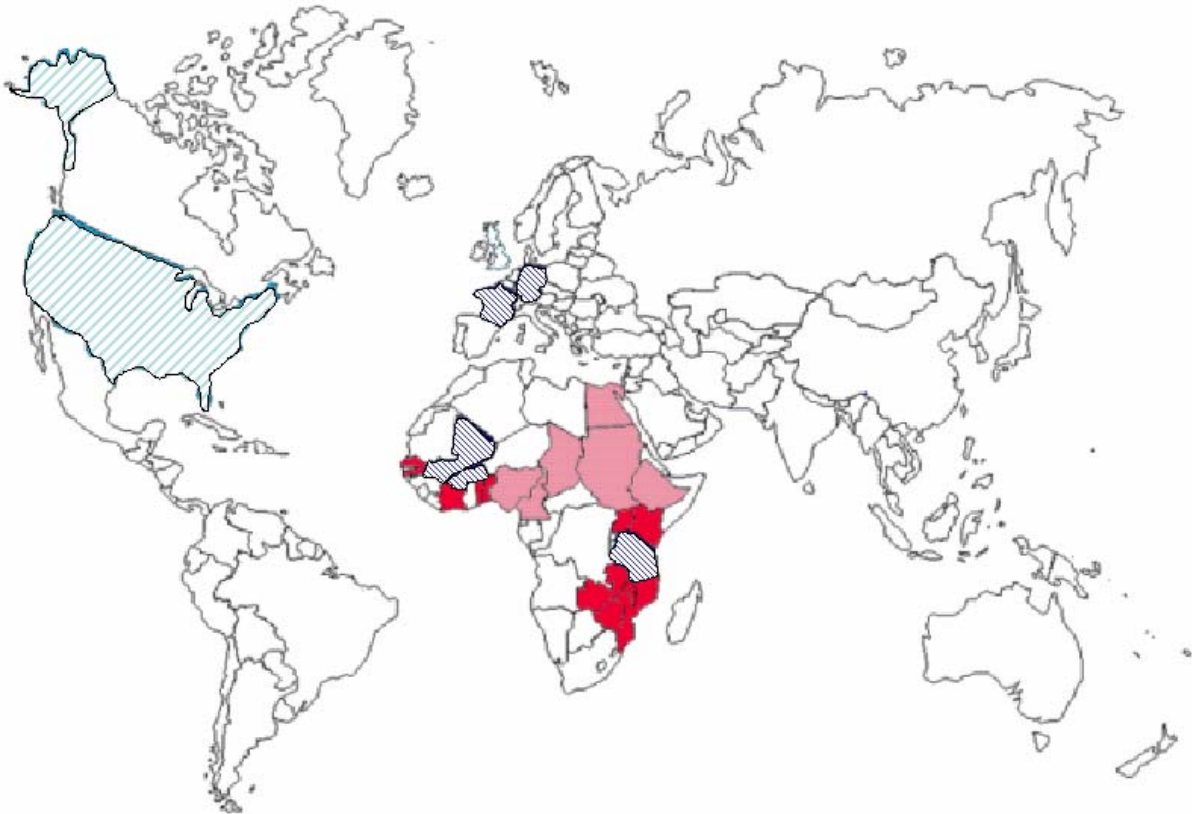


PROJECT PROPOSAL

Commercial Standardisation of Instrument Testing of Cotton
for the Cotton Producing Developing Countries in Africa

CFC/ICAC
November 17th, 2005

Map



- Dark hatching pattern: Direct project partners (supporting and supported countries)
- Red (dark grey): Countries to be support by the Regional Technical Centres
- Light hatching pattern: Additionally supporting countries
- Light red (light grey): Countries being indirectly supported by the RTCs and/or the involved international expert bodies

Abbreviations and Acronyms

ACSA	American Cotton Shippers Association
AMS	Agricultural Marketing Service (USDA Agency)
ART	SITC instrument (Manufacturer: Premier)
CERFITEEX	Centre de Recherche et de Formation pour l'Industrie Textile, Mali
CFC	Common Fund for Commodities
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement, Montpellier, France
CRDC	Cotton Research and Development Corporation, Australia
CSITC	Commercial Standardisation of Instrument Testing of Cotton; esp. the ICAC Task Force on Commercial Standardisation of Instrument Testing of Cotton
EA	Region: East Africa (including Southern African countries)
FIBRE	Faserinstitut Bremen e.V., Germany
HVI	SITC instrument (Manufacturer: Uster)
ICAC	International Cotton Advisory Committee, Washington, USA
ICB	International Commodity Body, here: ICAC
IEB	International Expert Bodies concerning cotton testing (e.g. Faserinstitut Bremen, CIRAD, USDA)
ITMF	International Textile Manufacturers Federation, Zurich, Switzerland
LDC	Least Developed Country
PEA	Project Executing Agency
PY	Project Year
RTC	Regional Technical Centre for the worldwide cotton testing laboratory certification system
SITC	Standardised Instruments for Testing of Cotton (as e.g. Uster HVI / Premier ART)
SOFITEX	Société Burkinabè des Fibres Textiles, Burkina Faso
TCB	Tanzania Cotton Board
TBS	Tanzania Bureau of Standards
UEMOA	Union Economique et Monétaire Ouest Africaine
UNIDO	United Nations Industrial Development Organization
USD	US Dollar
USDA	United States Department of Agriculture, USA
WA	Region: West Africa (including Central African countries)

COMMERCIAL STANDARDISATION OF INSTRUMENT TESTING OF COTTON FOR THE COTTON PRODUCING DEVELOPING COUNTRIES IN AFRICA

Project Summary

The International Cotton Advisory Committee (ICAC) declares that the project proposed is being supported by its members, and hereby submits the following draft project proposal for consideration with its recommendation for financing by the Common Fund.

Project Title	Commercial Standardisation of Instrument Testing of Cotton for Cotton Producing Developing Countries in Africa
Duration	4 years
Location	West Africa (including Central Africa) – represented by Mali/Burkina Faso; East Africa (including Southern Africa) – represented by Tanzania; Germany, France

Brief Description

The industry demands for objective and reliable test results are increasing rapidly, and major cotton importing countries are integrating instrument testing results in trade. Cotton with insufficient verification of its quality will result in price discounts for the producers or exclusion from the market.

Only a worldwide harmonised control and testing system can favour a frictionless business for all participants in the whole commercial chain.

Developed cotton growing countries like the USA have already built up their national cotton quality assessment systems and "HVI classification has resulted in a competitive advantage for the USA in global marketing; establishment of an adequate HVI system for the cotton producing countries in Africa and elsewhere would facilitate the access of their cotton to diverse global markets"¹. But up to now there is no adequate international verification of other worldwide test laboratories and their results. The availability of high volume cotton testing instruments solely is not satisfactory for producing reliable test values - examples from all over the world show that, without certified testing procedures, the results will be disregarded and therefore are worthless. The results have to be reliable and on an internationally agreed level. Cotton producing developing countries will be disadvantaged in their market position, if they do not manage to participate in an international quality assessment system.

So the objective of the project is to assist the cotton producing countries, especially the developing countries and Least Developed Countries (LDCs), to meet the emerging quality assessment demands of the global cotton market so as to strengthen or at least maintain their competitive position in the world market by keeping up with modern developments from the end-markets. Therefore it is essential to enable these countries to supply their cotton with objective, instrument-based quality information, based on internationally accepted test rules.

To achieve the objective, both of the following directions have to be followed:

- Introduction of a worldwide acceptable and worldwide adoptable, reliable cotton quality assessment with defined test rules and based on a worldwide cotton testing laboratory certification system.
- Strengthening of the market position of developing countries, especially the large number of LDCs in Africa, by enabling and implementing the international cotton quality assessment in their countries and for the benefit of their cotton business. Therefore the regional African capacities for the

¹ USAID : Summary and Findings of the West African Cotton Assessment, Sept 25 - Oct. 14, 2004

commercial application of instrument testing have to be built up, comprising the establishing and training of Regional Technical Centres (RTCs) as well as the technical assistance, maintenance support and resources mobilisation for application of instrument testing in cotton testing laboratories. Especially education will be essential for a successful setting-up of a network of well harmonised laboratories to satisfy the cotton testing demands.

The main financial support of the project will be used to implement the cotton quality assessment in Africa, especially with one Regional Technical Centre in Mali (LDC), and an additional Regional Technical Centre in Tanzania (LDC), supporting the West/Central and the Southern/Eastern African regions. Additional coordinated activity will occur in different regions of the world aimed at establishing a world-wide accepted, consistent system. This work will not be financed within this project, yet will provide spin off benefits to the project.

Estimated total cost	7,788,052 USD
Submitting institution	International Cotton Advisory Committee (ICAC)
Project Executing Agency	Faserinstitut Bremen e.V. (FIBRE), Germany
Additional Participating Agencies	ICAC, Washington CIRAD, France TBS TCB CERFITEX SOFITEX
Supervisory Body	ICAC
Duration	4 years
Estimated Start Date	July 2006

The estimated total cost- according to the project partners¹ -

Project partners	Source	
ICAC	contribution	2 115 USD
ICAC	by CFC	150 000 USD
FIBRE	contribution	654 743 USD
FIBRE	by CFC	1 382 388 USD
CIRAD	contribution	316 964 USD
CIRAD	by CFC	526 502 USD
CERFITEX / SOFITEX	contribution	110 044 USD
CERFITEX / SOFITEX	by CFC	1 261 632 USD
WA labs	contribution	0 USD
WA labs	by CFC	145 908 USD
TBS / TCB	contribution	108 280 USD
TBS / TCB	by CFC	1 388 039 USD
EA labs	contribution	0 USD
EA labs	by CFC	180 227 USD
External	contribution	1 561 209 USD
Total		7 788 052 USD

¹ Costs for FIBRE and CIRAD are based on the following exchange rate: 1 USD = 0.80 EUR

The estimated total cost - according to categories -

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	1.909.900 USD	1.551.900 USD	358.000 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	210.000 USD	18.000 USD	192.000 USD
IV Personnel	3.482.612 USD	1.876.933 USD	1.605.680 USD
V Technical Assistance and Consultancy	359.990 USD	200.158 USD	159.832 USD
VI Duty Travel	1.146.002 USD	854.743 USD	291.259 USD
VII Dissemination and Training	304.298 USD	202.963 USD	101.335 USD
VIII Operational Costs	225.250 USD	180.000 USD	45.250 USD
PEA Sub-total	7.638.052 USD	4.884.697 USD	2.753.355 USD
IX Supervision, Monitoring and Evaluation	150.000 USD	150.000 USD	0 USD
X Contingencies	included	included	included
Grant Total	7.788.052 USD	5.034.697 USD	2.753.355 USD

Financing sought from the Fund USD 5,034,697

Mode of financing Grant

Co-Financing -

Counterpart contribution

Agency	Source	
ICAC	contribution	2 115 USD
FIBRE	contribution	654 743 USD
CIRAD	contribution	316 964 USD
CERFITEX / SOFITEX	contribution	110 044 USD
WA labs	contribution	0 USD
TBS / TCB	contribution	108 280 USD
EA labs	contribution	0 USD
External	contribution	1 561 209 USD
Total		2 753 355 USD

External contributions are given by USDA, Bremen Cotton Exchange, CSITC members, CRDC

Previous Assistance to the ICB

The Common Fund has financed the following projects sponsored by the ICAC:

1. Cotton Production Prospects for the Next Decade (CFC/ICAC 01)

Duration: November 1992 to March 1995
Countries: Brazil, China (Mainland), Egypt, India, Mali, Mexico, Pakistan, Tanzania and Uzbekistan
Project Executing Agency: The World Bank

2. Integrated Pest Management for Cotton (CFC/ICAC 03)

Duration: September 13, 1994 to September 30, 1999
Countries: Egypt, Ethiopia, Israel and Zimbabwe
Project Executing Agency: The Israeli Cotton Production and Marketing Board Ltd

3. Integrated Pest Management of the Cotton Boll Weevil in Argentina, Brazil and Paraguay (CFC/ICAC 04)

Duration: June 30, 1995 to June 30, 2001
Countries: Argentina, Brazil and Paraguay
Project Executing Agency: National Service for Phytosanitary and Agro Food Quality, Argentina

4. Genome Characterization of Whitefly-Transmitted Geminivirus of Cotton and Development of Virus-Resistant Plants Through Genetic Engineering and Conventional Breeding (CFC/ICAC 07)

Duration: January 1, 1996 to December 31, 2001
Countries: Pakistan, UK and USA
Project Executing Agency: National Institute for Biotechnology and Genetic Engineering, Pakistan

5. Improvement of the Marketability of Cotton Produced in the Zones Affected by Stickiness (CFC/ICAC 11)

Duration: January 1, 1997 to April 30, 2001
Countries: France and Sudan
Project Executing Agency: The Sudan Cotton Company Ltd.

6. Improvement of Cotton Marketing and Trade Systems in Eastern and Southern Africa (Uganda and Tanzania)

Duration: October 1, 2000 to September 30, 2004
Countries: China (Mainland), India, Pakistan and UK
Project Executing Agency: Natural Resources International Ltd. UK

7. Sustainable Control of the Cotton Bollworm Helicoverpa armigera in Small-Scale Cotton Production Systems (CFC/ICAC 14)

Duration: October 1, 2000 to September 30, 2004
Countries: China (Mainland), India, Pakistan and UK
Project Executing Agency: Natural Resources International Ltd. UK

8. Resistance Management of Helicoverpa Amigers to Pyrethroids in West Africa (CFC/ICAC/16)

Duration: Fast track project (2000-2001)
Countries: Benin, Burkina Faso, Cote d'Ivoire, Mali, Senegal, Togo, Nigeria and Guinee
Project Executing Agency: Institut de l'Environnement et de Recherches Agricoles

9. Pilot Project, Price Risk Management for Cotton Farmers (CFC/ICAC 17)

Duration: Three years
Countries: Tanzania, Uganda and Zimbabwe
Project Executing Agency: The Cotton Company of Zimbabwe

10. Cotton Price Risk Management Study (CFC/ICAC 19FT)

11. Assessment of the Impact and Main Dynamics of Cotton Diseases Affecting in Particular Small Scale Production Systems in Eastern and Southern Africa (CFC/ICAC 21FT)

Duration: May 1, 2002 to October 30, 2002
Countries: Ethiopia, South Africa, Sudan, Tanzania, Uganda and Zimbabwe.
Project Executing Agency: Secretariat of the Southern and Eastern African Forum (SEACF)

12. Cotton Facts (CFC/ICAC 23FT)

Duration: May 1, 2002 to April 30, 2003
Countries: Not applicable
Project Executing Agency: International Cotton Advisory Committee

13. Improvement of the Sustainability of Cotton Production in West Africa (CFC/ICAC 25FT)

Duration: June 1, 2003 to July 31, 2004
Countries: Burkina Faso, Cameroon, Chad, Ivory Coast, Mali and Togo
Project Executing Agency: United Nations Conference on Trade and Development (UNCTAD), Geneva, Switzerland

14. Utilization of Cotton By-produce for Value-added Products (CFC/ICAC 20)

Duration: Four years
Countries: India
Project Executing Agency: Central Institute for Research on Cotton Technology, India

15. Utilization of Cotton By-produce for Value-added Products (CFC/ICAC 27FT)

Duration: May/June 2003
Countries: India
Project Executing Agency: Central Institute for Research on Cotton Technology, India

16. Preparation for the Commercial Standardisation of Instrument Testing of Cotton for Cotton Producing Developing Countries in Africa (CFC/ICAC 30FT)

Duration: Sept. 2005 to February 2006
Countries: Germany, France, West and Central Africa, Southern and East Africa
Project Executing Agency: Faserinstitut Bremen e.V., Germany

PART I: INTRODUCTION

A. Project Background

The industry demands for objective and reliable cotton fibre test results are increasing rapidly. Cotton with insufficient verification of its quality will result in price discounts for the producers or exclusion from the market. The objective of the project is to assist the cotton producing countries, especially the developing countries, to meet the increasing quality assessment demands of the global cotton market so as to strengthen or at least maintain their access to these markets. Therefore it is essential to enable these countries to supply cotton with objective, instrument-based quality information, based on internationally accepted test rules.

