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KITUI SAND DAMS: A DEVELOPMENT PARADIGM

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The Universal is the local without walls.
Michael Torga- The Creation of the World.

INTRODUCTION

This paper, whose earlier version was offered to the MCC Seminar on Globalization, in Kenya, at the beginning of this year, discusses what others have called the Kitui Sand Dam paradigm.

We in SASOL did not think of it that way until we were asked to participate in the seminar. We tried to run a project to address key development issues in this marginal district. We were confronted with the usual project problems of limited resources, time and community skepticism. However, we have tried a development approach, which we believe, can address some of the critical organizational and technology issues in participatory development of the arid and marginal areas.

In this adventure we have been inspired by the resilience of the people of Kitui. We thank them and hope that our intermediation role has been useful in addressing their needs.

This paper, expanded to explain the background to the paradigm, is in twelve sections including the introduction. The following section discusses in detail the physical and social background of the district. The third section, arid areas in Kenya and historical development, shows how the state has thought about districts like Kitui. This is followed by a discussion of how the sand dam technology became the project focus as covered in section four. The next topic is on development and research conflict for the use of the sand dam technology in cascades and their utilization needed some research. Research has been used to abuse development.

Section six, defines the sand dam project target group in the context of global thinking about the socio-economics of the poor and their neglect by mainstream development theory and practice. Then the economic impacts of the Kitui sand dams are discussed in section seven followed by a discussion of collective self-help, the driver of social and economic development in the Kitui traditions.

Section nine, individual and community accumulation, discusses the relationships between individual and community benefits. Global development theory has to some extent over-emphasized distribution over community control of collective assets. Section ten, community control and access to assets, covers this from the Kitui perspective.

Most water provision projects are segregated to either human or animal water. Provision of water-in green (for growth of vegetation) and blue (for now vegetation growth uses) versions- to be used in production in the global context is the subject of section eleven. The paper concludes by situating the contribution of donor organizations and the people who support such organizations within the Kitui sand dam development.

KITUI DISTRICT BACKGROUND

Location

Kitui district is one of the twelve districts in eastern province of Kenya. It covers an area of 20,402 km² (CBS, 2001). Its altitude ranges from 400 to 1800meters above sea level. The district borders Machakos and Makueni Districts to the west, Mwingi District to the North, Tana River District to the East and Taita Taveta Districts to the South. It is located between latitude 0 degree 37inches and 3 degree 0 inches south and longitudes 37 degrees 45 inches and 39 degrees 0 inches east.

Population

The district consists of ten divisions. The total population is 515,422. Table 1 below, culled from the 1999 Census, shows the population of each division, number of household and the area occupied by each division. In an unpublished paper, “Kitui Demographic Time Bomb” Leonard Kisovi writes: “Kitui District is one of the Arid and Semi-Arid regions of Kenya with a worsening population resource balance. Its rapidly deteriorating population-resource balance is a product of limited resource base and an explosive demographic growth rate.” ((1990, p. 1). It is estimated that 60% of the households are female headed. (SASOL Socio and Economic Impacts, 2002). SASOL currently (2004) works in Central, Chuluni, Yatta, Mutomo and Mutha Divisions.

Table 1: Kitui Population By Division Gender And Households

DIVISION	KM2	MALE	FEMALES	TOTAL	H/H
Central	808.6	59069		64673	123742
Yatta	175		20019	21627	41646
Mutitu		837.2		11245	12615
		23860	4988		
Chuluni	521.5		34298	38043	72341
		12977			
Mwitika	836		9246	10456	19702
		3871			
Mutonguni	398.1		27361	31537	58898
		11043			
Matinyani	269.7		19173	21665	40838
		7552			

Mutomo	1394	24103	27683	51786
	9608			
Mutha		4454.1	17927	21212
	39139	7126		
Ikutha		7707.8	20604	22866
	43470	7591		
Parks	3000			
TOTAL	20402		243045272377	515422
	97196			

Geology

Metamorphic and igneous rocks of the basement complex system characterize the geology of the district (Kisovi 1989). The southern side of the district is composed of Permian deposits and tertiary volcanics are predominant in the western part. These rocks hold extractable water only in small cells, which generally occurs in low areas near stream channels. The central part of the district has soil, which is mainly derived from the metamorphic rocks of the basement system although there are some small areas of black cotton soil [vertisols], which are tertiary sediments. These (vertisols) are usually high in fertility but are not intensively used because of lack of water and lack of appropriate land working technology.

The eastern parts of the district have red sandy soils, which are low in natural fertility. These soils are very rich in sodium and are considered to be the best grazing grounds. Towards the western part of the district are black cotton soils.

Topography

The topography is undulating and gives way to plains towards the east. The Yatta plateau is towards the west. There are also the ranges of hills in the central part of the district. Various gneisses of the basement system are the bedrock and are exposed in the hills east of Kitui town, around Mutomo in the south and in the northeast at Makongo and Endau.

Rainfall

Kitui district is classified as semi-arid with rains being erratic in the better part of the district especially towards the south (Thomas D.B 1999). Rainfall is bimodal in nature with short rains occurring between October and December and long rains between March and May.

The rainfall totals range between 250 mm to 750 mm per year. The hill masses, which constitute only 30 percent of the district, receive more rainfall while on the low lands which constitute 70 percent of the district, rainfall totals range from 250 mm to 500 mm. The rainfall

received in Kitui is unreliable both in amount and distribution. Dry spells are common within the rainy seasons. Due to this, crop failure is a common occurrence. There is a prolonged dry period, from June to October, during which most of the vegetation dries up. There are high temperatures that result to very high evaporation rates of water from the few available sources. The open pan evaporation is estimated at above 2000 mm per year.

Vegetation

The vegetation of the district consists of natural grasses, shrubs of lantana camara and acacia species. The grasses and other species of plants have short life cycles to enable them take advantage of the short and unreliable rainy seasons. Making charcoal from the predominant acacia species is an important drought survival mechanism. Most of the district is now eroded and has little continuous cover.

Water Sources

River and ground water resources are scarce. River Athi, which forms the southern boundary of the district, is the only permanent river. The river is highly polluted with sewage and industrial wastes from the city of Nairobi. River Tiva however carries water for a long time after rains but in prolonged drought it dries off. This river is polluted by the wastewater from the district capital.

Boreholes and wells have been constructed to lessen the water shortage but the problem persists given the population growth, the settlement of people in the drier plains as well as the deteriorating ecology. A lot of homes have shallow wells but most of these wells dry up during drought periods. Most boreholes are dry while others have saline water, which is unsuitable for human, livestock, and irrigation uses. The salinity problem is very severe in the southern part of the district especially Mutomo and Mutha division.

ARID AREAS IN KENYA AND HISTORICAL DEVELOPMENT

Kenya's arid and semi-arid areas (Asal or Sahelian) make 82% of the country. They are currently estimated to carry about 25% of the population. These areas have been neglected historically due to economic arguments that the development returns are higher in the wetter regions. The high potential areas carried the bulk of the population up to independence in 1963 but since then the populations of the ASALS have increased due to natural population growth and migration from the high potential areas.

Kenya Government development programmes for the arid and semi-arid lands did not begin until 1977. Till then most communities in the arid and semi-arid parts of Kenya, as is also true for the rest of Africa, suffered development. This is so because many of the development activities were not planned to address key issues for these areas. Often knowledge was borrowed from wetter parts of the country and applied irrationally. Expertise was usually from without those communities for they also lagged in education for colonial missionaries occupied them late. More often than not development agents did not listen to the communities who have operated some of the most sophisticated social institutions in human history. All these problems are compounded by short-term sectoral development strategies more often than not with inappropriate physical and social technologies.

Kitui district was one of the first districts to get be surveyed for development once the government changed its policy in 1977. This was done with funding from the USAID with the main contract being held by University of Utah and United States Agriculture Department. The survey included reconnaissance soil survey, water resources and social economic survey. Since then an assortment of development bilateral and ngo agents have been contracted to undertake development work in the district with variable results. Some of the original directors of SASOL acted as consultants to some of these development programmes. Ultimately four of these consultants decided to create SASOL since they were not convinced that the appropriate activities were being done effectively.

