

Feasibility Study of the Cotton Value Chain Revival Subprogram (CVCRS) for Mozambique



Instituto do Algodão de Moçambique



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Study Performed by:



cutting through complexity

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General Background Information



General Background Information



- The Mozambique Institute for Cotton (IAM) is the public institution elected by the Government to be responsible for promoting the positive evolution of the cotton sub-sector.
- IAM conducted several interventions to strengthen the cotton sub-sector, which resulted in the production of several research studies, technology transfer plans and support services that addressed issues existing throughout the value chain.
- In 2010 IAM developed the country's Cotton Value Chain Revival Sub-program (CVCRS) which is a consolidation of the mentioned research studies.
- The CVCRS has a 10 year's duration and was appraised favorably by the Ministry of Agriculture (MINAG).

General Background Information



The CVCRS main targets are the following:

- 10% annual seed cotton production increase from current 80,000 ton to 200,000 tons;
- Seed cotton yield increase from current 0.550 kg/ha to 1,000 kg/ha;
- Cotton farming area per family increase from current 0.75 hectares to 2.0 hectares;
- Ginning out turn (GOT) from current 38 % to 41%.

General Background Information

CVCRS Objectives, Sub-objectives and Results:



Overall Objective- To make a contribution towards the production increase of cash crops and farmers' income, towards stabilization of the country's economy and capture hard currency revenue, through improvement of cotton production and productivity and its domestic industrialization.

Sub-objective 1- Increase production, productivity and quality of the Mozambican cotton.

Result 1.1 Cotton research is improved.	Result 1.2 A proper seed system is established and functional.	Result 1.3 An input supply system is established.	Result 1.4 Farmers and extension workers are trained in integrated management of cotton production	Result 1.5 The cotton cropping area per farmer is increased.	Result 1.6 Practices to improve cotton quality and cotton grading are adopted.	Result 1.7 Cotton price setting mechanism is improved.	Result 1.8 Practices for sustainable management of natural resources are adopted.
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Sub-objective 2- Improve commercialization and marketing of the Mozambican cotton and its by-products.

Result 2.1 Standardization of cotton fiber, instrumental fiber testing and other international procedures are adopted.	Result 2.2 International regulations for bale packing and for bale labeling are adopted	Result 2.3 The country' social and environmental standards are disseminated.	Result 2.4 Direct link between the cotton producers and the end consumers is established.	Result 2.5 Climatic shock risk and market risk management mechanisms are established.
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Sub-objective 3 -Promote adding value, through the revival of the textile industry and re-launching of processing of cotton products and by-products.

Result 3.1- Cotton agro processing investors are attracted and are established.

Sub-objective 4- Suit the political-institutional framework and the capacity of the value chain actors to act according to the dynamic to be implemented.

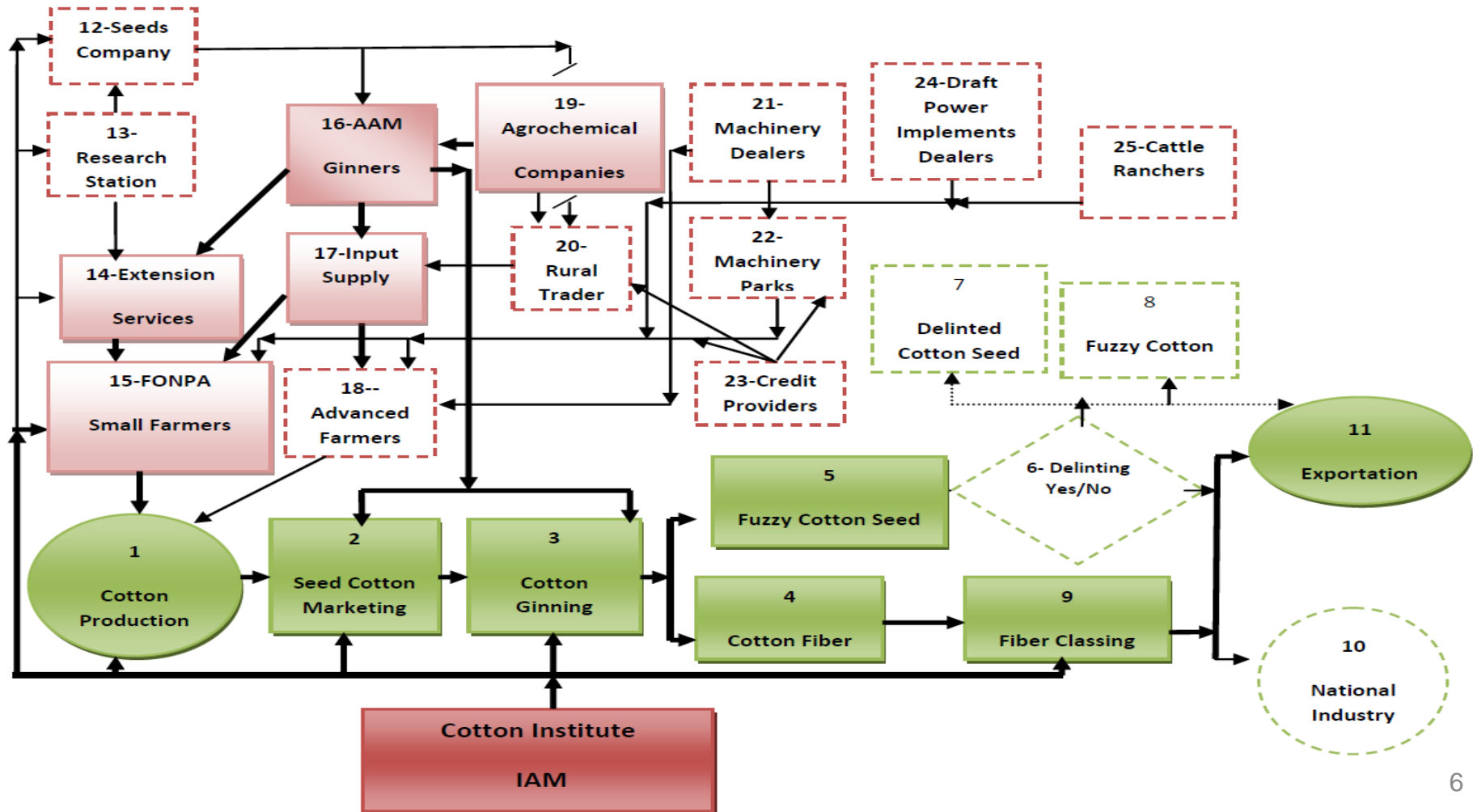
Result 4.1 The cotton policy and the cotton sector institutional set up is revised and updated.	Result 4.2 The cotton institutional and legal framework is revised periodically.	Result 4.3 The main cotton players, IAM (Cotton Institute), AAM (Spinner's Association) and FONPA (Smallholder's Association) are upgraded /trained.	Result 4.4 IAM is enabled to undertake technical demonstrations of advanced techniques in the terrain.
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General Background Information

Linkages within the cotton value chain:

KEY:

- Currently Existing Links
- Currently Missing or Very Weak Links



General Background Information

14 projects were designed to implement the CVCRS, which also aim to improve the interaction between the main players of the cotton sector. This interaction will ease the implementation of the new dynamic to be created in the cotton sub-sector.

