



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th 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.

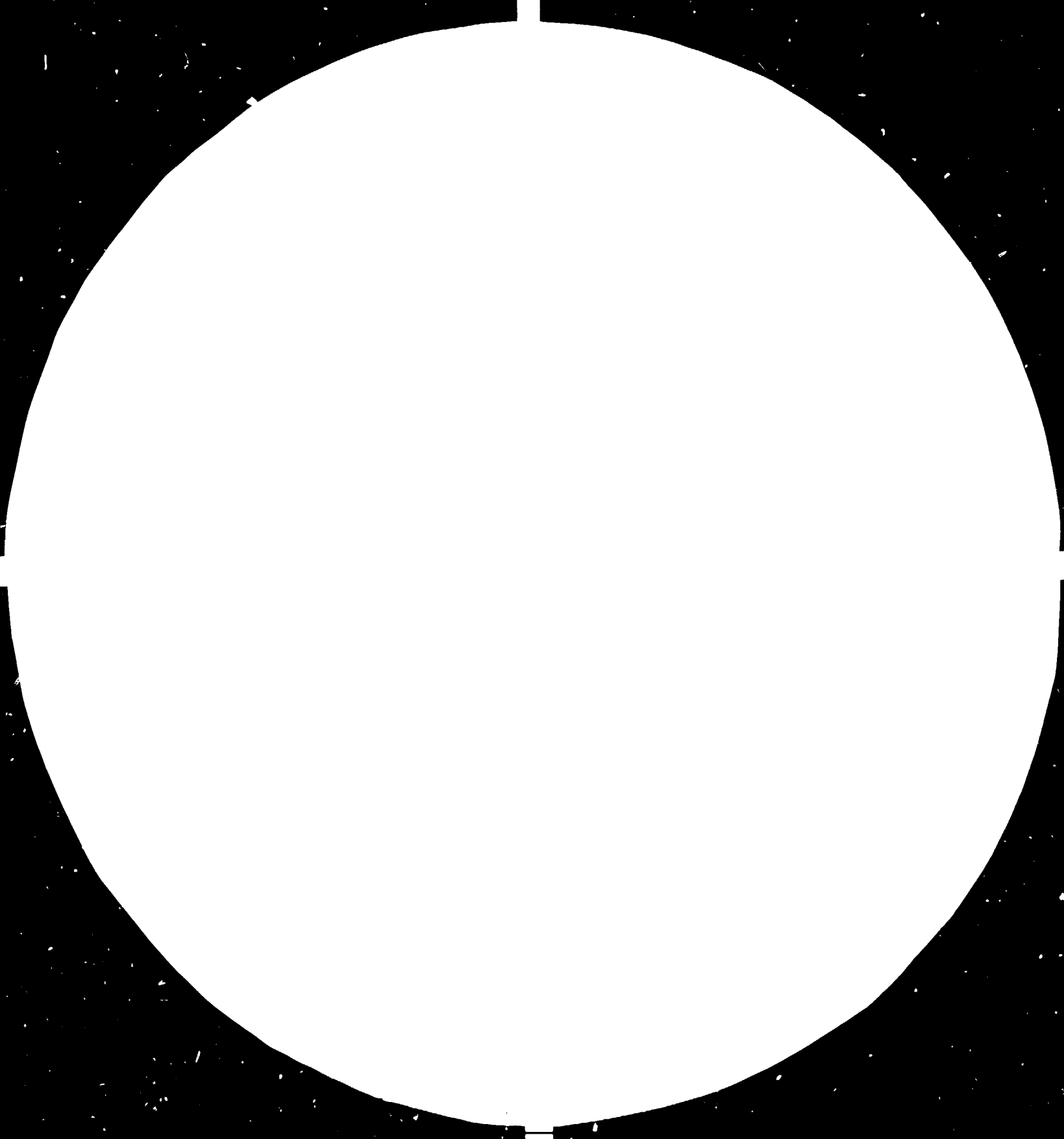
FAIR USE POLICY

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 for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org



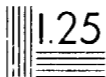


1.0 25

22



20



Resolution test charts are used to determine the resolution of a system. The resolution is the ability of a system to distinguish between two points that are close together. The resolution is measured in lines per inch (LPI). The resolution of a system is determined by the number of lines that can be resolved per inch. The resolution of a system is determined by the number of lines that can be resolved per inch. The resolution of a system is determined by the number of lines that can be resolved per inch.

