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**STRENGTHENING THE BACKWARD LINKAGES
WITH THE READY-MADE GARMENT INDUSTRY**

NC/BGD/92/025

BANGLADESH

Report

Prepared for the Government of Bangladesh
under UNDP-financed TSS-1 facility

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TERMS AND ABBREVIATIONS

ADB	Asian Development Bank
BGMEA	Bangladesh Garment Manufacturers & Exporters Association
BJMC	Bangladesh Jute Manufacturing Corporation
BMR(E)	Balancing, Modernization, Rehabilitation (Expansion)
BSTPIA	Bangladesh Special Textiles & Powerloom Industries Association
BSB	Bangladesh Shilpa Bank
BTMA	Bangladesh Textile Mills Association
BTMC	Bangladesh Textile Mills Corporation
CMT	Cut, make and trim
CTA	Chief Technical Adviser
EEC	European Economic Community
EPB	Export Promotion Bureau
EPZ	Export Processing Zone
FOB	Free-on-board
GOB	Government of Bangladesh
GSP	General Scheme of Preferences
ITB	Industry Training Board
LC	Letter of Credit
Ltd	Limited (Company)
LVA	Local Value Added
MOT	Ministry of Textiles
NA	Not available
NGO	Non Governmental Organization
NZ	New Zealand
P/C	Polyester Cotton
pick	an insertion of weft
Poly	Polyester
p.p.i.	picks per inch
RMG	Ready Made Garments
r.p.m.	revolutions per minute
sp	spindles
T/C	Terylene Cotton
Taka	Bangladesh unit of currency
TAPP	Technical Assistance Project Proposal
TIDATO	Textile Industry Development & Training Organization
TIDC	Textile Industry Development Centre
TIRS	Textile Industries Restructuring Study
TOR	Terms of Reference
TSMU	Textile Strategic Management Unit
TSS-1	Technical Support Services at the programme level
UK	United Kingdom
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Programme
USA	United States of America
warp	the lengthwise threads in fabrics
weft	the crosswise threads in fabrics
\$	United States Dollar

During the period of the mission, 28 September to 5 November 1992,
the following exchange rate prevailed: US\$1 = Taka 38.8

ABSTRACT

The exporting ready-made garments manufacturing industry imports practically all of its fabric requirements, estimated at 950 million m² annually, as locally made fabric is of unacceptable quality and would not be available in the quantities required.

Although this fast-growing, dynamic sector accounts for 60 percent of the country's total gross exports, its almost total dependence on imported fabric reduces its net export earnings to a level where it is not performing any better than the rest of the manufacturing industry - including the inefficient and declining jute industry. There is thus a strong incentive to develop a local supply base for the exporting RMG sector to increase its present low local added value.

The local supply of textile fabric is estimated at 970 million m² p.a. of which some 88 percent come from the handloom and powerloom sectors and only 12 percent (approx. 116 million²) from the mill sector. The local demand is estimated at 1.250 million m² p.a. leaving thus a supply gap of 280 million m² p.a. filled with (presumably illegal) imports.

The two largest fabric producing groups - handlooms and powerlooms - cannot be considered as potential suppliers to the RMG sector for reasons connected with reproducibility, quality and type of product. The generally poor condition of the equipment and the predominance of narrow-width looms in the mill sector would require extensive rehabilitation and replacement in addition to a drastic increase in productivity. Furthermore, a ten-fold expansion of the mill sector would be necessary to satisfy the RMG needs.

In view of the magnitude of the investment needed to supply even part of the RMG sector's requirements, any backward integration must, of necessity, proceed in stages, with the dyeing and finishing of imported grey cloth as the logical first step, followed gradually by weaving of imported yarn and, finally, spinning.

Concurrently with these steps mill practices and labour productivity must be improved. To this end the existing training institutions should be activated and their role strengthened in close cooperation with the industry. An independent consultancy unit, manned by both expatriate and local consultants, should be established to support the backward linkage process initially.

INTRODUCTION

A World Bank-financed study on the restructuring of the textile industry in Bangladesh (TIRS - Phase I) was conducted in November 1991 and the draft report submitted to the Government of Bangladesh in May 1992. A dialogue between the World Bank and GOB on the report's findings, conclusions and recommendations had not started by October 1992 when the UNIDO mission was fielded.

The terms of reference for the UNIDO study (*see Appendix 2*) were based on a Technical Assistance Project Proforma (TAPP), prepared by the Ministry of Textiles in December 1991, approved under the UNDP-financed Technical Support Services (TSS-1) scheme in May - six months before the conclusions of the WB study were presented to GOB. These TOR thus pre-empted the conclusions of the WB study and they reflect a totally different approach to the question of backward linkage with the ready-made garment sector. The UNIDO study was to prepare the ground for a follow-up phase II of the WB study but, while the WB study advocates the installation of new productive capacity to supply the exporting RMG sector, the UNIDO TOR imply that balancing, modernization and rehabilitation (BMR) is the appropriate route to local supply of export-quality fabric.

In view of these two, diametrically opposite positions on this issue the UNIDO team decided not to accept either premise as given but to approach the question from the top down, starting with the requirements of the exporting RMG sector, qualifying and quantifying these and then comparing the results of this analysis with the capacity and performance of the local textile industry, taking also into account the supply/demand situation in the local market for textiles. This enquiry focused on the central question what the most appropriate route would be to domestic fabric supply to the growing RMG sector.

The UNIDO team leaned heavily on the wealth of statistical information contained in the World Bank report, verifying the data wherever possible. Other sources used are listed in *Appendix 4*.

The members of the UNIDO team were:

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 S.P. Datta

The team arrived in Dhaka on 28 September and departed on 5 November 1992.

The conclusions and recommendations of the team are based on mill visits, discussions with the officials of the Ministry of Textiles (MOT), Bangladesh Textile Mills Corporation (BTMC), Bangladesh Textile Mills Association (BTMA), Bangladesh Garment Manufacturers and Exporters Association (BGMEA), UNDP and the World Bank. A complete list of persons and organizations consulted is in *Appendix 1*.

The present report was finalized at UNIDO Hq. after consultations and comments received from relevant units in the Secretariat.

* Returned to UK on 15 October 1992 for medical reasons. Continued to supply data for the team from his home office base.

I. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

1. The ready-made garments sector needs a local supply base of good quality fabric of acceptable type (minimum 60" width) at competitive prices in order to increase its local added value and its international competitiveness.
2. In Bangladesh, the local textile industry is at present unable to supply the RMG sector for a variety of reasons:
 - the quality of both yarns and fabrics is low;
 - the local capacity is insufficient to meet even the local demand of fabrics;
 - the production costs are too high owing to low productivity and excessive use of labour.
3. The handloom and powerloom sectors which produce 88% of the local fabric output cannot be considered as a potential supplier to the RMG sector as the very character of these sectors would not permit the type and level of consistency of product required by the exporting garment manufacturers.
4. Balancing, modernizing and rehabilitating the mill sector to a level where it could supply the exporting garment manufacturing industry would be very costly, would not significantly increase its present production capacity of 116 million m² and would thus probably result in increased (illegal) imports.
5. The creation of new productive capacity to cater for the needs of the RMG sector is not feasible in the short term because of the sheer magnitude of the investment required - up to 1.300 million US\$ for the major equipment only, depending on the source. In the long term, however, there is no alternative to it.
6. Attempts to force by legislation the RMG sector to use locally available fabric cannot succeed unless local supply is available at competitive quality and price levels.
7. In the short term the only alternative and the logical first step towards local supply of fabrics to the RMG sector would be to facilitate the import of grey fabric for local processing and - concurrently with that - ease the availability of credit through the commercial banking system to permit entrepreneurs to import the requisite dyeing and finishing equipment. The immediate effect of these measures would be a 100% increase in the local value added in garment manufacturing. In the long term the resultant accumulation of capital would pave the way towards further backward integration.
8. In view of the extensive preoccupation with the concept of BMR(E) (Balancing, Modernization, Rehabilitation, Expansion) the following observations are relevant.

Balancing

Much of the imbalance in the integrated textile mills stems from inefficient mill practices and consequent break-downs. Its correction, therefore, must be accompanied by changes in these practices.

The powerloom sector - which was ill-conceived from the start - suffers, among other things, from the almost total absence of warping and sizing facilities. The result is poor weaving efficiency and low product quality.

The extent of the problem is difficult to determine as there is some doubt about the reliability of the data on installed capacity.

Modernization

In the long-term, modernization is the only alternative, but it must be accompanied by a drastic improvement in mill practices and productivity.

Rehabilitation

With most of the equipment in the mill sector either old, of outdated technology, badly maintained, wrong type, wrong size or a combination of these, rehabilitation is not likely to be a cost-effective solution to the local supply of fabric to the RMG sector.

Expansion

With a total production shortfall of some 1.230 million m² of fabric per year to meet the combined requirements of the domestic consumption and the RMG exporters, expansion on a massive scale is needed. To meet alone the portion of the export market which is the easiest to manufacture, would require some 16.000 new looms and one million new spindles, at a cost between \$ 742 million and \$ 1.300 million - excluding building costs.

9. Training at all levels within the industry is of low standard. The installation of new productive capacity will only produce the desired results if accompanied by a comprehensive training effort.
10. The quality of raw cotton currently being processed does not appear to be commensurate with the quality of yarn (and fabric) required.
11. The existing technical education and training institutions are not satisfactorily performing the function for which they were established. Some of them do not even have facilities for training women, thus denying skill upgrading and therefore better employment opportunities for female workers in this industry. There is not much evidence of cooperation with the industry.
12. There appears to be very little cooperation among the ministries, NGO's and employers' associations concerned with the textile and garment industries.

B. Recommendations and Priorities

1. In order to facilitate backward linkages, the Government of Bangladesh should allow importation of grey fabric for processing by existing and new dyeing and finishing mills in order to create a greater local value addition for garment exports. Stocks of imported grey fabric should be allowed to be kept in bond. The practice of importing finished fabrics should be continued until such time as the local industry can match the demand.
2. A Textile Industry Development and Training Organization should be created to organize and provide consultancy and training services, and co-ordinate the efforts of the other industry bodies.
3. Regulations on credit/loans through the commercial banking system should be eased.
4. Cotton purchasing policies should be reviewed and textile mills should be persuaded to use cotton of a higher grade and more suitable staple length for the count ranges being spun.
5. Pricing policies of yarns and fabrics in BTMC mills, which are probably used as a benchmark, should be reviewed.
6. The industry-related technical education and training centers should be revitalized and also be made accessible for women.
7. Employment policies should be reviewed with a view to reducing the number of surplus workers in each mill. The excess should be redirected into new enterprises.
8. The government should address the problem of the mass smuggling of finished fabrics.
9. All future weaving and finishing equipment should be capable of processing fabrics of at least 60 inch widths.
10. Any BMR of the majority of the existing industry should be carried out with the intention of improving and continuing the supply to the domestic market. A few dyeing and finishing plants may be considered suitable candidates for upgrading for exports. A feasibility study should be carried out in each case before any BMR.

II. CURRENT SITUATION

A. Ready Made Garments Export Industry

The Bangladesh ready made garments (RMG) export industry has a very short history marked by tremendous achievement. Established in 1979 with only a very few factory units attempting to break into the export trade, the industry has grown dramatically over the period to 1992. In the last ten years, the value of exports from the sector has increased from Taka 0.14 billion in 1981/82, to Taka 45.026 billion in 1991/92 - a growth of 320 times, making it the most important export industry with well over 50% of the gross national export value.

There are about 1,250 garment factories, employing over 600,000 workers, registered with the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), and an additional 1,000 new factories have received Government approval.*

The main markets for the industry are:

United States of America	50.80%
European Economic Community	42.00%
Canada	3.14%
Other	4.06%

The USA and Canadian markets have quota restrictions, but the EEC, at the moment, does not impose quotas. This market therefore is the one that is growing at the most rapid rate.

While there is a large number of different quota items produced (84) or under consideration (56) for the USA and Canadian markets, these appear to fall into three main product groups:

Woven shirts/blouses/tops
Knit shirts/'T' shirts
Trousers

Exports to the EEC have, to date, concentrated on woven shirts and 'T' shirts, but trousers, blouses, anoraks and track suits are being developed.

* It is a requirement, that to receive quota (for the USA and Canadian markets), and for obtaining Visa/Export License or Certificate of Origin, a manufacturer has to prove membership of BGMEA [Source: Textile Trade and Quota Administration Rules 1991, paragraph 3.(4)(e)].

It is therefore reasonably safe to assume that BGMEA membership represents the total effective garment exporting industry.

Bangladesh is the largest single source of supply of shirts and 'T' shirts for the EEC.

That this industrial sector has demonstrated its capability in export trading is unquestionable. The main reasons for its success appear to be:

1. Introduction of back-to-back letter of credit facility.
2. Introduction of a simplified bonded warehouse system.
3. Low initial capital requirement.
4. Short gestation period.
5. High investment to turnover ratio.
6. Readily available credit.
7. Minimal government interference, as the export industry deals directly with the foreign buyers who exert considerable influence on the sector's performance and product quality.

B. Scale of Fabric Imports for Re-export

It has been very difficult to establish definite figures for the import of finished fabrics for manufacturing into garments for export, but most sources agree that about 97% of the requirement is imported. Many sources of information were considered, and what was considered to be the most likely, the Customs Department was approached. Unfortunately the team's request met with failure, because although the figures probably are available, they are kept in such a way that UNIDO was not in a position to grant resources to carry out the extensive research that would have been necessary.

Several different figures have been recorded at meetings with different organizations. These tend to fall between 700 million meters and 800 million meters. We have had to assume that the term "meters" refers to square meters.

As this is a huge quantity, precision is not strictly necessary. In any case, if the RMG sector continues to expand at the present rapid rate, whatever figure is selected will be out of date in a very short time. We have therefore, for the purposes of calculating backward linkage requirements, tended to err on the high side of the current fabric imports.

The team's calculations, based on a notional 1.52 square meters per garment piece exported (this figure obtained from the other reports studied), gives an approximate figure of 708,610,000 square meters actually exported as garments in 1991/92.

The import requirement to give this figure will depend on the efficiencies of lay-planning and fabric utilization, and so if it is assumed that all lays are only 75% efficient (as quoted by one manufacturer), then there will be an import requirement for approximately 945,000,000 square meters.

If, on the other hand, looms are 90% efficient, then only 787,335,000 square meters will be required.

The true figure will obviously lie somewhere in between, at the moment. For calculation purposes, 950,000,000 square meters has been used as the base figure, and as it is the intention of the industry to improve its performance, a 60 inch nominal width has been assumed. Some of the more popular fabrics include:

- Sheeting
- Twill
- T/C (Terylene/Cotton)
- Denim
- Flannel (Winciette)
- Poplin
- Oxford
- Gingham
- Cotton Knits
- Ramie/Cotton
- Linen/Cotton
- Rayon

Fabric constructions will be discussed in a later chapter.

C. Capabilities of the Local Industries

It has been quite difficult to obtain reliable information on the actual capacity available for all sections of the industry. The spinning capacity is largely either in the BTMC or BTMA sectors. Weaving falls into three main areas:

- BTMC
- BTMA
- Unorganized

This third sector is that in which the handloom and powerloom sectors fall. It is the most contentious and the most fragile. Dyeing and Finishing spreads across all sectors.

1. Weaving and knitting

a. Handlooms

In the absence of other reliable data, the World Bank report indicates that of 514,400 handlooms available, only 327,300 were operational in 1989/90. These looms produced 675,000,000 meters of fabric in that period. If we assume working for 300 days a year, ten hours a day, inserting 60 picks per inch, this gives 0.69 meters per hour per loom, or 1,624 picks per hour, or 27 picks per minute, which is below the figure quoted in the World Bank report (page 64). Shorter working time and fabric requiring more than 60 picks per inch could account for the difference, thereby still giving a credible performance rate.

675,000,000 meters at an assumed average of 85 grams per square meter generates a yarn requirement of 57,400 tonnes. The major proportion of this fabric is for saris and lungis (World Bank report page 67).

However, although this sector may be highly desirable and very important for the domestic market, it cannot be considered as competitive with the established export mainstream as it falls into a different category altogether.

It is unlikely that any upgrading would change the situation.

b. Powerlooms

World Bank report figures show 8,000 looms producing 175,000,000 meters of fabric per year.

This works out at 21,875 metres per loom per year, and if working 300 days on three shifts, gives 3.04 metres per loom/hour at 100% activity.

For a fabric having 60 picks per inch, this represents 120 picks per minute at 100%. Though the machines may be operating 24 hours a day, it is not likely that they could maintain 100% activity, and at best, might achieve 90% efficiency.

This means that the machine speeds would then have to be assumed as being an average across the board of 133 picks per minute working 24 hours per day on 60 ppi fabric.

This production rate might be exaggerated.

Production distribution is given as:

60% Synthetics	=	420,000,000 metres
35% Plain Cotton	=	245,000,000 metres
5% Denim & Warp Knitting	=	35,000,000 metres

The activity level is given as only 25%!

At that level of activity, the spun yarn requirement is given as 9,000 tonnes.

The main feature of this weaving is 'low speed' with unsized yarn. Looms working on synthetics (filament warp and spun weft) were seen working at 75 picks per minute.

Doubt has been expressed in some quarters as to the existence of all the 34,000 powerlooms claimed. If the capacity really exists, it is surprising that so little advantage has been taken of the shortfall in the domestic market.

One reason for the quite poor performance of the sector is the possibility that the yarn quality has been allowed to 'find its level' for the handloom sector, which is less stringent in its requirements, making the yarn less suitable for powerlooms. If the powerlooms themselves are inadequate for unsized cotton yarn, then the answer is self-evident.

The better quality local yarn that would be more suitable for the powerlooms is probably being taken up by the knitting sector.

The way in which the powerloom sector is set up to operate will make it very difficult and costly to upgrade it to export quality standards. Consistency and reliability would also be suspect. The ability to produce repeat orders of considerable quantities is a major feature of fabric sourcing for the garment sector.

Like the handloom sector, the powerloom sector plays an important role in the domestic market, and that should be recognised. However, it is difficult to see how much investment would be needed in order for this sector to play any role in the provision of export quality fabrics.

c. BTMC and BTMA looms

A very small number of the looms installed in the BTMA mills can produce 60" fabric. The poor yarn quality has so far inhibited any acceptable quality fabric production.

