Chapter Four

MECHANICS OF MARKETING

The marketing of agricultural produce was a complex process involving several stages. In addition to handling, storage and protection from pests and insects, marketing also involved grading and standardization to ensure a better price for the product. A vital link between the farm and the market was provided by the system of transport, but before agricultural produce could be considered ready for transportation, it had to go through several operations each of which had a bearing on the quality and cost of the commodity.

Harvesting, threshing and winnowing were the preliminary operations performed in the preparation of grain for the market. The size of the farm determined the mode and time taken by these operations. If the area of the farm was large the quantity for harvesting, threshing and winnowing was larger. These operations, carried along traditional lines, took a long time and it was only by the end of May that the whole crop could be carried home.¹ Delay, coupled with unfavourable weather, could cause heavy losses.²


² For example, in 1927-28, there was a sudden onslaught of hot and windy weather which caused the grain to shrivel up and the yield was as low as 582 lbs. per acre. In 1929-30, the weather was favourable and the yield went up to 851 lbs. per acre. In 1934, during the harvesting season the weather was mild and accompanied by clouds. This caused the wheat to be badly affected by rust and the yield fell to 640 lbs. per acre.
In the Punjab the wheat crop was sown any time between September and the beginning of December and harvested in April-May depending upon the climatic conditions in different sub-regions. It was harvested when it was fully ripe, or when the straw and ears had turned yellow. On barani lands the crop was ready for harvesting by the beginning of April, while in the canal irrigated tracts it ripened later. Notwithstanding the variations in the time of sowing, the time of wheat harvesting was remarkably regular, and in most places it began on the festival of Baisakhi falling on 12 or 13 April.

Reaping was traditionally done by means of the hand-sickle. The workers used to squat in a row and go cutting heapfuls till they reached the farthest end. The crop was usually cut close to the ground. If the area was small, reaping was generally done by the cultivator himself, but if the area was large, there was danger of shedding grains and hired labour was used. The number of labourers employed depended on the proportion of the total area that was cultivated by the owner himself, the size of the holding and the number

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3 Ibid., 85; I.D. Mahendru, Some Factors Affecting the Price of Wheat in the Punjab, 24.


5 Report on the Marketing of Wheat in the Punjab, 85. See also, DG Lahore 1916, 93 ; DG Attock 1930, 168 ; DG Ferozepur 1915, 146.

of able bodied members available within his kin circle. Of all the sub-regions, the highest demand for the hired labour was in the canal colonies where the labour came over from the south-eastern Punjab or the present Haryana region. After the crop had been cut it was tied into small bundles by means of a band made of whetted straw and stacked on the threshing floor and allowed to dry. Each weighing about one *maund*, these bundles were opened and scattered over the threshing floor immediately prior to threshing.

Local variations were prevalent in threshing operations also. Usually select open sites, plot of the land or part of the field were used for threshing. In the canal colonies part of the field situated in the centre was used for threshing, whereas in other districts select common open sites in the vicinity of the village were used. These sites were not used for sowing crops. In Amritsar and Ferozepur the part of land reserved for threshing was called *pir*. In the Lahore district a circular space was used for threshing. The floor was first watered and then pressed down hard and firm and carefully cleaned. Often a crop of relatively less value was first threshed.

Mainly, two traditional ways of threshing were prevalent in the Punjab. Under the operation called *mehr* a pair of bullocks was driven around a central pole over the harvested wheat till the grain was driven out and straw turned into chaff. For the second

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7 *DG Lahore 1916*, 95-96.
method, a wooden frame with some cotton sticks or thorny branches, weighed down by a fair load of harvested wheat tied to the frame by means of strings. Known as the phalla, it was yoked to a pair of bullocks and dragged round the harvested grain till the grain was separated and chaff broken. Since the sites used for harvesting were kacha, the mud from the sites as well as the loose mud and dirt from the bullocks' hooves often entered the produce. This reduced the marketable value of wheat.¹¹

To separate the grain from the chaff, it was heaped on the floor for winnowing. Two ways of winnowing were prevalent in the Punjab at the turn of the century. The first was the tossing of the grains into the air by means of a pitchfork. The chaff was blown away and the grain fell onto the heap. The second was by placing the grain and chaff in a winnowing tray, which was held aloft the head in a tilting position. The contents were shaken out by a slow movement. In most areas the winnowers stood on the floor but in some areas the use of improvised stool was common.¹² Winnowing was usually done by the village menials, mostly Chamars who were paid on an average at the rate of 1½ to 2 seers of grain for every maund in the 1930s.

After winnowing was complete, the traditional dues of the artisans were paid off. If the crop had been grown by the tenant, the owner's and the tenant's shares were also separated off on the threshing floor itself. The average cost of harvesting, threshing and

See also Gazetteer of the Chenab Colony 1904, Lahore, 1905, 72.