13983

Distr.
RESTRICTED
UNIDO/IO/R.132
17 August 1984
ENGLISH

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ASSISTANCE TO PAC IN THE ESTABLISHMENT OF A WOMEN'S GARMENT
MANUFACTURING WORKSHOP IN THE UNITED REPUBLIC OF TANZANIA

UC/PAC/84/028

PAN AFRICAN CONGRESS-TANZANIA,

Technical report: Preparatory mission for the garment workshop *

Prepared for the PAN African Congress by the
United Nations Industrial Development Organization

Based on the work of K. Davitian, Garment Industry Expert

* This document has been reproduced without formal editing.

TABLE OF CONTENTS

	<u>Page</u>
1. PAC	1
2. Legal Status of the Garment Workshop	1
3. Working Capital	1
4. Location	2
5. Building	2
6. Counterpart Personnel	2
7. The Production Line	3
8. Machinery and Auxiliaries	3
9. Raw Material	3
10. The Project Document	3
11. Conditions to be Fulfilled by PAC	4
12. Timing	4
13. Budget	4

ANNEXES

I	- Preliminary Estimates of Area Requirements, Layout and Electrical Power	5
II	- Machinery List for PAC Garment Factory ..	11
III	- Fabric Requirements (UNIDO Input)	13
IV	- Garment Factory to Produce:	14
V	- Training Schedule	15
VI	- Working Capital	16

Persons met

Mfamasekhanga Egabose - Project Director
Edgar Motau - Office for Education
Maud Jackson - Project leader garment unit, counterpart
Jesefa Sifuba - Chief Coordinator Women's Affairs
Ms. Numzi Njikelane - Secretary Women's Affairs

1. PAC

The Pan African Congress (PAC), with Headquarters in Dar-es-Salaam is a south African National Liberation Movement. PAC is officially recognized by the Organization of African Unit (OAU) and UN General Assembly. Its members enjoy "sub-status" in Tanzania.

The Project

In accordance with the official policy of the Pan Africanist Congress (PAC) efforts are being made to integrate women in the industrialization process aimed at increasing self-reliance. Special attention in this connexion is being given to the garment production sector which is relatively labour intensive, where economies of scale are not critical and for which women have a natural aptitude.

An official request to assist the South African National Liberation Movement was made during the 18th Session of the Industrial Development Board. A subsequent UNIDO mission identified the PAC garment workshop.

2. Legal Status of the Garment Workshop

It is expected that the Office of the Prime Minister will authorise the Registration for the garment production unit, after which the legal status will be determined. The most likely construction will be a benevolent society. UNIDO's commitment (signed Prodoc) to assist PAC in establishing a garment production unit will support and facilitate the procedure of obtaining the Registration, which automatically provides legal protection.

It was stated that this legal Protection automatically waves the conditions normally required for establishing a company. PAC enjoys hospitality in the URT and benefits from several privileges such as exemption from import taxes in goods, including raw material (fabrics).

3. Working Capital

Once the Legal Status is obtained PAC can enter into negotiations for drawing on financial resources required for operating the workshop. The UNIDO input might serve as a further guarantee to meet the financial requirements for PAC's inputs such as working capital, building, electricity, transportation. The Organization will need sometime to raise the necessary funds.

A statement on the financial situation will be required at least four months before the starting date of UNIDO's technical assistance programme. Approximately US\$ 120,000 will be needed as initial working capital. (Annex VI explains the working capital requirements).

4. Location

The suggestion of the members of the mission to locate the garment unit in the PAC Camp was rejected by PAC whose leaders stated that the infrastructure in the camp was unsuitable for a garment manufacturing unit. Insufficient power supply and poor road connections were given as the main obstacles. Further investigations on this matter confirmed the PAC statements. A suitable location is yet to be found.

5. Building

The mission members found the house rented for the establishment of the garment unit not suitable. It was suggested to erect a semi-permanent building at any suitable place near Dar-es-Salaam.

The garment expert provided the PAC organization with a provisional layout of the unit including the required size of the building (drawing attached - Annex I). The availability of the building should be confirmed, four months before shipping the UNIDO input, including adequate power supply (Annex IA).

Management

A general Administrator or Director will be appointed to direct the operations through and on behalf of PAC. He/she will also be responsible for the day to day management and all organizational and administrative matters.

The Director will report to a Supervisory Committee composed of PAC members.

6. Counterpart Personnel

PAC will be required to provide

- 1 Director/administrator
- 1 support staff for clerical work
- 1 stockroom clerk
- 1 stockroom assistant

UNIDO will provide training for

- 1 floorlady
- 1 cutting room foreman
- 1 spreader/cutter
- 1 work distributor
- 2 sorters
- 25 sewing operators
- 2 finishers/inspectors
- 2 ironers
- 2 folder/packers

At least one mechanic should be trained on maintenance and repair of machinery. However, this is not included in the project document and Messrs Rimoldi of Italy are offering the training of a machine mechanic during 10-15 days free-of-charge. A project revision would be required to provide for funds to cover travel cost and Daily Subsistence Allowance (DSA).