There is a strong need to strengthen technological benefits to developing countries to assist their economical development. The African cotton growing countries especially will need increased additional support to extend or even maintain their cotton business, to earn foreign exchange and strengthen their viability.

This project proposal stems from the conclusions and recommendations of the ICAC Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC) held in Bremen in March 2004 and Mumbai in November 2004. The Task Force was established as an Expert Panel by the International Cotton Advisory Committee (ICAC) in 2003 on the initiative of the International Cotton Association and changed to the Task Force in 2005.

The aim of the project is to improve the integrity of worldwide cotton trade by establishing a reliable system of instrumental cotton characterisation, adoptable by all cotton producing countries, especially developing countries. Therefore the following measures have to be achieved:

- Introduction of a worldwide quality assessment system with standardised controlled testing procedures, standardised calibration methods and standardised assurance checks.
- Strengthening of the developing countries, especially those in Africa, by enabling and implementing the international cotton quality assessment in their countries and for the benefit of their cotton.

For this purpose the Task Force brought together representatives of spinning mills, traders, cotton producers and research. The world wide composition of the Task Force, the momentum and consensus for international cooperation on the issue, which was visible at the Plenary Meetings of the International Cotton Advisory Committee in Mumbai in 2004 and in Liverpool in 2005, demonstrate the actual need of the aimed targets impressively.

The project proposal is based on the recommendations and conclusions of the ICAC Expert Panel meeting in Mumbai on November 28th, 2004. The recommendation of the Expert Panel is summarised in the proceedings of the 63rd meeting of the ICAC as follows:

“The Expert Panel is suggesting that the Fiber Institut Bremen [FIBRE], together with the USDA, ITMF International Committee on Cotton Testing Methods and CIRAD draft basic rules for international cooperation in testing cotton. Once the Panel has approved the rules, it will work with cotton industry organizations for acceptance and popularization of rules and their inclusion in the associations’ rules. He [Mr. Andrew Macdonald] added that in this regard, certification of testing centers is contemplated. The panel proposed that ICAC, based on the evaluation of the Fiber Institute and USDA, would issue and withdraw certification. Other institutions could also be involved in certification of laboratories. The panel is also

recommending establishing calibration standards including valid definition of calibration standards, control of the section of standards and validity and forwarding of calibration standards to all labs.”¹

In order to prepare for the establishing of the international cotton testing certification system and in order to identify the requirements and the best premises for building up a regional supporting structure in Africa, a Fast Track Project (CFC/ICAC/30FT) has been approved, started, and the results are the basis for this proposal.

B. Overview of the Commodity and the Related Background: **Cotton and Cotton Market**

Cotton is a major agro-industrial crop produced in both developing as well as developed countries. As one of the world's most important textile fibres, accounting for about 40% of all fibres used in clothing and household furnishings, cotton is also used in industrial fabrics and products and by-products are derived from cotton seeds and stalks for edible oils, soaps, firewood, paper and high protein animal feed supplements. The world cotton industry provides employment opportunities for hundreds of millions farmers and to allied industries such as agricultural inputs, machinery and equipment, transportation, storage, ginning, baling, seed crushing and textile manufacturing. Cotton is produced in approx. 80 countries and serves as the economic mainstay of many regions and nations. In some countries, cotton represents more than 50% of national export income. Over 75% of world cotton production occurs in developing countries and the farm-level value of world cotton production has been estimated at USD 30bn.

Cotton produced in Africa accounts 8-9% of the world cotton production and 10 to 20% of the world cotton exports; approx. 80% of the African cotton production are exported. Therefore cotton is of critical importance to many African countries. Cotton is the largest source of export receipts in several West and Central African (WCA) countries. The cotton sector is also key to rural poverty reduction, with cotton-related activities accounting for a large share of rural employment². 15 million people in Africa work in the cotton sector³, 6 to 10 million are involved in WCA⁴⁵.

The countries with a cotton production higher than 10,000 tons in Africa are (2004/2005) ⁶:

- West Africa (UEMOA)
 - Burkina Faso 263,000 tons
 - Mali 241,000 tons
 - Benin 174,000 tons
 - Ivory Coast 145,000 tons
 - Togo 75,000 tons
 - Senegal 18,000 tons
- East / Southern Africa
 - Tanzania 100,000 tons
 - Zimbabwe 75,000 tons
 - Zambia 75,000 tons
 - Uganda 41,000 tons
 - Mozambique 26,000 tons
 - Ethiopia 23,000 tons

¹ 63rd Plenary Meeting of the International Cotton Advisory Committee; Minutes; Third Open Session

² UNCTAD homepage, April 2005

³ UNIDO-UEMOA homepage, March 2005

⁴ UNCTAD homepage, April 2005

⁵ UNIDO-UEMOA homepage, March 2005

⁶ ICAC, September 2005

- South Africa 21,000 tons
- Other regions
 - Egypt 292,000 tons
 - Cameroon 124,000 tons
 - Sudan 114,000 tons
 - Nigeria 95,000 tons
 - Chad 80,000 tons

The typical situation can be described at the example of the following WCA countries¹:

- Benin: Cotton is the main cash crop and the largest source of export receipts, accounting 1/3 of Benin's exports. Cotton production is also critically important to rural welfare, since cotton-related activities employ about 45% of rural households. Ca. 20% of the cultivated area in Benin is under cotton.
- Burkina Faso: Cotton exports accounts for approx. 40% of exports from Burkina Faso. Cotton is the main exported commodity in terms of value, and generates income for approx. 2 million people in the country.
- Mali: Cotton exports account for 35% of total export revenues; in value terms, cotton was the second major source of foreign exchange earnings.
- Chad: Cotton is crucially important to the national economy, both in terms of income generation for farmers and for export revenue. More than 2 million people (almost 40% of the country's total population) are occupied in the sector. Cotton accounts for 2/3 of total exports from Chad.
- Togo: Cotton accounts for ca. 18% of total exports from Togo, and is therefore the largest source of export receipts (superseding phosphates in the early 2000s).

For the eight UEMOA countries (Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo) the importance of quality control for commodities (fish, food, cotton) is already known, and an internationally supported project was started by EU/UNIDO/UEMOA to enhance quality control systems in this region. The obtained operationalisation of three regional conformity assessment bodies will be a basis for the introduction of the cotton quality assessment in the planned project. It will be cared for that this project will be synchronised with the activities of EU/UNIDO/UEMOA.

C. Relevance of the Project to the ICAC's Commodity Strategy

The development and maintenance of a sound world cotton economy is one of the major policy objectives of ICAC.

The proposed project with its focus on quality assurance and enhancement is designed to stabilise cotton trading by providing a commercially acceptable system for the instrument testing of cotton. On the basis of reliable cotton test results an equitable trade based on the inherent cotton quality is possible. Cotton purchasing can be done more independently from the origin, as deliveries can be directly compared based on comparable test results. Cotton Associations are included in the project and will be encouraged to adopt the standardised test methods in their trade conditions.

To enable reliable cotton testing worldwide, the laboratories have to be assisted and the required technical pre-conditions have to be made available. In this project important technical requirements will be tackled to solve the most important problems for cotton testing laboratories in developing countries. The focus of the project is on developing countries, especially in Africa. The project will contribute to regional integration and cooperation, and will additionally contribute to CFC partnerships with international organisations and donor institutions.

¹ UNCTAD homepage, April 2005, based on data from 1995 to 2000

With the laboratory certification trade and cotton mills will get certainty about the reliability of the testing laboratories and the test results they pay for.

As a result, cotton producers, traders, spinners and other stakeholders in the world cotton economy will benefit from more reliable and improved cotton market. The objectives of the project are therefore in full conformity with ICAC's strategy for cotton development.

D. Relevance of the Project to the Objectives and the Policies of the Fund

The rationale of the Common Fund's mandate is to enhance the socio-economic development of commodity producers and contribute to the development of society as a whole. In line with its market-oriented approach, the Fund concentrates on commodity development projects. The Common Fund operates under the novel approach of commodity focus instead of the traditional country focus. Commodity focus entails concentrating on the general problems of commodities of interest to several developing countries. The activities of the Fund mainly comprise:

- Commodity development measures aimed at improving the structural conditions in markets and enhancing the long-term competitiveness and prospects of particular commodities. They include research and development; productivity and quality improvements; transfer of technology; diversification and processing; improvement of marketing and market access;
- Commodity market development activities which assist developing countries and, in particular least developed countries (LDCs), to function effectively in a liberalised global economy. Projects in this field include physical market development; enhancement of market infrastructure; facilitation of private sector initiatives; and commodity price risk management.

This proposal is directly corresponding to the objectives of the Fund, and gives a market-oriented approach focussed on the commodity cotton. It is addressed to all cotton producing countries, but is mainly aimed to assist developing countries, mainly in Africa, to participate in the emerging changes in cotton trade, so that the opportunity will be given to them to benefit from the changes instead of bearing the disadvantages.

E. Project Related Institutions

International Cotton Advisory Committee (ICAC), Washington, USA

The International Cotton Advisory Committee (ICAC), which is the sponsoring agency, will be the Supervisory Body. It has the capacity and resources to assume the supervisory role for this project.

The ICAC is an association of governments having an interest in the production, export, import and consumption of cotton. It is an organisation designed to promote co-operation in the solution of cotton related problems, particularly those of international scope and significance. Its members account for more than 80% of the world's cotton exports and for more than 50% of the imports.

Faserinstitut Bremen e.V. (Bremen Fibre Institute) - FIBRE

Faserinstitut Bremen (Bremen Fibre Institute – FIBRE), Germany, will be the Project Executing Agency (PEA) for this project.

Faserinstitut Bremen is a public funded research institute and offers research and development in the subject area of fibres. The activities concentrate on the fields of fibre quality testing, fibre measurement technology and harmonisation, renewable materials, and composite materials. The institute is the official testing and arbitration laboratory of the Bremen Cotton Exchange, carries out cotton testing since 1955,

organises the International Cotton Conference Bremen in co-operation with the Bremen Cotton Exchange, and exhibits intense and long-term international practical experience in the harmonisation of fibre testing

- Execution of the Bremen Cotton Round Trial
- Designated laboratory of the USDA for Calibration Cotton Standards
- Certification of wool laboratories in co-operation with INTERWOOLLABS, UK
- Vice Chairmanship in the Committee on Cotton Testing Methods

Faserinstitut Bremen was involved in the EU/UNIDO/UEMOA quality program, preparing a feasibility study for the installation of Technical Centres for the cotton value added chain in West Africa.

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CIRAD

Centre de coopération internationale en recherche agronomique pour le développement - Département des Cultures Annuelles, (CIRAD-CA), France

CIRAD is a French agricultural research centre working for international development. Most of its research is conducted in partnership. CIRAD has chosen sustainable development as the cornerstone of its operations worldwide. This means taking account of the long-term ecological, economic and social consequences of change in developing communities and countries. CIRAD works in over 50 countries worldwide, on targeted research for developing countries. Throughout its history, it has established and maintained close links with communities, agricultural, animal and forest production sites and physical and biological environments in the tropics and subtropics.

The aim of the CIRAD Research Unit on Quality in Cotton Production is to improve product quality, taking account of the expectations of and constraints faced by each type of player in the commodity chain. The unit applies its international experience to help cotton producers and ginners manage and promote quality, through training, appraisals, studies and advisory services relating to cottonseed and fibre classification, and through the development of new analysis equipment.

CIRAD is experienced in capacity building in Africa, is involved in international programs for Africa as EU-UNIDO-UEMOA, and participated in CFC project CFC/ICAC 11. CIRAD will, due to its experience, be subcontracted in the project.

Contact: Cirad ca TCOT; 73, Rue Jean-François Breton; TA 70/16; 34398 Montpellier cedex 5, France

- Dr. Jean-Paul Gourlot, Tel. +33-4-6761-5875, e-mail: jean-paul.gourlot@cirad.fr
- Dr. Bruno Bachelier, Tel. +33-4-6761-6596, e-mail: bruno.bachelier@cirad.fr

Tanzania Bureau of Standards (TBS)

The Tanzania Bureau of Standards (TBS) is Tanzania's sole standards body. It was established in 1975 and is a parastatal organization under the Ministry of Industry and Trade. The main functions of TBS are :

- Formulation and promulgation of Tanzania standards in all sectors of the country's economy with priority in the fields of textiles, leather, agriculture and food, chemicals, engineering and environment
- to improve the quality of products both for export and local consumption through various certification schemes
- to promote standardization and quality assurance services in industry and commerce through training of personnel in company standardization, quality assurance, quality improvement and laboratory techniques
- to undertake the testing of product samples in the course of implementing standards or as requested by manufacturers
- to undertake calibration of industrial and commercial measuring equipment and instruments in the areas of mass, length, volume, energy, temperature etc.

Laboratories included in TBS are a chemical laboratory, a building and construction laboratory, a mechanical engineering laboratory, and electrical engineering laboratory, a food laboratory and a textile and leather laboratory.

Contact :

Tanzania Bureau of Standards

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- Mr. Dominic Haynes Mwakangale, Textile Engineer (MSc), e-mail : dhmwakangale@yahoo.com

Tanzania Cotton Board (TCB)

TCB is aimed at improving and developing the cotton industry by promoting, facilitating and monitoring the functioning of the entire production, marketing, processing and export chain of cotton business. TCB is classing the whole cotton production of Tanzania with visual classing and 10% of the produced bales with SITC testing.

Tanzania Cotton Board (TCB), P.O. Box 9161, Dar es Salaam, Tanzania

- Dr. Joe C.B. Kabissa, General Manager
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CERFITEX

CERFITEX (Centre de Recherche et de Formation pour l'Industrie Textile) is a textile school for the education of textile engineers, higher textile technicians and textile technicians. It was created in July 2004 based on the former work of ESITEX. It is situated in Ségou, Mali and belongs to the Ministry of Industry and Trade.

