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ESTABLISHMENT OF A CLOTHING UNIT IN THE DEPARTMENT  
OF SUPPLIES TO ORGANIZE AND SUPPORT TECHNICALLY  
LOCAL MANUFACTURE OF SCHOOL AND OTHER UNIFORMS

US/BOT/87/097

BOTSWANA

Terminal report\*

Prepared for the Government of Botswana  
by the United Nations Industrial Development Organization

Based on the work of D.A. Hague  
Chief Technical Adviser

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\* This document has not been edited.

6/1

TABLE OF CONTENTS

	page
ABBREVIATIONS	2
CURRENCY RATES	2
I INTRODUCTION	3
II OBJECTIVES OF THE PROJECT	6
III ACHIEVEMENT OF THE OBJECTIVES	8
IV UTILISATION OF PROJECT RESULTS	10
V FINDINGS	12
VI RECOMMENDATIONS	13
ANNEXES	
1. LIST OF FELLOWSHIPS AND TRAINING COURSES	16

ABBREVIATIONS

P	-	Pula
US\$	-	United States Dollars
UNDP	-	United Nations Development Programme
UNIDO	-	United Nations Industrial Development Organisation
UNIDF	-	United Nations Industrial Development Fund
CDSO	-	Computerised Descriptive Sewing Data
ISO	-	International Standards Organisation
BSI	-	British Standards Institute
JIT	-	Just In Time
CTA	-	Chief Technical Adviser
Lomé IV	-	The latest version of the Lomé Agreement, laying down the rules for trading between African, Caribbean and Pacific states and the European Economic Community
RSA	-	Republic of South Africa
BEDU	-	Botswana Enterprise Development Unit

CURRENCY RATES

Obviously the currency rates have varied over the period of the project. The following list will give some indication.

1.	November 1988	US\$1 = P1.95
2.	February 1989	US\$1 = P1.90
3.	March 1989	US\$1 = P1.98
4.	September 1989	US\$1 = P2.08
5.	March 1990	US\$1 = P1.87
6.	July 1990	US\$1 = P1.83

## I INTRODUCTION

This Terminal Report has been prepared broadly in line with the guidelines contained in the CTA Manual.

Many documentary outputs have been produced during the life of the project and these have recorded the mission to mission progress of the work carried out by the four experts.

Two Project Performance Evaluation Reports have been produced which again have tabulated the progress.

This report will therefore attempt to discuss, in a concise manner, the current state of the project, and the outcomes of the various activities which have been described in other reports.

Observations, findings and recommendations are offered as discussion points at the Terminal Review Meeting and for consideration for future action.

### A Project Background

In his letter of 14 August 1986 to UNDP Gaborone, the Director of Supply succinctly stated the reasons for seeking aid. Briefly, these were:

- to reduce economic dependence on neighbouring states, in particular, RSA.
- to promote local industry.
- to stimulate the spirit of self reliance and self sufficiency.
- to generate and enhance employment opportunities in Botswana.
- to develop available skill.
- to guide the producers and train them in technological disciplines.
- to develop management skill.

Little had been done in the areas identified by the Director, although two surveys of the textile and garment industries had been carried out just prior to his request for assistance.

### B Official Arrangements

As already indicated, aid was requested in August 1986 by the Director of Supply. A preliminary mission, designated UC/BOT/86/296, was sent by UNIDO to Botswana from 31 March - 8 April 1987. During this mission, visits were made to factories and government departments, and a project proposal was formulated. This proposal was subsequently submitted to donors to UNIDF to obtain funding. Eventually, in the second half of 1988, funding for the project was provided by the Swiss Government.

The project became operational in September 1988, even though the funds had not been transferred at that time. It was necessary to start the project in order not to lose the Fellowship opportunities at the start of the Academic Year in the United Kingdom.

The original scheduled start date had been December 1987 for completion by December 1989. Because of the later start, the completion date is now September 1990.

### C Contributions

The UNIDO input to the project was US\$37,000 and the Government inputs have been in kind:

- the recruitment of staff and all employment costs
- office accommodation and facilities
- provision of transport
- provision of local training where necessary
- some equipment

Originally, the Department of Supply had expressed a willingness to supply accommodation for use by the team of experts. This proved to be virtually impossible at the time, due to an acute shortage of housing and a very long list of more worthy applicants.

