

Production of cotton & growth of ginning mills in Haryana: A case study of Mandi Adampur

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It is the need of the time to make a balanced regional development as far as practicable based on the local resources and the skill. The development of an area can be judged with the production in the field of agriculture and industry. If both develop side by side the prosperity brought by them will make the region economically balanced. To start with the economic development the agriculture comes first, since it provides food material as well as the raw materials primarily depends upon the physical factors. The agriculturists adjust themselves to different physical and economic conditions. Economics factors dominate when different types of crop can be grown in the prevailing physical situations. Any change in the physical and the economic conditions in an area is directly reflected with the change in the economic activities of the agriculturist. This is observed in the region of Mandi Adampur. The facilities of canal irrigation brought the change in the physical conditions and agriculturists slowly turned from cultivating the traditional food crops (Jawar, Bajra etc.) to the cash crops (Cotton, Mustard etc.). The cotton an agricultural product is the raw material for the Ginning Mills. The cotton being weight losing raw material invites the cotton ginning Mills to be set up in its producing region.

This fact has lead to the growth of cotton Ginning Mills at Mandi Adampur, which is the most striking feature of the region. The considerable investigation in this matter will reveal the actual fact. Such work at microlevel becomes the best way to detect the prevailing conditions and the factors affecting them. This work is to examine the physical, the economic, the social, the political and the administrative factors affecting the production of cotton and the growth of Ginning Mills in an industrially backward region. The work proceeds to analyse the temporal growth in the procurement of raw material and the development of the Ginning Mills, and a future course of planing has been predicted. Such

information would enable planners to plan and the farmers to use natural resources to the greatest possible extent. The present description is based on the personal observation in the field. The questions related with the physical economic, managerial, administrative and social aspects were asked from the entrepreneurs, farmers and the workers; and facts were gathered for a reference period of three months. The available data from the Govt. offices and from other concerned sources were collected. The farmers, entrepreneurs, administrators, politicians, workers and social values, all, play an important role in the decision making for the growth and development of Cotton Ginning Mills. The near approach to the reality will make the decision making perfect to match with the need of the study region. This will help the people to have a better adjustment with the environment. A systematic and critical analysis of the facts for a scientific planning can efficiently be done after selecting a unit of the area.

The study region in Mandi Adampur and its environs, which is a part of «Cotton tract» of Haryana. A branch line of Northern Railway runs between Delhi to Bhatinda Via Mandi Adampur. Besides the Railway Station Mandi Adampur, located at 29° 15' Longitude, has Track Union, Hospital, Bus-Stand, Rest Houses, Fire Brigade, Banks, Telephone Exchange, Industrial Training Institute, as infrastructural facilities. Being a development block from Administrative point of view it holds 34 villages with an area of 49366 hectares & a total population of 96506 persons in 1981 census. This place has a good nodal location, Hissar 38 kms. Sirsa 98 kms. Fatehabad 40 kms. Rohtak 130 kms. Bahadurgarh 180 kms., in Haryana, Bhadra 44 kms, in Ganganagar Distt. of Rajasthan Delhi 200 kms. and Chandigarh 270 kms., are directly connected by roadways with this place. Towns of Gurgaon 223 kms., Rewari 172 kms. Charkhi-Dadri 116 kms. Bhiwani 89 kms., Hansi 52 kms. Hissar 29 kms. Sirsa 53 kms in Haryana, Bhatinda 128 kms. in Punjab and Delhi 255 kms. have direct Railway link with Mandi Adampur.

Factors

The process of industrial growth at Adampur is influenced by Geographical, Economic, social, Political and Administrative factors. The economic growth of a region is dependent upon the natural resources, human resources, capital, enterprise, technology etc. The Social institutions, cultural attitudes, moral values, political situations are also the guiding factors for the Economic growth. The natural environment is especially important to economic Geography in Two aspects: 1. It is a store House of certain source material that will be consumed ultimately by man & 2. It provides certain physical and biological conditions within and on which man's consumption, production and exchange occur (Thoman & Corbin p. 31).