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Contact: Mr Djibrila C. Maiga, Directeur Général
Mr Bréhima Tounkara, Directeur des Études
Mr Lassana Sako, Conseiller Spécial du Directeur Général

SOFITEX

SOFITEX is the largest of the three cotton companies in Burkina Faso. At the same time SOFITEX is responsible for cotton classing of the whole cotton production of the country. It is owned by the government with 35%, 34% by DAGRIS, 30% by the National Union of the Cotton Producers. SOFITEX is closely involved in quality assurance actions initiated by the EU-UNIDO-UEMOA quality program.

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Bremer Baumwollbörse (Bremen Cotton Exchange)

The Bremer Baumwollbörse is a Cotton Organisation in Germany with about 180 members in 30 countries. The membership includes cotton producers and shippers, merchants/agents and cotton mills, banks, insurance companies and textile machine manufacturers. Main tasks and functions are International Trading Rules with Technical and Quality Arbitration, Cotton Seminars, the biannual International Cotton Conference, Cotton Classing (Traditional and instrumental), publication of a fortnightly issued Cotton Report, Expert Surveys, Cotton PR information and market analysis. The Bremen Fibre Institute functions as laboratory of the Exchange.

The Bremer Baumwollbörse is, based on the approval of their board, planning to contribute to the project by providing expertise for CSITC specific changes in the trade rules and by establishing a training centre with an Uster HVI SITC directly for the purpose of training and re-testing.

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United States Department of Agriculture Agricultural Marketing Service – USDA-AMS

The USDA-AMS Cotton Program promotes the orderly and efficient marketing of cotton by preparing, distributing, and encouraging the use of universal cotton classification standards, and by providing cotton classification and market news that meet the needs and expectations of the cotton and textile industries.

USDA-AMS is an important member of the CSITC Task Force and will give significant contribution to all major components of the project. As the USA is no member of CFC, all costs of USDA-AMS will be borne by USDA.

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F. Choice of Regions and Partner Institutions

The choice of the regions and partner institutions is based on the results of the CFC/ICAC/30FT project. The final clarification of the participation of the different partners with each other, their boards of directors and their ministries is in progress.

The first decision that had to be done was the decision about the regions in which Regional Technical Centres will be established. For the decision about potential regions for RTCs, it has to be paid attention to the fact that the established RTCs will have to be self financing after the end of the project. Therefore the choice of the important regions is

- mainly based on the cotton production of the regions (see chapter B),
- is additionally regarding the homogeneity of their cotton production (same ginning process)
- is regarding the existing co-operations between the countries.

It has to be emphasised, that this project is planned as a pilot project for Africa. The number of Regional Technical Centres to be established is restricted due to the operability of the project, the aimed self financing status of the RTCs and the limited project funding. Therefore it will not be possible to support all cotton producing countries to the same extent. However, the perspective of this project is to give support to all cotton producing countries. In regions, where it is not feasible to start a RTC in the first step, it will be possible to get a) basic support for the cotton testing laboratories by the RTCs in the chosen regions and to get b) support by the international expert bodies involved in this project.

The highest cotton production can be seen in West Africa. Eight countries including six major cotton producing countries are cooperating in UEMOA, additional cotton producing countries such as Ghana and Nigeria are in the region, so that the total annual cotton production is more than 700,000 tons. Based on these countries with French as their common language, Benin, Burkina Faso and Mali are the most likely countries for a RTC. Togo and Ivory Coast were disregarded because of safety reasons. Senegal was disregarded because of the non central location and the relatively low cotton production. Nigeria and Ghana, which are no members of UEMOA, were disregarded because of their different national language and as they are not included in the close cooperation given between the UEMOA countries.

Another cotton production zone can be seen in Southern/East Africa, including Ethiopia, Mocambique, Tanzania, Uganda, Zambia, Zimbabwe and, with a minor production, e.g. Kenya and Malawi. Due to the total amount of the cotton production (approx. 300.000 t per year) it was not possible to divide up between Southern and Eastern Africa with each one having a RTC. Therefore a possible additional assistance from South Africa to the Southern African countries can be included in this project, at first compensating the work from the RTC.

Egypt is mainly and Sudan is partly producing Extra Long Staple cottons. Instrumental testing of ELS cottons is not comparable with testing usual cotton varieties. In the CSITC Task Force, ELS cottons are not regarded up to now. Consequently, Egypt and Sudan are not forming an own region for a RTC at first, but the upland cotton production might be included in the CSITC structure. These countries might therefore be supported by the East African Regional Centre and by the involved international expert bodies.

In Central Africa, Chad and Cameroon (and Nigeria, based on the definition of the region) are the main cotton producing countries. Because of the infrastructure, it is difficult to include the countries in the West African region. On the other hand, the cotton production of these countries and the number of cotton testing laboratories is not sufficient to ensure a financially sustainable operation of an own RTC after the end of the CFC funded project. Therefore, assistance for these countries is intended to be

given from the West African RTC and from the involved international expert bodies. With the experience obtained in this project, it will be possible to evaluate the benefit and the sustainability of a RTC for Central Africa after the end of this project.

The choice of the partner institutions for Regional Technical Centres (RTCs) is based on the following criteria - graded by their importance:

- Current political events, political stability, regulatory content
- Independency from particular competitive interests
- Existing knowledge/specialists in the different fields of expertise
- Regional work without preference for single countries
- Administration that is capable to include the organisation of the RTC (organisational ability)
- Existing equipment as demonstration objects for training and as reference instruments
- Transport infrastructure (airport, roads, telecommunication)
- Central location
- Common language for the region
- Easiness to welcome people around (e.g. lodging, training room)

For the choice of partners in West Africa, experts from approx. 26 bodies in Benin, Burkina Faso and Mali were interviewed, beginning in cotton production, ginning, classing to spinning.

CERFITEX in Ségou, Mali, shows the following advantages that resulted in the involvement in this proposal:

- Independency from particular competitive interests
- Existing basic equipment and basic knowledge for cotton testing, but not including an operating SITC instrument up to now
- Sufficient laboratory space for the installation of SITC equipment
- Existing experience in and best prerequisites for training for the region
- Existing ideas/knowledge for the establishment of a Regional Centre for the UEMOA region

In order to include intense knowledge in everyday cotton classing and instrumental testing, SOFITEX with its classing office in Bobo Dioulasso, Burkina Faso, is involved in the planned West African RTC. SOFITEX shows

- Intense knowledge in ginning, manual classing and instrumental testing
- International training for classing
- Existing equipment for SITC cotton testing
- Knowledge in quality management and its requirements
- Experience in training for the region

With the combination of the RTC at CERFITEX and the added knowledge from SOFITEX, it is possible to achieve independency and experience. SONAPRA in Benin, which shows similar advantages as SOFITEX, was not chosen because of the significantly higher distance between both partners.

The choice of partners for West Africa is corresponding to EU/UNIDO/UEMOA studies done for the cotton value added chain from cotton production to textile production.

For the choice of partners in Southern/East Africa, a workshop was conducted in September, and additional experts were interviewed at the ICAC plenary meeting or were asked with the help of a questionnaire. Answers were coming from different experts in Kenya, Mozambique, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.

The best prerequisites for the Southern/East African RTC were found in Tanzania, especially Dar es Salaam. Tanzania possesses a nationally organised instrumental cotton testing structure. In Dar es Salaam, there is an advantageous constellation with the possibility to include TBS and TCB as direct partners.

The Tanzania Cotton Board (TCB) is responsible for the total manual classing and instrument cotton testing in Tanzania and therefore exhibits knowledge in everyday cotton testing and production control. TCB was already included in CFC work. The Tanzania Bureau of Standards (TBS) is, as Tanzania's sole standards body, responsible for the quality assurance in industry and commerce. TBS exhibits intense knowledge in measurement and quality management in measurement, in calibration and in training for laboratories. Based on their daily work, TBS is able to check laboratories and laboratory practice for different products, including textiles. TBS is totally independent from the cotton business, cotton promotion and from particular cotton testing laboratories. The combination of these two partners shows the same advantages as mentioned for the partners in West Africa. Additional reasons for the choice of Tanzania / Dar es Salaam were:

- Tanzania is one of most important cotton producing countries in Southern/East Africa
- Surpassing location for cotton testing with its harbour as one of the main cotton harbours in East Africa
- International airport
- Wakefield Inspection Services in Dar es Salaam as a laboratory from the internationally operating WIS company, utilising SITC equipment for cotton quality control, can be involved for an independent inspection of the RTC work

Zambia was not regarded, as the government has no institutional interest in cotton, as the existing instrumental cotton testing is mainly done by private cotton trading companies, and as the location does not exhibit the road network of typical cotton harbours. Zimbabwe was not chosen mainly because of the political situation and the non central location. Kenya and Malawi were not regarded due to their low cotton production. Mozambique was not regarded because of the not given SITC testing structure and the language, being different to majority of the countries. Uganda showed interest in the participation in the CSITC system, but not in conducting RTC work. South Africa was not included as a direct partner for a RTC, as it is not member of the Common Fund for Commodities.

The parties selected, have, with the named combinations, confirmed to accept

- the responsibility for hosting the RTCs,
- the realisation of training programs at their facility
- to provide expert services to national cotton testing laboratories in neighbouring countries to train on SITC equipment
- to manage the testing systems
- to run tests for the production control of cotton from the region.

PART II. PROJECT DESCRIPTION

A. Project Rationale and Objectives

Cotton with insufficient verification of its quality will result in difficulties in cotton processing. So cotton trade and industry demands for objective and reliable test results are increasing rapidly, and major cotton importing countries like China are integrating instrument testing results in trade. Cotton with insufficient verification of its quality will result in price discounts for the producers or exclusion from the market.

Developed cotton growing countries like the USA have already built up their national cotton quality assessment systems and "HVI classification has resulted in a competitive advantage for the USA in global marketing; establishment of an adequate HVI system for the cotton producing countries in Africa and elsewhere would facilitate the access of their cotton to diverse global markets"¹. But up to now there is no adequate international verification of other worldwide test laboratories and their results. The availability of high volume cotton testing instruments solely is not satisfactory for producing reliable test values - examples from all over the world show that, without certified testing procedures, the results will be disregarded and therefore are worthless. The results have to be reliable and on an internationally agreed level. Cotton producing developing countries will be disadvantaged in their market position, if they do not manage to participate in an international quality assessment system.

The current situation is affected by different non positive influences caused by inconsistent manuals, calibration procedures and software implementation regarding different generations of worldwide established test devices. There is no adequate control of the cotton testing laboratories and their results. The request for better raw material management and the demand for a sustainable production and processing of cotton need a certified evaluation system, which has to be accepted from all the participants in the whole chain of cotton business starting from the farmer up to the consumer. Benefits should result from better raw material characterisation with assured test results, thereby contributing to consistent and improved yarn properties.

The main objective of the project is to assist the cotton producing countries, especially the Least Developed Countries (LDCs), to meet the emerging quality assessment demands of the global cotton market so as to strengthen or at least maintain their competitive position in the world market by keeping up with modern developments from the end-markets. Therefore it is essential to enable these countries to supply their cotton with objective, instrument-based quality information, based on internationally accepted test rules.

To achieve the objective, both of the following directions have to be followed:

- Introduction of a worldwide acceptable and worldwide adoptable, reliable cotton quality assessment with defined rules and based on a worldwide cotton testing laboratory certification system.
- Strengthening of the market position of developing countries, especially those in Africa, by enabling and implementing the international cotton quality assessment in their countries and for the benefit of their cotton business. Therefore the regional African capacities for the commercial application of instrument testing have to be built up, comprising the establishing and training of Regional Technical Centres (RTCs) as well as the technical assistance, maintenance support and resources mobilisation for application of instrument testing. Education will be essential for the successful setting-up of a network of well harmonised laboratories to satisfy cotton testing demands.

¹ USAID : Summary and Findings of the West African Cotton Assessment, Sept 25 - Oct. 14, 2004

The main financial support of the project will be used to implement the cotton quality assessment in developing countries in Africa, with the participating African institutions forming Regional Technical Centres. Support includes to a major part equipment and personnel costs. Additional coordinated activity will occur in different regions of the world aimed at establishing a worldwide accepted, consistent system. This work will not be financed within this project, yet will provide spin off benefits to the project.

The first, indispensable work package is the development of a worldwide accepted and worldwide adoptable International Certified Cotton Testing System, that must not be focussed on exclusive regions (neither solely developed countries nor solely developing countries), but that has to be developed as one integral system suitable for the whole world with advantages for all participating countries.

Marketable SITC instruments (Standardised Instrumental Testing of Cotton) as the High Volume Instruments (HVI), manufactured by Uster, Memphis, TN, and Automatic Rapid Testers (ART), manufactured by Premier Evolvics, Coimbatore, India, will be used. These instruments are able to measure approx. 300 to 500 bales per shift and support technological values for the mills' demands.

The development of the International Certified Cotton Testing System has to include *inter alia*:

- Defined rules for the international co-operation in testing and certification, including arbitration procedure
- a defined test method including sampling and calibration
- specified control limits
- an implementation of the test rules in the cotton trading rules of the cotton associations
- a worldwide structure to support participating laboratories, including an international centre and regional coordination centres
- certification of the laboratories according to their test results (round trials)
- certification of the laboratories according to their laboratory practice conformity
- defined international calibration standard material
- solutions for technical problems restricting the use of SITC instruments

In a first step it was decided by the ICAC Task Force to establish benchmark properties:

- Micronaire
- Strength
- Length
- Length Uniformity
- Colour Grade (Rd)
- Colour Grade (+b)

The certification system will include any instrumental testing device without supporting special systems or special manufacturers, the main criteria is compliance with the Universal Calibration Standards (e.g. HVI-CCS cottons and USDA Colour Calibration Tiles) and appropriate parameters. These standards are prepared by the USDA (United States Department of Agriculture) for a universal use for calibration purposes and they are accepted by most cotton producing countries. Up to now there is no other procedure to calibrate the machines. Artificial standards are not available for most properties.

Some properties like trash / foreign matter are not properly measured with instrumental testing methods. Therefore manual/visual classing will still be the appropriate method for classing, and will be included in this project. The aim is to come to a comprehensive expression of the quality of cotton, including mainly SITC test results, but not disregarding properties that cannot be measured adequately with instruments at the moment.

As testing of Extra Long Staple cottons is different to the common varieties, these cottons are up to now not included in the CSITC work.

Only a worldwide harmonised control and testing system can favour a frictionless business for all participants in the whole commercial chain.

The first part of the project will be the establishment of an international system to check laboratory reliability. Besides the necessary basic international configuration of this kind of check system, the main focus is on the installation of a CSITC Round Trial. By participating in this Round Trial, laboratories can prove to produce reliable results.

