CHAPTER I

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Ever since the innovative synthesis and commercial production of first truly non-cellulosic fibre popularly referred to as synthetic fibre, it has been making tremendous headway on account of its versatile properties. The various applications of these fibres and fabrics resulted in its use expansion and consequent consumer acceptance, the world over. Synthetic fabrics have virtually eroded not only natural fabric markets but captured a considerable proportion of market segments as held by its cellulosic predecessor, i.e., fabrics constituting the man-made group of which it is classified as a prominent member. The synthetics accept modification for induction of desirable properties right from the stage of their polymerisation, whereby reorientation of molecular groups can be effected up to the weaving/knitting stages. Its long run economy and gradual correcting of bias on the part of consumers due to fabric performance has diverted the attention of potential consumers. As a result synthetics were put to various uses like apparel wear, household, industrial and defence requirements, achieved through concerted Research and Development efforts at different phases of fibre fabric life.

Since the last forty eight years the world over and for thirty years in India, Rayon and Synthetic Textile Industry
has grown from root. Not only its productive capacity and output have increased substantially but it has also achieved wide diversification in the range of fabrics and has adopted modern scientific manufacturing processes to produce a large variety of woven-plain, dobby and Jacquard-fabrics, knitted fabrics, embroidered and non-woven fabrics. There are sixteen units which produce synthetic filament yarn, staple and tyre cord while letters of intent have been issued to sixteen more units. The total production of fabrics is estimated to stand at 1,200 million meters. More than Rs. 2,800 million have been invested in this industry. The main raw materials for the manufacture of polyester fibres are dimethyl terephthalate (DMT) and ethylene glycol, while as Nylon fibres are derived from caprolactum. The three main sources of raw materials for manufacture of synthetic organic chemicals are: (a) by-products of coal carbonisation and coal-tar, distillation, (b) alcohol, (c) petroleum and natural gas and their derivatives. The Gujarat State Fertiliser Corporation manufactures caprolactum and Indian Petro-Chemicals Corporation manufactures DMT and Oxylene, though the availability of indigenous raw materials has improved a lot yet they continue to be imported to meet industry’s needs fully.

The Indian synthetic textile industry consists of fibre,

spinning, weaving and knitting sectors. The fibre and spinning sector consists of units manufacturing non-cellulosic fibres and yarns (both staple fibre and filament yarns) of Nylon, Acrylic, Polyester, Polypropylene, Poly Venyle Chloride (PVC) and Poly Vinyle Acetate (PVA) origins. Out of the total man-made production, approximately 70% consists of cellulosic fibres/yarns and only 30% consists of non-cellulosic (synthetic) fibres/yarns. The weaving sector consists of 1,36,000 power looms and 700 knitting machines. Eight per cent of the looms are units with 10 looms and below, and are in the decentralised sector. The total number of looms in the organised sector with 50 looms and above would be approximately 18,000.

There has been a substantial increase in the production of various man-made fibres and yarns which is expected to reach about 1,90,000 tonnes by the end of 1979, as against 1,57,000 tonnes during 1975-76. An additional 74,448 tonnes capacity is under implementation. Enhancement of production and availability of synthetic/blended fabrics at cheaper consumer prices have been kept in view and a number of measure taken during 1976-78. The innovative measures include placing the imports of viscose, polyosin and polyester fibres on a free


5 Text of Integrated Policy For Development of Textile Industry presented by the Minister of Industries to Lok Sabha on 7th August, 1978.
licensing basis. Actual user imports of Nylon filament yarn have been freely allowed through State Trading Corporation (STC). The abolition of excise and countervailing duty on caprolactum was resorted to make it available at cheaper prices. The integrated textile policy announced by the Minister of Industries, Government of India, in a comprehensive statement presented to Lok Sabha on 7th August 1978, envisaged that, mills would endeavour to reduce costs of production and improve fabric quality both by modernising their equipment and through the use of cheaper synthetic fibre. It has also been declared that use of synthetic fibre would, at all times, be without detriment to the interests of Cotton industry. Besides research and development work was ensured to be strengthened to solve the problems facing the textile industry.