7. The Production Line

In view of the high market value of gent's clothing and its relative immunity to frequent model changes due to fashion it was agreed to concentrate on the production of the men's and boy's trousers, shirts, safari suits etc.

8. Machinery and auxiliaries

In accordance with the requirements of the chosen garment lines heavy duty versatile machinery will be installed. Specifications of machinery and auxiliaries are attached (Annex II + IIA). Total cost exceeds budget line 49-00 by approximately \$ 13,500 which calls for action at the appropriate time.

9. Raw Material

PAC has its own resources for fabrics. A list with specifications for the most common fabrics to be used for gent's clothing is attached for easy reference. Fabrics for the duration of the training of the 25 PAC women will be provided by the project in the following order:

	<u>Pcs m</u>	<u>Pcs m</u>
1 week	-	5th week -
2 week	120 m (local supply)	6th week (500 m PAC input)
3 week	-	7th week (500 m PAC input)
4 week	500 m (5 qualities)	8th week (etc.)

Total value of UNIDO input estimated at \$ 5,000.

A list with fabric specifications is attached in Annex III.

10. The Project Document

Deviating from the Prodoc it was suggested that in order to secure the continuous availability of capacity all but 6 machines provided by the project would have to remain in the workshop.

It was decided that the installation of similar workshops in other frontline states would not be part of this project and would be subject to separate requests. 6 machines of the Dar-es-Salaam workshop will be transferred to workshops in other frontline states as initial equipment.

Instructor training. Training of instructor/supervisor of other frontline states should be combined with the training of the permanent supervisor of the Dar-es-Salaam project. By this arrangement the foundation of similar workshops in other frontline states will be laid.

11. Conditions to be fulfilled by PAC

1. Documented Legal Status.
2. Financial report on the operation.
3. Working capital of at least \$ 100,000 - \$ 120,000.
4. A list of the main resources of raw material.
Delivery of raw material in March 1985.
5. Suitable building, including electr. power, water, inventory (chairs, tables, shelves, bins etc)
Details are to be found in Annex IV.
6. Availability of suitable and sufficient counterpart personnel.

It was agreed that SIDFA/JPO would verify these elements after which the corresponding UNIDO/JNDP inputs can be implemented.

The starting date of the training programme will commence 4 months after SIDFA has confirmed that each of the conditions have been fulfilled but not later than end 85.

12. Timing

PAC and UNIDO agreed on the following provisional time-table:

June 1984 - October 1984 - PAC organizational measures

October 1984 - ordering equipment, auxiliaries and fabrics by UNIDO

January 1985 - delivery of above

1 February 1985 - implementation (8 weeks - detailed training programme - Annex V)

30 April 1985 - finalization of the training programme

1 May 1985 - three trainer/instructors return to their respective countries with two machines each.

This programme is subject to the confirmation on the fulfilment of the conditions set for PAC and will only take effect 4 months after SIDFA gives the green light.

13. Budget

Once the conditions on item 11 above are fulfilled by PAC UNIDO will take action to increase budget line 42-00 from \$ 45,000 to \$ 58,422, in order to meet the required inputs as listed in Annex II of this report.