The core of the project will be to enable the cotton producing developing countries in Africa to adopt and implement the international cotton quality assessment in their countries and for the benefit of their cotton business. Therefore it is important

- to pay regard to the specific problems in developing countries during the development of the Certified Cotton Testing System
 - organisational problems
 - technical problems (as laboratory climate control, power supply, maintenance)
- to establish the capabilities required for African Regional Technical Centres (RTCs) – for regional support for the laboratories
 - setting up African Regional Technical Centres (RTCs) in
 - West Africa – Mali / Burkina Faso
 - Southern/East Africa – Tanzania
 - international training of experts for the RTCs
 - international reference for the RTCs
- to support laboratories in Africa to fulfil the requirements for reliable testing
 - expertise and monetary support for the necessary modifications in the equipment
 - training of the regional laboratories by the Regional Coordination Centres
 - technical assistance, maintenance support
 - reference measurements for the laboratories

Laboratories and regions in Africa that cannot be fully supported by the two planned RTCs will be additionally supported by the involved international expert bodies.

The routine work that is to be done by the Regional Technical Centres for the region consists of :

- reference measurements for cotton fibres (regional reference laboratory)
 - re-tests of samples tested in the laboratories
 - regional round trials with regional cottons
- support for the participation of the cotton testing laboratories in the international certification
- training
 - for cotton testing laboratories according to instrument testing and visual classing
 - for cotton testing laboratories on quality management
 - for staff in the cotton chain to realize the complexity of quality, its dependencies and its influences on the subsequent steps
- expertise for the laboratories for special questions
- collection and dissemination of technical information (prepared in data bases)
- support the cooperation between the concerned partners in the different countries of the region
- opportunity to use the funded instruments and operators for additional testing of the cotton production as a paid service

Therefore additional work of the International Coordinating Centre resp. the International Expert Bodies will be :

- Evaluation of the cotton testing laboratories (global)
- Preparation of the regional support structure
- Training for the regional experts
- Coordination of the RTCs
- Periodical audit of the RTCs
- Reference measurements
 - Test of regional round trial samples
 - Re-check of the regional re-test samples
- Help/check for the regional training
- Expertise for the RTCs
- First expertise for the cotton testing laboratories
- Collection and dissemination of technical information
- Facilitate cooperation between the RTCs

The necessary International Coordinating Centre will be established from the involved international expert bodies as FIBRE, CIRAD and USDA.

B. Background Knowledge about Cotton Testing especially in Africa

Cotton Testing

Cotton testing is in a major change. Manual/visual classing is rated as not objective and not precise enough for cotton trading and cotton processing. Beginning in the 1970s new instruments were developed as a basis for rapid and cheap and therefore high-volume instrument testing of cotton. The actual term for the instruments is SITC, but better known is the trademark HVI. In some countries like the USA every produced cotton bale is evaluated with SITC instruments, resulting in a competitive advantage for the countries in global marketing, other countries as Australia or China are following. Up to now approx. 1900 SITC instruments are in operation worldwide.

In Africa there are already some existing SITC instruments, which are mainly¹

- Benin 4
- Burkina Faso 1
- Cameroon 1
- Chad 2
- Egypt 6
- Ghana 1
- Ivory Coast 1 plus 1 planned for 2005 (EU/UNIDO/UEMOA)
- Kenya 2
- Lesotho 1
- Mali 1 in 2005 (EU/UNIDO/UEMOA)
- Mauritius 1
- Morocco 3
- Nigeria 2
- Senegal 1 planned for 2005 (EU/UNIDO/UEMOA)
- South Africa 18
- Sudan 2
- Tanzania 2 plus 1 in 2005
- Togo 1 in 2005 (EU/UNIDO/UEMOA)

¹ Based on USDA information (J. Knowlton) and results from interviews

- Tunisia 4
- Uganda 1
- Zambia 1
- Zimbabwe 6

The instruments are used for cotton classing, for research or in spinning mills.

Although there are some SITC instruments in Africa, the following disadvantages are given:

- There are not enough instruments in Africa to cover the whole production
- Many of the existing instruments are for research/breeding purposes and not for the testing of the cotton production
- The existing instruments are not properly maintained and therefore are often not or only occasionally testing: training and maintenance are missing
- Test results are dubious due to the conditions of the laboratories (e.g. climatisation, power-supply, calibration)

The disappointing conclusion of the United States Agency Industrial Development (USAID) in an investigation in 2004 was: "While the C-4 (Benin, Burkina Faso, Chad, Mali) has some high-volume instrument (HVI) testing equipment, the required controlled conditions are not met, so results are dubious and not used for marketing".¹ This conclusion can be applied to other African countries, too.

Directly here is the starting point of this proposal.

Regional centres will be installed in two different cotton producing areas of Africa, based on existing organisations in the countries. The Regional Centres will be:

- West Africa: CERFITEX textile school, Mali, in cooperation with SOFITEX classing office in Burkina Faso
- Southern/East Africa: Tanzania Bureau of Standards (TBS), in cooperation with the Tanzania Cotton Board (TCB)

Both solutions offer with the combination of partners the advantage of combining independency in testing, daily knowledge in instrument cotton testing and knowledge in quality management. The detailed description of the choice is represented in chapter I-F.: Choice of Regions and Partner Institutions.

¹ USAID : Summary and Findings of the West African Cotton Assessment, Sept 25 - Oct. 14, 2004

C. Description of Project Components, Activities and Outputs of the Project

The project will be built on global and Africa-specific components. Nevertheless it is not possible to regard African components without the global components. On the other hand, the African work will be used as an example for other cotton producing regions in the world.

The components are:

A – Global CSITC configuration (global)

→ Basic configuration and implementation of CSITC to worldwide cotton trade

B – Evaluation of Cotton Testing Laboratories (global)

→ Installation of a Round Trial system to evaluate laboratories

C – Support to African Cotton Producing Countries (Africa-specific)

→ Support to Africa to fulfil quality requirements in testing mainly by the establishment of Regional Technical Centres

D – Technical Developments to Improve Instrument Testing Reliability (mainly Africa-specific topics)

→ Definition of basic technical requirements / cotton variability studies for the African regions

E – Evaluation and Dissemination

→ Dissemination of the project findings to the cotton world

F – Project Management and Financial Administration

→ Project management at the PEA, CIRAD and the RTCs in Africa

G – Supervision, Monitoring and Evaluation

Component A: Global CSITC Configuration

The worldwide cotton testing laboratory certification system that will be implemented in this project needs careful preparation to fulfil the expectations and the demands of all partners in the worldwide cotton chain. As this international system will only work when it is voluntarily adopted by the majority of the cotton producing countries, the majority of the cotton associations and the cotton testing laboratories, all relevant and constructive demands have to be regarded and incorporated. For this purpose, the global CSITC configuration and the basic test method for SITC testing have to be fixed. Additionally it is inevitable to implement the CSITC system in trade and in the trade rules.

All other components are based on this first global component. The subsequent proceeding for the implementation of the regional support for Africa is fixed here.

These tasks are mainly organised by the CSITC Task Force, but will partly be prepared in the project to be approved by the Task Force. The prevailing share of the costs is financed by international in-kind contributions given by the CSITC Task Force members and especially USDA-AMS. The Bremen Cotton Exchange is, based on the approval of their boards, planning to establish a training centre for this project, to train people from the different regions in instrument testing and visual classing. Therefore the Bremen Cotton Exchange intends:

- To purchase a new Uster HVI 1000 SITC instrument directly for the purpose of training and re-testing
- To provide a conditioned room for the named SITC
- To provide seminar rooms for training

Faserinstitut Bremen will additionally be able to train on a new Premier ART SITC instrument and on additional cotton testing instruments, and to provide knowledge in laboratory quality management and accreditation according to ISO 17025. Faserinstitut Bremen will, together with the Bremen Cotton Exchange, conduct the planned training sessions for the regional experts to cover knowledge in instrument testing, instrument maintenance, quality management, visual cotton classing and trading / trade rules.

Objectives:

- Establishment of a defined CSITC assessment structure, accepted by all partners in the cotton chain
- Determination of the duties of the involved bodies
- Specification of basic definitions
- Implementation of the CSITC objectives in cotton trade

Activities:

A.1. Defining the rules for international cooperation

A.1.1. Prepare CSITC structure

A.1.2. Define detailed duties of the involved bodies

A.1.3. Prepare rules for the African RTCs and the boards of the RTCs

A.2. Definition of test method

A defined test method containing all relevant recommendations for testing is essential for harmonised test results

- *including sampling, calibration, testing conditions and testing*
- *based on ASTM, USDA Guidelines, ITMF HVI Users Guide and additional recommendations*

A.3. Implementation of test rules

This step is very important to bring SITC testing to a success, as the aspired aim can only be reached by a cooperation of the majority of the cotton related business

A.3.1. Provide information to Cotton Associations

- Recommendations for changes in trade rules
- Recommendation of arbitration procedures

A.3.2. Provide information at the national political and regulation level

A.4. Provision of Calibration Standard Material (USDA, costs not included in the project)

A.5. Task Force activities for the international approval of the project findings

Output:

- Structure of CSITC system applicable to the global cotton trade and to regional support
- Defined integral SITC test method for reliable testing
- Cotton trade rules including SITC testing

Overall time schedule:

The main tasks will be done in year 1.

The necessary actions to be continued in all years include the CSITC work and the provision of information to the national political and regulation level and to the cotton associations.

Costs:

Costs for this component include primarily personnel costs and duty travels being necessary to synchronise the global activities and to promote the implementation of the test rules. Detailed costs for the individual activities are elaborated in the detailed budget file.

The prevailing share of the costs is financed by international in-kind contributions given by the CSITC Task Force members

Table Component A: Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	358.000 USD	0 USD	358.000 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	120.000 USD	0 USD	120.000 USD
IV Personnel	590.790 USD	91.650 USD	499.140 USD
V Technical Assistance and Consultancy	110.432 USD	40.600 USD	69.832 USD
VI Duty Travel	360.232 USD	85.432 USD	274.800 USD
VII Dissemination and Training	80.000 USD	0 USD	80.000 USD
VIII Operational Costs	0 USD	0 USD	0 USD
PEA Sub-total	1.619.454 USD	217.682 USD	1.401.772 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
Grant Total	1.619.454 USD	217.682 USD	1.401.772 USD

Table Component A: Manpower for the different years

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Expert	FE	67	23	23	23
FIBRE Expert external consultation	FX	22	22	22	22
CIRAD Expert	CE	50	0	0	0
CIRAD Expert external consultation	CX	12	12	12	12
External Experts	XE	163	163	163	163

Costs per activity

	Total cost	CFC contribution
A.1.	56.400 USD	39.480 USD
A.2.	14.100 USD	9.870 USD
A.3.	241.850 USD	69.780 USD
A.4.	120.000 USD	0 USD
A.5.	1.187.104 USD	98.552 USD
sum	1.619.454 USD	217.682 USD

Component B: Evaluation of Cotton Testing Laboratories

In order to obtain the commercial acceptance of instrument testing results, it is essential to check the reliability of the cotton testing laboratories and the test results provided by the laboratories. It will not be sufficient to do this regionally, but this has to be an independent, international action that will be applied to the cotton producing regions of the world.

To obtain, to assure and to prove the reliability of the laboratories and their results, the first and most appropriate activity is the implementation of a global check system based on a qualified international round trial ("CSITC Round Trial"). There is no suitable round trial up to now, fulfilling the requirements for this purpose. This CSITC Round Trial has to be prepared and to be performed. After the first years of execution, this system will be self-financing based on participation fees by the participating laboratories.

The result of the CSITC Round Trial will be a grading/rating of the laboratories that can be used by trade to assess the quality of the results of cotton testing laboratories and to choose laboratories based on their reliability. It was agreed during the 3rd meeting of the CSITC that ICAC will, as the independent international body, serve an oversight role to establish certification standards and compliance requirements for test centres.

Re-tests of samples from the African Regional Technical Centres and from laboratories involved in the project will be another step to prove the reliability of laboratory test results.

A second, advanced step will be the direct check of the laboratory practice. This can be done according to ISO 17025. This very ambitious activity will not be undertaken in the project, but it will be considered in future CSITC work. The Regional Technical Centres mentioned in Component C will be the basis for supporting the laboratories to achieve this accreditation as soon as it is desired by the laboratories. Accreditation will be done by national accreditation bodies, which are not specified for cotton.

As fixed by the CSITC Task Force, the realisation of the Round Trial is to be done by Faserinstitut Bremen and USDA-AMS.

Objectives:

- Installation and realisation of a suitable CSITC Round Trial system
- Check of laboratories based on the CSITC Round Trial and based on re-tests

Activities:

B.1. Preparation of grading based on an International Round Trial System

- Establishment of a Round Trial System
- Development of a database for the Round Trial

The database will additionally be usable for the regional round trials at the RTCs

B.2. International approval of the international cotton testing laboratory certification

The grading can be prepared by the project partners, but it is important to achieve international approval. This will be done by ICAC, the international cotton associations and USDA.

B.3. Periodical work for the international laboratory check

This work is planned to be self-funding after the first years of introduction. Costs will have to be paid by the participating members.

B.3.1. Periodical work for the International Round Trial

- The Round Trial will be conducted 4 times per year with each 4 cottons to be tested intensively
- Sample provision and distribution

- Test of the variability of the samples
- Basic realisation of the Round Trial
- Scientific evaluation, preparation for the laboratory grading, expert advice to the participating laboratories, monitoring of changes in interlaboratory variations and changes in levels

B.3.2. Re-test of samples from laboratories at USDA, FIBRE and CIRAD

Besides the international round trial, re-tests are the best possibility to prove reliability in everyday testing. According to the international approval of the results, FIBRE and CIRAD and USDA are involved in re-testing. Re-testing will be done for the RTCs and the laboratories themselves.

B.4. Preparation of the embedding of ISO accreditation in the CSITC system

This activity is not considered in this project, as it is not decided by the CSITC task force up to now how this will finally be done.

Output:

- CSITC Round Trial system to achieve grading/rating for participating laboratories including a database system for simplified and cheap performance of the Round Trial
- Suggestions for grading of the laboratories to ICAC
- Expert advice to the participating laboratories to reduce their measurement uncertainty

Costs:

Costs for this component include primarily personnel costs for the preparation and execution of the Round Trial and the provision of Round Trial material. Additional costs are regarded to develop the necessary database system (to be done by a subcontracted company).

The prevailing share of the costs according to Component B is financed by international in-kind contributions and laboratory fees.

Financial sustainability is started by a rising share of payments for the sample shipping. Until the end of the project it is planned to increase the number of participating laboratories to 70.

