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**DYNAMICS OF MEDIUM-SIZED TOWNS AND MIGRATION PROCESS IN INDIA
AN APPROACH THROUGH INTERRELATIONS BETWEEN MIGRATION AND EMPLOYMENT**

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THE DYEING AND PRINTING INDUSTRY IN JETPUR (GUJARAT)

by

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THE DYEING AND PRINTING INDUSTRY IN JETPUR (GUJARAT)

by Veronique DUPONT

ORSTOM

INTRODUCTION

The textile dyeing and printing industry of Jetpur exemplifies mono-industrial development based on a traditional activity, which was primarily promoted by local entrepreneurs, hence illustrates a case of endogenous dynamics.

The presentation of this case study will be organized as follows.

It begins with the history of the inception of the dyeing and printing industry in Jetpur and its contemporary development.

The description of the production technology, the questions relating to the marketing of the products, the initial investment and the cost of production as well as the supporting institutions will be examined. The employment capacity of this industry will be appraised.

The next two sections will be devoted to the entrepreneurs and the workers : their socio-demographic profile, geographical origin, economic background. The earnings and the working conditions of the workers will be investigated.

In the last section, the problems faced by the dyeing and printing industry will be evaluated.

The study will conclude with some reflections about the future prospects of the dyeing and printing industry in Jetpur.

The source of data and the system of observation implemented for this case study will be presented in a preliminary section.

1 - SOURCE OF DATA

This case study is part of an ongoing research project on industrialization, urban development and migration processes in Indian medium-sized towns.

The system of investigation adopted combined several levels and angles of observation : the town in its regional background, the industrial establishment, the household, the individuals (entrepreneurs as well as workers). Several types of approaches and surveys, quantitative as well as qualitative, were also conducted. The variety of the observations aimed at a better grasp of the different facets of the processes of industrialization and urbanization.

Besides the existing official statistics (census, establishment registers ... etc) and other available secondary data or study reports which were examined, the data used are mainly from our own surveys and personal field observations, carried out in Jetpur from October 1987 to May 1989 in four phases. The first phase consisted of a preliminary qualitative observation, in the form of a few interviews conducted in Jetpur with local dignitaries, officials, industrialists ... It aimed at a better approach of the field : it enabled us in particular to identify the different types of spatial and labour mobility induced by the industrialization, and it helped us to sharpen, according to the local context, some concepts essential for our study and to define the relevant questions for the next surveys. It was conducted in the course of October 1987.

The second phase consisted of a quantitative survey on migration and economic activities, by the means of a household schedule with a limited number of questions, most of them closed ended. It aimed at describing the population according to its demographic, socio-cultural and economic characteristics and at providing information on in-migration vis a vis the native place as well as information on out-migration from the household.

The population covered by the household survey included the population of Jetpur urban agglomeration as well as the population of the surrounding villages in order to take into account the great number of commuters working in the printing industry. A 10 per cent sample of households was drawn, covering all the blocks of the urban agglomeration and of five nearby villages located within a radius of eight kilometres around Jetpur. A systematic sampling was carried out in every block on the basis of a direct counting of the households, with the help of detailed maps previously designed. About 2400 household schedules were filled from January to April 1988 [DUPONT, 1988].

The third phase of observation focused on the textile printing industry, which is the predominant sector of activity in Jetpur. The unit of observation was the industrial establishment, a 10 per cent sample was randomly drawn from the list of the Industrial Association, corresponding to 50 distinct individual enterprises or familial groups (see sub-section 2.2). Extensive interviews with the concerned entrepreneurs were conducted in November-December 1988, in order to collect both qualitative and quantitative information pertaining to the migration and occupation biography of the entrepreneur as well as the setting up of the establishment, its economic characteristics and employment details.

The fourth phase followed a qualitative approach, at the micro-social level and focused on the workers of the printing industry. It was based on in-depth interviews conducted with 64 workers, drawn from the individual file of the household survey, following the method of quota in order to represent the different categories of workers with respect to their occupational group in the industry as well as their place of residence and geographical origin. The interviews aimed to reconstruct the detailed migration and occupation biographies, and to better understand the reason for in-migration and the choice of the town - or the reason for not migrating and the preference for a rural residence in the case of commuters, the process of insertion in the urban labour market - including the working conditions, and the nature of the relations maintained with the native place. This last survey took place in April-May 1989 (DUPONT, 1989-b).

2 - SETTING UP AND DEVELOPMENT OF THE DYEING AND PRINTING INDUSTRY IN JETPUR

2-1-Origin and development of block printing in Jetpur

Gujarat has been famous for its textiles and especially dyeing and printing craft since ancient times : "Before the beginning of the Christian era up to the rise of the British power in India textiles from Gujarat were popular all over the known world" (TRIVEDI - 1970 - p.3).

Various modes of dyeing and printing were highly developed in this state, and in Saurashtra more particularly, the western peninsular of Gujarat, where Jetpur is located.

In Jetpur, 72 kilometres south from Rajkot, on the western bank of the Bhadar river, the origin of dyeing and printing craft could be traced to the beginning of the 19th century. Gopalji Chatrabhuji Kamdar, who was the councillor of one local ruler of Jetpur at that time (namely Shardul Vala), called upon various artisans as well as traders, from different places of Saurashtra, in order to promote the economic expansion of the town. In 1813 the first families belonging to the Khatri community were called from Kalavad in Jamnagar district to develop dyeing and printing craft and trade in Jetpur. They were followed by other Khatri artisans coming from textile printing centres located in the neighbouring districts of Junagadh and Amreli (like Kuthiana, Bhesan, Majevedi, Bagasara) (SAMPATRAM, 1868).

In the latter part of the 19th century up to 1947, Jetpur became a flourishing and prosperous town and an important centre of trade in textile. One specific factor gave an impetus to the commercial development of Jetpur : before Independence it was a Kathi princely state wherein no duty was levied on the cloth imported in the town. This concession made it profitable for the traders of Jetpur to import cloth from Japan and other countries (cotton as well as silk) and sell it in other parts of the country (TRIVEDI - 1970).

The development of dyeing and printing of cloth also progressed along with the expansion of textile trade. The concentration of this craft in Jetpur was further encouraged by the special properties of the water of the Bhadar river, on the bank of which the town is situated : this water is famous to help in developing the colours and prints.

Around 1920 nearly 100 artisans were engaged in dyeing and printing craft in Jetpur. Later block printing got a considerable impetus during the Second World War (TRIVEDI - 1970). But then, the technique of screen printing was introduced in Jetpur in 1947, and the rapid development of this new mode of printing gradually supplanted block printing. In the seventies, block printing had disappeared

from Jetpur, except for one or two units which are still running today.

2-2-Development of screen printing industry since 1947

The partition of the country after its independence in 1947 put an end to the flourishing economy of Jetpur as a textile trading centre.

The town was subject to communal riots in 1948 and 1949. The neighbouring state of Junagadh, ruled by a Muslim king before Independence, and under which an adjoining village of Jetpur, Navagadh, was, wanted to merge with Pakistan. Jetpur was used as a military base for the army sent to crush the rebellion, and eventually the king of Junagadh escaped to Pakistan.

Following these events, the Muslim community, especially the Memons, migrated to Pakistan. The Memons, who had built their fortune as traders in Burma during the first World War, formed a very prosperous community before the Independence, and they played an important role in the development of Jetpur. Thus their migration led to an economic depression, which was further aggravated by the successive departure of other communities : many artisans left the town, and most of the Vaniya traders migrated to Bombay.

Subsequently the population of Jetpur diminished dramatically in the years following the Independence : according to estimates provided by the Municipality the decrease would approximate 15,000 people. The census data also reflect a dramatic inversion in the population trend of the town.

Between 1921 and 1941 the population of Jetpur increased at a decennial growth rate of 23 per cent [1], to reach 28,406 inhabitants in 1941. A decade later the population was almost at the same level : 28,444 inhabitants in 1951. This apparent stagnation masks in fact a continuation of the demographic growth of the town up to 1947, followed by massive out-migration.

The economy of Jetpur was in total doldrums when the introduction of a new technology to print textile, screen printing, marked the beginning of a new era of industrial development for the town.

The pioneer in the setting up and promotion of the screen printing industry in Jetpur was Shri Gordhandas Karsanji Bosamia, popularly known as Bachubhai, who started the group 'Jagdish Textile Dyeing and Printing Works' in 1947-48. Bachubhai was a direct descendant of the first Khatri family called in Jetpur to develop dyeing and printing craft at the beginning of the 19th century. At the time of the Independence Bachubhai was involved in cloth trade in

Ahmedabad. His foresight and business accumen enabled him to visualize Jetpur as an ideal place for the development of the printing industry, while the slackness and unemployment which prevailed in Jetpur after the departure of the Memons also prompted him to return to his native place and to try to give impetus to its economy.

The first screen printing unit in Jetpur was started on a very small scale. Subsequently Bachubhai went to Japan to improve his knowledge of screen printing and other modern techniques of dyeing, bleaching and printing. This brought in a new outlook to his industrial group which progressively expanded in Jetpur itself, as well as in Ahmedabad, along with the setting up of trading companies in Bombay, Delhi, Madras, Indore.

After the establishment of the first screen printing unit in Jetpur in 1947-48, other printing units shifted gradually from block printing to screen printing, while traders and entrepreneurs of the Khatri caste came to settle in Jetpur. Later the prospects of the printing industry attracted many entrepreneurs from other communities, in particular Vaniyas and Kanbis.

Subsequently the number of printing units set up in Jetpur has shown a continuous and rapid growth. In 1970 it approximated 300, and 1200 units around 1985. Today the number of industrial units reported by the industrial association fluctuates between 1100 and 1200.

The best period for the expansion of the dyeing and printing industry in Jetpur took place from the mid sixties to 1983. Then the industry faced an economic crisis, mainly due to fierce competition and depression of demand, increased by the adverse effect of the last recurring drought (1985-86, 1986-87, 1987-88).

All the 1200 dyeing and printing units belong to the small scale sector [2]. However, the entrepreneurs of Jetpur adopt the common practice of dividing their concern in small-sized units, for administrative registration purpose, in order to avoid extra taxes [3] and to escape from the labour legislation. Therefore these 1200 units correspond only to about 500 distinct individual enterprises or familial groups. Thus, the bigger industrial groups can be constituted by more than 25 small-sized units. As a result of this property dividing practice, reinforced by the under-declaration of the workers employed, only 8 industrial units were registered under the Indian Factories Act with the Chief Inspector of Factories in Ahmedabad in 1988 [4].

The development of the screen printing industry in Jetpur has also promoted several ancillary manufacturing and servicing activities set up in the town or its immediate surroundings. Manufacturing of screen frames and screen making account for

about 200-300 small units of production. About 100 small unit are engaged in finishing processes, pressing and folding operations. There are also about 20 units manufacturing dyes or other chemicals used in the printing process (gum powder, silicate..), located in the town and the nearby villages.

Along with manufacturing activities, trade (in cloth, dyes and chemicals, packaging material and other accessories) as well as transport (from handcart to truck) related to the industry also expanded.

The maximum capacity of employment of the Jetpur dyeing and printing industry, including its ancillary industries, would approximate 40,000 (according to Jetpur Dyeing and Printing Industries Association).

The increasing number of industrial establishments over the last forty years has been accompanied by an extension and decentralization of the industrial area. Initially the printing units were located in the inner city. Progressively factories have been set up in the peripheral zones of the town, and then outside the Municipality boundaries, on the territory of adjoining villages like Navagadh and Chamrajpur. For example, in March 1988, 364 printing units situated on Jetpur revenue land, but outside the residential site, on non agricultural land used for industrial purpose, were registered on the Revenue records. In Navagadh, at the same period, 246 printing units located on the territory of the village were registered with the local administration.

The first reason for this centrifugal movement is the scarcity of land in the inner town as well as its appreciating price. The second set of reasons pertains to taxes, which are higher within the civic administrative boundaries, whereas outside the Municipality limits entrepreneurs in particular avoid the octroi tax.

2-3-Factors of industrial growth and concentration in Jetpur

Several factors played an important role in the concentration and growth of the screen printing industry in Jetpur.

As above mentioned, the quality of the water of the Bhadar river, which flows in Jetpur, is especially favourable for dyeing and printing work. This technical advantage was important in the past, as long as the saris were washed directly in the river. Nowadays the flow of the river is quite insufficient to fulfil the requirements of the increased number of printing factories. Besides the construction in 1964 of a dam on the Bhadar river, 22 kilometres upstream from Jetpur, has considerably reduced the flow of the river.

Another technological factor allowed the expansion of the screen printing on an industrial scale : the introduction of photo screen making, which replaced the more traditional Japanese stencil method after 1960 (see sub-section 3.2).

After the Partition, the out-migration of the rich Memons from Jetpur, which, on the one hand, ruined the economy of the town, turned to be on the other hand a favourable factor for the new establishment of industries in Jetpur. The Memons left behind them all their properties, spacious houses and big buildings. Thus many buildings were available at a very low cost. Some Khatri artisans, the first entrepreneurs in Jetpur, took advantage of this situation and converted the properties evacuated by the Memons into printing factories. More specifically, the Sindhi Khatri, migrants from Sindh in Pakistan, who were traditionally engaged in dyeing and printing craft, and arrived as refugees in Gujarat after the partition, could benefit directly from the custodian property system - a system of exchange of property between refugees from Pakistan and refugees from India - to settle in Memons' houses and start printing factories in these buildings.

An administrative measure taken by the Municipality of Jetpur also gave an impetus to the development of the local industry. In 1950, Jetpur got the status of Municipality, and its trade was thus subject to octroi taxes. That could have constituted an additional force of dissuasion for trade and commerce, in the context of an already depressed economy, due to the departure of the prosperous Memon traders. Therefore, the Municipality of that time, aware of such a risk, introduced a modification in the rules governing the octroi system. In the initial system, the merchants who were importing goods - like cloth - had 15 days to pay the octroi tax. The Municipality of Jetpur extended this delay up to 60 days, which created an unique situation among all the towns in Saurashtra. This comparative advantage allowed the printing industry, which was highly dependent on cloth trade, to flourish.

Then, the rapid expansion of the screen printing industry can be explained by its economic characteristics. To start with it is not a capital intensive industry : it does not require high initial investment, nor specific machinery or sophisticated technology. Easily obtainable bank credit facilities for plant and equipment up to 1982-83 was an additional favourable factor. Raw material were also available on credit and cloth supply was abundant. As the entire process of dyeing and printing is manual and the main equipment consists of printing tables and screen plates, this enabled the entrepreneurs to start their concern on a small scale, even in rented premises sometimes already equipped, and to expand it progressively. Moreover the system in which the entrepreneurs undertake printing work only on contract, according to the orders placed by the traders, allowed the entrepreneurs to minimize the expenses as well as the risks,

since the traders provide them with the cloth and market the finished products.

The concentration of printing factories in Jetpur induced further industrial growth and concentration as the new entrepreneurs were assured of finding appropriate conditions and infrastructure to start their concern : factory premises on a rental basis, skilled labour and network of traders. As long as the level of demand was high, this industry offered good and fast profits, with a minimum of economic and technological constraints. This explains why it attracted many entrepreneurs, who did not necessarily belong to the traditional communities of craftsmen or traders.

Among the newcomers in the printing industry, a traditional caste of cultivators, the Kanbis (also called Patels) participated increasingly in the industrial development of Jetpur. In a broader perspective, this process has to be related to "the emergence of the Kanbi cultivators as a dominant middle order caste in Saurashtra" (JOSHI-1989). At the time of the princely states the Kanbis were tenants-at-will on the lands of the local rulers (Jagirdars or Girasdars). After the independence of India, the implementation of the land reforms and tenancy acts [5] gave them full occupancy rights and ownership. As landowner cultivators they developed cash crop agriculture, especially after 1969 with the bank nationalisation policy which provided easy access to financial facilities. Eventually they benefitted from the progress of irrigation facilities and managed to set aside surplus from agriculture incomes. This process also took place around Jetpur, in the command areed of the Bhadar irrigation dam and canal, where irrigation facilities supplied since 1966-67 allowed the farmers to make good profits from agriculture and reinvest them in printing industry.

Good infrastructure facilities contributed to the promotion of the industry in Jetpur. This town is situated on the National Highway from Rajkot to Porbandar; State Transport buses regularly pass through it and connect with main towns in Gujarat. In addition it is linked by rail by two stations to major cities of the state and the country.

Among other noticeable urban facilities, Jetpur, as a headquarter of a Taluka in Rajkot district, has the appropriate administrative infrastructure, eight banks, a government hospital, an Art and Commerce College.

2-3-Impact on urban dynamics

The considerable expansion of the printing industry over the last forty years resulted in the rapid population growth of the town, indicating a high in-migration. The population increased from 31,186 in 1961 to 41,943 in 1971 and to 63,074

in 1981 (year of the last census), which corresponds to a decennial growth rate of 34.5 per cent during the first intercensal period and of 50.4 per cent during the second one. Meanwhile the Gujarati towns belonging to the same size class as Jetpur in 1971 (namely class III with population from 20,000 to 49,999) recorded an average growth rate of only 32.6 per cent from 1971 to 1981.

Today the urban and industrial spread of Jetpur also includes an adjacent village Navagadh, which has developed into an industrial suburb. Jetpur and Navagadh together constitute an urban agglomeration of around 113,750 inhabitants [6].

The proportion of in-migrants in the population of the urban agglomeration is 44 per cent, coming mainly from Saurashtra (86 per cent of them). But, in the working population engaged in the textile printing industry, the proportion of in-migrants reaches 56 per cent.

The dyeing and printing industry is the most important sector of economic activity for the population residing in the urban agglomeration: 44 per cent of the employed labour force is concentrated in this sector. It is also a sizeable source of employment for the rural population: in the five nearby villages surveyed 21 per cent of the employed labour force is engaged in this industry [7].

The printing industry not only leads the entire urban economy and has attracted large numbers of migrant entrepreneurs and workers, but it also provides ample employment opportunities for the population living in the surrounding villages.

From the point of view of its population dynamics as well as its economic development, Jetpur proves to be an industrial urban centre deeply rooted in its hinterland.

