

KITUI RIVER BARRAGE  
AND CATCHMENT CONSERVATION  
PROJECT PROPOSAL.

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## 1. NAME OF PROJECT

Kitui River Barrage and Catchment Conservation Project.

## 2. IMPLEMENTING NGO

Sasol (Sahelian Solutions) Foundation.

## 3. LOCATION OF PROJECT

Central and Kyuluni Divisions of Kitui District.

## 4. PROJECT OBJECTIVES

Reduction of poverty through development of water resources with catchment and conservation approaches.

### (A) PROJECT OUTPUTS

- (1) 100 functional river barrages with improved offtake wells
- (2) 4 conserved catchment areas
- (3) 40 water community based organisations.

### (B) PROJECT ACTIVITIES

- (1) Construction of river barrages
- (2) Terracing of catchments for conservation
- (3) Training in community organisation to improve existing structures.

## 5. DURATION OF PROJECT

3 years

## 6. TOTAL BUDGET FIGURE

Ksh. 31942730

## **7. AMOUNT REQUESTED FROM SIDA**

Ksh. 24625530

## **2. BACKGROUND INFORMATION**

### **2.1 Situational Analysis**

The project is based at the Central and Kyuluni Divisions in Kitui District.

#### **2.11 Social - Economic status of the project area.**

The economic activity in the area is dominated by subsistence agriculture and livestock production. Sale of agricultural produce and livestock generate the bulk of incomes. Additional family income is generated through labour export. This factor results in many female headed households. 50% of the working males are wage earners outside the area. 65% of the household are female headed.

Population density in Central and Kyuluni Divisions are given as 161 and 134 respectively per sq Km.

The project area is a rainfall deficit region receiving between 500 - 800mm per year. Furthermore this rainfall is irregularly distributed and there is generally a total failure in 1 out of 3 rainy seasons. The land is that prone to droughts and frequent crop failures. This land is semi arid and is classified as Agro-Ecological zone 4/5 according to the Jaetzold classification. The rainfall is bimodal, the first rains occur in April to June and a highly unreliable. The second rains regarded as the major rains start in October and tail off indeterminately in late December/early January.

The project area is in the heart of Kamba country. The population is nearly

wholly Kamba with a sprinkling of other immigrants working as teachers traders. The basic cultural organisation is thus based on the Kamba tradition which has a strong Mwethia organisation tenet (an informal voluntary organisation which includes all members of the community irrespective of gender and/or age for communal work).

## **2.2 Purpose Statement**

The main problem in the area is poverty as a direct result of reliance on agricultural and livestock production which in turn is dependent highly unreliable rainfall.

The problem of communal poverty is thus basically a water based problem. To address the poverty problem the water needs in the project area must thus be addressed.

Addressing increased access to water resources is a major objective in the Kitui District plan 1994-1996. Two major methods of improving water availability in the area is through catchment protection and construction of barrages on sandy river beds to retain received precipitation on the land.

This project seeks to lead with the construction of barrages on ephemeral rivers to retain water in these coupled with creation of environmental awareness and action toward terracing and tree planting. The measures taken together can realistically transform a catchment and improve the incomes from agriculture and livestock production.

## **2.3 History of the Project**

Sasol River Barrage project was started as a vehicle to put into practice the ideas of a development manager, a development planner and a ground water expert. The originators realised that water could be harnessed cheaply if the proper structures are instituted with the help of the community. To be able to do this, however, a river catchment should be developed in total.

The catchment approach depends on the cooperation by the community in developing sequential barrages in their dry rivers coupled with terracing and tree planting on individual plots. Thus there is an element of communal and individual work.

The barrage construction started in 1995 March with a pilot project on the Kiindu river. The pilot enabled Sasol to test the initial thinking and the practicality of instituting the system. It was also a test of the technology involved and the working systems in community organisation in this type of work. The pilot project was completed in August 1995. The barrages

constructed during this period received water in the October rains that year. We have observed a dramatic increase of water level at Kamumbuni barrage where the scoop holes used to go down to 12ft but now the water level after the last long drought was only at 4ft.

The pilot was followed by "25 barrage projects" on the same Kiindu river catchment. The main barrages construction and their associated offtake wells was completed in November 1996.