Table Component B : Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	126.000 USD	126.000 USD	0 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	90.000 USD	18.000 USD	72.000 USD
IV Personnel	440.731 USD	212.910 USD	227.821 USD
V Technical Assistance and Consultancy	0 USD	0 USD	0 USD
VI Duty Travel	0 USD	0 USD	0 USD
VII Dissemination and Training	0 USD	0 USD	0 USD
VIII Operational Costs	20.000 USD	20.000 USD	0 USD
PEA Sub-total	676.731 USD	376.910 USD	299.821 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
Grant Total	676.731 USD	376.910 USD	299.821 USD

Table Component B: Manpower for the different years

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Expert	FE	138	58	58	58
FIBRE Expert external consultation	FX	0	0	0	0
FIBRE Technican/Operator	FT	26	26	26	26
CIRAD Expert	CE	20	0	0	0
CIRAD Technican/Operator	CT	13	13	13	13
External Experts	XE	111	26	26	26

Costs per activity

	Total cost	CFC contribution
B.1	258.800 USD	195.350 USD
B.2	10.601 USD	0 USD
B.3	407.250 USD	181.560 USD
sum	676.651 USD	376.910 USD

Component C: Support to the African cotton producing countries to fulfil testing quality requirements

Component A and B are, as global components, essential to prove the reliability of the participating laboratories, which will be beneficial for the cotton testing laboratories independently from their origin. Besides the importance of these components, this will not be sufficient for adopting, implementing and performing instrument cotton testing in the African cotton producing countries for their benefit. With component A and B, it will only be possible to prove the reliability that is already given.

For Africa, a direct support is requested in order to fulfil the requirements for reliable cotton testing, and with this to increase the share of cotton tested with SITC instruments. Based on this it will be possible to help them benefiting from the undoubted benefits of instrument cotton testing (see chapter II-D) and to strengthen their market position.

The most important basis for the adoption of instrument cotton testing is not the machines (which are particularly already given), but the obtained quality in testing. Many countries failed in adopting SITC testing, as testing reliability was not regarded and not obtained.

In order to achieve a sustainable system, it will be necessary to build up Regional Technical Centres (RTCs) to help the existing cotton testing laboratories in adopting and implementing the international quality requirements. These RTCs will get initial international support and international verification of the reliability of the testing quality achieved, and will then be a support system inside the regions, regarding the specific necessities and problems in their region (e.g. organisational and technical problems).

Two regions were chosen for the implementation: One in West Africa, including the most intense cotton production of the over-all continent; another one in East Africa, including the countries in Eastern and Southern Africa. The RTCs will base on existing bodies in order to assure the long-term sustainability of the RTC establishment (criteria for the choice of the partners are mentioned in chapter I-F).

For West Africa, CERFITEX (Mali) was chosen as the best hosting partner for establishing the RTC. With its knowledge, regional acceptance and independency, it will be possible to assure the uninfluenced support and check of the regional laboratories and the best prerequisites for the training of concerned people. SOFITEX (Burkina Faso) is chosen as a second partner that can assure the reference to given national classing and classing structures and with this the maximum benefit for the cotton business. Only the combination of both partners safeguards to achieve the attended aims.

The West African RTC will be able to serve directly to the following major cotton producing countries:

- Burkina Faso
- Mali
- Benin
- Ivory Coast
- Togo
- Senegal
- Ghana
- additional countries with lower cotton production

A limited support can be given to additional countries in West and Central Africa including:

- Nigeria
- Cameroon
- Chad

For these countries it will be possible to carry out services as training and expertise, but according to the distance it will only be possible to a limited extent to enable e.g. regular re-testing of cotton samples. Here an additional support is envisaged from the international bodies.

For East Africa TBS is the chosen partner for the RTC, as it exhibits intense knowledge in measurement and quality management in measurement, in calibration and in training for laboratories, and as they are totally independent from cotton business. TCB, being responsible for Tanzania's national cotton classing, will be the second partner to assure the optimal cotton specific implementation.

The East African RTC will be able to serve directly to the following major cotton producing countries:

- Tanzania
- Zimbabwe
- Zambia
- Uganda
- Ethiopia
- Mocambique
- additional countries with lower cotton production as Kenya and Malawi

A limited support can be given to additional countries in East and Southern Africa including e.g. Sudan.

During the project time, it will be possible to give basic support to countries which are not sufficiently covered by the two RTCs from the involved international expert bodies as Faserinstitut Bremen or CIRAD.

Besides the establishment of the RTCs, direct monetary support is included to help the existing cotton testing laboratories in improving the necessary equipment and laboratory limiting conditions. This is a necessary supplementary activity for supporting the instrument cotton testing, but can in no way replace the named measures to assure the fulfilling of quality requirements.

The routine work that is to be done by the Regional Technical Centres for the region covers mainly the two activities:

- Provision of information to run cotton testing laboratories with SITC instruments and to fulfil quality requirements
- Reference activities to prove the reliability of test results

In detail, the activities include:

- Reference activities:
 - reference measurements for cotton fibres (regional reference laboratory)
 - re-tests of samples tested in the laboratories
 - regional round trials with regional cottons
 - support for the participation of the cotton testing laboratories in the international certification
- Provision of information
 - training
 - for cotton testing laboratories according to instrument testing and additional visual classing
 - for cotton testing laboratories on quality management and laboratory management
 - for staff in the cotton chain to realize the complexity of quality, its dependencies and its influences on the subsequent steps
 - experience and expertise for the laboratories for special questions

- contact person for any testing related questions
- detailed expertise for special topics
- collection and dissemination of technical information (prepared in data bases)
- support the cooperation between the concerned partners in the different countries of the region

Both RTCs will be equipped with an SITC instrument appropriate to the laboratories in the region and with the necessary equipment to form an exemplary laboratory. The RTC laboratory will fulfil the following tasks:

- Exemplary laboratory for training and information of the regional laboratories
- Reference laboratory for re-tests and round trials
- Performing laboratory for the instrumental testing of the regional cotton production.

The last item is not planned in competition to existing cotton testing laboratories, but for:

- countries without SITC instruments, as they can avoid buying these instruments
- countries with SITC instruments, as the RTC can fill gaps in the testing capacity of the national laboratories.

Provision of information, reference activities and testing of the regional cotton production can each contribute to the financial sustainability of the established RTCs (see chapter II-C).

To assure the proper working of the involved bodies, supervision of the work is included:

- The RTCs will supervise the quality measures of the cotton testing laboratories
- The involved international bodies will supervise the work of the RTCs
- The results of laboratories and the RTCs will be checked by the Round Trial system introduced in component B and by the international re-tests included in component B

For operating the RTCs it will be very important to provide employees which are not only working for the RTC, but who identify themselves with the aim of the project, the assurance of the quality of testing results. On the other side, financial sustainability will be difficult to be achieved with only full-time staff. Additionally it is important to include the RTC work as good as possible in the work of the hosting bodies.

Based on these prerequisites, the personnel costs of this component include for each RTC:

- Approx. 1.5 Regional Experts with an adequate schooling (MSc or equivalent)
 - The regional experts will be the key for the sound procedure of the RTCs and the project.
 - The expert in the hosting bodies (CERFITEX, TBS) will be involved up to full-time work – depending on unavoidable works for the hosting body.
 - The expert from the co-operating bodies will continue work for their bodies (SOFITEX, TCB), and will spend about half of their working time for the RTC.
 - Both experts will give trainings and expertise, but mainly the expert of the hosting body including the reference laboratory will do additional work as laboratory head and for managing the project. To regard full time operational ability of the RTCs during missions of one expert, the second expert will act in place of him.
 - The Regional Experts will be trained intensively from multiple international bodies according to cotton production and cotton quality, SITC testing, quality management.
- Approx. one skilled SITC operator with adequate schooling (technician / superior technician) not only to operate the SITC, but to understand and manage classing, basic instrument maintenance, and additional work for e.g. conducting and evaluating the regional round trials. With a

rising number of cotton re-tests and testing for the cotton production, the number of operators is extensible.

- The SITC operator will be trained by the regional experts and will get additional knowledge by the direct exchange to technicians/operators from the other involved laboratories
- Part-time involvement of a managing employee of the hosting body to assure the proper involvement of the RTC in the hosting body.
- Part-time involvement of staff for the project administration (accountant and secretary), based on their regular work for the hosting body.
- Involvement of the necessary daily workers for driving, sample preparation, guarding etc., based on the staff of the hosting body.

The personnel costs for the regional experts and the technician/operator are based on the detailed assumptions for the necessary work for each detailed activity, not on overall estimates.

The work of the experts and operators is envisaged to be financed fully, whereas project administration will partly be given as in-kind contributions from the involved bodies, to compensate the reciprocal benefit between the RTC and the hosting body.

For any employees working for the RTC and the hosting body, the hosting bodies have to care that these employees will be available when needed.

Before the start of the project, the involved employees will be named. Up to now the following persons are nominated:

- Expert CERFITEX: to be engaged
- Operator/Technician CERFITEX: to be named
- Expert SOFITEX: Mr. Rodolphe Joel KY
- Expert TBS: Mr. Dominic Haynes MWAKANKALE, Textile Engineer (MSc)
- Operator/Technician TBS: to be named
- Expert TCB: to be named

After the end of the project it is intended to continue RTC work on a self financing basis. Therefore the number of experts and SITC operators might be adapted to the necessary activities. For a second SITC operator, a less intense level of skills will be necessary.

Objectives:

- Establishment of a Regional Technical Centre (RTC) in West Africa – Ségou, Mali
- Establishment of a Regional Technical Centre (RTC) in East Africa – Dar es Salaam, Tanzania
- Establishment of regional support structures for the cotton testing laboratories
- Training of the regional experts to prepare them for their work in the regions
- Support of the regional laboratories with equipment, training, assistance, information, expertise
- Continuous monitoring of the regional laboratories by re-tests and regional round trials
- Continuous monitoring of the regional laboratories and the RTCs by the international CSITC Round Trial
- Care for the reliable work of the RTCs by the involved international bodies
- Continuous work of the RTCs for the instrument testing of the regional cotton production

Activities:

The general structure of the activities in component C is given in the following way:

On the first level of structure, the activities in the component are divided up in

C.1. Preparation of the African support system

C.2. Running of the African support system

Besides this the activities and contributions of additional partners, not directly involved in the project, are named in C.3.

The preparation of the African support system will be worked on in project year 1.

The regular work of the RTCs will start in year 1, and will come to its full extension from year 2 to year 4.

The second level of the structure divides into:

C.x.1. Tasks for the Regional Technical Centres

C.x.2. Task for the cotton testing laboratories

The third level of the structure divides into the activities for

- West Africa
- East Africa
- Regions without RTCs

In the following structure, activities will be named with a hierarchic number. Any comments or details are mentioned without hierarchic numbers and in italics.

The international activities in the component are conducted by Faserinstitut Bremen and CIRAD. The regional activities are organised by the RTCs. The RTCs (CERFITEX, TBS) will organise the work and administration for the involved people from the partner bodies (SOFITEX, TCB).

C. Support to African Cotton Producing Countries

C.1. Preparation/installation of the African support system

Basic work to prepare the support system – Description: Given in the 2 subdivisions

C.1.1. Preparation/installations for the Regional Technical Centres

The preparations for the RTCs fill the major part of C.1. Preparations for the cotton testing laboratories are not included in this activity – Description: Given in the 4 subdivisions

C.1.1.1. General preparation/installations

Basic activities independently from the regions – Description: Given in the subdivisions

C.1.1.1.1. Detection/Listing of the interested cotton testing laboratories

The detailed analysis of all institutions involved in cotton quality is the first step of the preparation. This activity will be performed by the RTCs to achieve maximum support in all countries of the region during the project.

C.1.1.1.2. Preparation of the structural and legal organisation

This activity will be performed by FIBRE and CIRAD to fit the requirements of CSITC testing and to achieve sustainable performance of the system after the end of the project

C.1.1.1.3. (considered in other activities)

C.1.1.1.4. Preparation for the routine tasks

The routine tasks of the RTCs to be done in activity C.2 have to be prepared. - Description: Given in the 4 subdivisions

C.1.1.1.4.1. Training for regional experts and staff

This important activity includes the training of the future Regional Experts to obtain the knowledge they need for their work. Training includes English language skills (for the West African participants), cotton production and ginning, cotton sampling, traditional cotton classing, spinning and textile processes, use of SITC instruments, technical instructions for SITC instruments, use of SITC results, laboratory management, technical laboratory requirements, quality management for laboratories, visual classing of leaf grade and foreign matter, informatics for preparing documents, databases, spreadsheet analysis.

Training will be executed at the USDA, FIBRE, CIRAD, ACSA International Cotton Institute, and the instrument manufacturers.

C.1.1.1.4.2. Preparation of guidelines for SITC testing

This activity can base on EU/UNIDO/UEMOA work, so costs are not included

C.1.1.1.4.3. Preparation of a retest evaluation software

C.1.1.1.4.4. Preparation of a regional round trial evaluation software

To facilitate the work of the RTCs, it will be useful to prepare some basic software for the retests. This will be done central for all RTCs. Software for regional round trials will be a component of the international CSITC Round Trial software (component B.1).

C.1.1.2. Preparation/installations for West Africa

This activity contains all installations to be done specifically for the RTC in West Africa.

- Description: Given in the 3 subdivisions.

C.1.1.2.1. Preparation of the structural and legal organisation

Knowledge acquired in C.1.1.2 can be used here, so there will be no additional costs.

C.1.1.2.2. Installations for the Regional Technical Centre

To prepare the RTC for the future work, equipment has to be installed. The required investments include:

- *SITC instrument*
- *reliable power supply*
- *ambient air management system ("climatisation")*
- *temperature and humidity recorder*
- *calibration material*
- *computer, printer, projector*
- *4 WD for transport of samples, travels of the experts, transport of the trainees, and the connection between CERFITEK and SOFITEK*

C.1.1.2.3. Preparation for the routine tasks

The preparations for the routine tasks are kept to a minimum and are mainly included in activity C.2.1.2. Included is the expertise for the cotton testing laboratories, which will in the first year be done by the involved international experts and in the following years by the regional experts.

C.1.1.3. Preparation/installations for East Africa
Similar activities like named in C.1.1.2. for West Africa are intended for East Africa in this activity.

C.1.1.4. Preparation/installations for Regions without RTC
For this activity, no costs are considered, as the support of the regions can be performed by the involved international bodies without preparation

C.1.2. Preparation/installations for the cotton testing laboratories
To prepare the cotton testing laboratories in the regions to fulfil the quality requirements of reliable cotton testing, support with the required equipment is regarded (not including SITC instruments). This support will help to involve Africa faster to the CSITC level. To achieve a meaningful support to the laboratories, the following steps are included:

- *Questionnaire for the evaluation of the laboratory operational ability*
- *Audit of the interested cotton testing laboratories*
- *Give advice for the fulfilment of the CSITC requirements*
- *Estimation of the necessary monetary support*
- *Direct monetary support for the necessary laboratory investments*
- *Check of the realisation of the necessary modifications*

The investments include mainly costs for air management, temperature and humidity recorder and basic repair for SITC instruments that are not properly working, as they are the critical points for a good functioning of the laboratories.

