



**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)

RESTRICTED

DP/ID/SER.A/1319  
9 February 1990  
ORIGINAL: ENGLISH

18600

RESEARCH AND DEVELOPMENT ON VARIOUS METHODS  
OF SPINNING SHORT STAPLE COTTON

DP/VIE/86/014/11-01

VIET NAM

Technical report: Second mission of the Chief Technical Adviser\*

Prepared for the Government of Viet Nam  
by the United Nations Industrial Development Organization,  
acting as executing agency for the United Nations Development Programme

Based on the work of Roy Nield  
Chief Technical Adviser

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

United Nations Industrial Development Organization

Vienna

\*

This document has not been edited.

V.90-81431

- 11 -

TABLE OF CONTENTS

	<u>Page No</u>
ABBREVIATIONS	1
I EXECUTIVE SUMMARY	2
II INTRODUCTION	3
III RECOMMENDATIONS	4
IV ACTIVITIES AND OUTPUTS	5
Purpose of the mission	5
Programme	5
Counterparts	5
Meetings, seminars, etc.	5
Inputs	6
Budget revision	6
Documentary outputs	6
V CONCLUSIONS	7
VI ACKNOWLEDGEMENTS	8
ANNEXES	
1. Text of Progress report for TPR	9
2. Equipment	12
3. Training	13
4. Experts	14
5. Work Plan	15
6. Budget	16
7. Government Budget	

- 1 -

ABBREVIATIONS

CTA	Chief Technical Adviser
Est	Estimate
JD	Job Description
MOLI	Ministry of Light Industries
NPD	National Project Director
Prodoc	Project Document
Req xx	Requisition No. xx
SIDFA	Senior Industrial Development Field Adviser
TOR	Terms of Reference
TPR	Tri-Partite Review
TRI	Textile Research Institute (Hanoi)
TRSI	Textile Research Sub-Institute (Ho Chi Minh City)
UTE	Union of Textile Enterprises

## I EXECUTIVE SUMMARY

This mission took place during November and December 1989. It was coordinated with a mission to Project DP/VIE/86/015 in Ho Chi Minh City.

The project concept remains very relevant to the Government's Development Plan which emphasises the need to expand the production of consumer goods especially clothing by increased utilization of indigenous raw materials.

A progress report by the CTA was accepted as presented by the TPR meeting in Hanoi on 12 December 1989 and the following decisions were taken:-

1. Continue implementation of the project according to the work plan given in the CTA's report.
2. Amend the Mandatory Budget Revision in accordance with the decisions of the TPR meeting. This has been done. After taking into account all the feasible savings that could be made, it was found to be necessary to increase the budget by approximately \$120,000 to allow for inflation and purchase 3 items of equipment, namely, an Uster Evenness tester, an Uster "Tensorapid" yarn strength tester and a set of hand spinning equipment, all of which were included in the original list of equipment and are essential for achieving the objectives of the project.
3. Schedule an evaluation mission for the second half of November 90 so that its findings will be available to the TPR.
4. Schedule the next TPR for December 1990.

The status of the Project outputs is as follows:

Output 1, cotton testing laboratory, will be fully produced after completion of the training programme and expert missions.

Output 2, testing of yarn properties, will be produced after delivery of the Uster evenness and yarn strength testers.

Output 3, pilot plant, will not be produced until October 1990 when the building will be completed and the 2 major items of equipment (ordered early 1989) will be installed.

The TRI has already made considerable progress with Output 4, development of hand ginning and spinning machines.

It is expected that the main project objectives will be achieved within the intended life of the project (2 years from 8/8/88).

## II INTRODUCTION

The main object of the project is to increase the availability of good quality textiles for domestic consumption which is in line with the Government's development plan for the period 1986-90 which emphasizes the need to expand the production of consumer goods - especially clothing - by means of increased utilization of indigenous raw materials.

The immediate objective is to strengthen the capability of the Vietnam Textile Research Institute in evaluating cotton fibre and conducting spinning development work with particular emphasis on the use of short staple cotton.