Estimated water holding capacity on this river after the project is estimated at more than 1.1 million Cubic Metres. This water supplies drinking and vegetable irrigation water for 26100 people in Mulango and 8000 people in Kisasi. Extensive terracing has been carried on in this catchment. Records of this terracing is being recorded together with the community and results will be available in February 1997. Tree planting has lagged behind in the area due to lack of water for raising tree seedlings. A series of nurseries in the community are due to be started. Numbers and types of trees which will be planted will be reported on an "Impact Assessment PRA for Kwa Muli/Kyangunga sub-locations" scheduled for October 1997. Just prior to the tree planting season.

This project compliments the work Sasol does on providing school based shallow wells. The shallow wells provide clean water to the community within a 2km distance from the school. Through the complimentary projects a water-net is created. This ensures that each household eventually has access to a waterpoint near the household.

## **2.4 Background documentation**

1." Baseline data on environmental Impact Assessment of Kiindu and Kyuusi rivers in Kitui District".

This environmental study is designed to show the changes of vegetation type and cover in the project area as a result of the water stored by the created barrages. Other issues under investigation are the affection soil salinity and acidity as a result of the anticipated raising of the water table. This survey was commenced on March 1996 and first year report will be ready by February 1997.

2." Kiindu River Basin Barrage System constructed under the pilot and 25 barrage projects report".

This report shows the methods used in running the projects and gives some of the results of water stored in the river system. Additional information on the number of terraces constructed will be added when this data is due in February 1997.

3." Barrage Project Impact Assessment using PRA for Kyangunga/Kwa Muli

sub-locations".

This assessment gives the baseline data for 2 sub-locations at the end of the barrage construction period. This was carried out before most of the barrages were filled with water. A subsequent assessment planned after a years time will show the changes achieved by the project.

### **3. PROJECT DESCRIPTION**

#### **3.1 Overall Goal**

The goal of this projects is the reduction of poverty in the community.

This would be achieved by harvesting and storing rainfall water for human, livestock consumption and production. The availability of water will impact directly on health and incomes of the community.

#### **3.2 Purpose of the Project**

The project aims to increase the supply of available water to the community through the adoption of the catchment development and conservation approach. The elements of this approach include construction of river barrages, terracing and tree planting on the agricultural lands.

At the end of the project the community should have a source of adequate water throughout the year and not only for a short time after the rains. Less time in the household should be spent on water chores as water points increase and are nearer to the community. Also the quantity of water reduces time spent at a waterpoint waiting for slow seepage to collect only a tiny amount of water in the hole.

Impacts of the project will be measured by PRA type of data collection. At the onset of the project baseline data will be established showing the existing situations against which future assessments can be gauged to establish changes.

#### **3.3 Outputs**

This project aims to produce an increased number of river barrages whose water losses below a depth of 30 cm is negligible. Offtake wells constructed on the barrages, enable the community to access a better quality of water than that found in scoop holes which are contaminated by all nature of extraneous matter. Increased awareness and practice of water catchment management and conservation on the farms, increased number of effective CBOs involved in water and adoption of additional water technologies.

It is anticipated that 100 river barrages, 75 offtake water wells, 40 CBOs 1 more technology and 25% of households aware of catchment approach will be achieved in 3 years.

Most of these outputs will be assessed through actual counting and reports.

### **3.4 Activities**

The project will identify barrage and well sites, organise the community through an entry PRA construct the barrages and wells.

It will also train the community to create formal organisations based on the informal Mwethia groups enabling them to institute viable constitutions thus strengthening the organisations. These organisations will be able to raise funds when formalised such as to purchase a pail and chain for lifting water using the windlass and lead to a transformation into effective water CBOs. The CBOs who will be responsible for organisation of community labour for the facility and maintenance and accommodation of the artisans at site and will plan the longterm maintenance of the facility. It will also identify and test a new technology for applicability in the community.

The CBO will in effect be a forum through which sanitation activities can be undertaken to reach the whole community. From previous experience, Sasol has found that Community Based Health Attendants are an effective way of transmitting sanitation messages. For a wholesome development sanitation will be included in the overall CBO training.

The activities in the project are to be carried between Sasol and the community. It is paramount that sites are located by community together with Sasol to satisfy both technical and practical needs of the facility. It is only in this case will the community identify with and have complete ownership of the facility. This allows for care and maintenance as necessary.

