

# Rufiji Environment Management Project<sup>1</sup>

Environmental Management and Biodiversity Conservation of Forests,  
Woodlands, and Wetlands of the Rufiji Delta and Floodplain

## Selection of Pilot villages

**A report on the rapid appraisal methodology used and the selections  
made, together with eleven individual village profiles**

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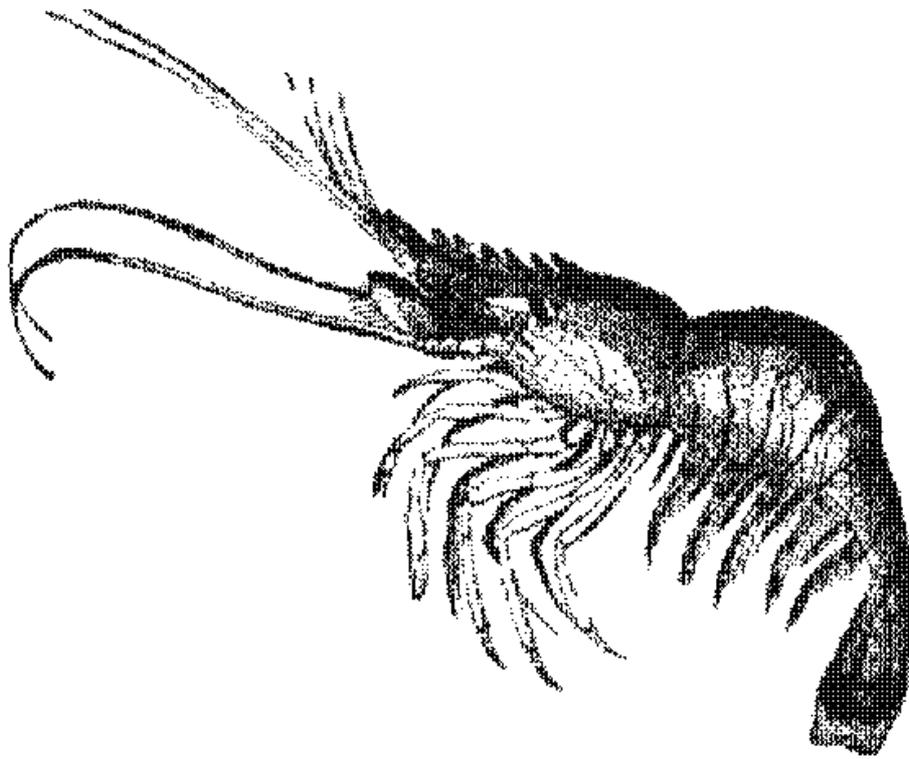
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To Mrema, Mashaka and Kassim, drivers and navigators who got us there and back safely despite very tough physical circumstances.

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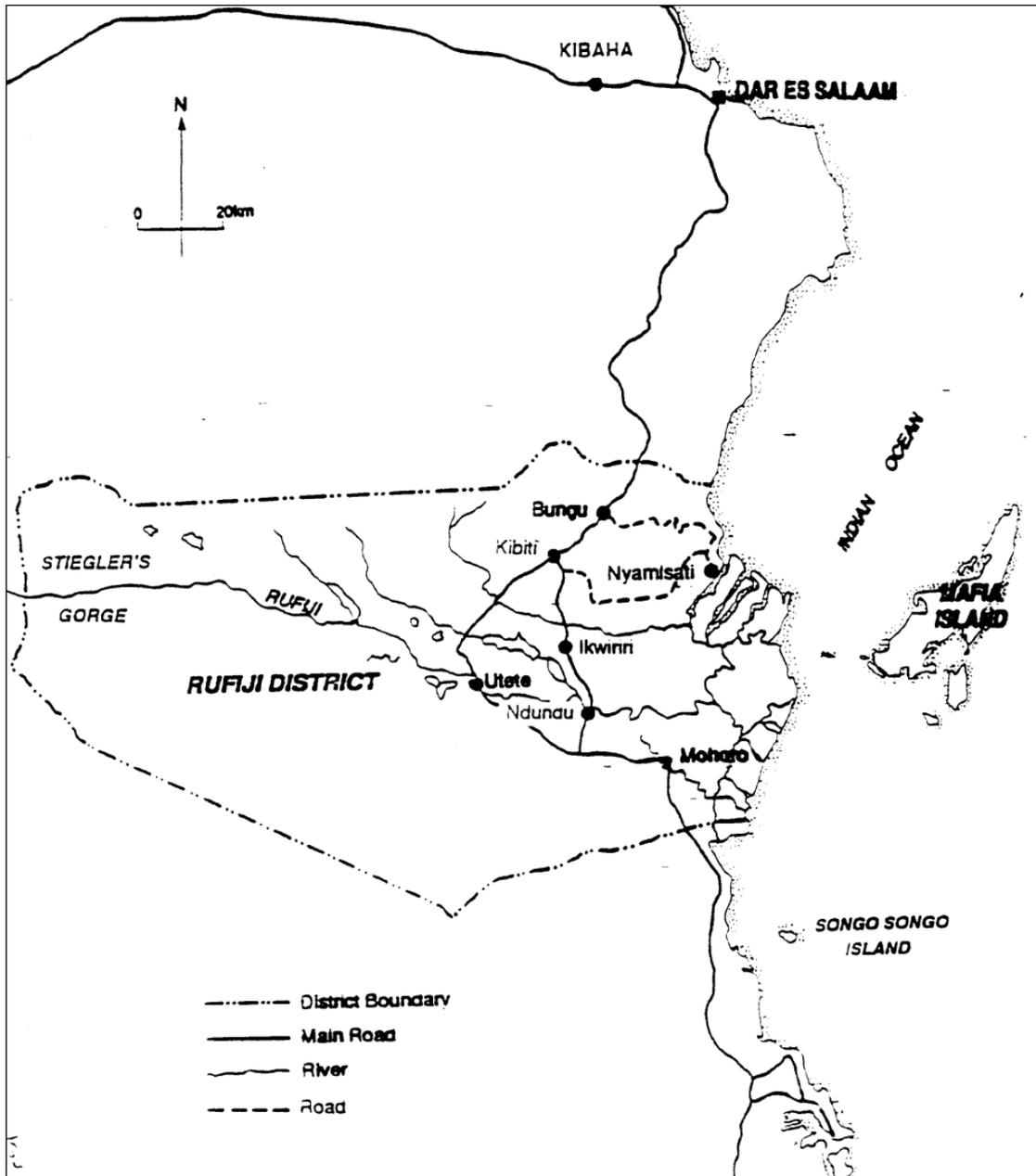
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Map 1: Rufiji District in relation to Dar es Salaam and the Indian Ocean.