Ref Nr	Title	Duration - Years	Total Budget (in USD)
1	- Development of a Cotton Research center of Excellence (Result 1.1)	10	35,975,862
2	- Development of a Seed Cotton System (Result 1.2)	3	10,487,369
3	- Establishment of Communitarian Input and Services Suppliers (Rural Traders)(Result 1.3)	7	946,000
4	- Technology Transfer and Training of Extension Officials and Producers (Result. 1.4)	10	24,428,238
5	- Development of Advanced and Commercial Cotton Producers and Farmers (Result 1.5)	10	3,040,000
6	- Increase the capacity for land preparation (tillage) (Result 1.5)	10	10,402,000
7	- Environmental Management, Decent Work and Compliance with Health Standards (Result 1.8)	10	5,448,000
8	- Development of a National Fiber Classing System (Result 2.1)	6	3,580,000
9	- Development of a System for Collective Cotton Trade (Result. 2.4)	10	3,169,340
10	- Development of Agrarian Insurance and a Mechanism for Stabilization of Seed Cotton Price (Result 2.5)	10	5,010,000
11	- Promoting Cotton Processing for Hospital Use (gauzes) (Result 3.1)	3	1,190,000
12	- Promotion of Artisanal Textiles (Result 3.1)	10	2,314,884
13	-Capacity Building to IAM, AAM and FONPA (Result. 4.3)	10	9.886,490
14	- Financing Facilities for the Cotton Value Chain (Cotton Financing)	10	2,400,000
		TOTAL	118,275,183

CVCRS Economic Feasibility



CVCRS Economic Feasibility



The economic and socio-economic impacts of the respective investments have been measured in terms of contributions to:

- Gross Domestic Product (value added to the national economy);
- Employment creation (creation of new jobs (person years) during the construction phase of a project and the jobs created during the operational phase (production phase) and the average annual jobs created for skilled, semi-skilled and unskilled labourers;
- Poverty alleviation (income directly benefiting low income households); and
- Utilization of capital (use of machinery, transport, equipment, buildings and other social and economic infrastructure)

CVCRS Economic Feasibility



Estimated development impact for the programme

Impact indicators of CAPEX expenditure	Direct impact	Indirect impact	Induced impact	Total impact
Impact on Gross Domestic Product (GDP) (US\$m)	479.1	93.3	950.4	1,522.8
Impact of capital formation (US\$m)	745	226.4	1,786.8	2,758.2
Total impact on employment (number of job opportunities)	23,378	3,061	40,518	66,957
Impact on skilled employment (number of job opportunities)	4,578	632	7,331	12,541
Impact on semi-skilled employment (number of job opportunities)	8,421	1,124	15,174	24,719
Impact on un-skilled employment (number of job opportunities)	10,379	1,305	18,012	29,696

Sectoral distribution of the estimated GDP impact.

Combined impact	Direct impact	Indirect impact	Induced impact	Total impact
	US\$ (million)			
Agriculture	287.47	14.53	513.55	810.55
Manufacturing	5.80	7.90	14.92	28.62
Financial and business services	16.38	7.34	39.59	63.31
Commerce	174.49	63.47	382.42	620.38
Total Economy	484.14	93.24	950.48	1522.86

Technical and Financial Feasibility



Project 1 - Development of a Cotton Research center of Excellence

Technical Feasibility (1/2)



Main Activities

The aim of this project is to improve farmers' income from cotton production by improving cotton research through the transformation of CIMSAN into a cotton research center of excellence. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Definition of the CVCRS research guidelines, assessment of the current capabilities of CIMSAN, and deriving its development /transformation plan.• Establishment of the governance and funding of the Cotton Research Center.• Preparation and Implementation of the CIMSAN development/transformation plan, design of protocols and conducting of trials based on the CVCRS research guidelines.• Establishment of linkages and cooperation with relevant international cotton research agencies.	<ul style="list-style-type: none">• Availability of cotton seed for propagation by the seeds company.• New established cotton varieties.• Higher ginning outturn.• Better fertilizers and pesticides combinations.• Conservation Agriculture techniques.• Better farming systems adopted.• Progress of socio-economic indicators.• Progress in Agribusinesses and agro-processing findings.

Technical Feasibility (2/2)



Research sections to be created:

Research Sections to be Created	Research Topics to be Tackled
Cotton Breeding	<ul style="list-style-type: none">• Breeding Techniques• Cotton Amelioration• Cotton Varieties Purification and Maintenance• Adaptive trials• Varieties Zoning• Transgenic Cotton
Cotton Agronomy and Business Economics	<ul style="list-style-type: none">• Soil Management• Planting Techniques• Farming Systems• Seeds Preparation• Agro business• Cotton by Products
Plant Protection	<ul style="list-style-type: none">• Investigate main cotton insect protection techniques• Investigate on main cotton diseases protection techniques• Investigate on main cotton weeds protection techniques• Investigate on most effective and economic pesticide combinations

Financial Feasibility



This is a non-income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating costs	239,198	1,208,249	2,274,339	2,274,339	2,274,339	2,274,339	2,274,339	2,274,339	2,274,339	2,274,339	19,642,158
Construction	3,006,537	2,000,000	2,000,000								7,006,537
Equipment	-	1,996,608	1,703,250	670,760	-	-	293,358	-	-	-	4,663,976
Transport means	402,438	402,438	402,438	-	-	603,658	603,658	-	-	-	2,414,631
Training of local staff	-	249,840	249,840	249,840	249,840	249,840	249,840	249,840	249,840	249,840	2,248,560
Total	3,648,173	5,857,136	6,629,867	3,194,939	2,524,179	3,127,837	3,421,195	2,524,179	2,524,179	2,524,179	35,975,862

The appointment of qualified staff, the construction of houses and other buildings, vehicles and equipment have been phased in the budget. It should be noted that the salaries that government pays for qualified staff is very low. To attract and secure the right personnel, higher salaries and benefits will have to be offered which will increase the budget substantially.

The following salaries are recommended:

Category	US\$ / month
PhD Researchers	6 000
MSc Researchers	5 000
BSc Researchers	4 000
Service Agents	2 000

Without taking the phasing of the appointment of qualified staff into account, and should the above salaries be paid, the total salaries will increase to approximately US\$ 304 000 per month, i.e. US\$ 3 648 000 per annum. The net effect will be an annual increase in the budget of US\$ 23 466 120. The total budget over a ten year period, taking the increase in salaries into account, is estimated at US\$59 675 832. The above calculation was done to indicate the effect higher salaries will have on the budget.

Conclusion



Technical feasibility:

- CIMSAN development/transformation plan was prepared, containing the detailed capital and operating cost needs for resizing the unit infrastructure, equipment, human and financial resources;
- Plan implementation will tackle the main causes of low cotton yield namely:
 - Poor cotton seeds;
 - Poor soil conditions;
 - Poor cotton pest control.

Financial feasibility:

- The total budget for the project is 35,975,862;
- This is a very important project for the success of the CVCRS and its implementation is considered feasible assuming that all financial resources are available,

Technical and Financial Feasibility



Project 2 - Development of a Cotton Seed System

Technical Feasibility (1/2)



Main Activities

Improving the incomes of farmers from cotton production by improving cotton yields through the development of a cotton seed producing and processing company, with a unit in each of the 5 cotton producing regions of the country, in order to meet the demand for improved seeds. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Gather the necessary data and develop the business plan and location of the 5 seed company's units.• Discuss with all interested investors and come to a signed contract on the seed project.• Connect with CPI and MIT and get the investment clearance of the seed company.• Connect investors with local authorities and get the company's 5 farming land allocations.• Develop the factory facilities (5 Shells, 5 warehouses, 5 offices and 10 houses)• Procure and assemble the ginnery equipment.	<ul style="list-style-type: none">• Business plan is developed in year 1• Stakeholder contract is signed in year 1.• CPI & MIT authorization is obtained in year 1• Allocation of 5 farming sites is done in year1.