¹² This information is based on: I.D. Mahendru, Some Factors Affecting the Price of Wheat in the Punjab, 24; DG Ferozepur 1915, 147; DG Lahore 1916, 94; DG
winnowing in the late 1930s came to Re 0-12-6 per maund of grain. The wages of harvesting were usually paid in kind at the rate of five sheaves per acre. Taking the price of wheat at three rupees per maund and of chaff at Re 0-4-0 per maund in money value, the average cost of harvesting amounted to Rs. 5-11-0 per acre, of threshing Rs. 4-6-0 and that of winnowing Rs. 2-6-6 per acre.\textsuperscript{13} The cost of harvesting and winnowing in the canal colonies was much less, respectively around Rs. 1-15-3 and Rs. 2-3-4 per acre.\textsuperscript{14} The cost of these operations by men and animals varied considerably, averaging Rs. 9.5 per acre for manual labour and Rs. 2.4 for bullock labour.\textsuperscript{15}

The Punjab Agricultural Department tried to improve the implements used in these processes. In the 1930s in Lyallpur, the scythe was introduced instead of a sickle and so were bullock driven cutting machines and threshing machines. The scythe was rejected by the local cultivators firstly because its use required an upright working position which was not comfortable and reduced the speed of reaping, and secondly the straw being slippery, it was strewn all over the field. The bullock driven cutting machines or reapers could not be used on barani or rain-cultivated lands because there were many ridges. From 1917-18 to 1934-35 only fifty-eight such machines were sold. As already pointed out in the previous chapter, the reapers introduced were recommended for use in the canal colonies.

\textsuperscript{Attock 1930, 168.}

\textsuperscript{13} Report on the Marketing of Wheat in the Punjab, 87, 88, 303.

\textsuperscript{14} Kartar Singh, Studies in the Cost of Production of Crops in the Punjab, 18, 52-53.

\textsuperscript{15} Labh Singh and Ajaib Singh, Cost of Production of Crops on a Canal Irrigated Estate in the Punjab 1935-36 to 1939-40, BOEI, 1944, 8.
For the reaper to be economical, the holdings had to be sufficiently large which was the case only in the canal colonies. But, there too the tendency was to rent out the reaper rather than buy one. Hence, the small number of machines sold. The threshing machine lowered the value of the consignment by causing breakage of grain which ranged from one to five per cent.\(^{16}\) The 'improved' implements thus did not find favour with the farmers who continued to adhere to their traditional methods. Even the roller mills, wholesalers and exporters preferred to employ labour for cleaning the grain.

In its movement from the threshing floor to the market, wheat was handled in bulk or in bags. Where it was sold directly off the threshing floor the grain was weighed by the buyer in bulk. A sheet of strongly woven cotton or woollen fabric called *khes* was commonly used to carry the grain from the threshing floor to the village. From there the grain was put into carts lined with similar sheets. This traditional method continued to be in use in central and eastern Punjab. With the advent of the canals resulting in an increased surplus, handling of grain in the bags became more popular. In the canal colonies wheat was filled into bags on the threshing floor itself and it remained in bags till it was emptied outside the commission agent's (*artia's*) shop. Once the wheat reached the *mandis*, for export subsequently it was handled in bags only. These bags, commonly called gunnies or *borrees*, were broadly of three types: B-Twill, Heavy-C and White D-W, locally known as Khesi, Gauripur Brick Marka, and Sufed D-W.

The jute B-Twill bags of 44” x 26.5” were used for export while the other two

types were used in internal trade. Heavy-C bags were common in the central districts and White D-W enjoyed popularity in the eastern districts. The B-Twill contained 224 lbs. net, while the other two contained 206 lbs. net. After the bags had been filled and stitched they were loaded onto carts and conveyed to the buyer’s godowns or to the railway station where they were unloaded and stacked. The rate of unloading at the railway stations in the 1930s was Rs. 1-9-0 per hundred bags charged by station brokers.\(^7\)

II

Wheat had now to be classified, graded and standardized to get the best price in the market. Standardization furnished the ethical basis for the making of a transaction and involved the determination of the basic limits or grades. Grading was the process of sorting individual specimens of a given product to the standard grades or classes to which they belonged. This differentiation of the products was required to meet the various requirements of customers.\(^8\) While preparing produce for the market it was desirable and important that different lots offered for sale be uniform or adhere to some common characteristics.\(^9\) An advantage of grading was that wheat could be bought and sold

\(^{17}\) Report on the Marketing of Wheat in the Punjab, 186-88. Also I.D. Mahendru, Some Factors Affecting the Price of Wheat in the Punjab, 27.


through telegraph or telephone as it obviated the cause of dissatisfaction and dispute.20

After the initial classification of wheat into commercial types, *Tritium Vulgare*, *Tritium Durum* and *Triticum Compactum*, there were certain quality factors that determined grading. The first among these was the extent of refraction in terms of dirt, other foodgrains, shrivelled grains, weevilled grains and the mixtures of red and white wheats. The bushel weight was another important factor in appraising the quality of wheat. The Punjab wheat compared favourably with world wheat in terms of the ‘natural test weight’ or bushel weight laid down in important grain standards. The minimum bushel weight required in Canada averaged sixty lbs.; in United States it was fifty-one to sixty lbs.; and in Liverpool it was sixty lbs. The bushel and kernal weight of wheat in the Punjab ranged from 62.7 lbs. in northern Punjab to sixty-one lbs. in southern and western Punjab. The kernal weight of the Punjab grain is also reported to be adequate.21

The moisture content occupied an important place in determining the quality of wheat. The miller preferred low moisture grains as they absorbed more water and increased the milling quality of the grains.22

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20 The telegraphic communication between England and India was introduced in India in 1855. The subsequent opening of the telegraphic link with the port of Karachi in 1862 facilitated a more accurate and quicker study of demand and supply and other related phenomena. Himadri Banerjee, *Agrarian Society of the Punjab (1849-1901)*, Manohar, Delhi, 1982, 47. See also Indu Banga, ‘Karachi and its Hinterland Under Colonial Rule’, *Ports and Their Hinterlands 1600-1950*, ed. Indu Banga, Manohar, Delhi, 1992, 342.


