

**Project Document**

**FAST TRACK PROJECT**

**for**

**a supporting study and analysis  
on**

**PRODUCTION AND MARKETING OF  
UNCONTAMINATED COTTON IN MALI  
(CFC/ICAC/32FT)**

7 April 2006

## **Production and Marketing of Uncontaminated Cotton in Mali (CFC/ICAC/32FT)**

### **Project Executing Agency:**

The Cotton Program of the "Institut d'Economie Rurale -IER" (Institute of Rural Economy) of Mali will implement the project.

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### **Project Duration:**

One year  
(July 1, 2006 to June 30, 2007)

### **Project Cost:**

Grant from CFC	= US\$50,000
Counterpart contribution	= US\$40,000
Total	= US\$90,000

### **Location of the Project:**

Djidjan sector, Kita region of CMDT  
Niena sector, Sikasso region of CMDT  
Republic of Mali

Grower surveys and their production practices will be monitored and seedcotton samples will be collected from the collection centers within the above two sectors. However, the project will expand to maximum gins, if not all, for collecting seedcotton and lint samples.

### **Role of the International Cotton Advisory Committee:**

In line with the Common Fund's requirement, the International Cotton Advisory Committee (ICAC) will act as Supervisory Body for the project. In that capacity, the ICAC will provide technical backstopping and other assistance to the Institute of Rural Economy (IER) as appropriate to successfully implement the project. The Technical Information Section of the ICAC will closely work with IER and CMDT on the following aspects.

1. Design of the survey questionnaire
2. Hire a consultant (if need be) to go and visit the project twice, once during design of the project and once during actual collection of data.

3. In the absence of a consultant, ICAC staff will visit the project during the peak data collection time.

**Main Theme and Scope of the Project:**

Contamination in cotton is caused by foreign matter and results in severe disruptions during spinning. There are many reasons that why cotton gets contaminated. The contamination can result from bad cultivation methods (use of inappropriate chemicals, delay in the farming interventions), but also from bad handling of seedcotton at the time of picking and storage. Contamination increases the cost of spinning and lowers the quality of yarn. Malian growers suffer price discounts because their cotton is contaminated with foreign matter and seedcoat fragments. This project aims at ascertaining the level of contamination, type of contamination and find out how and why these contaminants are added to cotton. Taking into account the findings of the field study as well as documented industry experiences elsewhere, the project will make recommendations about how to avoid contamination and produce uncontaminated cotton in Mali, with possible applications in other West African cotton producing countries.

**Project Sites and Institutions Involved:**

The project will be conducted only in Mali. CMDT has divided cotton producing area into six regions: Fana, Koutiala and San in the north, Bougouni and Sikasso in the south and Kita in the west. Various components of the study will be carried out at Djidjan sector (CMDT region of Kita) and Niena sector (CMDT region of Sikasso) in two zones very contrast because of production practices, history of cotton grown, average farm size per family and even the intrinsic quality and/or favorable or unfavorable prejudice of the quality of cotton produced. The observations (%fiber output to seed; technological characteristics) will be continued by evaluating the impact of seedcotton in factories known as modern having the complete chain of cleaning seedcotton and fiber (Super Jet, Lint-cleaner) and in the traditional factories where cleaning is rather limited. After the harvesting season, the project will expand to maximum gins, if not all, for collecting seedcotton and lint samples. Analysis of seedcotton and lint samples from most gins will show differences among sectors and gins.

The two institutions involved in the project are the Institute of Rural Economy and CMDT. The directorate of production at CMDT will be mainly involved in providing facilities to IER.

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**International Status of Work on Contamination:**

The 2005 Cotton Contamination Survey of the International Textile Manufacturers Federation (ITMF) showed that 22% of all cotton analyzed in the survey had at least some

kind of contamination. 15% had moderate contamination while 7% had serious contamination problem. The ITMF survey looked for contaminants that are fabrics and strings made of woven plastic, plastic film, jute/hessian and cotton, organic matter (leaves, feathers, paper, leather, etc), inorganic matter (sand/dust, rust and metal/wire) and oily substances like grease oil, rubber, stamp color and tar. Mali is a cotton exporting country and cotton is always discounted in the international market due to contamination. But, what is the actual status of contamination and what are the main contaminants in Malian cotton have not been studied locally.