Technical Feasibility (2/2)



Main Activities

Activities	Indicators
<ul style="list-style-type: none">• Procure equipment for the offices and houses.• Procure tractors and implements, and staff transport means.• Hire and train staff for the cotton seed company.• Prepare and implement the seed production plan of 5 farms and 5 grower's schemes.	<ul style="list-style-type: none">• Business plan is developed in year 1• Stakeholder contract is signed in year 1.• CPI & MIT authorization is obtained in year 1• Allocation of 5 farming sites is done in year1.• Company seed units operating according to planned seed production program : 3 in Y1 and 5 in Y2

Financial Feasibility (1/2)



Three alternatives were investigated for the establishment of a company to produce and process cotton seed. The budget indicated exclude the requirement in terms of capital items for which the seed companies will have to obtain loan capital if they do not have equity to invest in the project.

Elements	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	Total
	US\$										
Preparation & Admin	156,000	-	-	-	-	-	-	-	-	-	156,000
Construction	-	2,002,675	2,002,675	-	-	-	-	-	-	-	4,005,350
Equipment	-	1,159,043	1,159,043	-	-	-	-	-	-	-	2,318,085
Hire & train staff	-	859,090	859,090	-	-	-	-	-	-	-	1,718,180
Business plan, agric inputs, impl Agric Out-grower scheme	-	1,144,877	1,144,877	-	-	-	-	-	-	-	2,289,754
Total	156,000	5,165,685	5,165,685	-	-	-	-	-	-	-	10,487,369

Financial Feasibility (2/2)



The credit requirement for the preferred alternative is indicated in the Table hereunder.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Capital		3,191,985	3,131,450	-	-	-	-	-	-	-
Operational expenditure	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754
Input costs	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180
Total	4,007,934	7,199,919	7,139,384	4,007,934	4,007,934	4,007,934	4,007,934	4,007,934	4,007,934	4,007,934

Conclusion

Technical feasibility:

- Cotton experts and all stakeholders now strongly believe that poor seed quality ranks first among the main causes for low cotton yield.
- Implementation of this project will ensure that farmers are timely provided with quality certified seed, thus increasing their crops' yield.

Financial feasibility:

- A maximum potential amount of US\$ 10,487,369 will be required for the Development of a seed cotton system (Seed Company).
- Preferred alternative will require approximately US\$6 323 435 for fixed and moveable assets. The assets were depreciated over the expected life of the asset. It was assumed that the company will replace the asset from profits and that no new loans will be taken up to replace the assets. Interest was calculated at 22% per annum and tax was assumed at 32% of net income

Technical and Financial Feasibility

Project 3 - Establishment of Communitarian Input and Services Suppliers (Rural Traders)

Technical Feasibility



Main Activities

Improving the incomes of cotton farmers by the developing a network of rural traders. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Identify and select rural traders according to the criteria already defined by IAM.• Train rural traders in proper use/handling of agricultural inputs and in business.• Create a Rural Traders Association that is working effectively.• Make sure that rural traders are regularly provided with credit.• Make sure that input supplies are regularly made available to the rural traders.• Make sure that rural traders sell agricultural inputs to farmers and regularly organize field days for them.	<ul style="list-style-type: none">• Number of identified and selected rural traders in according to the criteria already defined by IAM is in line with the CVCRS projections.• All rural traders in the project attended a training course in proper use/handling of agricultural inputs and in business.• An effectively working Rural Traders Association is created in the second year of project implementation.• All rural traders in the project were regularly provided with credit for their investments and inputs packages.• All rural traders that received credit were provided with inputs by an agro chemical company.• All rural traders in the project sold agricultural inputs to farmers and regularly organized field days

Financial Feasibility (1/2)



This is an income generating project. The Table below gives a summary of the proposed budget

Elements	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year 10	Total
	US\$										
Operating Costs	-	-	-	18,000	18,000	18,000	18,000	18,000	18,000	18,000	126,000
Training Courses	-	-	-	60,000	60,000	60,000	60,000	60,000	60,000	60,000	420,000
Consultancies	-	-	200,000	200,000	-	-	-	-	-	-	400,000
Total	-	-	200,000	278,000	78,000	78,000	78,000	78,000	78,000	78,000	946,000

This project potential credit requirements are indicated in Table below.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Capital	-	-	-	2,484,300	2,247,700	4,732,000	9,464,000	4,732,000	5,915,000	5,915,000
Operational expenditure	-	-	-	179,928	162,792	342,720	685,440	342,720	428,400	428,400
Input costs	-	-	-	4,331,947	8,251,327	16,502,653	33,005,307	41,256,634	51,570,792	61,884,950
Total	-	-	-	6,996,175	10,661,819	21,577,373	43,154,747	46,331,354	57,914,192	68,228,350

Financial Feasibility (2/2)



Table below gives the projected balance sheet per Rural Trader

Item	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
	US\$									
CAPITAL EMPLOYED	128,796	134,385	141,843	149,129	161,802	175,218	195,956	222,254	255,464	297,271
Capital Reserves	9,887	19,149	31,174	41,643	61,380	82,919	115,241	155,122	205,226	268,041
Net Profit/Loss this year	608	1,503	2,615	3,999	5,720	8,519	10,520	13,829	17,944	23,062
Sub Total	10,496	20,652	33,789	45,642	67,099	91,439	125,761	168,951	223,170	291,103
Long term Loan	118,300	113,733	108,053	103,486	94,703	83,780	70,196	53,302	32,294	6,168
Loan 1	118,300	113,733	108,053	103,486	94,703	83,780	70,196	53,302	32,294	6,168
EMPLOYMENT OF CAPITAL	128,796	134,385	141,843	149,129	161,802	175,218	195,956	222,254	255,464	297,271
Fixed assets	118,300	111,890	105,480	99,070	92,660	86,250	79,840	73,430	67,020	60,610
Current Assets	10,496	22,495	36,363	50,059	69,142	88,968	116,116	148,824	188,444	236,661
Cash	10,496	22,495	36,363	50,059	69,142	88,968	116,116	148,824	188,444	236,661

With a reduction of 30% in net flow (decrease in price or turnover), the Rural Trader still makes a positive NPV at a discount rate of 10%. Similarly, with a reduction of 20% in the net flow of a Rural Trader, it renders a positive NPV at a discount rate of 20%.

Conclusion



Technical feasibility:

- There is an urgent need to develop and implement, from scratch, a community based input supply system to meet the growing demand for these inputs;
- The establishment of a rural traders network is the best option considered by the cotton stakeholders, thus project implementation will specifically address this problem.

Financial feasibility:

- Rural Traders will require approximately US\$118 300 for fixed and moveable assets.
- The assets were depreciated over the expected life of the asset. It was assumed that the Rural Trader will replace the asset from profits and that no new loans will be taken up to replace the assets. Interest was calculated at 22% per annum and tax was assumed at 32% of net income;
- The scenarios evaluated result in a feasible project which will produce income for the rural traders.

