COMMON FUND FOR COMMODITIES

CONSULTANCY REPORT:

EVALUATION ON BUSINESS PLANS FOR TWO AFRICAN REGIONAL TECHNICAL CENTRES

Project CFC/ICAC/33

Commercial Standardization of Instrument Testing of Cotton with particular consideration of Africa

This project is co-funded by the European Union and the Common Fund for Commodities

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Commercial Standardization of Instrument Testing of Cotton (CSITC) Project

Report by John Lupton Cotton Consultant
Produced for Fibre Institute Bremen (Project CFC/ICAC/33)

"Evaluation on Business plans for 2 African Regional Technical Centres (RTC'S) with the view to making them independent from project funding by 2012"

July 2011

Revision 1 – including corrections received from RTC East

Report Contents **Pages**

1.0) Background

Developed cotton growing countries like the USA have already built up their national cotton quality assessment systems and their instrumental classification has resulted in a competitive advantage for the USA in global marketing. It is obvious that the establishment of an adequate instrumental cotton testing system for the cotton producing countries in Africa and elsewhere would facilitate the access of their cotton to diverse global markets. Currently there is no adequate international verification of test laboratories and their results. The availability of high volume cotton testing instruments solely is not satisfactory. The test results have to be reliable at 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 system to assess the quality of test results.

The Africa-specific content (core of the project) thus supports African laboratories, so that they will be able to meet the international requirements for reliable instrument testing of cotton. This will be done mainly by the establishment of two Regional Technical Centres (RTCs) capable to provide the necessary assistance for the application of instrument testing in cotton testing laboratories. Training and expertise development will be essential for a successful setting-up of a network of well harmonised laboratories to satisfy the cotton testing demands.

The RTCs are installed in Segou/Mali (Cerfitex/Mali jointly with Sofitex/Burkina Faso) and in Dar es Salaam/Tanzania (Tanzania Bureau of Standards jointly with the Tanzania Cotton Board).

Both RTCs developed procedures, Training programmes, which are implemented, and offer Regional Round Trials, Re-Testing of Cotton samples from other laboratories in the region, Collection and dissemination of information as well as Expertise to cotton testing laboratories in the region. Both RTCs are located in own buildings donated by the respective host countries in which state-of-the art cotton testing labs are in routine operation.

Both RTCs developed suggestions of embedding the RTCs in the region. They estimated the required funds to operate the RTC and the cotton business development in the regions as a frame for the business opportunities of the respective RTC after the termination of the public funding. The business plan of the RTC in East Africa includes scenarios on the development of the cotton production and thus resources and work available for the RTC's operation on the basis of considerably optimistic assumptions. The business plan of the RTC West gives high yearly rates for its operation costs which may be difficult to source.

The complexity of the task still leaves possibilities to review and improve the developed business models. Funds are planned to be raised from the regions through either agreement on annual rates by the beneficiaries or by payments according to services procured from the RTCs.

2.0) Consultant's Role

Evaluation and consultancy on business plans for the 2 African RTC's developed within the project CFC/ICAC/33 and to become independent from project funding by 2012

2.1) Consultant's Programme of work

- Initial discussions with the PEA on expectations from the supervisory and donor sides and introduction to the current level of development of business planning by the RTCs.
  "Where we are today and where do we want to go"?

- Study of business plans and surrounding documents as available from the RTC'S.

- Visit the RTC'S for discussion on RTC experiences and options for improvement.

- Attendance at the Pan-African Cotton Meeting in Cotonou from 27/29 June 2011.

- Conclusions, improvements of business plan, brief summary and final discussion, including travel to Bremen.

2.2) Reporting

Only a brief summary report with key recommendations and achievement on implementation into the revised business plans is expected. The major outcome of the consultancy mission should become visible through the improved business plans developed in the best possible agreement of all involved parties i.e. by summary tables listing relevant costs and income sources for each RTC, assuming year-round operation.

3.0) Introduction

3.1) Where are we today?

The first section of the project to install two Regional Technical Centres will be accomplished by the end of November 2011. The test laboratories have been established, the equipment has been installed and the staff trained but it remains to be seen until a significant number of live, active tests have been conducted if the RTC's are indeed the centres of excellence for testing desired. So far they have performed numerous round trial tests, check tests and completed some training courses.

The current project partners fully recognise that for the next step to be successful i.e. operating independently from project funding by 2012, a creditable and objective business plan for both RTC's needs to be produced and agreed by all parties. The two papers provided by the RTC's although providing important information are mainly income & expenditure models and information reports that do not address future marketing requirements of self sustaining laboratories.

This is a rather unusual business concept and consequently will not be easy to achieve because the objectives, motives and goals of the project will prevent adopting many usual profitable practices. The significant number of different entities and countries involved will slow down the progress.

3.2) Recommendation

My belief is that a new approach is needed, with a business plan that includes all the current information provided plus a "Sales Action Plan" (SAP) for marketing the RTC's services from November 2011.

4.0) Visit to the Regional Technical Centre

4.1) Participants for the RTC West meeting 15-17 June 2011

N°	Names	Jobs and titles	Email addresses
1	Djibrilla Maiga	Director General, RTC West coordinator	direction@cerfitex.edu.ml
2	Simon Koita	Deputy Director	direction@cerfitex.edu.ml
3	Brehima Tounkara	Director of studies, RTC West administrator	direction@cerfitex.edu.ml
4	Mamadou Togola	Textile engineer, head of CERFITEX's metrology laboratory, RTC West expert	Matogola67@yahoo.fr
5	Aboubacar Singaré	Textile engineer, teacher of spinning	
6	Maliki Sanoussi Diallo	Teacher of English, translator, RTC West secretariat	abadikal@yahoo.fr
7	Cheick Oumar Goro	RTC West accountant	gorosmias@yahoo.fr
8	Mahamadou Abdou Touré	IT specialist	

5.0) Expenditure West

The object of the meeting was to discuss the current Business Plan for RTC West and any outstanding concerns while examining the financial reports. I decided that the best way to approach this was to design a simple 4 column spreadsheet showing projected income and expenditure.

a) Zero activity at RTC

b) Break-even. The first logical target for RTC

c) Best case. Say in 5 years time

d) Most likely outcome based current known parameters.

This was an opportunity to see how the local people calculate their costs whilst the first zero activity column was clearly designed to highlight to all involved that even with no activity the centre still costs money.

e) **Salaries**

RTC West had over estimated the annual salaries indicating 41,400,000 MF or about U$ 98,500 per annum (or about U$8,200 per month) because they had included too many staff in their calculation. Only the people who will actually be required to make the laboratory operate should be included in cost calculations. Looking at other successful laboratories in other parts of the world the following staff should be required to provide a suitable service. i.e.