3 - PROCESS OF PRODUCTION

The dyeing and printing industry in Jetpur specializes in printing of cotton saris. This is a labour intensive industry, based on hand printing.

After presenting the raw materials and tools used in this industry, the different operations of the process of production will be described. The impact of climatic conditions on the printing process will also be underlined. Lastly some indications about the processing capacity of the factories in Jetpur and the total production will be given.

3-1-Raw Materials

Two main categories of raw materials are used in the dyeing and printing industry : firstly cloth, and secondly dyes and chemicals.

- Cotton cloth

The cloth is the principal and basic material required. Only cotton cloth is printed in Jetpur. Earlier mill cloth as well as powerloom and handloom cloth were used. But since the sixties, with the development of powerlooms, supply of powerloom cloth became more abundant and relatively less expensive than mill cloth, and it gradually supplanted the other sorts of cloth. Nowadays powerloom cloth is the exclusive type of cloth used in Jetpur.

The prevalent channel for cotton cloth printed in Jetpur is as follows.

The cotton yarn is mainly manufactured in Tamil Nadu (in Coimbatore particularly), yarn is woven in powerloom houses in Maharashtra (in Bhiwandi, Ichalkaranji, Dombiwali....) to obtain grey cloth, and grey cloth is sold in Bombay market to brokers, traders or industrialists involved in dyeing and printing. The grey cloth is then sent for bleaching to processing houses in Maharashtra, wherein impurities are removed from the fabric through treatment in chemical solution. Mercerizing process is also carried out, consisting of another chemical treatment which aims to impart a certain degree of lustre with added strength, and hence increased durability and increased dye absorbing power, to cotton. The bleached and mercerized fabric then ready for dyeing and printing.

Only 2 or 3 big dyeing and printing establishments have their own bleaching unit in Jetpur, to process the cloth before dyeing and printing.

Several qualities of cotton cloth are available, the main ones used in Jetpur are mulmul (a very fine cotton cloth), cambric (a thicker fabric introduced in Jetpur printing industry about ten years ago), and to a lesser extent doria, organdy, moongakota.

- Dyes and chemicals

The dyes used in Jetpur screen printing industry are chemical, no vegetable dyes are used. Besides dyes, other chemicals are required in the dyeing and printing process such as acetic acid, sodium nitrate, caustic soda, sodium silicate, urea... etc. Dyes and chemicals are purchased mainly from manufacturers in Ahmedabad, but also in Vapi, Valsad, Baroda (for Gujarat) and Bombay, most generally through the intermediary of trading agencies, many of whom are based in Jetpur.

The few dye factories set up in Jetpur or around can supply only a marginal part of the printing industry market. Moreover, some of these factories manufacture raw materials for dyes, which are not directly usable by the dyeing and printing factories.

Several classes of dyes can be used for dyeing and printing of cotton cloth. Indigo dyes were used for a long time, in block printing as well as screen printing ; then from the mid-sixties reactive dyes and rapid dyes were adopted in Jetpur. This technological progress allowed further development of the screen printing industry.

In addition to dyes and chemicals, other products are needed for the dyeing and printing process. Wax is applied on the printing table before spreading of the cloth.

Gum is used in the preparation of the dye paste as a thickening agent. It is extracted from a leguminous plant, the gowar, which grows particularly in Rajasthan.

Starch, which is a hardening agent, is extracted from maize.

3-2-Main tool : the screen

The method of screen printing originated from the Japanese so-called Yuzen style, which was carried out with screens made from especially prepared rice paper cut in stencil form. (TRIVEDI, 1970).

The first screens used in Jetpur were made with a silk fabric very tightly strained on a wooden frame. The screen design were prepared by hand-cut, following the principle of stencil : the material forming the screen was treated with lacquer in such a way that the design to be printed appeared positively

and remained porous, while the background became waterproof. The size of the screen is adjusted to the width of the sari or other cloth to be printed.

Further improvement were introduced in the screen technique : metallic frames which are more durable and light in weight have replaced wooden frames, nylon fabric has been used instead of silk, and photograph process has been adopted to prepare the stencil. The design is first drawn by artists with ink on tracing paper and then transferred onto nylon fabric through photographic process. This improved type of screen can be utilized to print 2000 to 3000 saris on an average.

Screens are manufactured in Jetpur in specialized establishments, which receive their orders from the dyeing and printing factories, along with the patterns of design to follow. However some big printing concerns have their own screen making department.

3-3-Printing Process [8]

The first step of the printing process is the preparation of the thickened solution of the dyestuff, mixing colour powders in water with suitable starch or gum paste and other chemicals to give the actual printing paste. This operation of primary importance is carried out by the dyer, in the 'colour laboratory' of the factory. Thus the dyer who occupies a strategic position must be a well trained and skilled worker. In some small establishments the proprietor himself is engaged in the preparation of dyes.

The second step is the application of one or more paste on the fabric surface in order to print a multicolour design. The fabric to be printed is spread on the wooden slanted table specially made for the purpose. As saris form the prevalent item of production in Jetpur, the usual length of a printing table is about 30 metres, on which the cloth of six saris can be spread simultaneously, with nearly 2 metres in width. Wax is previously applied on the top of the table in order to keep the cloth creaseless and firmly fixed in position while printing. After the fabric is well spread and gummed over the top of the table, the printers place the screen on the printing table across the width of the fabric, with the screen nylon material lying flat upon the cloth to be printed. The dyeing solution is poured inside the screen frame and, with the help of a rubber squeegee attached to a wooden handle, one or two strokes are given across the screen, in order to transfer the dyeing solution through the open pores of the screen onto the fabric placed underpath, thereby registering a part of the final design to be printed.

The screen is then lifted and placed at the next point marked and fixed at proper distance on the side of the table to

ensure continuity of the print. This process is performed by two printers standing opposite each other on both sides of the table, and it has to be carried on till they cover the entire length of the cloth.

When the design is single coloured, only one screen is required. But in the case of multicoloured designs, the number of screens to apply is equal to the number of colours in the particular design, each screen printing that portion of the design which bears that particular colour. Only one colour can be printed at a time, and the printers cannot apply a new colour before the previous one is completely dried.

Different styles of printing can be distinguished. In direct printing, the dyestuff are screen printed directly at the required places of the multicoloured design on the bleached cotton fabric, leaving the other portion white. But in some specific styles, called discharge printing and resist printing, the fabric is first dyed uniformly, dried and then screen printed.

The step following the screen printing operation is the immediate drying of the printed fabric, so that the dye present in the wet paste on the fabric surface does not spread beyond the boundaries of its design. For that purpose all the printing factories are equipped with electric ceiling fans. The printed cloth is first hanged under the fans above the tables to dry out, and to finish taken out and spread in the sun light.

Some factories are fitted out with 'hot tables', that is printing tables equipped with a heating system, in order to dry the dye solution applied on the fabric, hence enabling the printing process to be carried out during the monsoon, when the atmosphere is too humid to allow the cloth to dry only by air exposure.

When indigo dyes were used, the printed textiles were rolled and kept in a cool place for 24 hours where it should not come in contact with sun light. The next day, after an exposure to sun shine, they were immersed in a solution of acetic acid, sodium nitrate and caustic soda, in order to develop the colours.

If reactive or rapid dyes were used, the printed and dried cloth is taken for steaming or silicating process, in order to develop and fix the colours.

In steaming process the fabric is exposed to an atmosphere of wet steam at the temperature of the order of 100 degrees C. in an enclosed chamber for 5 to 30 minutes, to fix the dyes on the fabric and develop the colours. This process was introduced in Jetpur in the mid-sixties.

In silicating process, which is more prevalent today, the printed cloth is passed through a solution of sodium silicate at a temperature of 45 degrees C., and then kept for 20 to 24 hours in closed plastic bags, as it should not come in contact with open air.

In the next step, the cloth is sent for washing, in various detergent solutions as well as clear water in order to remove starch, gum and other chemicals used in the preparation of the printing paste and throughout the dyeing process and which remain in the fabric.

At this stage the cloth can be also dipped in a mixture of bleaching powder for whiteness, and finally passed through a solution of starch to obtain hardness.

Earlier, the process of developing indigo dyes as well as the washing operations took place on the bank of the Bhadar river. But the tremendous extension of the printing industry on the one hand and the reduced flow of the river after the construction of an upstream dam in 1964 on the other, did not allow this situation to be perpetuated on a larger scale. Nowadays the printing factories have their own washing-places inside their premises, or - in most of the cases - they send the printed cloth outside their factory to washing-places called 'washing ghats' situated in the agricultural fields, in the surroundings of Jetpur.

To become attractive enough to be presented to the consumer market, the printed cloth goes through different textile finishing processes. For example, as mentioned above, starch gives stiffness to the cloth.

The cloth can also be put on a Stencer machine where it is stretched and passed through a steam chamber ; this helps to strenghten the fibre and increase the durability of the material as well as to give uniformity to the cotton material [9].

Another technique, called 'bamboo roll' or 'Benares roll' and which is entirely manual can be also used to give uniformity to the cotton material. Each sari is rolled on a long wooden stick while spreading simultaneously a starch solution on the cloth, and remains on it for several hours before going for ironing and folding. This technique which has been used traditionally in Benares for a long time was introduced in Jetpur in the mid-seventies.

Besides a soft effect can be produced by applying certain chemicals called softening agents by suitable methods. One of these methods, called 'felting process', requires a heavy machine which sprays automatically softening agents on the cloth and then spreads it uniformly all over the sari by passing on big rolls.

The type of washing and finishing processes depends on the class of dyes used for printing.

The final step consists of ironing, folding and pressing the saris before packaging. More precisely, in roll pressing the ironed and folded saris are passed several times between two rolls and then kept under heavy pressure in a big press before packaging.

The big dyeing and printing concerns have their own finishing and packaging departments. Among the bigger ones some are even equipped with a Stencil machine and a felting machine. But many printing factories send their saris for finishing processes, including pressing and packaging, outside their premises, to specialized establishments working on a contract basis for them.

As shown in the above description, the entire printing process is manual. Sophisticated machines which can be used for finishing processes (Stencil machine, felting machine) are found only in a few dyeing and printing establishments, or in some specialized establishments (there are for example 10 to 15 separate felting finishing units in Jetpur area).

3-4-Impact of climatic conditions on the printing process

Humid atmosphere is not suitable for printing, in addition the saris are to be dried out in dry air and sun light. Therefore monsoon is the slack season for printing work. Most of the dyeing and printing factories cannot run throughout the year and have to close seasonally, thus their average numbers of working days in a year is about 225. Only those factories equipped with a heating system for the printing tables, which ensure the drying of the dye solution applied on the fabric, can also operate during the monsoon. However this concerns only a very small proportion of the printing units. Besides 'hot tables' were introduced in Jetpur only recently, in 1982.

Saurashtra being a drought-prone region, the effect of drought on the dyeing and printing industry should be also examined. In fact drought brings about climatic conditions more favourable for dyeing and printing work. The factories are then not compelled to stop their production for 2 to 3 months because of the monsoon. For example, during the last three years of recurring drought which hit Saurashtra (1985-86, 1986-87, 1987-88), the number of working days could be significantly higher - providing however the establishment was not forced to close due to other difficulties faced during the drought. According to the survey conducted with a sample of 50 entrepreneurs, the number of working days reported in 1987 averaged 247, as against 222 working days in 1988 (year with a good monsoon). In some establishments the gain of working days in the year of rain scarcity was more

than 60 days, up to 77 days in extreme cases. Concerning the number of saris printed, in half the establishments surveyed the production declared was significantly higher in 1987 than in 1988. Moreover, at the question "When was the best period for your business, with respect to production, since you have been running this factory?", 16 industrialists out of 50 answered the years - or one of the years - of the last drought, from 1985-86 up to June 1988, and they mentioned explicitly the good climatic conditions for printing as the main reason (DUPONT - 1989 (a)).

But, on the other hand, severe drought has an adverse effect on the dyeing and printing industry : its process of production being water intensive, the industry is hit in the first place by shortage of water.

Water is indeed an essential element in the dyeing and printing process : sufficient quantities as well as adequate quality of water have to be provided. Water is first used in the preparation of the dye solutions, to solve the colour powders. Then large quantities of water are required to wash the saris. For these two operations the quality of the water is also important [10]. A good amount of water is also needed to wash the printing tables, the screens, buckets and other tools.

To ensure the functioning of their establishments during the 1985-87 drought, the industrialists had to buy water from rural areas and bring it back by means of mobile tankers. They had also to send the saris for washing to places where water was available in sufficient quantities, sometimes up to 90 kilometres away from Jetpur. This resulted in increasing the cost of water in the cost of production of the saris (see sub-section 5-4).

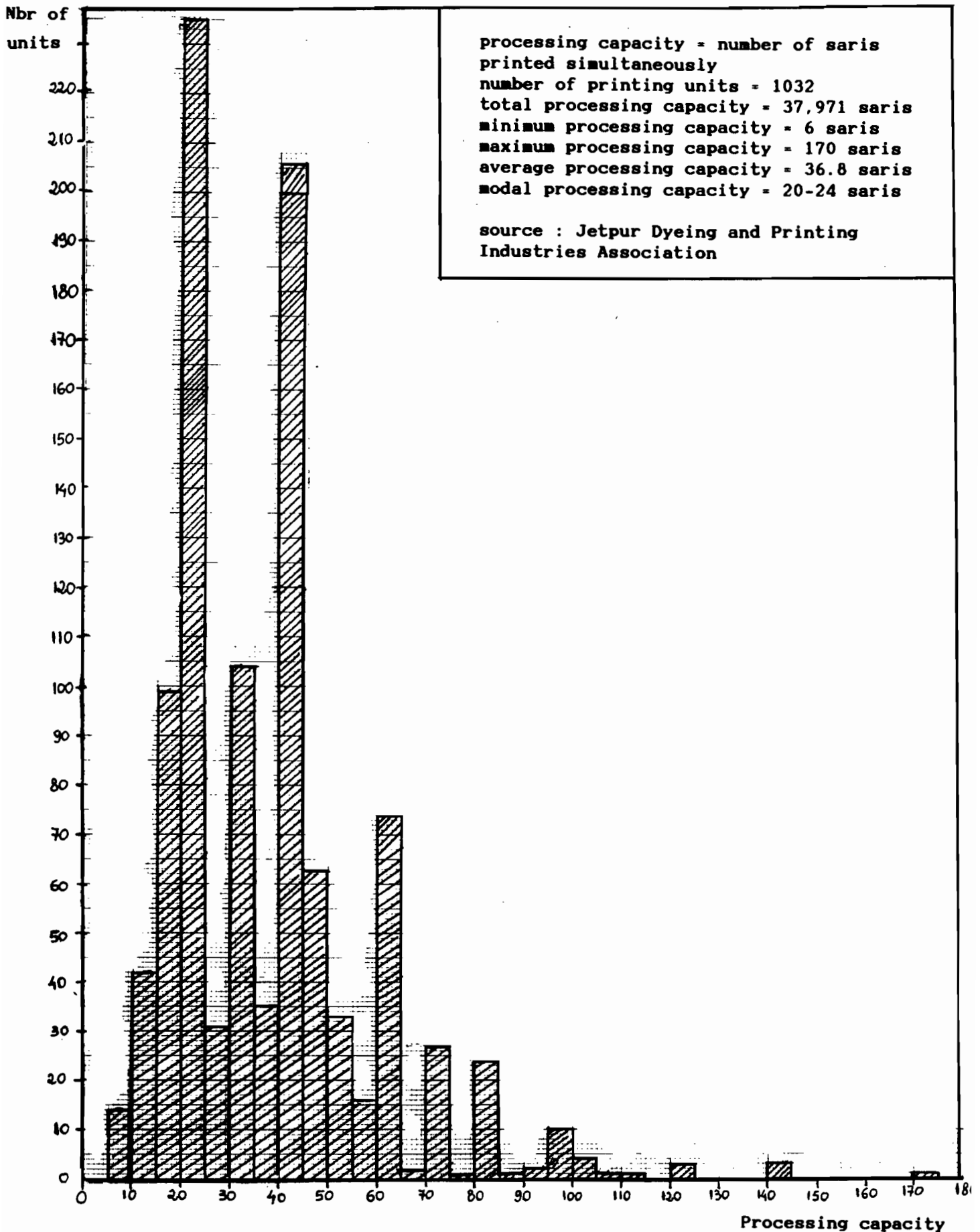
Due to the drought, the prices of raw material based on agricultural products can also increase, when there is a deficiency in the crops of the corresponding agricultural staple products (see sub-section 5-4).

In addition to the shortage of water, another main adverse effect of the drought, when it extends to large parts of the country, is the slump in demand (see sub-section 11-4).

3-5-Processing capacity and level of production.

The processing capacity of a printing unit is measured in number of saris which can be printed simultaneously, and thus it is directly related to the number of printing tables. Then, for a given number of printing tables, the daily production depends on the number of working hours, the main factor of differentiation being whether night shift is practiced in the factory or not. For example, when 'hot tables' operate, the printing process goes on continuously

Figure 3-1
Distribution of the sari printing units of Jetpur dyeing and printing industry by processing capacity, in 1988



4 - MARKETING

4-1-Finished products and market places

The main product of the dyeing and printing industry in Jetpur is cotton saris for the lower and lower-middle classes, with selling prices ranging from 35 to 50 rupees (in 1988-89).

In the early stage of this industry, Saurashtra and the rest of Gujarat constituted the major market for Jetpur saris. Then the development of the industry has been associated to the extension of the market and gradually Jetpur saris have been sold all over India. Today Gujarat represents only a very small part of the entire consumer market, as for Saurashtra part it is almost insignificant. West Bengal, Uttar Pradesh, Bihar as well as South India have become major market places for Jetpur saris. Large quantities of saris are also sent to Bangladesh through Calcutta, and some to Nepal, Sri Lanka, Mauritius.

Length, colours and designs of the printed saris are prepared to fit the specific customs and tastes of customers from different parts of India and abroad.

In addition to saris, a few units in Jetpur also print 'khangas' and 'mishars', that is pieces of cloth worn by African and Arab women, and which are exported to East Africa and West-Asia.