C.2. Running of the African support system

Continuous work for the regions – Description: Given in the 2 subdivisions

C.2.1. Continuous tasks for the Regional Technical Centres
This is the most important activity for the RTC system

C.2.1.1. General tasks
The general tasks to be done for both RTCs; these tasks are covered in the other activities

C.2.1.2. Tasks for West Africa

C.2.1.2.1. Acquisition of additional participating cotton testing laboratories
No additional costs considered

C.2.1.2.2. Regional round trial
A round trial is designed to check laboratories for the accuracy and precision of the results on a periodic basis, and it serves to see, if these laboratories are able to perform well at these periods. Regional round trial will allow comparing based on cottons which are typically tested in the laboratory instead of cottons from other continents. The RTC will conduct the regional round trials, starting with 4 round trials per year and ending with 6 per year. Costs include the work of the skilled operator and the expert

C.2.1.2.3. Retest on laboratory samples
A retest is designed to check if a laboratory is able to perform properly on a daily basis and is able to produce precise and accurate results along the time for their own commercial activities. This activity has to come in addition to the Round Trial. RTC will retest a defined share of samples that were tested in the laboratories to prove their reliability in everyday-testing. The number of samples is considered to increase to the end of the project. The days considered for work contain re-test and evaluation.

C.2.1.2.4. Training for the laboratories

Training from the regional experts to the laboratories will be done 2 times in each year. 8 participants are regarded each time. Travel for the participants is included in the budget.

C.2.1.2.5. Training for the cotton stakeholders

This activity contains training from the regional experts to cotton stakeholders in the countries, regarding instrument testing, testing reliability and its input on the cotton chain. It will be done two times each year. Costs for travel and time will have to be paid by the stakeholders, training fees will at first be included in the project, and will in the following year of the project shift to a self-financing system by fee payments of the trainees.

C.2.1.2.6. Expertise for the cotton testing laboratories

The expert will visit the regional testing laboratories and will give advice and expertise. Travel is therefore included 2 times a year.

C.2.1.2.7. Collection and dissemination of technical information

10 days each year are considered for the regional expert to collect information and to spread it to the regional laboratories (e.g. by mails or database system)

C.2.1.2.8. Cooperate with other RTCs

To transfer knowledge between the different regions, a yearly exchange between the experts of the different regions is included. Activities include e.g. the feeding of a FAQ database.

C.2.1.2.9. Facilitate the cooperation between the cotton testing laboratories

Days for the regional experts are considered

C.2.1.2.10. Technical support for the routine work of the cotton testing laboratories

Days for the regional experts are considered

C.2.1.2.11. Work as a testing centre for the region

The RTC laboratory will allow to test cotton from the regional production. Necessary time for the testing is included, costs will be covered by the customers (cotton companies)

C.2.1.3. Tasks for East Africa

Similar activities like named in C.2.1.2. for West Africa are intended for East Africa in this activity.

C.2.1.4. Tasks for Regions without RTC

Similar activities like in C.2.1.2 and C.2.1.3 are considered for laboratories that are not covered by the RTCs in West and East Africa. They can be conducted by the involved international bodies or by subcontracted institutions (e.g. from South Africa)

C.2.2. Continuous tasks for the cotton testing laboratories

C.2.2.1. Participation in the CSITC certification system

C.2.2.2. Participation in the Regional Technical Centre actions

The necessary work of the regionally laboratories to improve their testing ability is not considered. Included in the budget is the necessary participation fee for the CSITC Round Trial, which covers the distribution costs.

C.3. Activities and Contributions of additional partners

International control companies with their laboratories in Africa are intended to contribute to the regional activities of the project.

Output:

- Capable Regional Technical Centres to ensure reliable cotton testing
- Capable cotton testing laboratories for the instrument testing of the regional cotton production

Costs:

The major share of the project is included in this Africa specific component. Included are mainly investments costs and personnel costs.

The total investment costs account for approx. ½ of the budget in this component and are inserted for the support of the RTCs and the laboratories.

Personal costs include the major participation and payment of the RTC employees as well as the consultation costs for FIBRE and CIRAD.

During the installation of the system, travel costs are relatively high, but will be reduced during the regular work of the RTCs.

Table Component C : Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	1 373 400 USD	1 373 400 USD	0 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	0 USD	0 USD	0 USD
IV Personnel	603 265 USD	541 441 USD	61 824 USD
V Technical Assistance and Consultancy	169 982 USD	133 574 USD	36 408 USD
VI Duty Travel	699 130 USD	682 671 USD	16 459 USD
VII Dissemination and Training	124 298 USD	102 963 USD	21 335 USD
VIII Operational Costs	165 250 USD	160 000 USD	5 250 USD
PEA Sub-total	3 135 324 USD	2 994 049 USD	141 276 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
Grant Total	3 135 324 USD	2 994 049 USD	141 276 USD

Table Component C: Manpower for the different years

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Expert	FE	72	30	30	30
FIBRE Expert external consultation	FX	40	30	30	30
FIBRE Technican/Operator	FT	10	20	20	20
CIRAD Expert	CE	50	15	18	18
CIRAD Expert external consultation	CX	20	20	20	20
East Africa Expert	EE	285	209	190	185
East Africa Technican/Operator	ET	70	215	285	290
East Africa Daily Worker	ED	375	375	375	375
West Africa Expert	WE	295	209	195	190
West Africa Technican/Operator	WT	70	223	295	300
West Africa Daily Worker	ED	375	375	375	375

Table: Investment costs in Component C

Kind of Cost	User	Unit price	Quantity	Contingency%	Total cost
	institute				
Development of software	FIBRE	10.000 USD	1	5%	10.500 USD
Purchase a 4WD car	Cerfitex	25.000 USD	1	5%	26.250 USD
Ambient air management system	Cerfitex	50.000 USD	1	5%	52.500 USD
Temperature and humidity recorders	Cerfitex	5.000 USD	1	5%	5.250 USD
Computer Projector Printer etc.	Cerfitex	7.500 USD	1	5%	7.875 USD
Purchase of a SITC	Cerfitex	225.000 USD	1	5%	236.250 USD
Power supply: Generator, UPS	Cerfitex	10.000 USD	1	5%	10.500 USD
Classing tables, conditioning storage etc	Cerfitex	4.000 USD	1	5%	4.200 USD
Purchase a 4WD car	TBS	25.000 USD	1	5%	26.250 USD
Ambient air management system	TBS	50.000 USD	1	5%	52.500 USD
Temperature and humidity recorders	TBS	5.000 USD	1	5%	5.250 USD
Computer Projector Printer etc.	TBS	7.500 USD	1	5%	7.875 USD
Purchase of a SITC	TBS	374.000 USD	1	5%	392.700 USD
Power supply: Generator	TBS	6.000 USD	1	5%	6.300 USD
Classing tables, conditioning storage etc	TBS	4.000 USD	1	5%	4.200 USD
Temperature and humidity recorders	Cerfitex	5.000 USD	5	5%	26.250 USD
Temperature and humidity recorders	TBS	5.000 USD	5	5%	26.250 USD
Investment in laboratory equipment (air management, SITC repair, etc.)	Cerfitex	45.000 USD	5	5%	236.250 USD
Investment in laboratory equipment (air management, SITC repair, etc.)	TBS	45.000 USD	5	5%	236.250 USD
Sum					1.373.400 USD

Costs per activity		
	Total cost	CFC contribution
C.1.1	1.647.250 USD	1.574.387 USD
C.1.2	567.087 USD	557.217 USD
C.2	920.987 USD	862.445 USD
sum	3.135.324 USD	2.994.049 USD

Component D: Technical Developments to Improve Instrument Testing Reliability (mainly Africa-specific topics)

High volume cotton testing was invented more than 30 years ago, but still there is scepticism about the usability of the test results for use in cotton contracts. These problems will even gain more actuality with using the test data for contracts. To achieve part of the overall objective – perform reliable measurements with SITC in the classification of cotton productions – some important technical tools or information are required.

Additionally, whereas the total U.S. crop is measured with SITC instruments, the use in developing countries is more difficult regarding worse conditions in developing countries as not ensured power supply or insufficient possibilities for the laboratory climate control. SITC are very sensible to stability of the supplies (voltage, compressed air) as well as the SITC results are very dependant upon the ambient conditions

Activity D.5 is aimed to achieve the optimal number of samples per bale and the optimal number of tests per sample. These numbers depend highly on the origin of the cotton production. It will not be possible to characterise cotton bales correctly, when the samples do not represent the bale. The results will be a direct input not only for the laboratories, but additionally for the gins and the sampling done there. For these studies, each one PhD student will be involved.

Objectives:

- Define the minimum tools that are required for installing a laboratory according to its supplies
- Provision of an objective basis comprising the technical problems with SITC instruments for a systematic solution
- Provision of a basic approach to reduce the problems in cotton testing laboratories in LDCs according to power failures and fluctuations
- Define the minimum tools efficient to monitor, control and stabilize air temperature and relative humidity in the standard conditions defined at the international level
- Provision of a basic approach to reduce the problems in humidity and moisture control
- Evaluation of an optimised number of necessary SITC tests per sample and samples per bale, based on specific variability studies for the regions included in the project

Based on the limited budget of the project, objective 1 to 3 are only covered basically in this project to initiate a study to approach these tasks. The last objective is fully scheduled in the project.

Activities:

- D.1. Assessment of necessary technical actions to improve SITC testing
- D.2. Development of a list of requirements for an integrated power supply system for laboratories
- D.3. Development of a list of requirements and basic principle drawings for a simple and efficient integrated climate control system
- D.4. Development of a suitable moisture correction

Activities D.1 to D.4, which are important for the global SITC testing, are in this project only covered with a minimum of days for a study to initiate future work on these topics.

- D.5. Evaluation of cotton variability

Testing cottons for reliable and commercial purposes in accordance with the USA way can lead to claims as the production of US cotton is very different from the African one. This causes different levels of within bale variability of the measured characteristics. It is therefore essential to study the within-bale variability in several African conditions to ensure that the way of testing the cotton will ensure no claim due to cotton quality characterisation.

This activity will be mainly undertaken in the RTCs with the support from CIRAD. PhD Students from the region will be included to cover this task.

Output:

- List of technical problems with SITC instruments
- Ranking of the problems according to their influence on the test results
- Nomination of possible steps to reduce the problems or to ply with them
- Specifications for the SITC manufacturers
- Optimised number of necessary SITC tests per sample and samples per bale

Costs:

Activity D1 to D4 will cost 70,500 USD for work of the FIBRE and CIRAD experts with 30% of counterpart contributions.

Activity D5 will cost 536,000 USD, mainly regarding costs for work in CIRAD and for PhD students, and regarding a homogenising machine for the cotton samples.

Table Component D: Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	52.500 USD	52.500 USD	0 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	0 USD	0 USD	0 USD
IV Personnel	387.677 USD	284.054 USD	103.622 USD
V Technical Assistance and Consultancy	79.576 USD	25.984 USD	53.592 USD
VI Duty Travel	86.640 USD	86.640 USD	0 USD
VII Dissemination and Training	0 USD	0 USD	0 USD
VIII Operational Costs	0 USD	0 USD	0 USD
PEA Sub-total	606.393 USD	449.178 USD	157.214 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
Grant Total	606.393 USD	449.178 USD	157.214 USD

Table Component D: Manpower for the different years

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Expert	FE	0	50	0	0
CIRAD Expert	CE	134	80	30	0
CIRAD Expert external consultation	CX	46	46	6	0
East Africa Technican/Operator	ET	25	25	25	0
West Africa Technican/Operator	WT	25	25	25	0

Costs per activity

	Total cost	CFC contribution
D.1 to D.4	70.500 USD	49.350 USD
D.5	535.892 USD	399.828 USD
sum	606.392 USD	449.178 USD

Component E: Technical Evaluation and Dissemination

Objectives:

The project is intended to be a pilot for other regions in the world. To evaluate the changing impact of SITC instrument testing on the cotton market, an impact assessment is included. Ways of assessment will consider the different benefits of SITC testing named in chapter II-D and will be done in close cooperation with the national cotton marketing boards.

To transfer the knowledge achieved in the project directly to other interested regions, initial discussions and advice with interested regions are included in the project.

The final dissemination will show the enhancement of reliability of cotton testing to the people involved in cotton business, and will therefore increase the market of African cotton with reliable test results.

Activities:

E.1. Assessment of the limits in the improvement of cotton quality in African regions

Not considered, as it is not essential for the project

E.2. Impact assessment of SITC

E.3. Transfer of the acquired knowledge to other regions

E.4. Dissemination

E.4.1. Final seminar and proceedings

E.4.2. Preparation of final reports on various media

Output:

- Impact assessment study
 - List of evidences proving the level of positive/negative impact of SITC in Africa
- Dissemination documents

Costs:

Costs for activities E.2 and E.3 include personal costs for FIBRE and CIRAD, in total 89,000 USD, including 30% of counterpart contributions.

Costs for the dissemination are estimated based on the experience from CIRAD in other projects. These costs will be detailed later.

Table Component E: Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	0 USD	0 USD	0 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	0 USD	0 USD	0 USD
IV Personnel	88.830 USD	51.818 USD	37.013 USD
V Technical Assistance and Consultancy	0 USD	0 USD	0 USD
VI Duty Travel	0 USD	0 USD	0 USD
VII Dissemination and Training	100.000 USD	100.000 USD	0 USD
VIII Operational Costs	0 USD	0 USD	0 USD
	188.830		
PEA Sub-total	USD	151.818 USD	37.013 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
	188.830		
Grant Total	USD	151.818 USD	37.013 USD

**Table Component E:
Manpower for the different years**

		Days			
		Year	Year	Year	Year
		1	2	3	4
FIBRE Expert	FE	0	0	0	60
CIRAD Expert	CE	0	0	0	60

Costs per activity

	Total	CFC
	cost	contribution
E.2	44.415 USD	29.610 USD
E.3	44.415 USD	22.207 USD
E.4	100.000 USD	100.000 USD
sum	188.830 USD	151.817 USD

Component F: Project Management and Financial Administration

The major share of project management will be done by the PEA.

For the PEA the following persons are involved:

- Project manager (part time: ½)
- Accountant (part time: ½)
- Secretariat (part time: ½)

The project manager is involved in both all organisational tasks and results oriented benefits of the whole project. He is responsible for all relevant activities and of course regarding scheduling and supervising. He is the key interface between the PEA and the project partners. The reports have to be done and any discrepancy from the project's items has to be noted and cleared out. Regarding his top level position within the project and the huge amount of all the activities he is obliged, a part time employment is justified. The project manager will be engaged for this project.

Accountant: The project includes several partners besides the PEA. From long period experience of the PEA, the financial control of all activities is one of the main requirements to run the project in a satisfactory manner. The bookkeeping, including control of biddings and reviewing the whole monetary transactions is necessary for any kind of evidence to financial transactions according to the whole project budget. Regarding the financial scheme and the total budget, there is the need for a part time accountant.

Secretariat: The correspondence including preparation and scheduling of any activities of the project manager is one of the most important tasks of this position. Caring for all partners and subcontractors and organising the whole official correspondence between the partners and partially the administration of the regional centres and other participating laboratories, there is the necessity for another part time employment of an internationally experienced staff member.

CIRAD expenses for project managing and accountant/secretariat are included with 30/55 days per year.

Intense additional management/administration will be necessary in the RTC resp. the bodies hosting the RTCs. It is intended to guide the RTCs from the beginning of the project on to be able to manage the RTC without international support.