## 1 Rufiji Floodplain and Delta

The Rufiji is Tanzania's greatest river. It drains 20% of the country and has an average annual flow rate of 900 cubic metres per second. It carries an average of 17 million tonnes of silt each year, which it deposits on its floodplain and delta.

### **Floodplain**

The Rufiji's floodplain stretches 130 km from west to east and is from 7 km to 35 km wide. During flooding the river leaves its channel and forms meanders and oxbow lakes. The floodplain has 13 permanent lakes and supports a variety of natural vegetation including grasslands, riparian forests, swamp forests, woodlands and intermediate associations.

### **Delta**

The Rufiji delta contains the largest (53,000 Ha) area of mangrove forest on the Eastern coast of Africa. These mangroves support an extensive intertidal fishery, provide nursery grounds for 80% of Tanzania's prawns, produce mangrove poles for export and are important for prevention of coastal erosion. Humans have lived in and maintained this unique ecological zone for more than a thousand years. There are numerous endemic species in this floodplain and delta, where biodiversity is thought to be of great significance locally and regionally.

In the uplands above the delta and floodplain, dry coastal forests such as those of Kichi Hills, Nyamwete, Namakutwa and others contain biodiversity of local, regional and possibly international importance.

Over 150,000 people derive their livelihoods directly from the river, floodplain and delta by cultivation, fishing, and extraction of forest, woodland and wetland products.

### **The Pressures**

Rufiji's forests, woodlands and wetlands have come under pressure from a range of factors including:

- the commercialisation and over-harvesting of timber and fish resources,
- the conversion of mangrove forests to cultivation,
- the use of riparian forests and woodlands for commercial charcoal-making and fuelwood,
- human population growth,
- commercial prawn farming,
- road network development with improved access,
- oil and mineral exploration, and
- upstream developments such as water extraction for irrigation and hydroelectric power schemes.

Management interventions to address these pressures have been hampered by a lack of information on ecological, socio-economic and land-use issues. Also, there is insufficient capacity for long-term integrated planning and management within Rufiji District.

The Rufiji Environment Management Project has been established to address the threats to the floodplain and delta ecosystems.

## 2 Rufiji Environment Management Project

*Project Goal: To promote the long-term conservation through 'wise use' of the lower Rufiji forests, woodlands and wetlands, such that biodiversity is conserved, critical ecological functions are maintained, renewable natural resources are used sustainably and the livelihoods of the area's inhabitants are secured and enhanced.*

### Objectives

- To promote the integration of environmental conservation and sustainable development through environmental planning within the Rufiji Delta and Floodplain.
- To promote the sustainable use of natural resources and enhance the livelihoods of local communities by implementing sustainable pilot development activities based on wise use principles.
- To promote awareness of the values of forests, woodlands and wetlands and the importance of wise use at village, district, regional and central government levels, and to influence national policies on natural resource management.

### Project Area

The project area is within Rufiji District in the ecosystems affected by the flooding of the river (floodplain and delta), downstream of the Selous Game Reserve and also including several upland forests of special importance.

### Project Implementation

The project is run from the district Headquarters in Utete by the Rufiji District Administration through a district Environmental Management Team coordinated by the District Executive Director. The Project Manager is employed by the project and two Technical Advisers are employed by IUCN.

Project partners, particularly NEMC, the Coast Region, RUBADA, The Royal Netherlands Embassy and the Ministry of Natural Resources and Tourism, collaborate formally through their participation in the Project Steering Committee and also informally.