	MF	U$
Monthly salary HVI operator (22 days in working month)	190,000	450
Monthly salary assistant	60,000	150
Monthly engineer	375,000	900
Monthly Administrator	375,000	900
Monthly cost for half a Technician's time	250,000	600
Total	1,250,000	3000

n.b. It is the custom in Mali for employees to work half day Saturday each week.
(See fig No 1)

g) **Maintenance of Equipment**

It is anticipated that both RTC's will pay the machine suppliers an annual manufacturer's maintenance contract fee of about U$15,000 per annum.

h) **Spare parts**

This should only become a large expense in a few years time when the machines are running at full capacity with probably 2 shifts in a commercial HVI setting. Spare parts can prove expensive for the HVI testing machines (particularly the combs).

j) **Bale purchases, sample dispatch, round trial costs and supervision.**

Have calculated a total cost of U$10,000 to cover the purchase of 2 bales, sample dispatch, round trial costs and supervision.

n) **Depreciation**

This was set by Bremen at U$ 50,000 per annum for both RTC's based on equipment purchasing costs over the next 8 years.

o) **Electricity**

Although recognised that power is expensive in Mali by African standard the original figure of over U$ 20,000 was too high as it probably included the cost for power to the entire complex when the calculation should only cover cost of conditioning room, the room containing the equipment and the RTC staff rooms. A figure of MF 3,150,000 or about U$7,500 per annum is considered appropriate.

q) **Communications**

Staff should whenever possible use the cheapest technology available to them. Emails are an excellent cheap form of communication, while SMS messages are quick, to the point and also relatively cheap. Voice over internet calls and conference calls on systems like Skype should be encouraged and if necessary an additional computer with a camera could be considered to make full use of this technology.

r) **Marketing and visit to ICAC Plenary**

A total cost of U$ 50,000 for both items was discussed in Bremen and agreed upon.

u) **Insurance**

It was noted that no reference to insurance costs were made in the costings sheets. The testing machinery is currently the property of the CFC (donors) until a date to be fixed in the future and therefore as the legal owners of the equipment CFC should take out contents insurance. The main risks in Africa are fire theft or wilful damage and as it is intended that international students will attend the centres for training public liability insurance should also be considered. Africa has an unfavourable record for electrical problems in particular. Health and safety issues generally need to be addressed.

5.1) Comment

The minimum annual cost of running RTC West should be U$113,400 (see fig No 1) if you disregard depreciation, marketing and travel costs of U$110,000. I have suggested a budget of U$250,000 be used after November 2011 because the inclusion of marketing and travel costs is needed to move the project forward to the next level. Depreciation is a difficult item to assess as each country and organisation has its own way of calculating it but I feel it should be included as it is necessary to have an equal cost base calculation to the privately owned and run laboratories. Although the laboratories have been set up with donations this cost saving advantage should not be used to under cut other local operators. Further more if the RTC's are financially successful the profits should be used to provide members with cheaper fees or used to buy additional equipment for the RTC's.

6.0) Cost to test one sample West

Following the detailed discussions in Segou it is now possible to asses the cost of testing one sample. There are three main options to produce this costing.

6.1) Including only Salaries and Power

	MF	U$
Salaries per month 22 working day month	1,250,000	3000 (see (e) above)
Power 30 day month running 24 hour a day	262,500	625
Total	**1,512,500**	**3625**

Uster recommends that a good operator on their machines should be able to test 700 samples per 8 hour shift or 87/88 per hour, while both RTC's have indicated only 400 per 8 hour shift is currently possible. Checking with laboratories in other overseas countries a figure of 500 per 8 hour shift is both reasonable and achievable.[1]

MF 1,512,500 (U$3625) divided by 8800 samples
(22 days x 8 hour shift x 50 samples per hour)

= MF 172 or .41 cents per tested sample.

6.2) Including all essential Costs

Based on discussions and as itemised in Fig No 1 the total cost of running RTC West excluding depreciation, marketing costs and local travel is MF 47,628,000 or U$113,400 per annum or about U$ 9,500 per month.

Using these numbers and again assuming 8800 bales can be tested per month it

= MF 449 or U$ 1.07 per tested sample.

6.3) Including total costs

The total cost of running RTC West including all current costs is MF 93,828,000 or U$223,400 per annum or about U$18,500 per month.

Using these numbers and again assuming 8800 bales can be tested per month it

= MF 883 or U$ 2.10 per tested sample.

6.4) Recommendations

1) Both RTC's must be able to test 500 samples per 8 hour shift.
2) The term Re-Test be replaced in all correspondence with "Check Test".

[1] According to RTC East estimate only about 350 samples per shift can be tested as
•Due to bad ginning time is wasted in opening cotton
•Rapid condition systems accompanied with sample conveyors are not installed
•Bale Identification system compatible with Bar Code system is not used

7.0) Visit to Regional Technical Centre

7.1) Participants for the RTC East meeting 20-21 2011

N°	Names	Jobs and titles	Email addresses
1	Mr Charles Ekelege	Director General TBS RTC East Management	ekelegecm@yahoo.co.uk
2	Mr Dominic Mwakangale	Director of Testing, Calibration and Packaging Services TBS RTC East Expert	dhwakangale@yahoo.com
3	Mr Gervas Kaisi	Quality Assurance Officer TBS RTC East Expert	kaisig@yahoo.com
4	Ms Maryam Mbwana	Cotton Classer TCB RTC East Expert	mariamwazir@yahoo.com

8.0) Expenditure East

Again the object of the meeting was to discuss the current Business Plan for RTC East and to have a look at the financial reports included. I decided that the best way to approach this was to use the same methodology as for the West i.e. use a simple 4 column spreadsheet showing projected income and expenditure.

a) Zero activity at RTC

b) Break-even. The first logical target for RTC

c) Best case. Say in 5 years time

d) Most likely outcome based current known parameters.

This was an opportunity to see how the local people calculate their costs whilst the first zero activity column was clearly designed to highlight to all involved that even with no activity the centre still costs money.

e) **Salaries**

	U$
Monthly salary HVI classer (20 days in working month)	800
Monthly salary Daily Worker and Assistant	400
Monthly engineer	1400
Monthly Administrator	1400
Monthly cost for Half a Technician's time	500
Total	**4500**

The salaries are higher in the East and so using the same personnel requirements estimated as suitable for the RTC West, the monthly cost is currently about U$5,000. Also due to more English influences Tanzania does not work on week ends and so a working month is based on 20 days. (See Fig No 2)

f) **Electricity**

Electricity in Tanzania is cheaper than Mali and U$ 6000 per annum or U$500 per month is required for the designated areas.

N.B. Items Depreciation, communications, marketing and insurance are same comments and costs as for RTC West.

9.0) Cost to test one sample East

Following the detailed discussions in Dar es Salaam it is now possible to asses the cost of testing one sample. There are 3 main options.

9.1) Including only Salaries and Power

	U$
Salaries per month 20 working day month	4500 (see (e) above)
Power 30 day month running 24 hour a day	500
Total	**5000**

U$5000 divided by 8000 samples
(20 days x 8 hour shift x 50 samples per hour)

= .63 cents per tested sample.

9.2) Including all essential costs

Based on discussions and as itemised in Fig No 2 the total cost of running RTC East excluding depreciation, marketing costs and local travel is U$131,900 per annum or about U$11,000 per month.

Using these numbers and again assuming 8000 bales can be tested per month it

= U$ 1.38 per tested sample.

9.3) Including total costs

The total cost of running RTC West including al costs is U$241,900 per annum or about U$20,000 per month.