The physiography drainage, soil climate, irrigation facility are the main geographical factors which have directly or indirectly influenced the location of cotton ginning Mills and production of Cotton in this region. The area has a gentle slope from the north—east to the south—west with an average height of 209 Mtrs. It is part of Haryana Plain between Satlaj and Yamuna rivers. River Ghaggar, a seasonal stream flows towards South-west.

The water of river Ghaggar brings alluvium for the high yield of the crops particularly the Cotton. The alluvial sandy soil is important factor in the cultivation of cotton. The gentle slope and sandy soil of the region do not permit stagnation of water. Even favourable soil conditions cannot compensate for unsuitability of the climate. The climate of this area is the controlling factor for the cultivation of the Cotton upon which Mills operate.

Under the head of the climate the rain fall, the temperature and the humidity are vital for the cotton. The following table gives an idea of the average climatic conditions of the region for the last five years.

TABLE 1
Climatic conditions in the Region

Name of Month	Relative Humidity in %	Mean Temperature in °C	Average Rain-fall in Cms
Jan.	84.0	13.5	1.5
Feb.	73.0	17.8	1.4
March	73.0	27.7	1.2
April	45.0	29.8	1.2
May	36.0	34.4	1.0
June	55.0	33.7	3.5
July	81.0	31.5	10.3
Aug.	74.0	32.1	10.4
Sept.	67.0	30.7	6.8
Oct.	71.0	28.0	1.0
Nov.	78.0	20.7	0.1
Dec.	83.0	15.5	0.7

Source: Regional Meteorological Station HISSAR

The above table shows that the relative humidity and the rain fall start to rise from the month of June. The rain fall is heaviest from July to Sept. The temperature also remains high during this period. Such conditions are favourable for the growth of Cotton crops. The farmers sow their cotton seeds in the forms before the on set of Monsoon. The combination of great heat & high humidity is particularly helpful for the growth of the Cotton plant (Dubey and Begi p. 227). The weather becomes dry from Oct. to Dec. this factor helps the ripening and bursting of the cotton bolls. The picking season generally falls in Nov. and Dec. which is the driest period. Cotton plant needs sufficient rainfall in the early stage of growth but a sunny and dry weather is required after flowering (Sharma & Continho p. 112-13). No doubt the area has favourable relative humidity and temperature but the amount of rainfall is scanty. This insufficiency is fulfilled by irrigation of crops by canal water in which area has been enriched. The cotton crops needs about 75 Cms rainfall uniformly be distributed for four months of growing period. The table does not show this trend and the amount from May to Sept is only 32 Cms. The remaining amount of water comes from the Ratia and the Barwala canals of Bhakra canal system (1954). Cotton is a dry Zone irrigated crop in Haryana because it is largely restricted to the Zone of 300 mm to 500 mm rainfall (Singh p. 299). The frost is a rare phenomenon in this area 200 frost free days are available by the crops. The fertile alkaline soil net work of canal irrigation from Sutlej moist climate at growing season and sunny weather at harvesting period encourage the cultivation of Cotton as raw material needed for Ginning Mills.

The economy to set up on an industry has to be considered from various angles. The whole Haryana plain under which the study area falls, is devoid of minerals and forests. The industries based on minerals and forest produce will not be economical since the transport charges for importing the raw materials from other areas will be heavy. The only alternative is to develop industries based on local raw materials. The area is rich in the pro-

duction of cotton based industries find the best environment to be set up. The production of cotton becomes the first choice of the Farmers because it gives a high return in comparison with other crops. The following table reveals the fact.

TABLE 2
Whole sale price of Principal crops
(Value in Rs. per Qtl.)

Crops:	Maize	Jawar	Bajra	Cotton Desi	Cotton American
Value:	153.8	126.6	134.9	435.6	462.9

Source: Statistical Abstract of Haryana 1982-83

The price of cotton is higher than the price of other crops. Secondly the producers have direct link with the purchasers in nearby area. They receives immediate to farmers. They take loan from the middle man at the time of social functions. The middle man demand Cotton in return.