### D Objectives

The objectives of the project, which are discussed in more detail in Chapter II OBJECTIVES, were aimed at improving the garment industry of Botswana to a point where it could cater for the growing demand for clothing, and assist the development plans of the government to encourage more indigenous entrepreneurs.

It was not considered necessary to change the objectives in any way during the project. In the opinion of the project management, the immediate objective has certainly been achieved. Obviously, the development objective will take longer than the duration of the project to achieve significant results, but already, there are signs that improvements in the capability of the industry to meet the local demand for better quality clothing, are taking place.

### E Training

The majority of the project has been concerned with the training of the Clothing Unit staff and developing them to train representatives from industry. A number of Fellowships were also arranged

and these and a list of training courses are contained in Annex 1.

#### F Recommendations

Several recommendations are made in Chapter VI. In brief, these are:-

1. The Department of Supply should consider concentrating the bulk of the production of government clothing into a smaller number of efficient production units instead of spreading the work amongst the large number of inefficient suppliers.
2. As an alternative to 1, the Department of Supply should consider phasing smaller orders to coincide with the off-season for the production of school uniforms by smaller entrepreneurs.
3. The Department of Supply needs to give some attention to the care and storage of fabrics. In addition, the ordering system, the quantities held in stock and the disposal of non-moving items should be reviewed as a matter of urgency.
- 4 & 5. UNDP and UNIDO should consider providing an extension to the project in order to consolidate what has taken place so far; to provide additional support to allow the Clothing Unit to be divided between Gaborone and Francistown, and to attempt to change the industry over to a system of work measurement based on standard minute values, with a view to improving some of the factories further towards a future export potential.
6. The government of Botswana should investigate the possibilities of encouraging the growth of a Botswana-based textile industry to supply the growing demands of the garment industry, substitute imports, and create a lot of new jobs.

## II OBJECTIVES OF THE PROJECT

In the Project Document, the objectives are stated in the following manner:

- The development objective of the project is to improve the Botswana garment industry's ability to meet local demand for garments. This is in keeping with the country's National Development Plan 1985 - 91 which emphasises the importance of developing the manufacturing sector.
- The project objective (immediate objective) is to strengthen the Department of Supply of the Ministry of Finance and Development Planning in its role of promoting, coordinating and supporting technically, the manufacture of garments by local, indigenous entrepreneurs for the various Government agencies.

Because the government, being the largest purchaser and consumer of clothing in Botswana, this provided the best vehicle for the process of developing technical skills within an embryonic industry, through the medium of government contracts. It was perceived that if government contracts were awarded to small entrepreneurs, and technical assistance given in the execution of the contracts, then the training benefits gained could be applied to all work undertaken by the entrepreneur, whether for the government or for private consumption.

Thus the ultimate (or development) objective was created, which was to improve the capability of the local garment industry to produce good quality garments, on time, and at a reasonable (value for money) price, not only for the government, but for local consumption in general.

The Project Document provides for only a single output to achieve the objectives. This is:

A Clothing Unit within the Department of Supply with a trained staff of 8, capable of:

- identifying the exact clothing requirements of the various Government agencies;
- identifying the items that could be manufactured by the local garment industry;
- determining the fabric requirements for these items;
- sourcing and procuring the requisite material and coordinating its conversion into garments;
- providing technical assistance to the manufacturing units executing the orders;
- providing technical assistance to the manufacturing units executing them by running courses in:-

Garment Production Management  
Pattern Cutting, Grading and Styling  
Quality Control and Inspection  
Production Planning and Control



and short seminars on:-

- Low cost work aids
- Improvement in methods

The activities considered necessary to achieve the output consisted of several missions by four experts, to categorise the assistance required, give training to staff and industry by means of a variety of industry related training courses or workshops, coach staff, produce recommendations for changes/action locally, and arrange external training for selected counterpart staff. The detail of the various activities and expert missions have been recorded in the individual expert's mission reports.

