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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/87/097/11-03

BOTSWANA

Technical report: First visit of the Garment Technologist*

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

Based on the work of Tom Ramsey, Garment Technologist

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

* This document has not been edited.

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I. INTRODUCTION

The purpose of this mission was to provide 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 co-ordinate 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 manufactures;
- train his counterparts in garment technology;
- assist in the selection of candidates for sewing machine technician fellowships;
- preparation of a final mission report.

As a result of the failure of the Botswana Government to fulfill a commitment to provide a suitable 3 bedroom house for use by the UNIDO team, this mission was terminated on 19 April 1989, by the resignation of the Garment Technologist.

This report sets out the investigations conducted, and their results, together with the activities carried out, and results achieved during the time "on site".

II. FACTORY VISITS AND RESULTS

A total of 29 factories were visited, and subjected to a brief but comprehensive investigation covering all activities, from pattern sources through to finished goods.

Most of the factories were reasonably well equipped in so far as their cutting, sewing and finishing equipment was concerned. Major problems were the use of commercial patterns, badly maintained machines almost total lack of spare parts, and the non-availability of trained staff to carry out even minor adjustments on machines, let alone routine maintenance and repair work. The majority of factory proprietors told us that they invariably had to transport machines to South Africa for all but the most basic repairs.

Pattern making was an obvious problem. With only four exceptions, the patterns being used were commercial dressmaking patterns from South Africa, with any necessary modifications being performed in a very amateurish way. In several cases the grading of patterns was confined to increasing or decreasing the length of garment parts, with no attempt to size grade for width.

In order to compare the various units, they were evaluated and categorised as follows:

<u>VERY GOOD</u>	Operating reasonably efficiently as an industrial manufacturing unit - with a little help and support could become very efficient.	4
<u>GOOD</u>	With rather more help, could become a reasonably efficient unit.	4
<u>FAIR</u>	With a great deal of help and hard work from both sides, capable of improvement to an acceptable standard.	8
<u>POOR</u>	Badly equipped, with an inefficient labour force. Not really capable of industrial production standards.	9
<u>VERY POOR</u>	Basically a "One-off" dressmaking enterprise, with virtually no chance of improving to the level of an industrial clothing manufacturing unit.	4

One area where the vast majority of the companies are lacking in expertize is that of cloth costing - evaluating the optimum cloth required to produce a specific style in various sizes. Lay planning was in most cases haphazard and amateurish, and garments were not being cut in an economic manner. Due to the relatively low wages being paid, the highest area of cost in all garments is the raw material, particularly fabric. It is therefore particularly important that the Clothing Unit staff are in a position to calculate cloth usage accurately prior to an order being issued, in order to issue the correct fabric requirement for each individual order, and also to assist manufacturers to lay plan efficiently and to control cloth usage tightly.

As the clothing manufacturers themselves require a considerable amount of training, followed by practical experience under supervision in order to improve in this direction, it is essential that the Clothing Unit possess both the expertize and equipment to enable it to offset manufacturers shortcomings in the short term.

III. NATIONAL SIZE CHARTS/BODY MEASUREMENTS

To date no attempt has been made in Botswana to produce a national size chart for local people, and the size charts used are predominantly South African, with some influence from Zambia.

There is no doubt that on the African continent, body configurations and dimensions can and do vary dramatically, to a far greater extent than is the case in Europe where, of course, individual countries do have their own national size charts.

It was decided therefore to set up and undertake an extensive exercise to take direct body measurements of as many people as possible, both male and female, in order to be able to analyse the results and either produce a Botswana national size chart, or at least adjust the South African ones accordingly. To that end, a number of government agencies were contacted and arrangements for their staff to cooperate in this endeavour.

The day prior to commencing the measurement programme, four of the Clothing Unit staff were instructed in the taking of direct body measurements.

To date 12 government agencies have cooperated in this way and approximately 200 men and 100 women have been measured and the results recorded.

To ensure accuracy in producing a national size chart, many more measurements than these need to be taken and the results then analysed. This can be carried out much more quickly and efficiently by computer when the unit computer is available.

IV. OTHER ACTIVITIES

Other activities undertaken during this project were as follows:

1. Obtaining quotations for tool requirements.
2. Obtaining quotations for joinery requirements.
3. Assisting in the selection of fellowship candidates.
4. Official meetings (numerous).
5. Liaison with another UNIDO project C.T.A.
6. Visits to Polytechnic to liaise with Head of Mechanical Engineering Department (re fellowships).
7. Visits to "BRIDEC" to liaise with textile adviser.
8. Factory visits for machinery repairs (M + R expert did not have his driving license).
9. Assisting M + R expert in his two courses in machine adjustment.

V. CONCLUSIONS AND RECOMMENDATIONS

- (i) Whilst it cannot be assumed that all clothing manufacturers will fall into the same categories as the 29 visited so far, it is clear that 45% of the factories visited to date, are highly unlikely to be able to benefit from the technical courses it is intended to run if in fact the content is even understood by them.

Technical courses and on-the-spot technical help and back up over a period as short as 12 man months will not be sufficient to convert "dressmakers" with 2 or 3 machinists into industrial clothing manufacturers and in fact attendance on the courses by such people will in all probability reduce the overall impact of the courses, as the speed of the course will have to be slowed to the comprehension level of the slowest student, there by detracting from the course for the more competent students.

My recommendations is that the participants on each course should be selected carefully to ensure that the instructional content is not wasted on people incapable of benefitting, and using the knowledge acquired. It would be better to have 100% success from 50% of the entrepreneurs rather than 50% success from 100% of them.

The more efficient companies who do benefit from the instruction given, could then be awarded government contracts, with the proviso that a certain proportion be sub-contracted to the smaller, less efficient companies, but with the main contractor retaining overall responsibility technically for quality and delivery performance, and in this way encouraging the better companies to pass on their technical expertise and efficiency to their less competent colleagues.

- (ii) One of the areas of assistance most urgently required is pattern drafting and grading, as there are very few people in Botswana capable of producing patterns.

A start should be made in the following product types. Initially with courses of 5 days duration for selected candidates

- (a) Ladies overall coats
- (b) Gents trousers
- (c) Gents shirts.

(iii) The assistant uniform coordinators, who at present are the only people in the Unit with technical knowledge, should start immediately to produce style/quality specifications for all government contract styles. An important part of this should be cloth costing (i.e. the quantity of fabric required per garment and per order).

At present this will be extremely difficult due to a lack of information and equipment which has in fact led to the present situation whereby manufacturers are supplied with whatever cloth they ask for, with no control over usage, thereby leading to very poor cloth utilisation.

(iv) In order to make an efficient start over the control of cloth, I would strongly recommend that a proprietary miniaturised lay planning system be added to the project equipment budget. This would enable the Uniform Clothing Unit staff to plan lays in advance, and also to provide manufacturers with a miniaturised plan of each lay when the order is issued.