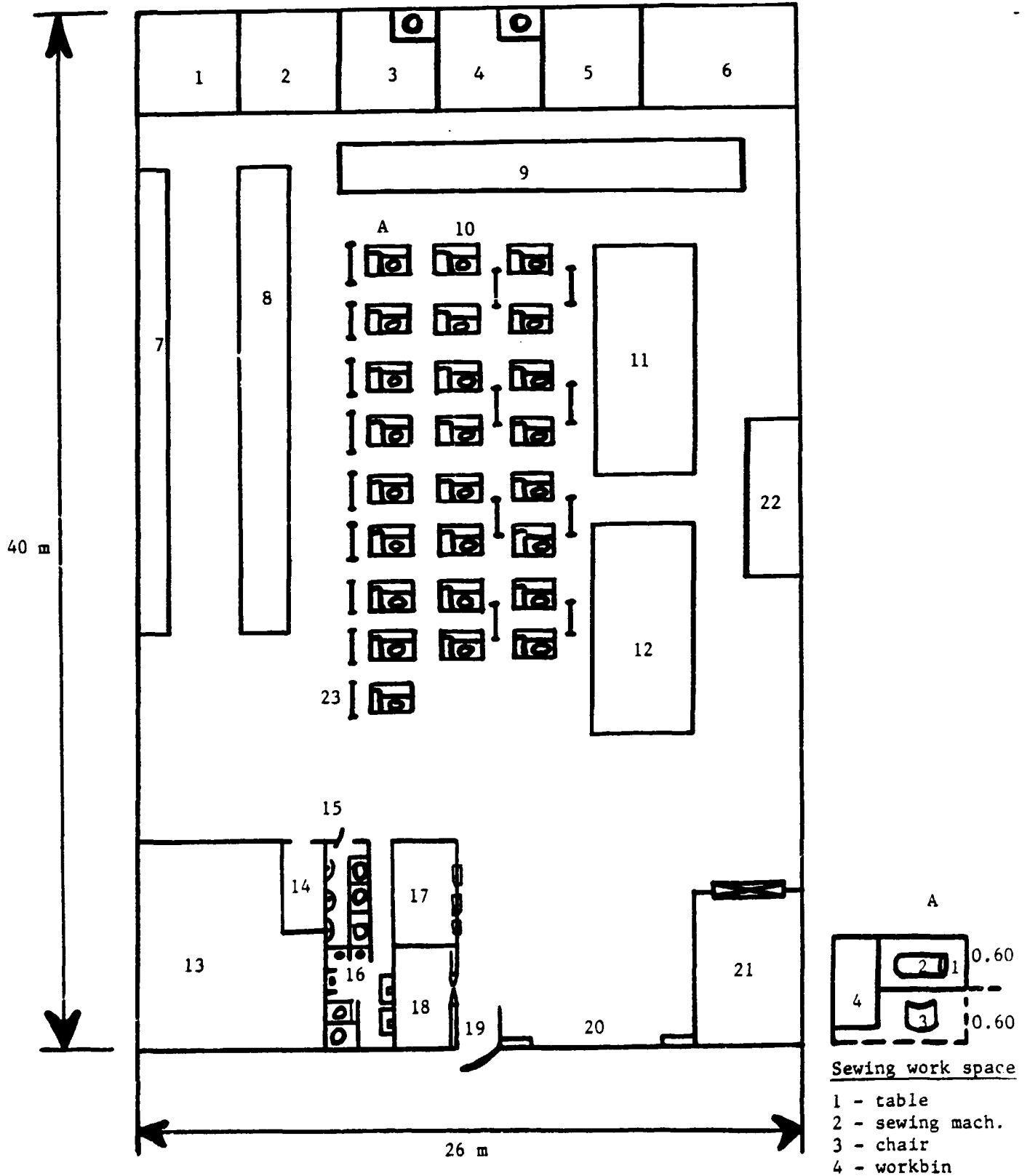
ANNEX I

PRELIMINARY ESTIMATES OF AREA REQUIREMENTS

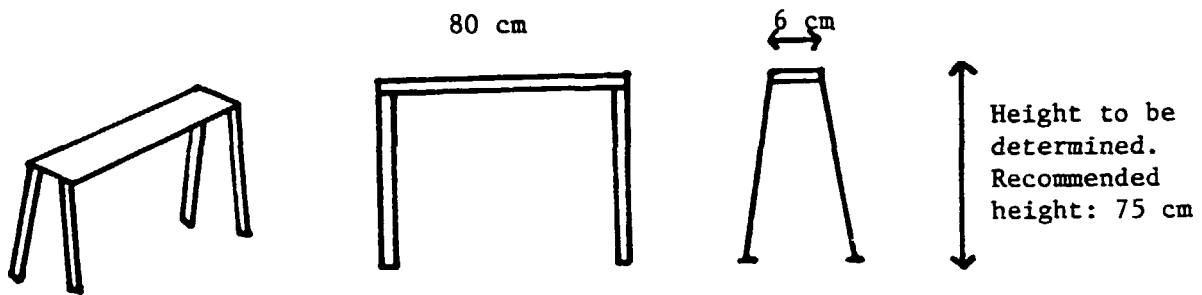
Item	Description	Surface in m ²	Remarks
1	Repair workshop	4 x 4	
2	Men's wardrobe	4 x 4	
3	Auxiliary rooms	4 x 4	
4	" "	4 x 4	
5	Men's wardrobe	4 x 4	
6	Storage for spare parts	4 x 6	
7	Shelves for storage	0.6 x 1.8	
8	Double-decks storage table	2 x 18	
9	Sorting table	2 x 16	
10	Machine area	10 x 20	for sewing units as shown in drawing A
11	Finishing area	2 x 8	
12	Dressing area	2 x 8	
13	Fabric storage	6 x 8 + 4 x 2	
14	Storage rippers, sewing thread	2 x 11	
15	Ladies' toilets	2 x 4	
16	Men's toilets	2 x 4	
17	Main office	2 x 4	
18	Storeroom	2 x 4	
19	Entrance		
20	Main storage area for final goods		
21	Finished goods	4 x 6	
22	Main electrical panel	2 x 4	
23	Horses for hanging trousers		