These objectives were elaborated upon in the first mission report of the CTA (DP/ID/SER.A/1152) dated 13 February 1989.

### III RECOMMENDATIONS

1. Continue implementation of the Project according to the plan (Annex 5) and Budget Revision (Annex 6) and, in particular:-
2. Complete the civil engineering work before the OE spinning machine and Blowroom are delivered. (NPD). Note that the OE room must be air conditioned.
3. Check the specification of the Tensorapid strength tester with Uster and inform UNIDO. (CTA).
4. Place the order for the Tensorapid with Uster. (UNIDO).
5. Check the specification of the evenness tester with Uster and inform UNIDO. (CTA).
6. Place the order for an evenness tester with Uster. (UNIDO).
7. Identify a potential supplier for a set of hand spinning equipment and place the order. (UNIDO).
8. Manufacture locally a set of nep counting boards and templates. (NPD).
9. Implement Fellowship 31-03, 31-04 and 31-16 in Bolton in April 1990, together with 8 persons from project 015. (UNIDO).
10. Contact Bolton regarding Fellowships. (CTA).
11. Agree with Bolton extra fee for English language tuition. Total cost 400 pounds for entire group. (UNIDO).
12. Arrange training for candidates 31-08 and 31-09 in the works of Schlafhorst. (UNIDO). Note next course in English starts 19 March 1990.
13. Confirm exact dates for next missions of CTA. (CTA).
14. Provide CV's for posts 11-02 Textile Testing and 11-05 Appropriate Spinning Technology. (UNIDO). Note reduced m/m's.
15. Explain situation to Truetzschler and Schlafhorst and request them to recommend experts. (UNIDO).
16. Organize a Project Evaluation for the second half of November 1990 - coordinated with Project 015. (UNDP, Hanoi).
17. Organise the next TPR for December 1990. (UNDP, Hanoi).
18. Arrange for the entire spinning department (except the Blowroom) to be air-conditioned. (Government).

#### IV ACTIVITIES AND OUTPUTS

##### Purpose of the Mission

The main objectives of the mission were:

- to review progress since the last mission.
- to discuss outstanding issues.
- to finalize the training programmes.
- to up-date the work plan.
- to advise the NPD on the work to be carried out in the absence of the CTA.
- to assist in preparation for the TPR.
- to prepare a progress report and recommendations for the TPR.
- to participate in the TPR.
- to prepare the "Summary of TPR Revue Report"
- to prepare a mission report recording all decisions taken and the actions necessary and by whom to expedite further implementation of the project.

##### Programme

The mission was combined with a mission to the TRSI in Ho Chi Minh City which is receiving assistance through project DP/VIE/86/015. The dates of the combined mission were 5 November to 18 December 1989, inclusive.

##### Counterparts

The NPD is Dr Mme Nguyen Thi Bau. The Director of the TRI is Dr Pham Hoang Ninh.

##### Meetings, Seminars, etc.

Frequent meetings were held with the Director of the TRI and the NPD and her staff. All outstanding matters were discussed in great detail.

The members of the study group which had recently returned from India and Australia were de-briefed.



The fellowship groups which had recently returned from India (Appropriate Technology), Switzerland (Uster Testing) and W. Germany (Truetzschler Blowroom) were debriefed and advice was given on the preparation of their final reports.

All the items of equipment supplied by UNIDO were examined and various suggestions made.

Two meetings were held with Mr Bonnamy, SIDFA.

### Inputs

The project inputs are elaborated in the progress report (Annex 1).

### Budget Revision

The Mandatory Budget Revision was amended in accordance with the decisions taken at the TPR meeting. After having taken into account all the feasible savings that could be made, it was found that it would be necessary to increase the budget by approximately \$120,000 to allow for inflation and to purchase the 3 items of equipment still necessary for achieving the objectives of the project.

### Documentary Outputs

Agenda for the TPR.

Progress report for the TPR. A slightly edited version of the text is included as Annex 1 of this report. The tables have been updated to reflect the decisions taken at the meeting.

Summary of the TPR report (Minutes of the meeting).