The SASOL view is that development of these areas has to be within the context of sustainable ecological resource use for the ecologies are fragile and take much longer to recover than the wetter regions. Further, as the populations become poorer, they drop out of either pastoralism or agro-pastoralism and begin to cultivate in these rangelands. The ecological imperative demands that communities participate in the design and implementation of their development activities. It also means that new ideas, technologies and techniques have to be generated to produce for the exploding populations. New natural and human resources management techniques are called for if these populations are not to lose their humanity -UTU- and die off in the degrading environments and attendant poverty. The need is urgent.

Central in SASOL philosophy, in contrast to some of the other development implementers who had programmes in Kitui in the past, is commitment to participative development, which cannot be if resource conservation, within the framework of time tested technologies sustained by ASAL populations, is ignored. This does not

mean that the scientific approach, planning and new ideas are not introduced to these base communities. It simply means that the beginning point is what is known and sustainable by the base communities as evaluated by multidisciplinary teams formed by the community, intermediators and donors. Clearly water is a central concern.

TOWARDS SAND DAMS

Background

SASOL started as a typical intermediation Kenyan NGO dealing with drought food distribution in Kenya and Somalia in 1990. SASOL also tried to introduce sim sim as a cash crop in Kitui in the first three years. This was a total failure for those who pushed both castor oil and cotton production in the past had exploited farmers. In 1993 and 1994 SASOL supported 13 schools in sponsoring 750 children who could not afford fees. SIMAVI support for school water provision started in 1993. From then to date SIMAVI has contributed Ksh. 18,037,750 for building a hundred and thirteen school wells and fifty water tanks. It is on the basis of the initial SIMAVI supported activities, which led to the SASOL policy of a Schools Approach to Development. It continues today (2004) as support for computerization over and above school water provision.

Production Water

The foundation five years led to identifying the water constraint initially with respect to SASOL's school feeding component and later with regard to the whole community. The efforts in community and school water supply make the water net, which is the foundation stone for building poverty net in the district.

SASOL then developed the concept of production water composed of green water (i.e. biomass production water) and blue water i.e. water for drinking and other uses). Since then, the concept has not only been funded but has caught the imagination of many. The communities have built four hundred dams and a hundred and fifty community off take wells to date (2004).

The donors who have financed them, and the community contribution are shown below: The pilot five dams were financed by WATERAID UK, which moved out of the country within a year of initiating funding. To date the bulk of the constructed dams has been from financed by DFID and SIDA. SASOL has received critical funding from MCC and Canadian Food Grains Bank. This funding is important, not in terms of total numbers of dams financed, but because initially it was offered to rehabilitate the pilot dams when the 1997 El Nino played havoc with SASOL construction techniques. Canadian Grain Bank farmers, who

came to look at the project in 1997, recommended a change in construction techniques, which became a positive permanent feature in subsequent years. In later years, especially 2003 and 2004, when there was major famine, the MCC funding included a component of food for work, which enabled SASOL to complete work, which could not have been done by hungry people and for which other donors could or would not finance.

FUNDS UTILISED IN BUILDING 400 KITUI SAND DAMS (KSH.)

Donor	Amount
DFID	56,176,759
SIDA	27,452,430
MCC	10,497,585
WATERAID	5,691,500
EXCHANGE	3,289,800
Subtotal	103,108,074
COMMUNITY CONTRIBUTION	154,662,111
TOTAL	257,770,185
Say	US\$3,222,127
AVERAGE DAM COST	US\$ 8,055

Community Contribution

There was no data on whether communities in Kitui would invest in dam construction for other agencies had constructed dams without asking for community input in the district.

Three other points are important. First, the strength of the SASOL programme was the belief that though the sand dam technology was simple, underneath the simplicity was enormous underlying potential for social organization, which could be tackled on a dam-to-dam basis. Secondly, scarcity of water is usually associated with lack of drinking water, but the technology would produce both green water and blue water in the longer term. Thirdly, the community was to be involved totally in the development of the cascade of sand dams as a base line asset –a platform on which their developmental process would be built on subsequently.

The implication of these three inter-related points is that the sand dam construction was both an experiment in participatory socio-economic and environmental engineering. In SASOL’s view the socio-political engineering aspect is what drives the Kitui sand dam paradigm. This is based on several conceptual ideas found in tradition but tempered by the emergent social systems as well as choosing a project technology and a development strategy, which does not enrich poverty.

To arrive at an overall project strategy SASOL had to think through the implications, to the Kitui population, of donor relations, research and activities in some past developments in the region, which were very much in the collective memory of the Kitui population. The overall SASOL vision, which evolved essentially between 1990 and 1994, was to implement water activities, which would enable the Kitui poor to generate human and non-human life and assets. This was to be achieved by relying on collective self-help, enhancing individual and collective accumulation thereby assuring growth through community control and distribution of access to development assets. Finally it is to give the Kitui community, which is generally poor, capacity to deal with globalization. Globalization in this context meant what is outside the village.

It is important to detail the community contribution. This is the labor the community puts into organizing itself; providing construction labor; collecting stones and aggregate, sand and water for construction; and feeding the mason and construction labor. Donor funds are used to buy construction cement and other materials like reinforcement bars; tools and equipment; pay masons and supervision staff and overheads.

When SASOL started reporting the community contribution to donors, there was shock and disbelief for it is not normal in development planning, financing and accounting to show community contribution in detail. Where this is occasionally reported, it is only the magnetization of construction labor. The use of community time in organizing for the task, the use of their materials and the time they spend with officialdom is in typical development accounting supposed to be a free good!

Sand Dams Extension

Kitui sand dams have been copied in Marsabit district where 40 dams have been built with advice from SASOL. In Tanzania (Kiteto District), about ten dams are under construction with advice from SASOL and in Kitui district three farmers have built their own. In the adjoining district of Machakos many dams have been constructed since SASOL started but, given that this district had historical experience with them, we cannot attribute this rapid expansion to SASOL's efforts.

For the past four years, in conjunction with the Technical University Delft Netherlands, Leuven University Belgium, Protos, a Belgian NGO, University of Nairobi-Kenya, University of Dar es Salaam-Tanzania and Westerveld Conservation Trust -Netherlands, the scientific parameters of construction, recharge, social organization, water quality and

environmental impacts have been documented. This has been under a EU knowledge project called Rehydrating the Earth. Students from Europe and Africa, as well as academics, have participated in it. Out of it, efforts to extend the technology have taken place through past participants in Zimbabwe, Aden, Tanzania and Haiti.

Perhaps most significant in terms of extending this technology has been the knowledge contribution by SASOL in global fora. On the basis of work done, SASOL participated in the World Water Forum in Tokyo in 2002. In the same year it was invited to a specialized worldwide conference on the Management of Aquifer Recharge in the Netherlands. This year, SASOL and some of the communities in Kitui took part in the MCC Globalization Seminar.

The project has also attracted a lot of visitors from around the globe. The table below shows the countries and gender of the visitors. No doubt at some point they will use the experience.

VISITORS TO KITUI SAND DAMS

Country	Female	Male	Total
Kenya	8	45	53
Netherlands	12	38	50
Canada	6	13	19
Tanzania	3	8	11
Ethiopia	-	4	4
USA	1	3	4
Belgium	2	2	4
Sweden	1	2	3
Italy	1	1	2
Rwanda	-	2	2
UK	1	1	2
South Africa	1	-	1
Uganda	-	1	1
Zimbabwe	-	1	1
Norway	-	1	1

Group visits have included among others a delegation of Ethiopia's Ministry of Agriculture, Tanzania's Kiteto District Council, Kenya's Marsabit District Community Leaders, Participants of Kenya's Sand Dams and Subsurface Dams National Seminar, MCC Globalization Seminar Participants and African Indigenous Knowledge Workshop Participants. These group efforts have drawn community, governmental, university and donor groups into the Kitui Sand dam knowledge system.