Technical and Financial Feasibility



Project 4 - Technology Transfer and Training of Extension Officials and Producers

Technical Feasibility



Main Activities

The aim of this project is to improve farmers' income from cotton production. This will be achieved by:

Activities	Indicators
<ul style="list-style-type: none">• Improving cotton yields and fiber quality by increasing farmers' technical capacity;• Providing training for such capacity, with a focus on high yield, environmentally and socially sustainable production techniques;• Establishing proper training and demonstration facilities in Nhamatanda and 30 priority districts	<ul style="list-style-type: none">• The MCKC is developed and working in year 2 after funding of the project.• 50% of the planned DCKC, ACKC and CFFS are developed and working 3 years after funding of the project and 100% after 5 years.• The training programs to the extension workers and farmers are implemented according to the plan schedule

Financial Feasibility



This is a non-income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Infrastructure (Construction)	2,000,000	2,500,000	2,500,000	786,092	-	-	-	-	-	-	7,786,092
Moveable Assets (Equipment)	-	2,000,000	4,000,000	857,739	-	-	-	-	-	-	6,857,739
Operating Costs	100,092	500,000	937,500	937,500	937,500	937,500	937,500	937,500	937,500	937,500	8,100,092
Training courses	27,575	30,000	46,250	46,250	46,250	46,250	46,250	46,250	46,250	46,250	427,575
Consultancy fees	500,000	500,000	256,740	-	-	-	-	-	-	-	1,256,740
Total	2,627,667	5,530,000	7,740,490	2,627,581	983,750	983,750	983,750	983,750	983,750	983,750	24,428,238

Conclusion



Technical feasibility:

- The project will work cooperatively with the companies' extension networks until its objectives become established. Then it will take over extension, so that ginners might concentrate on seed cotton purchasing, agro-processing and the selling of fiber;
- Plan implementation will develop opportunities for the training and professionalization of Mozambican extension workers, in order to increase cotton production and create benefits for the entire cotton value chain

Financial feasibility:

- The total budget for the project is 24,428,238;
- Project implementation is considered feasible assuming that all financial resources are available,

Technical and Financial Feasibility

Project 5 - Development of Advanced and Commercial Cotton Producers and Farmers

Technical Feasibility (1/2)



Main Activities

The aim of this project is to improve farmers' income from cotton production by increasing cotton areas, yields, and income. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Selecting the best farmers in the 30 cotton priority districts and grant secure land tenure for them;• Providing them with agricultural support services of inputs, machinery, extension and access to credit; and• Improving their management skills by training them in business	<ul style="list-style-type: none">• Farmers identified and selected by IAM and the cotton companies are in accordance with CVCRS projections.• Farming land allocation issues were cleared for all farmers in the project.• All farmers in the project signed credit contract with IAM, a cotton company, and a bank.• All farmers in the project attended a training course in businesses.• All qualifying farmers received credit for their investment packages.• All farmers that received the relevant credit were provided with machinery and implements by the machinery dealers.• All farmers that received the relevant credit were provided with inputs by a cotton company or a rural trader.

Technical Feasibility (2/2)



Main Activities

Activities	Indicators
<ul style="list-style-type: none">• Selecting the best farmers in the 30 cotton priority districts and grant secure land tenure for them;• Providing them with agricultural support services of inputs, machinery, extension and access to credit; and• Improving their management skills by training them in business	<ul style="list-style-type: none">• All farmers in the project were regularly assisted by IAM and or cotton company extension workers.• All farmers in the project re-paid credit at the delivery of seed cotton to the cotton company.• Monitoring, coordination and supervision of the project by IAM, cotton companies and the banks were properly done.

Financial Feasibility (1/4)



This is an income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating Costs	222,000	222,000	222,000	222,000	222,000	222,000	222,000	222,000	222,000	222,000	2,220,000
Training Costs	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	320,000
Consultancies	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000
Total	304,000	304,000	304,000	304,000	304,000	304,000	304,000	304,000	304,000	304,000	3,040,000

The above budget excludes loans that will be required by the Advanced Farmers for infrastructure, machinery and implements and production inputs.

Financial Feasibility (2/4)



The different types of “Advanced Farmers” are described below. If no equity is invested by the Advanced Farmers they will require a potential maximum credit facility in year 2 of US\$ 83 106 317. The potential annual and total credit requirement is indicated in Table below.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Capital										
- Advanced Farmer Type A	3,241,283	7,562,993	11,020,361	10,804,275	10,804,275	10,804,275	10,804,275	9,723,848	8,643,420	7,562,993
- Advanced Farmer Type B	-	-	290,129	5,802,581	10,154,517	14,506,453	18,858,389	23,210,325	27,562,261	31,914,197
- Advanced farmer Type C	-	-	1,673,478	2,789,130	5,578,260	8,367,390	11,156,520	16,734,780	22,313,040	27,891,300
Operational expenditure										
- Advanced Farmer Type A	195,825	456,925	665,805	652,750	652,750	652,750	652,750	587,475	522,200	456,925
- Advanced Farmer Type B	-	-	24,190	483,800	846,650	1,209,500	1,572,350	1,935,200	2,298,050	2,660,900
- Advanced farmer Type C	-	-	203,310	338,850	677,700	1,016,550	1,355,400	2,033,100	2,710,801	3,388,501
Input costs										
- Advanced Farmer Type A	249,500	582,167	848,300	831,667	831,667	831,667	831,667	748,500	665,333	582,167
- Advanced Farmer Type B	-	-	33,267	665,333	1,164,334	1,663,334	2,162,334	2,661,334	3,160,334	3,659,334
- Advanced farmer Type C	-	-	299,400	499,000	998,000	1,497,000	1,996,000	2,994,000	3,992,001	4,990,001
Total	3,686,608	8,602,084	15,058,240	22,867,387	31,708,153	40,548,919	49,389,685	60,628,563	71,867,440	83,106,317

Financial Feasibility (3/4)



It was assumed that a farmer would get 70% of the international price of cotton fiber and that the cost of ginning will be paid by the farmer.

Item	Per ha	Per ton
Total crop (Kg)	2,000	
- Fiber (Kg)	760	
- Fuzzy Cotton Seed (Kg)	1,240	
International price of Cotton Fiber (US\$ per ton)	1,800.00	1,440.00
Farmer gets 70% for fiber cotton (US\$)		1,008.00
International Price for fuzzy cotton seed (US\$)	110.00	88.00*
Farmer gets 70% for fuzzy cotton seed (US\$)		61.60
Total revenue to farmer per ton (US\$)		1,069.60
Ginning costs of fiber cotton per ton (US\$)		88.67
Price paid to advanced farmer (US\$ per ton)		980.93 **
Price paid to advanced farmer (US\$ per kg)		0.9809

Financial Feasibility (4/4)



The projected cash flow of an Advanced Farmer on 50 ha is given in Table below.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Profit / (loss) before tax	-6,700	-624	5,542	11,807	18,177	25,331	31,268	38,006	44,888	51,922
Tax	-	-	1,774	3,778	5,817	8,106	10,006	12,162	14,364	16,615
Cash generated / (utilized) by operations after tax	-6,700	-624	3,768	8,029	12,360	17,225	21,262	25,844	30,524	35,307
Depreciation back	15,819	15,819	15,819	15,819	15,819	15,819	15,819	15,819	15,819	15,819
Cash available after adjustments and tax	9,118	15,194	19,587	23,848	28,179	33,044	37,080	41,663	46,342	51,126
	-			-	-	-		-		
Cash generated by investment activities	245,774	-29,688	-29,688	29,688	29,688	32,368		29,688		-29,688
	290,547									
Cash generated by finance activities	7	75,633	76,895	75,633	79,720	81,299	83,001	84,835	86,812	88,942
									103,465	
Increase / (decrease) in bank balance	53,892	61,138	66,793	69,792	78,210	81,975	90,393	96,810	5	110,379
			115,030	181,823	251,615	329,820	411,803	502,196	599,009	
Cash available at the start of the period	-	53,892	0	3	5	5	0	3	3	702,469
		115,030	181,823	251,615	329,820	411,803	502,196	599,009	702,469	
Cash available at the end of the period	53,892	0	3	5	5	0	3	3	9	812,847

Conclusion

Technical feasibility:

- Three possibilities for the advanced farmers (Type A- 10 to 50ha, type B – 51-120ha, Type C->121ha);
- Technical packages, for each farmer type, were successfully designed based on past experiences thus the project is technically feasible.