The total installation given in the World Bank report and the figures obtained from BTMA and BTMC sources do not agree:

	BTMA	BTMC	TOTAL
World Bank report	2,421	3,262	5,683
UNIDO mission	3,419	3,626	7,045

For these purposes, a figure of 5,000 looms available for production is used to estimate a yarn requirement at 2.68 metres per loom per hour. For a fabric containing 60 picks per inch, this indicates an average loom speed of 106 picks per minute. As actual loom speeds have been observed at between 160 and 180 picks per minute, the efficiency must therefore be about 62% which coincides roughly with World Bank report estimates of efficiencies.

Two factors are very pertinent in the assessment of the loom production in the integrated mills of the BTMC and BTMA. One is the quality of the yarn supply, and the other is the care given to the looms. A major improvement could be achieved at virtually no cost simply by improving these two factors, and there must be some question as to whether the benefits of any expenditure on the improvement of looms without attention to these two factors would have a lasting effect.

The capacity within the BTMA/BTMC sector is relatively small and only a negligible number of looms can produce a minimum 60" finished fabric. The quality could be improved but even if all the looms in this sector were improved to export quality, the domestic requirement would still not be reached and there would be little point in diverting this capacity towards exports only to fill the domestic requirement with new capacity. It is doubtful if there is a need to raise the quality of production to export standards for the domestic market, and it is also doubtful if the cost could be recovered.

It should be stressed that 60" finished fabric is more acceptable in the mainstream of the international standard export garment industries because of better fabric utilization. This is not to say that a narrower fabric of export quality would not be used at the moment, but all future export quality fabrics should be a minimum of 60".

d. Knitting

Knitting is quoted in the World Bank report as being the fastest growing sector. Yarn requirement (30s and 32s) in 1991, for fabrics of 18 inch diameter and over, works out at nearly 19,000 tonnes with a further 14,000 tonne requirement for fabrics up to 18 inch diameter. At that time only 35% was sourced locally, a total of some 14,000 tonnes.

If the development of this part of the industry has continued to increase with a higher proportion of yarn being taken from the more modern local mills, the need may be somewhat higher. How much higher is not easy to estimate. Knitted garment export, however, appears to be thriving which would emphasize the need for more and better yarn produced locally, creating an even greater demand on the local capacity.

Summary of cotton and blends yarn requirement:

Handloom	57,400 tonnes
Powerloom	9,000 tonnes
BTMA & BTMC	11,600 tonnes
Knitting	<u>14,000 tonnes</u>
Total	92,000 tonnes
Plus 2% waste	<u>1,840 tonnes</u>
Grand Total	93,840 tonnes

2. Spinning

As with all other sectors, figures vary on available installation of spindles. Some of the new capacity reported in the World Bank report as due to come on stream during 1992 is in production, but indications of spindles out of commission and reliable efficiencies are difficult to check in order to obtain an overall figure of spindles in production.

Basic facts from the Textile Strategic Management Unit for August 1992 quotes 1,743,000 spindles as having produced 85,000 tonnes of yarn (49.00 kilos per spindle per annum at 65% efficiency).

The Bureau of Statistics quotes 1,708,000 spindles as having produced 50,000 tonnes in 1990 (29.00 kilos per spindle per annum at 39% efficiency). This is too low.

BTMC statistics quote 767,768 spindles as having produced 49,585 tonnes (65.00 kilos per spindle per annum at 86% efficiency). This is too high.

The World Bank report shows:

BTMC - 32,000 tonnes from 773,400 spindles at 41 kilos per annum at 55% efficiency

BTMA - 34,000 tonnes from 633,200 spindles at 54 kilos per annum at 71% efficiency

giving 1,406,600 spindles at 47.0 kilos per annum at 63% efficiency averages.

If these figures are accepted, they show a possible annual yarn output of some 70,500 tonnes, which as a proportion of a 93,800 tonne requirement is 75%. A previous figure of yarn capacity against domestic requirement was quoted as 75%, but if the knitting sector requirement has indeed increased thereby increasing the yarn requirement, the figure of 75% of demand will fall accordingly.

Even if all spindles in the spinning sector were to be brought into service, it is doubtful if they would achieve an effective production balance, even for the domestic market. It is questionable if low cost investment in upgrading spindles would give significant improvements in output even if an improvement in quality were to be gained, and certainly the likelihood of recovery of BMR costs is very low. The question of upgrading to supply the export market therefore does not arise.

The above statements of the capabilities of the three sectors of the industry point to the need for a substantial effort to be made in order to satisfy the needs of the domestic market.

If the needs of the garment export market are added to this, there is a requirement for an enormous increase in capacity.

3. Dyeing and finishing

There are some 133 mechanized dyeing, printing and finishing units in the industry, and approximately 193 semi-mechanized units. Within these groups are contained a number of garment washing units which have neither dyeing nor printing facilities.

The total dyeing capacity is about 420,610,000 metres per annum, and out of this total, 285,330,000 metres are synthetic fabrics which are not of any type currently used by the export garment industry. The fabric printing capability is quoted as 297,800,000 metres per annum, and the yarn dyeing capacity is quoted as 200 tonnes per annum.

Of the 133 mechanized units, local sources have suggested that 29 units may be considered for upgrading to produce export quality fabrics. It was not possible for the UNIDO team to substantiate this claim, but from the mills that were visited, it is quite possible that with a very small investment some units could be upgraded. In many cases, if the quality of the grey fabric were to be improved, then the appearance of the finished goods would be of a much higher standard; possibly even suitable for export.

The diversity of finishes which may be required by the garment exporters is so great that it would require a very detailed feasibility study to determine exactly what the capabilities of the sector might be, and exactly what level of upgrading should take place.

However, the 29 mills identified as being possible candidates for improvement can, between them, process approximately 227,210,000 metres per annum, which falls far short of the export requirement, and once again, if this capacity were to be diverted to export production, there would be a corresponding increase in the shortfall for the domestic market.

A list of potential BMR candidates is given in *Appendix 9*.

4. Accessories

When the Terms of Reference for this study were written, it was assumed that the accessories for export garment manufacture were not sourced locally. That position has changed considerably, and according to BGMEA officers and members approximately 80% of those items which generally are known as 'accessories' - zips, buttons, thread, stiffeners, inter-linings, packaging materials etc, are available locally, and meet the requirements of the international buyers. A considerable amount of backward linkage has therefore already taken place into this export support sector, and doubtless, if left alone, the process will continue.

5. Manpower

a. General

It is extremely difficult to determine exactly how many people are actually employed in the textile industry as a whole because figures for the powerloom and handloom sectors appear not to be accurate.

This is partly caused by the fact that women's role in the handloom sector is unrecognized. The traditional division of labour in this sector excludes women from weaving. They are confined to pre-weaving processing of yarn including warping. Although this role is extremely important, it carried no recognition in the patriarchal culture where men are the operators of looms and have a high status. This affects hiring practices in the industrial textile mills, where, if women are hired at all, they are in the spinning section, sometimes in the blow room.

However, from observations of the team, all mills are overstaffed by a considerable margin. This is probably due to a number of reasons, some of which were voiced during investigations; the remainder observed by the team:

- (i) The government encourages overstaffing in order to create employment.
- (ii) Some managers allow overstaffing to fulfil a moral obligation to provide as much employment as they can.
- (iii) Little or no work measurement is carried out.
- (iv) Labour costs are assumed to be low.
- (v) There is an assumption that "many hands make light work."
- (vi) Management are not conversant with modern industrial practices.
- (vii) Labour unions are a powerful lobby in maintaining of employment levels.
- (viii) The required work ethic and discipline to run a modern industry is not present.
- (ix) Inefficiencies in each process lead to additional staffing in subsequent processes.

Industries such as the textile industry were conceived mainly in Europe, and the industries were developed using European concepts, systems, procedures and society norms. Realistically, if an industry is established elsewhere in the world, then the only way for that industry to perform at the efficiency levels achieved by its creators, is for those same systems, procedures and norms to be applied, and this can only be achieved through the development of human resources.

b. Operators

From the team's observations, too many people are employed in every department of each mill. One weaver to four looms equipped with working stop motions and weaving plain fabrics seems a very low workload. However, even with this very low work load, weavers do not seem able to keep the looms running at optimum levels of efficiency.

Bad warping and sizing accounts for some of the problem, but lethargy and poor discipline also contribute to the overall inefficiency.

Workers seem to absent themselves from their machinery allocations far more frequently than their European counterparts, indicating not only a lack of self discipline and commitment to the work, but also a lack of proper supervision.

Housekeeping, a good indicator of operator competence and training levels is notably absent, even in the more modern mills, and yet housekeeping, the on-going routine of keeping the working area and equipment as clean and tidy as possible, is fundamental to the efficient production of quality materials.

Systematic training of the workforce does not appear to take place and so the bad habits of so-called experienced workers are passed on to new employees.

c. Technicians

Maintenance was seen being carried out in some mills, and undoubtedly, there are mechanically minded workers who have been trained in some way to repair machines. However, maintenance appears to be restricted to repairing equipment which has broken down; little, if any, preventive, planned maintenance seems to be undertaken.

d. Management

Management positions in the industry often appear to be filled by Textile College graduates who can best be described as being educated but not trained. Understanding the processes, even in the finest detail, is not the only qualification required to run a textile mill. Making the processes work by having effective control of all available resources is the most essential requirement in a good manager. Again, even at managerial levels, mills seemed to be overstaffed with managers, assistant managers, technical officers, supervisors, "in-charges", etc. all of whom hold degrees of varying levels - doctors, masters etc.

Management appeared not to be able to control processes in the mills which created a balanced production. Process control is non-existent.

Testing laboratories, even the very latest ones which are very well equipped, do not carry out a regular testing function to monitor processes.

e. Industry support institutions

For the claimed size, or indeed the actual size of the Bangladesh Textile Industry, there are remarkably few institutions to give technical education, training and support. The two technical education and training institutions the team was able to visit were both suffering from the same problems as the industry.

(i) The Textile College

This college, the only university-level college in Bangladesh dealing with textile education, is in a very run down state.

The dyeing and finishing workshop is being equipped with new laboratory-size machinery. The original machinery is still in place, but is full size, and it is doubtful if this has ever been properly used due to the fact that it requires considerable amounts of fabric and liquids if it is to be used to demonstrate a process adequately.

The pattern is the same in the spinning, weaving and knitting departments, although these departments have recently received three brand new items:

- a 24 head Rieter rotor spinner which undoubtedly is the only working piece of spinning equipment - the old ring frames look as though they have not run in years.
- a Sulzer-Ruti high speed projectile loom - again, probably the only fully operational loom in the workshop, and that condition may change when the warp supplied with the machine runs out, because the warping equipment also appears to be non-operational.
- a warp knitting machine - even though there is little warp knitting carried out in Bangladesh.

Whether there is adequate training in the maintenance of these fine pieces of equipment was not ascertained, but if maintenance and repair is carried out to the same standards as the other equipment in the workshops, these new machines are destined to have a short working life.

A UNDP/UNIDO project* to develop and support the Textile College has been running for some considerable time, but unfortunately the overall effects of the inputs applied to date seem to be minimal. The attitude of the college authorities who rejected the proposed 'twinning' arrangement with a UK technical college on the grounds that it was not a degree-awarding institution, is probably a major cause of the college not operating as effectively as it might. There appears to be very little dialogue between the college and industry, which is a cause for concern. Technical institutions cannot ignore the industries they are supposed to serve.

It has been observed that the college has a very limited number of female students, and only at the lower classes. Special efforts would be required to reach more female students and provide career counselling to encourage them. Using the few female students as role models, particularly after they have graduated and are employed, would be effective.

* BGD/85/162 - Strengthening the College of Textile Technology

In spite of the problems at the college, the industry appears to absorb most of the graduates - many of them, particularly in the private sector, at salaries in multiples of the salaries paid by the Ministry of Education to the often overqualified academic staff of the college.

(ii) Textile Industry Development Centre (TIDC)

This Centre, set up and operated by BTMC, is set in spacious grounds outside Dhaka, and with many very good facilities, including accommodation. However, none of these facilities or accommodations are accessible for female trainees.

Unfortunately the levels of activity appear to be quite low.

TIDC relies upon BTMC-owned mills sending students to the Centre. BTMA-owned mills use the facility rarely. Again, little dialogue appears to take place - the staff seemingly content to sit and await the arrival of students.

The textile equipment is old and mainly inoperable, including the UNDP/UNIDO provided** draw frame which cannot be run because other preparatory equipment to provide the basic input materials, was not provided as a government contribution as agreed.

TIDC has a number of well equipped textile testing laboratories which are standing idle; mainly because no one has thought of marketing the services of the laboratories to industry.

If this Centre could be activated and improved both in equipment and staffing, then it could serve the industry well.

(iii) The Bangladesh Standards and Testing Institution (BSTI)

This, the national institution for setting and monitoring industrial standards, is like the other institutions poorly equipped. The buildings themselves appeared run down.

** BGD/84/051 - Private Textile Mills -
Production Management System

Again, UNDP/UNIDO assistance* is given to this organization and the CTA has only been in post for a very short time. The UNIDO team had the opportunity to discuss the institution with him, and had the impression that the development plans could bring about improvements provided the local authorities cooperate fully.

As far as textile standards are concerned, there are enough well equipped textile testing laboratories distributed throughout the industry for some sort of licensing arrangement to be agreed whereby these laboratories could be licensed to carry out tests on behalf of the BSTI.

Again, if this institution is properly developed and managed, it will provide the basis by which much of the industrial performance can be measured.

6. General Conclusions

- a. Fabric production for the domestic market is very dependent on a diminishing handloom sector.
- b. Fabric production for the domestic market is dependent to a lesser extent on an inadequate and problem-ridden powerloom and specialized textiles sector.
- c. Fabric production for the domestic market is dependent to a lesser extent still on loom capacity in the integrated mills.
- d. Yarn quality has degenerated to the level of handloom requirements, thereby affecting the quality of all woven fabric, and also the efficiency levels of the powered looms.
- e. Fundamental mill procedures and disciplines have been ignored.
- f. Institutions whose function is to provide the technology, knowledge of factory disciplines and the working standards, have been marginalised by industry in general and the institutions themselves.
- g. No amount of BMRE on existing old plants, nor any amount of new plants can be expected to operate and thrive under these circumstances.

* BGD/91/006 - Assistance to the Bangladesh Standards and Testing Institution

D. Local Demand for Fabrics

1. Several sources have provided figures for the local demand for fabrics, and there seems to be a consensus of around 1,250,000,000 metres a year. A large proportion of this amount will be in the form of sarees and lungis. The per capita demand is therefore about 10 metres per year.

2. The local textile industry has a large installed capacity on paper. However, figures seem to indicate that it can only produce around 970,000,000 metres per year of generally inferior grades of fabric in varieties of plain dyed, yarn dyed and prints in cotton, blends, and synthetics. The widths of fabrics produced are generally 36 inches, 44/45" and 54/55", with a few looms capable of 60". The shortfall in provision to the local market therefore is in the region of 280,000,000 (square) metres (22.4% of total estimated local demand). In order to satisfy this shortfall, the industry would have to increase its output by 29% - no mean task, bearing in mind the capability of the equipment, management and workforce.

3. This shortfall in the local demand/supply chain is obviously taken up by imports, and as importation of fabrics is strictly controlled, it must be assumed that this shortfall is made up largely of illegal imports. Smuggling must represent the larger part of this considerable amount, and, although the local press reports almost daily that smugglers have been apprehended by special task forces, these cannot be the main culprits. If we assume that the bulk of the shortfall of fabrics for local consumption is smuggled, then this represents close to 23,800 tonnes, which would require a lot of suitcases or small river boats. The only logical route for this amount of goods to follow, is in containers through the ports.

4. Leakage of fabrics (imported by the export garment manufacturers) from the garment industry into the local markets is alleged by some sources to make up a considerable part of the local demand shortfall. If we assume that "leakage" means that the fabric remaining after an order has been cut and sewn, is allowed to find its way from the bonded warehouse on to the local market, duty free, then leakage of excess fabrics will undoubtedly take place. However, as the fabric consumption rates are set by the buyers and buying houses, and only 5% allowed for wastage, part of which must inevitably be needed, large scale leakage probably does not happen. It is, of course, quite possible that some illegal importing of fabrics takes place alongside legitimate imports. In fact this may be the principal route of illegal imports.

If we add the local demand for fabrics to the demand for export quality fabrics to be made into export garments, we reach a figure of 2,200,000,000 metres, which is 1,230,000,000 metres (see note above) more than the local textile industry can produce - even if it was capable of achieving the quality requirement. To meet this total demand would require a massive amount of additional new capacity installed in all three sectors of the industry - spinning, weaving, and dyeing and finishing

NB: The shortfall indicated above is produced by simple arithmetic. If we were to take into consideration that fact that BTMC mills are producing fabrics which are not selling in the local market, and are being stockpiled, then the shortfall is even greater.

III. BACKWARD LINKAGES

A. Fabric Requirements (Woven)

Backward linkage implies linking the garment manufacturing sector with the existing textile industry, i.e. finishing, weaving, and spinning, to take advantage of any capacity which, through BMR might be made available and which is at present not utilized.

This, for reasons already discussed, would not be a viable option in Bangladesh. A local supply of fabrics for the exporting RMG sector must, ultimately, be based on new productive capacity.

To establish the magnitude of the new productive capacity and its financial implications we have taken the 950 million m² figure as a total annual fabric requirement and identified a group of fabric constructions which would be easy to manufacture and which, together, would represent a sizable portion of the total.

Of the 950,000,000 square metres requirement, the following fabric groupings of cotton and cotton blends appear in the World Bank report in the indicated proportions of the six fabric constructions:

1.	7x7/30x35 to	21x21/60x60	21.00%
2.	22x22/64x64 to	40x40/80x80	8.28%
3.	42x42/83x83 to	65x65/150x150	34.00%

i.e. this represents 63.28% of the total = 601,160,000 square metres (466,666,000 linear metres of 60 inch wide fabric).

[Key: warp count x weft count / warp ends per inch x weft picks per inch]

Yarn counts (English Cotton Counts) range from 7s to 65s and fabric weights per square meter, range from 97 grams (2.8 oz per square yard) to 232 grams (6.9 oz per square yard) on a nominal basis.