### **3.5 Inputs**

Human resources

- 1 Field Manager
- 1 Office assistant
- 1 Technical Field Supervisor
- 1 Training Supervisor
- 12 Artisans
- PRA Trainers hired per training
- Accounting services hired

## **Material Inputs**

Construction material external - Sasol  
Cement, Iron bars

Construction material local - Community  
Sand, stone, water

Equipment - Sasol

## **Community inputs**

Organisation

Accommodation and welfare for artisan

Labour

Maintenance

**No other donors are involved in the project.**

## **4. SOCIAL ASPECTS OF THE PROJECT.**

### **4.1 Beneficiaries**

The beneficiaries in the project will be the community of

Mulango	26000
Kisasi	20000
Itoleka	11000
Nzambani	41000
<b>Total</b>	<b>98000</b>

Amongst these the women who together with children bear the brunt of the water chores will gain maximum benefits. It is anticipated that 50% of all the people who have benefits all the time, and all the people will benefit in the dry season. Time for fetching water would be shortened from about 6 - 12 hours in dry season to a maximum of 2 hours for those furthest from the river. In the short run also the women and children gain from the better nutrition stemming from vegetable growing on river valleys which follows immediately after there is enough water for bucket irrigation as observed in the previous project on the Kiindu. In the long run the whole community gains as the land productivity improves from the sale of vegetables and farm products coupled with water related economic activities such as brick making thus improving



income.

#### **4.2 Involvement of beneficiaries in the project**

The beneficiaries have right from the beginning been involved in the project. A meeting with community leaders through the Chiefs Office which contacted Sasol have explained to the people the need for water management in the community. The community as a whole has given a commitment to undertake the project.

Together with community representatives the sites for the initial part of the project the Kisiio/Mwiwe river have been identified. These are the sites where the community has agreed to develop barrages and offtake wells. Their commitment to collect stone for the construction has already been demonstrated by collecting stone at the specific sites.

#### **4.3 The role of women in the project.**

Women play a major role as the water managers in the household. As the project is mainly on water, they have a large role to play in it. They decide which areas are most convenient to obtain water and the distribution of these points for maximum coverage. In the community meetings, the women voice is heard loud and clear. In fact in the project on the Kiindu, more than half of the sites developed were overseen by chairladies, who organised the sum total of work at the site as well as organising for increased male involvement to support their work.

#### **4.4 Governance**

The project is designed to give the community maximum responsibility in its running of its own water projects. The artisans working on the project are in the hands of the community who take responsibility of their welfare.

All material which is delivered to site is received and stored by the community who is responsible for its security. Normally stores are established at the homestead of one of the community homesteads near the site. The chairperson or member of the site committee together with the owner of the store is responsible for all store issues. Records of the store issues are kept both by the community and the artisans. It is important to note that material orders are delivered by delivery notes from the suppliers to specific sites who are the recipients. Payments are made on the strength of material receipt by the community in good order. The community certifies the receipt of material in the presence of Sasol staff. This method ensures that the community right from start create a sense of ownership and create an interest in protection of the received assets which they identify with. Under the circumstances it is difficult to tamper with the supplies as there is

collective responsibility for the material. It is also an incentive to collect local material which is needed to complete work at the site.

Since material delivered to a community is for a specific purpose, it cannot be diverted into any other use. If for an unseen reason the material cannot be used at the site, Sasol has an option to transfer it to a different site in agreement with the community. Fortunately this has not happened in the past. Also, any residual material is transferred to the next site. To do this the community releases such material with proper documentation and is advised where it will be used. This material is received at the new site using the same procedure as if it came from the supplier.

The system is designed to educate the communities to take responsibility of public goods. This should eliminate the highly destructive notion that it is not theirs and can therefore be plundered. Rather as a public asset it is for the good of the community and everyone should ensure its wellbeing.

## **5. ENVIRONMENTAL ASPECTS**

The main thrust of the project is the retention of precipitation on the catchment where it is received. The direct consequence of this is increased water content in the catchment which would lead to raised water table levels both on the river beds and the adjacent land.

Raised water table levels would mean that shallow wells have water nearer to the surface and scoop holes on sandy river beds are shallower. Loss of life as a result of being buried by collapsing deep scoop holes will thus be eliminated. Thus safety at these scoop holes is improved.