### Project Outputs

At the end of the first five –year phase (1998-2003) of the project the expected outputs are:

- An Environmental Management Plan: an integrated plan for the management of the ecosystems (forests, woodlands and wetlands) and natural resources of the project area that has been tested and revised so that it can be assured of success - especially through development hand-in-hand with the District council and the people of Rufiji.
- Village (or community) Natural Resource Management Plans: These will be produced in pilot villages to facilitate village planning for natural resource management. The project will support the implementation of these plans by researching the legislation, providing training and some support for zoning, mapping and gazettement of reserves.
- Established Wise Use Activities: These will consist of the successful sustainable development activities that are being tried and tested with pilot villages and communities and are shown to be sustainable.
- Key forests will be conserved: Forests in Rufiji District that have shown high levels of plant biodiversity, endemism or other valuable biodiversity characteristics will be conserved by

gazettement, forest management for conservation, and /or awareness-raising with their traditional owners.

## 2.1 Pilot Village Selection

With community involvement being seen as fundamental to the entire project, pilot village selection is a priority in the first year of the project<sup>2</sup>. In the Planning Workshop held in Sept. 1998<sup>3</sup>, it was agreed that pilot village selection would begin in the final quarter of 1998. The pilot communities will be partners in the data collection and planning process for their own environmental plan and for the district's Environment Management Plan. They will also be the communities with whom the "wise use" activities will be identified and piloted. The criteria suggested for selection of these villages was based on how each of the following four ecological zones<sup>4</sup> & <sup>5</sup> are represented:

1. The Northern delta with adjacent highlands and lower floodplain
2. The Southern delta with adjacent highlands and lower floodplain
3. The Middle floodplain
4. The Western floodplain

Other criteria include:

- coherence of village community,
- signs of enthusiasm and initiatives from the communities, including the women,
- accessibility, both in physical and psychological terms,
- capacity and
- biodiversity.

The EMT (Environment Management Team) at the district level discussed these criteria and added an overall criterion of "Chances of Success". The criteria were developed into a more detailed checklist (see Appendix 1) of information needed for selection decisions and a process for selection was agreed.

The main steps in the process were as follow:

Decide criteria

Select team to do the work

Prepare team for the work

Prepare checklist

Prepare methodology for answering each point in the checklist

Do the secondary source reviews at district level

Do the fieldwork

Summarise the information

Make a report containing the information and recommendations to the EMT

EMT selects Pilot Villages

## 2.2 Team selection

The EMT assigned a team of four for the work, but within a short time one of its members was transferred out of the district. Other members were busy with other assignments. Initially, the core work was done by the two members from the DALDO's office with assistance from the REMP Technical Advisor. Later it was possible to get a Forest Officer and a Fisheries Officer involved. The new DALDO himself was available for one eight-day visit to three delta villages.

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<sup>2</sup> REMP Project Proposal document May 1997 Para 1.9.4.3 & 2.5.1

<sup>3</sup> Report of Second Planning Workshop Kindwitwi, September 1998, REMP

<sup>4</sup> REMP Project Proposal Document May 1997

<sup>5</sup> Report of First Planning Workshop Ikwiriri 1998 see, The Project Planning Matrix Pg.25 ;

### **2.3 Prepare team for the work**

This was done on-the-job by explaining how and when to use the selected methodologies and by doing a practical demonstration of each method. Reading material was supplied with time for questions and answers before application in the real situation. A few new methodologies were selected as the proposed field time was short and not many methodologies are required to get the necessary information. The methods taught were: secondary review of data, semi-structured interviewing, participatory mapping, Venn diagrams, direct observation, historical time line and transect walks. The team workers were sensitised about getting representative opinion and not being over-influenced by a few village representatives. Triangulation of information i.e. treble – checking on the authenticity of information was emphasised. The necessity to make special efforts to meet women and get their real opinions was stressed. The possibility of other people's marginalisation e.g. young people, disabled people was also raised.

### **2.4 Prepare checklist**

The original checklist was redrafted and methods for answering each item were listed (See Appendix 2).

### **2.5 Do the secondary source reviews at the district level**

The first step was to establish which villages are in the delta and floodplain. Those villages which were reached by the 1997/1998 flood were considered "in". District officials who had visited those villages during 1998 were our sources of information regarding the extent of the floods. Fifty-two registered villages fall within the delta and floodplain area.<sup>6</sup>

Rough boundaries were made between the four major ecological zones. Questions arose about the suggested zonation for example:

Are the North and South Delta ecologically different or ecologically very similar? Is it justified to represent both when selecting pilot villages? The size of the delta in relation to the whole project area could be a consideration? This may justify the selection of two villages in the delta as in the original suggestion. It was decided to work with the original suggestion and select two delta villages.

Should the Lower floodplain, where it bounds the delta, be considered as a separate ecological zone? There are villages on the margin of the floodplain and delta, which could well be biodiversity "hotspots" but would not represent typical floodplain or typical delta conditions. We asked whether a village was really floodplain or really delta in order to get typical representatives of these zones. In the future, perhaps the Lower Floodplain/Upper delta area can be considered as a fifth ecological zone and a pilot village be selected there.

The next step was to search for as much information as possible at district level about each of the fifty-two villages under the checklist headings. Some information such as distances and time taken to reach villages (DE, DMO and DALDO), religion, service delivery, physical accessibility, NGO's, ethnic mix, and present donor projects was reasonably easy to obtain. Other information was unreliable or not available for example:

Village area information is available from the Region but only gives the area of the central part of the village when registered in the late 1960's or early 1970's and does not give land area of the whole village including forests, lakes, rivers etc which fall within the village boundaries. For that reason, it was not considered worthwhile to obtain the registration maps.