Bed sheets, dress material and scarfs, though marginal in the total production, require mention. Dress material is printed for export houses of ready made garments, and along with printed scarfs they are sent to Europe and United States.

4-2-Marketing system

A large majority of the printing units, 75 to 80 per cent, work on contract basis, according to orders placed by traders. In this system, the traders supply the cloth to be printed, the pattern of design to be followed, and take back the finished products to market them; thus marketing is not the direct concern of the entrepreneurs who undertake the printing work.

The establishments working independently have to ensure themselves the marketing of their printed work. They have show-rooms in Jetpur and Ahmedabad, some have their own trading agencies in main market centres (Ahmedabad, Bombay, Calcutta, Madras, Kanpur ... etc, according to the final destination of their finished products), or at least they have representatives and travelling salesmen and are connected with wholesalers in major towns who distribute the

saris in their own state.

Some printing establishments combine independent printing works with contract work for traders. Some big independent establishments with their own trading agency also place orders with other smaller printing factories of Jetpur, to meet the demand.

Those establishments printing textile for export to West-Asia, East Africa, Europe or United States work for export houses. Only two or three big groups in Jetpur have direct contacts with these countries and export themselves. Direct export involves high risks, and very recently one leading industrialist of Jetpur incurred enormous loss following the rejection of his entire load of printed 'khangas' in Dar-er-Salaam, and was subsequently compelled to close down most of his factories in Jetpur.

4-3-Competition with other textile printing centres

On the national market Jetpur products are in competition with cotton saris printed in other screen-printing centres in India. In Gujarat the major centres are Rajkot, Ahmedabad, Jamnagar; in Rajasthan Pali, Jodhpur, Jaipur, in Uttar Pradesh Mathura, Farukhabad; and in Andhra Pradesh Hyderabad. Most of these screen-printing industries developed more recently than in Jetpur. With respect to the type of saris printed, the main direct competitor for Jetpur printing industry is Pali.

In addition, marketing of cotton saris has to face the indirect competition of synthetic saris. Though the selling price of synthetic saris is on an average higher than the price of cotton saris, their relative price is decreasing and they may be preferred by an increasing number of consumers as their maintainance is easier and they last longer. This is in particular the case in Gujarat, where synthetic saris from Surat flood the market. In this connection, it has been reported that 5 to 7 printing units in Jetpur have started printing polyester saris or other synthetic material, very secretly however, and more or less illegally, in order to avoid the excise duties imposed on the printing of synthetic cloth.

5 - CAPITAL, COST OF PRODUCTION AND PROFIT

5-1-Factors of differentiation

It is essential to examine the various modes of economic and financial organization adopted by the entrepreneurs, in order to appraise initial investment, cost of production and profit.

The first factor of differentiation to be taken into account is whether the entrepreneur is the owner of the factory premises or whether he runs his enterprise in rented premises. In Jetpur about 60 to 65 per cent of the printing units are run by industrialists who also own the premises, and 35 to 40 per cent are run on a rental basis. In the latter system the rented premises are most often available already equipped with printing tables and electric ceiling fans, on a temporary basis, for six months or one year, renewable.

Undertaking printing work in rented premises already equipped is a solution adopted by entrepreneurs who do not own fixed assets, or by industrialists who already own a factory and resort to this solution when they have to face extra orders. Thus this system allows the industrialists to adjust their production to the level of the demand, at a lesser cost.

The second factor of differentiation concerns the mode of business adopted by the entrepreneurs, 'job-work' or 'own-business', whose main characteristics are mentioned below.

In the most frequent system known as 'job-work', the entrepreneurs undertake printing work only on contract basis, hence they do not have to buy the cloth neither to market the printed saris. They are provided with bleached cotton cloth and sometimes even with screens by the traders who place the orders and pay them for the printing work according to a rate fixed per sari. About 75 to 80 per cent of the printing units in Jetpur function under this system.

In the alternative system, called 'own business', the entrepreneurs work independently: they themselves purchase the cloth to be printed, and then market the finished products. Some entrepreneurs also combine the two systems.

The last main factor of differentiation pertains to the juridical form of organization of the concern. In Jetpur two forms can be found: proprietary concern and partnership concern, the latter prevailing, more particularly under the form of familial partnership.

The partnership again allows a variety of possibilities in the distribution of the industrial capital and the sharing of profits. Several partners can be associated for the same

concern, some being active partners, some sleeping partners and some only nominal partners (for income tax purpose). The same entrepreneur can also hold shares in different concerns. Then, a group of partners, especially familial partners, can be associated to run a group of units, as a result of dividing juridically and administratively the industrial capital and profit under different names.

5-2-Initial investment

To start with, the above mentioned factors of differentiation bring about a wide range of situations with respect to the initial investment. The initial expenses to set up a printing unit can be minimized by taking on rent premises already equipped, starting the production on a very small scale, undertaking printing work for a trader who supplies the cloth as well as the screen designs, and purchasing dyes and chemicals on credit.

Besides entrepreneurs can go into partnership, in order to share the initial expenses and the risks. An entrepreneur without any saving to invest can even find sleeping partners, namely financial partners who advance the initial capital but without being involved in the effective management of the concern, while the former is the acting partner, who contributes his work, in the management of the concern, or even at the production process, as a dyer for example.

Eventually entrepreneurs can apply for loan from commercial banks or from the Gujarat State Finance Corporation (GSFC).

Subsidies for industrial investment may be also available under specific governmental schemes (see sub-section 6.2).

The survey conducted with a sample of 50 entrepreneurs provides a picture of the extent of the various practices adopted.

Out of 50, 21 entrepreneurs set up their first printing unit in rented premises.

20 had an initial processing capacity inferior to 20 saris.

38 started by undertaking printing work exclusively on contract.

44 have been in partnership, and out of them 37 in familial partnership.

23 have benefitted from loans of commercial banks or GSFC to set up their first unit or new units; or, as referred to the total number of units declared by the 50 entrepreneurs, 27 units out of 137 (namely 20 per cent) have been set up with the help of such loans.

The account of some entrepreneurs can illustrate more concretely different kinds of strategies implemented to set up a dyeing and printing factory in Jetpur [11].

For the entrepreneurs who have been involved in dyeing and printing craft in their families for generations, in the Khatri community especially, there was no initial investment as such, but rather a reconversion from textile dyeing or block printing to screen printing, starting from a very small scale and operating on a familial basis, with a gradual extension of the enterprise by reinvestment of the profit made. In the successful cases, further expansion of the concern by adding new units can be achieved, by resorting to bank or GSFC loans. Some of the current big industrial groups have indeed followed this type of development, starting from a very low profile.

The story of Manubhai is an appropriate example of the type of initial setting up with a minimum investment, but for an enterprise which however has remained modest until today. Bhavsar by caste, Manubhai belongs to a community traditionally engaged in printing work. His father had a block printing workshop in Jetpur and they shifted to screen printing in 1963. They started the screen printing unit in rented premises, on a very small scale, with a processing capacity of only 4 saris simultaneously. The unit operated mainly on a household basis : his father prepared the solutions of dyestuff, Manubhai and his brother were printers, and they recruited only one worker. They undertook printing work on contract for traders. Thus the initial expenses were extremely low : 700 rupees (in 1963), from their own savings. As they were already in this branch of activity, they had very good contacts with traders and dye and chemical merchants, and could get all materials on credit. After two years they dropped this first unit to set up two new units of 20 sari capacity each, and eventually became owner of the premises too. Today the concern is run in familial partnership by the two brothers and their sons, they engage 10 to 15 workers but they still themselves carry out the preparation of dyes.

Among the entrepreneurs whose families are native of Jetpur or had settled there before the Independence, or in-migrated soon after it, some could take advantage of the easy availability of buildings at low price to set up their factory in those buildings evacuated by the Memons following their departure to Pakistan after the Partition. In the specific cases of refugees from Sindh who arrived in Jetpur in 1948-50, some of them could claim buildings as custodian property.

Here is the example of Shantibhai, migrant from Sindh and Luhana by caste (i.e. from a caste traditionally involved in trading activities). He arrived in Jetpur with his family in 1948. The family acquired land and house as custodian property. His father and his three elder brothers set up provision stores. Meanwhile

Shantibhai got an office job in a sari printing factory, where he could gain experience of management and of dyeing technique. In 1966 he set up his own printing factory, with a processing capacity of 15 saris and undertaking contract work for traders. The building was part of the familial custodian property. The financial capital was brought in by his three brothers and his father, from the savings realized in the provision stores, and amounted to 16,000 rupees. His brothers were financial partners, himself was the acting partner and handled the management of the factory and worked as a dyer for the first ten years. Today Shantibhai runs his factory in partnership with his son, in the same building, with a processing capacity increased up to 27 saris.

For the entrepreneurs belonging to families involved in cloth or sari trade, as it is frequent among the castes of Vaniyas, Luhanas and some Khattris, the initial capital was raised with the profit made in the trading activities, completed by bank or GSFC loans if necessary. This often allowed them to start their first printing unit on a scale somehow larger than in the previous cases. Moreover, the personal or familial experience in cloth or sari trade made it easier for them to turn to sari printing industry. For example some entrepreneurs who were previously traders in saris and placed orders with Jetpur factories to get saris printed, decided to set up their own printing units when they realized the profitability.

Another very frequent type of strategy to set up a dyeing and printing factory in Jetpur is that implemented by the entrepreneurs belonging to a caste of cultivators, namely the Kanbis or Patels. In their case the initial investment was made with the surplus savings from agriculture. Being owners of agricultural land, they are also in a position to sell a plot of land to raise the required capital. Many examples could be given to illustrate this type of strategy : two have been selected and are presented below.

Rameshbhai is a Patel belonging to a family of cultivators owning 16 hectares of land in a nearby village of Jetpur taluka. In 1979 he set a printing factory in familial partnership with his four brothers, to do printing work on contract. The initial investment amounted to 255,000 rupees, 75,000 coming from familial savings from agriculture, 150,000 obtained as a loan from a commercial bank and 30,000 of cash subsidies for fixed assets under an industrial incentive scheme. He owns the factory premises which were constructed in an industrial area at the periphery of Jetpur. He started his first unit with a processing capacity of 40 saris, and three years later a second unit of the same capacity. Today his family owns four units with a total processing capacity of 192 saris. The family

economic activity has been almost entirely reconverted from agriculture to industry. Most of the land has been leased out, the agriculture is supervised by Rameshbhai's father and one brother continues to cultivate the fields, on a part time basis, spending half of his time in the factory. Rammeshbhai and another brother devote all their time to the management of the concern, while the last two brothers have very recently migrated to Surat to set up a sari trade, in order to diversify the familial enterprise further.

Kishorbhai, another Patel, belongs to a family of cultivators owning 11 hectares of land cultivated by his two brothers in their village of Jetpur taluka, with in addition 6.5 hectares of land located in another village and leased out. As the savings from agriculture were not sufficient to raise the required funds, they sold off one plot of land, found financial partners and took a loan from a commercial bank. The initial investment eventually amounted to 150,000 rupees in 1980, breaking down as follows :

- Kishorbhai and one brother put 20,000 rupees each
(20,000 x 2 = 40,000)
- three other partners brought also 20,000 rupees each
(20,000 x 3 = 60,000)
- the bank loan was of 50,000 rupees.

Kishorbhai started his printing unit in rented premises with a capacity of 32 saris, with a stock of dyes and chemicals obtained on credit, and printing on contract for traders. The concern is organized as a familial partnership. Among the five partners, Kishorbhai handles the management, his brother is still engaged in agriculture but has sent his son to work in the factory as a dyer, the three other partners are sleeping partners. In 1987 Kishorbhai increased the processing capacity by shifting the unit to new rented premises with a capacity of 60 saris.

Being cultivators, the Kanbis have also the possibility to buy agricultural land and to reconvert it in non-agricultural land for industrial purpose. Thus, to achieve their economic reconversion from agriculture to industry, prosperous Kanbi farmers bought agricultural land in Jetpur or in adjoining villages from marginal farmers like Kolis, obtained the authorization to reconvert this agricultural land to non-agricultural land for industrial purpose, and set up factories. For example, according to data provided by the Village Panchayat of Navagadh, an agglomeration adjacent to Jetpur in which many printing factories were set up, 60 per cent of the agricultural land converted for industrial purpose was purchased from marginal farmers who became landless and finally joined the proletariat. This type of transfer of land, from which the Kanbis were the first to

benefit, took place mainly between 1968 and 1974. After the entrepreneurs who set up factories were mostly rich farmers, landowners who converted part of their own agricultural land to non-agricultural for industrial purpose.

5-3-Fixed capital

As far as the fixed capital invested is concerned, its amount depends in the first place on the factory building tenure. The fixed capital is obviously much higher for those industrialists who own the land and the plant. For the entrepreneurs running their unit in rented premises, the fixed capital is mainly confined to fittings and fixtures, or can even be nil.

The main equipment in the screen printing industry consists of printing tables, screen plates and electric ceiling fans, which does not require very heavy investment. For example in 1989 the price of a printing table of 6 sari capacity amounted to 15,000 rupees and the average price of a screen plate ranged from 170 to 220 rupees (90 to 120 for the frame and 80 to 100 for the stencil). Moreover the factories available on a rental basis are generally equipped.

The fitting of hot tables with a boiler imposes a higher investment : 88,000 rupees for a table of 6 sari capacity in 1989. 'Stencer machine' and 'felting machine' are the only very expensive machineries used; each amounts to several lakhs. However this concerns only a very few printing establishments or some specific finishing establishments.

A study conducted by H.S.Ashraf in 1981-82, based on a sample of 30 printing units, showed that for the 20 units which were established and owned by their current entrepreneurs, and with a size ranging from 3 to 14 printing table (6-7 on an average), the average fixed capital invested amounted to 323,640 rupees per unit, breaking down as follows :

- land and building : Rs. 234,250
- equipment and tools : Rs. 66,500
- other assets : Rs. 22,890.

The other 10 units of the sample were set up by the entrepreneurs in rented premises : 6 of them did not show any fixed assets, and in the remaining 4 the average fixed capital came to 33,750 rupees per unit.

The district credit plan (1988-90) and the annual action plan (1988) for Rajkot district, published by the State Bank of Saurashtra which is the lead bank, provides a more recent estimate. According to the scheme and unit cost approved by the sub-group on industries held in July 1987, the total cost to set up a new sari printing unit is evaluated at 550,000 rupees, out of which 450,000 for fixed investment and 100,000 for working capital requirement.

Whatever the differences in the amount of fixed capital, all the dyeing and printing units in Jetpur come under the category of Small Scale Industry, with a capital invested in plant and machinery far below the threshold of 3.5 million rupees (by 1988 criteria).

Concerning now the total investment in fixed assets for the whole Jetpur dyeing and printing industry, a study done by R.B.Gandhi (1986) gives an estimate of about one billion rupees in 1985-86.

5-4-Cost of production

-Components of the unit cost of processing

The different components of the processing and distribution cost of a printed sari are shown in table 5.1, which is based on the results of a study on the cost of production in Jetpur sari printing industry conducted by R.B.Gandhi in 1985-86, with a sample of 30 industrial units. The cost of the cotton cloth is not taken into account in this table.

The comparison of these results with more recent data collected in 1988-89 during our own survey proves that the average cost has increased with an upward trend in the prices of dyeing and chemicals (plus 30 to 35 per cent of increase for the latter from mid 1987 to mid 1989. All costs included, except the cost of cloth, the average printing cost of a sari is 9 to 11 rupees, depending mainly on the quality of the dyes used and the number of colours printed. The cost of dyes and chemicals amounts to more than half the printing cost.

The cost of production can be minimized when all the operations take place inside the factory premises, which reduces the transportation cost, as well as the washing, pressing and finishing charges, these being higher when the work is done outside the factory on a contract basis.

- Labour Costs

Apart from the dyers, the office staff (accountant, clerk ...), the watchmen and the drivers who are salaried in the printing factories, the other types of work are remunerated by the entrepreneurs according to piece rate, and most frequently the remuneration is given to the workers' team leader, the contractor or to the head of the screen making unit or finishing unit, who redistributes their respective share to the workers (the effective earnings of the workers will be examined in section 10).

Table 5.2 shows the rates given for the main types of work in the printing industry of Jetpur, it is based on the data

Table 5-1 -Unit cost of sari printing process.

Source : R. B. Gandhi - Saree printing industry. A sample survey. 1985-86.

Type of expenses	Rupees (1986)	Percentages
labour cost : - printing .	0.85	9.3
- washing	0.26	2.8
- folding and ironing	0.16	1.7
- laboratory processes	0.21	2.3
other labour costs or service charges :		
- washing ghats/ water	0.17	1.85
- roll pressing	0.15	1.6
- design	0.64	7.0
raw material :		
- dyes and chemicals	5.10	55.6
over heads :		
- office charge	0.20	2.2
- electricity	0.17	1.85
- interest on capital or rent	0.66	7.2
distribution cost :		
- travelling	0.15	1.6
- packaging	0.34	3.7
- transportation	0.12	1.3
TOTAL	9.18	100.00

Table 5-2-Labour cost in Jetpur dyeing and printing industry.

source : Workers' biographies - Jetpur 1989 (own survey).

Type of work	rate in rupees (1989)
<u>screen design</u> :	- tracer 10 to 20 per screen
	- lacquer : 4 per screen
	- photographer : 5 - 6 per screen
<u>dyer</u> :	(salaried) 600 to 2000 per month, according to the experience and the factory.
<u>printing</u> :	0.45 to 1.00 per sari, depending on the number of colours and on the factory (up to 1.25 in extreme cases).
	1 colour : 0.45 to 0.55 per sari
	2 colours: 0.50 to 0.70
	3 colours: 0.70 to 0.80
	4 colours: 0.80 to 0.90
	5 colours: 0.90 to 1.00
<u>silicating process</u> :	0.05 to 0.10 per sari
<u>washing</u> :	0.25 to 0.30 per sari (paid to the master)
<u>pressing and folding</u> :	
	- ironing : 0.06 to 0.10 per sari
	- simple folding : 0.05 per sari
	- ironing and folding : 0.11 to 0.15 per sari
	- roll pressing; 0.05 to 0.20 per sari, depending on whether the work is done inside the factory or given outside to finishing units.
	- folding and pressing, including bamboo roll pressing : 0.15 to 0.50 (average : 0.30) per sari, paid to contractors from Uttar Pradesh and Bihar, depending on the type of folding and pressing.
<u>felting process</u> :	0.25 to 0.30 per sari (paid to the finishing unit)
	0.07 to 0.15 per sari (paid to the master)

collected in 1989 during the survey of industrial workers.