If there has been global exposure of the Kitui sand dam system, the journey into the deep structure of the Kitui community so as to facilitate its participation was most interesting. When SASOL launched the Kitui sand dam programme it was a leap of faith for it did not understand two key variables: community ability to finance investment in production water and the positive dramatic environmental and socio-economic impacts of the technology. The technology is so simple that nobody else had done it in large scale. A sand dam is only an impervious barrier across an ephemeral river in the arid areas. Most of the ideas existing in nineteen nineties about sand dams were patchy and unconvincing both at the technological level and the social level. At the technological level nobody had data on amounts of water stored and amount of recharge to the environs if the dams were done in a cascade. Further, in a world reeling with the glitzy technological advances of the 80's and 90's decades, simple structures had no place in the scheme of things particularly among development professionals in the bilateral, multilateral and ngo sectors. On their part, Kenyan academics and especially Kenyan civil engineers were not impressed by this simple technology.

Dam Construction Processes

The entry point of the sand dam project to the community is done through the local administration. Before starting to build dams in a new area, the community generates baseline data about the area. This gives information about the community. It determines the resources available within the particular community.

Through the local administration, usually the Assistant Chief, the community members are organized, told about sand dams and their roles in the construction. Through respective village headmen, the communities identify sites for sand dam development. A date is fixed with SASOL staff to ascertain the sites selected for technical suitability. The community decides on the total number of sites it is capable of developing and the actual sites. This depends on access criteria and availability of construction stones, sand and water. Household representation ensures the involvement of the community at large.

Once a site is identified and accepted by both community and SASOL the work starts. A SASOL technician marks the trench, and the community is charged with selecting a site committee, digging the trench, collection of local materials like sand, stones and water. The committee facilitates formulation of by-laws governing their daily site activities. After this, SASOL brings the external resources, cement, reinforcements and the technical staff. The committee keeps site records of; attendance, material used and costs. This log, kept by the secretary of the committee, is very important in ensuring compliance

and dealing with problematic participants. The SASOL artisan keeps separate records as a check on community records in case of disputes and for purposes of SASOL reporting to donors.

Construction of sand dams and catchment development is labor intensive. All community households are involved in supplying labor for the dam construction and provision of local materials since each produces a worker for all the days there are activities on the dam site. Each household is also involved in the catchment protection activities pertaining to their individual holdings.

Community capacity building takes place simultaneously with dam construction. The catchment development approach also involves community training. This is done through training on aspects of natural resource management. It emphasizes the importance of soil and water management on the land. It includes the role of vegetation in improving the productivity of land. It also includes leadership training.

Rivers have no water of their own. They receive and channel the run off water from the grazing land and farms. The land thus loses water which would have been used for crop and animal production. A complimentary part of the sand dam programme is training on run-off control on the individually owned lands. This is the individual household's contribution to the collective self-help asset buildup.

Results Achieved

Evaluation of the relationships of the different elements of the catchment development approach led to the concept of building a water platform as the basis of advancement in the community. It is a platform on which other developments and capacities can rest on.

Distance to water sources, in Central Kitui have been reduced by building sand dams within 0.5 - 1 km of each other on the dry river channels. This is why we talk of cascades. In general, the dry river channels are between 2- 4 km apart. Thus the target of a water source at a distance of 2 km from each household has been achieved.

Due to the development of sand dams and other water holding structures- terraces and contour bunds on farmlands- infiltration into the ground water holding spaces has been achieved. An example is Wii Sub-location. Only 2 productive shallow wells existed before the building of 14 sand dams and on-farm associated water-harvesting structures in 1999. 39 wells exist today.

A total 400 sand dam sites have, to date, been developed in Kitui. They

have brought water nearer to households with 200,000 inhabitants. The time saving on water fetching chores for these inhabitants -mainly women and girls- has been reduced from 5-10 hrs to ½ - 1 hr in these areas as indicated by the community in Tungutu during their project impact assessment.

Availability of water impacts positively on biodiversity. The improvement in ground water has led, not only to diversification of vegetation, but also to more extensive ground cover. Availability of water enables minor irrigations. This has boosted food security of the local communities. New economic activities have sprung up. Among them are: bee keeping, brick making and growing of vegetables and trees. This has improved the people's livelihoods as it generates incomes over and above giving them better nutrition.

Along side the sand dams, 150 off-take wells are constructed for abstraction of portable water, providing easy access to clean water.

Sustainability

Poor communities need to see results immediately for they cannot afford to amortize benefits over long term. The sand dam project results are immediate. The community can see water held in the reservoir as the first rains fall following construction of a dam. Investment by the community on the development of the sand dam (on average 60% of the total cost) leads to clear ownership.

The water held in the reservoir of the dam is a community asset enabling the site community to carry out beneficial activities. The site committee oversees the well being of the asset.

Sand dams operation requires minimal maintenance. The only mandatory maintenance activity related to the sand dams is environmental management, which is not directly related to structure maintenance but is related to its proper functionality. When a sand dam is well protected and soil erosion controlled, all other operational parameters are controlled by nature, which include sedimentation and development of ground cover. However, protecting cascades from induced pollution by human waste, animal waste, soap or pesticides is an issue.

Maturity time for a sand dam is 5-7 years. During this maturation period, the community is able to obtain water from it. Maturity of a dam means achieving adjoining ground saturation with stored water. Maturation brings along environmental changes. Enhanced agricultural use of the adjoining land leads to increase in land value. With a mature dam, water can be obtained by shallow well extraction at distances more two hundred (200) meters away from the channel. The import of

this is that many households will be able to get personal wells on their plots thereby even reducing water fetching time more!

The dams provide water all year round once they have matured. This makes obtaining water convenient. When serviced with an off take well, the dams provide clean, good quality water for domestic use.

In Kitui there are isolated dams which were built in the 1950's e.g. Mukongwe built in 1957 and is still functioning and in good condition. If these were done in series, they would have impacted on a whole catchment.

Use communities manage dams. The important issues in this are environmental management; pollution control and prevention of the contamination of potable water from off take wells. This involves soil conservation through terracing, planting napier grass to protect river banks erosion, sanitary practices to prevent contamination with water borne diseases and prevention of putting polluting agents in the water.

All issues discussed above contribute to sustainability of the dams.

Lessons Learned

Before the construction of many dams in Kitui, the population as well as SASOL, did not understand their potential in social and physical terms fully. Now there is knowledge about the many uses and this information is discussed by all and sundry.

The community gives the site committees, formed for each dam construction site, their terms of reference, for planning and executing the project. These terms of reference should be reviewed at the end of construction and a committee be reconstituted with new terms including those of operation and maintenance of the facility.

Keeping accurate records at the site helps the community to first analyze their resources and, with respect to the sand dam, know the value of their investment. This is important for the sustainability of the facility, as the community would not like to see their investment destroyed.

The fact that the community record shows that the community contribution is equal to or higher than that from SASOL is at first shocking. However, it reveals to the community that they possess resources which when utilized properly can be used to build community and individual wealth. With proper organizational structures the community can plan and execute many more complex projects.

Involvement of all the community households is important. Defaulters must be dealt with carefully but firmly according to the laid down rules instated at each site. Failure to deal with them will lead to conflict and threaten the investment.

Food security has improved evidenced by the rapid growth of production of vegetables; fruits; subsistence crop yields, livestock and trees. All these have led to savings in the households and created possibilities for future community and/or individual households investments.

The new activities, which are as a result of availability of water throughout the year, have raised the need for modification of the existing social structures. This has raised the demand in the community for capacity building to deal with the changes.

Transferability

Although sand dams are an old technology, it has been poorly documented. Its simplicity is deceiving and many dismiss it as ineffective. The contrary is true. The simple technology, instituted in series, is highly effective in holding water and recharging the ground water. It has already changed the lives of over 200,000 people of Kitui.

When SASOL started the pilot programme with 5 sand dams, on the Kiindu in 1995, the community was skeptical. As the programme continued, the doubts have been transformed. The programme is now a fully demand driven process. There are more communities demanding site development than SASOL has been able to raise funds for. To date 400 sand dam sites have been developed. SASOL estimates that there is active demand for another 500 more dams.

After 50 sand dams were developed, an external audit was carried out by Prof. G B Thomas, a member of the International Water Harvesting Organization. The aim of the audit was to evaluate the effectiveness of the programme. Results of the audit were published as a booklet "Where There Is No Water" The booklet has enabled the programme to reach many people involved in water development.