Financial feasibility:

- A smallholder farmer on 1 ha makes a loss at a yield under 1000 kg per ha at the current price and input structure if one takes the cost of his labour and that of his family into account. However, if a smallholder farmer receives the same price for seed cotton as the Advanced Farmers, a profit will be made even at a very low yield per ha;
- With a reduction of 20% in net flow (decrease in price or turnover), the Advanced Farmer on 50ha still makes a positive NPV at a discount rate of 10%. Similarly, with a reduction of 10% in the net flow of an Advanced Farmer on 50ha, renders a positive NPV at a discount rate of 15%.
- This is a very important project and its implementation is considered feasible assuming that all financial resources are available.

Technical and Financial Feasibility



Project 6 - Increase the capacity for land preparation (tillage)

Technical Feasibility (1/3)



Main Activities

The aim of this project is to improve farmers' income from cotton production by increasing cotton areas through the promotion of draft power multi-operations and machinery multi-operations in cotton farming. This will be done by the following means:

Activities	Indicators For Draft Power
<ul style="list-style-type: none">• Training of small cotton farmers by professionally trained draft power trainers.• Increased and regular supply of animals, implements and spare parts.• Regular credit provision to drought power cotton farmers.• Reactivation of the country's agricultural machinery dealers role in mechanization and incentive to all cotton farmers involved.	<ul style="list-style-type: none">• All 10 districts that have tradition of draft power use are provided with one professional multi-animals and multi-purpose draft power trainer.• Number of farmers provided with draft power animals, implements and spare parts increased 20% annually in all priority districts that have tradition of draft power use.• Number of farmers trained in draft power multi-animals and multi-purpose use increased 20% annually in all priority districts that have tradition of draft power use.• Number of farmers provided with credit for draft power animals, implements and spare parts increased 20% annually in all priority districts that have tradition of draft power use.

Technical Feasibility (2/3)



Main Activities

Activities	Indicators For Machinery
<ul style="list-style-type: none">• Training of small cotton farmers by professionally trained draft power trainers.• Increased and regular supply of animals, implements and spare parts.• Regular credit provision to drought power cotton farmers.• Reactivation of the country's agricultural machinery dealers role in mechanization and incentive to all cotton farmers involved.	<ul style="list-style-type: none">• All target groups in the cities and in the 20 priority districts are made aware of the start and progress of the project.• At least 2 types of machines and implements are tested and at least 1 type is selected, for both traditional and Conservation Agriculture operations, from land preparation to harvest.• Dealers of all selected machines and implements conduct regular training courses to farmers and/or their employees and provide them with certificates of competence.• Dealers of all selected machines and implements regularly provide spare maintenance services to all users in the 20 priority districts.

Technical Feasibility (3/3)



Main Activities

Activities	Indicators For Machinery
<ul style="list-style-type: none">• Training of small cotton farmers by professionally trained draft power trainers.• Increased and regular supply of animals, implements and spare parts.• Regular credit provision to drought power cotton farmers.• Reactivation of the country's agricultural machinery dealers role in mechanization and incentive to all cotton farmers involved.	<ul style="list-style-type: none">• Number of Machinery Parks established in each of the 20 priority districts: at least 2 in year 5 of the project, and at least 4 in year 10.• Number of machinery credit beneficiaries in accordance with CVCRS projections/plans.

Financial Feasibility (1/2)



It is anticipated that some of the mechanization contractors could also be farmers who will render mechanization services to other farmers in the surrounding areas. The total budget of the two project elements is presented in Table below.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Investments	45,000	45,000	-	-	-	-	-	-	-	-	90,000
Operating Costs	149,700	149,700	149,700	149,700	149,700	149,700	149,700	149,700	149,700	149,700	1,497,000
Training courses	781,500	781,500	781,500	781,500	781,500	781,500	781,500	781,500	781,500	781,500	7,815,000
Consultancies	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000
Total	1,076,200	1,076,200			1,031,200			1,031,200	1,031,200		10,402,000
	0	0	1,031,200	1,031,200	0	1,031,200	1,031,200	0	0	1,031,200	0

Financial Feasibility (2/2)

The Mechanization project is an income generation project. It is projected that a Mechanization Contractor / Machinery park will make net profits from Year 3 of the CVCRS Programme (Year 1 that the Contractor / Park is established) onwards.

Item	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
	US\$									
CAPITAL EMPLOYED	671,305	772,962	904,553	1,073,369	1,288,477	1,344,646	1,432,103	1,519,989	1,608,408	1,697,491
Capital Reserves	105,164	251,199	437,978	675,425	975,884	1,145,739	1,242,823	1,331,092	1,419,987	1,509,662
Net Profit/Loss this year	27,725	42,081	59,935	82,138	109,750	136,543	127,515	127,879	128,331	128,893
Sub Total	132,889	293,280	497,913	757,564	1,085,634	1,282,282	1,370,338	1,458,971	1,548,318	1,638,555
Long term Loans	538,416	479,682	406,640	315,805	202,843	62,365	61,765	61,018	60,090	58,936
Loan 1	64,000	63,798	63,547	63,235	62,847	62,365	61,765	61,018	60,090	58,936
Loan 2	474,416	415,883	343,092	252,570	139,996					
EMPLOYMENT OF CAPITAL	671,305	772,962	904,553	1,073,369	1,288,477	1,344,646	1,432,103	1,519,989	1,608,408	1,697,491
Fixed assets	538,416	483,114	427,813	372,511	317,210	261,908	206,606	151,305	96,003	40,702
Current Assets	132,889	289,847	476,740	700,857	971,268	1,082,738	1,225,497	1,368,684	1,512,405	1,656,790

Conclusion

Technical feasibility:

- As many farmers cannot afford to purchase machines to increase their small farming areas, draft power has long been regarded as the obvious solution;
- Several regions of Mozambique already have the culture of using draft power;
- The country's agricultural machinery dealers (who are currently stagnant and devoted to selling cars only) will be encouraged to import, test, select and supply the most appropriate machines and implements to the larger cotton farmers.

Financial feasibility:

- The total budget for the project is 10,402,000;
- The sensitivity analysis shows that with a reduction of 50% in net flow (decrease in price or turnover), it is projected that a Mechanization Contractor still makes a positive NPV at a discount rate of 10%.
- This project is important for the CVCRS and it is assessed as feasible assuming that financial resources are available.

Technical and Financial Feasibility

Project 7 - Environmental Management, Decent Work and Compliance with Health Standards

Technical Feasibility (1/2)



Main Activities

The aim of this project is to secure environmental and social sustainability to all CVCRS projects. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Implementation of the National Environmental Management Plan for the Cotton Growing Areas.• Implementation of the National Decent Work and Gender programs.• Implementation of the National HIV and Malaria programs.	<ul style="list-style-type: none">• The CVCRS projects implemented at least 80% of the Environmental Management Plan recommendations.• The CVCRS projects implemented at least 95% of the Decent and Gender and Gender national plans targets recommendations.• The CVCRS projects implemented at least 95% of the HIV and Malaria national plans recommendations.