22 The low moisture grains were lighter in weight and easier to handle over long
had a higher moisture content than the other tracts. In this respect too the Punjab wheat, with a moisture content of nine to ten per cent, compared favourably with other commercial wheats from North America, Argentina and Australia where the moisture content ranged from ten to thirteen per cent.

The protein and dry gluten content of wheat also formed an important determinant of its quality. The gluten content was related to the loch of dough and affected chapati making. The highest per cent of protein and dry gluten was in the wheat found in the western Punjab and the lowest in the southern Punjab.23

However, in actual practice, not much grading was noticed in the marketing of agricultural produce in India as a whole, and the Punjab wheat was no exception. Deliberate mixing of dirt and adulteration of superior and inferior grades were some of the common malpractices with regard to wheat meant for domestic and foreign trade.24 The cultivator did not grade his goods not because he did not know the benefit derived from grading but because he was not sufficiently rewarded for the trouble involved. The demand for the government intervention in the implementation of standards was first made by the Indian Chambers of Commerce in 1928.25 A meeting of the representatives of

25 B.B. Mukherjee, Agricultural Marketing in India, Thacker Spink and Company, Calcutta, 1937, 153. See also, S.A. Husain, Agricultural Marketing in Northern India,
important Chambers of Commerce, trade associations and millers was held at Delhi in April 1936. The Agricultural Produce (Grading and Marking) Act 1937 was passed by the Central Legislature in February 1937 to introduce some uniformity in the grading of products. The Act empowered the Agricultural Marketing Advisor to issue certificates of authorization to persons allowed to grade and mark their produce with the prescribed designation marks. In 1938 the Grain and Oilseeds Conference was held and it laid down terms for deductions of white wheat. Subsequently, grading of wheat flour was done at the Cereal Research Laboratory, Lyallpur.

The sale of wheat in the Punjab markets did not generally adhere to any particular standard. Price was settled after the physical examination of grains. The persistence of the traditional methods of sale hindered the proper grading of wheat. Sales on samples did not require personal inspection. In the Muzzafargarh and Multan districts, for example, a few well-to-do village merchants and big landlords took samples to the nearest market and entered into transactions on the basis of these samples. The sale of mixtures on the basis of fair average quality also precluded grading.


28 Annual Report of the Imperial Council of Agricultural Research 1940-41, Delhi, 1941, 94.

The export trade nevertheless provided a framework for change from the traditional ways. The wheat from the Punjab was exported through the special contracts called the ‘Karachi Pass’ (Appendix G). In such contracts drawn according to the standards and requirements of the European, mostly British, exporting firms, quantity and quality of wheat were stipulated, and the basis of refraction and the mode of delivery were also fixed beforehand. The speculative trade in wheat also had its contracts which specified the quality that would be accepted for export. For example, the Amritsar market did not accept weevilled wheat but the Lyallpur market accepted it in the months of June-July up to one fourth per cent subject to a discount of one per cent. In the ‘futures’ contract for procurement of wheat the tolerable rate for dirt was 1.5 per cent whereas for weevilled grain and admixtures it showed wide variations from nil to four per cent.\(^\text{30}\)

Sampling and analysis were the prerequisites of grading. In case of bulk wheat, samples were obtained by inserting an arm into the bulk as far as it could go and drawing out handfuls from a couple of points for examination. Samples from bagged wheat were usually drawn by a hollow spear locally termed as \textit{parkhi}.\(^\text{31}\)

As regards the method of analysis, the traders commonly relied on the visual test. After the sample had been obtained it was thoroughly mixed and spread on a smooth surface. Small quantities were taken from different places and mixed again to form a

\(^{30}\) \textit{Report on the Marketing of Wheat in the Punjab}, 150-53. See also \textit{Seasonal Notes, October 1928}, Punjab Agricultural Department, 4. For a discussion of ‘futures’ trade see Chapter Five below.

\(^{31}\) K.R. Kulkarni, \textit{Agricultural Marketing in India}, Volume II, Co-operators Book,
composite sample. Dirt was removed by sieves whereas pieces of stone, bits of straw and other refractions were separated by hand. After the components had been separated they were individually weighed on a chemical balance. \(^{32}\)

Lack of uniformity in the methods of sampling and analysis seriously hampered the wheat trade. The question of standardizing methods of sampling and analysis was discussed in Delhi in 1937. An experiment was conducted with 148 samples of wheat, each weighing about two lbs., from twenty-six lots selected at random. The samples were drawn by four methods: a) closed end spear, b) open end spear, c) hand, and d) a scoop. It was found that the amount of refractions varied with the method employed. The scoop method proved to be most consistent in its results. \(^{33}\)

**IV**

The necessity of storage naturally came in because the produce was not usually disposed off to the ultimate consumer immediately after harvests. The movement of produce from primary traders to secondary traders or from primary markets to secondary markets involved a time lag. This time lag necessitated provision for storage and its cost became a part of the price to be included at the time of sale. The difference between the harvest and off season prices was the direct outcome of storage. The system of storage was

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essential also to pool together the yield of different seasons so that it could be gradually withdrawn to meet the demand. Storage was done at different stages in the villages by the grower; in small markets by the local traders; in big markets by the commission agents from whom the exporters made their purchases; and also at the terminal markets prior to shipment. The quantity that was stored depended largely on the keeping quality of wheat, economic position of the producer, and facilities of storage. Wheat could not be stored for a long time as the weevils multiplied rapidly in the high air temperatures of the summer months if the wheat was not fully dry. In fact, it was damaged considerably by humidity in the rainy season.

