



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

## FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)

18698

Distr.  
RESTRICTED

IO/R.175  
24 October 1990

UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

ORIGINAL: ENGLISH

---

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

US/BOT/87/097/11-03

BOTSWANA

Technical report: Fifth visit of a garment technologist\*

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

Based on the work of C. Whitehouse, garment technologist

Backstopping officer: J. P. Moll  
Agro-based Industries Branch

---

\* This document has not been edited.

TABLE OF CONTENTS.

1. INTRODUCTION
2. FACTORY VISITS
3. SPECIFICATIONS
4. QUALITY CONTROL
5. WORKSHOPS
6. EQUIPMENT
7. CONCLUSIONS

ABBREVIATIONS

---

CTA	Chief Technical Adviser
UNDP	United Nations Development Programme
GTM	Garment Technologist/Management
P & P	Purchasing and Procurement
M & R	Maintenance and Repair
U.K.	United Kingdom
C.V.	Curriculum Vitae
UNIDO	United Nations Industrial Development Organization
BDF	Botswana Defence Force
BEDU	Botswana Enterprise Development Unit

Exchange Rates:

During the period of the mission, April 1990 to September 1990 the following exchange rates prevailed.

US\$1 = P2.08

1. INTRODUCTION

-----

The purpose of this mission was to continue the technological help and assistance in garment manufacture within the newly established Clothing Unit of the Department of Supplies, Ministry of Finance and Development Planning. The objective of the Unit is to coordinate and support technically, local manufacture of uniforms for various government agencies.

Attached to the Department of Supplies, the Garment Technologist was to

- devise and conduct training courses in
  - garment production management
  - pattern cutting and grading
  - quality control
  - production planning
- provide direct assistance to garment manufacturers
- train his counterparts in garment technology
- assist in the selection of candidates for sewing machine technician fellowships
- preparation of a final mission report.

This report sets out the activities completed and the results achieved during the mission.

## 2. FACTORY VISITS.

The factory visits were continued during this trip although they have changed their format since the start of the project. When we first started the visits we had to turn up unannounced because the factory owner would not be there if they knew we were coming. Now, more often than not, they ring us with a specific problem and ask when we can come to advise them how to solve it. A lot of this has come about by getting to know the owners and the employees during the workshops so almost every factory that we go into now we see a friendly face. More people from the department now visit also, as well as the technical visit that I do they also have a visit from the quality control people doing in-house inspection and the maintenance people advising them on equipment, spares, attachments etc. The most improved factory since the start of the project would have to be Franka in Gaborone and the least improved in my opinion would be Commercial Enterprises in Francistown. We can only advise the owners on what to do to see improvements, they have to implement the new ideas themselves, if they don't then other factories will improve and pass them by. As time goes by I think that some of the traditional suppliers to the department will fall by the wayside and be replaced by new suppliers who are prepared to do that little bit extra to meet the new quality standards, measurement specifications and delivery dates.

The department is showing signs of getting tougher with the suppliers on prices, delivery and quality though I have urged them not to go too deeply into the timings for the garments given by the supplier as none of the suppliers or any member of the local staff is qualified in work study. Any involvement with a stop watch without proper training could cause a lot of problems. With this in mind I am going to run at least a basic work study course in January 1991 which will give some insight at least into how to set about work measurement. It will be a natural follow-on to the production planning workshop that we have

been running. Working on the principle that a little knowledge is a dangerous thing then I have had to emphasise that staff members should not be put in the position of going onto suppliers premises to do work they are not trained for.

The factory owners are not making enough use of the information we have supplied them with such as attachments, folders, workplace engineering, machine preventative maintenance etc. Its difficult to get them to install some of the innovations even when we tell them how much money or time they can save. A perfect example of this is the Premier factory. In the last report dated 30th March 1990 I attached a copy of a consultancy report given to the owner Mr Adam. Part of this report explains to Mr Adam how he could make cloth savings of 133904 Pula per year for a very modest outlay. To date nothing has been done.

### 3. SPECIFICATIONS.

The ladies size chart has now been finished and is awaiting testing, it is very important to test any size chart before going into full production as something may have slipped through un-noticed. I have had a meeting with the relevant staff members to explain how it was compiled should any adjustments be necessary in the future. Each style can now have its own full specification built up for it now as all the necessary information is available for both male and female. Another eight specifications have been completed in recent weeks which now brings the total to 32. The new ones are;

- messengers grey trousers
- EDF olive green poncho
- wildlife cream/white shirt
- EDF camouflage cap
- MP armband
- wildlife light green skirt
- Messengers safari suit
- customary court gown

New ones are being added all of the time and it is hoped that in the near future the list will be complete. The manufacturers are now starting to understand how to use this new information and when it filters through to them all, and when all items are covered, it should mean the department will be getting standard uniforms instead of each individual manufacturer's interpretation. Before these specifications came into use it was possible to have garments delivered in to the warehouse from different suppliers with the same size tag but measuring differently and in some cases also looking differently therefore destroying the intention of uniformity.

The pattern workshops have also helped a great deal in having the opportunity to spend time with the students letting them see how to build up a range of patterns starting from the original size chart and specification.