Population figures are available in the district profile (1997) but are extrapolations from the 1988 census (adding and compounding 1.3% p.a.). Population figures are available in the DALDO's Office for each village giving household numbers but not total population numbers. Their source is

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<sup>6</sup> See full list in Appendix 4

village and ward offices in 1997/1998. They were compared to the District Profile figures. Where large discrepancies were found the DALDO figure was taken. On the other hand the figures available from the DALDO's office regarding target acreages of crops were found to be very unreliable as estimates of the acreages grown in each village.

#### **Natural resource use**

Figures available from the DNRO's Office regarding natural resource use are very limited both in number of villages covered and information about the users in those villages. The information is based mainly on licensing data, which is itself limited. For instance, it is known by the DNRO office that charcoaling is an important economic activity in the district but no licenses have been sold for this activity in the recent past.

#### **Economic activities**

Because of the difficulty of getting accurate information about the acreages, fish catches, quantities of timber sold etc. it was decided to rank the three most important economic activities in each of the 52 villages by interviewing various officers within the district who are familiar with particular villages. This gives a rough idea of the villager's dependence on different natural resources and to some extent the level of pressure on natural resources to expect.

Leadership, enthusiasm, psychological accessibility and capacity were discussed with officers who had experience of working in particular villages. Their opinions were noted. Ward files were checked for information regarding development levy, revenue collection records and for information regarding leadership.

The secondary data searches at District level took more than one month to complete because some key personnel were not available due to travel for other duties.

#### **Shortlisting**

It was decided that as few villages as possible should be visited in order to leave the least number of villages with unmet expectations to a minimum and also to save expense and time. The information was summarised in tabular format on flipchart sheets and in a first draft of a computer database of villages of the project area. The villages were ranked by individual team members and the rankings were summarised in a special meeting which shortlisted two to three villages in each ecological zone. A total of nine villages were shortlisted, but a reserve list was maintained.

### **2.6 Do the fieldwork**

The preparations for the fieldwork included field team selection, preparation of a fieldwork plan, timetabling (see Appendix 3) and logistical arrangements. It was decided that one and a half days, including one night sleeping there, would be spent per village. It was decided that no pre-information would be given in order that the team get a true picture of the village.

The limitations on the team, during the visits to the western and central floodplain villages in December and January, were time, distances within villages, the season, school holidays and lack of expertise in natural woodlands and biodiversity. In a short time it is not possible to get any in-depth knowledge of the village, only first impressions.

Distances within the villages meant that foot travel across the whole village was not possible, therefore some areas were visited by car and distant forests were not visited. Schools were on holiday and so school attendance and school records were not observed.

Clarification as to the administrative locations of some bodies of water delayed selection in the central zone. Also the central floodplain has three large settlements. It has few discrete villages. Leadership difficulties limited the pool for selection.

Arrangements for travel to the delta had to be postponed twice and finally the launch of the project boat was awaited because hire of existing facilities was too expensive and complicated. Visits to the delta began in March. Travel was very difficult because of the low level of water in the River Rufiji and the presence of sandbanks. Utete to Mbwera took 21 hours on one occasion.

Tides had to be considered, which is not an easy task even with tide tables in hand! It depends on the destination as to how much of the incoming or outgoing tide is needed to get one around that particular point or through that particular channel. Thus, the experience of wading thigh deep in mud to enter Kiomboni village and waiting three hours for a certain level of tide to get us from Kiomboni to Simba Uranga.

Later, the rains and flooding assisted river navigation (Utete to Jaja in eight hours), but made conditions very uncomfortable as the mosquitoes were numerous and active throughout the day and night. Also the field and camping equipment had not arrived and sleeping arrangements were not always waterproof.

The roads deteriorated dramatically during the last weeks of March making car travel impossible.

A total of eleven villages were visited.

### **2.7 Summarise the information**

The information collected in each village is summarised in individual village reports in Kiswahili and English (see Appendix 5). A copy of the relevant village report, together with transect maps, has been given to the village. Each village was informed by letter as to whether it had been selected as a pilot village or not. The villages within each zone were ranked according to the agreed criteria and discussed by the field team members who had to defend their choices. On selection of each of the pilot villages the reasons why were outlined.

### **2.8 Make a report containing the information and recommendations to the EMT**

Interim reports explaining the choices were presented to the EMT and approved. This is the final report, explaining the reasons for the choices made and attaching eleven individual village reports (Appendix 5). The report is also available in Kiswahili and is to be presented to the Full Council of Rufiji District and also the Project Steering Committee.

### 3 Pilot Villages chosen and Rationale for choices

#### 3.1 Western Floodplain

It is recommended that the project work in Mtanza/Msona in the Western Floodplain because it complies reasonably well with most of the criteria which were used. It is very close to the Rufiji River and the villagers' lives are very much influenced by the river which floods into their fields and their lakes almost every year. The climate is typically semi-arid as recorded for the Western Floodplain. The physical area of the village is unknown but it is clear that there is a large area of land possibly (60km x 20km) and a wealth of natural resources. There are some pressures on the natural resources, particularly the forests, but as yet the villagers are not very concerned about the state of the natural resources except that they resent losing them to outsiders and state authorities. If awareness was raised, the potential to improve environment management is good. In terms of population, it seems to be an average-sized village for the area. Although the village is cut off by road in the wet season, it is accessible by river all year round. The river gives access to the main cultivation area of the village. Although the village is an amalgamation of two villages it is reasonably coherent. If the proper protocols are followed it should be possible to get co-operation from both Mtanza and Msona. The majority of the population come from one ethnic line and are of one religion. Women are accessible and quite vociferous. No major leadership problems were detected. When compared with Ngorongo Mashariki, the other shortlisted village for the Western Floodplain, it was found that Mtanza/Msona is under greater physical influence of the river, the villagers and their land and wetland areas are more clearly defined, and are more accessible than Ngorongo Mashariki. Mtanza/ Msona is less well served with both government and private services and seems slightly poorer than Ngorongo Mashariki. (See individual village reports)