PROPOSED LAYOUT OF GARMENT FACTORY

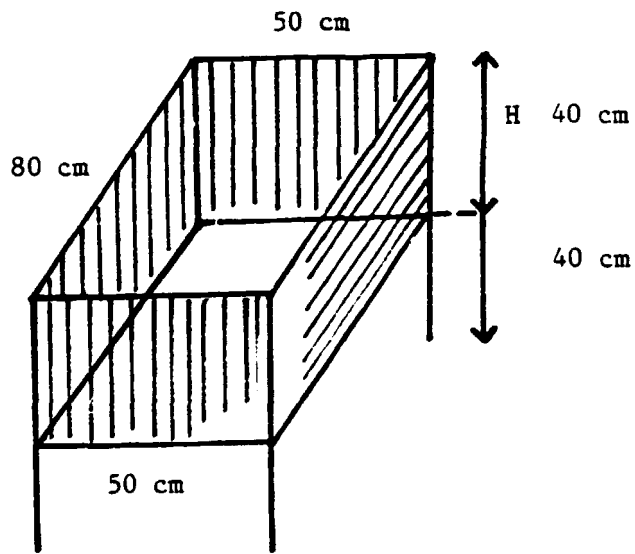
Scale: 1:200



DRAWINGS FOR AUXILIARY ITEMS



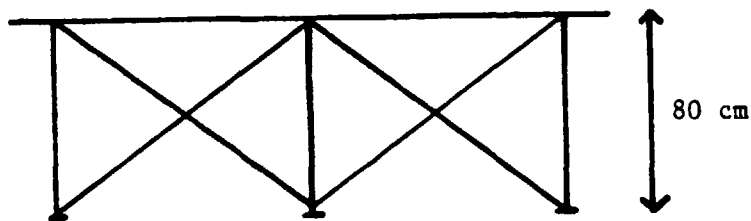
HORSE



BINS

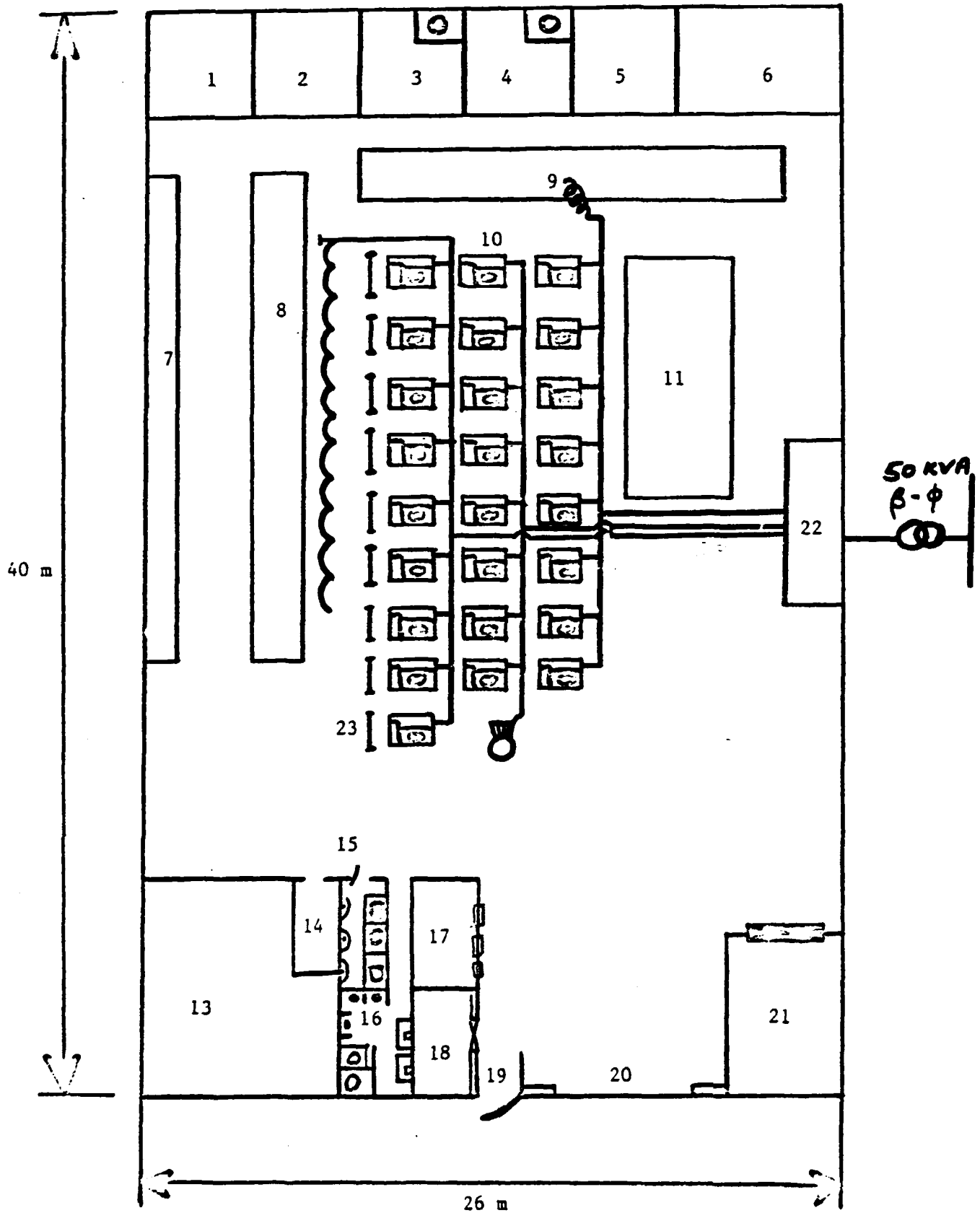
CUTTING TABLE

SORTING TABLE



PROPOSED LAYOUT OF GARMENT FACTORY
Scale: 1:200

ELECTRICAL POWER SUPPLY



CABLES REQUIRED

<u>Item</u>	<u>Specification</u>	<u>Length required</u>	<u>Remarks</u>
Cable from transformer to electrical panel	16 m/m ²	According to the position of transformer	
Cable from electric panel to the machine lines	1.5 m/m ²	150 m	
Cables for illumination	1.5 m/m ²	1200 m	14 rolls (4 black) (4 red) (4 green)

ANNEX I A

REQUIRED POWER (PRELIMINARY ESTIMATE)

1. For machinery	20 kw
2. Illumination	4 kw

Total	24 kw
	=====

Rounded up to 30 kw

Assumed power factor f. 0.8

$$\text{Required K.V.A.} = \frac{30}{0.8} = 37.5 \text{ K.V.A.}$$

for safety factor, the required K.V.A. will be 50 K.V.A.

The transformers of 50 K.V.A. are available in the local market.

ANNEX II

Machinery List for PAC Garment Factory, Tanzania

Prices quoted in Italian Lire. 1 US-dollar equals 1.665 Lire

<u>Quantity</u>	<u>Description</u>	<u>Italian Lire</u>	<u>Total US-dollar</u>