The industrial development normally takes place in the region which provides inherent advantages for the industrialists. The advantages may be in terms of marketing facility, energy availability, cheap raw material, nodal location and labour force. In the case of Mandi Adampur the raw material is the main force to attract the entrepreneurs at economic rate. After the establishment of the factory due to one vital force, other factors get momentum which encourage the further development. Cotton is weight losing raw material. The attractive power of the raw material is normally great if the material substantially loses in weight or bulk during the process of manufacture (Jarret p. 23). In the process of Ginning the raw material loses its 66% weight due to the presence of cotton seed. Two percent goes in wastage, and only 32% comes out as finished products. The existence of Warehousing facilities at Mandi Adampur since 1969 has been the prime economic factor in the establishment of Cotton Ginning Mills. The collection of the raw material is done two tier methods.

First, the businessmen make the contact with the farmers and ask them to send the products at there shops. After this work the mill owners come in the late hour of the day and bidding starts. The highest bidder purchases the cotton. The payment of raw material is made in a different method. Such method is unique one different from other places. The mode of payment to bussines-men is given in the table No. 3. This method has an economic effect. The regular and comparatively quick payment brings an intensive for them to make the raw materials easily available.

TABLE 3
Mode of payment to Merchants by Ginning Mills Owners, 1985

Sr. No.	Day of payment	Rate of Interest per month	Days counted for interest	Deducted/Added
1	I	1.5%	5	Deducted
2	II	—do—	4	—do—
3	III	—do—	3	—do—
4	IV	—do—	2	—do—
5	V	—do—	1	—do—
6	VI	—do—	1	Added
7	VII	—do—	2	—do—
8	VIII	—do—	3	—do—
9	IX	—do—	4	—do—
10	X	—do—	5	—do—
11	XI to XXX	—do—	No. of days from the date of purchase	—do—
12	After one month	2%	—do—	—do—

Source: Field work 1985.

The above method of payment is more beneficial to local entrepreneurs also. Most of them pay raw material price within a short period. 40% payment comes within five days. Another 35% entrepreneurs pay within ten days, 15% payment within a month and 10% pay after one month. Effective marketing planning calls for finding the relationship between different levels, type and allocation of marketing resources and the corresponding impact on sales and profits (Kotler, 251). This is the reality in the case of Mandi Adampur.

The marketing of cotton links has another economic advantage in the growth of Ginning Mills in this region. The high demand of American Cotton lints of this area by the Textile Mills of Bombay region provides favourable environment for the firms, secondary the local demand of Desi Cotton lints for quilts bedding cotton guaz etc. are additional demands. Such demands are fulfilled by transporting the products by easy transport facilities. It has a two tier connection first, every village within the jurisdiction of Mandi Adampur has direct link with this place. Most of the farmers have Tractors with Trolley or camal carts to bring cotton. The products of Ginning Mills are transported by Railway wagons which are made available easily.

This area produces Desi Cotton as well as American Cotton. American Cotton (*Gossypium hirsutum*) is suited to the cotton tract covering about whole of the Distt. of Hissar where dry conditions and soft loamy soils prevail. Desi or indigenous Cotton (*Gossypium arboreum*), a tough fibre crop predominates in those area where American cotton can not be grown successfully due to any reason. Both type of cotton are purchased by entrepreneurs and lints are produced. Cotton is easily collected at the place of production. The amount of raw material collected at Mandi Adampur for the ten years aragiven in the Table No. 4.

TABLE 4
Collection of raw material at Mandi Adampur
(Figure in 000's Qtls)

Year	American Cotton	Desi Cotton	Total
1974-75	21.14	58.46	79.60
1975-76	37.28	81.42	118.70
1976-77	52.11	73.29	125.40
1977-78	109.85	47.89	157.74
1978-79	141.49	48.28	189.75
1979-80	154.85	46.16	201.01
1980-81	179.14	25.06	204.20
1981-82	188.01	36.52	224.53
1982-83	327.73	54.64	382.37
1983-84	243.74	48.38	292.12

Source: Market Committee Mandi Adampur

The above data shows that there is no uniform supply of raw material. The supply was recorded in 1982-83. This declined in 1982-84. The supply increases when the cost of raw material is high and other factors remaining the same.