The methods of storage were traditional and varied widely. In the villages there were no facilities for common storage and every cultivator had to make his own arrangements. The small cultivator did not have funds to construct separate stores nor did he have much surplus produce, so he stored the wheat in various containers and kept it in the house. The grain was not put in these containers directly from the threshing floor but was allowed to dry to avoid insect attack. It was, however, liable to depredations by rats. Wheat was stored also in earthen bins of various shapes and sizes. They were placed on supports one or two inches high in the corner of the room but did not touch the wall on any side. This kept the grain cool and less liable to attack by weevils and rats.

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34 S. A. Husain, *Agricultural Marketing in Northern India*, 32.
35 B.B. Mukherjee, *Agricultural Marketing in India*, 133-34.
36 A cylindrical bin with concave sides, a narrow top, covered by an earthen pot with a small outlet near the bottom which was kept closed by an earthen or cloth plug was
There were interesting sub-regional variations often related to ecology. Sometimes a corner of the room was selected and two mud walls were erected at right angles to form a rectangle. This was called a *bukhari*. Wheat could be stored in this container in bulk for a short period. This method was common in the central districts. Conical structures called *pallis* made of a matting of plaited date palm leaves and supported on a raised platform were used for grain storage in the south-western districts. Before filling the grain a lining of *bhusa* was laid. After filling the grain the opening was closed down by mud. The use of plaited bamboos called *pairoos* was common in the Kangra district. In the relatively arid tracts containers called *thekas* were used. Before storing the grains a layer of sand was laid at the bottom. This method of storage was in use in the Ambala division, especially in the Rohtak and Karnal districts. These *thekas* could store up to 120 *maunds* of grain.\(^{37}\)

Also common in Ambala and Karnal districts were underground digouts with a wide mouth, known as *kacha-khattis*. Their insides were plastered with mud. The grain was put

\[^{37}\] *Pairoos* were fixed in the courtyard of a house under the shelter of an awning. The sides of a *pairoo* were always plastered with mud and cowdung. The top hole was covered with the thatch and then plastered with mud and cowdung. *Thekas* were tall cylindrical structures made of strong closely woven hemp cloth or sometimes a number of gunny bags ripped open and resewn into a bigger bag. *Report on the Marketing of Wheat in the Punjab*, 162-64. See also B.B. Mukherjee, *Agricultural Marketing in India*, 134.
inside only after the sides were totally dry and a lining of chaff had been laid. The average storage capacity of a khatti was three hundred maunds. Its use gradually diminished because the grain got discoloured. The use of enormous wooden chests for storage was fairly widespread in the Jhelum district. Experiments for storage of wheat in kacha bins with both sides and bottom lined with galvanized iron sheets, the joints being rendered gas tight by soldering, were carried out in 1914-15. The results of this experiment remained inconclusive. In the canal colonies, wheat was stored in gunny bags. It was common to use a corner of the living room for storage.

The scale of storage became different after wheat reached the markets. Here it was generally stored in godowns or rooms locally known as kothas. In most cases the lower floors of houses of the artias were used. These kothas were made of brick and had a storage capacity of one hundred and fifty to three hundred maunds in which wheat was stored either in bulk or in bags.

The storage in the markets of the canal colonies and those of the eastern and the western Punjab was predominantly in bags (Table 4.1). This could have been an outcome of the transportation of wheat by railways which did not provide for the movement of

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39 YBPAD 1915, 30.

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loose grain. In the central Punjab wheat storage in bulk was more common. Besides being cheaper, it was believed that liability to insect attack was reduced in bulk storage. In Amritsar there was a somewhat standardized form of storage known as the *kotha* system. This had a storage capacity of one thousand *maunds*. All exits were firmly closed and the grain was poured from a hole in the roof. Occasionally, there was an increased demand for storage, and in such times any covered accommodation such as barracks of cotton factories, verandahs and covered courtyards could be used. In Lyallpur and Okara the grain was stored either in bags or in bulk in godowns hired or owned by *artias* or in spare rooms of shops. Okara was the only market which had underground cellars. The average loss in *mandis* due to insect attack was estimated at two to eight *seers* per bag of 2.5 *maunds* of wheat. This worked out to an annual loss of about seven million rupees in 1926 alone. The wheat at roller mills was stored in bags in godowns or barracks with *pacca* floors and wooden or corrugated roofing. During the wheat harvesting season these structures were hired for storage.

As regards the cost of storage, in villages it was negligible as the grain was stored in houses. The gunny bags used in *thekas* cost two to three rupees, and the *pairoo* cost about three rupees. The cost of storage in markets included the rent of the *kotha*, the cost of the *bhusa* and the handling charges. The rent of a *kotha* in the 1930s in the Punjab

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43 *Seasonal Notes April 1927*, Punjab Agricultural Department, 19,
averaged to five rupees per mensem and at places it was realized in advance. The cost of storing wheat had increased substantially by 1946 in the Punjab. For example, the Sargodha and Jullundur markets respectively registered an increase of two hundred and 508 per cent in the cost of storage. The cost of storing 250 mounds in Amritsar increased from Rs. 2-1-0 in 1936 to Rs. 7-15-8 per month in 1946; in Moga it increased from Rs.2-9-8 in 1936 to Rs.9-12-0 in 1946; in Fazilka from Rs. 1-13-0 in 1936 to 6-3-6 in 1946, and in Macleodganj from Rs. 2-3-10 in 1936 to 6-14-4 in 1946. If the storage was in bulk on an average it cost Rs.1-9-0 per hundred bags more for handling charges. This increased cost of storage could have been an outcome of the war time scarcity, forced rationing and the tendency to hoard for black-marketing. As may be expected, the increased costs would be broadly in consonance with the rising prices.