The world trade of synthetic fabrics is expanding while that of natural fabrics has tended to stagnate. At present India is using only 13% man-made fibres as against 87% cotton. Even in this thirteen per cent, a substantial portion is accounted for by Viscose a cellulosic fibre that is not in great demand for apparel wear in international markets. Further, it has been thought that it is not possible for India to

6 Ibid.
switch over to synthetic fabric exports to any appreciable extent. As synthetic fabric prices in India are much higher than world prices, India finds it difficult to compete in world markets. Further, the technology is oriented largely towards cotton, and this will have to be changed to suit the needs of export markets. No Mr. K.S. Sreenivasan, Chairman, National Textile Corporation (NTC) and Director, South India Textile Research Association (SITRA) expressed in his talk at the International Textile Conference held in London, May 25-26, 1978. To bridge up technological gap a Rs. 375 million Research and Development plan was submitted to the Government of India by a group of synthetic manufacturers for inclusion under Fifth Plan outlay.

Increasing exports from a long-term point of view depend very largely on our success in negotiating larger synthetic export quotas, particularly with U.S.A. and the E.E.C. countries. Out of our total imports by U.S.A. and E.E.C. (countries) India's contribution is only of the order of 1% to EEC and above 4% to U.S.A. Increase in these meagre percentages should not be difficult and this increase will not have any appreciable effect on their domestic industries. The Scandinavian countries and Canada have imposed quantitative restrictions recently. For future forecasts these limitations are to be taken into account. During the year 1976-77 certain important steps were taken to push up exports of synthetics and man-made fabrics as such. Cash incentives at varying rates have been

announced on exports of man-made textiles including made-ups and garments. A percentage-based replenishment policy has been announced with sufficient incentives for export of high unit-value synthetic fabrics. Also synthetic fibres and yarns have been included in the scheme for advance import of duty-free raw materials for export production. About 25% of the production of viscose filament yarn and 5% of viscose staple fibre have been earmarked for being supplied to exporters at special concessional price for export production. The import duty on nylon and polyester filament yarn have been abolished when exports of nylon and polyester filament yarn fabrics and made-ups are undertaken. With these steps exports of synthetics have shown an upward trend.

Under the Fifth Five-Year Plan production targets envisaged to be achieved by the end of the plan are 85 million kgs of synthetic yarns as against 104 million kgs of production capacity. For fabrics the production targets are 2,000 million meters of man-made origin. Consequently it indicates an increase of 250% over the production of man-mades in the country. As a result of increased production higher fabric export targets have been set up, crossing Rs. 350 million mark to be accomplished by the end of Fifth Five-Year Plan. The scope for higher exports can be the consequence of new multi-fibre agreement enforced from 1st January 1974. This agreement worked out by GMT countries will help to grow most of the world's textile trade by the end of 1979. This
MTA representing a compromise between importing and exporting countries is bringing liberalisation and control of international trade ensuring higher quotas for Indian textiles both to U.S.A. and E.E.C. countries. This MTA especially offers higher export opportunity for synthetics (as developing countries being new entrants for these fabrics, a higher growth rate was ensured) provided production constraints are overcome. The new arrangement has categorically made it clear that new quotas cannot be lower than those that were in force under the last trade agreement.\textsuperscript{10} Thereby developing synthetic exporting countries seek higher quotas and liberal growth rates.

The changing situation and the deeper understanding of problems faced by this nascent industry has been the centre of attraction for not only the Government and professionals but also for academics. The present study has been conducted with a view to analyse various factors related not only to export, but also to the research and development efforts undertaken in India and abroad right from polymer in liquid form to the end product in fabric form. This highly import based industry has two aims to achieve higher growth of exports: (a) to pay for essential imports, and (b) to find funds for reimbursing foreign debts that are used to acquire for purchasing equipment and machinery and import recent

technology. Obviously the increase in exports to the level of balancing foreign exchange account can be achieved through higher consumer acceptance of our fabric produce. To keep the demand at a higher base level and ever increasing, the fabrics are to be manufactured in conformity with changing consumer needs. This involves continuous research and development efforts to modify existing and innovate new fabric types, modify old and introduce new processes at various stages of production and finishing of fabrics, and affect import substitution. This essentially should lead to cost economies. Consequently the prices can be brought within the pocket range of the consumer and make these acceptable to them. There have been changes in various factors effecting exports. Some of these factors work as export distortions and others as export stimulants. The study necessitates their present and likely impact on synthetic export trade.