Project management in the RTCs will partly be done by a project manager from the hosting institution to assure a proper cooperation. The main part of project coordination will be done by the regional experts, as they will be the key partners for the project. The project manager is included with 1/3 of his working time, the regional experts from the hosting institution (only CERFITEX and TBS) with ½ of their working time, and accountancy/secretariat with in sum 130 days per year.

To reduce funding costs and to regard the interaction between the project and the other activities of the partners, approx. one half of the total costs of the administration are given as in-kind contributions from the project partners.

Table Component F: Summary Project Cost by Category of Expenditure (USD)

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	0 USD	0 USD	0 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	0 USD	0 USD	0 USD
IV Personnel	1.371.320 USD	695.060 USD	676.260 USD
V Technical Assistance and Consultancy	0 USD	0 USD	0 USD
VI Duty Travel	0 USD	0 USD	0 USD
VII Dissemination and Training	0 USD	0 USD	0 USD
VIII Operational Costs	40.000 USD	0 USD	40.000 USD
PEA Sub-total	1.411.320 USD	695.060 USD	716.260 USD
IX Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD
X Contingencies	included	included	included
Grant Total	1.411.320 USD	695.060 USD	716.260 USD

Table Component F: Manpower for the different years

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Project Manager	FM	130	130	130	130
FIBRE Administration including accountant and secretary	FA	260	260	260	260
CIRAD Project Manager	CM	30	30	30	30
CIRAD Administration including accountant and secretary	CA	55	55	55	55
East Africa Expert	EE	130	130	130	130
East Africa Mangement	EM	80	80	80	80
East Africa Administration incl. Accountant and Secretary	EA	130	130	130	130
West Africa Expert	WE	130	130	130	130
West Africa RTC Management	WM	80	80	80	80
West Africa Administration incl. Accountant and Secretary	WA	130	130	130	130

Component G: Supervision, Monitoring and Evaluation

Supervision, monitoring and evaluation by the Common Fund for Commodities are included in component G.

Costs:

Costs of 150,000 USD are considered for category IX – Supervision, Monitoring and Evaluation.

There is no input belonging to category IV or V.

There are no detailed activities for component G.

D. Benefits and Beneficiaries

The proposed project is, in its global part, designed to stabilise cotton trading by providing a commercially acceptable system for the instrument testing of cotton. On the basis of reliable cotton test results an equitable trade based on the inherent cotton quality is possible.

Cotton producing countries, especially developing countries will be enabled to sell their cotton based on reliable and comparable test results, so that their cotton production can be directly compared to cottons from higher developed countries with existent cotton quality control systems. Special advantages of the different origins (as e.g. reduced trash content or higher and more uniform maturity caused by hand-picking) can be evaluated independently from the basic cotton characteristics. Indiscriminative price discounts due to unproven test results can be avoided. The benefit is given by several reasons:

- avoiding price discounts due to unknown properties
- higher achievable prices (due to recognised/proven premium quality bales)
- less claims
- possibility to secure a market of customers for a recognised quality of fibres and to improve the market share to new customers
- check of manual/visual classing
- higher selling volume compared to not instrumentally classed cotton – this advantage will become even more important in the following years based on the global increase of instrument testing
- help in direct selling to cotton importing countries (e.g. online trade)
- central importance for quality management of the cotton and textile value added chain
 - option for proper gin setting
 - testing for research, breeding
 - option for bale selection and efficient yarn production in spinning mills

Monetary Benefit

Most of the benefits by instrument testing of cotton can not be evaluated for their direct monetary impact. Nevertheless it is possible to get some answers to the monetary benefit of instrument tested cotton compared to not instrument tested cotton.

For this project proposal, the monetary benefit of achieving a higher price for instrument tested cotton was estimated by for different sources and at different dates, so with basing on varied price and market conditions

1. Uster, unofficial notice, based on estimations in Uzbekistan 1990: 20 US-ct/kg
2. ICAC, unofficial notice, based on conversations with merchants: 4.4 US-ct/kg
3. CIRAD, net benefit based on an evaluation in Benin 1994: 1.5 US-ct/kg, meaning a gross benefit of 3.5 US-ct/kg
4. Wakefield Inspections, based on their experience in Brazil: 2.7 US-ct/kg

These numbers show a high deviation. Nevertheless it is possible to come to a conclusion of about 3 to 4 US-ct/kg. Based on 3 US-ct/kg, it will be 6.90 USD/bale. The costs for testing have to be subtracted from this. For Africa, a maximum testing price of 2.50 USD per bale can be estimated. So, after deductions, the following monetary benefit can be stated:

• For each bale:	• USD 4.40
• For the yearly cotton production of Tanzania (100,000t)	• USD 1,900,000 per year
• For the yearly cotton production of Mali (250,000t)	• USD 4,750,000 per year
• For the yearly cotton production of West Africa (800,000t)	• USD 15,200,000 per year

For the cotton testing laboratories in the regions supported in the project there will be a direct benefit. They will be given the assistance to produce reliable test values for cotton. Additionally important technical requirements will be initiated to solve some important problems for cotton testing laboratories in developing countries. Based on the subsequent control of the laboratories according to the level of their test results and based on the control of their laboratory practice conformity they will be given an annual certificate to prove their ability of producing reliable test results.

Cotton testing laboratories in other regions of the world, classing their national cotton production, will benefit from the global system, as they can prove their ability of producing reliable results. Where necessary, Regional Centres equal to the one established in the project may be built up.

Additionally cotton control laboratories all over the world will benefit from the global part of the project as soon as they participate in the established CSITC Round Trial. Based on the control of the laboratories according to the level of their test results they can verify their ability to produce reliable test results and therefore will achieve a direct advantage in competition with not participating cotton testing laboratories.

For these reasons, the majority of cotton testing laboratories will start participating in the CSITC laboratory certification action and will render a self financing CSITC check system.

With the laboratory certification cotton trade will get certainty about the dependability of the testing laboratories and the test results they pay for, independently from the cotton producing region and the laboratory location.

Cotton mills will be enabled to buy cotton based on the measured cotton characteristics and to compare cotton from different origins with contrastable test results. Differences between agreed and delivered quality can be identified, evaluated and valorised.

Financial Sustainability

Instrument tested results for cotton will during the next years gather even more importance than today. According to the international efforts to replace visual classing by instrument testing, it is undoubted that

- instrument testing will grow from now approx. 30% to the majority of produced bales during the next 5 years [ICAC]
- instrument test results will be included in cotton trade rules of the major cotton associations (ICA, Bremen Cotton Exchange and Gdynia Cotton Association are encouraging the CSITC actions)
- instrument test results will be the usual future basis for cotton selling/buying contracts
- cotton producing countries are aware of the advantages of instrument testing of cotton and it is their declared intention to increase instrument testing

The global evaluation of cotton testing laboratories, initiated with component B, will bring a direct financial benefit to the cotton testing laboratories and the cotton producing countries being part of the evalua-

tion and being certified by this system. Therefore the number of laboratories participating will, after the first years of proving the proper work of the system, include the majority of cotton testing laboratories being involved in the classification of the cotton production or being a control laboratory for cotton. In the business of wool testing it can be seen that the majority of wool laboratories are certified by INTERWOOLLABS and are willing to pay a yearly fee for being certified. Depending on the number of participating laboratories for cotton, it will be possible to reduce costs for certification to approx. 500 to max. 1000 USD p.a., which is comparable to the price paid to INTERWOOLLABS in wool. During the project time it is mainly intended to raise the number of participating laboratories, therefore costs are only partly transferred to the laboratories. Nevertheless, for directing to a financially sustainable system, sample distribution costs will have to be paid by the labs after a shorter period.

The Regional Technical Centres in Africa (RTCs) will be directly beneficial to the cotton testing laboratories in the region:

- They are necessary to prove the reliability of the testing laboratories
- They are necessary to improve the testing ability of the laboratories.

As in cotton business the use of SITC results and the demand for these results from reliable laboratories will increase clearly, there will be direct demand from the cotton testing laboratories for the work of the RTCs.

The Regional Technical Centres in Africa will have different sources of income:

- direct fee for training
- direct fee for expertise
- direct fee or yearly payment for re-test of samples tested in the laboratories
- direct fee for the instrument testing of a part of the cotton production in the region

All named sources of income for the RTCs will be directly profitable for the laboratories in the region:

- Training costs from the RTCs will be lower than training costs at international bodies (like American Cotton Shippers Association (Rhodes))
- Fees for consultations, expertise and technical support will be lower than international expertise or support (however, the international expert bodies will have a close look to the performance of the RTCs in their provision of services to the laboratories, and will perform periodic training to RTC trainers to keep them informed about the latest knowledge)
- The fees for the re-test of samples will be unavoidable for the laboratories to prove their ability to provide reliable test results
- The instrument testing of the cotton production in the RTCs will be beneficial to
 - countries without SITC instruments, as they can avoid buying these instruments and their surrounding necessary equipments
 - countries with SITC instruments, as the RTC can fill gaps in the testing capacity of the national laboratories.

The costs of the RTCs can be adapted to the amount of work in the RTCs:

- the minimum engagement of the regional experts is a part-time engagement, as the RTCs are linked with existing bodies
- the engagement of SITC operators can be synchronised with the number of tests to be done
- the administration of the RTCs can be minimised as the RTCs are linked with existing bodies

The costs and the income of the RTCs depend on the number of laboratories benefiting from the RTC and from the tasks demanded by the laboratories. Laboratories/ classing offices, their companies and the governments will demand the services due to the given added value to cotton.

For illustrating the financial sustainability of the RTCs, an estimation is given based on the following assumptions:

- 1 regional expert in full time is planned for regional training and expertise as well as for laboratory management
- It will be necessary to engage one well skilled SITC operator / technician for the whole year despite of a limited harvesting period
- Administrational staff and daily workers have to be included
- Typical running costs and repair costs are considered
- The number of retests will be levelled to 0.5% of the bale production in the region (starting with SITC testing of 10% and 5% of retest, going up to 50% of SITC testing with 1% of retest), in sum 18,000 bales per season.
- The number of SITC tests for the regional production is expected to reach about 12,000 tested bales per year. With a higher number of bales to be tested, additional SITC operators with less salary can be added, increasing the monetary benefit. The SITC instrument is capable to test up to 150,000 bales per year.
- Training and expertise are considered to serve 10 laboratories in the region
- Expertise will be demanded by every laboratory every second year for 2 days
- Training will be done for 10 trainees per year

Yearly expenses of one RTC		
Cost	unit price, USD	sum USD
Regional expert (1/1)	30000	30000
Skilled SITC operator/technician (1/1)	20000	20000
Administration (1/2)	8000	4000
Daily worker (1/1)	6000	6000
Running costs (SITC, electricity...)	10000	10000
Repair costs, spare parts (SITC, add. equipment)	50000	5000
Sum		75000

Yearly Income of one RTC				
Source of income	amount	unit	unit price USD	sum USD
Training	10	persons/year	1600	16000
Expertise	10	days/year laboratories with	200	2000
Round Trial	10	6RT/year	250	2500
Retest	18000	samples	2	36000
Testing of cotton production	12000	samples	2	24000
			Sum	80500

Based on the modest assumptions named above, the RTCs will be self financing. With increasing number of tests the net income will be higher.

Additionally to the named direct sources of income, there will be the national interests of the countries in the region to accompany the work of the RTCs, as the RTCs are directly improving the monetary benefit of the national cotton productions in the region.

During the time of the project it is aspired to initiate the later financial sustainability of the project. Therefore an increasing share of external payments for the following key works in the CSITC round trial is regarded:

- training for the laboratories
- training for the cotton stakeholders
- expertise for the cotton testing laboratories
- participation in the international CSITC round trial

For training and expertise, the shift of payment from CFC to external beneficiaries can be seen in the following table.

	Year 1	Year 2	Year 3	Year 4
CFC contribution	9.524 USD	23.247 USD	11.624 USD	7.702 USD
External payment	0 USD	0 USD	11.624 USD	15.545 USD

E. Intellectual Property Rights and Publications

Intellectual property rights will rest with the Common Fund for Commodities.

F. Project Costs and Financing

The total project costs over four year period are estimated at USD 7,788,052 (see appendix). The Common Fund is expected to finance USD 5,034,697 (see appendix). in grant. The project partners and external partners will contribute counterpart contribution equivalent to the difference between project costs and CFC funding.

Tables with project costs by component and year, costs and contributions of project partners, costs by categories are included in the appendix. Additionally the working days for the involved persons (personal categories) and the investment costs are named in the appendix.

G. Procurement, Disbursement, Accounts and Audit

Procurement

Procurement will be in accordance with the Fund's rules and regulations. There will be no need for additional capital investments. Consumptive goods will be ordered if necessary. Especially there will be the necessity for purchase of calibration cotton standards.

There will be no need for procurements under International Competitive Bidding (ICB).

Disbursement

Disbursement against the purchase with a value of USD 250 or more will be fully documented. Other expenditures will be disbursed against certified Statements of Expenditure (SOE). The project account will be replenished in accordance with the Fund's procedures for operating a project account. The su-

pervisory body will ensure, prior to first disbursement of the project and grant agreements that the inputs of the collaborating countries and institutions are confirmed in the quantity foreseen in the project.

Accounts and Audit

The PEA and the involved collaborating institutions will maintain independent and appropriate financial records and accounts in accordance with internationally acceptable accounting practices. All financial records and statements, including those for the project account, will be audited annually by independent auditors acceptable to the Fund. The audited accounts and the auditor's report will be submitted within three month after the end of the project's fiscal year.

H. Organisation and Management

ICAC will be the supervisory body.

The Faserinstitut Bremen will be the Project Execution Agency (PEA). The other specific agencies named above will contribute with specific technical competence or strong regional position.

The PEA will allocate an appropriate expert to the project manager. The supervising agency (ICAC) will observe the execution of the project including the financial control.

Faserinstitut Bremen will organise all the necessary issues to establish and administrate the Regional Technical Centres including the certification procedure.

The USDA will contribute by consulting and organising the necessary round trials.

The PEA has to report their activities directly to the supervisory body within six month periods.

In each participating RTC a contact person will be established. Furthermore the heads of the Regional Technical Centres have to provide regular progress reports.

The project manager has to ensure the responsibility of each Regional Technical Centre for the implementation of the certification system. The call for regular meetings and the supervision of the action items has to be revealed in the meeting's protocols.

Two meetings of the ICAC Task Force are planned each year. The arrangement of meetings of the heads of the Regional Technical Centres together with the project manager depend on the PEA's decisions.

I. Monitoring, Reports and Supervision

ICAC will act as the supervisory body of the project and will establish appropriate arrangements for the implementation. The supervisory body will prepare an annual supervision report and submit this report to the fund.

The Project manager is responsible for summarising the interim reports including the evidence of the scheduled targets instructed to the regional coordination centres.

The fund will undertake its regular monitoring of the project through review of partial project reports and visits to the project partners.

The fund also will supervise the activities by reviewing the work plan and the scheduled tasks.

After the end of the project an evaluation will be carried out to determine the overall achievements against the project's pre-set objectives and the project's cost effectiveness.