### III ACHIEVEMENT OF THE OBJECTIVES

The Clothing Unit has been created and functions according to the the items listed in Chapter II, plus a few extra capabilities which have been developed during the project.

The staff can now:-

1. Prepare accurate and detailed Specifications for garments, based on client department requirements. These specifications are used as the basis for the checking of manufactured goods.
2. Draft and grade patterns for sample garments. These can now be supplied to industry and so eliminate variation in garments manufactured.
3. Run training courses for participants from industry in:-
  - a. Quality Control
  - b. Improving Productivity
  - c. Supervisor Training
  - d. Pattern Drafting and Grading (Basic)
  - e. Production Planning
  - f. Basic Sewing Machine Maintenance.
4. Follow up into the factories supplying government clothing and check:-
  - a. The quality of the garments before they are delivered.
  - b. The quantities being produced.
  - c. The day to day delivery status of each manufacturer, so that to ensure timely completion of a major contract, work can be distributed to factories capable of dealing with it.
  - d. The suitability of the equipment in use, and arrange for the adjustment or repair of machines as necessary.
5. Operate a Textile Testing Laboratory and:-
  - a. Carry out relevant tests on fabric samples submitted by potential suppliers.
  - b. Submit recommendations (supported where necessary with quantified test results) to the Tender Board and Purchasing Department, regarding the suitability and value-for-money of each sample.
  - c. Test samples from each delivery of fabric to ensure that the correct materials are being supplied.
  - d. Test garments for shrinkage of either fabric or sewing thread.

6. Assist factories by carrying out advisory work especially on the analysis of machine operations. This is done by video recording the operation, analysing the movements, eliminating unnecessary activities, rearranging movements, and then feeding the analyses through the Computerised Descriptive Sewing Data system (CDSO). This then produces a print out with Standard Minute values, thus providing a basis for Productivity Improvement, Incentive Payment schemes, Costings, Improved Methods, Factory Layouts, introduction of new equipment or work aids etc. These latter items are at present outside the scope and the capability of the staff of the Clothing Unit, but the information provided by CDSO analysis allows Factory Management to consider these changes.

In addition the work of sourcing the materials is carried out by members of the Unit staff. During the period of the project, it was realised that the perceived problems of procurement were diminishing and the Assistant Director of Supply (Clothing), Miss C. Mwasi had already created an adequate system, therefore little expert time could be spent on this subject and more on the more technical aspects of fabric testing.

It is possible that the objective could have been achieved by carrying out training, in isolation, only with the appointed Unit staff. The project however has approached the achievement of the objective in a more practical way by training not only the staff, but also representatives from the industry through a series of courses.

In the early part of the project, courses were run by the experts, and staff were included as trainees. Later, staff acted as counterparts and were given specific areas of each course to present. More recently counterparts have run courses with very little supervision from the experts, and now plan and run courses unaided.

Some difficulties were experienced in the early stages of the project because of the low numbers of counterparts, but this was resolved by the beginning of 1990.

To date, some 32 training courses and workshops have been run, in Gaborone and Francistown, involving approximately 152 course days and approximately 1,175 student days. Considering that the training courses were only started in July 1989, the figures above serve to illustrate what has been achieved in only a little over twelve months.

#### IV UTILISATION OF THE PROJECT RESULTS

Prior to the commencement of the project, the garment industry hardly warranted such a title. Basically it was a very fragmented cottage industry of small dress-making units, employing only seven or eight employees each. Some larger units were starting to emerge, but with the same low technical capability as the smaller establishments. The only recognisable system of training was being operated by the BEDU of the Ministry of Commerce and Industry. This appeared to be having little success. Some 'handicraft experts' had been provided by various aid programmes, to work with the Brigades in some villages; again the results were generally quite poor.

The Department of Supply, committed to the Government policy of developing indigenous entrepreneurs, was obliged to accept the products of a very inefficient production system in which there seems to have been a total lack of quality consciousness compounded by lack of technical ability. Uniforms purchased from the 'industry' were badly made, and in many cases unusable.