#### 3.2 Central Floodplain

The Central Floodplain has large villages and small towns such as Utete and Ikwiriri. The latter is an amalgam of nine villages. There are very few villages which are clearly defined economically and socially. It was therefore difficult to find villages which fit the criteria. Three villages were shortlisted for further investigation i.e. Ruwe, Utunge/Nyanda and Mgomba Kaskazini. In Ruwe it was realised that in order to work

with Lake Ruwe it would be necessary to work in four villages including Mkongo A, Mkongo B, Mbunju and Ruwe itself. It was felt that this would be too great an undertaking for the first phase of the project and that it would be unwise to try to work where leadership problems are already known. Utunge/Nyanda was found to have leadership problems and also it is not a coherent village but acts as three separate villages with emphasis on different economic activities. The main reason for shortlisting Mgomba Kaskazini was the incorrect understanding that Lake Uba was under the sole control of this village. Mgomba Kaskazini was found to be an urban area and L. Uba is not under its sole control. Mgomba Kusini was visited because it was seen as less urban than Mgomba Kaskazini and also seemed to have a lake under its jurisdiction (L.Ilu) and contains the site for the new bridge. However it was found that Mgomba Kusini is not a discrete village in terms of where its population fishes and cultivates. Its resource use is complicated with that of the eight other villages in the Ikwiriri urban area and also it has leadership difficulties. Mbunju village claims to control Lake Uba and is a discrete village where we did not detect major difficulties with the leadership. There are secondary connections from the Rufiji River which flow into two rivers in the village's land area and the village bounds the Rufiji River to its south. The Ruhoi River also flows into Mbunju's floodplain. There is some consciousness of the loss of natural resources, particularly valuable timber trees and some efforts have been made to redress the situation. Mbunju is accessible by road either via Ikwiriri or Mkongo. The road is under repair and hopefully will be passable even during the wet season. There are no other development projects in the village which seems relatively poor in comparison to other neighbouring villages (e.g. Ruwe). There is a tendency towards a begging attitude. It is felt that Mbunju is more suitable than the other villages in the Central Floodplain as a pilot village.

### **3.3 Northern Delta**

Twasalie was compared with Kiasi and Kiomboni. Kiomboni was eliminated because it is already quite aware of the value of its environment and has strong interactions with environment and human rights NGOs from Tanzania and elsewhere. It is the centre for the struggle against the establishment of a major prawn farm in the delta. The leaders are very much occupied by the court case against the government and were very suspicious of a government project which might aim to help them to manage their environment better. The Mangrove Management project is more active in Kiomboni than either of the two other villages. All three villages have obvious leadership weaknesses. Kiasi's leaders were hesitant or perhaps resistant to our requests to see mangrove – pole cutting and to sleep in the centre of the village. There were long delays before the public meeting could be held and there was a lack of openness as to why. Kiasi is not a compact village and does not have command over the areas which its villagers cultivate. Twasalie's leaders are blamed for delaying the progress of community projects, but they were open, welcoming and responsive to the teams other requests. Twasalie has a very rich natural resource base encompassing the most important prawn fishing sites on the Tanzanian coast and also large areas of cultivable grassland. The economic activities (fishing, farming and mangrove pole cutting) take place at long distances from each other, but boat travel will make most of the village accessible. Twasalie is sensitive to the value of its natural resources and is quietly strong in the struggle against the AFC prawn farm. Twasalie villagers claim that they do not farm in the mangrove areas. With education and support the village has the potential to earn greater revenues through better management of its resources which are under great demand by outsiders. Twasalie was chosen as the pilot village to represent the Northern Delta.

### **3.4 The Southern Delta**

Mbwera Mashariki and Jaja were shortlisted. Mbwera Mashariki operates as a “Siamese twin” of Mbwera Magharibi. It does not have its own market place, but depends on Magharibi. Similarly its agricultural activities are in its twin village which is also the Divisional Headquarters. Decisions about any activities in Mbwera Mashariki are not independent of Magharibi. It was felt that the overlap of so many economic and administrative issues between the two villages would make working with one of them very complicated and cumbersome. Jaja is clearly an independent village even though its cultivation areas are not within its own boundaries. Jaja is more accessible than Mbwera which has only one long narrow channel which is tide dependent. There are three routes by which to access Jaja. Jaja is more exposed to environmental over-exploitation than Mbwera. There is a degree of concern for the natural resources in Jaja where long closed seasons for prawn fishing were suggested. Women are reasonably accessible, by delta standards, in Jaja and are confident and vociferous at their economic production sites.