No doubt, the supply of raw materials has played the vital role in the collection of raw material and in the growth of Ginning Mills, but the administrative and Political factors are also acting as supporting elements without which the industrial development at this place could have doomed. The importance of Govt. activities are increasing day by day. The direct encouragement to industrial development may be attributed to conversion of un-cemented canal into cement lining for regular irrigation, conversion of unmetalled road to metaled ones to connect villages, establishment of warehousing and opening of the branch office of cotton corporation if India and Agricultural Development Office. These developments could easily take place only because of an active political leader of this region, who became the Chief-Minister of Haryana. The type of Govt. policy and effective administration could materialised only due to his efforts. A strong, efficient and incorrupt administration is therefore, essential for economic development. Peace, protection, stability and payment of timely overhead capital facility in this region have stimulated the industrial development in positive form. The Govt. does not interfere much with the functioning of these industries. Moreover, the Govt. has provided tax free period for two years to new firms for the encouragement of entrepreneurship.

Social and cultural factors have also influenced the growth and development of ginning Mills of Mandi Adampur. The fatalistic nature of the local people due to the religious belief, like contentment with what they have, is being transformed now into the habit of saving and investment to earn more. The single family unit in place of joint family system has helped further in the industrial development. Each unit of family feels easy in taking independent economic decisions leading to further investment in this field. The traditional attitudes and values are another social factors. The area is dominated by a caste (an ethnic group) named as Bishnoi. They have a strong belief in the protection of animal and trees. The area is rich in animals particularly in cows, buffelows and camels, but, development of leather industry tanning industries or meat packing industries can not development due to the social restriction. This aspect goes in favour of the development of cotton ginning mills without any social hinderance, other factor is the social contact of merchants with

the agriculturists. These merchants provide financial assistance if required by agriculturists to perform social functions like festivals, marriage ceremony, death funerals etc. Farmers repay them in the form of cotton.

Production

The production of Cotton lints are affected by the supply of raw material. The figure No. 4 shows the trend of supply of cotton. The growth rate was highest with 41.2% in 1982-83, when the agriculturists obtained high price of cotton. The cotton from other region was also diverted to this direction. The percentage of increase next to this is seen with 33.36, 20.52, and 16.87% in the year 1975-76, 1977-78 and 1978-79 respectively. The growth rate was low in 1979-80, 1981-82 and 1976-77 with 5.6, 9.05 and 5.34 respectively. The lowest growth was in 1983-84 which minus 30.89% due to breach in Bhakhra Canal in Punjab which disrupted the supply of water and Cotton production was badly affected. The growth was also very low in 1980-81 with 1.56% increase due to the pest attack. The low growth rate in 1976-77 was due to the heavy rain fall which occurred in this area. The planned production of cotton started after the construction of canal in 1954. The amount was poor in the beginning and only desi cotton was produced. The Table 4 reflects that Desi Cotton dominated the same till 1976-77. The sudden change took place in the 1977-78. The new variety of cotton seeds, introduction of chemical fertilizers and use of pesticides gave the farmers high yield after the introduction of American Cotton. Since then the American Cotton is dominating the total production.

The region has a domestic base for the growth of ginning mills. The aim of maximum exploitation and the most efficient use of the local resources are used by the growth of these units. The further of these mills depends upon the amount of Cotton supplied. The units become sick in case of non availability of raw material. The following data give the picture of the growth of Ginning Mills in different years.

TABLE 5
Growth of Cotton Ginning Mills
(In %)

Year	% of total units
1968	10.00
1970	5.00
1973	10.00
1974	5.00
1976	15.00
1980	10.00
1981	20.00
1982	20.00
1983	5.00
Total	100.00

The increase in No. of Cotton Ginning Mills depend upon the supply of Cotton. The farmers, businessmen, entrepreneurs and the workers are the operative factors for the industrial growth. These factors are affected by the physical economic and social aspects

of the region. These are directly modified or controlled by the policies and programmes of the Government in a developing country. The entrepreneurs and farmers both are equally responsible for the growth of Ginning Mills in this region. The inputs and outputs are closely related. The timely rain fall regular canal irrigation the better quality seeds proper use of fertilizers and pesticides will bring high yields of Cotton in the region and the firms will grow further more. The better financing system is the main reason behind the growth of firms at this place. This factor was supported by efficient administration safety of life and property, guarantee of business contracts and better quality of raw material.