In Table 1, at the end of the Machinery Requirements section, three requirements are shown having taken the two constructions in each of 1., 2., and 3., above, at percentages of 50/50, 25/75, and 75/25 (to represent different product mixes), in order to give some indication in the overall weight requirement, (should more or less of a heavier fabric be required whilst overall metreage remains constant).

B. Yarn Requirements

Yarn requirements have been based on the same distribution of weight, having taken average counts of 14s in Group 1, 32s in Group 2, and 52s in Group 3.

Table 1 also shows the weight of fabric (therefore of yarn) varying from 76,094 tonnes, required with more of the lighter weight fabric, through to 90,124 tonnes, with more of the heavier weight fabric.

C. Machinery Requirements

The different fabric constructions represent different production rates. If the output in metres is to remain constant at the two extremes shown, then with a constant machine speed, the numbers of looms required would vary from 14,446 to 16,704.

Ring spindle requirements worked out in this way range from 970,007 to 1,148,854.

This means that it would be necessary to more than double the whole of the existing capacity in order to cope with a 63% proportion of the present export requirement. When expanding the capacity, the selection of the newly acquired machinery should take into account the needs of the female workers so that they are not excluded from more technical, higher paying jobs. Machinery which is not gender discriminatory also creates scope for increasing female employment.

Table 1 shows the requirements calculated on fabric and yarn weights; showing numbers of looms and spindles.

Table 1

Group	Construction	Average Count	75%heavy	25%heavy	50%heavy
			25%light A	75%light B	50%light C
1	7x7/30x35 21x21/60x60	14s	--	199,500,000	(33% of total)
2	22x22/64x64 40x40/80x80	32s	--	78,660,000	(13% of total)
3	42x42/83x83 65x65/150x150	52s	--	323,000,000	(54% of total)
Fabric weight (tonnes)			88,357	74,602	81,480
Yarn weight(+2%)(tonnes)			90,124	76,094	83,109
Number of looms			16,704	14,446	15,575
Number of spindles			1,148,854	970,007	1,059,431

1. Unit Balance

In order to give a further dimension to these requirements, units, based on a similar proportional breakdown as above, and capable of producing, say, 15,000,000 metres annually are shown below:

Group 1	33% of 15,000,000	=	4,950,000 metres
Group 2	13% of 15,000,000	=	1,950,000 metres
Group 3	54% of 15,000,000	=	8,100,000 metres

Simple proportions in round figures to produce 15,000,000 metres of fabric per year (1,250,000 metres per month) are:

Ring spindles	27,000
Looms	390

In simple terms, to produce 601,160,000 square metres of fabric per year in order to satisfy only 63.28% of the export garment industry requirement, expressed in mill units producing 15,000,000 metres per year, would require:

- forty new spinning units of 27,000 spindles each, and
- forty new weaving units of 400 looms each.

Dyeing and finishing equipment is much more complicated to calculate and will depend very much upon the ever changing whims of the garment buyers and their consumers.

As there is the likelihood of some BMR taking place in the dyeing and finishing sector, a round figure of 400,000,000 linear metres per year was used as the target throughput.

The UNIDO team's investigations would indicate that because modern machinery operates at such high speeds, it is not economical to build installations for processing relatively small amounts of fabric. A minimum annual throughput, for maximizing the capabilities of modern equipment is suggested as 10,000,000 linear metres, for plain dyes and for denim finishing, and 40,000,000 linear metres for units dyeing and printing.

Three options, covering the different types of product mix are given as suggestions in *Appendix 7*.

In addition, it would appear that there is likely to be a requirement for considerable quantities of yarn dyed fabric, particularly if the RMG industry move further 'up market'. There will therefore be a requirement for yarn dyeing at some time in the not too distant future.

The quantity has been assessed as approximately 100,000,000 metres of yarn dyed fabric, or 21,000 tonnes of yarn (assuming an average weight of 140 grams per square meter).

2 Cost of New Equipment

This will vary according to the makes of machinery. Also the degree of sophistication will influence building, atmosphere control, testing and materials handling equipment.

Tentative enquiries indicate that European/USA-sourced equipment is approximately 25% more expensive than elsewhere.

Opening and sliver preparation equipment is critical to all subsequent operations, which may, in some cases, decide its source; the better equipment coming from Europe.

In round figures, a 27,000 spindle spinning unit up to and including winding, without the costs of building, atmosphere controls, testing and materials handling equipment, would cost approximately:

From Europe/USA	From elsewhere
\$ 13,600,000	\$ 10,080,000

For weaving capacity to match the spinning capacity (and produce approximately 15,000,000 metres per year), there would appear to be three options, giving three price categories. The figures are approximations but looms costs might be calculated from:

1. New single width 450 r.p.m.	=	\$ 80,000
2. New double width 350 r.p.m.	=	\$ 128,000
3. Good used single width 225 r.p.m.	=	\$ 24,000

giving:

1. 200 looms @ \$80,000	=	\$ 16,000,000
2. 129 looms @ \$128,000	=	\$ 16,512,000
3. 400 looms @ \$24,000	=	\$ 9,600,000

Four factors will be critical when selecting the equipment:

- i. Ancillary equipment cost
- ii. Capabilities of the workforce
- iii. Running/maintenance costs
- iv. Rate of depreciation

Additional costs for warping and sizing equipment would be approximately \$936,000 per weaving production unit.

Total spinning and weaving costs to substitute 63.28% of the 950,000,000 square metres currently being imported for making into export garments would therefore be:

SPINNING

	Mills	Europe	Elsewhere
Product mix A (1,148,854 sp)	43	\$ 584,000,000	\$ 433,440,000
Product mix B (970,007 sp)	36	\$ 489,600,000	\$ 362,880,000
Product mix C (1,059,431 sp)	40	\$ 544,000,000	\$ 403,200,000

WEAVING (including warping & sizing)

	Mills	Option 1	Option 2	Option 3
Product Mix A	42	\$ 711,312,000	\$ 732,816,000	\$ 442,512,000
Product Mix B	36	\$ 609,696,000	\$ 628,128,000	\$ 379,296,000
Product Mix C	39	\$ 660,504,000	\$ 680,472,000	\$ 410,904,000

The most expensive scenario therefore would be:

Product Mix A using European spinning equipment and Option 2 weaving equipment @ \$1,316,816,000.

The least expensive scenario would be:

Product Mix B using "Elsewhere" spinning equipment and Option 3 weaving equipment @ \$742,176,000.

It should be noted that these calculations are indicative of the range of costs for substituting 63% of the present import fabric requirements.

DYEING AND FINISHING

The costs in this sector, have been estimated using the quoted options in Appendix 7, and are therefore only offered as a guide. Precise details would only become apparent after a further in-depth study of the industry had been carried out. Three types of installations were considered:

Type A installations, to process (dyed or finished white) 10,000,000 linear metres of up to 160 cm wide fabric in cotton or P/C blends.

Type B installations, to process (dyed, printed or finished white) 40,000,000 linear metres of up to 160 cm wide fabric in cotton or P/C blends.

Type C installations, to process 10,000,000 linear metres of up to 160 cm wide denim (warp and weft shrinking).

Type	Number	Total annual capacity (linear metres)	Cost per mill \$	Total cost/type \$
A	10	100,000,000	8,000,000	80,000,000
B	7	280,000,000	19,200,000	134,400,000
C	2	20,000,000	840,000	1,680,000

Total cost therefore of providing new installations for the processing of approximately 400,000,000 linear metres per year would be \$216,080,000, excluding building costs.

YARN DYEING

As in dyeing and finishing, it is very difficult to assess precisely what quantities of yarn dyed fabrics (and therefore dyed yarn) will be required by the RMG sector for export, but the figure of 100,000,000 metres was taken as representative of the present requirement. Appendix 8 shows a number of options, with appropriate cost breakdowns.

The overall cost of equipment for dyeing 100,000,000 metres, will be between \$15,000,000 and \$26,000,000, excluding buildings and ancillary equipment.

The total general equipment costs for spinning and weaving, dyeing and finishing, and yarn dyeing (for the RMG sector only), will be between:

\$973,256,000 and \$1,558,896,000

3. Cost of BMR(E)

Indications are that brand new plant in spinning might cost from \$326 to \$435 per spindle.

A reconditioned spinning plant of 25,000 spindles with new drafting systems might cost approximately \$112 per spindle (\$80 for plant and \$32 for the new drafting systems), excluding shipping and installation. This represents approximately 30% of the average cost of new equipment. With lower cost of local labour and the production of some parts locally this figure might be further reduced to 20% of the cost of new, i.e. to \$80 per spindle which is taken as a reasonable basis from which calculations could be made.

On the same basis of 20% of the average cost of new equipment \$3,400 per loom is perhaps an indication of 'relatively low cost BMR' for looms.

As the major part of the 1,500,000 spindle capacity and 6,000 loom capacity (BTMA/BTMC) requires some form of upgrading, the overall cost reaches enormous proportions:

1,500,000 spindles	@ \$ 80	=	\$ 120,000,000
6,000 looms	@ \$3,400	=	<u>\$ 20,400,000</u>
	TOTAL		\$ 140,400,000

The cost of BMR for the dyeing and finishing sector has not been calculated, but if the same formula of 20% of new installation costs across the 29 mills identified as possible candidates for upgrading, then the approximate costs would be in the region of \$ 25,000,000.

Caution should be exercised in using this figure, as much of the existing industry has narrower than 60" equipment and therefore this would have to be replaced at new installation costs.

In any case, detailed figures could only be produced after a comprehensive study had taken place.

IV. DEVELOPMENT AND TRAINING NEEDS

1. General

It has been mentioned earlier in this report, that if the right training environment is not created, no amount of investment, either in new machinery and equipment, or in upgrading of existing machinery and equipment, will be effective.

The management of new plants must be fully trained to maximise the capabilities of the equipment and the workforce in order to produce fabrics cost effectively for exports.

The labour to be employed in new installations must be very carefully selected and systematically trained in order to fully utilize the capabilities of the new equipment. It is important that female workers' needs are taken into account when acquiring new equipment. At present, the argument used that women are physically unsuitable to operate big machines is partly relevant to the situation in Bangladesh where the installed technology includes only partial automation of the production line and makes very limited use of hydraulics and other devices to reduce the need for physical strength on the part of the operator.

However, results from a survey done in a textile mill established in 1983 with Chinese aid reveal that the new machinery imported from China was very well suited to women operators. This is because textile workers in China, like in many other countries, are predominantly women. This demonstrated that if textile mills are modernized with machinery which is not gender discriminatory, there is scope for increasing female employment.

The supervisors must be properly trained to ensure that the management requirements are fully understood and carried out, and the workers and machines under their control are fully occupied at reasonably high levels of activity producing quality products.

It could be said that the managers and supervisors should ensure that the required quantities of products are produced to the required quality standards and the required price at the right time and in the right sequence using all the resources and facilities under their control.

In order for this level of training to take place, significant changes must be made in the industry support infrastructure.

2. Improving skill levels at existing installations

If BMRE is considered for the existing installations, and certainly before it is undertaken as a mass programme, there is an urgent need to review the labour situation in all existing textile mills. It has been stated previously that there is an excess of labour within each mill. This is also confirmed by the study into productivity within the public sector, undertaken by consultants of ADB.

Whilst we recognise the fact that reductions in labour forces give rise to socio-economic difficulties, it is an undeniable fact that if the recommendations of the ADB consultants were to be accepted and implemented, both in the public and private sectors of the textile industry, productivity and consequently profitability would be improved dramatically, freeing capital for further investment.

There is no need to dispense with the redundant labour from each mill altogether, because, unlike the jute sector, the textile sector has an urgent need to expand, and so the surplus labour could be redirected into new mills as they come on stream.

If the present levels of over-employment are continued, the costs of new equipment, or the costs of BMR of existing equipment will not be recoverable whilst maintaining reasonable price structures for both the export and domestic markets.

In addition, if the training of the human resources in the industry were to be undertaken, and levels of skill increased at all levels within the industry, productivity and quality would improve yet again. Naturally, such efforts should also be directed to the existing and potential female workforce in order to achieve a more balanced human resource development.

This course of action would require considerably less investment than BMRE, and would probably achieve much better results. Managers should be trained to manage the mills in the most effective way. Practices such as producing large quantities of unsaleable fabrics (BTMC mills) because performance is assessed on quantity produced and not sales, should be discontinued.

The numbers of managers, production/technical officers, supervisors, and other ancillary workers should be reduced in order to remove some of the enormous burden of management overheads. Supervisors need to be taught how to supervise and get the best performances from both the equipment and the workforces under their control, ensuring that processes are properly controlled, and mill disciplines applied.

Technicians and technologists need training, not only in the basics of their work, but also in preventive maintenance and regular spot checking of processes to avoid costly major problems. At the moment, it appears that maintenance is only carried out on broken down equipment, and testing only when a problem arises.

Operators need retraining in housekeeping, basic skill operations, patrolling, quality control/faults identification and procedures. Full time trainers should be trained and set to work in the mills as a matter of urgency. While management is responsible for training in any organisation, practically, in the larger textile mills, it would be better to employ full time training managers/training officers to actually be responsible for the day-to-day implementation of training policies.

Every major industry in the developed world recognises the need for training specialists, and if the Bangladesh textile industry is to improve, then that same recognition is required here.

3. Reinforcement of existing institutions

There are several institutions which should be giving considerable support to the textile industry, but due to a number of reasons, the support is not very effective and in most cases not accessible to the female workforce.

There needs to be a reinforcement and re-alignment of institutions such as:

The Textile Technology College
Textile Industry Development Centre
The Bangladesh Standards and Testing Institution
Training Centres operated by the Department of Textiles.

There seems to be an impression that these are 'stand alone' entities, and yet, to be effective, they should be an integral part of the industry. There should be an intensive two-way dialogue between the institutions and the industry to ensure that the services provided are fully commensurate with the industry's needs.

The establishment of a central body, along the lines of the British Industry Training Board system*, should be considered.

This 'stick and carrot' approach was not liked by some employers, but by and large, it worked, and provoked enough reluctant activity to create a more permanent training environment.

The Trade Unions welcomed the approach because it gave all workers the chance to receive proper job training.

The ITB's targeted particular areas of training activity during each year of operation and gradually moved from the initial levy/grant system of raising funds, to a levy exemption scheme for those companies meeting the training standards.

The Cotton and Allied Textiles ITB, based in Manchester, was one of the first ITB's to be established (in 1966), and was also one of the more enlightened Boards.

Most of the ITB's were phased out in the early 1980's, having achieved their targets, and only a handful remain today.

* NOTE:

The British Government set up the Industry Training Boards - one for each major industry sector- by enacting the Industrial Training Act of 1965. The Act had a limited number of objectives. Principally it sought to:

- ensure an adequate supply of properly trained men and women at all levels and in all disciplines throughout the industry.
- improve the standards of industrial training
- share the cost of training more evenly between companies.

(Prior to the Act, "poaching" of trained labour was rife)

The Act empowered each ITB to raise a levy from its industry, to be paid back in training subsidies to those companies carrying out effective training structured to meet the guidelines set down by the ITB. This meant that the good training companies were rewarded and the 'poachers' were made to pay for the training their labour had received in another company.

V. SUPPORTING POLICY NEEDS

As has been stated elsewhere in the report, one of the reasons for the success of the export garment industry, is the fact that the government has had relatively little involvement in its development. The government should continue its facilitating role to assist this most important sector of the economy to flourish and multiply, and hopefully pull other elements of Bangladesh's industries in its wake.

Importation of grey fabric

It should be quite apparent that the first stage of backward linkage must be into the Dyeing and Finishing sector of the textile industry.

In order for this to be firmly established, the importation of grey fabrics for local finishing must be allowed, whilst allowing the remainder of the RMG requirements of finished fabrics to continue to be imported.

This, of course, must be regulated in order to control imports, and the Import Policy Order 1991-93, paragraph 21 (19) seems reasonable. However, the amendment to this paragraph, restricting imports unless an equivalent amount of local fabric is also processed and exported seems unreasonable, and seems to be an attempt to force backward linkage to materials which are totally unsuitable as export commodities.

It is therefore imperative that the amendment to Import Policy Order 1991-93 para 21 (19) is rescinded as a matter of great urgency.

In addition, whilst allowing the back-to-back Letter of Credit system to continue to fund the imports of grey as well as finished fabrics, some system must be introduced to allow a stock of grey to be held (in bond) by the dyeing and finishing plants.

If this is not done, some of the advantages of allowing grey imports will be lost.

If imports of grey can only be arranged when an order and LC are received from the garment manufacturer, then almost the same lead-time will be required as already exists for the importation of finished fabrics, because the grey fabric imports will have to follow the same route.

If, however, a stock can be held, then the garment manufacturer can be supplied out of stock and his order used to replenish stock.

If this system is permitted, there is a very strong likelihood that this first stage of backward linkage will be started with no commitment of public funds, and the additional income generated could then be used to establish more linkages.

To deny this facility to entrepreneurs seeking to support the success of the export garment industry, on the grounds that protection of the local industry is a pre-requisite, would be counterproductive.

The local industry should concentrate its efforts on attempting to fill the gap in local demand.

Loan facilitation

It is difficult to specify precisely what financial assistance may be extended to the industrial sector. However it is clear that in the past there has been a high incidence of default on loans. This of course is to be deplored, but if backward linkage is to take place, banks should be encouraged to assist genuine entrepreneurs to establish these badly needed industries.

Quota regulations

At the time of writing this report, quota regulations were under review and negotiations were still taking place.

The comments of the UNIDO team on the subject, of necessity, have to be general:

- a. Quota allocations should not penalise the consistent export performer in order to spread the quota across a larger number of new factories to generate more employment.
- b. Quota allocations should be designed as incentives not disincentives.
- c. Quota should be earned.
- d. Companies should be encouraged to be more aggressive in selling into the European markets where Bangladesh has a considerable advantage. This position may not continue, and if the EEC imposes quota in the future, it will be the companies already performing well which will benefit.

Development of existing industry

This is not a simple task, and from a technical point of view, the government should refrain from interference.

However, the privatisation of mills may bring about some improvements in performance, although fears have been expressed that some of the mills to be privatised are only attractive as buildings and land, and not as 'going concerns'.

Duties and tariffs on imported machinery and spare parts should be reviewed in order to give a little more incentive to those who wish to improve the local industry.

Protectionist measures such as increase in yarn and fabric prices should be reviewed because these price increases are only creating a more fertile market for the smugglers.