The introduction of the elevator system could improve the quality of wheat and also lower the costs, enabling the Punjab wheat to compete in the foreign market. The question of adopting the elevator system for handling and storage of grain was moved for the first time in India in 1879 – a decade after the opening of the Suez Canal – in consequence of the development of Indian grain trade and foreign competition. It was only

44 In Ludhiana, Moga, Ferozepur, Fazilka, Gujranwala, Amritsar and Tarn Taran the rent was realized in advance. Report on the Marketing of Wheat in the Punjab, 167-168.
46 For a discussion on prices, see Section V below.
in 1913 that the Punjab Government could start an experimental grain elevator at Lyallpur to handle the surplus wheat production in the canal colonies. It was built at a cost of 493 thousand rupees; it had thirty-two bins with a total storage capacity of four thousand tons.\footnote{I.D. Mahendru, \textit{Some Factors Affecting the Price of Wheat in the Punjab}, 35.} It was constructed to enable the Punjab wheat to get a good price in London by doing away with the margin that exporters kept to prevent their losses, besides providing services for cleaning the grain.\footnote{\textit{PAR 1922-23}, 85.}

The elevator started working in 1920. Messrs Clements, Robson and Co., were entrusted with the task of running it. The total amount of wheat received in the first working season was about fifty thousand \textit{maunds}. The storage charges at the elevator were six times greater than the \textit{kothas}, and hence the small cultivator could not bring his grain to the elevator.\footnote{Report on the Marketing of Wheat in the Punjab, 167.} The elevator received only a few consignments. The disorganized state of export prevented the adequate demonstration of its capabilities and it was closed down in 1926.\footnote{I.D. Mahendru, \textit{Some Factors Affecting the Price of Wheat in the Punjab}, 35. Also see, \textit{Report on the Marketing of Wheat in the Punjab}, 172.}

According to a contemporary field survey, the elevator failed due to several reasons. First, a single elevator was not sufficient for the Punjab. Geographically too, Lyallpur was not the ideal place as it was quite far from Karachi. This increased the cost of transportation which had a direct bearing on the elevator collections. The erratic and
insufficient supplies at the elevator prevented the establishment of a permanent market for elevator wheat. Paradoxically, the elevator grain being cleaner had to be shipped separately. As the quantity was small, the railways too did not provide wagons for it. Then, the incentive to the people to supply cleaner grain was absent, because the refraction for all kinds of wheat remained the same. The elevator was run by a European firm which was already trading in wheat. When the wheat of the Punjab peasants was graded and it fell below their expectations, the peasants resented it. The elevator came to be popularly known as the ‘alligator’. The political unrest caused by the Non-Cooperation movement may also have played some part in the failure of the elevator. It is also relevant to point out that the elevator at Lyallpur was the only one in India at that time, and the elevator wheat, despite being cleaner, was subjected to the same deductions as the wheat exported from other regions like the United Provinces. No special considerations were given to the better quality of elevator wheat.\(^\text{51}\)

In the context of the global market, it is worth mentioning that the large scale use of the elevator system in the Western world by the mid 1920s also appears to have affected the situation in the Punjab. As stated above, wheat from India was harvested at a very opportune time and her exports helped to fill the depleted stocks in the UK. Despite this the supply of Indian wheat was erratic. It is here that the grain ‘pools’ and elevators in North America came in. A ‘pool’ was an organization in which members brought their

produce to be stored and subsequently sold when the market was favourable.\textsuperscript{52} The big wheat giants, namely Canada and USA stored their grain in these ‘pools’ and elevators and sold regular quantities irrespective of seasons to the European consumers, thus obviating the necessity of the latter turning to India for interim supplies.\textsuperscript{53}

IV

Transportation as the physical movement of goods from the place of production to the place of consumption was an integral part of marketing. A commodity cannot be said to be produced unless it was placed in the hands of the consumers. Thus the prosperity of agriculture and agricultural improvements both depended on effective transportation.\textsuperscript{54}

In the previous chapter we have taken note of the modes of transportation prevalent under colonial rule, mainly rivers, roads and railways. Therefore, here we may confine to the situations specific to the transportation of wheat.

The cultivator could get a good price for his produce only if his village was linked with the \emph{mandi} by means of good roads as they meant a lesser strain on animals and enhanced speed which lowered the cost.\textsuperscript{55} Two and four wheeled carts drawn by a pair of

\begin{footnotesize}
\begin{enumerate}
\item Seasonal Notes, October 1928, Punjab Agricultural Department, 21.
\item S.A. Husain, \textit{Agricultural Marketing in Northern India}, 182.
\item Report of the Royal Commission on Agriculture in India, Government Central Press, Bombay 1928, 367. Also see, K.R. Kulkarni, \textit{Agricultural Marketing in India}, 1, 128; B.B. Mukherjee, \textit{Agricultural Marketing in India}, 163.
\end{enumerate}
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bullocks or camels were commonly used in the plain areas, where the roads were pacca or where kacha roads were in good condition. The carrying capacity of the cart varied from twenty to forty maunds according to the condition of the roads, the number of animals yoked and the design of carts. These carts were traditionally made of wood, and hence, their speed was slow. In 1934-35 the government introduced carts with pneumatic tyres instead of iron rimmed wheels which enhanced the speed and the carrying capacity of the carts. This helped the farmers to reap double benefits as time was saved and daily output increased. The number of traditional carts in the Punjab in 1899 was 243