#### 4. QUALITY CONTROL.

The new quality control system is working quite well and improvements can be seen in the work being delivered. The main reason for this is that the work is being examined on the premises of the supplier with the production people present and any mistakes are being corrected immediately. Before it used to be delivered to the warehouse and the mistakes were not found until the end user took delivery and of course the supplier had already been paid. Any supplier is a lot more ready to listen about rectifying mistakes when he knows that he will not be paid until this has been done. Some suppliers are having a hard time meeting the new quality standards because they have had it so easy in the past, we do appreciate their problems but upgrading their levels of quality for the department of supply they will automatically upgrade the other items they manufacture for other clients which should then lead to a fuller order book for them.

The first years results won't serve to prove much as they will be very varied as the different suppliers have to get used to the new system. Eventually we will be looking for something like a 2% reject rate in the factory and 0.5% when checked in the warehouse. At the moment we still have occasions when the inspector is recording 100% reject rate with a new supplier, hence the variable results. As can be seen there is a very long way to go to make up that gap and I would not expect the system to be functioning fully for at least a couple of years as there is such a lot of work to do. Eventually it will become the main function of the department. To make it work to its fullest extent then the quality control staff must be fully trained in all of the necessary areas, be confident in using their knowledge and have the complete backing of the senior officers of the department of supply.

## 5. WORKSHOPS.

The workshops have continued to be in demand and we are now beginning to see some of the results. With the knowledge that some of the students have gained from the various courses it has helped some of them improve their position with their present employer, some have moved on and up and some have started their own small business. This should mean that there has been a general improvement all round. Most workshop participants ask at some point during a course if they can attend any others. The feedback from employees and employers is very positive.

When we start the extension one of the first priorities is to build up a basic work study course for the new year. This will be a natural follow on from the production planning course where we were teaching the students about garment breakdown now they need to know how to convert the breakdown operations into minute values. At the moment all of the manufacturerere work by guesswork which benefits nobody. Because they are submitting prices and quotes by guessing then some of them could be putting themselves out of business without knowing it.

All of the workshops have been well attended and during this split mission, 12 weeks plus 6 weeks, we have managed to record 378 student days. This gives a total of 1216 for the project so far. During the latter part of this mission we managed to fit in an advanced pattern course which included pattern manipulation and some blocks made in imperial measures in case they have to work on exports at some time. The majority of the students did well but if we do the course again we need to increase it by one week. We have now completed five basic pattern courses which means that approximately 40 people have learned how to make patterns and that should mean that the need to purchase patterns from South Africa should be at an end. The students have also been taught to grade so the practise of buying just one size and adding a centimetre all around it to increase it should also stop, making a better fit of the finished garment.

## 6. EQUIPMENT.

The fabric inspection machine has still not turned up, although it is not a U.N.I.D.O. purchase it is urgently needed so that an operator can be selected and trained under our guidance. As soon as it is in place and working along with the fabric testing equipment then the department should start to see some changes in its fabric utilisation figures. When the suppliers of fabrics, linings and fusibles become aware that tests and checks are being carried out then the department will become less vulnerable to dumping, piece shortages, weight loss, fading, pilling, cloth flaws, narrow fabrics etc etc.

It was recommended some time ago that a small technical library be set up, the books have been ordered I understand but have not yet arrived. It is critical to have this back-up before the experts leave so that the local counterparts have somewhere to go if they are asked questions they have no answers for.

All of the equipment is in good working order and the maintenance trainees have taken over the servicing of it. All of the equipment is in daily use by the local staff.

We hope to be giving courses in basic work study in January 1991 and as we only have three stop watches I have suggested to the department to purchase another ten as it is impossible to have students sharing a watch during practical courses.

The uniform unit now has its own transport, this is proving to be extremely useful for staff doing factory visits for quality control and machine maintenance. This week it is in Mochudi and Pilane with the two trainee mechanics and next week it goes to Francistown, Maun, Tutume etc.

The uniform unit has now purchased its own single needle lockstitch machine which is being used in the laboratory and as an example during basic machine maintenance courses.

## 7. CONCLUSIONS.

During this split visit we have successfully completed the planned work schedule. The emphasis has been on workshops and getting the ladies size chart finished. As mentioned before we have also completed an advance course in pattern making. The factory visits have continued but mostly done by local staff.

During this mission we have had full cooperation from all of the department of supply staff and the personnel in the factories.

B.E.D.U. have again been helpful to us in letting us use their premises and we are now training one of their own staff to run courses himself so they do not have to rely on us in the future.

On the 28th August 1990 we ran an extremely successful demonstration in the department of supply for invited guests. The local radio and newspapers were there, we have since had a favourable report in the local press and the Director of the department of supply was interviewed on the radio. The demonstration itself went very well with the local staff demonstrating their newfound skills. The majority of the guests were either suppliers or end users, for example we had the Police, B.D.F. Prisons, Customs, Immigration, Wildlife etc. We feel it gives an opportunity for the two sides to meet and for them to become aware of the equipment and services now available to them through the good offices of the department for their mutual benefit.

One more counterpart, Metha Ikaneng, has joined the unit bringing the total to ten local staff.

Overall, not only the department of supply but the industry as a whole, appears to be depending less on the necessity of getting just about everything from South Africa. In particular, patterns and machine repairs, all of which were from over the border. When you try to compute the cost the supplier was paying before in terms of lost factory time, travelling time, down time etc the costs were horrendous but now they are able to solve some of their problems on site.