Tighter controls on customs procedures in order to reduce the smuggling of fabrics, and tighter controls on the bonded warehouses would be the most effective measures to protect the local industry.

New textile industries, oriented towards exports should be encouraged to set up in the Export Processing Zones, thus taking full advantage of any export-related benefits, and minimising import procedures, whilst keeping separate from the domestic supply for the time being.

The Government of Bangladesh should consider establishing an organisation (possibly named Textile Industry Development and Training Organisation - TIDATO), to co-ordinate the development of the industry, and the human resources within the industry. It has been stated earlier, that unless the human resources - both male and female - are trained to the high standards required, no amount of new investment or BMR will have the slightest effect upon the performance of the industry.

The TIDATO would provide:

- * an advisory service to entrepreneurs on requirements for establishing new enterprises.
- * a consultancy/advisory service for any BMR of the locally oriented industry.
- * a training service to determine industry training needs, establish standards of training, develop the most suitable curricula, and ensure that proper training is carried out in a non gender-discriminative way.
- * monitor the progress of the textile and garment industries, and advise government of any changes and priorities.
- * provide the link between the various NGOs and Employers' Associations which are currently all seeking to protect their own spheres of activity.

LIST OF PERSONS METUNDP/UNIDO

R. Larsimont	Resident Representative
G.L. Narasimhan	Country Director, UNIDO
J.T. Hannak	Programme Officer, UNIDO

Ministry of Textiles

Rezaul Hyet	Secretary
M. Maqbul Husain	Joint Secretary
Md. Afeauddin	Deputy Secretary
Akhter Hamid Khan	Deputy Secretary
Mokbul Ahmed Khan	Textile Adviser, TSMU
Mr. Moqubul	Industrial Economist

Bangladesh Garment Manufacturers & Exporters Association

Md. Mosharrat Hossain	President
Md. Fazlul Azim	Vice President
Shah Alam Chowdhury	Treasurer
A.S.M. Quasem	Executive Committee Member
Shamsur Rahman	"
C. Donald Brasher, Jr.	Adviser

Bangladesh Textile Mills Corporation

Maj. A.K.M. Akhteruzzaman	Director of Operations
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Bangladesh Textile Mills Association

Saleh Ahmed	Chairman
M.J. Uddin	Secretary

Bangladesh Special Textiles & Powerloom Industries Association

Lt. Col. Quazi Salimuddin	Director
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The World Bank

Shamsuddin Ahmad	Programme Officer
Charles Draper	Senior Economist

Commission of the European Communities

Zillul Hye Razi	Economic and Information Officer
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Export Promotion Bureau

Abdur Razzak Mondal	Director (Textile Division)
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Textile Industry Development Centre

Md. Aftabuddin Chowdhury	Principal
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College of Textile Technology

Mustafizur Rahman	Principal
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Bangladesh Standards & Testing Institution

Safiqur Rahman	Deputy Director
Hamdy Eldosokey	CTA, UNIDO

Industry and Trade

L. Slee	KPMG Peat Marwick (NZ)
Raphael Halder	Mirage (Bangladesh) International
Saber Shah	Boston Garments
Albert B. Sarker	" "
Rabial Haque	" "
Salim Chokraburty	Ahmed Bawani Textile Mills
Sirajul Islam	Siddique Textile Mills Ltd
Md. Mazaffar Hossain	" " "
Noorul Kader Khan	Desh Garment Industries
Rajan Mahatain	Epic Designs
Mr. Majumer	Chand Textile Mill
Mr. Nitai Pada Das	" " "
Abul Hashem	Padma Textile Mill
Shah Alam	" "
Mansur Murshed	Murshed Fabrics
M. Rahman	Mazim Corporation
Md. Mohiuddin	Unimpex Limited
Mr. Nizamudding	"
Eng. M.A.Taher	Fortuna Group
Tony Hutchins	Casket Ltd (UK)
A. Noakes	Geo & R Dewhurst (UK)
Subid Knight	Union Butterfly s.s.I (Italy)
M.M.Fazlul Haque Arif	Daewoo Corporation
Irshad Hossain	Hossains Ltd

TERMS OF REFERENCE

A detailed diagnostic study is required to identify specifically the action to be taken and to put together a programme of technical assistance oriented towards selected candidate units, capable of reaching the target of export quality yarn/fabric in the shortest possible time. It is understood that the technical assistance will also identify the requirements of BMR for specific units which can then negotiate the necessary financing from available lines of credit. Specifically, the preparatory assistance is expected to:

- a. Review the capability and operations of existing spinning mills to identify those which can produce export quality yarn without major investments and separately those units which can do so with relatively little investment. A similar exercise should also be undertaken for the weaving mills particularly in powerloom and specialised textiles;
- b. Identify the scope and extent of advisory and consultancy services required to design and implement appropriate upgrading programmes for both the above categories targeted to individual candidate enterprises;
- c. Assess training needs at managerial, supervisory and operator levels and suggest organisational mechanisms and arrangements for meeting the same together with all input requirements (e.g. trainers, training aids, etc.);
- d. Advise on the establishment of the proposed National Institute of Textile Training, Design and Research to actively support the local textile sector with a view to increasing its input into the RMG sector and in particular propose institutional modalities of a user sponsored nature for such an institute;
- e. Identify the requirements of market, price, product, production, export and similar information necessary for the textile sector to quickly respond to the needs of the RMG sector without jeopardising its international competitiveness and advise on the establishment of such an information system;
- f. Identify the strengthening that may be required in the Government policy making and monitoring organisations for effective monitoring of the programme including in particular cooperative and collaborative arrangements between the Bangladesh Textile Mills Corporation (BTMC), Department of Textiles (DOT), Bangladesh Garments Manufacturers and Exporters Association (BGMEA), Bangladesh Textile Mills Association (BTMA), Bangladesh Special Textiles & Powerloom Industries Association (BSTPIA), Bangladesh Handloom Board, Bangladesh Sericulture Board and so on;
- g. Identify the accessory industries that are to be developed on a priority basis for linking with the RMG sector and prepare project profiles for the same with a view to activate promotional work for attracting foreign investors;

- h. Examine whether major expansion and/or establishment of new modern textile units is warranted, if so, provide detailed recommendations;**

- i. Review present policy structure to see if it militates against RMG sector building backward linkages with the local industry and provide detail recommendations on the issue;**

- j. Additionally and if an immediate phase of technical assistance is considered desirable, to provide a project document in the UNDP format encompassing technical assistance requirements for all necessary aspects of the programme aimed towards increasing local inputs to the RMG sector.**

REVISED PROJECT STEPS

After studying the Terms of Reference (Objectives) in some detail, it was decided to rewrite these into a simpler format to use as steps to be undertaken for the completion of the project, bearing in mind that as the team had been charged with the need to study the Backward Linkages from the RMG sector to the textile sector, it would probably be a more logical approach to work backwards. The steps identified were:

1. Determine the volume, value and types of fabrics and accessories required by the RMG exporters, and, if possible, determine what proportions are plain dyed, yarn dyed and printed.
2. Analyse and convert the target group of fabrics into yardage (metreage) of fabrics by type, by yarn count, and by weight. This could also then be converted to yarn and fibre.
3. From the results of 2 above, calculate the amount of equipment required in Spinning, Weaving and Finishing to provide the additional increase in capacity for the manufacture of export quality fabrics.
4. Compare the new requirements with the present textile and accessories industries' capability, and conclude how much new equipment will be required, and how much BMR(E) will be required. The overall costs for these items should be calculated.
5. Consider what support services may be required to support the additional capability of the industry - training, design input, standards, consultancy etc., with appropriate costs.
6. Identify any policy constraints and make the appropriate recommendations.
7. Prepare an Action Programme for Investment Programmes, Feasibility Studies, Industrial Institutional arrangements, Training etc., with priorities, time scales and costs.

SOURCES OF INFORMATION

The full list of documents consulted is as follows:

1. Report on the Textile Industries Restructuring Study Phase I (Revised Draft) prepared for World Bank, 9 May 1992.
2. Textile Sector Study - Volumes I & II by Bangladesh Project Management Institute.
3. Prospects of using locally produced materials by the Garment Industry prepared by Economic Department, Bangladesh Shilpa Bank.
4. "Wrong Policy Cripples Textile Sector" article published by Illustrated Newsweekly.
5. Textile Digest 1992 published by Department of Textiles, 30 June 1992.
6. Proposal for Composite Textile Complex by Dosh Textiles prepared by Beacon Consultants, 26 December 1989.
7. Import Policy Order 1991-93 published by the Government of the People's Republic of Bangladesh.
8. Industrial Policy - 1991 published by Ministry of Industries, Government of the People's Republic of Bangladesh.
9. Export Policy 1991 - 93, Ministry of Commerce, GOB.
10. List of Garments (Manufacturers) and Buyers, a Soukhin Production.
11. Guide to investment in Bangladesh by Board of Investment.
12. Textile Trade and Quota Administration Rules 1991 (including Draft amendment) by Export Promotion Bureau.
13. Information for Investors published by Bangladesh Export Processing Zones Authority.
14. Statistical Pocket Book of Bangladesh 1991 published by Bangladesh Bureau of Statistics, Ministry of Planning.
15. Basic Facts about Textile Sector 1981-92 compiled by Textile Strategic Management Unit, Ministry of Textiles.

COMPARISON OF IMPORT & LOCAL FABRIC PRICES

Width	Construction	Type	Imported \$/m	Local grey \$/m	Local Finished \$/m	
Source 1						
45 inch	20x20 108x58	Twill	1.10	1.15	1.61	
45 inch	45x45 110x76	T/C 65/35	0.65	N/A	N/A	
60 inch	20x20 60x60	Sheeting	0.98	0.78 1.03 (58/59)	1.15 1.55 (53/54)	
60 inch	6 oz	Denim	1.90) White	2.70	
	12 oz	Denim	2.10)	
	13.7 oz	Denim	2.35) Black	3.00
Source 2						
60 inch		Shirting	0.82		0.98	
Source 3						
45 inch		White Shirting(TC)	0.71			
		Dyed Shirting(TC)	0.73			

Taking a wide range of local fabric types and averaging the prices, and, from locally produced figures, taking the average value addition from grey to medium dyed fabric, the results are:

Width	Average Grey Price Taka	US\$	Average Value Addition	Finished Fabric Price US\$
38 inch	18.40	0.474	47%	0.70
50 inch	25.66	0.66	47%	0.97
60 (59)inch	32.22	0.83	47%	1.22

In every case (where it has been possible to compare), local fabrics are more expensive than imported fabrics, and do not match imported quality, or desired widths.

PRICE PER METRE (TAKA) - 38" width

HILL	CONSTRUCTION	32x32	32x32	40x40	32x32	32x32x2x32	32x32x2x32	40x32	32x40	32x32
		64x68	68x60	72x68	60x56	60x62	64x64	68x56	68x60	64x64
1	Ahmed Bawani	19.24	18.83	21.83						
2	Bangladesh Textiles	-	20.76	-	18.03					
3	Chitta Ranjan Cotton					18.49	19.90			
4	Dhaka Cotton Mills				18.05					
5	Khulna Textile Mills				17.51				18.84	
6	Lasmi Narayan Cotton							18.66	19.24	
7	Meghna Textile I				18.05					19.86
8	Meghna Textile II		20.76							
9	National Cotton									18.96
10	N.R. Textile									
11	Sharnin Textile									
12	Sundarban Textile							20.16		20.76
13	Olympia Textile		18.84		17.81					
14	Zeenat Textile		18.84						19.71	
AVERAGE PRICE		19.24	19.61	21.83	17.89	18.49	19.90	19.41	19.26	19.86

-2-

HILL	CONSTRUCTION	32x32	32x32	32x32	32x32	32x32	32x32	32x40	32x32
		60x60	56x52	58x60	64x60	64x62	76x68	68x60	64x60
1	Ahmed Bawani								
2	Bangladesh Textile								
3	Chitta Ranjan Cotton								
4	Dhaka Cotton Mills								
5	Khulna Textile Mills								
6	Lasmi Narayan Cotton								
7	Meghna Textile I							19.24	18.38
8	Meghna Textile II	19.86							
9	National Cotton	18.09	16.08						
10	R.R. Textile	19.41							20.00
11	Sharnin Textile	19.53		18.96	19.81				
12	Sundarban Textile					21.06			20.46
13	Olympia Textile						22.11		
14	Zeenat Textile	18.38							
AVERAGE PRICE		19.05	16.08	18.96	19.81	21.06	22.11	19.24	19.61

PRICE PER METRE (TAKA) - 50' width

CONSTRUCTION	20x20 60x60	32x32 64x56	32x32x2x32 60x58	60x80 68x64	32x32 70x60	32x32 56x60	32x32 46x42	32x32 60x54	32x32 68x60	32x32 68x72	32x32 60x60
1 Ahmed Bawani	29.87	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2 B'desh Tex Mills	-----	24.07	-----	-----	-----	-----	-----	-----	-----	-----	-----
3 Chitta Ranjan Cott	-----	-----	23.63	-----	-----	-----	-----	-----	-----	-----	-----
4 Lasni Cotton	-----	-----	-----	40.84(Saree print)	-----	-----	-----	-----	-----	-----	-----
5 Meghna Tex I	-----	-----	-----	-----	25.87	22.57	19.25	-----	-----	-----	-----
6 Meghna Tex II	31.29	-----	-----	-----	-----	-----	-----	22.86	-----	-----	-----
7 R.R. Textile	-----	-----	20.52	-----	-----	-----	-----	-----	-----	-----	-----
8 Sharmin Textile	30.73	-----	-----	-----	-----	-----	-----	-----	25.56	-----	-----
9 Olympia Textile	-----	22.97	-----	-----	-----	23.20	-----	-----	{24.70}	26.42	-----
10 Zeenat Textile	29.87	-----	-----	-----	-----	-----	-----	-----	{37.34}	26.42	22.97
									(Print)		
AVERAGE PRICE	30.44	23.52	22.08	40.84	25.87	22.89	19.25	22.86	25.13	26.42	22.97

PRICE PER METRE (TAKA) - 60' width

1. Ahmed Bawani	32.74	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2 Zeenat Textile	32.74	-----	-----	-----	-----	31.70	-----	-----	-----	-----	-----
AVERAGE PRICE	32.74					31.70					

COMPARISON OF YARN PRICES

	<u>Count</u>	<u>Imported</u>	Prices in Taka per pound (lb)		<u>Retail</u>
			<u>exBTMC</u>	<u>exBTMA</u>	
1.	10	33.60	28.00	-	-
2.	20	NA	28.00	-	-
3.	30	40.00	-	-	-
4.	32	NA	41.60	-	43.00
5.	40	41.60(Poly)	44.00	-	46.00
6.	45	43.20(Poly)	-	-	-
7.	60	NA	62.40	87.00	83.20
8.	62	93.00	-	87.00	89.50
9.	74	NA	-	95.00	
10.	80	110.00	94.00	110.00	-
11.	82	110.00	-	-	127.00

NB.

Where local mill prices are lower, it should be borne in mind that imported yarns generally are of a superior quality.

OPTION A

APPROXIMATELY 10 MILLION LINEAR METRES PER ANNUM
DYED (OR FINISHED WHITE) WOVEN FABRICS UP TO 160 CMS WIDE
FABRICS ARE COTTON AND POLYESTER/COTTON BLENDS
(OPTIONAL PRINTING FOR POLYESTER/COTTON FABRICS)

	<u>BUDGET PRICE</u>
1. GREY INSPECTION MACHINES (2) <u>180 CMS FABRIC</u>	£ 60,000
2. BRUSH, SINGE, DESIZE IMPREGNATION RANGE <u>180 CMS FABRIC</u>	£ 150,000
3. SLOW ROTATION STATION <u>180 CMS FABRIC</u>	£ 15,000
4. CONTINUOUS DESIZE WASH, SCOURING AND BLEACHING DRYING RANGE	£ 650,000
5. MERCERISING, WASHING AND DRYING RANGE	£ 480,000
6. JIG DYE MACHINES (3)	£ 240,000
7. BEAM OR JET DYE (HIGH TEMPERATURE/PRESSURE) MACHINE	£ 100,000
8. PAD/BATCH DYE RANGE	£ 85,000
9. WASHING, SOAPING AND DRYING RANGE	£ 450,000
10. FINISHING STENTER WITH WEFT STRAIGHTENER AND PADDING MANGLE (DRY/SET)	£ 640,000
11. COMPRESSIVE SHRINK RANGE (ZERO COMMERCIAL TOLERANCES STANDARD)	£ 250,000
12. SELECTIVE SHRINKING EQUIPMENT (FOR PRODUCT FLEXIBILITY)	£ 60,000
13. SPARE RUBBER SLEEVES FOR ITEM 12.	£ 10,000
14. FINAL INSPECTION MACHINES (3)	£ 105,000
15. FILM WRAPPING BASIC STATIONS (2)	£ 5,000
	<hr/>
<u>FINISHING MACHINERY FOB U.K. TOTAL BUDGET PRICE</u>	<u>£3,300,000</u>

ANCILLARY/OPTIONAL EQUIPMENT:-

16.	ELECTRICAL/HOT OIL HEATED TRANSFERPRINT INSTALLATION	£ 120,000
17.	STOCK OF TRANSFERPRINT PAPER/PATTERNS	£ 150,000
18.	BOILER HOUSE INSTALLATION (FOR STEAM)	£ 180,000
19.	AIR COMPRESSOR INSTALLATION	£ 30,000
20.	LABORATORY INSTALLATION (INCLUSIVE OF INSPECTION MACHINERY)	£ 100,000
21.	DYE KITCHEN INSTALLATION	£ 80,000
22.	FORK LIFT TRUCK, HOISTS, BATCH AND FLAT TRUCKS	£ 90,000
23.	ELECTRICITY GENERATOR INSTALLATION (FOR ELECTRICITY FAILURE)	£ 50,000
24.	SMALL MACHINE SHOP	£ 100,000
25.	SERVICE PIPEWORK, ELECTRICAL CABLING, STORAGE TANKS	£ 220,000
26.	ERECTION AND COMMISSIONING OF ITEMS 1 TO 25 INCLUSIVE	£ 280,000
27.	C & F SHIPPING, BUDGET ONLY	£ 300,000
		<hr/>
	ITEMS 1 TO 27 INCLUSIVE BUDGET TOTAL	£5,000,000