**Indonesia** – A textile mill in Indonesia has seen that there is a wide variation in the level of contamination among shipments of the same origin (country). Cottons from different countries differ in the level of contaminations but the nature of contaminants is almost the same (if cotton is hand picked). Electronic machines for detection and elimination of contamination in the blow room and winding are expensive. Such gadgets are unable to identify material smaller than 1 cm sq while most contaminants by this stage are already reduced to small sizes. The problem arises if the electronic machines fail or deteriorate in their sensitivity to identify contaminants. Blow room cleaning has no problems but cleaning during winding could affect speed and quality of yarn. The mill, based on their seven-year experience, observed that less than one gram of contamination per ton of lint is helpful to minimize complaints. The cost of manual cleaning is 3.1 to 4.4 cents per kg lint depending on the level of contamination. The cost of cleaning increases with the level of contamination.

**Pakistan** – The survey studies in Pakistan have shown that the average weight of contaminants in cotton is 19.4 gm per 175 kg of lint. The main contaminants are jute/hessian, polypropylene, polyethylene and colored cloth. The government undertook extensive approach in a small project area and was able to reduce contamination to 1.8 gm per 175 kg of lint. The approach included price incentive, educating growers about contamination and convincing traders and ginners to avoid contamination during storage and ginning.

**India** - A group of companies 'GTN Textiles Limited' manually analyzed cotton of Indian and foreign origin and observed that white polypropylene strings and fabrics and alkathene bits constituted 40% of contamination, colored polypropylene strings, fabric and hair constituted 30% and colored cotton yarn, fabric and fibers, coir, feathers and grease/oil 20%. All other contaminants were only 10% of the total contamination. GTN kept a record of cotton suppliers and worked backward to reach growers in addition to educating suppliers to buy least contaminated cotton. Four suppliers improved their contamination levels from 7.9 to 4.3, 8.4 to 4.7, 6.8 to 4.0 and 8.1 to 6.7 which proved that their approach works.

**USA** – Cotton in the USA is machine picked but it could still be contaminated. The nature of contamination varies depending upon if it is irrigated or not irrigated. Irrigated cotton has shown to have higher contamination. The National Cotton Council receives feedback from spinners, weavers and end users and based on that produces a video highlighting the consequences of contamination and suggesting recommendations. There are 976 ginneries in the USA and video is distributed free to ginneries who pass on the message to growers. The approach again is prevention.

### **Current Cotton Situation in Mali**

Small-scale cotton growers in Mali produce cotton. All inputs are supplied by CMDT. CMDT is a semi-public company; 60% owned by the State of Mali and 40% by the French semi-public company Dagris. CMDT is responsible for providing seed, fertilizer and insecticides and also buys seedcotton from farmers at a price agreed prior to planting. CMDT owns and operates 18 gins. There are about 170,000 registered cotton growers and 7,000 producer unions in Mali. Cotton growers and their families form a population of 3.2 million people, 28% of the total population in Mali. CMDT might split into 3 or 4 smaller companies in 2008 but by then the project will be over.

The Institute of Rural Economy (IER) headquartered in Bamako undertakes research on cotton. IER has 6 research centers operating through a network of 8 research stations and 12 sub stations. Beside cotton, IER's regular research programs cover other crops (cereals, leguminous crops, fruits and vegetables), cattle, poultry, soil fertility, food processing technology, genetics, biodiversity, sustainability and environmental conservation, and agricultural economics. The institute has a full-fledged cotton research program based in Sikasso with four sub stations in different ecological zones. The research team is headed by a national cotton program leader who works directly with the scientific coordinator of crop plants in Bamako at IER headquarters. The cotton research program of IER receives a significant amount of funding from CMDT and works in close collaboration with the Director (Production) of CMDT. Close collaboration and cooperation between CMDT and cotton researchers will ensure that the IER staff has the full excess to all the cotton they want to sample. IER will provide neutral testing of cotton for contamination. Poor maintenance of gins increases the risk of contamination with seedcoat fragments and that will also be studied in the project.