- Dyes and chemicals

Until recently dyes and chemicals were easily available on credit. Merchants used to give to the industrialists a time limit of 60 to 75 days for cash payment without credit charge, and 6 months for payment on credit with 10 to 15 per cent interest charge. But in the facts, in both cases, the terms of payment were very often deferred by one or two months by the industrialists. In addition, during the three years of drought (1985-86, 1986-87, 1987-88) the dye and chemical merchants lost 4 to 5 million rupees due to non-payment by the printing factories which could not overcome their cash flow problems or were compelled to close down.

As a result dye merchants stopped giving long term credit to their customers, and insist on cash payment within 8 to 30 days (depending on the merchant).

A rise in the prices of dyes and chemicals has been recorded since the end of the 1988 monsoon, when all the printing factories suddenly resumed their production, after three years of general slackness. For instance, between October, 1988 and June 1989, the cost of dyes and chemicals has increased by 0.80 to 1 rupee per sari.

- Cotton cloth

The price of cloth varies according to its quality, which makes the main difference in the selling price of the saris. The most common and cheapest type of cloth, the unbleached mulmul, cost 5 to 6.5 rupees per meter in December 1988.

However, the market of grey cotton cloth as well as the market of cotton yarn are both very fluctuating and speculative. There are affected not only by the supply of rough cotton, but also by various other factors like the export policy of cotton. But since 1987, the fluctuations in the cloth market are particularly important and have reached unprecedented levels. For instance, ten years ago there was already a lot of speculation in this market but at that time an average fluctuation would be of 5 paise per meter and the traders would fight for 2 paise per meter. Now the increase may reach up to 1.5 rupee per meter in one session of transactions, as it did in November 1988.

Such fluctuations create acute difficulties for the independent entrepreneurs and for the traders, as they cannot raise the selling price of the saris in the same proportions at one go : this would mean an increment of 7.5 to 8 rupees per sari, namely 15 to 20 per cent increase for a sari of 40 to 50 rupees, which cannot be acceptable by the consumer

market. In such situations the entrepreneurs and traders are bound to reduce their margin of profit.

For the three fourths of the printing units in Jetpur, those working on contract, the price of cloth is not a component of their cost of production, as the cloth is provided by the traders who place the orders. However important fluctuations in the price of cloth also affect these units indirectly, through their impact on the general buoyancy of the textile printing industry and trade.

5-5-Profit

The rate of profit as well as its way of calculation also depends on the mode of business adopted by the entrepreneurs.

For printing work on contract basis the margin of profit of the entrepreneur is the difference between the price given by the trader for the printing work and the processing cost. The entrepreneurs can make a profit of 0.50 to 1 rupee per sari, corresponding to a rate of 5 to 10 per cent of the printing charge. However 5 per cent profit seems a more common figure, only those entrepreneurs who manage their enterprise very successfully may reach 10 per cent of profit.

For independent establishments, the margin of profit of the entrepreneurs is the difference between the selling price and the cost of production including the cost of cloth. The selling price depends first of all on the quality of the cotton material and then on the type of print, ranging from 35 to 50 rupees per sari on an average (in 1988-89). The average rate of profit varies from 5 to 10 per cent of the selling price.

Nevertheless, in both systems, the margin of profit is always subject to reductions, including drastic ones or even loss, following a sharp increase of certain components of the cost of production without possible increment of the printing charge or the selling price, or still due to the unfavourable conditions of the market.

The adverse effect of the erratic fluctuations in the grey cloth market were mentioned earlier.

During the last three years of recurring drought in Saurashtra (1985-86, 1986-87, 1987-88) the margin of profit in Jetpur printing industry was also severely hit.

The scarcity of water resulted in increasing the cost of water and hence the cost of production of the saris (see sub-section 3-4). In normal climatic conditions the total cost of water varies from 0.05 to 0.25 rupee per sari, but during the drought it amounted to 0.20 to 0.60 rupee per sari.

Due to the drought, the prices of agriculture based raw materials - cotton cloth, gum, starch -also increased, following a deficiency in the crops of the corresponding agricultural staple products. Gobar crop in particular was dramatically affected by the drought that also hit Rajasthan, where this leguminous plant is grown. Consequently the price of gum flared up : it tripled, from 20 rupees per kilogram before the drought up to 60 rupees per kilogram.

But, due a global depression in the sari market, it was not possible to transfer the increasing cost of production to the printing or selling price. The slack in demand after the extent of the drought in many parts of the country resulted in keener competition amongst the industrialists in Jetpur. To snatch contracts from traders, some entrepreneurs accepted to lower their prices. Besides the traders argued that the conditions of the market (fall in consumers' purchasing power) did not allow them to increase the selling prices of the saris. Consequently the margin of profit in the sari industry was reduced.

More generally, even without adverse impact of climatic conditions, the increasing competition prevailing in the sari printing industry has brought about unfair means amongst Jetpur entrepreneurs in order to minimize the cost of production, but at the expense of the quality of the work. This resulted in the reduction of the margin of profit for those entrepreneurs who refuse to compromise on the quality of printing but have to accept the prevalent selling prices in order to maintain their position in the market (see sub-section 11-4).

6 - SUPPORTING INSTITUTIONS

Two categories of institutions play a role in organizing and supporting the dyeing and printing industry in Jetpur : on one hand, the industrial and trade associations and, on the other, the credit institutions and government corporations.

6-1-Industrial and trade associations

-Dyeing and printing industrial association

The first association to be organized to serve the interests of the dyeing and printing industry and its entrepreneurs was the "Jetpur dyeing and screen printing industry co-operative society", founded in 1959 with 30 members. The co-operative society got a loan in order to purchase tools and implements for the industry. But, due to the lack of co-operation of the members, it failed : the society incurred a loss, stopped its activities and went into liquidation.

On 24-12-1964, a new industrial association was founded : the "Jetpur Dyeing and Printing Association", with about 250 members. Its objectives were to organize the industrialists, defend their interests and solve the difficulties faced by this industry.

The first problem that the Association tried to cope with then was to safeguard the industrialists' interests faced with sari traders, more precisely in the case of entrepreneurs undertaking printing work on contract, when the traders did not pay in time, or even refused to take the saris printed according to their orders. Such traders were black listed by the Association and boycotted.

The Association also created a co-operative, called "Jetpur Sari Printing Small Scale Manufacturers Co-operative Society Limited", in order to buy kerosene and other necessities not easily available on the market. The enrolment fees were one rupee and the minimum participation 50 rupees to buy four shares.

The Association acts as an intermediary to purchase and resell to its members certain chemicals (today soda bicarbonate and starch for example) and packaging material (like butter paper), that is raw material for which the government imposes quota, or which are in shortage in the market or for which the Association can obtain more advantageous rates than the individual entrepreneurs.

More generally, the Association represents the industrialists' demands to the Government or to the concerned authorities. Some of the issues tackled by the Association are : irregularity of electricity supply, inadequacy of the

telecommunication system in Jetpur, insufficiency of water supply, octroi rates and sales taxes, problems faced with certain transport companies, claim for better bus and railway facilities for Jetpur people, housing problem in the town ... etc.

For the last ten years, the Association has represented the industrialists in the negotiations with the Gujarat State Water Pollution Control Board, to implement a water pollution control plan in Jetpur (see sub-section 11-7).

In 1988 603 printing units were members of the Jetpur Dyeing and Printing Association, whose membership fees amounted to 25 rupees per unit and per year. But in fact, these 603 units, out of a total of about 1200, represent most of the industrialists of Jetpur, as the industrialists running several units do not systematically register all their units with the Association, but usually at least one. The number of industrialists staying completely apart from the Association should not exceed 50, essentially small entrepreneurs.

In spite of the representativeness of the industrial association and its indisputable role in the negotiations with the Gujarat State Water Pollution Control Board, some industrialists complain about the dissensions and political divisions within the Association, and more generally about the lack of unity and solidarity among the industrialists of Jetpur, resulting in the inefficiency of the Association to defend the real interests of the dyeing and printing industry of Jetpur.

-Cloth brokers' association

The brokers in cloth are the intermediary agents between, on one hand, the grey cloth traders in Bombay market and, on the other hand, the sari traders placing orders with the printing factories and the independent industrialists in Jetpur. The brokers purchase grey cloth in Bombay according to the orders booked, send it to processing houses for bleaching, in order to supply their clients in Jetpur with bleached and mercerized cloth.

There are all together 19 brokers in Jetpur (6 big and permanent ones, and 13 small and non permanent ones working only according to the demand). In 1986 they felt the need to form an association, in order to safeguard their own interests faced with Jetpur traders and industrialists. Since 1986 the cloth trade has been subject to important fluctuations, it was also affected by the economic consequences of the drought, and the brokers had to suffer from non payment by the traders and industrialists of Jetpur. These acute difficulties explain the recent formation of the brokers' association, which seems rather exceptional in this type of trade. For example there is no association of cloth

and sari traders, each trader running his business secretly.

-Jetpur Colour and Chemicals Merchants Association

The dye and chemical merchants of Jetpur founded an association in 1969, starting with 30 to 40 members, and counting today 110 members. About 25 merchants do not belong to the Association, mainly merchants from Rajkot or Ahmedabad having an agency in Jetpur.

The role of the Association is to defend the interests of the dye and chemical merchants faced with the industrialists, in case of non payment of the credit by the latter. For example, during the last drought (1985-1986-1987) the situation was also very critical for the merchants who incurred a loss of 4 to 5 millions of rupees, due to non payment by the sari printing factories.

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The respective roles of the industrial and trade associations reveal some of the problems faced by the dyeing and printing industry in Jetpur, as well as the tensions existing between suppliers and customers, upstream and downstream from the sari printing industry itself.

6-2-Credit Institutions and Government Corporations.

As far as economic and especially financial assistance is concerned, the dyeing and printing units of Jetpur are eligible for various benefits and facilities given by the government to small scale industries, provided they are effectively registered with the Industries Commissionerate, Government of Gujarat.

- Banks

There are 7 commercial banks of the public sector in Jetpur, the State Bank of Saurashtra being the leading one in financing the industrialists [12]. Rajkot Nagarik Sahakari Bank plays also an important role in the co-operative sector [13].

These banks can provide two types of loans : term loans and cash credit facilities.

Term loans are meant to finance acquisition of land, building and machinery. The industrialists' own capital should represent a minimum of 25 per cent of the total investment. The repayment period is up to 7 years, with an annual rate of interest 13.5 per cent (in 1989).

However, the commercial banks normally do not encourage term loans, and they rather orient their clients towards the Gujarat State Finance Corporation which is the appropriate institution for financing the acquisition of fixed assets of small and medium industries.

The more specific function of the commercial banks is to help the industrialists with the financing of their working capital, through cash credit facilities sanctioned for a one year period and which are renewable. The industrialist's seed money should represent a minimum of 25 per cent of the total required amount (but in some cases it can be released up to 10 per cent). The annual rate of interest ranges from 12.5 to 17 percent (in 1989), according to the amount of the loan.

The total annual amount of loan disbursed by the banks in Jetpur to the dyeing and printing industry amounts to 160 to 170 millions of rupees [14].

-The Gujarat State Financial Corporation (G.S.F.C.)

The G.S.F.C. was established in May 1960, along with the formation of the State of Gujarat, as a development bank for encouraging promotion and development of small and medium industrial units in the state of Gujarat. It provides financial assistance consisting of term loans to set up new industries, for acquisition of fixed assets such as land, building and plant, machinery or equipment; or for expansion, diversification, renovation ... in case of existing units.

The stipulated seed capital is 25 per cent of the total cost of the project and the repayment period up to 8 years with an initial moratorium of one year and a half in case of new units. There is a concessional rate of interest of 13.5 per cent (in 1988-89) for small scale industry.

The G.S.F.C. has a regional office in Rajkot. However, among the entrepreneurs of Jetpur, G.S.F.C became popular over a decade after its establishment, especially from 1975 to 1980, when a new set of industrial incentives was declared by then Government of Gujarat.

Since 1971 the Central Government had implemented a scheme of capital subsidies and fiscal incentives to set up small and medium scale industries in backward areas. From 1975 to 1980 the State Government declared a new set of incentives in order to include districts not identified as industrially backward, by state or by central government, under the state industrial incentive scheme. Under this scheme, three grades of growth centres were distinguished all over the State: grade A with 3 growth centres, grade B with 9 growth centres and grade C with 96 growth centres (later on extended to 109), the incentives increasing gradually from grade A to C.

Jetpur, though not located in an industrially backward district, was categorized as a grade C growth centre, hence new industries set up there became eligible for the new set of incentives consisting of cash subsidies amounting to 15 per cent of the initial cost of fixed assets, along with sales tax exemption or deferment.

The state industrial incentive scheme was modified several times with the succeeding governments in Gujarat. Nevertheless, it seems that the particularly generous scheme implemented in the second half of the seventies had a significant impact on Jetpur dyeing and printing industry. Many units were set up during that period, and this is the only industrial incentive scheme mentioned today by the industrialists when discussing about the past development of Jetpur industry.

- The Gujarat Industrial Development Corporation (G.I.D.C.)

The GIDC developed a small industrial estate in Jetpur, in the mid-seventies. Plots are provided for the setting up of new industrial units, and acquisition of land can be financed with GIDC loan, at an interest rate of 17 per cent (in 1989). But, with no more than 25 units, this industrial estate remains very marginal within the industrial spread of Jetpur and its total 1200 printing units.

A location in GIDC estate became more appealing since 1983 when the Gujarat Water Pollution Control Board stopped giving 'No Objection Certificate' for the construction of new dyeing and printing factories in Jetpur area (see sub-section 11-7), except for those factories located in GIDC industrial estate [15]. As a matter of fact, most of the units located in this estate were set up since then.

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The degree of dependence of Jetpur dyeing and printing industry upon financial institutions is very high. According to the estimates of local banks, the proportion of printing units which are completely independent from the various financial institutions (banks, GSFC, GIDC) for their functioning would not exceed 10 per cent. This would correspond to small entrepreneurs who do not approach public financing institutions for two types of reasons.

First of all this may concern entrepreneurs from the lower socio-economic strata, with inadequate educational background and lack of managerial skills, who are not aware of the financing possibilities provided by the banks and governmental corporations, or are discouraged by the administrative procedures.

The second category would pertain to small units which succeed in functioning on their own source of financing, because their entrepreneurs maintain a small scale production along with a strict financial management.

But, it is not possible for the bigger industrialists to function without the assistance of the financial institutions. In fact most of the industrialists of Jetpur have to approach banks for the financing of their working capital. Following the government policy to promote the Small Scale Industry, the public commercial banks should play a major role in financing the Small Scale Industry which is a priority sector.

However, in the case of Jetpur dyeing and printing industry, the financial institutions do not fulfil all the requirements of this industry, especially concerning the financing of working capital. The entrepreneurs also depend upon private financial sources : credit given by dye and chemical merchants, with annual interest rate ranging from 10 to 15 per cent; credit given by cloth traders (for independent entrepreneurs), with interest rate ranging from 24 to 30 per cent; and, in the last resort, loan from private money lenders, with annual interest rate ranging from 24 to 36 per cent. As a result, the dyeing and printing industry of Jetpur has become over-indebted (see sub-section 11.6).

7 - EMPLOYMENT GENERATION

As mentioned above, according to the estimate provided by Jetpur Dyeing and Printing Industries Association, the maximum employment capacity of this industry would approximate 40,000. This figure includes employment in ancillary industries (sari finishing units, screen manufacturing units, dye manufacturing units), and concerns all the types of work and status in employment, entrepreneurs as well as workers; employers, self employed workers as well as employees and unpaid helpers. Maximum capacity also implies the maximum employment which would be generated provided all the units function at their full capacity.

However, it must be pointed out that these optimal economic conditions have not been fulfilled for at least the last five years, due to economic difficulties faced by this industry, which were increased from 1985 to mid-1988 by the adverse effect of severe drought (DUPONT, 1989-a).

Based on the 1988 household survey, the working population employed in the textile printing industry (including ancillary units) and residing in Jetpur urban agglomeration was estimated at around 16,500 : around 2,000 entrepreneurs and 14,500 hired workers [16]. To obtain the actual employment generation of this industry, the commuters living in the surrounding areas should be added to these figures. According to the survey of industrial establishments, the proportion of commuters within the workers of the dyeing and printing industry would approximate 50 per cent. Therefore the number of commuters in Jetpur dyeing and printing industry would approximate 14,500 and the total employment generated 31,000, which is still considerable. This estimate is coherent with other data provided by the industrial association on the number of units and their processing capacity.

The next two sections will focus on the working population of the textile printing industry : the entrepreneur-employers on one hand, and the hired workers on the other.

8 - ENTREPRENEURS' PROFILE

The description of the entrepreneurs according to their demographic and socio-economic characteristics is based on the results of the 10 per cent household survey, which enabled us to cover a sample of 215 entrepreneurs.

The total number of entrepreneurs in Jetpur dyeing and printing industry is estimated at around 2,000 and corresponds to three categories : 73 per cent of the entrepreneurs run sari printing units, 19 per cent screen manufacturing units, and 8 per cent finishing units (table 8-1).

8-1-Demographic characteristics

The entrepreneurs form an exclusively male population. They are relatively young, with an average age of 36 and 40 per cent of whom are below 30 (table 8-2).

8-2-Caste and religion (table 8-3)

The original craftsmen and the first entrepreneurs who developed the dyeing and printing industry in Jetpur were Khattris, but the Kanbis have gradually entered this industry in increasing numbers.

Even today, the Khattris constitute the majority group (44 per cent) of the entrepreneurs of sari printing units, followed by the Kanbis (34 per cent of the entrepreneurs) and then the Vaniyas who form a noticeable though small minority group (11 per cent).