Increased amount of water available throughout the year will encourage vegetable growing on river channels using bucket irrigation.

Napier grass and associated plants can survive throughout the year to protect river banks during a storm at the same time providing fodder for animals during the dry season.

A raised water table will also facilitate new colonising plants which could not grow before. On the other hand some plants will die due to water logging. Overall however ground cover should be improved.

Through terracing, water should be held on higher grounds of the catchment for longer periods. This will result in the soil remaining moist for longer, facilitating a longer period conducive to crop production. Some of the water held in the higher grounds eventually flows through the ground into the river

channels recharging them. This phenomenon ensures adequate supplies of water even in extended droughts.

The availability of water will mean that tree seedlings can be grown. The non availability of seedlings in the locality has been one of the biggest hurdles to tree planting in the past. Additionally when tree nurseries are developed in the community only trees people desire to plant are grown. Tree planting exercise then continues smoothly as all the community stands to gain by planting trees, the impetus once initiated is self sustaining.

With a raised water table and higher ground cover, evapotranspiration is increased. Further more increased ground cover reduces runoff, facilitating percolation and higher soil storage space recharge rates. Theoretically once the improvement cycle is started it should go on perpetually.

There is a possibility that the raised water level can result in waterlogging, salinity and sodicity. Although this is a remote chance it is a situation which we are watching closely and a major study in this area is already in progress, which would alert us to the possibility of this occurring.

## **6. ECONOMIC ASPECTS OF THE PROJECT**

District focus for development is the official policy for GoK. Thus each District Development Committee designs its own agenda for development in the district.

The Kitui District Development plan stipulated among its main objectives. Two areas which are addressed in this project.

- (1) Increase of accessible water resources in the district.
- (2) Improvement of Women Group Management skills for effective economic development.

### **6.1 Percentage Coverage of Beneficiaries**

During the rainy season, there are many temporary water points in a community. Only a few people draw water from the rivers. In the case of extended droughts, however, these river channels are the only sources of water for the community. The beneficiary coverage is therefore variable depending on the season.

On the other hand the terracing exercise which is an integral part of the project will benefit all the beneficiaries all the time. A dramatic

demonstration of this is achieved by bringing to the attention of the community, that, the people who have developed terraces on their farms usually realises a harvest and reduction of erosion when their neighbours without terraces have none. All this is due to the additional moisture held on the land for production.

**Further the training involves the application of appropriate marketing strategies for produce. In the previous project it was a joy to hear one woman tell the community that as a result of the training, Mary Kimanzi realised the highest return of her produce ever by selling at the appropriate time. She reckoned that she made at least three times the returns she would have realised if she sold immediately after harvest.**

## **6.2 Sustainability of the project**

A very strong training element in the project using Participatory Rural Appraisal (PRA) techniques is the basis of its sustainability. Apart from identifying the site, labour contribution in development, accommodating and feeding the artisans, a monetary contribution for the purchase of the pail with a chain or a stock of the moving parts of a pump, will give the community a strong sense of ownership through collecting money and paying for these goods as already observed in other water projects; this leads to the community maintaining and sustaining the facility.

From the onset of the project, the community takes charge. Since they develop their own asset and provide a major input in it in terms of organisation, material and work, they have the highest stake in the assets. Under the circumstances the community identify with the project and commit to protect maintain and enhance its attributes.

## **6.3 Exit Strategy**

As the end of the project a formal commissioning of the project offers the community an opportunity to review their achievements and congratulate themselves for realisation of the goals they set out to achieve, in this ceremony a renewal of the commitment to take care of the project is made.

## **8 (a) ASSUMPTIONS**

The success of the project is based on the following assumptions.

1. Continued political stability
2. As minimum of 50 mm rainfall is received to create barrages with water.
3. The community has the long term will to contribute effectively towards the project and makes a commitment for catchment and water conservation approaches which would be maintained and sustained.
4. Ongoing cooperation and acceptance of Sasol staff by the community, with mutual respect being elicited between the interacting groups.

## **8 (b) RISKS**

1. Collapsed national security - This is unlikely in the foreseeable future.
2. Flood hindering work on the river bed. Not likely
3. No rain at all, so the barrages remain dry. Not likely.
4. Famine, making people so weak they are unable to undertake the project.
  - This is likely if there is sustained low harvest for 3 seasons continuously.
  - An allowance in contingencies for possibly feeding the work groups at lunch time has been considered.