1	REECE no 101 Button-hole machine	9,860,000	5,922
1	US no 1118 Hemmer machine	4,650,000	2,793
2	NECCHI no 460 machine a braccio with puller	4,000,000 each à \$ 2,402	4,804
1	RIMOLDI no 529 ten millimeter sew serger	4,960,000	2,979
1	RIMOLDI no 527 one needle serger	4,200,000	2,523
2	NECCHI no 471 oil base two needle sewing	2,780,000 each à \$ 1,670	3,340
1	UNION SPECIAL no 52100 two needle on copertura	4,500,000	2,703
17	PFAFF no 483 oil base straight stitchers	1,360,000 each à \$ 817	13,889
1	WOLF 24 cm high cutting machine	3,000,000	1,802
1	WOLF 15 cm high cutting machine	2,700,000	1,622
1	Hot hole puncher	850,000	511
2	TG/5 suction table with two automatic steam iron	1,700,000 each à \$ 1,021	2,042
1	FUNK 80 litre tank no BE80 B/L compressor	700,000	420
Extra parts for each machine will cost about		160,000 à \$ 96 x 32	3,072
20 kilowatts of electricity will be needed to carry all these machines			
For a cost of five thousand Lire per day all inclusive a technician will go to Dar-es-Salaam to completely set up all electrical systems			
RIMOLDI factory in Milan will drain FREE OF CHARGE a mechanic on all machinery.			
In addition: auxiliaries (ref. Annex IIA) fabrics			5,000 <u>5,000</u>
		TOTAL	<u>58,422</u> =====