OPTION B

APPROXIMATELY 40 MILLION LINEAR METRES PER ANNUM
DYED, PRINTED (OR FINISHED WHITE) WOVEN FABRICS UP TO 160CMS WIDE
FABRICS ARE COTTON AND POLYESTER/COTTON BLENDS

	<u>BUDGET PRICE</u>
1. GREY INSPECTION MACHINES (6) <u>180 CMS FABRIC</u>	£ 180,000
2. BRUSH, SINGE, DESIZE IMPREGNATION RANGE <u>180 CMS FABRIC</u>	£ 180,000
3. SLOW ROTATION STATIONS <u>180 CMS FABRIC</u>	£ 30,000
4. CONTINUOUS DESIZE WASH, SCOUR, WASH, BLEACH, WASH DRYING RANGE	£1,400,000
5. MERCERISING, WASHING AND DRYING RANGE	£1,000,000
6. JIG DYE MACHINES (3)	£ 240,000
7. BEAM OR JET DYE (HIGH TEMPERATURE/PRESSURE) MACHINE	£ 100,000
8. BATCH/DRY/THERMOSOL RANGE	£ 700,000
9. PAD/STEAM DYE AND PAD/BATCH SECTION	£ 280,000
10. WASHING, SOAPING AND DRYING RANGE	£ 600,000
11. PRE-PRINT CLIP STRETCHER WITH STEAM DAMPING PIPES AND DRYING COILS	£ 300,000
12. ROTARY SCREEN PRINTING RANGE, D.A.P. UNIT ENGRAVING AND WASHING EQUIPMENT	£1,000,000
13. PRINT FIXATION STEAMER	£ 200,000
14. WASH AFTER PRINT AND DRYING RANGE	£ 600,000
15. FINISHING STENTERS (2) EACH WITH WEFT STRAIGHTENER AND PADDING MANGLE (DRY/SET)	£1,500,000
16. COMPRESSIVE SHRINKING RANGES (2) EACH TO ZERO COMMERCIAL TOLERANCES STANDARD	£ 500,000
17. SELECTIVE SHRINKING EQUIPMENT (FOR PRODUCT FLEXIBILITY) ONE SET	£ 60,000
18. FINAL INSPECTION MACHINES (8)	£ 280,000
19. FILM WRAPPING BASIC STATIONS (6)	£ 15,000
20. SPARE RUBBER SLEEVES FOR ITEM 16	£ 35,000
	<hr/>
<u>FINISHING MACHINERY FOB U.K. TOTAL BUDGET PRICE</u>	<u>£9,200,000</u>

OPTION B ContANCILLARY/OPTIONAL EQUIPMENT:-

21.	HOT OIL BOILER INSTALLATION	E	100,000
22.	BOILER HOUSE INSTALLATION (FOR STEAM)	E	400,000
23.	AIR COMPRESSOR INSTALLATION		100,000
24.	LABORATORY INSTALLATION (INCLUSIVE OF QUALITY INSPECTION MACHINERY)	L	150,000
25.	DYE KITCHEN INSTALLATION	E	150,000
26.	FORK LIFT TRUCKS (2), HOISTS, BATCH AND FLAT TRUCKS	E	150,000
27.	ELECTRICITY GENERATOR INSTALLATION (FOR ELECTRICITY FAILURE)	E	100,000
28.	MACHINE SHOP INSTALLATION	E	250,000
29.	SERVICE PIPEWORK, ELECTRICAL CABLING, STORAGE TANKS	E	400,000
30.	ERECTION AND COMMISSIONING OF ITEMS 1 TO 29 INCLUSIVE	E	450,000
31.	C & F SHIPPING, BUDGET ONLY	E	550,000
	ITEMS 1 TO 31 INCLUSIVE BUDGET TOTAL		£12,000,000

OPTION CAPPROXIMATELY 10 MILLION LINEAR METRES PER ANNUM
INTEGRATED DENIM FINISHING LINE (TO SHRINK WARP AND WEFT)

1. FABRIC ENTRY, 4 ROLL BRUSH AND BEAT, FLOCK COLLECTION, PAREX SINGE UNIT, WATER FILTER, BEATER UNIT, LIGHT WATER MANGLE, 13M SATURATOR + 10 TONNE SQUEEZE NIP, HEAVY COMPENSATOR, 4 TONNE SQUEEZE NIP, SLIDING ROLLER COMPENSATOR, WEFT SKEWING UNIT, TWO STACK 16 X 800 DRYING CYLINDERS, HYPASET SHRINK UNIT, PALMER DRYING UNIT AND PLAITER
2. SHRINK TEST WASHER/DRYER EQUIPMENT INCLUDED
3. ERECTION AND COMMISSIONING INCLUDED
4. SPARE PARTS INCLUDED

<u>BUDGET PRICE</u>	£ 510,000
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- | | |
|--------------------------------|----------|
| 5. C & F SHIPPING, BUDGET ONLY | £ 15,000 |
|--------------------------------|----------|

ABOVE RANGE WILL PRODUCE THE HIGHEST QUALITY AND BEST SHRUNK DENIM.

IF IN AN ISOLATED FINISHING INSTALLATION
E.G. AT THE DENIM SIZING AND WEAVING MILL,
PLEASE ADD SERVICE PIPEWORK, ELECTRICAL CABLING AT £ 12,000
(STEAM AND AIR ASSUMED TO BE AVAILABLE AT SITE)

YARN DYEING EQUIPMENT

Since there are 100,000,000m (150,000,000m²) of yarn dyed fabric to be processed, the yarn will need to be dyed at some time in the future.

If the industry moves towards improvement by initially addressing the dyeing and finishing sector only, then presumably the yarn-dyed fabric would be imported and the need for yarn dyeing would not exist. This assumption is based on the established fact that the existing spinning and weaving industry cannot produce yarn and fabric of the quality necessary for the export garment industry.

As and when improvements are made in the spinning and weaving sectors and the industry becomes self-contained, there will be a need for yarn dyeing.

Assuming an average weight of 140g/m² then 150,000,000m² of fabric weigh 21,000,000,000g or 21,000 tonnes.

Assuming that 25% of the yarn in yarn-dyed fabrics is white, then 15750 tonnes will require scouring, bleaching and dyeing and 5250 tonnes will require scouring and bleaching only.

The scouring, bleaching and dyeing time (Longclose figures) is 8 hours, whilst the scouring and bleaching only cycle is 4 hours.

SCOURING, BLEACHING AND DYEING

Using 100 kg machines, 3000 kg per day per machine, can be processed and in 350 days 1050,000 kg or 1050 tonnes per machine can be processed.

Hence to process 15750 tonnes per annum

$$\frac{15750}{1050} = 15 \times 1000\text{kg machines would be required.}$$

SCOURING AND BLEACHING ONLY

Since the processing time is 4 hours, 6 batches per day per machine can be processed.

Using 1000 kg machines, therefore, 6000 kg per day per machine can be processed giving in 350 days, 2100 tonnes per machine.

Hence to process 5250 tonnes per annum

$$\frac{5250}{2100} = 2.5 \times 1000 \text{ kg machines are required}$$

i.e. 2 x 1000 kg machines
 and 1 x 500 kg machine

giving a total of 17 x 1000 kg machines
 and 1 x 500 kg machine

The price of each 1000 kg machine quoted by Longclose is \$204,800.
Hence 17 machines will cost \$3,481,600

a 500 kg machine (Longclose) costs \$ 168,000
TOTAL \$3,649,600

These machines can be adapted to take smaller quantities as necessary, provided the machinery maker is aware of these requirements before building the machine and it might be necessary to dye smaller quantities of some shades depending upon demand.

For this reason, Longclose suggest that it might be more appropriate to install a range of machines of different capacities viz 1000 kg, 500 kg and 250 kg.

An alternative suggestion, therefore, is:

12 x 1000 kg machines @ \$204,800 = \$2,457,600
7 x 500 kg machines @ \$168,000 = \$1,176,000
8 x 250 kg machines @ \$136,000 = \$1,088,000
TOTAL \$4,721,600

Obviously other combinations could be worked out depending upon requirements.

YARN DRYERS

For 17 x 1000 kg machines plus 1 x 500 kg machine, Longclose suggest 8 dryers would be required @ \$240,000 each = \$1,920,000.

If a range of sizes of dyeing machines were used as above, then the number of dryers would be

5 x 1000 kg dryers @ \$240,000 = \$1,200,000
3 x 500 kg dryers @ \$211,200 = \$6,330,600
3 x 250 kg dryers @ \$168,000 = \$ 504,000
TOTAL \$2,337,600

The price for dyeing and drying machines, therefore, ranges from \$5,569,600 to \$7,059,200.

YARN WINDING ON AND OFF DYE PACKAGES

Cheese or cone winding as required Ayrton and Co Ltd have stated a price for a 128 spindle machine of \$112,000. The machine is capable of a speed of only 200m per minute, so 11290 spindles would be required or 89 machines at a total cost of \$9,968,000.

If we take Morata figures, a 60 spindle machine capable of operating at 1200m/min and 93% efficiency, 2022 spindles would be required ie 34 machines.

At \$277,008 the cost would be \$9,418,272.

It may be possible to weave from the dye package but if precision wound packages are required, then a further \$9,600,000 (approx) would be required.

Adding these figures together, the machinery cost would range between approximate \$15,200,000 and \$26,400,000.

These figures do not include ancillary equipment such as steam generators, lifting equipment, dye kitchens etc or services, the cost of which would depend upon how many factories the yarn dyeing is distributed over and upon how sophisticated the dye kitchens are. These can range from manually mixed buckets of dye to computerised shade matching and delivery systems.

LIST OF FINISHING MILLS WHICH MAY BE CONSIDERED FOR BMR

The following list of mills which may be considered as suitable for BMR programmes was supplied from industry sources, and does not necessarily indicate that the UNIDO study team would make the same recommendations.

MILL	Annual Capacity(Million mtrs) Dyed & Printed
PRIVATE SECTOR	
1. All-Tex Industries Ltd	15.00
2. Noman Fabrics Ltd	13.51
3. Dewan Textile Mills Ltd	4.30
4. Al-Faruque Textile Mills Ltd	7.20
5. Sidtex Ltd	5.20
6. Rahim Textile Mills Ltd	7.20
7. Chittagong Dyeing, Finishing & Printing Mills Ltd.	15.00
8. Jamuna Textile Mills Ltd	7.20
9. Azmat (BD) Ltd (In EPZ)	15.00
10. Specialised Textile Mills Ltd	5.00
11. Quyum Dyeing & Finishing Mills Ltd	7.20
12. Swapna Textile Mills Ltd	7.20
13. Modern Dyeing & Finishing Mills Ltd	7.20
14. Crescent Textile Mills Ltd	7.20
15. Sarathi Textile Mills Ltd	7.20
16. Lina Textile Mills Ltd	5.00
17. Syntex	5.00

18. Quasem Textile Mills Ltd	5.00
19. Saiham Textile Mills Ltd	7.20
20. Faridpur Textile Mills Ltd	7.20
21. Osman Dyeing & Finishing Mills Ltd	5.00
22. Phoenix Textile Mills Ltd	7.20
23. G.M.G. Industries Ltd	5.00
24. Hossain Textile Mills Ltd	5.00
25. Sun Textiles	9.00
26. H.R. Textile Mills Ltd	9.00
Private Sector Total	<u>200.21</u>

PUBLIC SECTOR

1. Meghna Textile Mills	15.00
2. Ahmed Bawany Textile Mills*	6.00
3. Olympia Textile Mills	6.00
Public Sector Total	<u>27.00</u>

* We were informed from a separate source, that Ahmed Bawany Textile Mills had carried out a feasibility study into BMR of the mill, and had rejected BMR as too costly. From our own observations of this mill, it should not be considered as a candidate for BMR.

Before ANY mills are considered for the quite costly process of BMR, there should be a detailed study carried out.

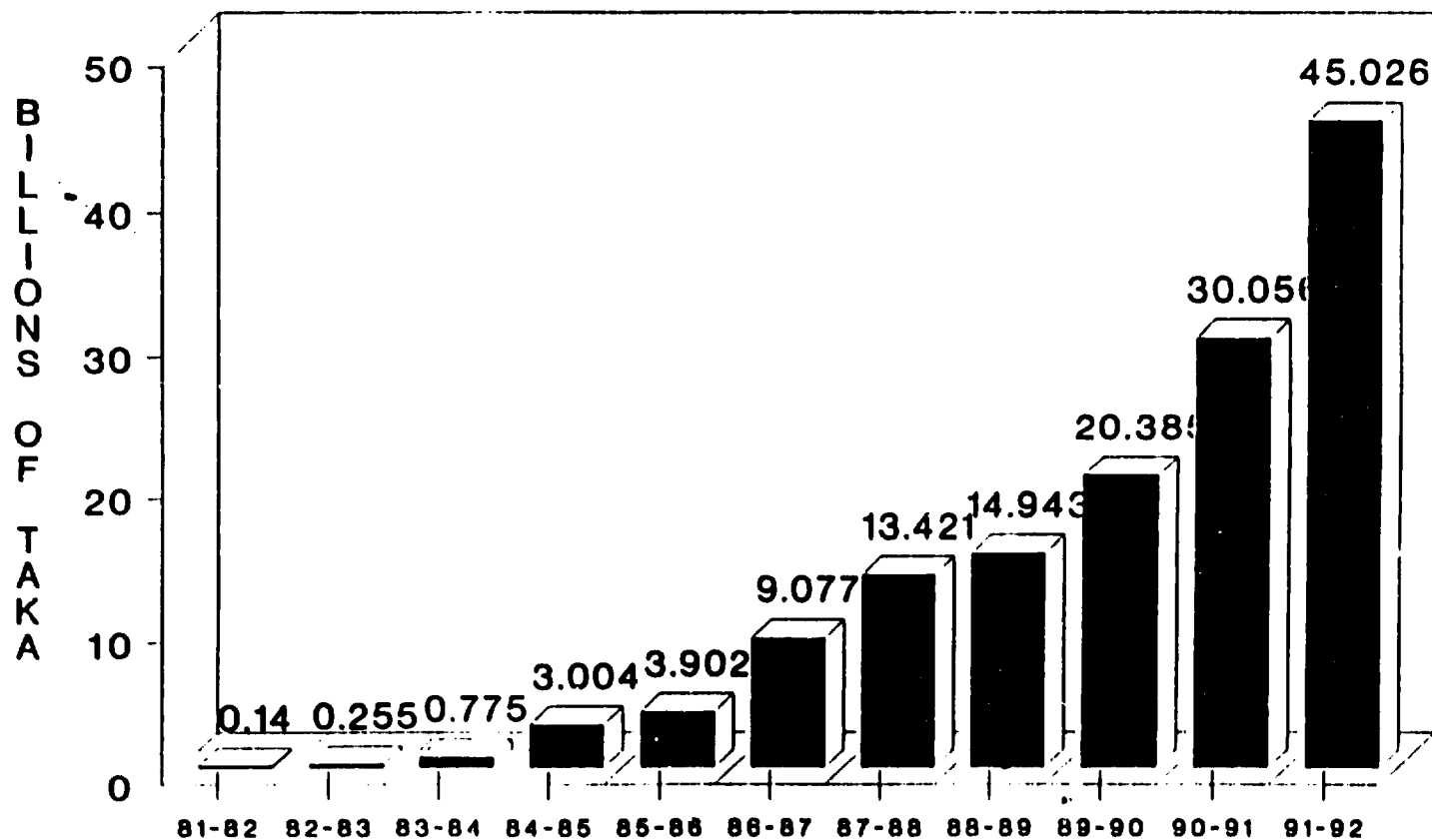
Any mill that is not at present capable of running 60 inch wide fabrics should not be considered as suitable for providing export quality fabrics for the future.

EGMEA STATISTICS

BANGLADESH GARMENT EXPORT THE FASTEST GROWING EXPORT INDUSTRY

- Bangladesh exported 45 billions taka worth of readymade garments in the 12 month ending June 1992.
- Readymade garment exports have increased 120% over the past 24 month.
- Bangladesh has emerged as a major supplier in three very important markets.
- On quantity basis Bangladesh is the :
 - 7th largest exporter to the United States.
 - 10th largest exporter to the EEC.
 - 9th largest exporter to Canada.