56 The carts predominated in the colonies of Lyallpur, Montgomery and Shahpur and in the well-irrigated districts of Jullundur, Ludhiana and Rohtak. Two wheeled carts were common in the central districts of Gurdaspur, Amritsar, Lahore and Gujranwala. Four wheeled camel carts were common in the south-eastern districts of Rohtak and Gurgaon. In the Ferozepur district the cart had long triangular frames tapering to a point in front. It ordinarily carried a weight of 16 maunds, but if a third bullock was yoked, it could carry about 40 maunds. The carts of the Lahore district also carried up to 20 maunds whereas the carts of the Rohtak district in the Haryana region carried 40-50 maunds. DG Ferozepur 1915, 147-48; DG Lahore 1916, 107, 137; DG Rohtak 1910, 120. See also Report on the Marketing of Wheat in the Punjab, 193; K.R. Kulkarni, Agricultural Marketing in India, I, 133-34

57 The ordinary country cart covered 10 miles on metalled roads in 4 hours 5 minutes whereas the new cart took 2 hours 58 minutes for the same distance similarly on unmetalled roads the ordinary cart covered 10 miles in 4 hours 56 minutes whereas the new cart took 3 hours 40 minutes. Moreover, the maximum load that could be carried in the new cart was 2,952 lbs. whereas the old cart could carry a maximum load of 1,312 lbs. B.B. Mukherjee, Agricultural Marketing in India, 169.
thousand. By 1915 their number had risen to 295 thousand. Though the extension of railways and the introduction of the motor lorry in the 1920s offered stiff competition to the trade transportation by carts, these could not be obliterated.

Besides carts, the pack animals used for transportation were bullocks, camels and donkeys. Bullocks were not used on an extensive scale but were common in Campbellpur, Mianwali and parts of sub-montane districts. A pair of bullocks could carry two maunds of grains. Camels were in use in the western districts and they could carry a load of 7.5 to ten maunds. Transportation was also done by donkeys in areas where camels could not be used, that is, on irrigated lands or on lands where rainfall was heavy, as in the hills, sub-montane tracts and some central districts. They were generally owned by the potters, and were the best means of transport for small quantities of grain to be marketed by small cultivators. The average donkey load was from 1.5 to two maunds. On the whole, the transport by camels was cheaper than by donkeys or carts, the highest cost being for transportation by donkeys.

The construction of the railways was the key factor in increasing the wheat

58 PAR 1899-1900, clxxiii.
60 It may be interesting to mention that in 1929 there were 234 lorries and cars plying for hire in the Rohtak district alone. PLC D 1929, Volume XIII, 40.
61 The camels became popular even in Jullundur, Ferozepur and Ludhiana districts where they were yoked to work the Persian wheel. Report on the Marketing of Wheat in Punjab, 193-195, 379.
62 Ibid., 70, 194; DG Lahore 1916, 92.
trade of the region. Wheat exports from the Punjab registered an increase of 107 per cent from 1888-89 to 1939-40. The goods sent by the railways had to be classified. After various modifications a schedule of maximum and minimum class rates for goods traffic chargeable over the North-Western Railway and the lines worked by it was enforced in May 1936, and it classified goods into ten categories. Wheat belonged to Class I and flour to Class II. The maximum and minimum rates for wheat were 0.38 and 0.100 pies per maund per mile respectively. The rates however changed with distance. In 1930-31 the cost of carrying wheat from Amritsar to Calcutta was Rs. 1-2-7 per maund. The calculated freight per maund on wheat to Karachi from Amritsar, Lahore, Lyallpur and Okara were 1-9-7, 1-8-7, 1-6-4 and 1-6-1 respectively. This freight formed a high portion of the cost of distribution and it was found that of a difference of Re. 1-1-7 per maund between the wheat prices of Lyallpur and Calcutta during 1933-37, Re. 1-0-4 was due to railway freight alone. When the Depression set in, the Punjab government began urging a general reduction in freight rates on the export of wheat to Karachi and Calcutta. In 1931, the Railway Board offered to grant a rebate of one-third on the ordinary rate provided the provincial government agreed to


64 Table 4.2: Railway freight levied on wheat in the Punjab in the 1930s

<table>
<thead>
<tr>
<th>Distance</th>
<th>Pies per maund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. For the first and up to 233 miles</td>
<td>.333</td>
</tr>
<tr>
<td>2. For distance above 233 miles but not exceeding 250 miles to be added</td>
<td>.250</td>
</tr>
<tr>
<td>3. For extra distance above 250 miles but not exceeding 400 miles to be added</td>
<td>.125</td>
</tr>
<tr>
<td>4. For extra distance above 400 miles to be added to the charge for 400</td>
<td>.115</td>
</tr>
</tbody>
</table>

bear the cost of rebate. In 1932 a resolution was moved to reduce the railway freight on food-grains. A special rebate was given to the foodgrains that moved to the ports of Karachi and Calcutta.\textsuperscript{65} As a supportive measure import duty on wheat also continued till 1937.\textsuperscript{66} It is interesting to note that there was a provision for the exemption altogether of wheat from import duty if eighty-seven per cent of it was to be exported as flour to the foreign destinations within a stipulated time. Thus the Indian exporters could import cheaper wheat and export the flour. This could be one reason why the decline of wheat exports does not show a corresponding decline in the exports of flour.\textsuperscript{67}

Till the end of our period, the cost of transportation continued to occupy an important place in the scheme of distribution of grain. Wide variations in the price of wheat at the producing and consuming centres were largely due to transport charges. The rates charged by the transportation agencies entered into and determined the quantity of export as well as the price ultimately charged to consumers. Of the price paid by the consumer in Lahore, Karachi and UK, the primary producer at Lyallpur received eighty per cent, sixty-three per cent and fifty-three per cent respectively. The relative percentage

\textsuperscript{65} PLCD 1932, Volume XXI, 957-959.