Technical Feasibility (2/2)



Example of environmental plan (environmental plan for cotton ginnign):

OBJECTIVES	GOALS	ACTIONS	RESPONSIBILITIES	ACTIVITIES	Time line (Semesters)				
					1	2	3	4	
Reduce the emission of dust and rejected cotton lint	Reduce air contamination	Implement the use cyclones and filters	IAM, Developers, Producers, Associations, PCOA	Assembling cyclones and air filters in ginning factories o	x	x	x	x	
Reduce occupational health problems	100% use of DPI	Train senior staff in companies for occupational health area	IAM, Associations, DPT	Admission of qualifies staff trained in HST, setting HST policies in the company. Implement legal tools in force	x	x	x	x	
Eliminate solid waste dump sites (rejected lint)	Reduce at 100% the residues generated by lint preparation	Reuse or incineration of the rejected lint	Developers	Identify markets for recycled lint Setting incineration schemes	x	x	x	x	
Improve agriculture aspects	Implement adequate labor systems	Capacity building and sensitizing programs	IAM, Developers, Producers, Associations, DPT	Implement health and hygiene policies at work	x	x	x	x	
Encourage the reuse of by-products	Implement the reuse of by-products (seeds)	By-products usage programs	IAM, Developers	Construction of ancillary units for oil extraction, production of flour and chicken feed	x	x	x	x	

Financial Feasibility



This is a non-income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating Costs	52,800	52,800	52,800	52,800	52,800	52,800	52,800	52,800	52,800	52,800	528,000
Materials & Equipment	336,000	336,000	336,000	336,000	336,000	336,000	336,000	336,000	336,000	336,000	3,360,000
Consultancies	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000	1,560,000
Total	544,800	544,800	544,800	544,800	544,800	544,800	544,800	544,800	544,800	544,800	5,448,000

Conclusion



Technical feasibility:

- Mozambique is a subscriber of both the Stockholm and Rotterdam Conventions, and pesticide control is adequate at importation and distribution levels.
- Project will address a tremendous gap at the smallholders' levels;
- Regarding Decent Work, the situation is much better than that of farming practices but there's room for improvement. There are no reported cases of forced labor in the country;
- Human rights are included in the Mozambique constitution and the country is a subscriber of the major international conventions on the matter.

Financial feasibility:

- The total budget for the project is 5,448,000;
- Project implementation is considered feasible assuming that all financial resources are available.

Technical and Financial Feasibility

Project 8 - Development of a National Fiber Classing System

Technical Feasibility



Main Activities

The aim of this project is to improve the income of cotton farmers by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Improve cotton fiber classification through the development of a national Fiber Classing System based on international Fiber Classing Procedures and Rules (CVCRS Result 2.1);• Learn and adopt the International Procedures and Rules of Fiber Trading (CVCRS Result 2.2);• Upgrade and disseminate the country's environmental and social standards (CVCRS Result 2.3).	<ul style="list-style-type: none">• A national Fiber Classing System based on international Fiber Classing Procedures and Rules is developed and adopted from 3 years after project funding.• International Fiber Trading Procedures and Rules are learned and adopted from 3 years after project funding.• The Country's Environmental and Social Standards are upgraded and disseminated from 3 years after project funding.

Financial Feasibility



This is a non-income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Administrative costs	235,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	1,090,000
Equipment	1,020,000	-	-	-	-	-	-	-	-	-	1,020,000
Consultancies	1,000,000	-	-	-	-	-	-	-	-	-	1,000,000
Other costs	290,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	470,000
Total	2,545,000	115,000	115,000	115,000	115,000	115,000	115,000	115,000	115,000	115,000	3,580,000

Conclusion



Technical feasibility:

- IAM is currently putting together a modern system of lint analysis with High Volume Instruments (HVIs) in Beira, Nampula and Montepuez;
- The factors that affect lint quality upstream of the ginnery will be dealt with by the CVCRS projects on Research, Extension and the Environment respectively
- The project will tackle the gap regarding the training of IAM and Companies' staff in international procedures and rules of classifying and trading fiber.

Financial feasibility:

- The total budget for the project is 3,580,000;
- Project implementation is considered feasible assuming that all financial resources are available.

Technical and Financial Feasibility



Project 9 - Development of a System for Collective Cotton Trade

Technical Feasibility (1/2)



Main Activities

Improving the incomes of cotton farmers by creating a company for the bulk import of cotton inputs and the export of national fiber. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Create a MD within IAM, select, recruit technical staff for the Department and sent abroad for in depth training in matters of cotton inputs trading and international cotton trading rules and regulations.• Provide a quick response to IAM and AAM urgent need for advice in matters of fiber marketing through short consultancies and ginnery staff short training.• Prepare, conduct, submit a feasibility study for the creation of MCCT to the interested cotton stakeholders and get it approved.• Get the legal authorization to establish the Mozambique Corporation/ Trading, and transfer much of the IAM Marketing Department staff to integrate it.	<ul style="list-style-type: none">• The marketing department is created and at least 6 of its members are sent abroad for in-depth training in matters of cotton inputs trading and international cotton trading rules and regulations, 2 years after project funding.• At least 1 person of selected staff from main national gins are trained in key fiber trading issues by the MD through short consultancies, one year after project funding, and 2 persons per gin after MD staff graduation, 5 years after project funding.

Technical Feasibility (2/2)



Main Activities

Improving the incomes of cotton farmers by creating a company for the bulk import of cotton inputs and the export of national fiber. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Create a MD within IAM, select, recruit technical staff for the Department and sent abroad for in depth training in matters of cotton inputs trading and international cotton trading rules and regulations.• Provide a quick response to IAM and AAM urgent need for advice in matters of fiber marketing through short consultancies and ginnery staff short training.• Prepare, conduct, submit a feasibility study for the creation of MCCT to the interested cotton stakeholders and get it approved.• Get the legal authorization to establish the Mozambique Corporation/ Trading, and transfer much of the IAM Marketing Department staff to integrate it.	<ul style="list-style-type: none">• Ginners and the MD hold regular contacts for consultation, one year after project funding.• ToR are prepared and, the feasibility study is conducted 6 years after the creation of the MD.• The MCCT is created and is functioning effectively 8 years after project funding

Financial Feasibility



This is a potential income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating costs	62,070	62,070	62,070	62,070	62,070	50,070	50,070	50,070	55,070	95,070	610,700
Equipment	100,000	-	-	-	-	-	-	-	-	-	100,000
Training of staff	602,880	602,880	602,880	-	-	-	-	-	-	-	1,808,640
Consultancy fees	83,333	83,333	83,333	-	-	-	-	-	200,000	200,000	650,000
Total	848,283	748,283	748,283	62,070	62,070	50,070	50,070	50,070	255,070	295,070	3,169,340

Conclusion



Technical feasibility:

- Project implementation will tackle the problems related with input demand and low lint revenue, through the establishment of a company named Mozambique Cotton Corporation/ Trading (MCCT).
- The creation of a Marketing Department (MD) within the Cotton Institute (IAM) to perform an advisory role, advising the ginnerers how to properly buy inputs, and when and where to sell the fiber, is considered an excellent approach.

Financial feasibility:

- At this stage the CVCRS programme intends to prepare the establishment of a company that will help minimize problems that the farmers experience regarding high input prices and low lint export revenue.
- The final project investigations and establishment will take place in the future, and it is expected that this will occur in Year 9 or Year 10 of the CVCRS Programme.
- Project implementation is considered feasible assuming that all financial resources are available,

Technical and Financial Feasibility



Project 10 - Development of Agrarian Insurance and a Mechanism for Stabilization of Seed Cotton Price

Technical Feasibility (1/2)



Main Activities

The aim of this project is to minimize the loss of income to farmers from climate and market shocks by developing a risk management mechanism for cotton and other crops and a price stabilization mechanism for the seed cotton farm gate price. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Completion of the climatic and market risks diagnosis for cotton and other crops, and further training of the staff charged with designing the risk management mechanisms.• Definition of steps leading to the design and implementation of a national agrarian insurance model based on the pilot experiment done last season.• Design and implementation of an effective price stabilization mechanism for the seed cotton farm gate price.• Active fundraising for the project and adjustment of the country's legal framework to accommodate effective risk management mechanisms.	<ul style="list-style-type: none">• The climatic and market risk diagnosis are completed 2 years after funding of the project.• The staffing of the RMG strengthened and fully trained 3 year after funding of the project.• The national model of agrarian insurance is developed and adopted 3 years after funding of the project.