The benefits of this project to the Department of Supply, not to mention the client departments, are starting to accumulate. Orders placed with factories are subject to detailed specifications. Quality checks are carried out by unit staff in the factories before delivery and any reject items are reprocessed, thus ensuring that unlike in the past, items received into the Department of Supply warehouses are garments fit to be worn.

Some of the more progressive (usually the larger) factories now deliver on time and are geared to long runs on particular garments. Some factories now have the capability of producing garments to ISO/BSI quality standards reasonably efficiently.

The smaller factories will take longer to develop and will never reach the same level of efficiency as the larger units because of the constraints of size - equipment, labour force and premises. The latter is one item that is frequently not understood by the entrepreneurs. If the premises are not large enough to provide:-

- storage for incoming materials
- space to allow for cutting in bulk - thus saving fabric
- storage of completed products

then efficiency will never be achieved.

However, some improvements in the technical skill of some of the small entrepreneurs can now be detected, and because of the monitoring now being carried out by the Clothing Unit staff, the garments produced are acceptable.

Thus, industry is beginning to emerge with skills that were not present when the project was being formulated.

What the project has achieved to date can only be described as a beginning, but the utilisation that can now be seen is very encouraging, and providing that the Clothing Unit staff maintain the pressure upon the industry to continue to supply garments to the standards laid down, and continue to give the training and support necessary, then further improvements in the industry are inevitable.

V FINDINGS

Some difficulties have been experienced, and will probably continue, mainly due to the attitude of the entrepreneurs. They tend to believe that irrespective of capability and capacity, they have a right to be awarded government contracts to provide them with a living, and if contracts are not awarded when the entrepreneurs require them, they frequently approach senior government officials to complain that they are being denied their rights. When the contracts have been awarded, the execution - to provide good quality clothing to the standards set by the Department of Supply, and deliver the required number of items on time, has frequently failed to meet standards. Wastage of government materials because of inefficiencies has been commonplace, and has caused considerable difficulties for the staff of the Clothing Unit.

The checking procedures that have been installed are disliked by the smaller manufacturers, because, for the first time they are expected to produce quality goods, which of course is seen as being more difficult than the production of sub-standard items. In certain instances, remarks have been passed which are tantamount to verbal abuse of the staff of the Unit. Fortunately, the staff all have sufficient strength of character not to be cowed by such behaviour. However, if support is given to the complaining entrepreneurs by any government official, then it will seriously undermine the efforts of the staff of the Clothing Unit to improve the standard of the industry.

Whilst these smaller manufacturers have undoubtedly benefitted from the technical assistance provided by the Clothing Unit and the UNIDO experts, the scale of any improvement will inevitably be reflected by the size of the factory - small factory, small improvement.

## VI RECOMMENDATIONS

1. It may be timely to consider a slight shift in policy, to concentrate the bulk of the production of government clothing into a small, but efficient number of the larger production units. The smaller factories could then be sub-contracted and some of the responsibility for development shifted to the industry itself, with the Clothing Unit still providing technical assistance and training.

If small factories acted as sub-contractors, then the problem of cutting could be overcome by the large factories cutting all the fabric (efficiently), and delivering cut work to the small sub-contractor to make up. The main contractor would also be responsible for assuring the quality from the sub-contractor, whilst still being subject to the quality checks from the Department of Supply.

This change would in no way affect the development objective, and in fact may accelerate progress by giving the Unit staff fewer companies to deal with directly, so allowing more time to carry out development and training.

2. An alternative course of action, to overcome some of the problems of dealing with smaller manufacturers, would be to complete a more detailed analysis of the requirements of the client departments, say over a twelve month cycle, and also an analysis of stock replacement levels, in an attempt to determine if some of the smaller orders could be phased into the second half of the year. Some of the manufacturers appear to be quite busy in the first half of the year making school uniforms, and complain that by June, they are in need of government orders to keep them in business.

Certainly it has been noted on a few occasions that government orders placed with some of the small factories in the first half of the year are slow to be completed. Possibly there is a conflict between the need to produce school uniforms on time, and the need to produce a government contract for the Department of Supply, which has until recently, been fairly tolerant about late deliveries.

3. The storage and care of fabrics needs some attention, and it is recommended that a person is identified to be in overall charge of the fabric warehouse, and to receive special training in the storage of textiles.