Using these numbers and again assuming 8000 bales can be tested per month it

= U$ 2.50 per tested sample.

9.4) Recommendations

Suggest both sites are given the respective spreadsheets showing anticipated annual expenditure i.e. West at U$223,400 and East at U$241,900 but for CFC and Fibre budgeting suggest they use U$250,000 for annual expenditure for both sites after November 2011 because the inclusion of marketing and travel costs is needed to move the project forward to the next level. The minimum annual cost of running RTC East should be considered as U$131,900 (see fig No 2) if you disregard depreciation, marketing and travel costs of U$110,000.

10.0) RTC Income

This is without doubt the key item that remains unanswered and requires the most thought. The main sources of income possible for the RTC's are:-

10.1) Contributions from donors

Additional contributions from donors are not required to complete the first stage of this project. The original CFC/ICAC project was designed for the RTC's to be self funded after November 2011 but they may require extra help with funding to market the RTC's, Help from the local partners (TCB have offered to help with income in early stages of the RTC East development) might also be required depending of the level of support the RTC's receive from governments and exporters in other African countries.

10.2) Receive annual membership fees

Receive annual fees or levies from the exporters in each country. This should be based on the export volume of each agency as determined by ICAC production figures. This way the sellers exporting the most cotton and so gaining the most benefit from the RTC's efforts would contribute the most. Please see Figs No 3 & 4 below.

See Key Recommendations below

10.3) Contract Classing.

This need not involve competing against existing commercial testing facilities for work. It was never the donor's objective to secure business at the expense of existing facilities. As the buildings and machines were provided to the RTC as a contribution in the frame of the CFC/ICAC/33 project it would provide an unfair advantage against commercial laboratories who have to repay all set up costs.

Some countries however don't currently have any testing facilities and there are not enough commercial facilities in place to test all available bales. Therefore completing some of this work may be possible without causing conflict with other laboratories. Any contract work of this type would have to be completed at current commercial rates. Customers should only select one of the RTC's because no other site is available or they consider that the RTC offers more accurate test results. The RTC West had mentioned offering contract check testing at a negotiable U$3.50 per test while East had indicated U$2.00 in their Business Plan. Current rates for testing range from U$ 2.10 at the USDA and U$3.00 in parts of the CIS. U$2 per test should be indicated by both RTC's.

10.4) Paid training courses.

This is certainly something the RTC's should pursue. In the coming years two groups of people will need training. One course would be required for the supervisors and management of new testing facilities and the second for training operators and technicians in the running of a laboratory. If non members of the proposed association request this training service a fee of U$1000 for each participant per week should be indicated.

There are two major problems with this option. Firstly the courses are unlikely to produce enough income to meet the RTC's operating costs and secondly to keep costs down the early students of the RTC courses will no doubt become teachers and train their own staff to avoid further training fees and travel expenses.

10.5) Check testing

The original idea of the project was to provide a service to African exporters designed to increase demand for cotton, improve the standard of cotton testing in Africa and consequently increase the price paid to producers.

This approach is problematical as many exporters today do not feel any machine testing is worth the effort and cost. So a project to verify results is not even considered. Some players are also worried that machine testing will lead to the loss of manual classing jobs. All this means great deal of the marketing of the RTC's services to the main exporters will need to be done. Once machine testing becomes common place in Africa the need for Check testing will become apparent to all players. Regardless check testing at the RTC's based 5% samples on all cotton exported from Africa remains the fundamental core of the project. Once again a charge of U$ 2.00 per sample for a non member should be indicated.

10.6) Funding from participation in local public projects

Although all financial help and participation by local institutions would be most welcome at any time it is not one of the primary intentions of the project to receive funds from this direction. Therefore it should only be canvassed if future events make it necessary.

10.7) Re sale of tested samples

It has been the custom of the cotton trade for many years that the manual classing samples and more recently used test samples from machine testing become the property of the entity concluding the "classification". The new owners of the samples then send the samples to a gin for repressing into a new bale. Providing the samples are from the current crop and are sorted into broad general qualities the new bales can readily be used by spinning mills.

Based on current ICAC statistics RTC West could expect to have a volume of about 668,000 metric tons or about 3,068,000 statistical bales from the surrounding catchment area of West Africa. Likewise RTC East could expect to have access to about 346,000 metric tons or 1,589,500 statistical bales. This means that if initially the RTC's could persuade the exporters to class on a 10% basis themselves and then send 5% of those samples for check testing RTC West would receive about 15,000 samples per season. At a weight of about 150 grams the 15,000 samples could be turned into 11 new bales with a current value of about U$6000. Using the same formula for the East and basing on about 8000 samples 6 new bales with a value of about U$3000 could be produced. n.b Have added another U$ 3000 to model in break even column as RTC East is receiving extra samples from the TCB.

These initial income numbers are not impressive but if we are able to convince all partners to move to 100% testing then as the Fig No 4 below shows the value of the "sample bales" increases dramatically.

Furthermore in 5 years time if Africa increases production (have used last 10 year average production plus a conservative 10% increase) and adopts 100% machine testing the numbers become much more significant.

The RTC's will have to pay a gin to repack the samples into new bales. There will be a transport to the gin cost and a charge from a local gin to make the new "bales" but I would hope that the ginners involved will look kindly at the costs as this is beneficial to all parties. The RTC's will consequently need to segregate or sort the samples into a few sorts so the new bales are not mixed in quality. The following splits are suggested.

Mali RTC

Sort	Saw Ginned
A	31-3-36 and better
B	Spots/stained

Tanzania RTC

Sort	Roller ginned	Sort	Saw Ginned
AR	31-3-36 and better	AS	31-3-35 and better
BR	Lower than 31-3 but white	BS	Lower than 31-3 but white
CR	Spots/stained	CS	Spots/stained

11.0) Draft Business Plan

Although both RTC's have submitted business plans I believe it would be a good idea for them to be reproduced in a more suitable and consistent format which could be sent to both RTC's for completing This would make future reporting far easier as both RTC's will report in the same format. They would then provide identical reports in English and in U$ Dollars. i.e. the currency of the commodity they are trading. The following template could be used.

A) Objective or Goal of the Business

B) Business Summary

1) Business Overview

2) Service features

3) Market Analysis

4) Marketing Strategy

5) Key Objectives and Financial Overview

C) Detailed Plan

1) Marketing Analysis

2) Services

3) SWOT Analysis Strengths, Weaknesses, Opportunities and Threats.

4) Business Structure

5) Management and Ownership

6) Key Objectives

7) Financial Information

-Establishment Costs
-First Years Projected P and L
-Cash Flow
-Balance Sheet
-Break-even analysis

D) Sales Action Plan

Following the successful installation and commissioning of the testing Laboratories in Mali and Tanzania I recommend that a **Sales Action Plan** (SAP) be developed for the next segment of the project. The services to be provided by the RTC's now need to be "sold" to the desired users/customers. The SAP will

12.0) A Draft for Producing a Sales Action Plan (SAP)

12.1) Introduction

Establishing the laboratories and hiring the staff to run them has unfortunately yet to produce a significant response or interest from the 10 or so targeted countries in each of RTC's territories. Therefore the SAP approach appears to be the best way forward.