\textsuperscript{66} For example in 1935, 7000 tons of Australian wheat was imported by India. Though it was a relatively small quantity prices fell and upcountry speculators usually waited for a fall in prices before purchasing wheat. PLCD 1936, Vol. XXVIII, 932. Also, Legislative Assembly Debates 1934, Vol. I,39, Ibid., Volume II, 1401.

\textsuperscript{67} S.A.Husain, Agricultural Marketing in Northern India,182.
for Bombay and Calcutta respectively was fifty-nine and fifty-seven. Facilities of transport coupled with high prices led to the decline in the practice of storing of grains by agriculturists. They brought their grain to the market immediately after the harvesting season and were placed at the mercy of the bania and other functionaries of the market who mediated the pricing of wheat on behalf of the consumers in India and abroad.

Equalization of prices was an outcome of the development of the means of transport and communication making it possible for the surplus wheat to meet the domestic and international demand. Earlier, good harvests led to excessive supply over demand resulting in low prices, while in years of scarcity there were no means to cover the deficit and the prices of wheat rose. In either case the prices fluctuated violently. After the establishment of the rail link in 1870 with areas outside the province things became different. In 1873-74 the wheat crop in the Punjab was abundant, but the effect on the prices was counter-balanced by the exports to the famine affected districts of Bengal. Similarly in 1895, the Hisar and Rohtak famine absorbed the surplus Punjab wheat. With the opening of the Wazirabad-Khanewal railway line in 1896-1900, connecting Lyallpur (1896), Toba Tek Singh (1899) and Khanewal (1900) in the Chenab Canal Colony area, which had earlier seen the bumper harvest rotting in 1890, the surplus commodity began

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69 PAR 1901-02, xviii.
to be exported to other markets and further fall in prices was checked. In 1902-03 there was a scarcity of wheat in Kashmir which was overcome by the supply from the Rawalpindi district of the Punjab.\textsuperscript{70} In 1915-16 the famine in the United Provinces saw the wheat of the Punjab come to its rescue.\textsuperscript{71}

Notwithstanding the demand in the domestic markets, the price of Punjab wheat was much more closely linked with its demand in the markets of UK and Europe. The exports of wheat from India filled the gap in June and July between the arrival of American and Australian crops. The harvesting season in the Punjab being from March to May, it commenced two to four months earlier than that in USA and Canada. Since some period must elapse between the time wheat is harvested and is put on the market, the supplies from USA and Canada could reach the markets in September-October. These two countries were followed by Argentina and Australia who continued to market their wheat till about the end of March. Thus, from March to September-October, these important wheat producing countries did not ordinarily loom large in the world markets unless they had surplus accumulated stocks from the previous harvest. Consequently, India could hold her own without a strong competition during this period. However, in March and April, due to the end season the supplies in the Punjab were short and therefore, it could not take advantage of this situation till May when it began to fill the gap in the European markets until the arrivals of wheat from the above mentioned four important wheat producing

\textsuperscript{70} Seasons and Crops Report 1903-04, 10.

\textsuperscript{71} PAR 1915-16, 40.
countries in September. The Indian wheat was in demand also at the time of crop failures in Europe or America. Conversely, when the Western countries had good harvests, its demand in the international market declined, as it happened in 1922-23 due to bumper harvests in Canada.

The Indian wheat thus did not compete directly with wheat grown in the Western hemisphere, but served as a means to supplement deficiencies in the world market. The UK remained the chief centre of trade and the demand in Europe continued to be the major influence on the prices throughout our period of study. In one year, despite a good harvest, the price of Indian wheat could rise because of the poor harvest in other countries, while in the next the prices could remain low because of abundant supply of wheat from Russia, USA and other countries. Understandably, its price was governed by Liverpool and not by the domestic market. This tendency had become evident within two decades of the inception of colonial rule. This increase in the price of wheat not so much because of the deficiency of supply but because of the increased demand and opening of new markets.

On the whole, the prices in the Punjab continued to rise despite fluctuations and regional variations (Table 4.3). Notwithstanding the increase in supply available for internal consumption, the price of wheat had increased by thirteen per cent from 1907-08.

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73 PAR, 1922-23 ,81.
74 PAR, 1904-05,50, Ibid.,1905-06, 37, Ibid.,1906-07, 44.
to 1928-29. It rose substantially during the post-war period resulting in a steady increase in the acreage of wheat till 1920-21. With the declaration of World War I there had been a general rise in price of wheat all over the world and the Punjab wheat prices also moved up in response. The government tried to take over the stocks but failed to do so. In April 1915 all private exports of wheat were prohibited and a Wheat Commissioner was appointed to ensure favourable terms for exportable surplus. While this embargo remained in force the firms previously dealing with the export of wheat to Europe were appointed as buying agents for the Wheat Commissioner on a fixed commission. Wheat prices were fixed by the government to gradually reduce prices and discourage hoarding and speculation. In May 1916 private exports were allowed once again.  