## **9. (A) MONITORING AND EVALUATION**

1. Baseline data to which all subsequent data will be compared will be generated through the initial PRA.
2. Sasol field staff will monitor and produce a progress report on monthly basis to SIDA.
3. SIDA will inspect work in progress and accounts during their monthly field visits.

## **9.(B) EVALUATION**

1. A mid-phase evaluation is planned after every six months. This will be carried out with the community, Sasol field staff and directors with external help from a PRA trainer.
2. After one year an evaluation involving SIDA, Sasol and community will be undertaken.
3. At the end of each catchment development "Impact Assessment PRA" will be undertaken to assess the implications of the project in the catchment.
4. End of project evaluation will be undertaken with SIDA, Sasol and the communities.

### SASOL BUDGET OUTLINE

	YEAR 1	YEAR 2	YEAR 3	TOTAL	TOTAL
	Ksh.	Ksh.	Ksh.	Ksh.	£s.
Personnel	2064000	2270400	2497400	6831800	80370
Capital items/ Equipment	1050000	600000	600000	2250000	26470
Office Running costs	269000	295000	325000	889000	10460
Travel	368000	404800	445000	1217800	14330

Supplies/ /materials	2346930	4016800	3309400	9673130	113800	
Training	491000	540000	594000	1625000	19120	
Communications						
Monitoring/ Evaluation	220000	460000	620000	1300000	15290	
Other costs						
Institutional Support Nairobi Office Expenses	175000	192500	192500	560000	6590	
Audit fee	40000	40000	40000	120000	1412	
Community contribution	1980300	2541380	2795520	7317200	86085	
Total Cost	9052230	11413680	11476820	31942730	375797	
Total Requested	7071930	8872300	8681300	24625530	289712	

## **THE BUDGET**

### **1.PERSONNEL**

#### **1. Direct staff costs.**

Field Manager	70000	840000		
Supervisor(Construction)	12000	144000		
Supervisor(monitored)	12000	144000		
4000	48000	Askari	4000	Secretary 48000

**total**                      **1224000**

**2. Indirect staff costs.**

12 Artisans              60000              **720000**

**3. Medical**                      **85000**

**4. Insurance**                      **35000**

**Total yr.1**                      **2064000**

**yr.2**                      **2270400**

**yr.3**                      **2497400**

**2. CAPITAL ITEMS**

**1. Replacement cost**

1/3 2nd hand 4Wheel Drive and motor cycle replacement cost as a result of wear and tear on vehicles (Purchase cost for vehicle + motor cycle plus insurance Ksh. 1800000)

**600000**

**2. one new motorcycle**                      **400000**

Suzuki 175 cc

**3. Fax Machine**                      **50000**

**Total**                      **yr.1**                      **1050000**

**yr.2**                      **600000**

**yr.3**                      **600000**



### **3. OFFICE RUNNING COST.**

			cost/m	cost/y
Office Accommodation	2500	30000	Stationary	
1500	18000	Postage & freight	500	6000
Telephone & cables	6000	72000	Water	
150	1800	Power	350	4200
Office tea	900	10800	Cleaning materials	
600	7200	Insurance	5000	
Accommodation out of station	5000	60000		
Meals	4500	54000		
	<b>Total</b>	<b>yr.1</b>		<b>269000</b>
	<b>yr.2</b>			<b>295000</b>
	<b>yr.3</b>			<b>325000</b>

### **4. TRAVEL.**

#### **1. Vehicle Running cost**

	cost/m	cost/y
Fuel and lubricants	10000	120000
Service & repair	7000	84000
Tyres Vehicle		60000
Insurance & Licence		84000
Tyres motorcycles		20000
<b>Total</b>	<b>yr.1</b>	<b>368000</b>
	<b>yr.2</b>	<b>404800</b>
	<b>yr.3</b>	<b>445000</b>

### **5. SUPPLIES AND MATERIALS**

#### **5.1. Tools.**

Item	Description	Unit	Qty	Cost	T.cost
		Ksh	Ksh.		
1.	Motorcycle gloves	pc.	2	1000	2000
2.	Motorcycle suit	pc.	2	15000	30000
3.	Mattock	pc.	12	450	5400
4.	Mason Trowel	pc.	12	270	3240
5.	Motorcycle helmet	pc.	2	5000	10000
6.	Steel Trowels	pc.	12	460	5520