BANGLADESH GARMENT EXPORTS THE FASTEST GROWING EXPORT INDUSTRY



SOURCE: EXPORT PROMOTION BUREAU
PREPARED BY: ROTI, BOMEA

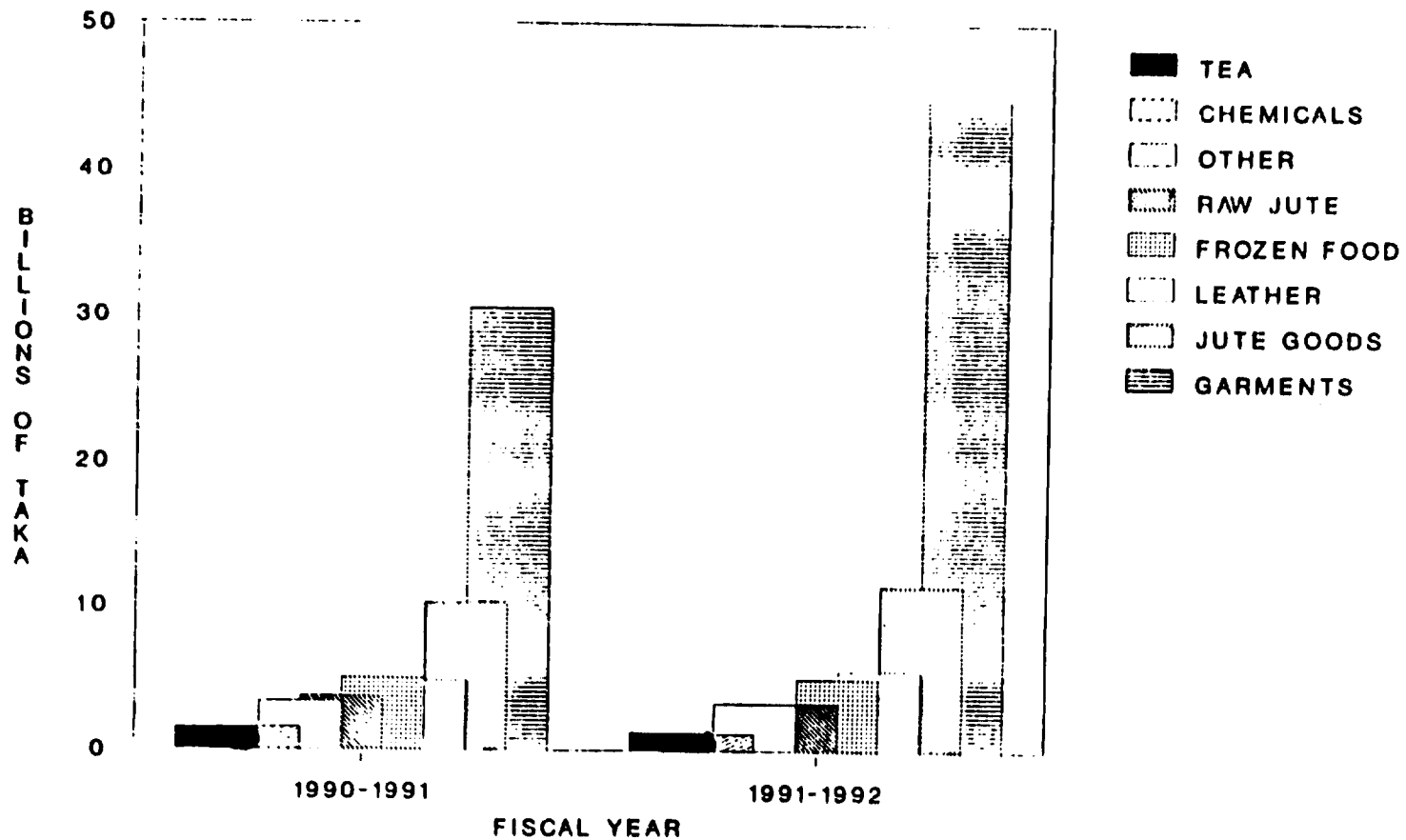
BANGLADESH EXPORTS

GARMENTS-MOST IMPORTANT TO BANGLADESH

- Garments export account for close to 60% of all of Bangladesh's exports and was the only sector with significant growth in 1991-1992 which exceeded its export target by 500 crore taka.
- The export of second largest industry Jute and the fourth largest industry Leather increased slightly in 1991-1992 and the export of third largest sector Frozen food remained the same of previous year.
- Over 600,000 workers are employed in the garment industry.
- Additional economic activities have been generated in the transportation, shipping, packaging real estate and hotel industry.

BANGLADESH EXPORTS

GARMENTS-MOST IMPORTANT TO BANGLADESH

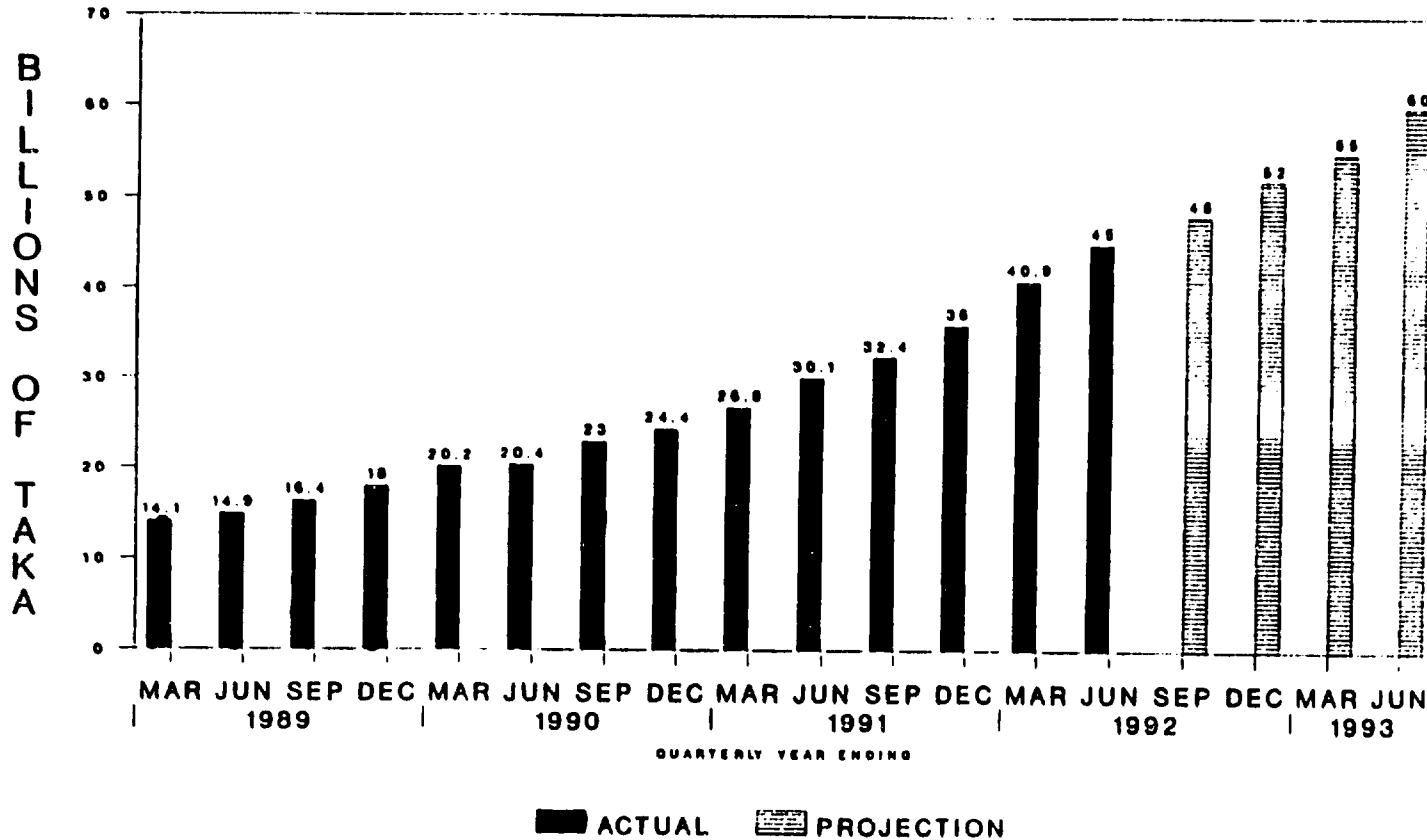


SOURCE: EXPORT PROMOTION BUREAU
 PREPARED BY: RDTI, DUMEA

BANGLADESH GARMENT EXPORTS OVER A BILLION DOLLAR EXPORT INDUSTRY

- There are 1250 (as of Sep. 92) garment factories registered with the BGMEA.
- Recently an additional 1000 new garment factories have received Government approval.
- Garment export is expected to reach 60 billion taka or one and half billion US dollars by the end of the 1992-1993 fiscal year.
- The industry expects to earn 3 billion US dollars by the year 1995.

BANGLADESH GARMENT EXPORTS OVER A BILLION DOLLAR EXPORT INDUSTRY



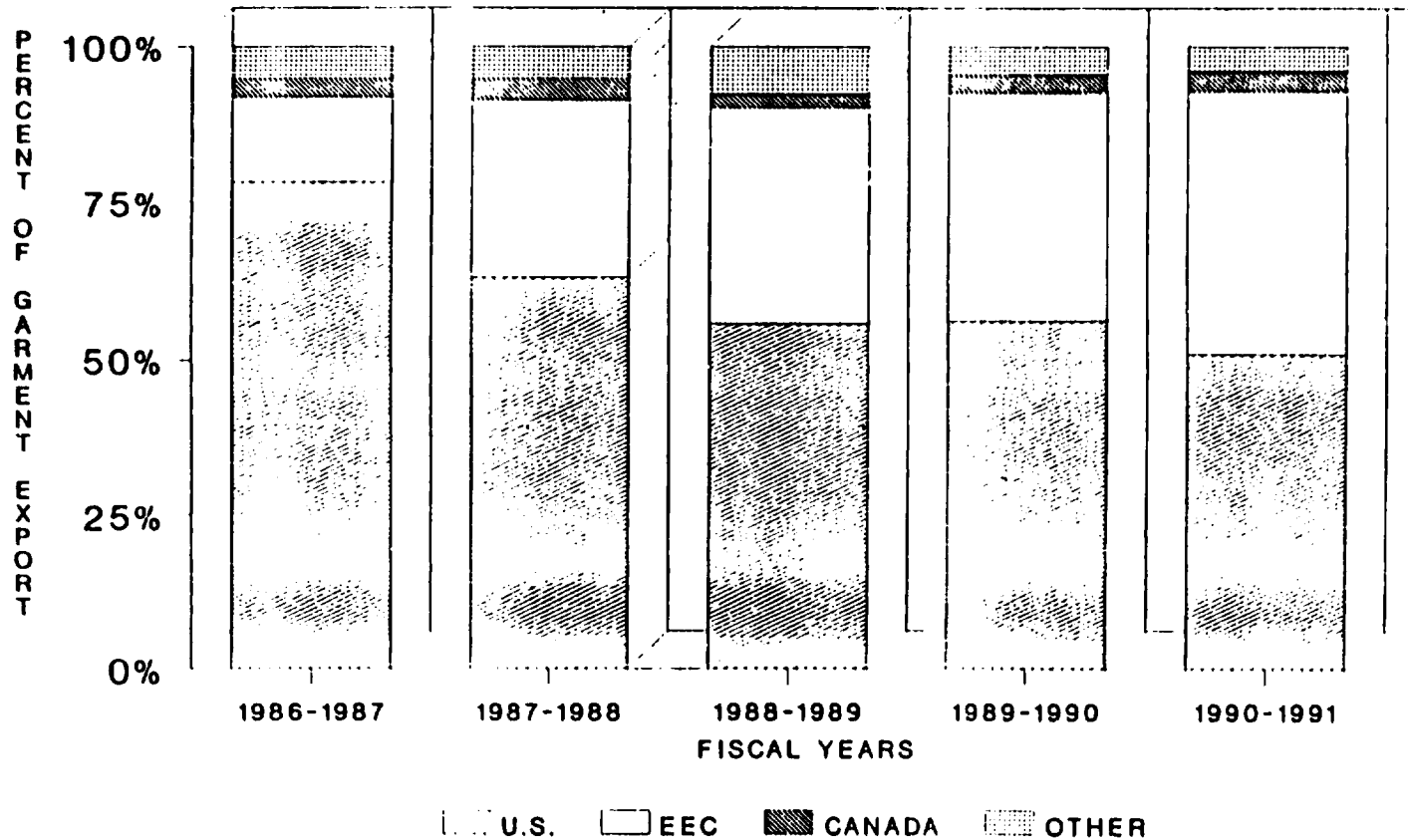
SOURCE: EXPORT PROMOTION BUREAU
PROJECTION: BUMEA
PREPARED BY: NDTI, BUMEA

BANGLADESH GARMENT EXPORTS

MAJOR MARKETS

- The U.S. had over 80% share of Bangladesh garment exports in fiscal year 1986 - 1987. This declined to 50.8% in fiscal year 1990-1991. This decline in market share was due to increased trade to the EEC. Exports to the U.S. increased during this time in value terms.
- The EEC market share increased from 14% in the 1986-1987 fiscal year to 42% in the fiscal year 1990-1991.
- The Canadian share of Bangladesh garment trade has remained close to 3.14% in 1990-1991.
- Other important markets include Norway and Sweden.

BANGLADESH GARMENT EXPORTS MAJOR MARKETS



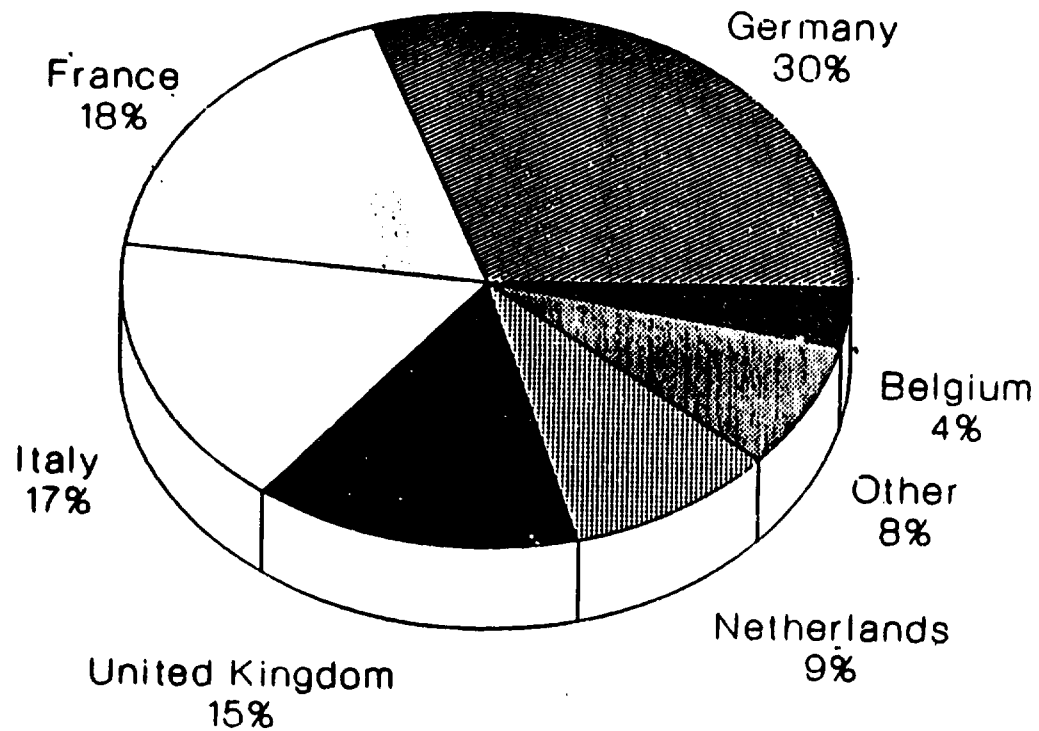
SOURCE EXPORT PROMOTION BUREAU
PREPARED BY RDTI, BOMEA

BANGLADESH GARMENT EXPORTS

MAJOR MARKETS IN EEC

- Exports to the EEC have increased dramatically over the last two years.
- In 1990 - Bangladesh exported 118.6 million pieces of garments to the EEC. This increased by 65% in 1991 to 195.8 million pieces.
- Out of the total exports to the EEC:
 - 30% went to Germany.
 - 18% went to France.
 - 17% went to Italy.
 - 15% went to the U.K.
- Trade growth has been most significant in the case of Italy.

BANGLADESH GARMENT EXPORT TO THE EEC YEAR 1991



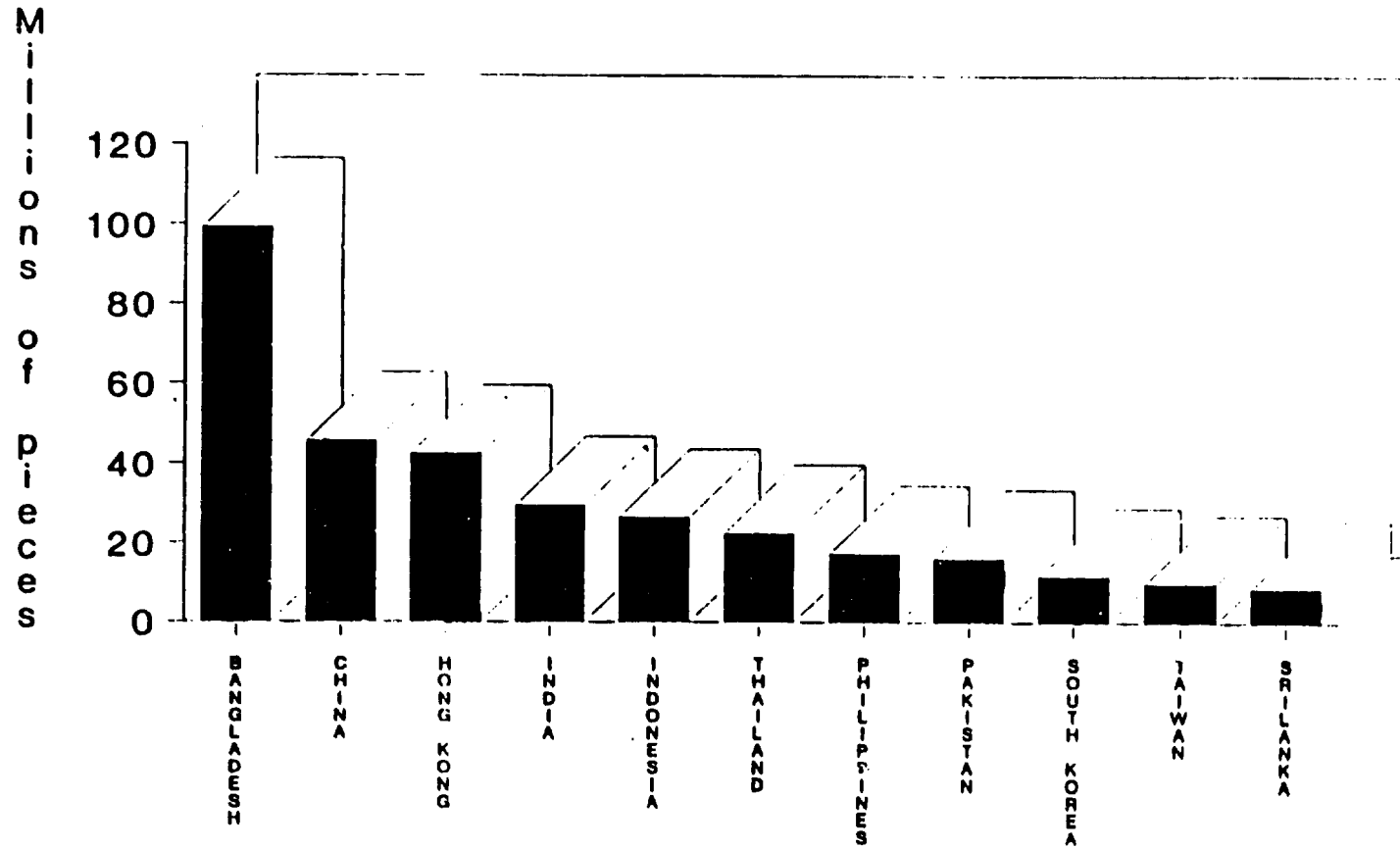
EXPORT OF MAJOR PRODUCTS TO THE EC BANGLADESH IS THE LARGEST SUPPLIER

- In T-shirts, Trousers, Blouse, Shirts and Bed Linen Bangladesh has a share of more than 1% in EEC market.
- Bangladesh is the largest supplier of T-shirts & shirts amongst all the suppliers to the EEC market.
- In 1991 Bangladesh had 14% share of T-shirts & 22.6% share of shirts of total EEC import.
- Export of T-shirt in 1991 has increased about 400% from the export in 1989.
- Export of shirts in 1991 has increased about 220% from the export in 1989.