Wheat prices touched the lowest ebb at the end of the next decade in 1930-31 (Table 4.3). To begin with, as already noted, in 1922-23 good Canadian crop saw the Indian prices slump. Prior to the onset of Depression the rates of wheat were abnormally high. Wheat production increased as the world was preparing for another great war and it was necessary to have sufficient stocks of grain. The world had learnt that unless a country was self-sufficient in respect of its production of grain, there was every danger of its being blockaded and having to suffer at the time of war. This induced the countries of Western Europe to begin their programme of cultivating lands, clearing forests and so on. As a result, they began producing more wheat than India. Prior to the

war the main importers of wheat were Germany, France and Great Britain. Now they had surplus of their own and did not need the Indian wheat.\textsuperscript{76}

In 1931-32 good harvests had resulted in the accumulation of stocks in the world market. The impact of these stocks was acutely felt in 1934-35 when the market value of wheat slumped and prices of wheat in the Punjab fell by sixty-eight per cent from 1929 to 1933, while the prices in Chicago and Liverpool receded by forty-two and thirty-three per cent respectively.\textsuperscript{77} This fall in prices led to a fall in the income of the people which affected their purchasing power.\textsuperscript{78} The prolonged phase of low prices till 1939-40 also brought about an exhaustion of credit. It was then that the feeling set in that the cultivation of wheat was non-profitable and people began considering replacing it with cotton and other food grains. However, wheat did not lose its foremost position in the Punjab as after a short gap the prices began to rise.\textsuperscript{79} By 1934-35 the stocks of the world

\textsuperscript{76} PLCD 1932, Volume XXI, 929.

\textsuperscript{77} The Tribune, Volume L, 18\textsuperscript{th} October, 1930, Lahore, 2.

\textsuperscript{78} Ibid., 18\textsuperscript{th} February, 1930, 9.

\textsuperscript{79} Table 4.4 : Average maximum and minimum area under wheat (million acres)

\begin{table}[h]
\centering
\begin{tabular}{|c|cccc|cccc|}
\hline
Years & \multicolumn{4}{c}{Irrigated} & \multicolumn{4}{c}{Unirrigated} \\
& Average & Max. & Min. & Devi. & Average & Max. & Min. & Devi. \\
\hline
1901-02 to 1904-05 & 3.9 & 4.1 & 3.8 & 0.3 & 3.1 & 3.7 & 1.9 & 1.9 \\
1905-06 to 1909-10 & 4.3 & 4.5 & 4.1 & 0.4 & 4.2 & 5.2 & 3.0 & 2.2 \\
1910-11 to 1914-15 & 4.5 & 4.7 & 4.4 & 0.3 & 4.4 & 5.2 & 4.0 & 1.2 \\
1915-16 to 1919-20 & 4.8 & 4.9 & 4.7 & 0.3 & 4.2 & 5.3 & 2.9 & 2.3 \\
1920-21 to 1924-25 & 4.9 & 5.0 & 4.7 & 0.3 & 4.5 & 4.9 & 3.9 & 1.0 \\
1925-26 to 1929-30 & 5.2 & 5.6 & 5.0 & 0.5 & 4.3 & 4.6 & 3.9 & 0.7 \\
1930-31 to 1934-35 & 5.1 & 5.4 & 4.9 & 0.4 & 4.1 & 4.8 & 3.6 & 1.2 \\
1935-36 to 1940-41 & 5.6 & 5.8 & 5.2 & 0.7 & 4.0 & 4.4 & 3.7 & 0.7 \\
1941-42 to 1946-47 & 5.0 & 6.0 & 1.6 & 4.3 & 3.8 & 4.7 & 1.5 & 3.2 \\
\hline
\end{tabular}
\caption{Average maximum and minimum area under wheat (million acres)}
\end{table}

Sources: Seasons and Crops Reports 1901-02 to 1946-47

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market had again depleted because of the shortage of crops in major wheat exporting countries. The World War II reinvigorated the demand for wheat. In 1941 a steep rise in wheat prices was recorded as there was a sharp increase in the demand from the military as well as the civil population. This increase in price resulted in hoarding of grain in anticipation of a further rise in price. As mentioned above, in 1942 the government introduced forced rationing of foodgrains and price control. These control measures hit normal wheat trade as all transactions were undertaken by appointed authorities. The free movement of wheat was checked and seasonal fluctuations in price were removed by a fixed level. Initially, this control did not perturb the agriculturists as they felt that a reduction in the prices of wheat and other foodgrains would be accompanied by a reduction in the prices of other commodities. But this did not happen and price control resulted in black-marketing in wheat.\textsuperscript{80} The price was nearly four times higher than that in 1939. This sudden prosperity by the rise in prices helped the cultivators to repay huge amount of their debts.\textsuperscript{81} Besides this, in 1943, the price of wheat once again registered an increase because of decontrol by the government. The wheat prices continued to rise, reaching the maximum in the last year of colonial rule. However, the exceptional circumstances of the global market during the early twentieth century and the phases of abnormally high and low prices did not substantially affect the organization of the market.

\textsuperscript{80} *The Tribune*, Volume LXII, 18\textsuperscript{th} December, 1942, Lahore, 1-2; *Ibid.*, Volume LXIII, 15\textsuperscript{th} December, 1943, 2.

\textsuperscript{81} *Seasons and Crops Report, 1944*, 3.