A delegation of community leaders from Marsabit district, in the very dry Northern Kenya came, saw and immediately decided to send artisans from their community to learn the techniques soon after the initial fifty dams. SASOL seconded two artisans to Marsabit to institute a sand dam programme there. To date, more than 40 sand dams have been developed in Marsabit. Requests to institute the programme in other districts in Kenya such as Machakos, Makueni, Mwingi, Baringo, West Pokot and Turkana have been received. The programme has also

received delegates from Ethiopia, Tanzania, and Uganda.

In order to document the technical –essentially civil engineering– initiative, effectively, the programme solicited the expertise of the Technical University of Delft, The Netherlands, which specializes in water structures. It in turn invited the University of Leuven in Belgium, the University of Nairobi, Kenya, the University of Dar es Salaam, Tanzania Protos, a Belgium NGO, Westerveld Conservation Trust of Netherlands and University of Amsterdam. As a result some dams are to be built in other parts of Kenya and Tanzania. A comprehensive documentation of this will be available in the near future.

DEVELOPMENT AND RESEARCH CONFLICT

Introduction

All non-community development agencies need to pay attention to the conflicting interests of development instruments and research as they impact on the development of local populations. This is of tremendous concern to SASOL as it builds relations with other partners in development and research in the name of assisting Kitui communities. We discuss some memories (experiences) in areas proximate to where SASOL works in Kitui and draw some conclusions about this. We do this to call attention to the fact that the base populations many of us use to justify our development intermediation activities are also critical judges of what is useful to them. They understand when they are being used as guinea pigs. Their memories are long, evaluative and totally opposed to the idea of using communities to do unproductive work-*wia wa kakumi-*, as was the case in the colonial period when forced labor was used to work on settler farms or public utilities not used by the people.

Exotic Trees

The first case is about a tree programme. In the past thirty years, a location within the environs of Kitui became an objective of development and research. This location was dry- bottom of Agro-ecological zone 4 out of the seven Kenyan agro-ecological zones, with seven being desert. The international body responsible for developing this area decided that the approach to food security would be to get trees into the farming systems. Globally, the driver of this strategy was response to the energy crisis of the seventies. Trees were supposed to address soil fertility, energy and food needs of the local population. Trees were selected from around the globe to address these parameters. They were to fix nitrogen, to provide fuel wood and to get some fruits into the local diet.

To make a long story short, over twenty years, 50 PhDs and 132 MA and MSc theses were produced on all sorts of subjects, which focused on how this particular community was to be developed by using this international tree knowledge. This was the donor's knowledge of trees for the community known trees were not part of the package. Funding was terminated for the project ten years ago in the middle of one of the worst droughts in the region.

SASOL visited the area to glean on what is remaining on the ground after some Kitui communities kept raising it.

There are no trees on the farms. Farmers cut them for as soon as the trees grew, the crops withered. There is vicious competition by trees and food crops in the arid and semi-arid areas. If the trees were some of the local nitrogen fixing species, wood fuel providing and pole providing and deep rooted not to compete for moisture with crops, for example melia volkensii known in the area, the people could have adopted them. Unfortunately many were shallow rooting imports or water guzzlers like prosopis and cassia species or heavy shading ones like mangoes. People uprooted them. The key fruit trees- imported Valencias, cousins of the Washington Navels- got greening disease - introduced into the country by another donor in another area but now blanketing the whole nation, and dried. The local community did not use the research on local vegetables for there was land shortage. The urgent need of ensuring water for intensification was not seen as a critical activity for development funding. Consequently the local population concentrated on assuring themselves subsistence grain for vegetables could be bought or jettisoned out of the diet if necessary. After all, it is starch, which is primary for survival, in their view.

Water In A Plate

The second case is about provision of water for communities from rock catchments. A bilateral donor-DANIDA- spent a lot of money in Mutomo division in Kitui District on rock catchments in the seventies and early eighties. The idea of a rock catchment is simply to put a skirting on the large rock masses found in many areas on this continent where the basement rock has not weathered over eons of time. It sounds useful but local communities point out that the water is only around when the occasional rains are around. Since the amount of water collected is stored in exposed collection points, local people point out that the water evaporates in very large quantities after the onset of the dry season and by the middle of the dry period they have no water. Similarly, there is a quantity limitation on how much water can be harvested for it depends on the size of the rock and the amount of rain falling. The large rocks in the district had been skirted as early as the nineteen fifties. Typically most rocks skirted in the later years are not

even an acre in expanse. This limits how much water can be harvested. It in turn limits how many people can use the water. One cheeky old man refused to work on these projects and kept asking: "Have you ever seen water in a plate?" Further, wild animals drink from the open storage areas.

Since this donor's efforts, others, including USAID, CARE, ACTION AID and a bevy of Churches, have spent millions of shillings building rock catchments in Kitui in particular and Kenya in general. They have also spent millions of shillings building small earth dams. The lives of these are limited by evaporation and silting.

Owned Groups

The third case is about coordinating development groups at the administrative levels lower than district. Typically in Kitui, each donor organized groups for its specific development activities since 1963, the year of independence. The Kenyan state recognized the importance of these groups and created a whole bureaucracy for registering these groups under the Ministry of Culture and Social Services. Even after Kenya Government introduced District Focus for Rural Development in 1981, which was supposed to organize area wide development committees at the sub-locational, locational, divisional and District level, to coordinate development and by implication groups, not much coordination of group formation took place at the levels below district. In Kitui one is hard pushed to show these organizations. Groups are institutionalized -in sociological and development activity sense- in such a way that they split base communities for politicians use them as the basic political mobilizational units. A development activity is seen as patronage, which a politician delivers to his people. This is even more so when specific donors get identified with specific politicians as happened in Kitui in the past twenty years.

Many donor organizations among which DANIDA, USAID, UNICEF, Catholic Diocese of Kitui and Ministry of Water Development, have built water structures in Kitui but access is only by a group, defined as those individuals who got in touch with the donor or politician as the beneficiaries. SASOL had to build sand dams in some communities simply because the majority of people in some villages did not have access to the water provided by some donors under self-selecting individual beneficiaries and drivers of patronage.

Self-selection is not just done by politicians. Sometimes self-selection is done and based on church affiliation. If it is applied, adherents of other churches and or other religions tend to be left out of sharing the benefits of the development activity. To SASOL, this is extremely counter- productive primarily because of the damage to the social

fabric. It also has impact on SASOL areas of work. If all members of particular communities would get access to some of these structures, the SASOL constructed dams would have gone to other communities thereby extending the needed coverage. It also is counter productive politically.

In contrast, SASOL asks those living in a particular sub-location-the lowest level administrative unit - to organize all the households of a sub-location and to plan labor for the various dams in their community. This includes and specifies the household beneficiaries of each dam in the sub-location. It is complex social organizing. SASOL is never party to this organizing. It however is a conditionality to its beginning to work in a particular sub-location.

External Teachers?

The fourth case study is about the utility of involving people external to the community people in the actual community participatory development work. Usually such postings of Kenyans and others from around the globe are justified in terms of teaching local people some skills. At Utooni- where a locally based CBO has been building sand dams as a platform to other innovations in development, since 1977, they argue that external people basically learn and do not contribute much. By the way, since Utooni became a tourist stop by many development people, they charge a fee for showing people around and teaching them!

Utooni insists that unless external people are financing some development activity, in return for being taught by local people, it is not worth having external people involved either in construction or even management of a development activity for their costs to the local community - in terms of food, security and teaching- are higher than those of local people. They arrived at this conclusion after UNICEF made a big do about their project even though it contributed minimally to their efforts. UNICEF led with the Utooni project in a CBS broadcast about their 40 years of existence. Their contribution was an old pickup. They spent two weeks filming with an American film tars at Utooni. (Mutiso, 1989 Media and Money are Not for Grassroots: The Utooni Experience.) This point of view is echoed by many development practitioners who are beginning to insist that the role of international donors, ngo, church, bilateral and multilateral, should be to build local capacities to undertake work and not to send their people to actually do the work. This is not to argue that external people cannot bring knowledge to local communities or even to local development agencies.