Exporting, as against domestic marketing calls for individual firms taking more complex decisions in conditions of greater uncertainty. This is partly offset by improved communications and availability of market data. Exporting is generally thought of as the transfer of goods to overseas markets. In fact when we look into exporting operations, we see that four elements are involved, they are: (a) the product element, (b) service element, (c) an investment element, and (d) the use of knowledge regarding fabric design, R & D,
marketing, etc. An individual firm seeks a return from the deployment of these four resources. But exporting varies according to the export policy adopted by the Government and the tariff and non-tariff barriers that impede export trade.

The highlights of the present research work are presented in six chapters each dealing with various inter-related facets of the problem.

The first chapter deals with the background discussion of the study.

Chapter II presents a thorough discussion on "International Marketing Operations". The variables related to elements of marketing mix can be instrumental in influencing synthetic fabric buyer's decision on one hand, and on the other hand act as a factor of pull on the Indian exporters to enter international markets. Certain other factors favouring synthetic export trade have also been discussed. All these factors result in generating a decision. Two approaches called 'Opportunity policy' and 'Matching basis' are resorted to conclude a decision for exporting synthetic fabrics. Mostly matching policy is resorted to for which reasons have been assigned in this chapter.

As a result of continuous research and development efforts some new fabrics have been developed and others modified in accordance with consumer requirements. As such fabrics are
induced into the overseas markets, an interacting process is set up between the market requirements and fabric profile. This results in either retaining the fabric or demanding its attribute modification on recycling these fabrics in the market. Operations at times call for a change in the capital mix depending upon the long-range demand forecasts. Certain model diagrams have been developed to explain these aspects of international marketing operations. All fabrics to be exported are put into various distribution conduits. Depending upon the market opportunities and fabric range a number of permutations are tried out.

Price, being a strategic element in exporter's marketing mix is used for extension of market. Consumer views price from want satisfaction point of view. The ultimate end price operating in the market is the reflection of efficient resource utilisation by the manufacturer, exporters. Pricing for export fabrics is an intricate issue and in conformity with these intricacies this chapter evaluates various constraints. Various price constituents have been discussed one by one which has made imperative to study cost components in the cost structure both at fibre and fabric levels. The high cost structure as attributed to certain financial imprudences and likely impact of various concessions and subsidies on ultimate fabric price and profitability per unit have been evaluated. Certain recent accounting techniques like 'Added value Basis' have been employed to estimate the actual profits accruing out of
export sales. Also the foreign exchange generated by export sales per rupee of foreign exchange investment are estimated. This led to the study of real and shadow rate of exchanges generated by each fabric unit exported. Pricing decision is further complicated on account of presence of significant complementarity or substitution effects with the exporters' fabric line comprising of cellulosic/blended/synthetic fabric mix. World markets have registered competition whereby erosion of cellulosic's markets have been achieved through synthetic substitution. Reinforcement through this synthetic substitution can be further achieved through acceptable consumer prices for our synthetic fabric trade take offs.

A vital barrier which has immense trade distortion effect is the tariff imposition and other levies on incoming fabrics into the importing countries. These inflate the end price, raising the burden on the consumer. Though certain bilateral agreements have eased the situation thereby attracting lower duty. The new Multifibre Agreement enforced from January 1974 has ensured a preferential tariff treatment from GATT countries, thereby lowering the intensity of this impediment and ensuring higher sales quotas at lower prices especially to U.S. and E.E.C. markets.

The government of India's tax-levy policy has led to price discrimination between indigenous and imported raw-materials (DMT and Caprolactum) thereby eroding price parity.
Mathematical tools have been used to calculate the present tax burden and the Government's share of revenue. Re-distribution of these tax rates have been suggested with marginal reduction in Government's revenue but giving ostensibly good relief to this highly burdened industry.

The inviting opportunities provided by gulf and open economies have been evaluated in terms of strategies required for entering these markets. The competitive and developed markets are much difficult and involve utmost care for fabric establishment. Different strategies are to be adopted in different market situations for different fabric varieties for promoting market take off. Synthetic fabric's life cycle in export trade has been drawn and various stages identified. Also reasons have been searched for its abrupt decline stage and its recycling later. Since profit figures on export sales have not been available for all the years, therefore, the exact behaviour of profit curve could not be studied.