ANNEX IIA

Equipment/Auxiliaries

1 Roll 200 kl	Pattern cardboard paper
2 Rolls 200 kl	Dotted paper 100 kl gummed, 100 kl not gummed
1 metre 30 cm	Metal ruler
2 50 cm	Square rulers
1	Curve ruler
3	Scotch tape dispensers
	10 rolls 1 1/2 cm scotch tape heavy duty
2	Cardboard scissor
2	25 cm scissors
50	18 cm scissors
10	Thread nippers scissors
2	Pattern notchers
2	Clear plastic 30 cm rulers
6	Tracing wheels short point
6	Tracing wheels long point
5 kl	Fabric steel pins 3 cm
10 boxes	of 50 pieces each tailoring chalk - red, black, yellow and white
50	Thimbles different sizes for men and women
50	Tape measures
2	Stapler tackers
1	20 cm stapler
1	Pattern hole puncher (heavy duty)
50 pkts	Sewing needles (normal hand mending) sewing
1	Tailoring dummy for men 38-40
1	Tailoring dummy for boys 10-15 yrs
	Size tags - men 26-54 (1 roll pr size)
	Size tags - boys 18-30 (1 roll pr size)
1	Gummed tape dispenser and gummed tapes (6 rolls)
2	Tagging guns and plastic stringers
50	Marking pens - red, blue, black
50	Pencils (marking) 5B
50	Felt tipped pens, red, black and blue
1	Electric spray gun cleaner and 2 cans cleaning fluid for oil spots
500	Plastic bags 40 x 60
	Oil for oiling sewing machines

ANNEX III

Fabric Requirements (UNIDO Input)

Date

Week 1

Week 2 and 3

Week 4

100-120 yards to be obtained locally

blue jeans fabric 100 yards 14 oz

drill 100 yds 14 oz

gabardine (pol/cotton) light weight, 100 yds

shirting (cotton) " " 100 yds

linen 100 yds men's suiting weights

+ muslin 100 yds

value of 500 yds approximately \$ 5,000

Week 6

fabrics for regular production (PAC Input)
of 250-300 garments daily.

ANNEX IV

Garment factory to produce:

Safari suits for men and boys

Blue jeans for men/women

to be prepared by PAC:

Expected output approximately Units of garments per day 250 pcs

Approx. space needed 1040 m²

Wiring

Lighting

Water

Tables 2 cutting tables

Chairs

Bins

Shelves

Closets

Shelves to hang patterns Hangers

5 kilo lead weights

Name tags with 3 mil hole

Power supply 20 kw/hr for machinery

50 KVA total requirement

ANNEX V
TRAINING SCHEDULE

Week 1	Week 2	Week 3 and 4	Week 5 and 6	Week 7 and 8
A. <u>SEWING</u> Technical familiariza- tion with machinery, care and use	Instruction in stitching and controlling the machine	Start to detailed work such as various pocket- types, hems, seams, zipper setting, belts, button holes	Trial production of a series of standard garments	Full scale operation of sewing, pressing, finishing
<u>Mat. used:</u> Thread no. 50 (cotton wrapped polyester) Spare needles Bobbins	Thread, scrap fabric, auxiliaries (attached Annex III)	Thread, zippers (50 pcs of 13 cm), belting, interfacing (fusible and non-fusible) hooks and loops, buttons (1000 x 1 cm) Fabrics (see list) (100 x 2 cms)	Same as week 3 and 4	Fabrics to be provided by PAC
B. <u>CUTTING ROOM</u>	-	-	<u>Week 4 and 5</u> Introduction to pattern machinery, cutting machinery, grading and for production marking. Cutting and sorting	<u>Week 6 and 7</u> <u>Week 8</u> - do -
<u>Material</u>	-	Pattern papers cardboard scissors etc.	-	