However, Kanbi dominate the screen manufacturing and finishing units, constituting 67 per cent of the concern entrepreneurs.

As a result, in Jetpur dyeing and printing industry considered as a whole (including ancillary industries), the Khattris constitute 34 per cent of the entrepreneurs, as against 42 per cent of Kanbis. The biggest industrial group in Jetpur is owned by a Khatri family, but among the first 25 leading groups the competition between the two communities - Khattris and Kanbis - seems very keen : 12 groups are run by Khattris, 10 by Kanbis, then two by Vaniyas and one by Luhanas [17].

The spectacular advance of the Kanbis in the dyeing and printing industry is not always easily accepted by the Khattris, which has nourished resentments. For instance it is not rare to hear Khatri industrialists complaining about how Jetpur sari printing industry "has been spoiled by the

Patels" : "this is not their traditional branch of activity, they come from agriculturists' families, they don't care about the quality of the work and they won't hesitate to compromise on the quality of the dyes in order to lower down their cost of production", and as a result "Jetpur saris have lost their good name".

Reflecting their composition by caste, the entrepreneurs are essentially Hindus (97 per cent). Only 2.5 per cent are Muslims, whereas this community accounts for 10.5 per cent of the total working population [18]. As for the proportion of Jains, it remains negligible (table 8-4).

8-3-Geographical origin (table 8-5)

Though the majority of the entrepreneurs (57 per cent) are natives of Jetpur urban agglomeration, the proportion of in-migrants is significant (43 per cent).

Most of the in-migrants came from Gujarat (80 per cent), moreover, all the native places of the Gujarati migrants are concentrated in Saurashtra [19]. Rajkot district, where Jetpur is located, accounts alone for 40 per cent of all the migrants' native places, and the adjoining districts of Junagadh and Amreli for 27 per cent and 7 per cent respectively.

Some caste-based particularities are discernible. All the Kanbi entrepreneurs are native of Rajkot, Junagadh or Amreli districts. Among migrants from states in India other than Gujarat, only a very few entrepreneurs can be mentioned, coming from Rajasthan, Maharashtra and Uttar Pradesh, and belonging to traditional trading communities (Vaniyas, Luhanas). Last but not the least, there is a significant group of entrepreneurs native of Sindh in Pakistan (13 per cent of the in-migrant entrepreneurs), who arrived soon after the Partition; they are essentially Khattris who were already engaged in dyeing and printing activity in their place of origin.

Though Jetpur dyeing and printing industry attracted many non-native entrepreneurs, the entrepreneurial dynamics at the basis of the industrial development of the town proves to be deeply rooted in the region, with 91 per cent of the entrepreneurs (native or in-migrant) belonging to Saurashtra.

As far as the rural/urban origin of the in-migrant entrepreneurs is concerned, the majority of them, 59 per cent, come from urban areas.

Pertaining to the year of in-migration (table 8-6), apart from the significant stream of Sindhi-Khattris who arrived between 1947 and the early fifties, the in-migration to Jetpur really speeded up after 1960, during the best period

of expansion for the printing industry. The in-migration of the Kanbi entrepreneurs is clearly more recent than that of the Khatri entrepreneurs : most of the Kanbi in-migrants (22 out of 26 in our sample) came since 1970, while a large majority of the Khatri in-migrants (30 out of 42) came before 1970 [20]. These two distinctly dated migration streams reflect the history of the development of the dyeing and printing industry in Jetpur.

8-4-Educational Background (table 8-7)

The level of formal education of the entrepreneurs is not very high : 21 per cent studied up to the primary school and half of the latter even did not go beyond the 4th standard; 38 per cent of the entrepreneurs have studied up to the secondary school (8th, 9th or 10th standards); 16 per cent up to the higher secondary (11th or 12th standards); and 24 per cent attended higher education. However, the proportion of post-graduate and professional degree holders remains marginal.

When faced with difficult economic conditions and the increasing complexity of the business world, the lack of adequate educational background and managerial skills can become a handicap for the entrepreneurs, and constitutes a unfavourable factor which cannot be ignored when analysing the sickness of this industry. However, besides formal education, entrepreneurs can be equipped with acumen, technical skills or experience in trade.

8-5-Socio-economic background

The findings presented here are based on the in-depth interviews conducted in November-December 1988 with a sample of 50 entrepreneurs running sari printing units.

To reveal the main types of economic profiles and backgrounds among the entrepreneurs, the break down by caste is essential, as the entrepreneurs' fathers and grand-fathers' occupations reflect directly the traditional caste-based occupational specialization.

Most of the Khatri entrepreneurs hail from families already engaged in dyeing and printing work for several generations. The fathers and grandfathers were initially artisans in block printing or even traditional dyeing, and the reconversion to screen printing took place in the fifties at the father's generation, or at the current generation. In such families the entrepreneurs have been involved in the dyeing and printing activity since their childhood, they had a direct experience of the diverse kinds of work performed in this industry and acquired technical as well as managerial skills through their training in the familial unit.

The second group of Khatri entrepreneurs have a familial background of trade in textile or saris, and they extended the traditional trading activity to sari printing industry. Before running their own printing unit, these entrepreneurs had a previous work experience in trade, or of management in the printing unit started by their father or other relatives.

This second group of Khatri entrepreneurs is numerically less important than the former. However, textile or sari trade and printing industry are two activities economically linked, and the combination of both is not rare among the Khatri families.

All the Kanbi entrepreneurs belong to agriculturists' families. At the time of the princely states their forefathers were tenants-at-will on the lands of local rulers. After the Independence, Kanbis benefitted from the implementation of the land reforms and tenancy acts, and became landowner cultivators. The Kanbis engaged today in the dyeing and printing industry represent the first generation of entrepreneurs among their community. Some of them have set up their first printing unit without previous experience of work outside familial agriculture and without any specific training for this new business.

However, more often, the new Kanbi entrepreneurs previously acquired work experience outside agriculture, particularly in sari trade, or in the dyeing and printing industry, as employees (salesmen, in management ...) or even as manual workers, to acquire technical skills, especially of dyeing which is the most strategic operation in the production process.

The Vaniya as well as the Luhana entrepreneurs belong to families of traders - which corresponds to the traditional activity of their caste - but more specifically traders in textile or saris, who entertain direct contacts with the sari printing industry. These entrepreneurs acquired an experience in the familial trade, which also equipped them with the necessary contacts to set up their own printing unit.

The entrepreneurs belonging to communities other than those reviewed form a minority and moreover heterogeneous group, hence other representative types of economic profile do not emerge.

The occupational biographies of the entrepreneurs can also be analysed from the viewpoint of social mobility. Out of the 50 entrepreneurs interviewed, 20 previously worked in the dyeing and printing industry as mere employees either as manual workers (13 of them), or as clerical employees or in management (7 of them) (these figures do not include the entrepreneurs who started working as unpaid helpers in the familial establishment).

As for the entrepreneurs belonging to families who were traditionally involved in the dyeing and printing activity, the expansion of this industry in Jetpur under its present form (using screen technology) enabled the transition from household craft to industrial production. Undoubtedly the development of the dyeing and printing industry provided opportunities for an upward socio-economic mobility, which could be also illustrated by some spectacular success stories.

TABLE 8-1
Distribution of the entrepreneurs of Jetpur dyeing and printing industry by type of establishment

type of establishment	Nbr	%
sari printing factory	158	73.5
screen manufacturing unit	40	18.6
finishing unit	17	7.9
total	215	100.0
source : 10 % household survey - 1988		

TABLE 8-2
Distribution of the entrepreneurs of Jetpur dyeing and printing
industry by age

age	Nbr	%
15-19	6	2.8
20-24	34	15.8
25-29	45	20.9
30-34	32	14.9
35-39	37	17.2
40-44	19	8.8
45-49	9	4.2
50-54	15	7.0
55-59	8	3.7
60 +	10	4.7
total	215	100.0
average age = 35.7		
source : 10 % household survey - 1988		

TABLE 8-3
Distribution of the entrepreneurs of Jetpur dyeing and printing
industry by caste and type of establishment

caste	sari printing		ancillary units		all units	
	Nbr	%	Nbr	%	Nbr	%
Kanbi	53	33.5	38	66.6	91	42.3
Khatri	69	43.7	5	8.8	74	34.4
Vaniya	18	11.4	-	-	18	8.4
Luhana	9	5.7	1	1.8	10	4.7
Brahmin	1	0.6	7	12.3	8	3.7
other castes (non BC, non SC)	6	3.8	2	3.5	8	3.7
backward castes	2	1.3	2	3.5	4	1.9
scheduled castes	-		2	3.5	2	0.9
total	158	100.0	57	100.0	215	100.0
source : 10 % household survey - 1988						

Table 8-4
Distribution of the entrepreneurs of Jetpur dyeing and printing industry by religion

religion	entrepreneurs of the dyeing and printing industry		total working population
	Nbr	%	%
Hindu	209	97.2	88.0
Muslim	5	2.3	10.5
Jain	1	0.5	1.2
other	-	-	0.3
total	215	100.0	100.0 Nbr = 5150
source : 10 % household survey - 1988			

TABLE 8-5
Distribution of the in-migrant entrepreneurs of Jetpur dyeing and printing industry by native place

native place	Nbr	%
Gujarat :		
Saurashtra : Rajkot dist.	37	40.2
Junagadh dist.	25	27.7
Amreli dist.	6	6.5
other districts in S.	5	5.4
district not known	1	1.1
other states in India	5	5.5
Pakistan	12	13.0
Burma	1	1.1
Total	92	100.0

rural	37	40.2
urban	54	58.7
not known	1	1.1
total	92	100.0
source : 10 % household survey - 1988		

TABLE 8-6
Distribution of the in-migrant entrepreneurs of Jetpur dyeing and printing industry by year of arrival and caste

year of arrival	Khatris		Kanbis		all in-migrant entrepreneurs	
	Nbr	%	Nbr	%	Nbr	%
before 1947					1	1.1
1947-1959	8	19.0	2	} 15.4	17	18.5
1960-1969	22	52.4	2		30	32.6
1970-1979	7	16.7	11	42.3	26	28.3
1980- 01/03/1988	5	11.9	11	42.3	18	19.5
Total	42	100.0	26	100.0	92	100.0
source : 10 % household survey - 1988						

TABLE 8-7
Distribution of the entrepreneurs of Jetpur dyeing and printing
industry by level of education

level of education	Nbr	%
illiterate	2	0.9
1st - 4th standard	24	11.2
5th - 7th standard	21	9.8
8th - 10th standard	81	37.7
11th - 12th standard	35	16.3
college below graduate	28	13.0
graduate	20	9.3
professional degree	2	0.9
post graduate	2	0.9
total	215	100.0
source : 10 % household survey - 1988		

9 - WORKERS' PROFILE

As mentioned above, the total number of hired workers employed at the beginning of 1988 in the dyeing and printing industry is estimated at around 14,500 workers residing in Jetpur urban agglomeration, and as many commuters. The description of the workers according to their occupation, demographic characteristics, caste and religion, geographical origin and level of education, is based on the results of the 10 per cent household survey, which covered a sample of 1764 workers of the textile printing industry, 1520 living in the urban agglomeration and 244 in nearby villages. Therefore this sample is more representative of the urban-based labour force, than of the commuters.

9-1-Range of occupational specializations (table 9-1)

The workers of the dyeing and printing industry are specialized by occupation, corresponding to the different operations of the process of production. The printers form the bulk of the industrial labour force (40 per cent of the workers), the washermen represent 14 per cent of the workers, the workers engaged in folding and pressing 10 per cent, the dyers 8 per cent, the screen makers and designers 6 per cent, the workers engaged in packaging operations 2 per cent, and other production workers engaged in steaming, silicating, felting processes and other miscellaneous operations 8 per cent. In addition to the production workers, a few clerical workers (6 per cent), salesmen (1 per cent) and a few service and transport workers (5 per cent) require mention.

9-2-Demographic characteristics

The female workers are almost excluded from the dyeing and printing industry : they represent only 2 per cent of the workers employed in this branch (table 9-2). Moreover they are confined to some marginal unskilled operations, like picking up and folding the saris spread in open air. Surprisingly, a study of Jetpur hand printing industry conducted by R.K. TRIVEDI in 1964 shows women working as printers at that time. Apparently the transition from virtually household craft to industrial production has led to the exclusion of the female labour force from the main operations of the process of production and to their marginalisation.

The workers of the printing industry form a very young population, noticeably younger than the entrepreneurs'. Their average age is 28, and 68 per cent of whom are below 30 (table 9-3).

9-3-Caste and religion

Unlike the entrepreneurs, the industrial workers belong to a wide span of various castes and communities (table 9-4). No caste group or community is excluded, and furthermore, as compared to the demographic weight of each caste-community group in the entire working population, there is no salient discrimination. For example, to take the two extremes of the traditional caste hierarchy, the Brahmins as well as the scheduled castes are represented in the industrial working class roughly proportionately to their demographic weight; and this remains valid even if one considers only the manual workers.

Among the groups which are however noticeably over-represented as compared to their demographic weight, are the communities classified as backward in Gujarat, which account for 39 per cent of the industrial workers but only for 32 per cent of the total working population [21].

Regarding now the composition by religion, the Muslim community appears also slightly over-represented among the industrial workers : they account for 16 per cent of the latter, against 10.5 per cent of the total working population (table 9-5) [22].

9-4-Geographical origin

- migration streams

The demographic contribution of in-migrant workers to the labour force of the dyeing and printing industry is considerable : 58 per cent among the workers living in Jetpur urban agglomeration, and still 44 per cent among the workers living in the five surveyed villages (table 9-6). This shows that the villages in the vicinity have also received a part of the labour migrants who were absorbed into the urban industrial sector. The residential choice of the latter can be explained by less expensive options of rented accommodation in the villages, as compared to the level of rent of accommodation supplied in the urban agglomeration. In addition, in one of the surveyed villages, two big dyeing and printing factories were set up which recruit essentially inter-state migrant workers who are housed within the premises of the plant itself.

Like for the in-migrant entrepreneurs, Gujarat prevails among the geographical origins of the workers (81 per cent of all the in-migrant workers' native places), with a high concentration in Rajkot district where Jetpur is located (32 per cent) (table 9-7). However, as compared to the in-migrant entrepreneurs, the geographical recruitment area of the migrant workers of the dyeing and printing industry shows a significant inter-state stream (17 per cent of the migrant

workers' native places), particularly from Uttar Pradesh, Rajasthan and Bihar.

Besides, the in-migrant workers are predominantly of rural origin (76 per cent of them) (table 9-7).

Most of the migrant workers absorbed into the dyeing and printing industry arrived recently : 63 per cent of them since 1980 (table 9.8), while the entrepreneurs' in-migration was more evenly spread over the last 30 years. This suggests that labour migration played a strategic role during the most recent phase of expansion of the dyeing and printing industry by helping the industry to face its increasing labour requirement.

- Commuters

The considerable demographic contribution of the commuters to the labour force of the dyeing and printing industry has been emphasized earlier. They represent about 50 per cent of the industrial production workers, and they come from villages located within a radius of 25 kilometres around Jetpur, but also from towns even bigger than Jetpur, up to 32 kilometres away [23]. The specific role of the commuters in the industrialization process, beyond their vital labour supply, will be examined in the next section.

9-5-Educational background (table 9.9)

The level of formal education of the industrial workers is low : 22.5 per cent are illiterate, 43 per cent did not study beyond primary school, 28.5 per cent studied up the secondary school, and only 6 per cent reached higher secondary level or above. Apart from the clerical workers and salesmen for whom formal education is important, but who represent only a very small percentage (7 per cent) of all the workers of the textile printing industry, the skills required to work in Jetpur dyeing and printing industry are acquired through apprenticeship and training in the factory itself (see sub-section 10.1).

9-6-Socio-economic background

The findings presented in this sub-section are based on the 64 industrial workers' migration and occupation biographies and in-depth interviews, which includes natives of Jetpur, in-migrants as well as commuters.

The majority of the workers belong to families engaged in agriculture (39 out of 64 at the father's generation and 44 at the grand-father's generation). The fathers and grand-fathers are/were landless agricultural labourers or, mainly,

farmers but rather small farmers or at least farm-owners whose land could not provide a decent livelihood for all the children, pushing some outside agriculture. Migration - or commuting - appears to be the prerequisite for a sectorial mobility. Those workers without agricultural economic background generally belong to families of artisans, self-employed service workers, petty traders and other miscellaneous labourers.

As far as the occupational mobility of the workers is concerned, a notable proportion of them (30 out of 64) still had their first experience of work in agriculture, mainly as unpaid familial helper, or as agricultural labourers, which reflects their socio-economic background. And for most of the workers of this group (24 of them) this constitutes the only experience before entering the dyeing and printing industry. The commuters in particular belong essentially to this category. The second important homogeneous group (22 out of 64) is formed by the workers who entered the dyeing and printing industry directly for their first work. Among them some in-migrants had work experience in other textile towns. Only a minority (11 out of 64) were involved in non-agricultural occupation, of varied types.

Absorption into Jetpur dyeing and printing industry allowed many youths to get their first remunerated work, and the migrants to find better employment opportunities than what they could have expected by staying in their place of origin.