Exports of synthetic fabrics can be promoted by large subventions but this offers no permanent solution to the various problems encountered in export marketing. The real answer lies in building up of an export base sustained by its own strength or potential viability. The markets to which the fabrics are to be beamed should be expanding rather than shrinking. Obviously exports of fabrics have to be the result of purposeful action-oriented programme taking into account specific growth-oriented overseas markets; fabric types
best produced competitively; lastly the quality requirements of the clientele. The approach calls for concentration rather than diffusion of exports which is obviously caused by operating and drawing policies geared to general rather than specific generic products.

**Product Development** is an essential function of synthetic fibre fabric industry particularly for making a headway in international markets. From the synthesis of first synthetic fibre fabric, it has constantly passed through various developmental phases as a result of concerted technological and scientific efforts specially in developed countries. This forms the subject-matter of Chapter III. Its scope extends to the study of various properties of individual fabrics presented according to usage classes such as household, apparel, industrial and defence. For the extension of their life span constant modifications and innovations of new fibre fabrics in the group become imperative. Another dimension of efforts is the trying of various blends of synthetics with natural and cellulosic fabrics resulting into mixed synthetics which have a better consumer acceptance than pure synthetics all over the world. The fabric development exhibits considerable bearing on the consumer preference. To give an attractive look to the fabric and expand its usage range, certain developments undertaken in fabric finishing, texturing, mercerising and knitting form a part of this chapter. Efforts aimed at cost reduction and optimisation through technical innovations and
standardisation have also come in for necessary analysis and evaluation.

In order to survive in the international markets primarily and then to seek the growth of these markets for our fabric produce, it becomes obligatory for Indian synthetic industry to keep track of fabric innovations in other parts of the world. Chapter IV discusses research and development efforts on the part of Indian industry. Our R & D efforts for their major part aimed at modification of fabrics and processes as innovated abroad. Keeping this in view "Product Modification An Indian Perspective" requires greater and separate attention. This forms the title of Chapter IV. A survey has been made of the work accomplished by various research institutions partly or wholly devoting their research efforts to technological aspects of synthetic textile industry. The fabric improvement and market expansion have been the twin objective of Research and Developmental schemes of the industry. Majority of these schemes have been application-oriented. Indian research includes study on spun yarn, knitting, texturising and texturised fabrics, tinting and sizing, besides change in basic structure of processes and products for dyeing, printing and fabric finishing. Moreover, modification of machinery, fabrication of testing equipments, designing of laboratory model machines also come within the purview of R & D efforts. Organisations like Silk Art and Silk Mills Research Association (SASMIRA), South India Textile Research
Association (SITRA). Bombay Textile Research Association (BTRA), Ahmedabad Textile Industries Research Association (ATIRA), etc., have directed research efforts into development of testing and other devices which contribute to import substitution. Consequently the improvement and perfecting of instruments have brought about standardization of fabrics. Apart from modification and development of fabrics for industrial, apparel and household uses, various Nylon/Polyester/Polyurethane fabrics have been made fit for defence application. This job has been entrusted to two research organizations named Aerial Delivery Detachment (ADDDET) and Defence Research Laboratory (DRL-TAJ) in addition to cooperative research facilities extended by Silk4Art, Silk Mills Research Association (SAS4TRA) for this purpose. The multiple and varying defects in the fabric arise out of slight variations between normative and actual manufacturing processes involved and due to fibre/yarn defects. The process variations include yarn slippage, faulty knitting mechanisms, faulty wet processes, residual alkali, high heat treatments in sizing, improper heat setting and hydro-cellulose formations. The defects attributed to raw-materials are the outcome of variations in yarn denier, uneven distribution of fibre on the surface and during spinning, mix up of different yarn plys, serrated and circular cross sectional shades of yarns and fibres, mix up of yarns/different elongation, crimp rigidity properties and differential dye affinity.

The defects generally are manifested in the form of holes, fabric tendering, permanent wrinkles, weft and warp way streaks,
lines and shade variations, colour fading, fabric shrinkage, etc. The recommendations of R & D outlay and various other such schemes drawn up by individual research organisations and research cells of manufacturing units to improve their fabrics enabling it to combat competition in international markets, have been analysed at some length in the chapter under discussion.