## **4 Lessons learned**

### **4.1 Do the groundwork well**

Even if the team is impatient to get to the villages, it will save time, including villagers time, if the team learns as much as possible about the villages it plans to visit from records held at District level. Written records, as well as oral information from experienced district staff were invaluable to this team. It is not often that departments work in an interdisciplinary way and the team gained a wider understanding of the work of their colleagues in other departments e.g. education, health and works. The information obtained was compared with on-site information and will contribute to correcting District statistics, particularly in relation to population.

### **4.2 Systemise report writing**

By referencing our individual notes with the labels used for the criteria (e.g. B4 for Economic activities or C5 for Conflicts and Solidarity, as in Appendix 2) it was possible for one person to take all the notes about one village visit and summarise them into a coherent report. This saved time.

### **4.3 Make a shortlist, but keep reserves as well**

Making a shortlist of villages was vital to carrying out the selection process within a reasonable amount of time. However it was important to also keep a reserve list for each area as we met some unexpected difficulties with the number one and two priority villages.

### **4.4 Develop more strategies for women's participation**

In most villages the team had to be proactive in ensuring that women attended public meetings. It was often necessary, not only to ask the leaders to ensure that women were invited to the meeting, but also to refuse to start a meeting without them. In all cases the team succeeded in getting women's participation but it is clear that it will continue to be difficult to ensure their involvement in meetings, particularly large public meetings. For direct work with women there will not be major difficulties as we found that women in their shambas or at their salt-making sites were accessible and confident. It is clear that men will need to be sensitised to the importance of women's involvement in decision-making and be encouraged to facilitate them to do so.

### **4.5 Mapping and Drawing**

When introducing mapping to people it is very important not to announce that we are about to do mapping or drawing. The reaction is usually that "it's for academics and that we can't draw". It is better to just get someone started on it by asking them to put a mark where the mosque is or the school or whatever point in the village they are familiar with.

### **4.6 Turn up unannounced, but early**

Although we were told that this was not normal and the team was nervous about it, it was a very good strategy for getting to know what the villages are really like e.g. whether they genuinely welcome visitors, whether the leaders are normally present and if not whether they appoint representatives. We inconvenienced our hosts and suffered on a few occasions when we arrived late. It is advisable to arrive in the early afternoon.

### **4.7 Gather many opinions**

It is sometimes very difficult to avoid being accompanied everywhere by a particular village leader or vociferous person. One method is to split the team and take different routes. Another is to explain that you want to meet particular focus groups e.g. the salt-makers, the weavers, the fishermen.

### **4.8 Learn to deal with dominators of meetings**

In large public meetings, where the Village chairperson is facilitating, there were individuals who constantly inputted their opinions. This meant that others remained silent. We dealt with this by

breaking the large group into smaller groups. However this is not always possible especially in formal village assembly meetings which are statutory decision-making bodies. Taking over the chair is not an option in this case either. More thought needs to be put into solving this problem, possibly including a briefing for the chairperson in advance about setting ground rules.

#### **4.9 Be transparent**

It is very important to show people what you are writing about their village and to feed it back to them in public where possible. An example of how note-taking can heighten suspicion of visiting teams was experienced in Kiomboni where people were not prepared to give their names or occupations unless we put our pens and notebooks down. The main advantages of transparency are development of trust, quick corrections and building a sense of pride among the people for their village and its resources.

## 5 Appendices

### Appendix 1: Selection of Pilot Villages - a note for EMT meeting of 16th October 1998

Because community involvement is seen as fundamental to the entire project process, pilot village selection is a priority in the first year of the project (project document 1.9.4.3 & 2.5.1 ). In the Planning workshop held last month Sept. 21<sup>st</sup>) we agreed that pilot village selection would begin this Quarter. The pilot communities will be partners in the data collection and planning process for their own environmental plan and for the district's Environment Management Plan. They will also be the communities with whom the "wise use" activities will be identified and piloted.

The criteria suggested for selection of these villages are;

#### **A. Representation of the following four ecological zones (see The Project Planning Matrix, footnote iv.);**

- 1.The Northern delta with adjacent highlands and lower floodplain
- 2.The Southern delta with adjacent highlands and lower floodplain
- 3.The Middle floodplain
- 4.The Western floodplain

#### **B. Representation of its zone**

Ecologically, Size (area, population),  
 Natural resource use,  
 Economic activities,  
 Ethnic mix versus uniformity,  
 Socially (family/household and social organisation characteristics),  
 Wealth/Poverty,  
 Service delivery, etc ????

#### **C. Coherence of village community**

Physical closeness / barriers to physical internal communication  
 Evidence of trust in leadership, e.g. collective tasks, community development projects, mass participation in decisions & actions, democracy???  
 Uniformity of ethnicity  
 Uniformity of religion  
 Organisations for various purposes. Which purposes? What is important to them at present?  
 Migratory/ transhumance habits  
 Conflicts  
 Solidarity  
 Women's freedom, participation and confidence.

#### **D. Signs of enthusiasm and initiatives from the communities, including the women.**

Environment management measures on any level (the household, ten-cell, sub-village, village).  
 Expression of environmental worries among priority needs, and /or by means of complaints to authorities.  
 Level of implementation of laws/ byelaws in relation to the environment.  
 Cases, fines, licence-giving in relation to land use, water use, timber, charcoaling.  
 Initiatives for other types of development e.g. self-help projects independently of donors or govt.  
 Attitudes to outsiders and government e.g. dependent, independent, welcoming unquestioningly, fatalistic, threatened, suspicious, tired ???  
 Presence of NGOs for community development.