TABLE 9-1
Distribution of the workers of Jetpur dyeing and printing
industry by occupation

occupation	Nbr	%
screen maker, designer	101	5.7
dyer	147	8.3
printer	711	40.3
washerman	243	13.8
folding-pressing	169	9.6
packaging	39	2.2
other production worker	135	7.7
clerical worker	114	6.5
salesman	18	1.0
service worker	60	3.4
transport worker	27	1.5
total	1764	100.0
source : 10 % household survey - 1988		

TABLE 9.2
Distribution of the workers of Jetpur dyeing and printing
industry by sex

sex	Nbr	%
male	1730	98.1
female	34	1.9
total	1764	100.0
source : 10 % household survey - 1988		

TABLE 9-3

Distribution of the workers of Jetpur dyeing and printing
industry by age

age	Nbr	%
10-14	73	4.1
15-19	362	20.5
20-24	443	25.1
25-29	318	18.0
30-34	212	12.0
35-39	135	7.7
40-44	90	5.1
45-49	53	3.0
50-54	35	2.0
55-59	15	0.9
60 +	28	1.6
total	1764	100.0
average age = 27.7		
source : 10 % household survey - 1988		

TABLE 9-4
Distribution of the workers of Jetpur dyeing and printing industry
by caste

caste	dyeing and printing industry workers		total working population
	Nbr	%	%
Brahmin	81	4.6	4.3
Kshatria	107	6.1	3.7
Vaniya	27	1.5	3.4
Kanbi	376	21.3	30.3
Khatri	115	6.5	4.9
other Gujarati Hindu castes (non B.C., non S.C.)	114	6.4	10.0
Gujarati backward classes	689	39.1	31.5
other non Gujarati castes	60	3.4	1.4
Muslim (non B.C.)	100	5.7	3.5
scheduled castes	95	5.4	6.7
non Hindu, non Muslim	-	-	0.3
total	1764	100.0	100.0 Nbr = 5150
source : 10 % household survey - 1988			

TABLE 9-5
Distribution of the workers of Jetpur dyeing and printing industry
by religion

religion	dyeing and printing industry workers		total working population
	Nbr	%	%
Hindu	1477	83.7	88.0
Muslim	278	15.8	10.5
Jain	9	0.5	1.2
other	-	-	0.3
total	1764	100.0	100.0 Nbr = 5150
source : 10 % household survey - 1988			

TABLE 9-6
Distribution of the workers of Jetpur dyeing and printing industry
by place of residence and migration status

place of residence	all residents	in-migrants	
	Nbr	Nbr	%
Jetpur urban agglomeration	1520	881	58.0
sample of 5 villages	244	107	43.9
total	1764	988	56.0
source : 10 % household survey - 1988			

TABLE 9-7
Distribution of the in-migrant workers of Jetpur dyeing and printing industry by native place

<u>native place</u>	Nbr	%
Gujarat :		
Saurashtra : Rajkot dist.	320	32.4
Junagadh dist.	232	23.5
Amreli district	64	6.5
other districts in S.	134	13.6
other districts in G.	52	5.2
district not known	2	0.2
Rajasthan	53	5.4
Uttar Pradesh	62	6.3
Bihar	28	2.8
other states in India	28	2.8
foreign countries	13	1.3
total	988	100.0

rural	751	76.0
urban	230	23.3
not known	7	0.7
total	988	100.0

source : 10 % household survey - 1988

TABLE 9-8
Distribution of the in-migrant workers of Jetpur dyeing and printing industry by year of arrival

<u>year of arrival</u>	Nbr	%	average number per year
before 1960	18	1.8	-
1960-64	31	3.1	6
1965-69	36	3.6	7
1970-74	67	6.8	13
1975-79	215	21.8	43
1980-84	359	36.3	72
1985-01/03/88	261	26.5	83
not known	1	0.1	
total	988	100.0	

source : 10 % household survey - 1988

TABLE 9-9
Distribution of the workers of Jetpur dyeing and printing industry
by level of education

level of education	Nbr	%
illiterate	397	22.5
1st - 4th standard	335	19.0
5th - 7th standard	424	24.0
8th - 10th standard	502	28.5
11th - 12th standard	63	3.6
college and above	43	2.4
total	1764	100.0
source : 10 % household survey - 1988		

10 - WORKING CONDITIONS

In this section the working conditions of the industrial workers will be examined, ranging from the entry into the dyeing and printing industry, the system of recruitment and payment, the period of employment, to health hazards and other related problems. The extent to which the industrial labour force is segmented also requires analysis. Finally, labour claims, labour disputes and the role of labour trade unions will be also examined. The evidence presented are based on the 64 workers' detailed biographies, completed by interviews with union leaders and labour officers.

10-1-Entry into Jetpur dyeing and printing industry

As a general rule, for the current industrial workers, natives, in-migrants as well as commuters, the entry into Jetpur urban market was synonymous of entry into the dyeing and printing industry : of the 64 workers interviewed all except one found their first job in Jetpur in this industry.

However, the first job in the dyeing and printing industry was in some cases (17 out of 64) preceded by a period of unemployment, the duration of which ^{sometimes} lasted several months, even one year or more in extreme cases.

It can be noticed that none of the inter-state migrant workers had to face unemployment in Jetpur before entering the dyeing and printing industry. This is due to their specific way of recruitment, most often through contractors who recruited them directly from their native places or other previous places of work where they had been contacted, or at least through well established migration channels providing them with the necessary contacts to secure a job in Jetpur.

To find their first job in Jetpur dyeing and printing industry, most of the workers (57 out of 64) benefitted from contacts with or introduction by persons already working in this industry. Moreover, the persons who provided some support were also often from the same caste, or/and the same village or native state.

Those who did not get any support went on their own to meet the factory owners, or went to the "Gujari", which is a local labour market in the strict sense of the word, a place where the workers in search of employment gather every morning, waiting for employers - or their intermediaries - to recruit them. But even here, preferences or discriminations based on community factor cannot be excluded.

To sum up, the entry into the industrial labour market relies on the various social networks : kingship and in-law bonds, caste solidarity, village fellow relations, or still

neighbours and friends.

- Apprenticeship

As a general rule too, access to a remunerated work in the dyeing and printing industry implies a period of apprenticeship or training. In the case of the inter-state migrant workers, the training period could have taken place in a previous place of work in other textile towns.

The apprenticeship depends first of all on the kind of work to be performed. It is compulsory for all the skilled jobs, and it is significantly longer for the dyers, the most skilled job among them. The duration of the training period is extremely varied, from a few days to more than one year, depending not only on the type of work, but also on the "master" under which the apprentice is trained, and on the opportunities of promotion in the factory.

It seems that until 15 years ago, the apprentices were frequently trained in the various operations of the process of production. Today, the industrial labour appears more fragmented: the apprentice acquires some specific skills to become a worker specialized in a single operation, in the same kind of occupation to be performed during his career.

As far as the earnings during the apprenticeship period are concerned, cases of unpaid apprentices are not rare, and even when remunerated, it remains marginal.

10-2-System of recruitment and payment

Three main systems of recruitment and payment can be distinguished in Jetpur dyeing and printing industry: piece wage system, monthly salary system and contract labour system.

- piece wage system

The prevalent system of recruitment and payment is engagement on a daily basis, with remuneration on the basis of the volume of work executed, according to a fixed piece rate (see table 3-2). This is the general system applied for the printers, washermen, workers engaged in pressing, folding and finishing operations, as well as for the screen makers. The remuneration is given at the end of each day (printers), or every week or fortnight (washermen, workers in folding and pressing...), by the employer or accountant to the head of the team who is responsible for the work - locally called "master". The master distributes the money between the workers of his team (for example 4 to 7 workers for a team of printers), according to their level of skills and experience.

The resulting daily earnings for the workers are highly fluctuating, even for the same occupation, depending on the piece rate applied in the factory, the number of working hours and the volume of work executed, the level of skill and experience of each worker. The figures given below pertain to 1989.

The daily earnings for a printer range from 20 to 45 rupees for 8 to 12 hours of work; it can reach 50, up to 70 rupees when increasing the working hours (up to 15-16 hours), especially when night shift is added. Higher piece rate may be applied for work on hot table.

A washerman can earn 15 to 25 rupees per day for 8 to 10 hours of work, up to 45 rupees with more working hours, or still if he is a master.

In folding and pressing, there are different operations involving different skills, which results in a wide range of daily earnings : from 20 to 40 rupees for 8 to 10 hours of works depending on the level of skill. But better earnings (50, 60 rupees per day) can be expected by the masters.

Unskilled work, as silicating process, does not bring more than 15 to 20 rupees per day for 8 to 12 hours of work.

Workers in screen making units (lacquers, tracers, photographers) can expect 20 to 45 rupees per day for 8 hours of work, the highest remunerated work in that branch being that of photographer.

Until 25 years ago, the piece wage system was not prevalent among the production workers, the system of payment by monthly salary was more largely spread. In the sixties the employers turned gradually to the piece wage system, in order to avoid the payment of all the employment benefits attached to the status of permanent workers (paid leave, allowances, bonus, provident fund ...etc), and hence to lower labour cost. In addition, they expected higher productivity through the piece wage system, which prompts the workers to work more for better earnings. In fact the industrialists consider the piece wage system as a contract with the master of the workers' team to whom they give a certain volume of work to be executed and to whom the payment will be given. In particular for washing, folding, pressing and finishing processes, the industrialists often do not consider the workers as their employees, especially the washermen whose work is performed in washing-places outside the factory premises.

According to the industrialists, the introduction of the piece wage system was welcomed by the workers as they could enhance their earnings as compared to when salaried, and earn almost double the minimum wage of the branch (namely 18 rupees per day for unskilled worker, 18.65 for semi-skilled

and 19.30 for skilled, plus dearness allowance of 6.75 rupees per day, in June 1989).

Not surprisingly, the workers' point of view is more critical. Admittedly some workers find the piece wage system more profitable than a fixed salary, provided they get assured employment. Some also appreciate the flexibility of this system, especially the commuters who belong to agriculturists' families, as it allows them to combine their work in the factory with agricultural work in their own fields, and for example to stop industrial work temporarily to give priority to agriculture during the peak season. Most of the workers are well aware that the piece wage system induces non permanency of work, insecurity of employment and irregularity of income, as they suffer directly from these. This reduces them to casual workers deprived of all benefits. The workers on piece wage do not get any weekly or annual paid leave, nor sick leave, they do not receive any allowance, at the best they may get a bonus for Diwali (10 to 15 rupees or some sweets for example), but even the latter practice depends on the factories and is not prevalent. The concept of over-time is alien to the piece wage system, the same rate is applied without consideration to the number of working hours. In case of night-shift, only the printers may sometimes benefit from better piece rate, when there is an extra demand to meet. For washing, pressing, folding and finishing operations, workers also complain that the piece rates are not adjusted to take account of inflation. It should be added that to yield good returns, the piece wage system implies very hard work and long working hours. The prerequisite is to be in good physical conditions (in order to be productive and because there is no sick leave) and, overall, to be able to find employment regularly throughout the year, which is virtually never the case, as it will be shown by examining the period of employment (see sub-section 10-3).

Another direct consequence of the piece wage system is a high turn-over of the workers between the different factories. Without any employment security, at the mercy of arbitrary dismissal, or in search of better piece rate and better working conditions, casual workers are rarely attached to the same establishment for a long time, and some of them change factories very frequently.

- monthly salary system

The monthly salary system is today restricted to a very few specializations in the dyeing and printing industry : only the dyers among manual workers, and office staff, watchmen and drivers. In such cases there is no intermediary between the worker and the industrialist to draw the remuneration (the accountant excepted). The monthly salary of a dyer ranges from 600 to 2,000 rupees at the maximum (but rather

rare), depending on the factory and on his experience. It is still possible to find some production workers (other than dyers) who have been working for many years in the same factory and who have preserved their status of salaried workers; but this is rare and confined to a very few big establishments.

Though more enviable than the casual workers, the fate of the salaried workers is not satisfactory either. Admittedly a monthly salary ensures regularity of income throughout the year, and implies a certain security of employment. However it must be underlined that the salaried workers never have the status of permanent workers. They are deprived of the various employment benefits attached to this status, and they are subject to dismissal even after many years of employment in the same establishment - sometimes precisely to prevent them from claiming the benefits to which they should be entitled. As a general rule they receive no allowance, do not benefit from provident fund, and have no proper paid leave. Admittedly they usually have one weekly holiday, though not systematically. Apart from that only a few days of leave from time to time are tolerated for medical or any other personal reasons, up to one or two weeks, without entailing cut in the salary. The practice of bonus for Diwali is more frequent among the salaried workers than the casual, though not systematic. In the best cases they receive one month of extra salary. Salaried workers, especially dyers, do not receive extra wages for overtime or night shift.

- contract labour system

Contract labour is the third system of recruitment found in Jetpur dyeing and printing industry, and it is confined to the inter-state migrant workers. This is a relatively recent and still limited type of recruitment, which is however quite indicative of a new economic logic, and likely to lead to a reinforced trend. Since the mid-seventies some employers have started recruiting workers from states other than Gujarat, mainly from the northern densely populated states of Uttar Pradesh and Bihar, and from the bordering state of Rajasthan. Most often these workers are recruited through intermediaries or contractors. They are male adults and teenagers, coming to Jetpur without their family, and the duration of their stay depends directly on the duration of their engagement, temporary by nature. They are highly mobile, as they return periodically to their native place, or go to other textile towns.

The inter-state labour migration corresponds to well defined channels of recruitment, with occupational specialization according to the region of origin of the workers : in particular printers from Rajasthan, workers for pressing and folding from Uttar Pradesh and Bihar. The contractor belongs usually to the same state as the migrant workers. He acts as

a recruiting agent to recruit workers from his native state or from other textile towns, and as a master-supervisor in the factory with his team of workers. A contract is fixed between the industrialist and the contractor, for a certain amount of work to be executed according to a fixed piece rate. For folding, pressing and finishing operations, the contractor then pay a fixed salary to his workers, according to their level of skills, from 150 to 650 rupees per month. For printing work, the piece wage system still prevails for the contract workers. Free accomodation in the factory premises is provided for inter-state migrant workers and the food expenses are advanced by the contractor. Some contractors also pay the medical expenses of their workers, and gift them clothes as bonus for festivals. Apart from that, the contract workers have no benefits. Work in night shift, which is virtually compulsory for the inter-state migrant workers under contract, is not compensated. The inter-state migrant workers accept lower remuneration than the local workers. Very often the contract workers draw their wages from the contractor only on their return to their native place, but they can withdraw advance from the contractor when necessary.

The share of inter-state migrant contract labour in the total labour force of Jetpur dyeing and printing industry can be estimated at around 10 per cent (apart from economic crisis conditions) [24]. Nevertheless, it will be shown that the significance of this specific segment of the industrial labour force extends beyond its demographic weight, which remains still modest (see sub-section 10-5).

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The industrialists' search for better labour productivity and minimizing of labour cost has undoubtedly contributed to the expansion of the dyeing and printing industry and to the development of mass production, but at the expense of the workers insofar as it has resulted in increasing casualisation of the labour force, and a general deprivation of social benefits.

10-3-Employment period and unemployment

The most important problem faced by the workers of the Jetpur dyeing and printing industry is insecurity and irregularity of employment. This has been underlined in previous studies (ASHRAF, 1985), and appears clearly through the data collected in 1988-1989. As mentioned above, monsoon is the lean season for the printing industry, and the seasonal closure of the factories or their intermittent functioning generates widespread unemployment among the workers.

The monthly salaried workers are more privileged, as they are remunerated throughout the year, including during temporary closure of the factory. The employment conditions of the contract labourers are more uncertain, and vary according to their contractor. The contractors usually adjust the number of workers to the volume of work available, and eventually retrench workers if necessary.

The most severely hit are the casual workers on piece wage, who form the bulk of the industrial labour force. Except the privileged few who manage to be employed in factories which are equipped with hot tables and can function throughout the monsoon - but which represent only a marginal proportion of the printing units - all the casual workers are subject to unemployment phases during the monsoon. At worst they remain unemployed continuously for three-four months. The least they can expect is about two months of unemployment, in continuum, or with intermittent employment. Moreover, during the monsoon, the working days - when possible - are often shortened, following the vagaries of the weather. In addition, even when printing is in process, each operation requires more time due to high humidity. To sum up, the scarcity of days of employment is aggravated by the irregularity of working hours and reduction of productivity. As a result the workers' earnings which are based on the amount of work completed fall dramatically during the monsoon, or are reduced to nill.

Outside the dyeing and printing industry, there is not much scope for other alternative employment opportunities in Jetpur, especially during the monsoon. Only a minority of the seasonally unemployed industrial workers manage to work elsewhere, mainly in agriculture, in the familial fields or as agricultural labourers, or still as casual labourers in construction or transport sectors. Among the other unemployed workers, many of them are too skeptical about the possibilities of alternative work to look for something else and they prefer to stay at home unemployed, whereas others continue to check for work everyday at the factory gates or at the local labour market.

A consequence of widespread unemployment during the monsoon is frequent indebtedness or over-indebteness among the industrial workers, as their economic condition is especially critical in this season. The current employer - or master - is often approached to obtain an interest free advance, which implies however for the worker a minimum degree of attachment to an establishment.

Apart from unemployment during the monsoon, which is the common and recurrent plight of the casual industrial labour force, any slackness in the dyeing and printing industry is a threat for the workers' employment, as the employers adjust the work force to a slump in the demand for saris.

In particular the three years of recurrent drought (1985-86, 1986-87, 1987-88) which affected the dyeing and printing industry (see sub-section 3-4) had a dramatic impact on employment. According to Jetpur Dyeing and Printing Industries Association, the capacity of employment at that time was evaluated at 15,000, as compared to a maximum capacity of 40,000. The excess of labour supply induced increased irregularity of employment, and periods of unemployment for the industrial workers. During the last year of drought (the most critical), the unemployment period could extent up to several months continuously or intermittently, or even the entire year in worst cases. Furthermore, in the functioning printing units, the number of working hours was frequently reduced, due to deficiency of water supply and to the lower level of production following slump in orders.

According to some industrialists' estimates, about half of the inter-state migrant workers left during this drought. When no more work is available for them, these temporary migrant workers do not stay in Jetpur, especially as they do not have any proper residence there, nor their family. Their presence in Jetpur being exclusively attached to their working contract, they return to their native state or go to other places in search of work.

However, the most severely affected by unemployment during the drought were the commuters (see below sub-section 10-5, and DUPONT, 1990).

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As shown from the above, the workers of the dyeing and printing industry in Jetpur are characterised by the precariousness of their employment and possible fluctuations in earnings. No worker in this industry, even after many years of employment, is protected from sudden deterioration of his employment.

10-4-Health hazards and other related issues

- health hazards

The chemical dyes and other chemicals used in the dyeing and printing process are injurious to the health of the workers who are directly in contact with them (dyers, printers, washermen in particular). It can create skin diseases, burns, respiratory diseases, allergies. Cases of tuberculosis and cancer are also reported. Gloves are provided to the dyers, which are not frequently used by them. Washermen on the other hand often complain that they are not given gloves to protect their skin from chemical solutions. Moreover, as the lunch

break is usually very short, the workers do not have enough time to wash their hands properly which leads to ingestion of chemicals. After several years of work, the printers are subject to stomach pain, due to their posture while printing, as they have to lean over the printing table, with one side of the screen plate resting against their waist.