SASOL has utilized external research as well as personnel. It wanted to

get some research on technical aspects of the sand dams. It tried to get this from local universities but they did not have interest, mainly driven by the fact that they did not have a financing mechanism by means of which they could avail SASOL civil engineers and other specialists to undertake some of the research it and its local partners saw as priority. They also did not see the global import of the technology.

SASOL needed to know whether the masonry construction technique was sound from an engineering point of view; techniques for construction in black cotton soils; the ground water table recharge potential of the dam cascades- i.e. in a series-; the water quality; changes in the riverine ecology etc.

The point is simply that the external knowledge and its carriers must be subordinated/intermediated to local processes if development is to stay meaningful to local communities. Ultimately this knowledge was provided by Technical University Delft initially and, in the last two years, by a clutch of Vocational Schools from Netherlands, significantly at their own cost. These external bodies were aware of the emerging global reality that there is not enough water and unless precipitation is harvested and stored global shortages will increase drastically. They were also aware that the most efficient storage of water is in the ground. SASOL had conceptualized that the rate and volume of recharge would be enhanced exponentially by building sand dams in a series in the ephemeral rivers as opposed to having standalone dams as was the case in many previous projects which had utilized the technology. These institutions invest in assisting SASOL so that their people can study aspects of these phenomena.

Initially SASOL was not particularly concerned about innovations on utilization of the availed water for it was practically free. We estimate that the storage cost the 300,000 cubic meters in 400 dams, is about Ksh. 0.001 per liter if the dams are amortized over fifty years! We also expected local communities to utilize and innovate on utilization. SASOL had not only taken them to Utooni, where the later community had innovated on water from sand dams but it also got Utooni community leaders-women and men- to come to Kitui to offer the local communities a menu about dam utilization.

Now that four hundred dams are built and are being utilized in different ways, the challenge is to scale up community organization, production and catchment environmental protection for although the target group is marginal it has made sweat investment.

THE KITUI TARGET GROUP

The choice of district to initiate the project was made, among other things, because the district is economically and ecologically poor and the topology varied. Making water easily available would not only release women and girl children out of the drudgery of water fetching, it would also release labor for other production activities with food production being central.

It is estimated that the annual per capita cash income in Kitui District is Ksh. 2,000 i.e. US Dollar 25. This is way below the currently accepted international poverty benchmark of USD 1 per day. In the Government of Kenya, Central Bureau of Statistics, Geographic Well-being in Kenya (2003) Figure 4.1.1. Poverty Incidence District Level (p.20) shows that over 70% of the Kitui District population is below the rural poverty line. Although it is possible to quibble with the statistics on the annual per capita cash income as well as the fact that there are non-cash exchange systems operating in Kitui district, and further that there are some rich people in the district, there can be absolutely no quarrel with the fact that the bulk of the population in Kitui is very poor. They are not only cash poor but also asset poor.

The bulk of the construction crews, who are the primary beneficiaries for water is in the female gender, in all dam sites, are women. On average they form 80% of the people working on the sand dams. It is estimated that 60% of the households are female headed. That they participate in construction should therefore not come as a surprise.

Generally the local rich have not directly participated in the construction of the sand dams. The local rich are the employed, mainly schoolteachers and some businessmen. There are mechanisms set by each dam committee, where the local rich can invest in the construction either by hiring somebody to attend on behalf of their household or wait until the dam is completed and then pay what is calculated as the total labor cost to those who are involved in construction and a punitive charge over and above this. This also applies to those employed outside the region.

Generally then, it is the poor, in the specific communities, who build the dams. This has led to challenging of the historic community power structures, which are dominated, by teachers and business people.

Who are the poor and how do they relate to natural resources? How

should development efforts assure their concerns? Joseph Stiglitz, winner of the Nobel Prize for Economics in 2001, eloquently defines the poor and on the strategy towards enabling their growth, nay their survival before they grow. We quote him extensively.

“The growth -poverty debate is about development strategies-strategies that look for policies that reduce poverty as they promote growth, that shun policies that increase poverty with little if any growth, and that in assessing situations where there are tradeoffs, put a heavy weight on the impact on the poor.

Understanding the choices requires understanding the causes and nature of poverty. It is not that the poor are lazy: they often work harder, with longer hours, than those who are better off. Many are caught in a series of vicious spirals: lack of food leads to ill health. Barely surviving, they cannot send their children to school, and without an education, their children are condemned to a life of poverty. Poverty is passed along from one generation to another. Poor farmers cannot afford to pay the money for fertilizers and high yielding seeds that would increase their productivity.

In poor countries...the impoverished have no source of energy other than the neighboring forest; but as they strip the forests for their bare necessities of heating and cooking, the soil erodes, and as the environment degrades, they are condemned to a life of ever-increasing poverty.

Along with poverty comes feelings of powerlessness.....the poor feel that they are voiceless, and that they do not have control over their own destiny. Forces beyond their control buffet them.

And the poor are insecure. Not only is their income uncertain...changes in economic circumstances beyond their control can lead to lower real wages and loss of jobs... but they face health risks and continual threats of violence, sometimes from other poor people trying against all odds to meet the needs of their family, sometimes from police and others in positions of authority...The only safety net is provided by family and community, which is why it is important, in the process of development, to do what one can to preserve these bonds.” (Globalization and Its Discontents. London: Penguin, 2002, pp. 82-8).

In organizing for the construction of dams, the particular communities deal with the issues of organizing for new collective tasks, collective environmental protection and protecting natural resources at the community level. By so doing they deal with their marginalisation and attendant powerlessness. At the individual level, perhaps most

important is the creation of new incomes.

ECONOMIC IMPACTS OF THE KITUI SAND DAMS

Kamale Village, Ithumula/Maluma Sub-Location

In Kamale village lives Mrs. Kavuu Kyalo, who can't hide her joy as a result of the sand dam project. "The evidence is all over", she declares. Kavuu plants vegetables (tomatoes and kale) and tree seedlings for sale. She says that she has intensified these activities by a factor of three after the sand dam project. Through selling of vegetables and seedlings, she has managed to buy livestock, build a firm house worth Ksh 100,000 and meet school fees expenses. "I'm relieved of looking for casual labor to look for money to pay school fees for my children. My school going children are not send home for school fees nowadays", Kavuu states.

Even though Kavuu's husband, Mzee Kyalo, never attended the training sessions offered by SASOL, Kavuu managed to teach her husband most of what was learnt. The training sessions covered lessons on food budgeting (measuring family annual food requirements, keeping enough food for the household, cooking the right amount of food and selling what is considered a surplus at the right time), soil conservation (terracing, tree planting and making compost manure) and sanitation (building toilets and personal cleanliness).

Robert Mwanzia reveals that he is making about Ksh 10,000/= and Ksh 6,000 from vegetable and seedling sales during the three dry months. He says as a result of the sand dams, there is prolonged moisture retention by the farms thus increased farm output. John Kimanathi of Kaangweni village shares similar sentiments. He adds that after the training, terracing, water boiling, tree planting and vegetables planting and literacy levels have gone up among some households.

Mr. Kithome Kavivu advised that the training was appropriate for women because the courses centered on their roles, e.g. food budgeting. It was noted that majority of the participants were men. It is only in Kyangala and Syanduini village where the number of women either equaled or was greater than that of the male counterparts in the sub-location.

Mzee Mutua has 290 banana plants, 120 oranges trees, 100 pawpaws, 40 mango trees, 50 citrus trees and 40 avocado trees. He embarked on this prosperous project after the SASOL training. His estimated annual income from bananas alone translates to Ksh 130,000. Other fruit plants are about to start bearing fruits. Mzee Mutua laments that he

greatest challenge will be market for his produce.

We should note that SASOL does not have the capacity to organize extension. As part of the leadership and natural resources training for dam leaders, some of the production potential is discussed. It is therefore clear that the innovations in production- utilizing the sand dam water- are essentially people driven. What is clear is that once a few people are trained they are able to train others informally. This way innovative knowledge is passed on to many more people than the ones taking part in the formal SASOL training seminars.