T-SHIRT EXPORT TO EEC (CAT - 4)

BANGLADESH - THE LARGEST SUPPLIER

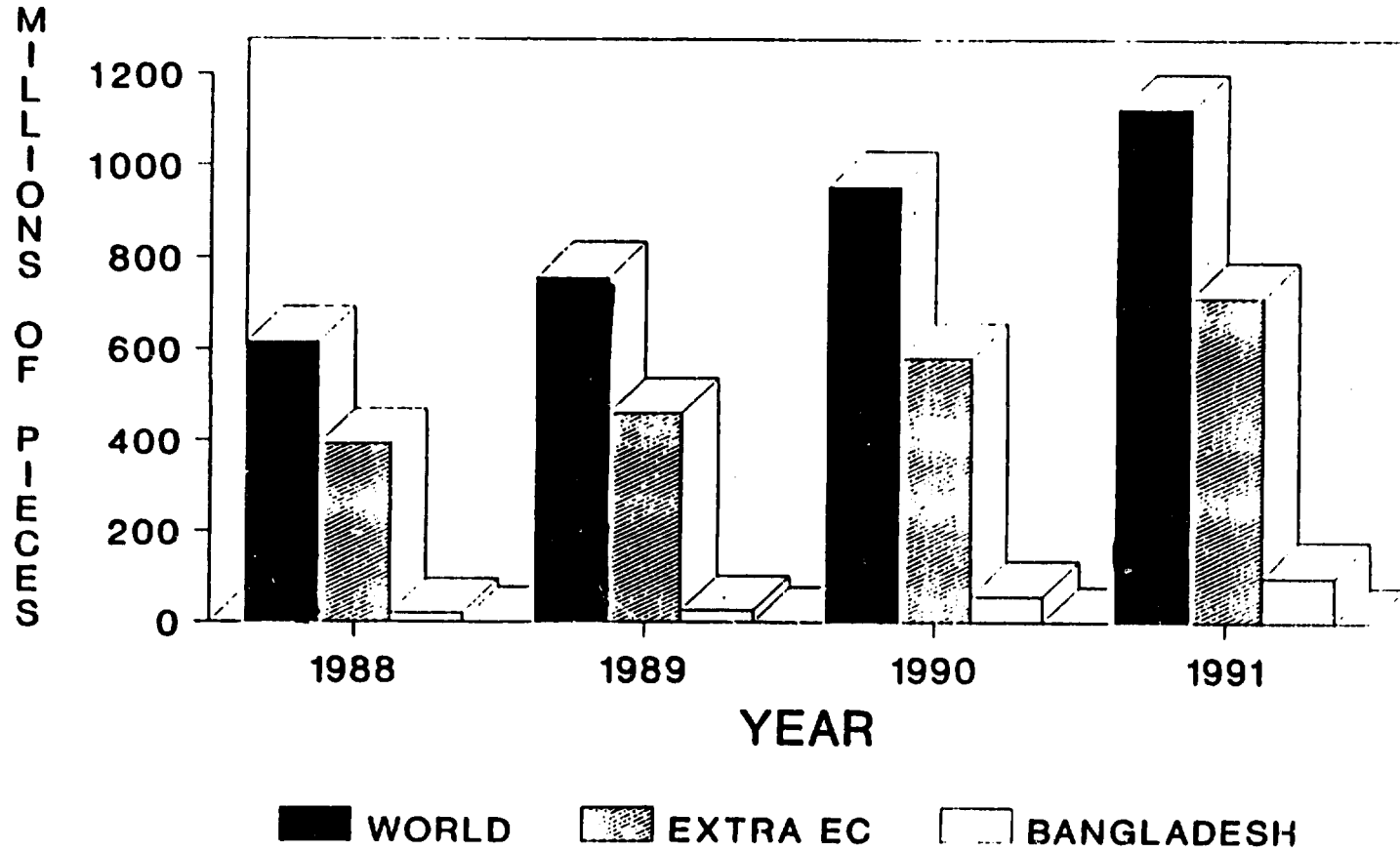
(1991)



Prepared by: RDTI, BOMEA

T-SHIRT IMPORT BY EEC

1988-91



PREPARED BY: RDTI, BGMEA

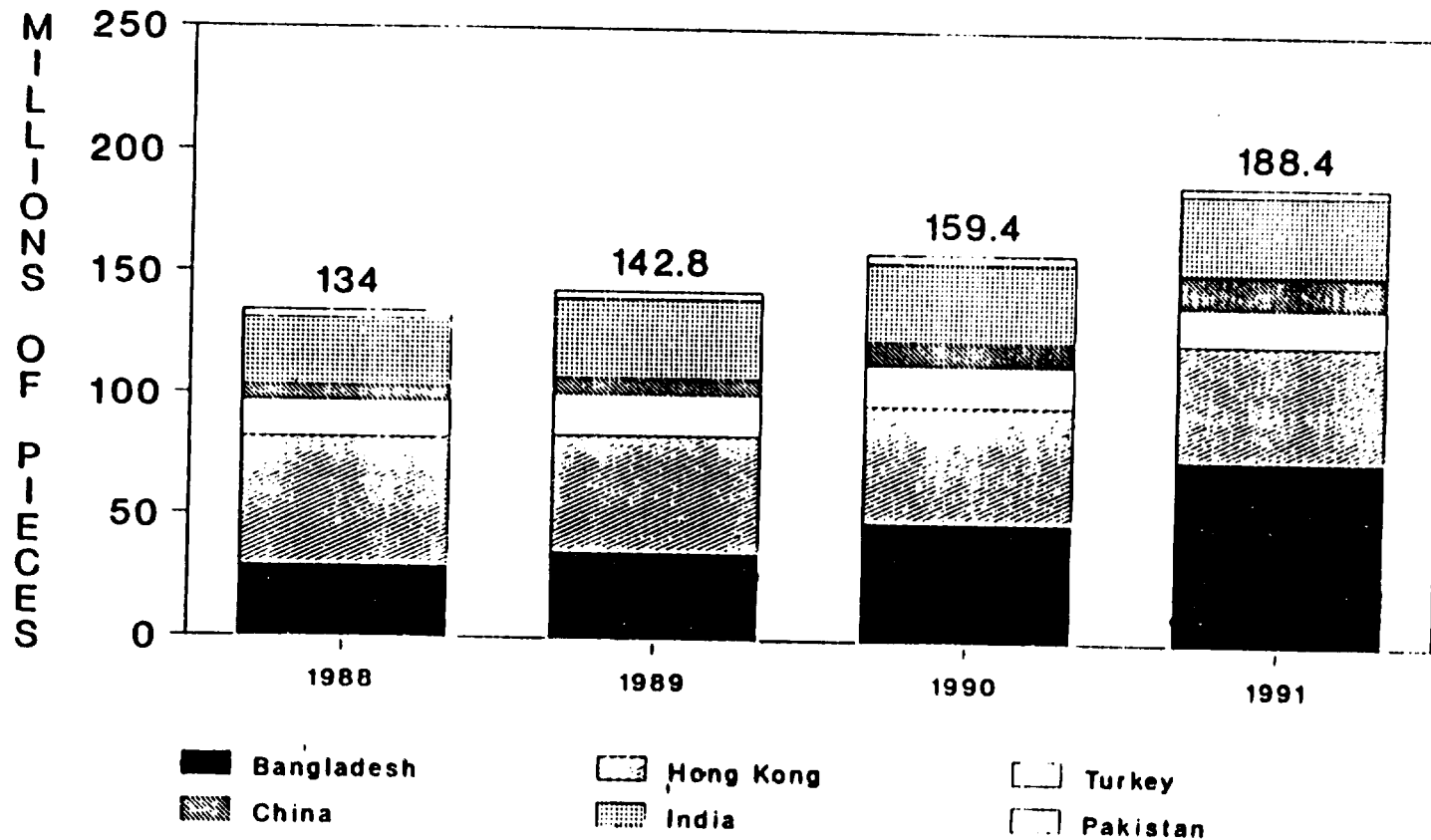
EEC SHIRT IMPORTS

BANGLADESH - THE LARGEST SUPPLIER

- 57% of the EEC shirt imports is sourced from six countries. The rest of the trade is sourced from over 40 additional countries.
- With 22.6% of the import market in 1991 Bangladesh was the largest exporter of shirts to the EEC.
- EEC imports of shirts increased by 86% in 1991 compared to 1990. This trade increased 74.2% in 1990 compared to 1989 and is expected to increase further in 1992.
- Bangladesh has begun to develop fabric for the T-shirt industry. It is estimated that over 50% of the T-shirts will be made from Bangladeshi fabrics by the end of 1992.

EEC SHIRT IMPORTS

BANGLADESH - THE LARGEST SUPPLIER



SOURCE: OFFICIAL EEC IMPORT DATA

PREPARED BY ROTI, DOMEA

U.S. IMPORTS OF GARMENTS

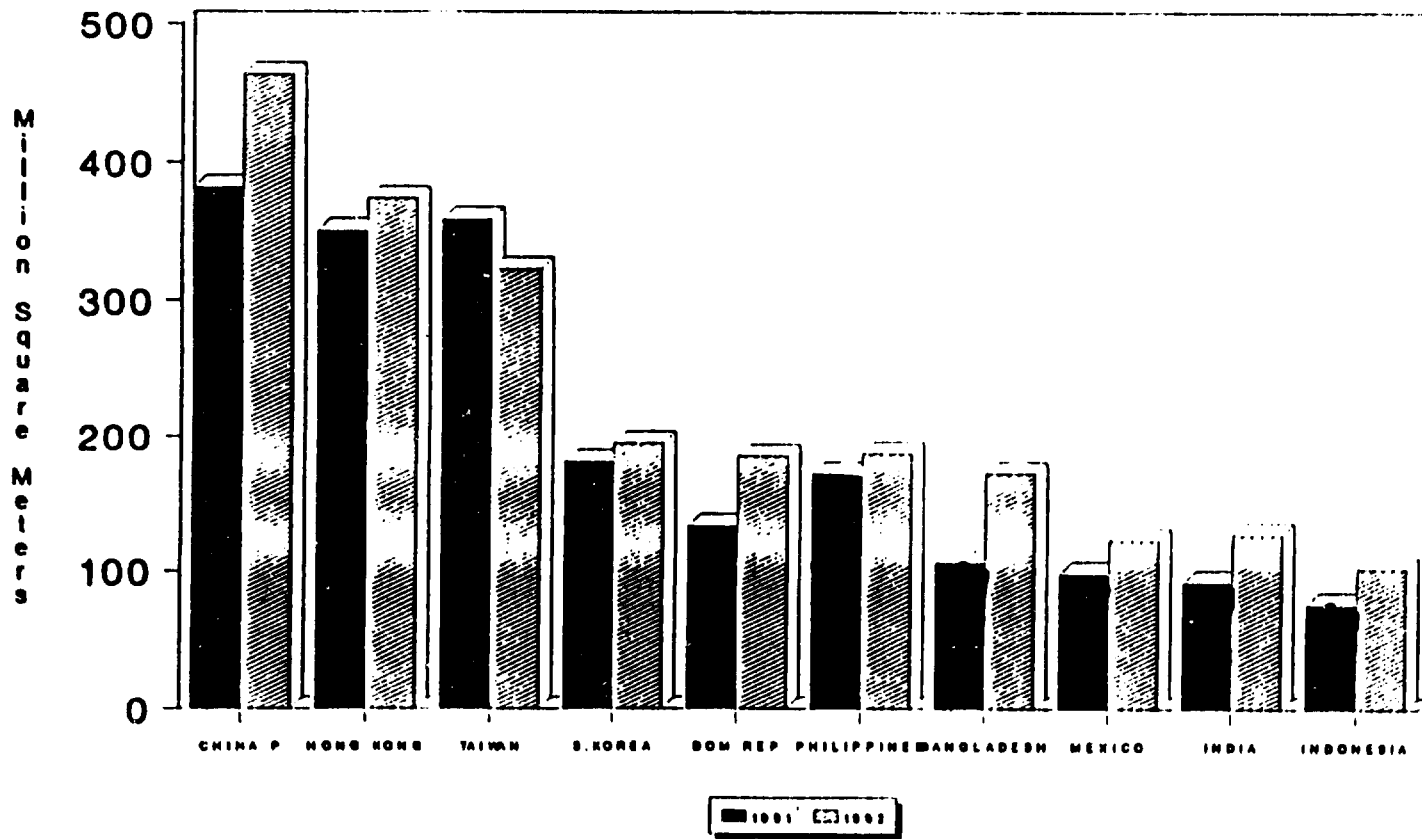
BANGLADESH - THE 7TH LARGEST SUPPLIER

- Bangladesh is the 7th largest exporter of garments to the United States.
- For January to June, 1992 Bangladesh has 5% of the U.S. apparel market on a quantity basis and 2.83% on a value basis.
- Bangladesh is a major exporter of the following products to the United States:
 - Woven shirts 46.4 million pieces
 - Knit shirts 21.4 million pieces
 - Trousers 31.0 million pieces
- There are 84 U.S. garment products. Bangladesh is subjected to quotas on 28 products. There are 56 more products where trade is developing.

US GENERAL IMPORTS OF APPAREL

TOP 10 SUPPLIERS

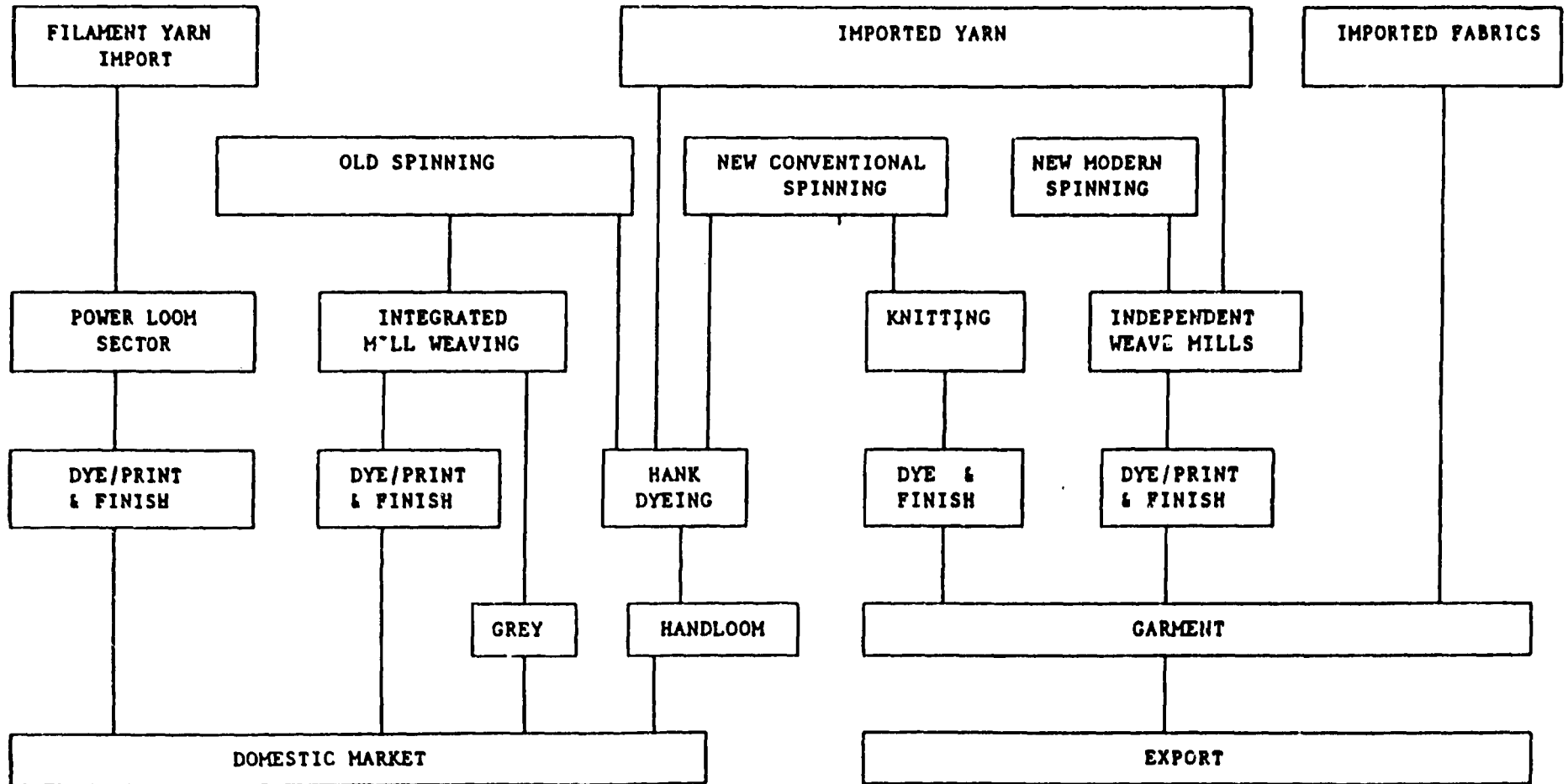
JANUARY-JUNE



Source: US Department of Commerce.
 Prepared by: NDTI, COMEA

BANGLADESH TEXTILE INDUSTRY: CURRENT STRUCTURE

REPORT ON THE TEXTILE INDUSTRIES RESTRUCTURING STUDY - PHASE I (WORLD BANK)



REPORT ON THE TEXTILE INDUSTRIES
RESTRUCTURING STUDY - PHASE I

EXECUTIVE SUMMARY

1. **Purpose, Scope and Approach**

The Textile Industries Restructuring Study, Phase I (TIRS-I) has analyzed conditions, structures, capabilities, problems and potential of Bangladesh's many-faceted textile sub-sector. Its purpose is to suggest reforms, restructuring and other measures to increase the efficiency, productivity, viability, and profitability of the several industries concerned. The long-range goal is to increase these industries' collective contributions to Bangladesh's economic development, including enhancement of employment generation, net foreign exchange earnings, and investment in the modern industrial sector.