Some operations imply working conditions especially hard to bear, like printing on hot tables because of the heat combined with chemicals inhalations, or felting process due to the humidity generated. Some other operations are very tedious, like "bamboo roll finishing", silicating process. Interestingly these operations are mostly performed by inter-state migrant workers.

Though some occupations involve less health hazards, like pressing and folding, after ten or fifteen years of work in the dyeing and printing industry, health problems and exhaustion seem to be the common fate of the manual workers. It should be pointed out that no insurance against occupational hazards, no medical indemnity is provided by the employers.

- working hours and night-shift

The prevalence of the piece wage system implies no fixed timing for the production workers. Long working hours are extremely frequent, but they are never treated as "overtime" since they never bring in extra remuneration.

Night-shift is not frequent among the local workers, whereas it is systematic among the inter-state migrants. As mentioned above, extra wage or better rate are rarely applied for work at night, and in no case for the migrant contract labour.

- Child labour

Though child labour (below 15 years old) is prohibited in textile printing industry, it is found among inter-state migrant labour, in folding and finishing operations - especially in felting departments. The exact extent of child labour is difficult to assess. As these young teenager workers are contract labour, living in the factories, they are not approachable directly, and the information collected about them was controlled by the factory owner or the contractor, whose interest is obviously to conceal child labour. Nevertheless, according to the enumeration of all the workers living in the factories conducted in January-April 1988, 101 workers out of 1056 (9.2 per cent) were below 15 years old, and 63 (5.7 per cent) were 15 years old [25], but this last age group probably contains children below 15 whose age has been deliberately over-reported.

In the total industrial labour force, the share of child labour appears marginal. However, within the category of inter-state migrant contract labour, it is significant. This implies that child workers have to particularly endure hard working and living conditions, including work at night.

- housing conditions

The housing conditions of the inter-state migrant workers living in the factories call for due attention. In some big industrial establishments, the premises are equipped with small one room dwellings and water facilities, sometimes fuel for cooking is provided by the owner free of charge. But frequently the workers live on the worksite itself, in the workshops, sometimes they may sleep amidst the piles of saris, and they are not provided with any toilet, bathroom or cooking facilities.

The few inter-state migrant workers who have arranged for independent accomodation outside the factory are not necessarily better off. They often stay in the vicinity of the factories, in insalubrious rooms over crowded without escaping the control of their contractor.

The housing conditions of the local migrants may also be critical. For instance precarious hutments settled virtually at the gates of the factories are a common scene in Jetpur.

- prospects

The plight of the industrial workers is reflected by the way they forsee their own future. On the whole, prospects are rather gloomy. As the most badly-off and pessimistic put it bluntly, they have no future, anticipate health problems and a short life span. Their irregular earnings do not allow them to constitute any saving, hence preventing them from realising any future plan for themselves or their children. The industrial workers' destiny might be reduced to the transmission of their skills to their children who would join the proletariat in their turn, while they would consider themselves as fortunate to find the opportunity of working as watchmen in a sari factory, after they become too exhausted to work at the production. Although many workers are not satisfied with their working conditions, they have no illusions about improvement of their current situation or opportunities of better alternative work. Starting a small business, or something on their own account, appears a frequent desire, however, this is likely to remain a dream due to the lack of financial means.

10-5-Segmentation of the industrial labour force

Caste or community belonging, geographical origin, place of residence, are some workers' characteristics which also generate a segmentation of the industrial labour force, as examined below.

- contextual background

Insecurity of employment which characterizes the industrial labour force of the dyeing and printing industry in Jetpur seems to constitute a ground conducive to divisions and rivalries. The piece wage system can generate an atmosphere of work highly competitive, as felt by some workers.

Rivalry also prevails among the dyers, whose employment is neither secure even though salaried. This is revealed by the attitude of the experimented dyers towards apprentices. They limit the transmission of their skills to their son or close kin and are secretive about their formula to avoid training future competitors.

- caste and community based divisions ?

Though no caste or community is excluded from the industrial labour force, discrimination can take place at the level of a specific factory. For example some Kanbi or some Khatri industrialists show a pronounced preference for recruitment of workers belonging to their caste in order to be assured of more loyalty from their employees. However, the volume of labour requirement limits the extent of such a practice.

Casteism and communalism are activated in a more pernicious way by the employers, in order to create divisions among the workers of their factory and prevent the formation of a movement of solidarity in case of conflict between a worker and the factory management.

- specific function of the inter-state migrant workers

The inter-state migrant workers form a specific segment of the industrial labour force, whose degree of segregation is increased by three factors. Coming from states other than Gujarat, they are first of all perceived by the local workers as foreigners, speaking a different language, with another regional culture, and specific food and sartorial habits. In addition, most of them live inside the factories, and they are therefore excluded from the common urban residential system. For these two reasons they are definitely not integrated into the urban population. Furthermore, their specific mode of recruitment, as contract labour, draws a clear demarcation with the other industrial workers.

From the industrialists' view point, the inter-state migrant workers show some "qualities" particularly appreciated.

First of all, some inter-state migrant workers, those from Uttar Pradesh and Bihar, fulfil a specific function in the process of production of the printing industry, which explains the origin of the migration stream. In addition to the usual techniques of pressing and folding, the Uttar Pradeshi and Bihari workers perform an exclusive finishing technique called "bamboo roll" or still "Benares roll" which has been used traditionally in Benares for a long time. It was introduced in Jetpur in the mid-seventies, in order to supply the Calcutta market with saris specially fit for the consumers' tastes. The technique expanded in Jetpur factories along with the growing importance of Calcutta market among the marketing places of Jetpur saris, and was subsequently accompanied by an increasing migration stream of workers from Uttar Pradesh and Bihar. As the "Benares roll" technique is not known by the local Gujarati workers, the migrant workers from Uttar Pradesh and Bihar hold the monopoly for this type of work, which secures them a niche in the industrial labour market of Jetpur.

The recruitment of inter-state migrant workers presents for the employers a second advantage : they constitute a more docile and more easily exploitable labour force. As these workers come to Jetpur exclusively to work without the intention of settling down, and in addition from regions less developed than Gujarat, they are less demanding about working conditions and wages, since these will be better than in their native place. Though this last remark could apply also to Gujarati migrant workers, particularly those coming from rural areas, in the case of inter-state migrant workers this predisposition is more pronounced due to their specific conditions of migration. In particular it is easier for the employer to impose longer working hours and night shifts to the workers who live within the factory premises, as most of the inter-state migrant workers do. On the contrary the local workers as well as the migrants settled with their family in Jetpur are reluctant to work at night; and as far as the commuters are concerned night shift is excluded, and moreover their working hours are limited to a certain extent by the length of transportation time or even constrained by bus and train timings. Furthermore, the inter-state migrant workers are generally under the control of contractors and "masters" who set the working hours as well as the wages, and thus release the industrialists from manpower management problems. Lastly, the local labour trade unions have no impact on the inter-state migrant workers secluded behind the factory gate under "due" control, which is seen as an additional advantage by the employer.

A last advantage, for the industrialists, of recruiting inter-state migrant workers, is the great elasticity of this labour supply. Reduction of manpower in case of slackness is

never a problem for the employers in this small scale industry which keeps out of all industrial and labour legislation; on the other hand increasing the labour force to meet an additional demand during the peak season is not necessarily obvious for the industrialists. The contract labour system which prevails in Jetpur exclusively among the inter-state migrant workers, offers a convenient solution to the industrialists. It is the contractors' responsibility to ensure an adequate supply of labour, and in case of an increasing demand, the contractors can recruit easily in the migrants' native state (which is generally also their native state). The recruitment channel and the necessary network of relations are already established, and, in Uttar Pradesh and Bihar particularly, there is a reserve army of unemployed or disguised unemployed which ensures virtually unlimited labour supply -according to Lewis' wellknown model (1954).

Taking all these factors into consideration, some industrialists implement a deliberate preferential recruitment policy for inter-state migrant workers. Though this type of recruitment is still limited within the total labour force employed in Jetpur dyeing and printing industry, the specific functions and characteristics of the inter-state migrant workers allow us to foresee an increasing trend. In this case the hypothesis of tension arising between the inter-state migrants and the local workers cannot be completely ruled out, as there is already a feeling-though not widely spread- among the latter that the recruitment of inter-state migrant workers has a negative impact on the potential improvement of their working conditions and weakens their negotiation power with the industrialists. One case of open conflict was also reported, confined to a factory, but however revealing. Seventeen local workers went on strike, following the attempt of a contractor to obtain from the industrialist a day shift contract for his inter-state migrant workers, in addition to night shift, at the expense of the local workers. The case was brought to a local union, finally a compromise was reached : financial compensation was given to the local workers, but they were not reinstated in the factory. From this example it appears clearly that the germ of resentment against the inter-state migrant workers could be increased if the local workers have the impression that their employment is threatened.

- specificity of the commuting labour force and its function

The dissociation between working place and living place which characterizes the commuter workers has introduced another segmentation in the industrial labour force.

Though the massive volume of the commuting labour force helped the dyeing and printing industry to face its increasing labour requirement, from the industrialists' view point this specific segment of the labour force shows an

inconvenience for running the industry : its lack of flexibility in working hours and its lack of complete availability. As mentioned above, overtime and night shift are not compatible with commuting. The rural based commuter workers are deeply integrated in the agricultural economy. Those belonging to agriculturists' families continue to participate in agricultural work, and during the peak season they give preference to the familial agriculture and temporarily stop work in the factory. The temporary non availability of commuting labour force can negatively affect the dyeing and printing industry. This was especially the case after the 1988 monsoon, the first good monsoon following three years of severe drought in Saurashtra. During the survey of industrial establishments conducted in November-December 1988, all the industrialists interviewed complained about temporary shortage of labour, created by the commuter workers who were engaged in seasonal agricultural work. This contrasts with the great elasticity of the inter-state migrant labour force, which can in fact partially fill in the shortage in commuting labour force supply ; faced particularly with a shortage of printers who form the bulk of the production workers, some industrialists resorted to recruiting printers from Rajasthan, through the already established channel.

In a situation of employment crisis, the difference in the residential pattern of the workers (residence in the urban agglomeration or outside in the surrounding villages and towns) induces an unequal capacity to cope with a drastic decline of employment opportunities, as it happened during the last drought. The commuter workers are the most affected by unemployment, as residence far from the industrial centre proves to be a handicap. In a situation of employment scarcity, the workers living in the urban agglomeration, in the vicinity of the factories, might have better contacts to get jobs. In addition, since most of the workers in the dyeing and printing industry are engaged on a daily basis, if the probability of getting work is very low, the commuters would prefer to stay at home rather than to incur daily transportation expenses without any return. The farther from Jetpur the commuters live, the higher the transportation cost borne, and the higher the probability to remain unemployed in the village or town of residence.

Thus the commuters appear to act as a buffer in case of slackness in the dyeing and printing industry and reduction of employment. This specific function of the commuters in the industrial labour force as " unemployment absorbers" turns to be a direct sizeable advantage from the viewpoint of the workers living in the urban agglomeration, and to a certain extent for the urban economy as well, since the main negative impact of unemployment is transferred to the rural areas.

From the point of view of urbanization and town planning, urban industrialization which relies to a large extent upon

the commuting labour force, presents an obvious advantage : the town benefits from this labour force without bearing the housing cost of it, and with a limited burden in terms of civic amenities to provide for this population.

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The analysis of the main factors of segmentation of the industrial labour force, and of two specific segments (inter-state migrant workers and commuters) shows how social segregation and economic discrimination among the workers are created. This has also repercussions on the working conditions of the workers in general, insofar lack of unity and solidarity weakens their bargaining power faced with the industrialists.

10-6-Labour trade unions and labour claims

Several labour trade union have branches in Jetpur : the Bharatya Majdoor Sangh (affiliated to the Bharatya Janta Party), the Centre of India Trade Union (affiliated to the Communist Party of India (Marxist)), the Indian National Trade Union Congress (affiliated to the Congress(I) party), the All India Trade Union Congress (affiliated to the Communist Party of India), and the Gujarat Majdoor Sewa Sangh.

The proportion of workers belonging to an union in the dyeing and printing industry can be estimated between 10 and 20 per cent maximum, according to the numbers of members reported by different unions. The numbers of members fluctuate, as some local branches are not deeply rooted and have irregular activities, in addition the workers may join only temporarily, for a specific case affecting them, and also change from one union to the other.

The major claim of the labour unions could be simply summerized by : implementation of the labour laws. But this implies an extensive programme, as the establishments of Jetpur dyeing and printing industry fall under the purview of various acts, each of them with its schedule of rules to be implemented. The main ones are listed below :

- the Factories Act, 1948;
- the Shops and Commercial Establishments Act, 1948 (for establishments located on the territory of Jetpur Municipality);
- Employees' State Insurance Act, 1948;
- the Minimum Wage Act, 1948;
- the Employees' Provident Fund and Miscellaneous Provisions Act, 1952;
- the Equal Remuneration Act, 1976;
- the Payment of Bonus Act, 1965;

- the Payment of Gratuity Act, 1972;
- the Inter-State Migrant Workmen Act, 1979;
- the Contract Labour (Regulation and Abolition) Act, 1970;
- the Child Labour Act, 1987;

And the prevalent rule in Jetpur dyeing and printing industry is the non implementation of the various labour laws. In 1988, for example, 1,566 cases of prosecution under the Factories Act, concerning 82 different factories, were recorded with the Chief Inspector of Factories in Ahmedabad. In addition, the labour office in Rajkot, on which Jetpur depends, reported 300 cases per year on an average for non implementation of other labour laws in this industry.

In their demands, Jetpur labour unions emphasize particularly on issuing of identity cards and attendance cards to the workers, as well as salary slip for the wages paid. Without any of these documents the workers have no proof of employment in a specific establishment, which makes it difficult to take legal action. The abolition of the piece wage system and the regularization of the casual workers into permanent workers is another strong claim.

Quite a few labour disputes are tackled by the unions, but there are essentially at the micro-level and confined to one establishment at a time. They deal in particular with arbitrary of dismissals workers. In the most successful cases, a compromise is reached with the employer, in which the retrenched workers receive a financial compensation and are reinstated in the factory. But very often the workers have to leave the factory against the indemnity. Moreover, whenever labour claims are at the origin of the dispute - demand for attendance card or bonus, or more generally for the implementation of any labour law - these are never satisfied by the employers.

As a result no breakthrough in the implementation of labour laws has been achieved in Jetpur dyeing and printing industry. On the contrary, the generalization of the piece wage system marked a downturn for the workers' employment security and social protection.

This acknowledgment of failure leads to investigate the reasons behind the lack of negotiation power of the workers faced with the industrialists.

The primary reason underlined by labour unions to explain their incapacity to organize the workers and create mass movement is the lack of unity and solidarity among the workers. In addition the different union branches do not show any dialogue or collaboration between themselves, nor any concerted action.

The industrial workers' degree of awareness regarding their own rights as well as the unions' activities in Jetpur seems very low.

Among the workers who are not ignorant of the unions, some do not trust them as they suspect collusion between the union leaders and the industrialists, at their expense. A case a fraudulent practice in which an union delegate was involved was recently unveiled, which probably increased the suspicion.

Many workers are merely scared of loosing their job if they join a union, or even to jeopardize the opportunities of employment in other factories too. This last remark applies especially to the dyers, as their strategic position in the process of production and their status of salaried worker prompt the industrialists to investigate about their past before recruiting them. Unfortunately fears of victimization prove to be justified and threats are effective. Some industrialists for instance resort to hire hoodlums to threaten the workers who attempt to contact the unions. A case of physical assault against an union leader was also reported, in retaliation for not having withdrawn a complaint filed against an industrialist, in spite of former warnings.

Not surprisingly then, the workers who eventually contact the trade unions are usually workers who are already the victims of arbitrary dismissals, and unions appear as their last resort.

Union leaders also accuse the labour officials of connivence with the industrialists, which would explain the failure or the deceptive outcome of the workers' complaints.

Despite some industrialists' complaints about "harassment" by trade unions, the actions taken by the unions as well as their impact among the industrial workers are limited, and labour unrest definitely does not characterize the situation prevailing in Jetpur dyeing and printing industry.

11 - PROBLEMS FACED BY JETPUR DYEING AND PRINTING INDUSTRY

Some of the difficulties faced by the Jetpur dyeing and printing industry were mentioned earlier : dependence upon climatic conditions, fluctuations in prices of raw materials, irregularity of labour supply, increasing competition, over-indebtedness, water pollution, or still some more minor problems like electricity loadshedding. This section will examine the major issues, more particularly with a view to tracing the causes of sickness in this industry.

11-1-Irregularity of water supply

The dyeing and printing industry being water dependent, adequate water supply is a primary concern and a potential source of recurring difficulties in a drought-prone region like Saurashtra. The adverse effect of water scarcity on the printing process and on the cost of production was already underlined (see sub-sections 3-4 and 5-4). Not surprisingly then, the industrial association in its representation to the government has constantly demanded that adequate steps should be taken to provide regular water supply to the Jetpur dyeing and printing industry.

11-2-Fluctuations in raw material supply and prices

Temporary relative shortage of dyes or other chemicals, and subsequent fluctuations in prices, create difficulties of stock management and rise the cost of production. Industrialists feel that these difficulties were compounded by the government's policy of promoting export of dyes for the last five-six years. This was in response to the ban imposed by industrialized countries on the manufacturing of certain chemical dyes, due to high pollution hazards.

As mentioned above (sub-section 5-4), the supply of cotton cloth is affected by important fluctuations on the markets of cotton yarn and grey cotton cloth, both highly speculative markets. This also generates uncontrolled increase of the cost of production.

Such erratic variations in some components of the production cost generally induce a reduction of the margin of profit made by the entrepreneurs, as selling prices cannot be adjusted proportionately. This is especially the case when significant fluctuations in the prices of raw materials occur between the time of the agreement set with sari traders or wholesalers and the date of the delivery of the finished products, as traders apply the rate fixed initially.