**E. Accessibility, both in physical and psychological terms.**

Physical accessibility in wet, dry season, tides, by what transport means (walking, bicycle, 4wd, boat).

Time involved in getting there.

Psychological accessibility; Attitudes (as in D above plus acceptance/resistance new ideas, too concerned with other matters , too poor & struggling or too busy making money , migratory and difficult to meet).

**F. Capacity**

Standard of village management.

Number and demands of other development projects.

**G. Biodiversity**

“hotspots” / Ecotones, areas on the margins between ecological zones e.g. floodplain grassland to forest.

**H. Other criteria**

Overall criterion of “Chances of Success.”

Overall consideration of what constitutes a village?

Maps showing settlement all over the floodplain (1:50,000).

**Draft Procedure for selection of pilot villages**

Decide criteria

Select team to do the work

Prepare team for the work

Prepare checklist

Prepare methodology for answering each point in the checklist

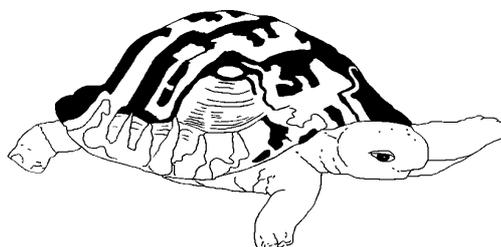
Do the secondary source reviews at district level

Do the fieldwork

Summarise the information

Make a report containing the information and recommendations to the EMT

EMT selects Pilot Villages.



**Appendix 2: Checklist for field work – Pilot Village Selection**

Village Name:

Name of Village Chairman and Executive (Mwenye Kiti Mtendaji)

Location of village:

Lat.: Long.:

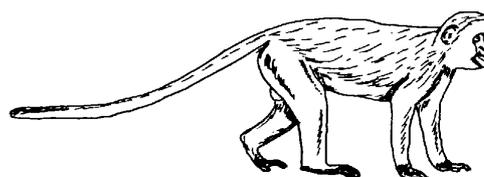
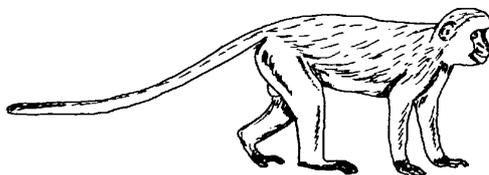
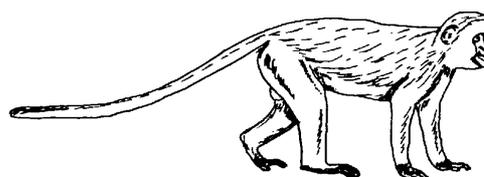
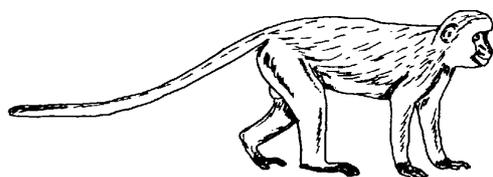
Distance from Utete:

Time to get there from Utete:

<b>Issue</b>	<b>How to get the information</b>
<b>B. Representative of its Zone</b>	
1.Size- Area	Ask at village office
	Do a social map
	Do a transect walk
2.Population	Ask at village office
	Do a social map with sub-village leaders
3. Natural Resource wealth and use/pressure	Revenue figures –proportions from fisheries , forest products (timber and non-timber) etc
	Direct observation during transect walk
	Natural resource maps with women and men separately . Site the resources and their uses e.g. water and where it is collected for domestic use, where people fish etc.
4.Economic activities	Ask at village office for numbers of people involved in each occupation
	Ask at least four people(two women, two men) to individually score the occupations for economic importance.
5.Uniformity of ethnicity	Ask at least four individuals (two women, two men) what is the tribal mix and if the tribes live well together.
	Ask at village office
6. Uniformity of religion	During social mapping observe presence of mosques and churches
	Ask at least four individuals (two women, two men) what religions are present and whether they live in harmony.
7.Social organisation at household level	Ask sub-village leaders during social mapping ,what constitutes a kaya
	During transect walk make observations of who is present in at least five kayas
8. Wealth /Poverty of village	Number of bicycle licences issued by village
	During social mapping ask who is wealthy and where in the village they live. Ask if the village is better or worse off than the surrounding villages.
9. Service delivery	Social map- sites of services
	Direct observation- is there a school? Is it operating? Are there lots of children not at school?
	Ask at least four individuals (2 women, 2 men) where they get their water, health care and education
<b>C. Coherence of the community</b>	
1. Physical closeness	Social map-get some rough distances, or a rough scale on the map.
	Take GPS readings in each extremity of the village.