Supervisor receives full training in sewing

Training in cutting room techniques

Specific instruction
from management

ANNEX VI

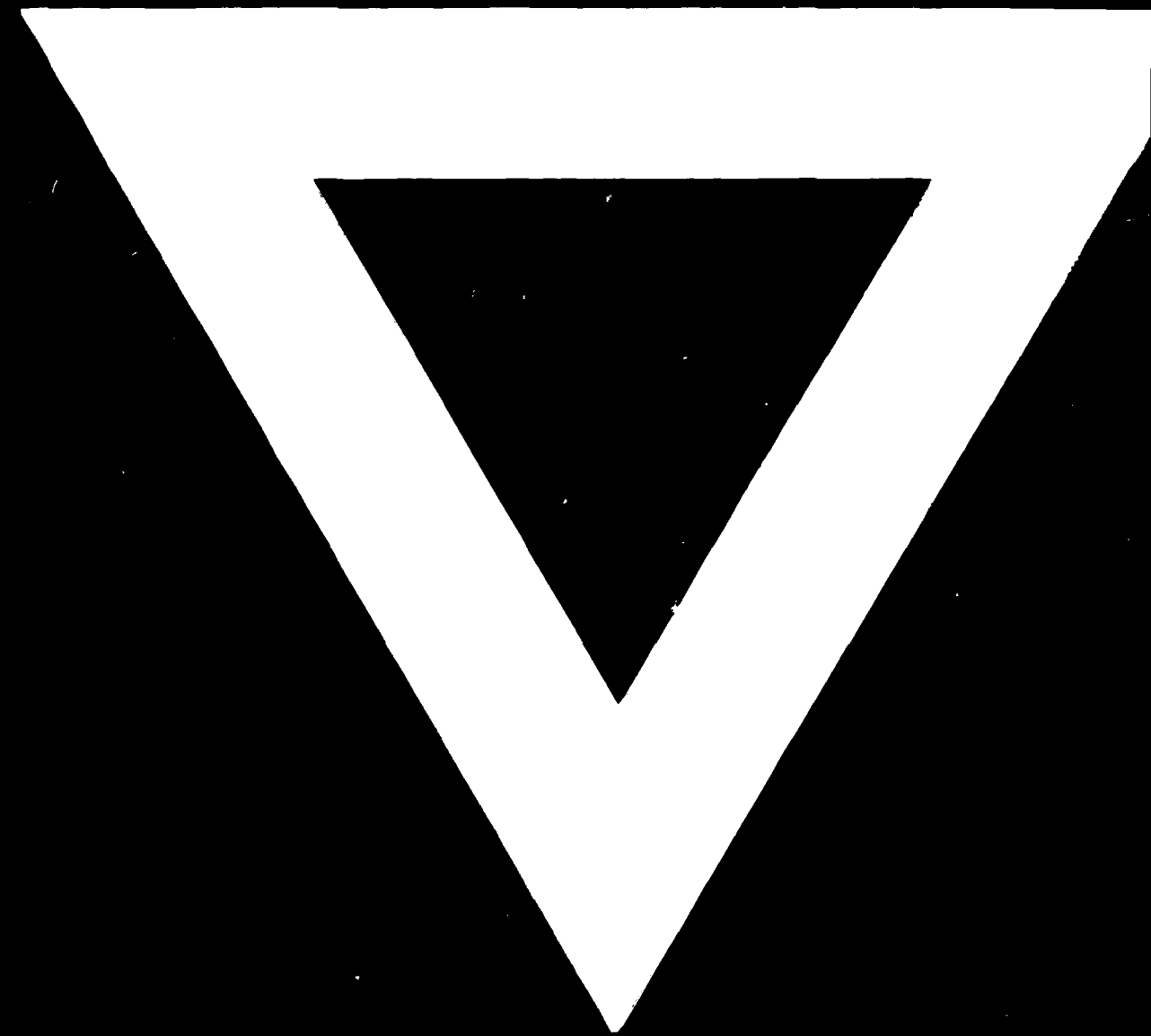
WORKING CAPITAL

The unit will have 25 sewing machines out of which 10 machines will be auxiliary. From each of the remaining 15 machines it should be possible to produce three pieces of clothing (trousers, shirts) per hour. During an eight hour day this makes $15 \times 3 \times 8$ pieces = 360 pieces a day. During a year of 300 working days 360×300 pieces = 108,000 pieces should be the target output in the long run.

Assuming a price ex-factory at \$ 40 a piece the turnover per year comes to $108,000 \times \$ 40 = \$ 4,320,000$.

The working capital needed at any specific point of time will be this figure divided by the figure indicating the speed of the turnover of the goods. If we assume the turnover ratio to be 4 the needed working capital will be $\$ 4,320,000 \div 4 = \$ 1,080,000$. If the figure is 12 the working capital needed will be to the tune of $\$ 4,320,000 \div 12 = \$ 360,000$.

The output target at 360 pieces will be reached gradually and tentatively after two years. If we assume that the output will be about one third of this (120 pieces a day) after 6 months the required working capital will be \$ 1,080,000 and \$ 360,000 divided by three depending on the speed of the sales turnover. This leaves a required working capital of \$ 360,000 and \$ 120,000 respectively during the initial stage.



84.12.14