Terms of Reference (TOR) for a future project evaluation.

Second Mission Report of CTA.

Schedules detailing the present status of the project as regards equipment, training and experts (Annexes 2, 3 and 4 of this report).

A detailed work plan for the remainder of the project (Annex 5)

An amended Mandatory Revision of the budget (Annex 6).

## V CONCLUSIONS

Having regard to constraints outside the control of the project management, reasonable progress has been made during the first 16 months of the Project's active life.

Implementation of the project has been controlled to a large extent by the long delivery times associated with the 2 major items of equipment (OE spinning machine and Blowroom line) which are expected to be delivered (as originally scheduled) in March and August 1990, respectively.

It was agreed at the TPR meeting to increase the budget to permit purchase an Uster evenness tester, an Uster "Tensorapid" yarn strength tester and a set of hand spinning equipment, all of which are essential to the success of the project.

The Tri-Partite Review meeting in December was very successful thanks mainly to a most efficient Chairman, the participation of the Back-Stopping Officer from UNIDO and thorough preparation for the meeting by the CTA and the NPD.

Implementation of the Project should be continued as outlined in this report in which case it is expected that the objectives will be reached within the intended life of the project (3 years from 8/8/88).

VI ACKNOWLEDGEMENTS

The author wishes to thank all those persons in the Government, UNDP and UNIDO who participated in the work of this mission for their willing co-operation and invaluable advice and in particular:

- Dr Dang Vu Chu            Vice Minister of Light Industry  
                                 Chairman of the TPR meeting
  
- Dr Ding Sy Bang            Director, Science and Technology, MOLI
- Mr Nguyen Lam Con        Deputy Director, Planning Department, MOLI
- Mme Vu Kim Anh            Deputy Director, International Cooperation  
                                 Department, ICD
  
- Mr Phan Trong Tiem        Senior Official, ICD
- Mr Nguyen Huy Chuong     Senior Official, Council of Ministers
- Dr Mme Phan Thu Vinh     Senior Expert, State Planning Committee
- Dr Do Van Vinh            Director, Industrial Department, State  
                                 Committee for Science and Industry
  
  
- Dr Pham Hoang Ninh        Director of the TRI
- Dr Mme Nguyen Thi Bau    National Project Director
  
  
- Mr J M Bonnamy            SIDFA, UNDP
- Mr Tran Trong Phung       Programme Officer, UNDP.

PROGRESS REPORT FOR THE TRIPARTITE MEETING TO BE HELD IN HANOI  
ON 12 DECEMBER 1989

Government Contribution

In 1986, the approved budget for the Government contribution was about 17 million dong. This has now risen to 2,152 million dong by the end of 1990. This huge increase is partly due to inflation but mainly due to improvements in the buildings and the purchase of additional machines for the pilot plant which will complement those supplied by UNIDO.

Details of the Government contribution are given in Annex 7.

Buildings

The Government has decided to construct a special air conditioned room for the OE Spinner, which needs a clean environment to function properly. It is also hoped that funds will be made available to allow the entire spinning department to be conditioned, as a controlled environment is essential for scientific work.

Equipment

All the equipment finally selected for the fibre testing laboratory has been installed and is operational.

Due to long delivery schedules, however, the 2 major items for the pilot plant (which were ordered early in 1989) will not arrive until March (OE Spinner) and August (Blowroom) 1990.

Books and periodicals are being delivered to the information department as planned. A monthly news letter with a circulation of 500 copies is appreciated by the industry.

Details of the UNIDO equipment are given in Annex 1.

The Government have provided the following items:

- 2 drawframes
- 1 comber and lap former
- 1 microcomputer
- 1 offset printing machine

Training

Both study tours have been successfully completed.

Three fellowship programmes (10 persons) have been successfully completed. Training for another group (3 persons) has been arranged for 1990 and arrangements are in hand to place the final group (2 persons) with the machinery supplier. Details of training are given in Annex 3.

### Experts

It was always envisaged to field the experts after completion of training and delivery of the equipment. Accordingly, all experts should be fielded during 1990. Details of the experts are given in Annex 4.