The completed business plans for the RTC's should provide the starting point and the financial background for the SAP.

The SAP should clearly state

Who will do what?
When it will be done? and
How much it is likely to cost?

It should list objectives and targeted clients. It will state the competitive advantages to the businesses, its marketing options, and the challenges it is likely to face.

12.2) Objectives of SAP

a) Promote the 100% machine testing of all African cotton.
b) Promote the use of RTC's 5% check testing to provide final buyers confidence in machine test results produced in Africa.
c) Promote the RTC's as "centres of excellence" for machine testing in Africa
d) Promote the RTC's as training facilities.
d) Promote the RTC's as "cotton information centres".
e) Promote the services to be provided by the RTC's
f) Provide details on how the RTC's can become self funded

12.3) Marketing RTC services

This should be approached from three different avenues.

1) Firstly at the top level. The original donors CFC/EU and ICAC executives need to place pressure on the main exporters and the Government's of the cotton producing countries to support the RTC's. The African Cotton Association (ACA) should be developed, strengthened and encouraged to promote the RTC's as it currently remains the body most likely to provide direction.

2) Secondly the RTC staff themselves need to become more active. They should to be proactive and develop direct contacts with ACA exporters, ginners, farmers and even final buyers. All these entities should be encouraged to visit the RTC's. A regular dialogue should be developed.

3) Thirdly the end users/spinners need to be approached for their support. If the final buyers embrace this plan for African machine testing and demand the test results then the sellers will have to provide the information.

All three avenues need to convince potential customers of the need for machine testing and the importance of check testing to provide universal acceptance of the results.
The First target for SAP should be to convince the governments of the host nations of the current RTC's namely Mali/ Burkina Faso and Tanzania to instigate legislation to make it compulsory that only cotton with an approved machine test result can be exported.
It is already required in Tanzania that all cotton produced is classified to Tanzanian standard by the TCB and a certificate is issued. Therefore it is a logical progression that machine testing is added to this requirement.

Perhaps 100% testing would be optimistic to start with so 10% testing of each export "lot" might be the first step. If the RTC's are to convince other countries to utilize their laboratories then they must have the full support of the host Government and major exporters in their own country.

12.4) Establish a "Brand"

As with all good marketing initiatives the new SAP strategy should have a theme. I recommend an Africa theme be adopted and less relevance to West and East should be made. The SAP should try to encourage an "Africa Cert". USA exporters sell their cotton on USDA or USA class. African cotton should try to emulate this system. An appropriate or catchy name could be "African White Gold" Cert or "White Gold" Cert. In this way spinners would buy African cotton guaranteed with a "White Gold" Cert. This could become the "Brand".

Whilst fully realising that individual laboratory performance is confidential if African testing is to compete with international standards then some system of certification or accreditation needs to eventually be implemented.

12.5) Actions

All possible avenues of advertising should be used
Presentations at conferences with professional handouts of disks and/or memory sticks
Local newspapers
Local TV interviews
Ads in cotton magazines
The existing web site should be expanded
Information packs should be produced on disks or memory sticks and distributed
Presentations to grower and ginners
Presentations to Governments
Networking to advance the African theme

A common theme for the advertising must be designed. It should clearly state that machine testing and associated check testing are the way forward for accurate cotton classification and price establishment in the 21st century. This way the services provided by the RTC's could be explained through the various methods of advertising. This would be for the benefit of all stakeholders in Africa and would target growers, ginners, exporters and governments i.e. the entire cotton export chain.

12.6) Staff or management requirements

Clearly the current staff at the RTC's are not trained or experienced enough to handle the next stage of marketing the RTC's and implementing the SAP. This can only be done in one of three ways

a) 2 full time senior marketing managers are employed in Africa to market the project.
b) A joint venture is established with a suitable cotton company to promote the project.
c) Consultants employed to handle the initial promotions for 2/3 years.

Whichever system is used the senior person in charge should train one person from each RTC (they would travel together) with the view to them taking over the marketing roll in 2/3 years time.

12.7) Manual of instructions to be included

The Sap manual will set time lines, marketing goals and confirm who should complete each identified function.

12.8) Recommendation Best Balanced Choice.

A) Appointing a J/V partner like an international cotton controller could see a loss of business control and possibly lead to a conflict of interests.
B) Employing full time sales managers located at each RTC with sufficient experience will prove expensive.
C) The use of suitable consultants remains the best choice and value for money option.

13.0) Costs and Profits

Costs will obviously vary depending on which avenue mentioned in staff requirements is selected. In both budgets U$50,000 has been itemised for marketing and another U$10,000 for local travel. If another project is set up for the eventual marketing and further development of the RTC's then the U$50,000 could be removed from the RTC's budget making the running costs and consequently any membership fees more attractive.

If the eventual aim of the RTC's is to make a profit then like most business ventures today the RTC's should look to make a minimum target of 10% clear profit after accounting for all costs and taxes. Should the RTC's achieve this target or better then profits could be distributed to the members in the form of a discount/rebate on the following year's membership fees or the funds could be used to buy additional equipment for the two RTC's.

Talking to both RTC they are confident that given the structure of their business they will not be liable to any taxes should they turn a profit in the future.

14.0) Recommendations

It is unlikely that enough institutions will initially become paying members of the association in the first few years and so other sources of income will have to be targeted over first 2/3 years to cover running costs.

The following figures have been entered in the models as most likely outcome

	West	East
Memberships fees	U$ 40,000	U$ 40,000
Contract Classing	U$ 70,000	U$ 95,000
Training/advisory	U$ 10,000	U$ 10,000
Selling of re-baled samples	U$ 25,000	U$ 15,000
Total	U$ 145,000	U$ 160,000

This is really crystal ball gazing as this concept has never been tried before and at this stage nobody knows what reaction the project will receive from the African cotton producers. Anyway we need to make some guesstimates.

In the West the RTC should attempt to obtain members who handle about 40,000 tons of production @ 1U$ per ton or about 6/8% of the targeted West production. Hopefully they will be able to attract about 35,000 bales at 2.00 per bale (about U$ 9.20 per ton) from contract classing and arrange to train 10 people per annum at U$1,000 each. The making of about 50 new bales from samples valued at U$ 25,000 should be achievable. This would give an estimated income of about U$145,000

Hopefully the East will initially be more successful in raising funds because of the involvement and commitment of the Tanzanian TCB and the Zimbabwe exporters to machine testing. In the East the RTC should attempt to obtain members who handle about 40,000 tons of production @ U$1 per ton or about 10/12% of the targeted East production. Hopefully they will be able to attract about 47,500 bales at 2.00 per bale (about U$ 9.20 per ton) from contract classing and arrange to train 10 people per annum at U$1,000 each. The making of about 30 new bales from samples valued at U$ 15,000 should be achievable. This would give an estimated income of about U$160,000

14.2)

All laboratories participating in the check testing should establish a fixed routine. They would draw the 5% of all cotton tested each day retain them until the end of the week and then courier the samples to the nearest RTC once per week. Costs for courier services could be paid by the laboratories or could be included in annual membership contributions of laboratories.