The ITMF data for the year 2005 showed that 26% of cotton sampled from Mali was contaminated, 16% moderately and 10% seriously. Plastic film in the form of fabric and strings is most common contaminant followed by woven plastic and cotton strings and fabric. The ITMF data also showed that 38% of production was contaminated with seedcoat fragments. However, the number of samples was small and differences among production regions are not known. Therefore, additional information is needed before recommendations can be made to get rid of contamination.

### **Seedcotton Purchase in Mali**

CMDT has three prices for three different grades. The large price differentials between these grades (160 -125 – 105 CFA francs per kg of seed cotton, respectively) result in 99% of the crop being purchased as first grade, regardless of the lint classing results. Contamination is not taken into account during the buying process, and little care is given to the cleanliness of cotton before it reaches the gin. The use of plastic materials for picking, storing, transporting and baling is widespread. The expanded use of colored plastic material, which is easier to detect visually than white plastic material, has been an improvement. However, efforts to educate farmers have had a limited impact so far because there is no financial incentive for farmers to deliver uncontaminated cotton and no discount is applied for contaminated cotton. CMDT is conscious of the contamination problem but no concrete steps have been taken to eliminate the problem. Currently, CMDT

is experimenting with wrapping cotton bales in cotton cloth. But, the real problem of contamination lies somewhere else.

**Implementation Modalities:**

The project will be implemented by IER in close collaboration with CMDT and technical backstopping and other support will be provided by the ICAC. IER will designate a person as a Project Coordinator who will prepare a national plan for implementation starting from the launch of the project (July 1, 2006). The project will include two sectors in the beginning but expand to include all ginning factories for seedcotton and lint samples.

The IER staff will monitor the two sectors from sowing to picking and collect data about what percent of growers are using what materials to pick, handle and store seedcotton. Surveys will be taken to see if there are any differences in grower practices in the two sectors.

IER will collect at least five representative seedcotton samples from different CMDT collection centers within the two sectors and transport them to the headquarters of the Cotton Program. Samples will be analyzed for each contaminant, and their weight will be calculated to average contamination per kg of seedcotton. This will be repeated three times during the season so that samples could be drawn from early picking, mid-season picking and late picking. Data will be compiled by sector to compare contamination by sector and by stages of picking and also at the national level.

It is expected that all the 18 ginning factories will be operating during 2006/07. IER staff will travel to all the ginning factories and take sample of seedcotton and analyze them for contamination. Seedcotton samples will be taken over 3-4 days at most and their level of contamination will be compared with the sector average of samples taken from the collection centers.

The third set of data will come from the lint samples from each sector. The IER staff will visit each gin and collect lint samples at least three times during the season. Once the staff is at the gin, samples will be taken in the morning, mid-day and in the afternoon. Samples will be analyzed for contaminants at the head office of the Cotton Program.

IER will have enough time from the beginning of the project (July 1, 2006) to prepare a work program and plan these surveys by no later than mid-August 2006. A copy of the plan will be made available to ICAC and CFC by end August 2006. A final plan will be ready for implementation by mid-September 2006.

The draft work program will also include organizational arrangements as well as the proposed budget for consideration by CFC and the ICAC for observations prior to their finalization.

Dr. Siaka Dembele, Scientific Coordinator of Crop Plants at IER head office in Bamako will manage the account for the project. Dr. Dembele will open a foreign currency account and disburse funds to the Project Leader, based at the cotton research station in Sikasso, as and when needed and requested by the Project Leader.