In order to release their financial constraints on raw materials, a common claim of the industrialists is the reduction of sales taxes and octroi taxes for this small scale industry.

11-3-Irregular labour supply

The prevalent piece wage system presents an inconvenience for the running of the industry : the irregularity of labour supply. The non-permanency of the workers induces high turnover, absenteeism, and temporary shortage. It has already be shown (sub-section 10-5) how seasonal shortage of labour occurs during the peak agricultural season, when the peasant-workers give priority to work in their fields and stop going to the factory.

Despite the inconvenience, the industrialists are not prepared to regularize the casual workers into permanent workers, as this would imply higher labour cost. In this connection and as a general rule, they consider that the labour legislation is adverse to the entrepreneurs and inappropriate for the functioning of this small scale industry, and that its implementation would impose stringent constraints on their management.

11-4-Fluctuating markets and relative recession of the demand

The demand of saris on certain regional markets may be affected by extraneous factors like political events, international relations, natural calamities, thus creating marketing problems and deficiency of orders for the establishments specialized in those markets.

For instance, the assassination of Indira Gandhi in 1984 and the subsequent social unrest and political disturbances perturbed the Delhi market and parts of the north-Indian market, compelling some industrialists to shift to other zones. Or still Bangladesh market is sensitive to political relations between India and this neighbouring country, especially to more rigorous control of exports.

The drought which hit large parts of the country in 1987 showed the vulnerability of the sari printing industry to natural calamities. Fall in the populations' purchasing power reduced the demand for consumer goods, like saris, especially in rural areas directly affected by the crop failure. And the consumers of Jetpur saris are mainly village women. Many entrepreneurs suffered from the general depression of the market during this drought and the subsequent reduction of orders. However, the situation differed considerably among the industrialists, according to the place of marketing of their saris and their capacity of adaptation to the changing conditions of the market. The demand shrank dramatically for

those establishments whose market was concentrated in regions severely hit by the drought. But some major markets for Jetpur saris were spared, in particular Bihar and West-Bengal (and Bangladesh through Calcutta).

Depression on a specific market has a reduced impact on Jetpur dyeing and printing industry as a whole, as the marketing places of Jetpur saris are very diversified, and extent to all parts of India and to some foreign countries. But for the establishments directly affected the procedure of shifting from a market to another is not an easy nor rapid one, as the entrepreneur has first of all to find new traders, and to adjust the prints to the market's requirements of the new selected region. On the whole, it amounts to a costly procedure, resulting in relatively low flexibility.

In addition to market fluctuations geographically confined and temporarily limited, the Jetpur dyeing and printing industry is also affected by the relative recession - or at least stagnation - of the global demand. This has to be related to the development of other screen-printing centres in India which compete directly with Jetpur for cotton saris, and to the indirect competition with synthetic textile industry (see sub-section 4-3).

11-5-Increased competition

In the context of general competition with other textile printing towns, Jetpur entrepreneurs over all compete fiercely between themselves. Jetpur dyeing and printing industry in a nutshell is the victim of its own successful development. The bright prospects of this industry attracted many entrepreneurs which contributed to the industrial growth of Jetpur as long as the demand was also expanding rapidly. When the demand started stagnating, this led to increasing competition, resulting today in the reduction of the margin of profit in this industry and to the elimination of the weakest units. However the whole process was accompanied by some perverted effects.

Among the entrepreneurs attracted by this industry, many of them did not have technical knowledge about dyeing and printing process, nor the required managerial skills (see sub-section 11-6). Consequently insufficient attention was given to the technical requirements of the production process, unskilled or semi-skilled workers were employed to perform the work of skilled labour, which finally damaged the quality of the prints. This contributed to a deterioration of the quality of Jetpur prints on an average, which affected the reputation of this industrial centre. This also turns to be a handicap on the export market whose quality standards are particularly strict.

To secure one's position in a highly competitive market, maintaining quality standards seems indeed a key factor. However this is not an easy stand when the competition takes an unfair turn, as is the case today in Jetpur. There is a fierce competition on printing prices, and to snatch orders from traders some industrialists do not hesitate to lower their price at the expense of the quality of raw material or by resorting to malpractices. The result is a general downward trend of the margin of profit in the Jetpur dyeing and printing industry. The decline is particularly marked for those entrepreneurs who refuse to compromise with the quality of printing. As admitted by Jetpur industrialists themselves, business ethics and quality rules are not respected in the current competition. In spite of the Dyeing and Printing Industries Association to which most of the industrialists subscribe, there is a total lack of unity among the industrialists. Any concerted action to raise - or at least to fix a common minimum to - the printing charge and the selling price of the saris vis a vis the traders appears impossible and even inconceivable in the present prevailing conditions.

11-6-Financial Crisis

Apart from the above mentioned difficulties, a major reason for sickness in the Jetpur dyeing and printing industry is the shortage of working capital in running the concerns, whose corollary is over-indebtedness. This industry is indeed a totally credit based business.

Problems arise for the entrepreneurs who want to increase their production without sufficient initial capital base, and who do not implement a strict financial management. In particular the balance between the creditors and the debtors is often not maintained. On the creditor's side, the entrepreneur has to pay interest charges to the dye and chemical merchants and cloth traders for the purchasing of raw materials, and to the bank for the financing of working capital. On the debtors' side, the finished products are sold to the traders on credit basis, with period of credit ranging from 30 to 180 days, which creates liquidity constraints to the printing unit and curtails its quantum of working capital. The realization of the sales determines the entire working capital cycle of the unit, and any disparity between the creditors' side and the debtors' side has a direct impact on the health of the unit. Attracted in particular by mass production, many entrepreneurs tend to give credit facilities to traders which go beyond their financial capacity, resulting in their over-indebtedness.

The financial crisis faced by these entrepreneurs is also a consequence of their lack of adequate managerial skills. In a situation of tough competition, and faced with shrewd traders who impose their conditions, such entrepreneurs are incapable

to save their unit from liquidation.

The trend towards over-production and the process of over-indebtedness is not a recent phenomenon in Jetpur dyeing and printing industry. When the conditions of the market became less favourable, industrial sickness to which this process leads was revealed more sharply. Not surprisingly, the number of sick units increased significantly during the last drought (1985-87) with the additional effect of other acute problems.

The entrepreneurs view the solution to their shortage of working capital and over-burden of interest charge in a more liberal policy of financing the small scale industry through the banking system, with reduced rates of interest and other measures aimed to release their cash flow constraints. They emphasize the lack of incentives and governmental assistance, and point out the considerable volume of employment generated by this small scale industry to advocate special consideration for the revival of sick units.

Financial institutions recommend firstly rigorous management of the financial resources of the units. They also point out that some entrepreneurs, especially small entrepreneurs with inadequate educational background, are not aware of the rehabilitation schemes provided to sick units.

11-7-Water pollution

Another main concern of Jetpur dyeing and printing industry is water pollution. This is a problem of a different nature from those examined above, as it does not affect the intrinsic management of the units directly, but it is more exactly an external effect generated by the uncontrolled expansion of the dyeing and printing industry with adverse consequences for the environment.

Factories discharge their effluent, loaded with dyes and other chemicals, into streams and rivers, leading directly to the pollution of the surface water, and by infiltration of the under-ground water. In addition washing-places for the saris have been constructed along the banks of rivers and in the agricultural fields in the surroundings of Jetpur, expanding the pollution of rivers and also affecting agriculture. This widespread pollution is not only prejudicial for the environment, but it also generates health hazards for people and cattle.

The acuteness of the situation led the Government of Gujarat to appoint a task force committee in 1979 to examine this water pollution problem. Since 1983 the Gujarat State Water Pollution Control Board also stopped issuing "No Objection Certificate" for setting up of new printing units in Jetpur. The leaders of Jetpur Dyeing and Printing Industries Association and the officials of this Board have had

deliberations since 1979, to find solutions to curb water pollution.

The first suggestion made by the task force committee was to take steps for the construction of individual water treatment plants at the factory site itself. This project failed, as the entrepreneurs found it economically unviable.

An agreement was eventually reached in order to implement a collective water depollution programme. The industrial association collected 4.5 million rupees from the Jetpur industrialists as their contribution for the expenditures of the plan. The remaining expenditures (about 5 million rupees) were to be met by the Government of Gujarat, in the form of subsidy to the industrial sector. The effluent disposal scheme consists of a drainage system to collect water from all the factories and release them into a main drain, and of a treatment plant. The recycled water would be used for agricultural purpose. The scheme has started being implemented, in 1989 the construction of the drainage system was in progress, and the treatment plant was to be completed.

But the problem of the chemical pollution created by the washing-places scattered along rivers and in agricultural fields is not solved as yet. The district administration resorted to extreme steps in order to curb water pollution, namely the demolition of some washing-places. The industrial association proposed the construction of collective washing-places, in a common area as a solution. They insist that the government provide adequate land as well as electricity and water supply facilities to make this scheme viable.

12 - CONCLUSION : RETROSPECT AND PROSPECTS OF JETPUR DYEING AND PRINTING INDUSTRY

The development of Jetpur dyeing and printing industry exemplifies transition from handicraft to industrial production, based on a bottom-up process. It is essentially the outcome of endogenous dynamics, which did not benefit from a specifically oriented governmental programme.

This case study also illustrates the successful integration of an industrial growth centre within its regional hinterland and the rural economy, as shown clearly by several dimensions of the development process :

- the geographical origin of the entrepreneurs and the workers is mainly confined to the local region;
- this industry also supplies ample employment opportunities to the rural population;
- the industrial growth is directly linked to the progress in agriculture of the surrounding region, through transfer of capital from agriculture towards the urban industry.

This example should encourage the policies of dispersed industrial development advocated by the Indian Government, as it underlines the potential role of medium-sized towns in regional development through small scale and labour intensive industrialization.

However this pattern of mono-industrial development presents also some limitations. The agglomeration and concentration of the dyeing and printing industries in Jetpur seems to have reached its saturation point, and the resulting increased competition affects the profitability of this industry and induces a process of elimination of the weakest units. The "golden years" of Jetpur dyeing and printing industry, when the town was known as "the little Dubai" of Saurashtra, appears over.

Though the state of the demand does not give much scope for further expansion of the Jetpur dyeing and printing industry at the global level, it still allows the firms respecting a rigorous management to be very prosperous, and the most dynamic ones to plan increase of their processing capacity.

In view of this general context, a trend of diversification towards ancillary industries or trades has emerged, often accompanied by a geographical redeployment : for instance cloth or sari trading agencies in major market towns, dye or chemical manufacturing units in the adjoining district of Junagadh identified as industrially backward and thus entitled to specific incentives for industrial investment, manufacturing of packaging material, setting up of powerlooms for synthetic textile in Surat ... However this is not a

reconversion strategy, since these industrialists maintain their dyeing and printing factories in Jetpur. Furthermore some large industrial groups developed, which integrate manufacturing and processing activities upstream of the dyeing and printing units, and commercialization downstream, with ramifications outside Jetpur. This vertical integration enables these establishments to better control their cost of production and ensure a steady supply of finished products, and hence to be more competitive on the market.

Today, Jetpur dyeing and printing industry proves to be extremely heterogenous indeed, in terms of size of the establishment, mode of business (contract work for traders or independent business), level of education of the entrepreneurs and degree of modernization of their management (including computerization for the most advanced), structure of the financial capital. Only the technique of production, hand printing with screen, is identical for all the enterprises.

This multifaceted heterogeneity calls for distinction in the formulation of any policy suggestion for the Jetpur dyeing and printing industry.

The most problematic issue is the industrial workers' welfare. In order to enable the bulk of the workers to better benefit from the industrialization process, a more rigorous implementation of the labour legislation seems a prerequisite to ensure them more security of employment, better earnings, minimum social security benefits, and thus improve appreciably their working and living conditions. However, for many small entrepreneurs whose concerns are barely profitable, such measures which would increase labour cost may compell them to close down. This dilemma is common to many small scale labour intensive industries, which provide attractive investment opportunities for the entrepreneurs essentially because of the availability of cheap labour.

Considering the problems faced by the dyeing and printing industry of Jetpur, particularly its creeping sickness, due attention should be given to the social angle, and the considerable potential of employment of this industry should also be taken into account besides the criteria of strictly economic profitability. Though a policy of promotion of this industry in view of further expansion in Jetpur is not realistic due to the state of the global demand, it seems necessary to prevent a further aggravation of sickness and to take action for the revival of sick units. A more effective implementation of the already formulated rehabilitation schemes and of the recommendation of the Board for Industrial and Financial Reconstruction for a more liberal policy [26] would be the first step. However its success relies beforehand on the better information of the entrepreneurs regarding the assistance provided by the financial institutions and their specialized rehabilitation cells. In

addition, management assistance for the entrepreneurs with inadequate educational background or managerial skills is also recommended. Such measures would also contribute to the safeguard of employment, which follows the spirit of the industrial policy formulated by the State government, with its emphasis on employment generation and encouragement to labour-oriented industries.

NOTES

- [1] 22.89 per cent between 1921 and 1931 (from 18,694 inhabitants to 22 973) and 23.65 per cent between 1931 and 1941 (from 22,973 inhabitants to 28,444).
- [2] An industrial undertaking belongs to the category of 'small scale industry' when the capital invested in plants and machinery does not exceed 3.5 million rupees or 4.5 million rupees in the case of ancillary units (by 1988 criteria).
- [3] For example, excise duties are levied for units printing more than 7.5 million square metres of cloth per year (1988 criteria).
- [4] The Indian Factories Act, 1948, applies to the undertakings using power and employing 10 or more workers and those not using power and employing 20 or more workers. The Act contains regulations covering hygiene and safety, sets the maximum number of working hours and the number of obligatory paid holidays and places restraints on child labour. The undertakings registered under the Factory Act are also submitted to other laws, like the Payment of Bonus Act, 1965, relating to the implementation of profit share in a specific proportion.
- [5] Four acts were enacted in Saurashtra : (1) The Saurashtra Land Reforms Act of 1951, (2) The Saurashtra Barkhali Abolition Act of 1951, (3) The Saurashtra Estates Acquisition Act of 1952 and (4) The Saurashtra Prohibition of Leases of Agricultural Land Act of 1953.
- [6] This estimation is based on the results of the 10 per cent household survey of 1988. The corresponding confidence interval at the 95 per cent probability is [109,481 - 118,352].
- [7] All the figures quoted in the last two paragraphs are based on the data of the 1988 household survey.
- [8] The description of the printing process presented here is mainly adapted from the detailed accounts given by TRIVEDI in "Block and screen printing in Jetpur", 1970, pp. 47-48, and by SEHNAI in "Hasthakala", 1972, pp. 44-45, completed and updated by our own observations.
- [9] Stencil machine can also be used to prepare the cloth material before the dyeing and printing process.
- [10] As mentioned earlier, the water of the Bhadar river, which flows in Jetpur, is famous for its special properties that help in developing the colours and the prints, which is one of the main reasons for the

- initial location and concentration of dyeing and printing craft in this area.
- [11] The names mentioned in the industrialists' accounts have been changed in order to respect the anonymity of the individuals.
- [12] The other banks are : the Central Bank of India, the State Bank of India, the Bank of Baroda, the Union Bank of India, the Indian Overseas Bank.
- [13] In the co-operative sector, The Rajkot District Co-operative Bank and the Gujarat State Co-operative Land Development Bank, which have also offices in Jetpur, are meant only for the agricultural sector.
- [14] Source of estimate : State Bank of Saurashtra, Jetpur Branch.
- [15] However, in spite of the official ban, some industrialists managed to build new printing factories after 1983 outside the GIDC estate.
- [16] The corresponding confidence intervals of these estimates at the 95 per cent probability are respectively : [15,830 - 17,191], [13,854 - 15,142], [1,758 - 2,267].
- [17] Source : Mamladar Office, Jetpur.
- [18] The difference is significant at the 0.1 per cent level (Chi-square test).
- [19] Saurashtra is formed by the following six districts : Rajkot, Surendranagar, Jamnagar, Junagadh, Amreli, Bhavnagar.
- [20] The difference between the two distributions is significant at the 0.1 per cent level (Chi-square test).
- [21] The difference is significant at the 0.1 per cent level (Chi-square test).
- [22] The difference is significant at the 0.1 per cent level (Chi-square test).
- [23] In particular Junagadh (120,416 inhabitants in 1981 and 32 kilometres away from Jetpur). Dhoraji (77,716 inhabitants in 1981 and 19 kilometres away) and Gondal (66,818 inhabitants in 1981 and 32 kilometres away).
- [24] This estimate is based on an enumeration of all the workers living within the factory premises, which was conducted along the 10 per cent household survey in

January-April 1988. The number of workers enumerated at that time was 1096, which would represent 4 per cent of the estimated total labour force of the dyeing and printing industry. However this percentage should be considered as a minimum estimate of the employment potential of Jetpur dyeing and printing industry for inter-state migrant contract labour. It should be corrected by three factors.

The first one is possible omissions due to misinformation, as the employers are reluctant to declare inter-state migrant contract labour living in their factories, since they generally do not respect the laws relating to this type of labour. Secondly, a few migrant contract workers have arranged for independent accomodation outside the factories.

The third and main factor pertains to the fluctuations of the number of inter-state migrant workers, according to the fluctuations in the level of activity of the printing industry. As the enumeration took place in the last year of a three year period of drought which severely affected the textile printing industry, many teams of temporary migrant workers left Jetpur at that time : about half of them according to some industrialists' estimates. This was confirmed by interviews conducted after the 1988 monsoon, which brought great release to this industry and allowed the recruitment of inter-state migrant workers to resume at a higher pace.

Taking these factors into consideration, the actual share - apart from economic crisis conditions - of the inter-state migrant contract workers in the total labour force of the dyeing and printing industry could be estimated at around 10 per cent.

- [25] These figures should however be considered as minimum estimates of the employment potential of Jetpur dyeing and printing industry for inter-state migrant child labour : see note [24]. [26] See : "Rehabilitation of sick units : BIFE seeks mandatarary powers", Economic Times, November 12, 1988; and "Pressure of sickness", Economics Times, November 14, 1989.

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