14.3)

Although both RTC's said that the free movement of samples into their country was allowed and manageable (I suspect bribes have to be paid to customs) it would be much better if this was formalised. Both RTC's with perhaps a supporting letter from the CFC should apply to their governments and receive some form of special import license that can be copied and remitted with all paper work to customs or border crossing points to allow the smooth movement of samples to the laboratories.

14.4)

Questions have been raised as to why the RTC's cannot match the manufactures recommended guideline of testing 700 samples per 8 hour shift. The reason for the different through put figures mentioned on the Uster's brochure of 700 per hour is based on "high volume instrument" testing in a USDA or similar laboratory while the RTC's are designed as "testing laboratories". In laboratories that HVI test substantial volumes rapid conditioners are used. Enabling samples that arrive late in the day to be quickly conditioned and tested that same day. At the African RTC's they would have to leave the samples over night in the controlled atmosphere to reach the required conditioned state. Also the users who have the best through put on HVI machines i.e. the USDA and Australian labs have clearly marked, bar coded samples. In Africa bales are poorly marked and it is time consuming to check for marks on rolled sheets or for tags inside the samples.

14.5)

Fig No 7 shows the possible volumes of samples that might be tested at each RTC. The aim of the RTC's would be to provide accurate results back to customers in a timely manner. If Africa ever concluded 100% exporter seller testing then both RTC's would have to operate two shifts on one machine in peak season. As we are a long way off from 100% exporter seller testing (would expect a mixture of 10% and

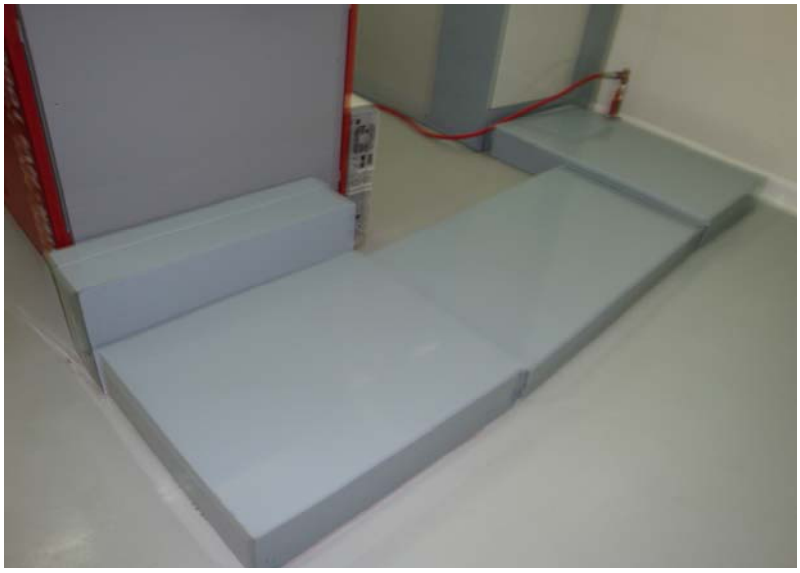
100% testing in near future) both RTC's should be able to meet timely schedules for customers.

14.6)

Whilst fully aware that currently only two manufactures can supply HVI machines and negotiating better deals is difficult it would be very beneficial if on any future machine purchases a longer warranty of say at least two years could be obtained.

14.7)

Accuracy rather than volume should be the aim. Given time and more exposure to the equipment both RTC's will be able to complete about 500 tests per shift.
The engineers in Dar es Salaam in an attempt to reduce heat in the laboratory and help the conditioners do their job installed metal box extractors on the floor designed to take the heat from the HVI machine and into the conditioner. (See Photos) Frankly this is in my opinion totally unnecessary (I have never known a HVI machine to produce an abnormal amount of heat) and when the Laboratory becomes busy it will prevent the movement of samples through the room. Recommend that next time Fibre visit they suggest removing these boxes or installing them to the ceiling.



15.0) Key Recommendations

15.1)

The RTC's will require strong support from the African governments, major exporters, an aggressive management, a "Business Plan", a "Sales Action Plan" and a flexible structure if they are to receive the support of major cotton exporters. I would suggest therefore that the RTC's should become associate members of the African Cotton Association (ACA). This section of the association would require a name. Keeping in line with my other recommendations on names I would suggest perhaps "The White Gold Association"

Although still in its infancy the ACA should logically grow into the main body for representing African cotton in the world market. The two RTC's should continue to run separately but under the combined banner of Africa. End users in countries outside of Africa are very familiar with the term "Cotton Association" and therefore will take more notice of an African Cotton Association than any other name.

15.2)

Each major exporter would have a seat and vote on the association. Ideally the RTC's would be financed by an annual membership fee based on each member's production. See Fig No 3. The main advantages of this system would be

a) An annual payment at the beginning of each season (based previous year's production). Once membership numbers are finalized early in the season RTC management can then easily asses what other income if any they need to break-even.

b) Very little time and money would be spent on obtaining or collecting income.

c) Easy accounting and much harder for any corruption to creep into the system

d) Phenomenally cheap check tests and services for members

15.3)

The annual membership fees will be sufficient to meet the RTC's initial budgeted annual running costs of U$250,000 per annum for each RTC if all countries eventually participate. These contributions would be based on the export volume of each country as determined by ICAC production figures for the previous year's cotton production. Using the ICAC published figures will prevent any disputes. This would currently calculate based ICAC African production in 2010/11 of

U$ 250,000 on 668,000 tons @.37 U$ cents per produced ton in the West and

U$ 250,000 on 346,000 tons @.72 U$ cents per produced ton in the East

Or if politics could be excluded from the decisions I would prefer one calculation for the whole of Africa as follows:-

U$ 500,000 estimated running cost on 1,014,000 tons or about .50 U$ cents per ton

Using this system of fees or levies the sellers exporting the most cotton and so gaining the most benefit from the RTC's efforts would contribute the most. Full African participation would mean very attractive rates for check testing and standardisation of results. Please see Figs No 1, 2 and 3 below.

Moving forward five years when the situation could have improved to a best case scenario the numbers would look like this.

Based African production in 2015/16 (used ICAC 10 year average plus 10% increase)

U$ 250,000 on 950,000 tons @.26 U$ cents per produced ton in the West and

U$ 260,800 on 380,000 tons @.69 U$ cents per produced ton in the East

Or again if politics could be excluded from the decisions I would prefer one calculation for the whole of Africa as follows:-

Based on the estimated running cost in 2015/16 of U$ 510,800 on 1,330,000 tons the cost for the whole of Africa would only be .38 U$ cents per ton.

Obviously if South Africa, Sudan and Egypt could become members then the cost per ton would reduce further. See Fig No 6.

15.4)

What sort of items/services would the members receive for their fees?

-Paid trip for one member to annual board meeting

-Check testing at RTC of 5% of annual turnover

-Staff training trip to closest RTC for 5 days for 2 people

-Access to technical information and trouble shooting advice on technical problems

-Annual visit from RTC staff to offer help and provide expertise on problems

-Participation in regional round trials (4 times per year)

-An African “White Gold Certificate” confirming your membership status and details of the volumes check tested in the season.