The TIRS-I team - a group of international and local experts assembled jointly by the Government of Bangladesh and The World Bank - visited more than 40 textile production units of various types, a dozen trade associations, and all relevant government agencies, and also surveyed a large additional number of units by questionnaire. As the first of an intended two-phase study programme, it has used the information gleaned to outline and integrate a wide range of issues affecting the sub-sector's problems and prospects, rather than dealing in depth with any one of them. The issues are grouped into five broad categories covering:

- organization, ownership and employment issues, including past and prospective privatization;
- production and technology conditions in the several industries comprising the sub-sector;
- domestic and export market opportunities, including backward linkages for the RMG export industry;
- public finance issues concerning the large and unprofitable BTMC and unresolved debt of privatized firms, and
- the assistance policy regime which has had prodigious influence over the sub-sector's uneven development.

Following a brief introductory chapter, broad analyses of the issues in these five categories are presented respectively in Chapters II - VI of the report, along with the team's findings and proposals for technical and policy reform in each area. The main conclusions and recommendations are summarized in the final chapter (and briefly below), constituting a proposed Action Plan which features both short-term measures and issues to be examined in greater depth in a second phase of the programme (TIRS-II).

2. Organization and Ownership

The Ministry of Textiles involves itself too directly in the day-to-day operations of the BTMC, which has an adverse effect on the latter's management influence and performance, as well as mill operations. The atmosphere between the Ministry and the BTMC, often charged and acrimonious, is not conducive to smooth functioning of public sector operations. The bureaucracy in both agencies is generally inertial, unmotivated, reticent to make decisions and, at times, self-serving. Public mills have limited autonomy and responsibility over operations, personnel matters, and even production decisions. Private mills are generally more efficient, better managed, and more profitable, but the margin is often not great. Moreover, several of the largest units have become dependent on unsustainable trade policies while some are plagued by debt stemming from their management by BTMC prior to reprivatization (see below). The labour force is fairly experienced, but highly politicized and undisciplined, especially in the present and former public mills. Labour productivity is poor, although low wages tend to balance this in terms of international competitiveness. Wage policies tend to be promulgated through the medium of political speeches rather than face-to-face, labour-management negotiations. Labour unrest is the over-riding political consideration in any discussion about privatization or reform in the industry. The Government recently made concessions to the labour movement that cast doubt on its political will to privatize failing mills and otherwise to promote reform packages and private sector development forcefully.

Ministry of Textiles interference in BTMC operations should be minimized, with the more commercial operations of the Ministry reabsorbed back into the Ministries of Commerce and Industries. Eventually, both the Ministry and the BTMC headquarters operation should be eliminated. All public sector mills should be privatized within 3-5 years, employing a variety of privatization techniques and methods, including employee stock ownership, selling of shares, spinning off potentially profitable arms of state mills, etc. In the meantime, as transitional steps, public mills should be given more autonomy and responsibility; and experimentation should be made with management and performance contracts, which could include incentive programmes for equity acquisition and bonuses based on sustained profitability. Public or private mills that are not viable should be closed down. BTMC's Sales and Display Centers network, which now makes a modest profit, should be privatized, selling individual shops to small investors. The Government should design and implement a widespread, objective, non-polemic programme of public education to increase awareness of the nature, goals, and benefits of the government's privatization effort. Wage policy should be taken out of the political arena to the extent possible, returning labour-management negotiations to the parties directly involved in the mills. Wages should be geared to productivity. Any retrenchment should be run in parallel with retraining and attractive severance programmes.

3. Production and Technology

Bangladesh's textile mills generally suffer from a lack of new investment to replace old and irretrievable outdated machinery, conventional technologies and methods, low labour productivity and overstaffing, low grade raw materials, poor quality yarns, inadequate supply of skills, and serious discontinuities of electrical supply. Across the board, it operates well below international standards. Many mills, both public and private, have little or no chance of catching up technologically in an industry where change and innovation is extremely rapid. Production priorities in public sector mills stress attaining bureaucratically arrived at quotas, rather than meeting market demands. Public mills, emphasizing quantity over quality, are regarded as production units and employment stations, not sales or profit centers. Some mills in both sectors are no longer viable as commercial operations. On the other hand, a few mills which have both new machinery and good technology are prospering.

In general, the spinning industry about breaks even in the aggregate, though there are many examples on both sides of the ledger. Weaving sustains losses in the integrated mill and powerloom industry, despite inherent problems and lack of support from the protection regime, fares remarkably well. Knitting, finishing, and other specialized textile sub-sectors are areas of varying profitability, with good prospects for further growth if certain basic shortcomings are overcome and technical assistance is provided. Bangladesh's greatest success story is the spectacular growth of the RMG industry. Starting from virtually zero a decade ago, more than 950 RMG factories now hire about 400,000 otherwise unemployable women; and export earnings may reach US\$ 1 billion this year.

Major steps must be taken to increase quality in yarn and fabric production, both in modernizing the process and improving the end products. Such improvement is essential in spinning, weaving, knitting, and finishing operations. Piecemeal investment and BMR will not suffice - in fact may be counter productive. The emphasis should be on building new mills, with up-to-date equipment, rather than on rehabilitation. Some of the better existing buildings could be used in the transformation; and many of the mills possess excess land. The main problem is hopelessly antiquated machinery that cannot be rehabilitated to bring the industry up to international standards and make firms competitive. A modest BMR programme might be considered for a few mills, just to enable them to compete more efficiently at the lower end of the domestic market. Assistance to improve and expand knitting and fabric processing and finishing operations should be seriously considered as these industries have good potential for expansion and profitability.

4. Markets and Linkages

The Ministry of Textiles and the BTMC have no recognizable strategy. The public sector has not fared well in the increasingly competitive market atmosphere spawned by privatization and a globalized economy. Textile mills have the capacity for increasing their share of the less expensive areas of the domestic textile market, but have little knowledge of how to compete internationally. The RMG industry sources only about 3% of its woven fabric requirements from local textile mills, principally because of poor quality, inability to supply required types, undependable delivery schedules, and relatively higher prices. Buyers usually supply their own in advance from foreign sources. Although some progress has occurred, including in knitwear, the lack of backward linkage between the RMG sub-sector and local spinning, weaving and finishing mills is one of the biggest challenges facing Bangladesh's textile sector.

Mill production, inventories, and prices should be put in line with market demand. Improved market analysis should accompany product diversification aiming at higher value quality goods, and capitalization on open quotas. Traditional distribution systems, long an obstacle to marketing efficiency, should be streamlined. Coordination between RMG and textile sub-sectors, and cooperation between public and private sectors must be improved. The most important move toward increasing backward linkage will be increasing the quality and ready availability of locally produced yarns and fabrics. The attitude and priorities of the industry must be altered to a more export-oriented outlook.

5. Financial Issues

Only five of 42 BTMC mills are showing a gross profit before taxes, depreciation, and interest; but all end up in the red once these factors are folded in. Net worth is negative in many cases. The overall industry's debt burden is enormous. Debt service is skyrocketing. Basically both public and private segments of the sub-sector (excluding RMG) are financed through infusion of public funds. The Government encourages its captive banks to make loans

to mills even when their capacity to repay and even their viability is in serious question. By carrying the debt interest in the current account and turning debt into equity, the government is making the books of BTMC look better than they actually are. Many of the debts, particularly those stemming from the privatization transactions of 1982 are now virtually uncollectible. Private mills are generally in better financial condition than public mills, except for the formerly nationalized mills that were later privatized. The Government's financial support has inhibited entrepreneurial initiative, rewarded failure, tended to penalize success, and generally endangered the viability of the entire industry. Previous studies, evaluations, and warnings regarding industry problems and reforms have not been heeded.

A mill-by-mill restructuring analysis should be made of all BTMC mills; and the assets should be revalued. The aim is to determine accurately their financial condition, along with identify appropriate options for restructuring and potential privatization. Assistance for restructuring of private mills should also be undertaken where necessary and requested. A realistic programme for rationalization of the industry's debt situation should be undertaken, along with measures to insure that future loans are made on sound commercial bases. Very important, a "conditional debt forgiveness programme" should be initiated that gradually writes off non-sustainable debt, based on policy reforms, a stable capital structure, and sustained profitability. At the same time efforts should be intensified to recover that portion of mill debt which can be recovered. A new set of proposals is offered by the team to break the deadlock over the historic debt of the mills privatized in the 1980s.

6. Assistance Policies

The limited progress made on import liberalization over the past five years has left the textile sub-sector relatively untouched, resulting in a group of industries that are over-regulated and over-protected. Treated as import substitution activities without obvious export prospects, they are not competitive internationally, produce low quality goods at relatively high prices, lack incentives for creating efficient operations, discourages new investment, and discriminates in favor of producing for domestic markets rather than export-oriented activities, thereby hindering development of crucial backward linkages. Bans on imported fabrics and high tariffs are often not effective, being easily circumvented by smuggling of quality Indian goods at attractive prices, and leakage from the RMG bonded warehouses. Where it is effective, the protection has been counter productive; it has warded off failure for mills that could survive only with artificial support but at the expense of the sub-sector's healthy development. The mild liberalization that has occurred so far has not had adverse effects. In fact, the industries that have become relatively free of protection and government interference - RMG, handlooms, knitting, and finishing - have been more successful than those which the Government has sought to protect.

The Government should design and implement an integrated set of economic policies and programmes that creates an atmosphere conducive to private sector development, achieving the benefits of a free market economy, and encouraging increased foreign investment. The effort to liberalize trade policy should be intensified. All non-tariff restrictions should be removed, and the tariff rates on fibre, yarn and fabric should be compressed to 10, 20 and 35% respectively in the near future. The medium term aim should be for a flat rate of 15% (about the present average nominal protection for the sub-sector, including RMG), which would enable the various industries to find their appropriate sizes and specializations to conform with the country's comparative advantage and thus optimize growth within a few years. The great diversity of the textile industry may necessitate some variations, but these should be temporary and tied to restructuring programmes. Such reduction in domestic market protection is a necessary but not sufficient condition to enable the sub-sector's export potential to be developed. In addition, immediate improvements are needed in the various schemes for relieving tax and duty on the direct and indirect inputs to export production, and an aggressive exchange policy is required

to replace tariff protection. In these trade regime measures and other policy areas, the emphasis should be on creating (by minimizing the effect of unconstructive Government intervention) a regulatory environment that encourages exports. The TIRS-I team's focus on the trade policy aspects is without prejudice to the importance of other regulatory aspects which deserve urgent action, perhaps after more detailed examination.

7. Sub-sector Development Strategy

Together, the policy changes and direct assistance proposed above provide a package of consistent measures which have three principal objectives as the basis for the development strategy. These are:

- promoting the manufacture of products in which Bangladesh has a demonstrated comparative advantage;
- deepening the industrial base via restructuring of smaller units and expansion of organized industry and development and implementation of programmes designed to improve product quality on a sustained basis; and
- strengthening the technological base via programmes designed to not only improve manufacturing technology capability but also improve product technology capabilities such as product design and material selection.

Protection policy changes are necessary to encourage structural adjustment of the sub-sector and to promote the manufacture of products in which Bangladesh has a comparative advantage. Much of the required reform can be put in place immediately without inappropriately harming industries - i.e. some firms will be able to adjust while others will continue with either unchanged or improved profitability when quantitative import controls are removed and tariffs adjusted to the recommended range for FY93. The agenda for deeper reform of manufacturing protection over the succeeding three years must be coordinated with programmes to encourage growth in technological supply capability, however. The need to coordinate protection reform with growth in technological supply capability emerges because the present poor state of technology and skills gives existing firms very limited capability to respond to changing price signals. The focus must be on encouraging them to develop supply capability and productivity to levels which makes a positive supply response from protection reforms a realistic proposition.

Macro policy initiatives, on their own, cannot achieve desired growth and competitiveness objectives if the industrial and technology base is lacking. The emphasis must be on coordinating macro strategies in the fields of protection and investment with micro strategies in the fields of protection and investment with micro strategies aimed at strengthening productivity and technological capability. Attention needs to be given to firm-level development through better product technology, better product standards and better skills, if the micro strategies are to be effective. Thus it is of the utmost importance to direct considerable effort towards broadening the industrial base of the textile sub-sector via measures designed to restructure the industry - particularly weaving which needs to become much less reliant on small unit production but also generally in developing and implementing programmes to improve product quality on a sustained basis.

8. Proposed Action Plan

The findings and recommendations cited above form the basis for an Action Plan comprising policy reform and TIRS-II, i.e., a proposed three-year programme of financial and technical assistance. The latter would best be provided through a project involving long and short-term consultants, both foreign and indigenous. The study has not addressed the nature and level of financial support which could be provided by the World Bank Group or other donors for the project. Even for its technical aspects, further work will be needed to define the project in detail. The principal functions, structures and needs are outlined in the report, however, and several particular services and activities are cited where they would be critical elements of the programme. The report proposes that project management should report directly to a government-appointed Task Force, which could be expanded to include representatives from the business community and sponsoring donors, but should be as independent as is possible in Bangladesh. The project would field consultants in a range of fields, and would include special units to design and supervise project activities on an on-going basis in several areas: production and technology, organization and management, training, and financial restructuring and debt monitoring.

PROJECT CONCEPT

A. Analysis of the Situation

1. Target beneficiaries and other concerned parties

The main target group for this project is the textile industry (spinning, weaving, dyeing/finishing) in Bangladesh - specifically the segment of it that caters for exports, initially through the garment manufacturing industry and ultimately direct. Several other groups will be concerned with the project: training and service institutions through which much of the assistance will be channeled, financial institutions vetting loan applications from the textile and related industries, and Government planning and policy-making organs. Finally, the exporting garment industry will increase the added value of its products if it, with the project's help, can increase the share of its fabric supply from domestic sources.

2. Problems to be addressed

The central problem that this project addresses is the inability of the local textile industry to supply the exporting ready-made garments sector with fabrics of acceptable quality at competitive prices.

There are several causes for this: the equipment is outdated, unsuitable and poorly maintained; there is excessive utilization of labour which, at all levels, is poorly trained and whose productivity is low; the raw material used is of low quality; there is a significant gap between the local production and local demand for textiles.

As a result, the exporting ready-made garment sector imports virtually all its fabric requirements and thus the net export value of the sector is limited to the labour content. The supply gap in the domestic market is filled with (illegal) imports.

3. Immediate objective of the project

The objective of the project is to support measures that are intended to increase the share of domestically produced fabrics in the garment manufacturing industry.

It has been established that significant investment in new productive capacity in textiles will be needed to supply the exporting ready-made garment sector, and it is essential that, concurrently with the investment, the productivity and the skill levels of the labour force be raised. This the project aims to accomplish by strengthening the role of the existing training institutions, providing consultancy services to entrepreneurs planning to expand and advising the Government at policy-making levels.

The principal outputs of the project will be a strengthened Textile Industry Development Centre (TIDC) and a Textile College, capable of addressing the training and technical services needs of the textile industry in a competent manner, and an industrial consultancy unit capable of assisting entrepreneurs in solving their production problems and advising them on questions related to new investment.

There is not, really, an alternative to the above strategy. A domestic supply base must be developed if the continued growth of the garment sector is to be secured and its vulnerability to changes in the international market place reduced. This domestic supply must come from new productive capacity as the existing textile industry is neither suitable nor sufficient. It is self evident that new equipment must be operated efficiently to provide an adequate return on the investment. This is the central issue that this project addresses.

4. Sustainability of the project's effects

The existing institutions serving the textile industry - Textile Industry Development Centre, Textile College and the Standards Institution, are all well established, functioning institutions but neither the quality nor the quantity of their services measures up to the industry's needs. The basic reason for the shortcomings of these institutions is their lack of contact with the industry. The project aims to change this through direct industry participation in steering the activities of the institutions. This, once accomplished, will automatically ensure the sustainability of the results of the project. A fee will be charged for the services to the industry.

5. Critical assumptions

- a. The Government will take the policy measures that will trigger off backward integration:
 - free import of grey fabric for domestic processing, under the bonded warehouse system.
 - availability of credit for new investment.
- b. The Government will permit direct private industry participation in the affairs of the institutions concerned in this project.
- c. The income from services to the industry can be distributed to those individuals who generate it.

These should be made pre-conditions for the approval of the project.

6. Relevant UNIDO experience

UNIDO has provided assistance* to the textile and jute sectors in Bangladesh through several projects during the past ten years. The impact of these institution-building projects has been marginal: the agreed project concepts were altered, schedules could not be maintained, contact with the industry never materialized as intended, there was extensive staff turnover.

This project, if implemented, must draw from the lessons of these past projects and build into its design safeguards that will prevent similar failures from occurring.

The project was recommended in a World Bank study** conducted in November 1991.

B. Justification

1. Both the Government and the exporting ready-made garments industry are well aware of the necessity of developing a strong raw material base in Bangladesh. There are differences of opinion, however, on how to accomplish that. This project is based on the argumentation presented in the UNIDO study NC/BGD/92/025 and in the World Bank study TIRS-phase I.

2. Modality of financing the project

The project could be partly financed from IPF funds and partly from WB or ADB credits to Bangladesh.

C. Special Considerations

The project itself does not have a direct effect on the employment situation in the country but it will increase the mobility of the labour force.

- * DP/BGD/75/013 - Jute Products Research.
- DP/BGD/79/030 - Central Testing for Jute Goods.
- DP/BGD/80/010 - Assistance to Jute Industry.
- DP/BGD/82/006 - Textile Industry Development Programme.
- DP/BGD/84/051 - Private Textile Mills - Production Management System.
- DP/BGD/85/162 - Strengthening the College of Textile Technology.

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D. Activities and Inputs

1. Technical consultancy and Advisory Division (TCD)

2. Training Division (TD)

Activities:

- Consultancy as required at factory level;
- Curriculum development for existing training institutions;
- Development and monitoring of training programmes to be implemented sectorally and mill level;
- Advice to Ministry of Textiles on textile policies.

Duration: 3 yearsInputs:

- CTA
- Specialist in spinning
 - " in weaving
 - " in dyeing/finishing
 - " in accountancy
 - " in productivity
 - " in garment manufacturing
 - " in training (textiles and garments manufacturing)

Sub-contract: Total 300 man/months of expertise
over 3 years \$ 5,000,000

Equipment: Laboratory equipment and two project vehicles \$ 280,000

Miscellaneous: \$ 20,000

Grand total: \$ 5,300,000