7.	Gum boots	pr.	15	650	9750
8.	Overalls	pr.	30	950	28500
9.	Mtalimbo	pc.	12	400	4800
10.	Cold chisel	pc.	36	400	14400
11.	Saw	pc.	6	560	3360
12.	Mason hammer 2kg.	pc.	6	350	2100
13.	Stone hammer 5kg	pc.	6	1000	6000
14.	Karais	pc.	24	250	6000
15.	Buckets	pc.	12	450	5400
16.	Spirit level	pc.	6	300	1800
17.	Hacksaw blades	doz.	12	480	5760
18.	Wheel barrow	pc.	4	2000	8000
19.	Water monitoring unit		1	100000	100000
20.	Claw hammer		12	250	3000
21.	Ropes	m	240	60	14400
22.	Measuring tape 30m	pc.	6	350	2100

<b>Total</b>	<b>yr.1</b>	<b>271530</b>
	<b>yr.2</b>	<b>142500</b>
	<b>yr 3</b>	<b>156700</b>

## **5.2 MATERIAL COST .**

### **5.2.1. Unit barrage.**

Item	Unit	Qty.	Cost	T.Cost
Ksh.	Ksh.			
1. Cement	bag	100	500	50000
2. Round iron bar 3/8 "	pc	6	460	2760
3. Barbed wire G16	roll	1	2250	2250
4. Nails 4"	kg.	1	70	70
5. Timber 2" * 2	Ft.	100	6	600
6. Polythene sheeting	m.	30	50	1500
7. Round bar 1/4"	pc	3	300	900

<b>Total per barrage</b>	<b>58,080</b>
<b>30 barrage yr.1</b>	<b>1502400</b>
<b>35 barrage yr.2</b>	<b>2236000</b>
<b>35 barrage yr.3</b>	<b>2459700</b>

### **5.2.2. Offtake well**

1. Cement	bag	20	500	10000
2. Barbed wire G16	roll	1	2250	2250
3. Round bar	pc	2	460	920
4. Galvanised wire 3mm	kg.	20	150	3000
5. Polythene sheeting	m.	15	50	750
6. Ropes	m.	25	60	1500
<b>total per well</b>				<b>18420</b>
<b>25 Wells yr.1</b>				<b>460500</b>
<b>25 wells yr.2</b>				<b>506600</b>
<b>25 wells yr.3</b>				<b>557000</b>

### **5.2.4. Windlass.**

Windlass	unit	25	4500	112500
<b>25 Windlass yr. 1</b>				<b>112500</b>
<b>25 windlass yr. 2</b>				<b>123700</b>
<b>25 windlass yr. 3</b>				<b>136000</b>

### 5.2.5 Ground water storage tanks (Yatta) (Pilot Project)

1. Cement	bag	250	500	125000	
2. BRC no 65	roll	3	11000	33000	3. Chicken wire 6' roll
6	800	4800			
4. Binding wire	kg	100	50	5000	
5. Sacking	pc	100	25	2500	
6. Round bar 3/8 "	pc	10	460	4600	
7. Round bar 1/4"	pc	10	270	2700	
8. Barbed wire	roll	2	2000	4000	
9. Pump	pc	1	20000	20000	
			<b>201600</b>		
<b>Total for 5 tanks</b>				<b>1008000</b>	
<b>yr. 2</b>				<b>1008000</b>	

### 6. TRAINING.

			Ksh.	
1. Artisan training				
Dam construction				60000
2. Exchange visits				
9 trips, Ksh 15000 hire of vehicle				
( 30 sealer) per trip				
3*15000 per year				45000
D.S.A.for 30 people/trip @Ksh.200 each				
3* 30 *200 per year				18000
<b>total</b>				<b>123000</b>
3.PRA Training 40 people per sub-location for 8 days.				
Trainer				36000
Transport				15000

DSA Trainer	11000
Lunches Trainees	30000
<b>total</b>	<b>92000</b>
4 PRA per year	<b>368000</b>
<b>Total yr. 1</b>	<b>491000</b>
<b>yr. 2</b>	<b>540000</b>
<b>yr. 3</b>	<b>594000</b>