-Password access to the RTC web site for access to test results

15.6)

While talking to various potential customers of the RTC’s the problem of remittance of funds to the RTC’s was mentioned. Many of the countries in Africa still have restrictions on the movement of foreign currency in and out of the country and this is particularly true when paying to other African countries. Some also do not like the idea that they are paying another country for the services rather than doing it in their own country. To alleviate these concerns and to keep control of all monies involved in the RTC’s business accounts could be established outside of Africa (probably in Europe). The account could have a name like “White Gold”. Who will manage these of these accounts will need to be addressed when and if a new project is allocated and the SAP is agreed/implemented.

15.7)

I would strongly recommend that all African producers be encouraged to use bale tags with bar coding. Not only would this help speed up the RTC’s to international standard performance levels it would help greatly in providing transparency for the logistical movement of the bales and help final customers build up confidence and a knowledge of their product. A move of this kind to bale tags and bar coding would improve the supply chain performance substantially. It would also lead to the establishment of computer data base which are badly needed in Africa. Access to important historical data is another factor that will help the entire product chain perform more efficiently while Africa will achieve a higher price for their cotton from the buyers.

Currently end users often don't know the original supplier of the product and consequently don't have any supplier loyalty. This relationship between end user and supplier at origin is a key way other countries develop customer preference and eventually a higher price from suppliers. This remains one of the main reasons why African cotton does not command a higher price in the market place.

15.8)

I would like to see a certification system introduced. Initially Laboratories that become members of the RTC's, machine test 100% of their samples and comply with the 5% check test rule should receive an annual certification from ACA confirming their membership, participation and volume tested in the RTC's program.

The association would also provide results on the accuracy of the check test results without mentioning specific laboratories. This would add to the end users confidence in African machine operation and results.

At a later date a system of "gold cards" (not green cards) could be designed and implemented. This would also be linked to bale tagging, bar codes and show the main machine testing results.

16) Conclusions and Executive Summary

These are the priorities moving forward

-Following the success of the initial project secure additional funding from donors for a new project to successfully market the RTC's.
-Revised updated Business Plans produced by RTC's.
-Sales Action Plans written for both RTC's.
-Convince all African cotton stakeholders that Instrument testing is essential and will provide higher prices and more income.
-Convince all African cotton stakeholders that check testing to prove accuracy and standardisation of results is also equally important.
-Membership by all cotton exporters is the best choice for financing the RTC's.
-Bale tags and Bar codes are essential to creating transparency to the supply chain.

The first step along the path of success for the RTC's is to firstly convince all members of the cotton community in Africa that machine instrument testing is the only way forward. Once enough machines are installed the need for standardisation of testing, check testing and regional round trials becomes obvious. Nominated people need to go and "knock on doors" to convince and cajole cotton entities to join and support machine testing and the RTC project. They have to be persuaded that the facilities at the RTC's are "State of the Art" and capable of providing accurate test results and finally they need to also be convinced that the system will produce a greater income from their cotton transactions while providing value for money. The monetary benefit of instrument testing (estimated at 3.00 U$ cents per kilo of lint) that suppliers will achieve by selling at a higher price has to be firmly mentioned in every communication. A great deal of work needs to be done convincing all concerned in Africa that machine results lead to higher prices being paid by buyers.

Outside of Africa where the need for machine testing, standardisation of results and value for money have already been proven and accepted the RTC's must strive for international recognition and create an image of accuracy and reliability, something Africa needs badly. End users want instrument machine test results and already pay premiums to other

countries for the service. That's why the ultimate goal should be 100% machine testing of all bales produced in Africa and 5% check testing at RTC's to achieve standardisation.
In my opinion without doubt one of the main problems facing the RTC's are the large number of different entities involved. The four local partners CERFITEX, SOFITEX, TBS and the TCB are trying to work with a melting pot of countries, religions, political systems, tribes, ethnic groups and numerous languages in Africa. Outside of Africa they have the ICAC, CFC, UN, EU, Fibre and CIRAD to satisfy. Africa is not ready for an EU type of structure and it has yet to understand the true value of paying for service and consulting. The job of selling and convincing our concept in Africa will take time and patience.

17.0) Spreadsheet analysis

See attached spreadsheets.

16.1) Fig 1 Projected income and expenditure RTC West

16.2) Fig 2 Projected income and expenditure RTC East

16.3) Fig 3 Cost per member

16.4) Fig 4 Potential value of test samples

16.5) Fig 5 African production 2001/02 to 2010/11 (Based ICAC figures)

16.6) Fig 6 Projected Africa production 2015/16 (Based ICAC figures)

16.7) Fig 7 Assessment of sample volumes for testing

Fig No1 **Projected Income and Expenditure RTC West**

		Zero Activity		Break-Even		Best Case in 5 Years 100% Testing		Most Likely First 2/3 Years 10% & 100% Testing	
		Units	U$ Dollar	Units	U$ Dollar	Units	U$ Dollar	Units	U$ Dollar
Code	**Revenue**								
a	Annual subscription Fees		0	0.37	74,000	0.18	168,500	1.00	40,000
b	Contract Classing		0	2.00	155,000			2.00	70,000
C	Training/advisory		0		15,000				10,000
d	Sale of re-baled check samples 5% Plus TCB extras		0	12	6,000	163	81,500	50	25,000
			0		**250,000**		**250,000**		**145,000**
	Essential Expense Requirements								
e	Salaries		36,000		36,000		39,600		36,000
f	Building Security/Repairs		10,000		10,000		10,000		10,000
g	Maintenance Contract for Equipment		15,000		15,000		15,000		15,000
h	Spare Parts		2,500		2,500		10,000		2,500
i	Consumables		3,000		3,000		5,000		3,000
j	Participation in Check Testing (Round Trial)								
j	Supervision (Round Trial) 4 times per year.								
j	Bale Purchase and sample dispach		10,000		10,000		10,000		10,000
k	Training Materials		4,000		4,000		4,000		4,000
l	Calibration Cotton		1,400		1,400		1,400		1,400
m	Administration		3,000		3,000		5,000		5,000
n	Electricty		7,500		7,500		7,500		7,500
o	Running Costs Vehicle		4,000		4,000		7,000		4,000
p	Phones/Web/Emails		10,000		10,000		13,500		10,000
q	Staff Training		5,000		5,000		10,000		5,000
r	Insurances		2,000		2,000		2,000		2,000
s	Contingency		26,600		26,600		0		0
			140,000		140,000		140,000		115,400
	Additional Expenses								
t	Depreciation		50,000		50,000		50,000		50,000
u	Marketing Including ICAC Planary		50,000		50,000		50,000		50,000
v	Local and Regional Travel Costs		10,000		10,000		10,000		10,000
			110,000		110,000		110,000		110,000
			-250,000		**0**		**0**		**-80,400**