It should also be noted that innovations are part and parcel of extensive social and production changes the full extent of which is yet to be documented. Perhaps part of the change is tied up with new visions and the capacity of local communities to get the message that their own development is in their hands. This is a spin-off of implementing the project in a participatory way. By so doing, SASOL has empowered the communities to design their futures.

District Wide Economic Impact

What is described in Kamale is only an appetizer. Currently SASOL is looking for a creative economist to tell the district wide economic impact in ways other economists and ordinary people would understand. We state it this way for what is called is not just the economic analysis but also the more humane understanding of how the dams have impacted on life.

Limited data from the field shows that the dams have had fantastic socio-economic impacts. Income from horticultural trees is on the rise, though yet to be aggregated and documented. Field interview data shows that households owning land adjacent to the regenerated rivers are now earning over Ksh. 100,000 (US\$1250) in the dry three months of August, September and October from bucket irrigated vegetables planted on plots less than a quarter acre on average. One family, which has invested in a motorized pump and drip irrigation, is getting Ksh. 250,000 i.e. US\$ 3,125! The production of vegetables has not only kept traders from other districts selling vegetables in the district, particularly in Central Kitui, but has led to vegetables being available in parts of the district where there was no supply in the past.

The case of Maluma/Ithumula community is illustrative. There are 1,969 households in Maluma/Ithumula sub-location. 38.5% of the interviewed households reported that they were engaged in vegetable planting the first year after completion of the dams. The local councilor estimated that four million shillings was earned in the sub location the first year after completion of the dams.

Conservatively assuming that only 2% of the households in the district did serious planting, the first year, and further averaging down the household earned income to Ksh 90,000, with an average household having 8 people, the dry months per capita income in the district would be Ksh. 3,750. This compares to the mean per capita income from food sales of Ksh. 125 as reported by the Government of Kenya Central Bureau of Statistics 1999 Welfare Study or with the earlier reported annual per capita income of Ksh. 2,000. For the whole district, keeping the same assumptions, the dams could generate a hundred and eighteen million shillings (US\$1,500,000) during the dry three months whilst using the land for other production during the rest of the year. We should note that there was no extension effort on this new mainly bucket vegetable production. With these incomes, the whole district can move into a higher economic plane dramatically. Further, from a health point of view, consumption of vegetables and horticultural produce has impacted positively on health, especially of women and children.

It is not only vegetable production, which is afoot. Burnt brick houses have been built. Health has improved because of the synergy of better nutrition, housing and relatively clean water. But perhaps most important in the long term is the release of labor from water fetching chores. This has improved the health of women and girls whilst making their labor available for production improvement and social life.

Improvements in incomes have led to investment in education, clearly a long-term positive effect.

To assure that the benefits continue to be enjoyed, their impact must be understood in the context of affirming collective self-help of the Kitui population and accumulation for individuals and communities. We deal with collective self help first.

COLLECTIVE SELF HELP

Philosophically, Kamba society historically defines each individual as a member of the community as well as the totality of the Kamba community. The survival of the community depends on its individual members whilst, in turn, the survival of the individual depends on the actions of the community. This is assured through the palaver philosophy and process, which assures that each is treated fairly. The philosophy and process assures and is driven by collective self help-usually misunderstood as communal self-help in some anthropological writings.

In collective self-help there is a bifurcation of the roles of the individual. Firstly the individual persons or households have selfish roles aimed at their survival per se. Secondly there are actions, which are undertaken by the individuals and individual households in conjunction with others. Several levels of interactions exist.

The lowest (micro) level, which is the smallest unit in traditional communities, is the neighborhood or village, historically made of clansmen but currently made up of members of mixed clans. The intermediate (meso) level is historically the lineage or clan but currently made up of a mixture of lineages and clans living in a local administrative unit. The highest (macro) level of interaction, which is tantamount to the global level, is the tribe made up of the many clans.

Tasks, which need to be undertaken, for individual and collective survival are matched with the appropriate structure and level. For example, when there is an attack by another tribe-with its attendant destruction of tribal property- the matching calls the tribal warriors to action, for organized warfare and its ideologies exist only at the global level. On the other hand, social reproduction, economic production, accumulation and nurture of property takes place at the family and neighborhood levels. For example if an individual homestead is on fire, it is the neighbors who come to the rescue. Further, Kambas say you do not set up a cattle camp alone (Mundu ndatwaa kyengo e weka.) thereby affirming that the process of accumulation is collective even for the village rich.

These interactions are undertaken under a value system, which is communitarian and which orders all and sundry, towards assuring life. As Benezet Bujo writes in *The Ethical Dimensions Of Community: The African Model And The Dialogue Between North And South* (Nairobi Paulines, 1997.):

“Numerous studies have sufficiently shown that African thought and action are deeply determined by the community. Foundational to them is the concept of life. The individual knows him or herself to be immersed in the community to such an extent that personality can develop only in it and through it. This development does not take place in an asymmetrical way but is based on mutuality. It also includes a giving back of what one has received from the community. In concrete terms, there is interdependency, which is based on the fact that all members have the task of increasing the life force. Everybody’s behavior and ethical action have consequences for the whole community; the good contributes to the increase of life, while evil destroys or at least reduces life”(p. 182).

Since water is life, all work related to it in the Kitui traditions as well as

in the sand dam project is thus done within a framework, which binds the local community (in the SASOL planning and praxis defined as a sub-location) and individuals. So far for the construction of sand dams and their initial utilization, the community is involved at the individual, family and village level. The individual has the dual role of participating in the communal activity as well as developing the individual land to enhance the harvesting of water in the catchment hence increasing both green and blue water potential in the locality.

The SASOL intermediation role is organizing the Kitui community for structural development, which is the process of mobilizing the local resources and sensitizing communities in order to improve the quality of life through collective self-help. The key is to facilitate communities to put in place organizational structures, which are functional and conducive to achieving individual and collective goals. In the case of the sand dam construction, the immediate goal is to alleviate the scarcity of drinking water for humans and livestock. It is only when there is surplus water that there is diversification into utilizing green and blue water for expanded production.

However, the availability of bulk green and blue water opens vistas, which have not existed before the construction of the sand dams. It challenges the historic organizational formats and processes. The adventurous individuals in the community lead the way in taking the opportunities provided by the water. This leads to the diversification of existing production systems. This gives new opportunities to those who have been left out in the historic models of social change and accumulation as they see new opportunities in the utilization of the water. A classic example is Mrs. Kavuu Kyalo, the lady quoted above. She has less than an acre of land but was able to save for her son's high school fees during the first year of irrigating with dam water. Others join in the fray and structural changes begin in the community, in this case driven by the sand dam palaver. The new tentative changes in production, begun through this palaver, change the collective outlook to life. Attention starts being paid to conservation as land becomes a precious commodity and is seen as a serious pathway leading to individual, family, neighborhoods and the community riches.

Soon after, this transformation needs new community organizational structures. The organizational structure, which was instrumental in building the dams, is not deemed suitable -by the community- for carrying it forward, given its new global- and thus different -goals. The reasons are simply that technologies, markets and distribution channels are global i.e. beyond the village. Communities tell us that when they chose the dam committees they needed only supervision of what they were doing locally. Now they need warriors to the globe-

equivalent to the traditional Athiani, usually translated as spies- who went to live and work among other communities in historic times to see what would be good for the local community.

SASOL recognizes that assuring this as the focus future of the sand dam project. In classical development literature, it is called capacity building for new tasks. The desired innovation is that its content will have to relate to individual and community accumulation as was in the Kamba traditions.

INDIVIDUAL AND COMMUNITY ACCUMULATION

In the traditional Kamba society the wealth of a household was measured in livestock and crop production. Towards that end, a young boy was given a cow or a goat usually. As he grew he was given other livestock assets, financed in very structured socially defined process, to speed his accumulation process. That cow or a goat would over time produce a herd as long as he was a good manager. The herd would be used to get a wife. Her family, on the day of her marriage, in turn, would give her implements and equipments to set up a household. On being married, she was given land by her husband and livestock by relatives. No woman was married without being given her exclusive land -called *mbee* land, the most important food production asset, by her husband. Only she would have the power to pass this land on to her progeny.