## 7. MONITORING AND EVALUATION.

**Yr.1** Ongoing Hydrological analysis 100,000  
Environmental monitoring (Annual cost)

Beginning - Baseline 1st River catchment -  
PRA overall as separate from sub-location PRAs

- Water use
  - Spread
  - Economic
  - Terracing
  - School attendance
- PRA itself 90,000  
write up document collect 30,000  
120,000

**Total yr. 1 220,000**

**Yr. 2** Ongoing Hydrological Analysis 130,000  
Environmental monitoring (Annual cost)

Beginning - Baseline 2nd River catchment 120,000  
Beginning - End of 1st yr. 1st river catchment 120,000  
End - of 1st year funding evaluation (do above 90,000  
(Project report ODA) plus any preparation work  
on new system).

**Total yr. 2 460,000**

<b>Yr. 3</b> Ongoing Hydrological Analysis	150,000
Environmental monitoring (Annual cost)	50,000
plus full write up document.	
Beginning - Baseline 3rd River system	120,000
Beginning - 2nd year, 2nd river catchment	120,000
End - evaluation of 1st river (2 yr. post)	180,000
2nd river (1 yr. post)	
3rd river (Nil yr. post)	
<b>Total yr. 3</b>	<b>620,000</b>

## **8. OTHER COSTS**

### **1. Institutional Support.**

Bimonthly Board members Visits		
Transport (360km. @Ksh 25/km.	9000	54000
Board members expense @ 2000 per visit	2000	12000
Accountant visit -monthly	6250	75000
Accountant transport monthly	1000	12000
Board meeting expenses @ 5000 per meeting 4 meeting per year	5000	20000
<b>Total yr. 1</b>		<b>175000</b>
<b>yr. 2</b>		<b>192500</b>
<b>yr. 3</b>		<b>192500</b>

### **2. Nairobi Representation Expenses.**

	cost/m	cost/y
Telephones/faxes	1400	16800
Stationery	600	7200
Transport	2000	24000
<b>Total yr. 1</b>		<b>48000</b>
<b>yr. 2</b>		<b>52800</b>
<b>yr. 3</b>		<b>58000</b>

### **3. Audit cost per year.**

<b>yr. 1</b>	<b>40000</b>
<b>yr. 2</b>	<b>40000</b>
<b>yr. 3</b>	<b>40000</b>

### **9. COMMUNITY CONTRIBUTION**

#### **1. Artisan upkeep**

Hire of accomodation for artisan	300.00
Upkeep for artisan 200.00 day for 40 days	80000.00
Water 1 jerrycan /day @ 5.00 for 40 days	200.00
Charcoal 1 bag	200.00

#### **2. Lunch on work days for community 30 people / day for 30 working days**

(1) 1 <sup>1</sup> / <sub>2</sub> kg sugar @ 60.00 / day x 30	1800.00
(2) Tea leaves 22/= /day @ 6x30	660.00
(3) Milk 1 litre /day @ 6x30	1800.00
(4) 15 kg maize/day @ 15 x30	6250.00
(5) 7 kg beans/day @ 30x30	6300.00

#### **3. Labour**

500 man days @ 80.00 / day	<u>40000.00</u>
Total cost per barrage	66010.00

<b>1st yr.</b>	<b>1980300.00</b>
<b>2nd yr.</b>	<b>2541380.00</b>
<b>3rd yr.</b>	<b>2795520.00</b>

**25 February 1997**

**The Programme Officer  
Water Conservation Unit  
SIDA  
Box 30600.  
Nairobi.**

**RE. KITUI RIVER BARRAGE AND CATCHMENT CONSERVATION  
-PROJECT PROPOSAL**

We hereby submit the attached proposal for your perusal and possible funding either in part or in full.

Sasol ( Sahelian solutions Foundation) is a local NGO. In 1996 we completed construction of a system of 33 river barrages with an estimated water holding capacity in excess of 100000 cuM on the river Kiindu. This water combined with terracing on the land and afforestation, already has a profound impact on the community at the end of the project.

We are currently looking for funding to extend this work. We would like you to be a partner in this work.

Looking foward to hearing from you soon, we remain,

Yours faithfully,



S.M. Mutiso.  
Field Manager.