In addition, the quantities of fabric held in stock should be reviewed as a matter of some urgency, and the principles of Just In Time (JIT) ordering should be considered. JIT in its pure form would be quite difficult to operate because of the need to import, sometimes from very distant locations, all cloth for consumption by the Department of Supply. However, reasonable lead - times on orders, and more accurate assessments of requirements should help to reduce the amount of fabric held in stock, which, when checked by the CTA on 27 July 1990, was in excess of 292,896 linear metres. A reduction in stock held would have the effect

of reducing the amount of finance tied up in the warehouse, as well as increasing the amount of space available in the warehouse, which would improve fabric storage and handling.

Some fabrics held do not appear to move at all, possibly because of overordering in the past, and then the client department changing the fabric specifications. These fabrics should be disposed of as quickly as possible in the most advantageous manner. The main purpose would be to further reduce stock and clear even more valuable warehouse space.

If, at some time in the future, textile manufacturing becomes firmly established in Botswana, then JIT ordering could be implemented.

4. More work is required with the Unit and the industry, to try to introduce a more effective method of measuring work. At the present time, factories which operate any system at all, tend to use a piece rate system of providing performance standards, i.e. so many pieces per hour or per day. The method of arriving at the piece rate is inevitably a crude estimation, and so, productivity levels remain low; costing is inaccurate, and realistic incentives difficult to apply. Because this prevails, all parties lose; the government because it is frequently buying clothing at too high a price; the manufacturers, because they are inefficient, have small, and in some cases, negative margins; and the labour force, because they are denied the opportunity to earn more by applying more effort.

The introduction of Standard Minutes as a method of measuring work would go a long way towards overcoming the problems. The Clothing Unit already has the CSDS software, and could easily provide reasonably accurate values on which to base costings. The manufacturers could calculate their production capabilities and cost accordingly, and the workers could be given the opportunity to earn more than a basic wage.

5. Because the Clothing Unit eventually will be divided between Gaborone and Francistown, more work with the counterparts, to consolidate what has already been assimilated, is felt to be necessary.

At the moment, the staff carry out the work for which they have been trained with competence and enthusiasm, but total confidence is still to be attained. If a problem has arisen, there has always been at least one expert on site to whom the staff could turn.

With the division of the Unit and the necessary introduction of more new staff, a weakening of the capabilities and a reduction in confidence would be the inevitable result.

The Director of Supply has indicated his desire to keep some outside support for his staff until they are totally confident in their work.

If these reasons and those in 4 above are put together, then an extension phase for the project should be considered.



This extension would allow the staff the time to acquire confidence, and also allow the experts to address the next series of problems thrown up by the activities so far, and take at least some of the manufacturing industry forward to a level of efficiency whereby they can not only produce for the Department of Supply and the local market, but seriously consider exports to Europe. This may not be quite so simple, because even under Lomé IV, it is necessary to prove country of origin for the materials and have a certain percentage of value added.

6. If a textile industry could be developed in Botswana, not only would support for the garment industry, by being able to supply materials, be beneficial, but the considerable increase in job opportunities would help to overcome some of the problems of unemployment.

LIST OF FELLOWSHIPS AND TRAINING COURSES

Fellowships

1.	Diploma in Clothing Technology	10 months	Ms.B.Jallow
2.	Diploma in Clothing Technology	10 months	Ms.F.Molobi
3.	B TECH (HN) Certificate in Clothing Manufacturing	10 months	Ms.G.Dichabeng
4.	Textile Testing	3 months	Ms.L.Tselametse
5.	Sewing Machine Maintenance	3 months	Mr.D.Garesego
6.	Sewing Machine Maintenance	3 months	Mr.M.Maruping

Training Courses established in Botswana

Quality Control	2 days
Improving Productivity	1 day
Supervisor Training	2 days
Pattern Drafting and Grading	14 days
Production Planning	2 days
Sewing Machine Maintenance (Basic)	3 days

In addition, special courses for Clothing Unit staff only, were held in:-

Computerised Descriptive Sewing Data	14 days
Fabric Testing	1½ days