### Work Plan

The agreed work plan for the rest of the project is given in Annex 5.

### Budget

The UNDP budget was increased by \$34,000 in 1989 to compensate for inflation in the cost of the OE Spinning Machine.

The latest budget revision is attached as Annex 6.

### Issues

Due to changes in emphasis since the Prodoc was written, e.g. more stress upon yarn testing for export, the following issues were addressed during the mission.

### Pilot Plant Buildings

The OE Spinning machine, which has now been ordered, needs a clean atmosphere with constant temperature and humidity to operate properly. This has been agreed.

### Equipment

The cost of equipment has always been the biggest stumbling block as far as this project is concerned. After the first mission it was decided to place orders for fibre testing equipment, the blowroom and the OE spinner and to make lists of priorities for the remainder of the equipment originally considered to be necessary for this project.

In order to achieve the objectives of the TRI the following items are essential:

- Evenness tester for slivers and yarns
- Hand spinning equipment
- Yarn strength tester

The evenness tester is the most important instrument for process quality control in a spinning mill.

Strength testing of yarn is essential for quality control purposes and also for export quality certification.

Without both the above instruments it will not be possible to determine the success or otherwise of any research and development work carried out nor to carry out the vast number of tests necessary for export quality certification.

Hand spinning equipment is needed to help village communities.

#### Yarn Testing and Certification for Export

After completion of the training programme, and delivery of the evenness tester and yarn strength tester the TRI will be capable of carrying out all the required quality certification tests to international standards. It was agreed at the TPR meeting that such instruments should be purchased.

#### Fellowships

There had been a problem of excessively high training costs but that has now been resolved.

#### Budget for the Remainder of the Project

In order to implement Output no 2 (testing of yarn regularity, strength and faults) the 2 instruments mentioned above are essential. The cost will be about \$150,000 but, taking into account possible savings from on budget lines, the net increase will be only \$120,000. This was approved at the TPR meeting.

#### Work Plan

The up-dated work plan for the rest of the project as given in Annex 5 was approved at the TPR.

#### Possibility of a Phase II

Consideration of a second phase or project extension was deferred to the next TPR.

DP/VIE/86/014

Research and Development on spinning short staple cotton

EQUIPMENT - Revised December 1989 (\* = Already Delivered)

Req No	Item	Supplier	Cost(\$)	Remarks
88/1	Landcruiser	Toyota	14,414	*
	Spare parts		2,290	*
88/2/1	Digital fibrograph	SDL	57,926	Items 1+5
/2	Fibre opener	SDL	6,022	*
/3	Pressley Tester	Baer	6,154	*
/4	Micronnaire	Baer		*
/5	Fineness/maturity	SDL		*
/6	Lab roller gin	Platt/SL	6,491	Items 3+4
/7	Microscope			Cancelled
/8	Analytical balance			Cancelled
88/3	2xAi conditioner	BB/York	19,391	*
88/4/1	Miniature spinning			Cancelled
/2	Blowroom line	Truetzschler	317,793	Del. Aug 90
88/5/1	OE spinner	Schlaforst	148,700	Del. Mar 90
/2	Small can d/frame	Cancelled	not needed	with 88/5/1
88/6	Hand spinning set	Estimated	2,000	No offers yet
88/7	PP copier	Kwan	1,538	*
88/8/1	Evenness tester	Uster		Estimate for
/2	Strength tester	Uster	149,000	items 1 + 2
88/9	Nep count boards	Cancel.	Make locally	
88/10	Books/periodicals	Munksgaard	2,395	*