If the new household continued to produce good managers, the family accumulation would be assured. The initial land and animals formed the asset base on which future assets were built by individuals, families and clans. With the assets, the individual, household or clan could afford to pay community obligations including producing warriors.

Developed and functional sand dams in dry riverbeds in a series forming a cascade, with the supporting environmental catchment management, are creation of a base asset for use by households and communities to facilitate individual and collective accumulation in reciprocal relationships. The large community investment, typically 60% of each dams cost, through the provision household labor and community materials, buys the protection of the community asset for it is both communal and individual- a point lost in Western development theory which does not address reciprocity being blinded by the so called tragedy of the commons and or arguments about the incompetence of native management. This is an important point for as Benezet Bujo points out in *The Ethical Dimensions Of Community: The African Model And The Dialogue Between North And South* (Nairobi:

Paulines, 1997), “The individual and the community are not in opposition to each other. Rather than impede each other, they complement each other”(p. 28)

The productivity of both the green water -supporting growth of plants- and blue water- used for in non-plant growing ways-, energizes the capacity of the community to adapt to the new opportunities. This leads to food security and distribution of wealth in the community with the resultant savings and further investment and asset build up. It also raises demands on skills to handle the new processes.

One primary need is that of an effective social organization to grapple with extremely new problems, such as transport of produce to the markets and marketing locally and globally. The salient technologies are accounting, logistics and ICT. If the community does not act to meet these demands, by default, it will be surrendering its sweat investment to the external -global-middlepersons- that would come and fill the gap. This scenario has low payback to the community, as the profits are taken away and invested elsewhere. The capacity building challenge of production in the marginalized areas is how to maximize the benefits of their production in an exploitive global system. This can only be assured by community control.

COMMUNITY CONTROL AND ACCESS TO ASSETS

In the traditional Kamba community, ethics and values were clearly defined and shared. Social norms had evolved overtime and existed in the tribe as the distillate of trials of new ideas and refinement through adaptation. Finally there were codes of behavior, which were enshrined, in the communal mind. The supreme organs of the community enforced them. These were King’ole and Ngolano whose edicts and judgments could not be breached for the individuals would be thrown out of society -kukoowa -literally to be spat out. This resulted in being completely ostracized from society. Few would dare to even imagine getting into this kind of trouble with their communities.

The coming of the colonialism dislocated the existing system of values and ethics found in the conquered communities. The colonialists, through their agents- the educated and westernized asomi- tried to replace these with their own values and ethics, which were irrelevant and never understood by many base communities. This state of affairs resulted in an artificial scenario, which gave rise to a small number of local exploitive elite, agents of the global. The elite, which was a collection of colonial loyalists, sought to gain all the advantages of colonialism by oppressing the populace for individual gain. Thus arose

a differentiation in the base communities. The new value system operated in a cultural vacuum because there was no mechanism to cater for the community but it thrived on favors bestowed on the loyalists by the colonial order, which was made of twins- government and formal external religions.

In the postcolonial era, it is the colonially created parvenu elite, which came into power. This elite continued the marginalisation of the larger community in the rural areas. It never dealt with tradition as Mahmud Mamdani effectively argues in *Citizen and Subject*. This era is characterized by false individualism, because there is none of the overall philosophy, which guides interactions at the household, clan or global levels. Ethics and values are individual and not collective.

This is not all. An overarching welfare state framework, as is in the West, which operates under the overall capitalism philosophy, does not control the rabid and false individualism. In the western system, there are control measures where the state oversees the welfare of the citizens. Taxes fund governments, which in turn fill the role of wealth distribution by providing services.

Individualism and the attendant accumulation in postcolonial situations are seen, by the majority in base communities, who are poor, as a selfish accumulation without responsibility or obligation towards production and social distribution. Concentration of wealth, usually stolen from the state, without relevant state distribution, leads to the polarization of society and extreme exploitation of the poor-especially the rural poor in marginal lands. This is exacerbated by the behavior of the postcolonial state, which more often than not has not even heard of basic infrastructure and service provisions, as its core business, not to mention that it at times is a state of a tribe against others.

To incorporate base communities into growth development, what is needed is the provision of an impetus for the poor communities to break the vicious circle of poverty by producing and managing the resources they have for individual and community improvement. Due to the meager rural earnings, the only way out is to start at the traditional model where sweat investment, using locally available resources, can be shared to create collective assets, which eventually creates more wealth, and more community assets, enabling individuals in the community to use their industry to create both individual and communal wealth.

This, SASOL not only believes, but there is indicative incomes improvement data that the organization and mobilization to create production water, through sand dams in Kitui, is systematically

addressing poverty. The planned detailed economic study will document this in detail.

PRODUCTION WATER AND GLOBALISATION

In this setting of marginal lands and the attendant marginal communities, where the reality is subsistence agriculture, what is the role of globalization? Remember that globalization is that which is outside the village. It offers new knowledge to use hydroponics, drip irrigation, latest researched seeds and better land use to deal with global warming for example. It further offers new knowledge enabling the village to trade without middlemen through the Internet. It allows the leading universities to bring students to the Kitui sand dam experiment. It allows the meeting of the East, the Middle and the West. It allows a menu of organizational skills ranging from traditionally social to modern corporate. It allows exploitation if the communities are not taught – in a Paulo Frere and Ivan Illich pedagogy of the oppressed and deschooling society senses- a plethora of skills to buffer them. It allows for varieties of intermediation, which are not classically developmentalist.

In this sense the issue of globalization is not just markets but to use some of its elements to improve the lives of many millions of people to produce food, to generate surpluses, to buy education, health and decent livelihood and ultimately to create equitable politics- not in the Fukiyama end of history –meaning capitalist economic dominance -or Huntington’s the clash of civilizations-meaning clash of Islam and Christianity. It is simply to assure life. The funding agencies or development intermediators do not easily understand this.

Elaboration is in order. The key to success in addressing poverty is integration of traditional and modern social and technical knowledge in creating growth oriented development structures and processes under the management of base communities. Ironically, this is classic African palaver per excellence. The organization seeking to do this systematically and in keeping with the traditions of particular communities is intermediating.

Palaver is the participatory method of arriving at decisions, which bind communities and individuals.

In *The Ethical Dimensions Of Community: The African Model And The Dialogue Between North And South* (Nairobi Paulines, 1997.) Benezet Bujo writes:

“Palaver is no means superfluous talk or useless negotiation but an

efficient institutionalization of communicative action. If an important decision is to be arrived at on matters that affect the people as a common community, the wisest representatives of the people are called together for a palaver...Wise men, who are invited for palaver, are not members of an official institution. In palaver only competence and experience count. They are the ones who share daily life with the people, so that their argumentation is concerned with the people's existential interests, often to the smallest detail. In order to find a solution for a problem, they share experiences, refer to the entire history of the clan community, and consider the interests of both the living and the dead. The whole procedure can be time consuming because it is carried out on and on until consensus is reached. An effort is made to discuss the matter neither by manoeuvring nor by trickery or force and taking into consideration the well being not just of the participants but much more that all affected people-the clan community and its living dead". (p. 36)

The wise are just that - wise. They are gender neutral for they can be women or men. They have responsibility to point to (vision) and organize the future. We have discussed above how communities choose dam building committees of the ones they think wise. We have also pointed out that for future tasks they tell us that they need other types of persons to lead the way.

Palaver also leads to new concerns. Among the key things now discussed in Kitui communities, where dams are functioning, is the place of the community in the context of the role of the state and democratization of society and how their improving livelihoods liberate them from ethnic political brokers-usually called peoples representatives -councilors, parliamentarians etc. Since the poor and marginal do not have power to influence governance until they can fill their stomachs, one expects changes in the political life of these communities. An indicator of this is the fact that in the last elections in 2002, the Ithumula community rejected a councilor whose past political life was mobilizational and not really participatory in the construction of dams for one who actually broke the stones, collected the sand and water and was actually on site all the time.