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The project leader will prepare a report providing critical analysis of the current situation of cotton contamination by sector and at the national level. The report will clearly quantify various contaminants in seedcotton and lint and try to correlate them with the origin. The report will also include recommendations for improving the cotton contamination situation in Mali. The report will suggest measures to be undertaken for each contaminant.

The draft report prepared by the project leader will be discussed in a national seminar on contamination. In addition to the representatives of CFC and ICAC, national cotton research leaders from the West African countries will be invited to the meeting. The report will be finalized after the meeting and submitted to ICAC for submission to CFC by end of April 2007. Any revisions and additions will be completed by June 30 and the project will conclude on June 30, 2007.

### **Description of Project Components**

The project comprises the following components:

1. Review of complaints from customers to the Commercial Directorate (responsible for international sale) of CMDT regarding contamination particularly during the last two years;
2. Survey of existing factory practices to reduce contamination;
3. Review of the cotton classification data (cotton grade) in Kita and Niena areas of CMDT;
4. Recruitment and training of two investigators for the two identified areas for the project;
5. Select project sites and design sampling procedures;
6. Train local staff in identifying contaminants and analysis of samples;
7. Survey of cotton planting, picking and handling practices;
8. Collection of seedcotton samples from collection centers according to the plan agreed; by ICAC and CFC
9. Analysis of seed cotton samples for contamination;

10. Collection of seedcotton samples from each gin;
11. Collection of lint cotton samples from gins;
12. Analysis of seedcotton and lint samples for contamination including seedcoat fragments in the lint;
13. Compilation and analysis of data;
14. Preparation of a draft report;
15. Organization of a national meeting to discuss the project results;
16. Finalization of the report for submission to ICAC and CFC.

**Beneficiaries and Benefits:**

The beneficiaries of this project will be small-scale farmers in Mali. Cotton growers will not directly benefit from the Fast Track project itself, but the project will develop recommendations that, if implemented, will have long-term impacts on the cotton industry in Mali and in the region. The current project will identify weaknesses in the system that contribute to producing highly contaminated cotton. Once a reliable inventory of contamination is established, efforts will be made through a full-scale project to eliminate contamination. Uncontaminated cotton will bring higher incomes to small-scale cotton growers in Mali. Other countries in the region will benefit from the Malian experience in dealing with the contamination problem

**Cost of the Project:**

The cost of the project is US\$90,000. A detail budget will be submitted to ICAC and CFC along with the survey plan in end August 2006. However, provisional details are as follows:

Total Project Cost	= US\$90,000
Grant requested from the CFC	= US\$ 50,000
Counterpart contribution	= US\$40,000

Budget Details are as follows:

<u>Item</u>	<u>Source of Funding (US\$)</u>			<u>Total</u>
	<u>CFC</u>	<u>IER</u>	<u>CMDT</u>	
Survey planning	-	1,000	2,000	3,000
Consultancy services	5,000	2,000	1,000	8,000
Training of local staff	6,000	1,000	1,000	8,000
Survey on picking materials	3,000	1,000	1,000	5,000
Materials	1,000	1,000	2,000	4,000
Seedcotton sample collection	8,000	2,000	3,000	13,000
Lint cotton sampling and analysis	8,000	1,000	6,000	15,000
National seminar on contamination	8,000	3,000	1,000	12,000
Project management	1,000	5,000	1,000	7,000
Overhead IER	-	5,000	-	5,000

ICAC participation in the meeting	3,000	-	-	3,000
CFC participation in the meeting	3,000			3,000
Contingencies	4,000			4,000
Total:	50,000	22,000	18,000	90,000

**Risks and Limitations:**

The Cotton Program of the IER has good working relations with CMDT. They work together on many projects and IER receives financial support from CMDT as well. The project cannot be implemented successfully if CMDT does not cooperate and provide access to its ginning factories for collecting samples and analyzing them. Similarly, IER staff should be able to draw samples from collection centers.

Although providing major financial support to the project, the Common Fund is not committed in any manner to finance any of the activities/programs as may be recommended in the report of the Fast Track project or resulting from the deliberations in the national seminar on contamination.