DP/VIE/86/014

Research and development on spinning short staple cotton

TRAINING - Revised December 1989

Number	Name	Duration	Remarks
<u>FELLOWSHIPS</u>			
<u>Uster testing</u>			
31-01	Hung Nguyen Manh	1	Implemented 1989
31-02	Minh Nguyen Quang	1	Zellweger Uster
<u>Textile testing</u>			
31-03	Dung Tran Thu	3	Scheduled April 1990
31-04	Hai Pham Bich	3	Bolton
31-16	Thu Ha Hoang	3	
<u>OE Spinning</u>			
31-08	Than Nguyen Kim	2	Schlaforst, FRG
31-09	Duc Nguyen Minh	2	UNIDO to request placement.
<u>Blowroom</u>			
31-05	Ding Giap Le	1	Implemented 1989
31-07	Quang Nhiem Huynh	1	Truetschler, FRG
31-17	Mich Tran Van	1	
<u>Appropriate spinning technology</u>			
31-06	Minh Nga Tran	3	Implemented 1989
31-10	Chiem Tran Trong	3	India
31-11	Phong Pham Dinh	3	Extended to 3 m/m at request of UNDP
31-13	Dung Vo Thanh	3	
31-14	Chuyen Bui Thi (015)	3	
31-12	Ha Le Thi	-	Cancelled
31-02	Tuyet Nguyen Thi	-	Withdrawn due accident

Total 17 less 2 cancelled = 15 active fellowships

STUDY TOURS - Revised December 1989.Research and Development (No 29)

32-01	4x1	Implemented 1987 France, UK and FRG.
-------	-----	---

Appropriate spinning technology (No 52)

32-02	5x1	Implemented 1989 India and Australia
-------	-----	---



DP/VIE/86/014

Research and Development on spinning short staple cotton

EXPERTS - 1990 AND FUTURE - Revised December 1989

Post no	Title	m/m	Remarks
11-01	CTA	4	R. Nield selected. Next missions Jul 90, Oct 90, Mar 91 and Nov 91. Co-ordinate and share cost with Project DP/VIE/86/015.
11-02	QC/Testing	2	Reduce to 2 m/m since miniature spinning not available. UNIDO to provide CV's for other candidates including, if possible Mr J. Mitchell of BTTG and/or a candidate from Bolton. Split missions Jul 90 (after fellowships) and Mar 91. Share expert and coordinate with 015.
11-03	Blowroom	1	Field expert after installation of blowroom. Ask Truetszchler to recommend candidate who could be machine erector.
11-04	OE Spinning	1	Field expert after installation of machine. Ask Schlafhorst to recommend candidate who could be machine erector.
11-05	Appropriate Spinning Technology	1	Reduce to 1 m/m in view of excellent report by UNIDO consultant, successful study tour and fellowships (extended by 1 month) and work already carried out by TRI. Modify Job Description; expert to review work of TRI and advise. Suggest expert from India. Field expert April 1990.

DP/VIE/86/014

Research and Development on spinning short staple cotton

WORK PLAN - PROJECT INPUTS AND ACTIVITIES - Revised Dec 1989

	1989	1990	1991
<u>Personnel</u>			
11-01 Chief Technical Adviser	-	- - -	- - -
11-02 QC/Testing		- - -	- - -
11-03 Blowroom Technician		-	
11-04 Open End Spinning Expert		-	
11-05 App/Spinning Technology		-	
<u>Fellowships</u>			
Fibre testing. Bolton 3x3m/m		-	
Blowroom. Truetschler 3x1m/m	-		
OE Spinning. Schlafhorst 2x2m/m		-	
Uster Equipment. Uster 2x1m/m	-		
App/Spinning Technology 5x3m/m	-		
<u>Study Tours</u>			
Research & Development (29) 4x1m/m	-		
App/Spinning Technology(52) 5x1m/m	-		
<u>Equipment</u>			
Fibre Testing	-		
OE Spinner		-	
Blowroom		-	
Yarn Testing		-	
Hand Spinning		-	
<u>Activities</u>			
Fibre testing		-	
OE Spinning		-	
Short Fibre Spinning R & D		-	
Design of A/T machines		-	
Manufacture of A/T prototypes		-	
<u>Evaluation of Project</u>			
			-

UNITED NATIONS DEVELOPMENT PROGRAMME  
PROJECT REVISION

Country : VIETNAM  
Project Number : VIE/86/014/G/01/37  
Project Title : Short Staple Cotton

The above project is revised as shown in the attached budget to reflect the estimated expenditures in 1989 and rephase the unspent funds to 1990 and onwards.