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La producció de cotó i els creixements de les desgranadores a Haryana: el cas de Mandi Adampur

L'alt cost de transport del cotó afavoreix la localització de les desgranadores en els llocs d'origen de la producció. Les desgranadores de Mandi-Adampur són instal·lades al centre de la regió de cotó de Haryana. L'àrea té uns factors físics, socials, econòmics i administratius molt favorables per al cultiu del cotó. Com que el cotó és una planta que tolera el sòl moderadament salí i alcalí que la regió posseeix, s'hi adapta perfectament. La producció de cotó per hectàrea és més alta que la d'altres collites de l'estació de Kharif (a mitjan setembre). La forma de pagament, un tret únic, favorable en aquesta regió. Altres factors favorables a considerar són els canals d'irrigació, un bon sistema de transports mitjançant l'eficàcia del ferrocarril i la disponibilitat de magatzems situats en les rodalies. Els valors socials són el suport que hi ha darrera el creixement d'aquestes indústries.

El futur creixement d'ambdós, el cultiu del cotó i de les desgranadores, depèn de la demanda dels productes en el mercat local i l'exterior. La demanda podria ésser calculada per una estimació del potencial d'aquests mercats. El nombre total de compradors d'un producte específic sota la suposició donada, ha de ser multiplicat per la quantitat adquirida per un comprador mitjà; es coneixeria així el potencial del mercat. La diferència entre el potencial de mercat i la part d'unitats existents en el mercat actual haurien de ser preses en consideració per un futur augment de la producció.

El sistema dividirà les funcions en nivells. La provisió de materials als agricultors, de matèries primeres i els productes finals, les facilitats de promoció de magatzems i la investigació haurien de ser realitzades en el nivell del govern. El procurament de les matèries primeres i la distribució dels productes acabats l'haurien de dur a terme els intermediaris o mercaders. El finançament i pagament a empresaris i agricultors se situaria en el nivell bancari. En el nivell dels empresaris hi compta també l'operació convenient de les firmes. Aquesta planificació de tot el sistema explotaria els recursos locals d'aquesta regió industrialment endarrerida. S'aconseguiria també la descentralització de les indústries i el descens de la pol·lució a les grans ciutats.

Production du coton et croissance des égrenées à Haryana: les cas de Mandi Adampur

L'haute cout du transport du coton favorise la localisation des égrenées au même lieu d'origine de la production. Les égrenées de Mandi Adampur se trouvent au coeur de la région du coton de Haryana. L'aire a des facteurs physiques, sociales, économiques et administratives très favorables pour la culture du coton, qui est une plante que peut bien tolérer les sols alcaline-salines de la zone. La production de coton par hectare est plus élevée que celle d'autres récoltes réalisées dans l'estation «kharif» (au moyen septembre). Le mode de payment, un trait bien particulier, est favorable dans la région, comme ils en sont aussi les canals d'irrigation, les système de transport avec la disponibilité du chemins de fer et les magasins dans le voisinage. Les valeurs sociales sont le support que se trouve derriere la croissance de cetttes industries.

La croissance future et le développement de la culture du coton et des égrenées va dependre de la demande de produits dans le marché local et exterieur. Le nombre total d'acheteurs pourrait être calculé à travers d'une estimation du potentiel de ces marchés. Le numero total d'acheteurs d'un produit spécifique sous l'assumptions donnée doit être multiplié par la quantité aqueride par un acheteur moyen pour comaitre le potentiel du marché. La difference entre le potentiel du marché et la partie d'unités existents dans le marché au present devrait être eu en consideration pour une augmentation future de la production.

Tout le système va niveles des fonctions. La provision du matieiels aux agriculteurs, de matières premières et produits finals, la promotion des facilités de magasinage et la recherche devraient être réalisées au niveau du gouvernement. La procuration des matières premières et la distribution des produits finis devrait aller au niveau des intermediares ou marchands. La finaciation et payment aux entrepreneurs et agriculteurs doit être située au niveau des bancs. Pour le niveau de entrepreneurs c'hi trouve aussi l'operation convenable pour des firmes. Cette operation planifiée de tout le système va exploiter les ressources locales dans cette région industriellement retardée. On obtendra ainsi une politique de descentralisation de l'industrie et la diminution de la pollution dans les grandes villes.