Technical Feasibility (2/2)



Main Activities

Activities	Indicators
<ul style="list-style-type: none">• Completion of the climatic and market risks diagnosis for cotton and other crops, and further training of the staff charged with designing the risk management mechanisms.• Definition of steps leading to the design and implementation of a national agrarian insurance model based on the pilot experiment done last season.• Design and implementation of an effective price stabilization mechanism for the seed cotton farm gate price.• Active fundraising for the project and adjustment of the country's legal framework to accommodate effective risk management mechanisms.	<ul style="list-style-type: none">• An effective price stabilization mechanism is designed, tested, and adopted before 2015.• At least 90% of the resources and technical assistance needed for the risk management mechanisms are timely mobilized from relevant international agencies.• The legal documents for the adjustment of the country's institutional and legal frameworks are prepared and approved according to project implementation schedule

Financial Feasibility



This is a potential income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Running Costs	155,000	155,000	155,000	135,000	135,000	135,000	135,000	135,000	135,000	135,000	1,410,000
Training Costs	50,000	50,000	50,000	-	-	-	-	-	-	-	150,000
Consultancy fees	450,000	450,000	450,000	-	-	-	-	-	-	-	1,350,000
Investment Costs	700,000	700,000	700,000	-	-	-	-	-	-	-	2,100,000
Total	1,355,000	1,355,000	1,355,000	135,000	135,000	135,000	135,000	135,000	135,000	135,000	5,010,000

Conclusion



Technical feasibility:

- IAM is carrying out a pilot project in two Nampula districts, in collaboration with cotton companies, Technoserv and Guy Carpenter.
- Around 6,000 households are involved, receiving inputs and main farming operations expenses, totaling 3,000 MZN each.
- The pilot project was initiated in 2012 and successfully ended in June 2013.
- The lessons learned from the pilot project will possibly be extended to other areas and to other crops.

Financial feasibility:

- At this stage the project intends to complete the climatic and market risk diagnosis and train staff charged with designing the risk management mechanisms.
- The final project investigations and establishment will take place in the future.
- The feasibility of such a mechanism was not investigated at this point in time, meaning that budget wise the project is feasible.

Technical and Financial Feasibility



Project 11 - Promoting Cotton Processing for Hospital Use (gauzes)

Technical Feasibility



Main Activities

The aim of this project is to establish a privately owned cotton wool company close to a cotton producing region that is capable of responding to both domestic and neighboring countries' demand for cotton wool. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Conduct a feasibility study for the establishment of a cotton wool plant in Dondo district.• Identify and attract potential partners for the establishment of the cotton wool plant.• Develop, equip, and operate the cotton wool plant.	<ul style="list-style-type: none">• The feasibility study;• A signed contract between partners;• The operating plant.

Financial Feasibility



This is a potential income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Feasibility Study Costs	-	-	450,000	-	-	-	-	-	-	-	450,000
Project Design Costs	-	-	600,000	-	-	-	-	-	-	-	600,000
Administrative Costs	-	-	140,000	-	-	-	-	-	-	-	140,000
Total	-	-	1,190,000	-	-	-	-	-	-	-	1,190,000

Conclusion



Technical feasibility:

- The country presents the basic conditions for project implementation, namely:
 - Available location to install the factory;
 - Access to raw materials in quantity and quality;
 - Existence of identified markets domestically and abroad;
 - Existence of work force to be deployed for factory operation; and
 - Access to specialized international technical support for training and unit implementation.

Financial feasibility:

- The total budget for the project is 1,190,000;
- This is a potential income generating project which will be implemented once the feasibility and design of the factory has been done.

Technical and Financial Feasibility

Project 12 - Promotion of Artisanal Textiles



Technical Feasibility (1/2)



Main Activities

The aim of this project is to establish textile artisans who will be producing and selling craft textiles and processing cotton by products. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Prepare a feasibility study and arrange assistance from an Experienced agency to the project.• Select and hire trainers in craft ginning, spinning and weaving, oil extraction and soap making in India or Brazil.• Import ginning, spinning and weaving crafts.• Select and train cotton association members, and help the trained ones to access credit to start their businesses.• Sell crafted objects locally and outside the village.	<ul style="list-style-type: none">• A signed agreement is produced between the project and the associations (or other groups) before the start of the project.• A feasibility study is conducted and an assistance agreement is signed between the project and the consulting agency in year one of the project.• Contracts are signed between the project and all trainers in year one of the project.

Technical Feasibility (2/2)



Main Activities

Activities	Indicators
<ul style="list-style-type: none">• Prepare a feasibility study and arrange assistance from an Experienced agency to the project.• Select and hire trainers in craft ginning, spinning and weaving, oil extraction and soap making in India or Brazil.• Import ginning, spinning and weaving crafts.• Select and train cotton association members, and help the trained ones to access credit to start their businesses.• Sell crafted objects locally and outside the village.	<ul style="list-style-type: none">• All training equipment are in accordance with the feasibility study specifications and arrive in Cabo Delgado by the start of the project.• At least 80% of the planned trainees attend each training course and at least 25% of the trained ones access micro credit for starting business.• At least 70 % of the craft objects produced by the artisans are sold to buyers

Financial Feasibility



This is a potential income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating Costs	24,400	19,400	19,400	19,400	19,400	19,400	19,400	19,400	19,400	19,400	199,000
Training Courses	82,000	82,000	82,000	82,000	82,000	82,000	82,000	82,000	82,000	82,000	820,000
Consultancies	200,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	650,000
Investments	645,884	-	-	-	-	-	-	-	-	-	645,884
Total	952,284	151,400	151,400	151,400	151,400	151,400	151,400	151,400	151,400	151,400	2,314,884

Conclusion



Technical feasibility:

- The government intends to set up a pilot project aimed at improving the income of smallholders by using cotton locally.
- Ginning, spinning, weaving and the processing of cotton at the household level are common in Brazil and India, as is the pressing of cotton seed for oil and soap. Thus the technical expertise is available and can be imported;

Financial feasibility:

- The total budget for the project is 2,314,884;
- The CVCRS budget is for the establishment of a pilot project aimed at stimulating micro industries involved in the artisanal ginning, spinning, and weaving as well as the pressing of cotton seed for oil and soap.
- The undertaking of a feasibility study does not form part of this assignment.

Technical and Financial Feasibility



Project 13 - Capacity Building to IAM, AAM and FONPA

Technical Feasibility



Main Activities

The aim of this project is to enhance IAM, AAM and FONPA capabilities in order to respond to CVCRS implementation needs. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">Identifying and taking the measures necessary to enhancing IAM, AAM and FONPA capabilities according to CVCRS needs	<ul style="list-style-type: none">At least 95% of the identified necessary measures to strengthen IAM are timely implemented.At least 95% of the identified necessary measures to strengthen AAM are timely implemented.At least 95% of the identified necessary measures to strengthen FONPA are timely implemented.

Financial Feasibility



This is a non-income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating Costs	819,049	819,049	819,049	819,049	819,049	819,049	819,049	819,049	819,049	819,049	8,190,490
Investments	1,296,000	-	-	-	-	-	-	-	-	-	1,296,000
Training	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000
Total	2,155,049	859,049	859,049	859,049	859,049	859,049	859,049	859,049	859,049	859,049	9,886,490

Conclusion



Technical feasibility:

- IAM has to be resized in order to meet the current challenges of the cotton sub-sector.
- AAM and have been the engine of the cotton-subsector ever since its privatization in the early 1990's and they are eager to solve the main bottlenecks of the country's cotton industry, especially the low seed cotton yield and the poor lint quality. This can be achieved through proper integration for CVCRS implementation.
- FONPA can play an important role in mobilizing and organizing farmers to key CVCRS issues, e.g. organization of farming in blocks, rural traders, advanced farmers, environmental and social activities, therefore capacity building is needed.