J. Risks

There are some risks that could potentially affect implementation of the project, and hence, the achievement of project objectives. These risks have been carefully considered during the process of project formulation and appraisal and appropriate measures have been included in the project design to mitigate such risks. These risks are discussed below.

- Global: The Certified Cotton Testing System might not be adopted by the cotton associations.
→ Producers, traders and spinners have recognised the importance of SITC testing and are willing to bring instrument testing forward. The International Cotton Association and other cotton associations have initialised the project or were prematurely involved, so they will, as precursors, encourage other cotton associations to participate. Before the start of the project letters of intent will be obtained from the most important cotton associations.
- Global: Laboratories besides the involved African laboratories might not collaborate and therefore the laboratory check system might get inexpedient.
→ When the developed system and rules are integrated in trading rules, laboratories and cotton producing countries will notice the economical advantages of a participation in the certified cotton testing system. An adequate time for filling the system with participating laboratories is included in the project.
- Global: Large cotton producing countries might not participate.
→ The early integration (from 2004 on) of major cotton producing countries as e.g. USA, cotton associations and cotton consumers into the CSITC Task Force will assure to exceed the critical stock turnover. The emerging certified cotton testing structure will effect economical advantages of the participating cotton producing regions, so that it will necessitate other regions to participate.
- Africa: Communication is a big problem in certain African countries. Not all contributors have easy access to fax and e-mail facilities. This may put a constraint on day-to-day management of the project and this could hamper the transfer of information between collaborating partners.
→ The selected partners have the capability of communicating in a timely and effective manner. For communicating with other cotton companies / potential information providers, the use of express mail is considered.
- Technical risk: Further developments on the testing instruments, which can only be initialised in the project, but not solved, might be necessary.
→ Technical requirements that have to be fulfilled for the project are included. Additional market demands can be initiated in the project. A co-operation with SITC instrument manufacturers is essential and is given. Business competition between various instrument manufacturers, which could benefit from the demand for system conform instruments, will encourage enterprising manufacturers to undertake the developments to enhance their market share.

APPENDIXA. Logical Framework

	Narrative Summary	Objectively verifiable indicators	Means of verification	Important assumptions
Project goal	<p>To establish an internationally accepted system regarding the commercial standardised instrumental testing of cotton (CSITC) to improve the trading and processing of marketable varieties.</p> <p>The main focus of this project is on supporting especially African market's needs. Cotton varieties will be tested once, the test results given in certificates valid worldwide.</p>	<p>Reduced number of claims according to SITC results from African countries.</p> <p>Reduced number of tests on cotton bales already tested by African laboratories.</p> <p>Rising number of premium cotton bales to be recognised.</p> <p>Secured market share.</p>	<p>Trade statistics by the cotton associations.</p> <p>Statistics by the national cotton bodies.</p>	<p>Change of the cotton rules towards SITC results based on reliable test results from certified laboratories.</p> <p>International acceptance of the CSITC system.</p>
Project purpose	<p>Develop international rules to characterise the process relevant properties of cotton</p> <p>Standardise test method to improve the outcome of the machine's performance.</p> <p>Install a globally working system to check and prove the reliability of the test results of cotton testing laboratories neutral and independently.</p> <p>Install a regionally working system to support the cotton producing countries in West- and East Africa.</p>	<p>Increased amount of cotton efficiently evaluated by instrumental testing.</p> <p>Increased amount of cotton traded based on SITC results.</p> <p>Increase the reliability of the results including a higher meaning of the results for the spinning mills</p>	<p>CSITC Round Trial evaluation.</p> <p>Trade statistics by the cotton associations.</p>	<p>International market acceptance for cotton with SITC results.</p> <p>Increasing the homogeneity of the worldwide responsible cotton exchanges.</p> <p>National support for cotton quality assessment</p>
Outputs	<p>An international CSITC Round Trial to check the reliability of test results from participating laboratories and to evaluate the labs.</p> <p>Regional Technical Centres in West- and East Africa to support these regions to fulfil the requirements for reliable testing and to improve the work of the laboratories in the region.</p>	<p>System installed properly and piloted successfully.</p> <p>Sustainable working RTCs and CSITC Round Trial.</p>	<p>Detailed analysis of costs and income of the RTCs.</p>	<p>System is adaptable across the cotton producing countries and regions.</p>
Inputs	<p>Support for the investment in SITC instruments and laboratory surroundings for RTCs and laboratories.</p> <p>Technical assistance and training to the RTC cotton experts.</p> <p>Consultancy and expertise for the RTCs and laboratories.</p>	<p>Comp. A: 1,400t USD in-kind contrib. - with 217t USD CFC funding.</p> <p>Comp. B: 299t USD in-kind contrib. - with 377t USD CFC funding.</p> <p>Comp. C: 139t USD in-kind contrib. - with 2994t USD CFC funding.</p> <p>Comp. D: 157t USD in-kind contrib. - with 449t USD CFC funding.</p> <p>Comp. E to G: 753t USD in-kind contrib. - with 997t USD CFC funding.</p>	<p>PEA Progress Reports and annual Audit Reports</p> <p>Participation in ICAC Task Force on CSITC and terminal dissemination workshop.</p> <p>On-site visits to ensure progress in implementation.</p>	<p>Financing from all sources is made on a timely basis in line with proposed activities and annual budget.</p>

B. Budget Tables

TBS represents the RTC East Africa, including costs and contributions from TBS and TCB.
CERFITEX represents the RTC West Africa, including costs and contributions from CERFITEX and SOFITEX.

A detailed spreadsheet with the costs for each activity was submitted to the CFC secretariat. The following tables are extracted from the detailed spreadsheet.

Table 1: Summary Project Cost by Component

Project components	Total Cost including contingency	CFC Contribution including contingency
A Global CSITC Configuration	1 619 454 USD	217 682 USD
B Evaluation of Cotton Testing Laboratories (CTLs)	676 731 USD	376 910 USD
C Support to African Cotton Producing Countries	3 135 324 USD	2 994 049 USD
D Technical Developments to Improve Instrument Testing Reliability	606 393 USD	449 178 USD
E Technical Evaluation and Dissemination	188 830 USD	151 818 USD
F Project Management and Financial Administration	1 411 320 USD	695 060 USD
G Supervision, Monitoring and Evaluation	150 000 USD	150 000 USD
Total (without contingency)	7 655 772 USD	5 034 697 USD
Contingency	132 280 USD	
Grand Total (including contingency)	7 788 052 USD	5 034 697 USD

Table 2: Summary Project Cost by Component and Year

Component	Year 1	Year 2	Year 3	Year 4	Total Cost
A Global CSITC Configuration	723 066 USD	298 796 USD	298 796 USD	298 796 USD	1 619 454 USD
B Evaluation of Cotton Testing Laboratories (CTLs)	367 975 USD	99 550 USD	102 550 USD	100 550 USD	670 625 USD
C Support to African Cotton Producing Countries	1 263 694 USD	937 599 USD	408 234 USD	407 834 USD	3 017 361 USD
D Technical Developments to Improve Instrument Testing Reliability	228 504 USD	275 684 USD	98 224 USD	0 USD	602 412 USD
E Technical Evaluation and Dissemination	0 USD	0 USD	0 USD	184 600 USD	184 600 USD
F Project Management and Financial Administration	352 830 USD	352 830 USD	352 830 USD	352 830 USD	1 411 320 USD
G Supervision, Monitoring and Evaluation	150 000 USD	0 USD	0 USD	0 USD	150 000 USD
Sub Total	3 086 069 USD	1 964 459 USD	1 260 634 USD	1 344 610 USD	7 655 772 USD
Contingency	57 962 USD	42 516 USD	13 796 USD	18 006 USD	132 280 USD
Grand Total	3 144 031 USD	2 006 975 USD	1 274 430 USD	1 362 616 USD	7 788 052 USD

A detailed project plan will be designed to give a clear assignment of the costs to the time of the project. Time displacements in the project may occur at this stage of planning.

Table 3: Summary Project Cost and Project Contribution by Partner

Project components	CFC CFC	ICAC contribution	ICAC by CFC	FIBRE contribution	FIBRE by CFC	CIRAD contribution	CIRAD by CFC
A Global CSITC Configuration	217 682 USD	0 USD	0 USD	82 497 USD	141 295 USD	26 815 USD	76 387 USD
B Evaluation of Cotton Testing Laboratories (CTLs)	376 910 USD	2 115 USD	0 USD	82 720 USD	350 120 USD	11 750 USD	26 790 USD
C Support to African Cotton Producing Countries	2 994 049 USD	0 USD	0 USD	32 745 USD	312 690 USD	28 653 USD	160 693 USD
D Technical Developments to Improve Instrument Testing Reliability	449 178 USD	0 USD	0 USD	10 575 USD	24 675 USD	146 639 USD	133 323 USD
E Technical Evaluation and Dissemination	151 818 USD	0 USD	0 USD	18 506 USD	125 909 USD	18 506 USD	25 909 USD
F Project Management and Financial Administration	695 060 USD	0 USD	0 USD	427 700 USD	427 700 USD	84 600 USD	103 400 USD
G Supervision, Monitoring and Evaluation	150 000 USD	0 USD	150 000 USD	0 USD	0 USD	0 USD	0 USD
Total Financed	5 034 697 USD	2 115 USD	150 000 USD	654 743 USD	1 382 388 USD	316 964 USD	526 502 USD
% financed (cost brought by body / cost for this body)		1%	99%	32%	68%	38%	62%
Project components	CERFITEX / SOFITEX contribution	CERFITEX / SOFITEX by CFC	WA labs by CFC	TBS / TCB contribution	TBS / TCB by CFC	EA labs by CFC	External contribution
A Global CSITC Configuration	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD	1 292 460 USD
B Evaluation of Cotton Testing Laboratories (CTLs)	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD	203 236 USD
C Support to African Cotton Producing Countries	8 064 USD	1 034 062 USD	145 908 USD	6 300 USD	1 160 469 USD	180 227 USD	65 514 USD
D Technical Developments to Improve Instrument Testing Reliability	0 USD	145 590 USD	0 USD	0 USD	145 590 USD	0 USD	0 USD
E Technical Evaluation and Dissemination	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD
F Project Management and Financial Administration	101 980 USD	81 980 USD	0 USD	101 980 USD	81 980 USD	0 USD	0 USD
G Supervision, Monitoring and Evaluation	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD
Total Financed	110 044 USD	1 261 632 USD	145 908 USD	108 280 USD	1 388 039 USD	180 227 USD	1 561 209 USD
% financed (cost brought by body / cost for this body)	8%	92%	100%	7%	93%	100%	100%

Table 4: Summary Costs by Category

Category	Total Cost	CFC Contribution	Counterpart
I Vehicles, Machinery and Equipment	1 909 900 USD	1 551 900 USD	358 000 USD
II Civil Works	0 USD	0 USD	0 USD
III Materials and Supplies	210 000 USD	18 000 USD	192 000 USD
IV Personnel	3 482 612 USD	1 876 933 USD	1 605 680 USD
V Technical Assistance and Consultancy	359 990 USD	200 158 USD	159 832 USD
VI Duty Travel	1 146 002 USD	854 743 USD	291 259 USD
VII Dissemination and Training	304 298 USD	202 963 USD	101 335 USD
VIII Operational Costs	225 250 USD	180 000 USD	45 250 USD
PEA Sub-total	7 638 052 USD	4 884 697 USD	2 753 355 USD
IX Supervision, Monitoring and Evaluation	150 000 USD	150 000 USD	0 USD
X Contingencies	included	included	included
Grant Total	7 788 052 USD	5 034 697 USD	2 753 355 USD

Table 5: Summary Manpower by Year

		Days			
		Year 1	Year 2	Year 3	Year 4
FIBRE Expert	FE	277	161	111	171
FIBRE Expert external consultation	FX	62	52	52	52
FIBRE Technican/Operator	FT	36	46	46	46
FIBRE Project Manager	FM	130	130	130	130
FIBRE Administration including accountant and secretary	FA	260	260	260	260
CIRAD Expert	CE	254	95	48	78
CIRAD Expert external consultation	CX	78	78	38	32
CIRAD Technican/Operator	CT	13	13	13	13
CIRAD Project Manager	CM	30	30	30	30
CIRAD Administration including accountant and secretary	CA	55	55	55	55
East Africa Expert	EE	415	339	320	315
East Africa Mangement	EM	80	80	80	80
East Africa Administration incl. Accountant and Secretary	EA	130	130	130	130
East Africa Technican/Operator	ET	95	240	310	290
East Africa Daily Worker	ED	375	375	375	375
West Africa Expert	WE	425	339	325	320
West Africa RTC Management	WM	80	80	80	80
West Africa Administration incl. Accountant and Secretary	WA	130	130	130	130
West Africa Technican/Operator	WT	95	248	320	300
West Africa Daily Worker	ED	375	375	375	375
External Experts	XE	274	189	189	189

Table 6: Investment costs to be funded by CFC

Kind of Cost	User institute	Unit price	Quantity	Contingency%	Total cost
Development of software	FIBRE	120.000 USD	1	5%	126.000 USD
Development of software	FIBRE	10.000 USD	1	5%	10.500 USD
Purchase a 4WD car	Cerfitex	25.000 USD	1	5%	26.250 USD
Ambient air management system	Cerfitex	50.000 USD	1	5%	52.500 USD
Temperature and humidity recorders	Cerfitex	5.000 USD	1	5%	5.250 USD
Computer Projector Printer etc.	Cerfitex	7.500 USD	1	5%	7.875 USD
Purchase of a SITC	Cerfitex	225.000 USD	1	5%	236.250 USD
Power supply: Generator, UPS	Cerfitex	10.000 USD	1	5%	10.500 USD
Classing tables, conditioning storage etc	Cerfitex	4.000 USD	1	5%	4.200 USD
Purchase a 4WD car	TBS	25.000 USD	1	5%	26.250 USD
Ambient air management system	TBS	50.000 USD	1	5%	52.500 USD
Temperature and humidity recorders	TBS	5.000 USD	1	5%	5.250 USD
Computer Projector Printer etc.	TBS	7.500 USD	1	5%	7.875 USD
Purchase of a SITC	TBS	374.000 USD	1	5%	392.700 USD
Power supply: Generator	TBS	6.000 USD	1	5%	6.300 USD
Classing tables, conditioning storage etc	TBS	4.000 USD	1	5%	4.200 USD
Temperature and humidity recorders	Cerfitex	5.000 USD	5	5%	26.250 USD
Temperature and humidity recorders	TBS	5.000 USD	5	5%	26.250 USD
Investment in laboratory equipment (air management, SITC repair, etc.)	Cerfitex	45.000 USD	5	5%	236.250 USD
Investment in laboratory equipment (air management, SITC repair, etc.)	TBS	45.000 USD	5	5%	236.250 USD
Duplication of homogenizing machine	Cerfitex	25.000 USD	1	5%	26.250 USD
Duplication of homogenizing machine	TBS	25.000 USD	1	5%	26.250 USD
Sum					1.551.900 USD

There will be international competitive bidding for all items of USD 100,000 or more.