The increase in the training, equipment and miscellaneous components are partly compensated by savings on the expert component due to the shared use of the CTA for this project and VIE/86/015. The net increase in the project budget is mainly to cover costs increases for equipment due to inflation as decided at TPR meeting on 12 December 1989.

The change to the project budget is as follows:

Previous UNDP input - Project budget	"F" US\$	<u>925,560</u>
Revised UNDP input - Project budget	"G" US\$	<u>1,044,729</u>
UNDP input - increase	US\$	<u>119,169</u>

Re letter of UNIDO  
Signed on behalf of Executing Agency

18/10/1989  
Date

*James L. ...*  
Signed on behalf of UNDP

15/12/89  
Date

PROJECT BUDGET COVERING 000? CONTRIBUTIONS  
(FIGURES IN US DOLLARS)

Country : VIETNAM  
Project Number: V12/06/014/C/01/37  
Project Title : Short Staple Cotton

BL	DESCRIPTION	TOTAL		PRIOR YEARS		1988		1989		1990		1991	
		m/n	US\$	m/n	US\$	m/n	US\$	m/n	US\$	m/n	US\$	m/n	US\$
10	PROJECT PERSONNEL												
11	INTERNATIONAL EXPERTS												
11.01	CTA	5.7	59,126					1.7	20,000	2.0	19,126	2.0	29,999
11.02	Fibre Testing Expert	2.0	19,400							1.0	9,400	1.0	10,000
11.03	Blowroom Technician	1.0	9,400							1.0	9,400		
11.04	Open-end spinning Technology	1.0	9,400							1.0	9,400		
11.05	Appropriate Spinning Tech.	1.0	9,400							1.0	9,400		
11.09	Sub-Total (Experts)	10.7	106,726					1.7	20,000	6.0	56,726	3.0	30,000
11.50	Short-term Consultants	1.4	14,143	1.4	14,143								
11.58	Sub-Total (Consultancies)	1.4	14,143	1.4	14,143								
11.99	Sub-Total	12.1	120,869	1.4	14,143			1.7	20,000	6.0	56,726	3.0	30,000
16.12	MISSION COST		10,000		5,636				2,000		2,364		
19	Component Total	12.1	130,869	1.4	19,779			1.7	22,000	6.0	59,090	3.0	35,000
30	TRAINING												
31.00	Individual Fellowships		100,512						50,512		50,000		
32.00	Study tours		76,552	31,571		7,411		37,570					
38.00	Savings		-3,604			-3,604							
39	Component Total		173,460	31,571		3,807		88,082		50,000			
40	EQUIPMENT												
41.00	Expendable Equipment		3,262			2,940		322					
42.00	Non-exp. Equipment		733,630			114,226		468,412		151,000			
49	Component Total		736,900			117,166		468,734		151,000			
50	MISCELLANEOUS												
51.00	Sundries		3,500	200		375		925		1,000		1,000	
59	Component Total		3,500	200		375		925		1,000		1,000	
99	PROJECT TOTAL		1,044,729	51,550		121,340		579,741		261,090		31,000	

DP/VIE/86/014

Research and Development on spinning short staple cotton

GOVERNMENT BUDGET - Revised December 1989

Units: Dongs x 1,000			
Item	Original Budget	Actual 1989	Estimated 1990
1. Salaries of fellows and personnel expenses	1,440	10,000	20,000
2. Value of existing equipment	11,000	600,000	
3. Cost of new equipment	1,260		
- Comber		400,000	
- 2 Drawframes		320,000	
- Microcomputer		12,000	
- Offset printing machine		128,000	
4. Installation of equipment		11,000	30,000
5. Manufacture of hand spinning equipment		12,000	20,000
6. Buildings			
Value of laboratory + plant		358,000	
House for expert + training		30,000	
Improvements to buildings	550	12,000	120,000
7. Raw materials and electricity	1,000	1,500	50,000
8. Miscellaneous expenses	800	2,500	5,000
TOTAL	16,650	1,907,000	245,000