Fig No 2 **Projected Income and Expenditure RTC East**

		Zero Activity		Break-Even		Best Case in 5 Years 100% Testing		Most Likely First 2/3 Years 10% & 100% Testing	
		Units	U$ Dollar	Units	U$ Dollar	Units	U$ Dollar	Units	U$ Dollar
Code	**Revenue**								
a	Annual subscription Fees		0	0.72	74,000	0.58	221,300	1.00	40,000
b	Contract Classing		0	2.00	155,000			2.00	95,000
C	Training/advisory		0		15,000				10,000
d	Selling of re-baled check samples 5%		0	12	6,000	79	39,500	30	15,000
			0		**250,000**		**260,800**		**160,000**
	Essential Expense Requirements								
e	Salaries		54,000		54,000		59,400		54,000
f	Building Security/Repairs		10,000		10,000		10,000		10,000
g	Maintenance Contract for Equipment		15,000		15,000		15,000		15,000
h	Spare Parts		2,500		2,500		10,000		2,500
i	Consumables		3,000		3,000		4,000		3,000
j	Participation in Check Testing (Round Trial)								
j	Supervision (Round Trial) 4 times per year.								
j	Bale Purchase and sample dispach		10,000		10,000		10,000		10,000
k	Training Materials		4,000		4,000		4,000		4,000
l	Calibration Cotton		1,400		1,400		1,400		1,400
m	Administration		3,000		3,000		4,000		3,000
n	Electricty		6,000		6,000		6,000		6,000
o	Running Costs Vehicle		6,000		6,000		7,000		6,000
p	Phones/Web/Emails		10,000		10,000		11,000		10,000
q	Staff Training		5,000		5,000		7,000		5,000
r	Insurances		2,000		2,000		2,000		2,000
s	Contingency		8,100		8,100		0		0
			140,000		140,000		150,800		131,900
	Additional Expenses								
t	Depreciation		50,000		50,000		50,000		50,000
u	Marketing Including ICAC Planary		50,000		50,000		50,000		50,000
v	Local and Regional Travel Costs		10,000		10,000		10,000		10,000
			110,000		110,000		110,000		110,000
			-250,000		**0**		**0**		**-81,900**

Fig No 3 — Cost Per Member

East	2010/11 Production		
	Metric Tons (000)	Bales 480 lbs	Cost per Member U$
Ethiopia	19	87,281	13,728
Kenya	11	50,531	7,948
Madagascar	0	0	0
Malawi	7	32,156	5,058
Mozambique	24	110,250	17,341
Rwanda	0	0	0
Tanzania	98	450,188	70,809
Uganda	30	137,813	21,676
Zambia	36	165,375	26,012
Zimbabwe	121	555,844	87,428
Total	346	1,589,438	250,000
South Africa	9	41,344	
Sudan	46	211,313	
	55	252,656	
Grand Total	**401**	**1,842,094**	
Cost Per Ton excl South Africa/Sudan			0.72
Cost per Ton Incl South Africa/Sudan			0.62
Cost Per 480 lbs bale excl S. Africa/Sudan			0.16
Cost Per 480 lbs bale incl S. Africa/Sudan			0.14

West	2010/11 Production		
	Metric Tons (000)	Bales 480 lbs	Cost per Member U$
Benin	98	450,188	36,677
Burkina Faso	197	904,969	73,728
Cameroon	64	294,000	23,952
Central African Rep	4	18,375	1,497
Chad	13	59,719	4,865
Congo	3	13,781	1,123
Ghana	8	36,750	2,994
Guinea	4	18,375	1,497
Ivory Coast	82	376,688	30,689
Mali	109	500,719	40,793
Niger	2	9,188	749
Nigeria	61	280,219	22,829
Senegal	9	41,344	3,368
Togo	14	64,313	5,240
Total	668	3,068,625	250,000
Egypt	132	606,375	
Grand Total	**800**	**3,675,000**	
Grand Total all of Africa	**1,201**	**5,517,094**	
Cost Per Ton excl Egypt			0.37
Cost per Ton Incl Egypt			0.31
Cost Per 480 lbs bale excl Egypt			0.08
Cost Per 480 lbs bale incl Egypt			0.07

Fig No 4 **Potential value of Test Samples**

West	**Tons**	**2010/11 Bales**	**Exporter % Tests**	**Check Test**	**Sample Weight in Grams**	**Kg Bales**	**U$ Value c.lb**
		480 lbs	**10%**	5%	150	200	100.00
Current Crop production	668,000	3,068,625	306,863	15,343	2,301,469	11.51	**$5,766.75**
		480 lbs	**100%**	5%	150	200	100.00
Current Crop production	668,000	3,068,625	3,068,625	153,431	23,014,688	115.07	**$57,667.48**
		2015/16					
		480 lbs	**100%**	5%	150	200	100.00
10 year aver plus 10 % production increase	950,000	4,364,063	4,364,063	218,203	32,730,469	163.65	**$82,012.14**
East		**2010/11**					
		480 lbs	**10%**	5%	150	200	100.00
Current Crop production	346,000	1,589,438	158,944	7,947	1,192,078	5.96	**$2,986.97**
		480 lbs	**100%**	5%	150	200	100.00
Current Crop production	346,000	1,589,438	1,589,438	79,472	11,920,781	59.60	**$29,869.68**
		2015/16					
		480 lbs	**100%**	5%	150	200	100.00
10 year aver plus 10 % production increase	457,000	2,099,344	2,099,344	104,967	15,745,078	78.73	**$39,452.16**

Fig No 5

African Production (ICAC Figures)

East	2001/02		2002/03		2003/04		2004/05		2005/06		2006/07		2007/08		2008/09		2009/10		2010/11	
	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs
Ethiopia	30	137813	20	91875	20	91875	20	91875	48	220500	47	215906	38	174563	32	147000	18	82688	19	87281
Kenya	5	22969	4	18375	4	18375	4	18375	9	41344	8	36750	5	22969	5	22969	11	50531	11	50531
Madagascar	0	0	0	0	0	0	0	0	0	0	7	32156	7	32156	3	13781	0	0	0	0
Malawi	15	68906	16	73500	20	91875	19	87281	22	101063	23	105656	28	128625	27	124031	5	22969	7	32156
Mozambique	31	142406	19	87281	26	119438	31	142406	42	192938	26	119438	25	114844	24	110250	23	105656	24	110250
Tanzania	63	289406	50	229688	114	523688	126	578813	44	202125	71	326156	124	569625	89	408844	84	385875	98	450188
Uganda	23	105656	20	91875	30	137813	46	211313	19	87281	25	114844	12	55125	23	105656	13	59719	30	137813
Zambia	46	211313	47	215906	69	316969	81	372094	80	367500	35	160781	45	206719	44	202125	34	156188	36	165375
Zimbabwe	80	367500	103	473156	130	597188	81	372094	106	486938	104	477750	92	422625	86	395063	104	477750	121	555844
Total	293	1345969	279	1281656	413	1897219	408	1874250	370	1699688	346	1589438	376	1727250	333	1529719	292	1341375	346	1589438
South Africa	21	96469	17	78094	29	133219	22	101063	14	64313	11	50531	10	45938	9	41344	8	36750	9	41344
Sudan	71	326156	83	381281	69	316969	83	381281	73	335344	61	280219	22	101063	29	133219	13	59719	46	211313
Total	92	422625	100	459375	98	450188	105	482344	87	399656	72	330750	32	147000	38	174563	21	96469	55	252656
Grand Total	**385**	**1768594**	**379**	**1741031**	**511**	**2347406**	**513**	**2356594**	**457**	**2099344**	**418**	**1920188**	**408**	**1874250**	**371**	**1704281**	**313**	**1437844**	**401**	**1842094**