KITUI SAND DAM DEVELOPMENT PARADIGM AND DONORS

The classical view of globalization saw states as the main actors and it did not envisage limitation on their sovereignty. At the turn of this century, international law and practice -which encapsulates the responsibility for development of the other - has accepted limitation of sovereignty to allow international intervention in the affairs of some states. It generally agrees that if a political system practices genocide,

crimes against humanity, violates human rights, is confronted by humanitarian catastrophes and, perhaps most significant, to establish or re-establish democratic governance, it opens itself to intervention. This new thinking on international law and practice is essentially ethically based and draws from the experience of the decade of the nineties when the UN Security Council authorized many interventions limiting sovereignty.

These ideas are reflected in the International Commission on Intervention and State Sovereignty titled *The Responsibility to Protect* issued in December 2001. The Commission was also aware that the right to intervene in military terms could be abused if done unilaterally and thus recommended the strengthening of the UN Security Council to enable it to lead the globe on the issue. This has come to be after 9/11 through the initial US thinking on preventive self-defense, as found in the National Security Strategy. That thinking ignored the UN system but the modifications in 2004 thinking by the US Government, to get legitimization for the continuation of the Iraq intervention, shows that some of the concerns by ICISS maybe intruding to the interpretation of US thinking.

However, the current thinking is yet to be clear that there is an international responsibility to intervene if a state marginalizes some of its people in terms of development. In Kenyan scholarship, the current Chairman of the Law Society of Kenya and also Chairman of the Anti-Corruption Commission, Ahmednasir Abdulahi, has time and again adduced the argument that if the state does not take its development role seriously for marginal communities, those communities have an obligation and duty to secede. This is an interesting variation of no taxation without representation tradition.

Bilateral and multilateral development financing, since the Marshall Plan, at the end of World War II, has been primarily used as a stick for getting states to do things with or for the financiers, within their own theoretical models, but is not primarily directed to ameliorating the conditions of internally oppressed/marginalized people. This is not to argue that at times states and other non-state institutions have not financed development of marginal and oppressed sectors. There are many who are so directed by their missions.

What concerns us here is the implication of the Kitui sand dam paradigm in the context of the donor aid organizations and donor allied/related people and the justification of the use of externally raised resources for use in development intermediation by local organizations like SASOL given this new framework for intervention.

ICISS thinking affirms the need to support those activities, which support peace and democratization whilst by implication denying the Fukiyaman dominance of the market or Huntingtonian civilization/religious wars. We believe that the funds SASOL has got from bilateral donors (DFID and SIDA) as well as from others (SIMAVI, MCC, EXCHANGE and WATERAID) for the Kitui efforts is in line with this thinking for two reasons. First, the Kitui communities have begun to build their own participatory organizations, not only to build the dams, but also, and perhaps most significant, to get into other production and marketing activities. These enable ordinary people to emerge as leaders and to challenge some of the historical socio-political dominance by more educated people connected to state power. These activities allow ordinary people to participate in the creation of slices of the global community outside the vehicle of the state. We believe that the net impact of these new organizational practices will contribute to the democratization of local political practices and perhaps, in the future, also lead to the rise of different political leaders. They will then offer this to the Kenyan nation for ultimately national democratization is about communities coming together to restructure their national politics. On the peace side, it is important to understand that it can only be if people have hope. People in turn can only get hope if they have minimum basic needs-defined as food security and belief and practice showing that life will be better for their progeny.

The last point is specifically about taxpayers and private individuals who contribute to international development activities. Should they finance development in marginal places like Kitui? Should they obey the dictates of donor fatigue?

Most commentary on countries like Kenya stresses the corruption and the many aspects of failed states. This is true criticism for how does one justify finding many more Mercedes cars in a city like Nairobi than in Stuttgart?

It is true that most post-colonial states are used for individual accumulation by many of those with access to it especially parliamentarians, politicians or employees. It is also true that most of these states do not systematically reach their marginalized in districts like Kitui for state budgets and activities are not allocated on the basis of population needs or degrees of marginality. It is also true that traditional institutions are ignored at best and at times attacked by both the state and the national elite and its local representatives in the name of modernization -whatever that means. It is also true that bribes drive rulership. These commentaries agree with Isaiah 1: 23

“Your rulers are rebels, companions of thieves

They all love bribes and chase after gifts.”

Yet marginal areas’ communities – be they rural or the urban poor– have not failed. Aid to failed states, which has led to donor fatigue, is not aid to marginal communities for it rarely reaches them. Aid to marginal communities is, first, assuring their survival and then creating platforms for future development. Any help by external organizations and individuals, to some marginal people, to assist them to create their own survival /growth is a very useful thing to do. It is creation of other slices of the global community not intermediated by the dismal states. All of us must always remember that when the marginalized dream, they form rivers of hope. In the original Greek meaning hope is no more than possibility of less evil.

We believe that the main actors for the creation of the global community, with all its attendant differences, surely will not be the states. States are already marginalized in this effort by transnationals and ICT who will continue to be the key actors for the foreseeable future. Given this, in the long term, it is the responsibility of these despised marginal communities to choose how they will survive by making choices about which global slices they will embrace to survive. This can be achieved if the relatively new international intervention doctrine also accepts that compelling states to invest in marginal communities is one of the basic responsibilities of the international community of nations, peoples and transnationals, not necessarily in that order at all times. The acceptance of this doctrine will facilitate giving aid to enable marginal communities to think through their needs, build up their own capacities to choose useful slices from the global menu as well as to offer this, first to their states and later to the global family. We all must accept that each community has something to offer to the global menu.

Therefore, we in SASOL complement our donor organizations as well as the many individuals who have in one way or other supported SASOL to intermediate for the people of Kitui who finance 60% of all the dams. They use them to create socio-economic practices, which will bring them out of environmental and socio-political bondage.

We also note, from our past relations with the donor organizations, that there is some controversy within them on how they organize and deliver implementation of development activities. Do they put their personnel in communities to intermediate on development or do they support local organizations, for example SASOL, for this effort? The debate has tended to be conducted on atheoretical basis. The key issue to be included in the debate, in our view, seems to be the ability of intermediary organizations and individuals to understand local

communities' deep structure, as Chomsky would say. If the problem is thought through in this framework, the obvious conclusion seems to be that local organizations seem to have a hedge. They understand the local cultures in ways external people and organizations cannot unless they have lived in these communities for very long periods whilst trying to understand the salience of their environmental and socio-political philosophies.

Although SASOL is an interested party on this issue, its view is that it is more likely that intermediation will be done more effectively and efficiently by local organizations. This, we believe, can also be adduced from studying the history of missionary activity or for that matter colonization. We offer this conclusion without implying that SASOL has a claim on truth for, in our work, following Albie Sachs, a judge of the South African Constitutional Court, we constantly ask: "What is the truth about truth about truth?"

We are particularly appreciative of the MCC and WATERAID contributions. They enabled the Kitui communities and SASOL to show that the sand dam technology works. ? We also greatly appreciate the contribution of EXCHANGE which has enabled SASOL to open up work on capacity building in marketing and ICT. They financed work in some of the worst parts of the district. The assistance was given to communities and not selected groups in particular communities.

Many in development circles argue that aid should only target the poorest of the poor or the poor. The operational question, if one is so oriented, is how does one define them out of their existing communities?

CONCLUSION

We would like to conclude with a comment on individuals. To those individuals, who may have caught the bug of doubt, in this era of donor fatigue, about their organization's development work and financing, we attest that in the Kitui sand dam case their finances were used to build local potential. Therefore, we appeal to you to accept the gratitude of Kitui people. Your very timely and relevant contributions have not only made a difference in the margin but have created a platform to assure life for many. This is an impressive commitment by any measure. It is your contribution to the emergence of the non-state or transnational driven global community.

"The task of the human person is to identify the enemies of life in order to defeat death". (Benezet Bujo 1997 p. 209). The same holds for a humane organization.

YOU AND THE SAND DAM PEOPLE OF KITUI HAVE BECOME WATU (A PEOPLE=A COMMUNITY) BY SHOWING YOUR UTU (HUMANITY=LIFE FORCE).

MAY THERE BE RAIN.
MAY THERE BE GRASS.
MAY THERE BE FOOD.
MAY THERE BE PEACE.

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