Financial feasibility:

- The total budget for the project is 9,886,490;
- Project implementation is considered feasible assuming that all financial resources are available,

Technical and Financial Feasibility

A decorative horizontal banner with a green gradient background. On the right side, there are several white cotton bolls. The text 'Technical and Financial Feasibility' is written in white, bold, sans-serif font across the banner.

Project 14 - Financing Facilities for the Cotton Value Chain (Cotton Financing)

Technical Feasibility (1/2)



Main Activities

The aim of this project is to develop sufficient financing for the projects requiring funding within the CVCRS. This implies developing fundraising and fund allocation activities as well as then necessary financial controls for all CVCRS projects. This will be done by the following means:

Activities	Indicators
<ul style="list-style-type: none">• Establishment of a permanent team within IAM Administration Department for CVCRS fund raising, fund allocation, and overall financial control and reporting activities including internal and external audits.• Definition, and characterization of all viable potential sources of funding at national and international levels, including negotiating with them.• Selection and integration into scheduled annual budget proposals of all activities eligible for government funding.• Selection and integration of all projects or activities that require provision of grants into negotiations with donors.• Creation of adequate access conditions to credit and micro-credit to all CVCRS potential entrepreneurs.	<ul style="list-style-type: none">• A viable solution to the lack of collateral problem is found in early year one of the project.• At least 80% of the projected credit beneficiaries timely access the required annual funding each year from year one of the project.• All potential and viable sources of funding at national and international levels are defined, characterized and approached from year one of the project.

Technical Feasibility (2/2)



Main Activities

Activities	Indicators
<ul style="list-style-type: none">• Establishment of a permanent team within IAM Administration Department for CVCRS fund raising, fund allocation, and overall financial control and reporting activities including internal and external audits.• Definition, and characterization of all viable potential sources of funding at national and international levels, including negotiating with them.• Selection and integration into scheduled annual budget proposals of all activities eligible for government funding.• Selection and integration of all projects or activities that require provision of grants into negotiations with donors.• Creation of adequate access conditions to credit and micro-credit to all CVCRS potential entrepreneurs.	<ul style="list-style-type: none">• All CVCRS projects or activities that are eligible for government funding are selected and integrated into scheduled annual budget proposals to the government.• All CVCRS projects or activities that require provision of grants are selected and negotiated with donors from year one of the project.• From early CVCRS year one, a permanent team is established within IAM Administration Department for CVCRS fund raising, fund allocation, and overall financial control activities including internal and external audits.

Financial Feasibility (1/3)



This is a potential income generating project. The table below gives a summary of the proposed budget.

Elements	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
	US\$										
Operating Costs	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000
Internal Audits	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	750,000
External Audits	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000
Total	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	2,400,000

- At this point in time, IAM intends to establish a permanent team for CVCRS fund raising, fund allocation, and overall financial control and reporting activities including internal and external audits.
- Funds will be sourced from government and other sources, both locally and internationally.
- Therefore, in the future, credit lines will be established to fund the CVCRS programme, together with grant funding from the public and private sectors

Financial Feasibility (2/3)



Anticipated credit requirement

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Capital requirement										
Seed company		3,191,985	3,131,450	-	-	-	-	-	-	-
Rural Traders	-	-	-	2,484,300	2,247,700	4,732,000	9,464,000	4,732,000	5,915,000	5,915,000
Mechanization Contractors	-	-	-	11,306,736	10,229,904	21,536,640	43,073,280	21,536,640	26,920,800	26,920,800
Advanced farmers										
- Advanced Farmer Type A	3,241,283	7,562,993	11,020,361	10,804,275	10,804,275	10,804,275	10,804,275	9,723,848	8,643,420	7,562,993
- Advanced Farmer Type B	-	-	290,129	5,802,581	10,154,517	14,506,453	18,858,389	23,210,325	27,562,261	31,914,197
- Advanced farmer Type C	-	-	1,673,478	2,789,130	5,578,260	8,367,390	11,156,520	16,734,780	22,313,040	27,891,300
Total Capital Requirement	3,241,283	10,754,978	16,115,418	33,187,022	39,014,656	59,946,758	93,356,464	75,937,592	91,354,521	100,204,289
Operational Expenditure										
Seed company	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754	2,289,754
Rural Traders	-	-	-	179,928	162,792	342,720	685,440	342,720	428,400	428,400
Mechanization Contractors	-	-	-	206,640	186,960	393,600	787,200	393,600	492,000	492,000

Financial Feasibility (3/3)



Anticipated credit requirement

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	US\$									
Capital requirement										
Advanced farmers										
- Advanced Farmer Type A	195,825	456,925	665,805	652,750	652,750	652,750	652,750	587,475	522,200	456,925
- Advanced Farmer Type B	-	-	24,190	483,800	846,650	1,209,500	1,572,350	1,935,200	2,298,050	2,660,900
- Advanced farmer Type C	-	-	203,310	338,850	677,700	1,016,550	1,355,400	2,033,100	2,710,801	3,388,501
Total Operational Expenditure	2,485,579	2,746,679	3,183,059	4,151,722	4,816,606	5,904,875	7,342,895	7,581,850	8,741,205	9,716,480
Input costs										
Seed company	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180	1,718,180
Rural Traders	-	-	-	4,331,947	8,251,327	16,502,653	33,005,307	41,256,634	51,570,792	61,884,950
Mechanization Contractors	-	-	-	3,532,435	6,728,448	13,456,896	26,913,792	33,642,240	42,052,800	50,463,360
Advanced farmers										
- Advanced Farmer Type A	249,500	582,167	848,300	831,667	831,667	831,667	831,667	748,500	665,333	582,167
- Advanced Farmer Type B	-	-	33,267	665,333	1,164,334	1,663,334	2,162,334	2,661,334	3,160,334	3,659,334
- Advanced farmer Type C	-	-	299,400	499,000	998,000	1,497,000	1,996,000	2,994,000	3,992,001	4,990,001
Total Input Cost requirement	1,967,680	2,300,347	2,899,147	11,578,562	19,691,955	35,669,730	66,627,280	83,020,888	103,159,440	123,297,992
Total Requirement	7,694,542	15,802,003	22,197,624	48,917,307	63,523,218	101,521,363	167,326,638	166,540,330	203,255,166	233,821,761

Conclusion

Technical feasibility:

- Fundraising is critical to the success of the CVCRS, and massive and systematic efforts must be made to secure the funding for all projects
- A permanent team within IAM Administration Department will be created to ensure that the funds are utilized correctly and adequately accounted for.

Financial feasibility:

- The total budget for the project is 2,400,000;
- This is a very important project for the success of the CVCRS and its implementation is considered feasible assuming that all financial resources are available,

Concluding Remarks



Concluding Remarks

- The CVCRS ProgImp document sets out a shared development vision for the cotton subsector, based on the CVCRS document and the research carried out by the consultants' team. The document presents elements of a “road map” for the implementation of the CVCRS.
- All specific objectives and results are addressed through the implementation of 14 projects with an estimated cost of US\$ 118.275 million.
- All projects are interconnected but the projects related to the research and improved seed supplies and IAM capacity building are acknowledged as very important for the success of the program.
- The costing and economical feasibility of the projects were evaluated, resulting in a positive assessment of the benefits that the total investments will produce in the economy of Mozambique, in terms of the cotton sector contribution for the GDP, employment and capital formation.



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