West	2001/02		2002/03		2003/04		2004/05		2005/06		2006/07		2007/08		2008/09		2009/10		2010/11	
	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs
Benin	172	790125	143	656906	142	652313	171	785531	82	376688	103	473156	113	519094	90	413438	80	367500	98	450188
Burkina Faso	158	725813	170	780938	204	937125	264	1212750	300	1378125	282	1295438	150	689063	182	836063	152	698250	197	904969
Cameroon	103	473156	95	436406	100	459375	100	459375	124	569625	86	395063	46	211313	60	275625	49	225094	64	294000
Central African Rep	0	0	0	0	0	0	0	0	0	0	2	9188	4	18375	4	18375	4	18375	4	18375
Chad	68	312375	77	353719	42	192938	84	385875	74	339938	40	183750	49	225094	29	133219	16	73500	13	59719
Congo	0	0	0	0	0	0	0	0	0	0	3	13781	3	13781	3	13781	3	13781	3	13781
Ghana	0	0	0	0	0	0	0	0	0	0	10	45938	10	45938	11	50531	8	36750	8	36750
Guinea	0	0	0	0	0	0	0	0	0	0	3	13781	3	13781	3	13781	4	18375	4	18375
Ivory Coast	162	744188	165	757969	73	335344	139	638531	115	528281	65	298594	50	229688	53	243469	81	372094	82	376688
Mali	240	1102500	182	836063	260	1194375	240	1102500	223	1024406	176	808500	101	463969	85	390469	99	454781	109	500719
Niger	0	0	0	0	0	0	0	0	0	0	2	9188	2	9188	2	9188	2	9188	2	9188
Nigeria	60	275625	85	390469	75	344531	95	436406	84	385875	65	298594	69	316969	60	275625	58	266438	61	280219
Senegal	15	68906	16	73500	22	101063	18	82688	19	87281	22	101063	15	68906	11	50531	8	36750	9	41344
Togo	70	321563	77	353719	68	312375	74	339938	28	128625	17	78094	20	91875	13	59719	11	50531	14	64313
Total	1048	4814250	1010	4639688	986	4529438	1185	5443594	1049	4818844	876	4024125	635	2917031	606	2783813	575	2641406	668	3068625
Egypt	317	1456219	290	1332188	198	909563	292	1341375	202	927938	210	964688	222	1019813	119	546656	100	459375	132	606375
Grand Total	**1365**	**6270469**	**1300**	**5971875**	**1184**	**5439000**	**1477**	**6784969**	**1251**	**5746781**	**1086**	**4988813**	**857**	**3936844**	**725**	**3330469**	**675**	**3100781**	**800**	**3675000**
African Total	**1750**	**8039063**	**1679**	**7712906**	**1695**	**7786406**	**1990**	**9141563**	**1708**	**7846125**	**1504**	**6909000**	**1265**	**5811094**	**1096**	**5034750**	**988**	**4538625**	**1201**	**5517094**

Fig No 6 Projected African Production (ICAC Figures plus JL Forward Est)

East	Current Year 2010/11		Average last 10 Years		Average last 5 Years		10 year ave plus 10% increase 2015/16	
	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs	Metric Tons (000)	Bales 480 lbs
Ethiopia	19	87281	29	134138	31	141488	32	147551
Kenya	11	50531	7	30319	8	36750	7	33351
Madagascar	0	0	2	7809	3	15619	2	8590
Malawi	7	32156	18	83606	18	82688	20	91967
Mozambique	24	110250	27	124491	24	112088	30	136940
Tanzania	98	450188	86	396441	93	428138	95	436085
Uganda	30	137813	24	110709	21	94631	27	121780
Zambia	36	165375	52	237497	39	178238	57	261247
Zimbabwe	121	555844	101	462591	101	465806	111	508850
Total	346	1589438	346	1587600	339	1555444	380	1746360
South Africa	9	41344	15	68906	9	43181	17	75797
Sudan	46	211313	55	252656	34	157106	61	277922
Total	55	252656	70	321563	44	200288	77	353719
Grand Total	**401**	**1842094**	**416**	**1909163**	**382**	**1755731**	**457**	**2100079**

West	2010/11		Average Last 10 Years		Average Last 5 Years		10 year ave plus 10% increase	
	Metric Tons (000)	Bales 480 lbs					Metric Tons (000)	Bales 480 lbs
Benin	98	450188	119	548494	97	444675	131	603343
Burkina Faso	197	904969	206	945853	193	884756	226	1040438
Cameroon	64	294000	83	379903	61	280219	91	417893
Central African Rep	4	18375	2	8269	4	16538	2	9096
Chad	13	59719	49	226013	29	135056	54	248614
Congo	3	13781	2	6891	3	13781	2	7580
Ghana	8	36750	5	21591	9	43181	5	23750
Guinea	4	18375	2	7809	3	15619	2	8590
Ivory Coast	82	376688	99	452484	66	304106	108	497733
Mali	109	500719	172	787828	114	523688	189	866611
Niger	2	9188	1	4594	2	9188	1	5053
Nigeria	61	280219	71	327075	63	287569	78	359783
Senegal	9	41344	16	71203	13	59719	17	78323
Togo	14	64313	39	180075	15	68906	43	198083
Total	668	3068625	864	3968081	672	3087000	950	4364889
Egypt	132	606375	208	956419	157	719381	229	1052061
Grand Total	**800**	**3675000**	**1072**	**4924500**	**829**	**3806381**	**1179**	**5416950**
African Total	**1201**	**5517094**	**1488**	**6833663**	**1211**	**5562113**	**1636**	**7517029**

Fig No 7 **Assessment of possible sample volume for testing**

East

	Production 2010/11 Metric Tons (000)	Bales 480 lbs	Tests 100%	Tests 10%	Production 2015/16 (10 year aver plus 10% increase) Metric Tons (000)	Bales 480 lbs	Tests 100%	Tests 10%
	346000	1589438			380000	1745625		
Testing by sellers			1589438	158944			1745625	174563
5% check testing at RTC			79472	7947			87281	8728
Working days @ 500 per day			159	16			175	17
Working weeks (5 days in East)			32	3			35	3

West

	Production 2010/11 Metric Tons (000)	Bales 480 lbs	Tests	Tests	Production 2015/16 (10 year aver plus 10% increase) Metric Tons (000)	Bales 480 lbs	Tests	Tests
	668000	3068625			950000	4364063		
Testing by sellers			3068625	306863			4364063	436406
5% check testing at RTC			153431	15343			218203	21820
Working days @ 500 per day			307	31			436	44
Working weeks (5.5 days in West)			56	6			79	8

Notes
1) Even if production increases 10% by 2015 in the East the RTC can handle the anticipated check test volume
2) The West however will need run their HVI on two shifts once it takes over 30 weeks to complete all check tests.
3) Obviously both RTC's will have to consider running two shifts sooner if the volume of contract classing is substantial.