Improved marketability of synthetic fabrics has made promotional efforts imperative. Chapter V entitled "Export Promotion Efforts" attempts to analyse the financial and non-financial promotional measures and services rendered by the government and various institutions involved in boosting up of synthetic's export trade and create sustaining markets for them. Higher overseas market take offs are aimed essentially as synthetics being reasonably dependent for its imports of production inputs like basic raw-materials (caprolactum, DMT), polymers, dyes and other auxiliaries. Fostering of exports results in greater availability of foreign exchange for importing sophisticated processing and weaving machines, and technical facilities for enhancing R & D activities to increase fabric competitiveness. The priority treatment to synthetic industry (man-made/Art Silk Industry) in the Import Trade Control Policy has been guided by the considerations of export promotion, import substitution, higher production of fabrics for mass consumption, and lastly great difference existing in indigenous and international yarn prices. The study necessitates analysis
of the extension of support by Govt. through three vital conduits namely, Import Replenishment, Duty-drawback and extension of credit facilities through Packing and Post-shipment credits. The import replenishment entitlements showed changes from time to time in accordance with the expansion in export dimensions. The drawbacks provide the repayment of duties paid on imported production inputs on exports of fabrics, thereby reducing cost of export production. The percentage of drawback entitlements have been varying from time to time and from fabric to fabric. Most of the export sales are credit sales thereby straining exporter's liquidity position. To maintain and strengthen the financial position of the merchant/manufacturer exporters, the finances are provided to them under various financing and refinancing schemes by various Govt. and Semi-Govt. institutions. Changing international trading milieu calls for the re-orientation of export policy of the Govt. as it plays a crucial role in the development of export trade, the bulk of which is subsidised directly or indirectly by the Govt. enabling to combat stiff competitive market challenges. To augment growth of exports, liberalisations were brought in the import policy especially in the post-devaluation era. Till devaluation imports of raw-materials were linked with exports of fabrics but subsequent devaluation was accompanied by readjustment of this import policy whereby raw-material imports were allowed to actual users through the State Trading Corporation (STC). Assistance is also provided to exporters in the form of higher replenishment and cash support through such
agency. A major portion of 'Market Development Fund', set up for trade stimulation and diversification for developing markets for Indian fabrics, is expended on schemes of compensatory support. Under this scheme, the commercial banks and financial institutions are also eligible to receive subsidy at a low rate of interest of $1^{1/2}$% per annum charged by them from exporters in respect of loans, advances and other credit facilities for export purposes.

Certain institutional arrangements were undertaken with three fold objective of regulating and promoting export trade of synthetic fabrics, export planning and production. These institutions help in conducting market research, fabric research, export publicity and dissemination of information. They help in financing participation in trade fairs and enforcing quality control and pre-shipment inspection. They have been instrumental in backing up sales efforts of individual units and expedite overseas contacts. Some of the institutional arrangement have been conceived as an institutional innovation in the context of export trade development where new operating techniques are employed. To bridge up communication gaps for potential exporters, some of the institutions have built up store house of information and memory bank with facilities for quick retrieval. Also research survey for fabric adaptation and development of new fabric version as per consumer needs are being backed up.

To boost up exports further buyer-seller meets both in
India and abroad are sponsored in addition to sponsoring of buying delegations. Also annual export awards for highest exports in embroidered fabrics, hosiery and knitwear, made-up garments are given. Special awards are given for successfully launching a new fabric into export markets and for successful break through in a difficult or impeding market. This is to envisage a favourable environment for innovative fabrics' inclusion in export fabric mix.

Enactment of Quality Control and Pre-shipment Inspection Act 1963, has provided quality considerations as vital for enhancing fabric export trade. The Silk and Rayon Export Promotion Council with its four-tier system of laboratories has devised quick quality control methods at the pre-shipment stage. It also stimulated quality consciousness stressing immense importance of consumer needs and their adherence to purchase only fabrics conforming to international standards (ISI).

In the recent past certain innovative decisions providing relief measures include duty free imports against advance export promotion licences, payment of duty drawbacks to exporters directly, abolition of deduction practice of 20% of REP licence on account of freight and insurance and relaxation in the use of blanket foreign exchange permits for renewal and granting foreign exchange in dollars have been evaluated with its accompanying advantages and disadvantages. Critical evaluation and the likely impact of liberalisation in imports of
all trade distortions both tariff and non-tariff factors have been evaluated and the measures to bring down their adverse impact have been attempted. These and certain other conclusions have been drawn in Chapter VI comprising the concluding part of the present research work. In addition to critical evaluation of various operations involved in the entire gamut of international marketing pertaining to Indian synthetic fabric industry, certain suggestions have also been put forward. These suggestions if considered for implementation are likely to yield tangible benefits, making the industry's and the Government's approach more export-oriented.