2. Evidence of trust in the leadership	Payment of taxes and development levy- see records at village office.
	Ask at least four (two women, two men) what collective tasks have been done in the village in the past five years. Ask if those tasks were successfully completed and why ?
	Ask the leaders how they view their own performance/capacity(Do you think you are good leaders?)
	What do we the team think of the capacity of the leaders we have met?
3. Organisations (are there NGO's for social or environment purposes?)	Venn/leaf/stone diagram representing each organisation and their importance. Do separately with a group of women and men.
4. Migratory habits	School attendance according to seasons
	Ask at least four people where do people go to get their income throughout the year. Other means ?/ occupancy of houses depending on seasons, nature of housing.
5.Conflicts and solidarity	Look for signs of conflict during discussions at all levels
	Look for signs of solidarity e.g. helping each other at times of harvest, shortage, flooding, level of and regularity of community activities.
6.Women's freedom, participation and confidence.	Observe whether women are seen in public places. Ask about women's associations for business , sport or cultural activities. Ask about women's participation in village decision-making. Ask women and men separately about gender division in control of household assets and income.
<b>D. Signs of enthusiasm and initiatives</b>	
1.Environment management measures at any level (household, ten-cell, sub-village, village)	During Transect walk look for natural forest management measures, tree-planting, permanent plants in fields, tree-coppicing, pollarding, patterns of fallow, mulching or other fertility or conservation measures.
2. Environment destruction	During transect walk. Removal of forest, charcoaling, small fish, few fish. Use direct observation and ask people how the environment was before.
3. Expression of worries about the environment.	Complaints to village government.- ask to see minutes of meetings and letters of complaint about over-use of natural resources e.g. timber removal, charcoaling, fishing
	Ask the village leaders and at least four individuals if the government sells licences to people for natural resource use, How many per year?
	Does the village have any byelaws regarding the environment? Which ones does it enforce? Have they made any new byelaws recently?
	Court records re cases and fines for illegal use of natural resources.
4.Initiatives for development	Transect walk- observe any private or group activities

	and make enquiries.
5. Attitudes to outsiders and government	Opinion of the team regarding Enthusiasm, dependence or independence, suspiciousness, fatalism
	Social map. Any new buildings or enterprises ?
<b>E. Accessibility</b>	
1. Physical accessibility	Take mileage reading
2. Psychological (see D above)	Note road conditions and ask if the road is passable in the wet season. Note possible mooring points for a twenty-foot boat and access by car and trailer to these points. Also note security for a boat.
	Measure time taken to get there from Utete.
	Note mode of transport used. Consider travel within the village and how best to access the whole village.
<b>F. Capacity</b>	
1. Standard of village management	Direct observation –opinion of RRA team
	Satisfaction of villagers with their leadership(See C.2)
2. Number and demands of other development projects	Ask government what other projects they have or are planning and how much time and labour they involve
	Ask at least four villagers the same question
<b>G Biodiversity</b>	
	Transect walk- not any areas which look very unspoilt and diverse in species.
	Resource map



### Appendix 3: Fieldwork for pilot village selection

It was decided that one and a half days, including one night sleeping there, would be spent per village.

#### Timetable at each village with suggested methodologies

Day 1	
1.a. Introduce ourselves to the Village Chairman and Village Executive Officer	Suggested Introductory explanation: Tumetoka wilayani . Wilaya imepata mradi wa usimamizi mzuri wa mazingira. Mradi unaitwa MUMARU/REMP. Madhumuni yake ni kuwashauri wananchi na Halmashauri katika ngazi zote kuhusu matumizi bora na udhibiti bora wa mazingira. Mradi unapenda hasa kufanya kazi katika bonde la Rufiji kwenye tambarare ya mafuriko na visiwani (delta). Haiwezikani lakini kuanza katika vijiji hamsini na viwili vyote vya eneo hilo mara moja. Kwa hio lazima kuchagua vijiji vichache vya kuanzia. Vigezo vya Timu ya Mazingira ya Wilaya ni vingi kama vifuatavyo; A. Ikologia, B. Uakilishi wa kanda yake (kwa ukubwa, makazi, uchumi, dini, kabila, jamii, huduma n.k.) , C. Umoja wa jamii, uongozi, tabia za kuhama, D. Hali na matumizi ya mazingira, E. Ufikiki , F. Uwezo, na miradi mingine mabalimbali.
1.b. Logistics	Kueleza kwamba tunapenda kulala na kufanya mpango wa chakula, malazi. Kueleza ratiba yetu na kuomba kukutana na wanawake wakilishi wa vitongoji vyote na viongozi wa vitongoji kwa kesho muda wa kuwafaa wao.
2.a. Collect statistics from the village office	Verification of data already collected at district level. Collection of new information as per the checklist.
2.b. Take a G.P.S Reading	Take a G.P.S. reading in the most central part of the village, for example at the school, village office.
3.a. Natural resource mapping	Ramani ya maliasili na matumizi yake. It is important that both women and men do this exercise preferably in separate groups.
4.a. Transect walk	Following the mapping exercise it is useful to choose a transect across as many ecological / agro-ecological zones as possible and if possible the whole length or breadth of the village. See the checklist for items to note during the walk which should be done with a small number of men and women who know the village well.
5.a. Check the checklist/tidy notes	Read through the checklist together and see what has been achieved and what is outstanding.
6.a. Rest/relaxation	Food, organising tents, sleeping accommodation etc.
Day 2	
1.a. Walk to fields, forests, and lakes and meet the people.	It is good to split the appraisal team so that they can meet a wider range of people and ask the outstanding questions or further opinions on the same questions as the previous day.
1.b. Venn Diagrams about village organisation	Venn diagramming can be used with individuals or groups to learn about the way the village is organised and what NGOs , religious other bodies have power in the village. This can lead into discussions about leadership quality and the unity or conflicts occurring between the power groups.
1.b.1	This is very useful for learning about the major events in the village over

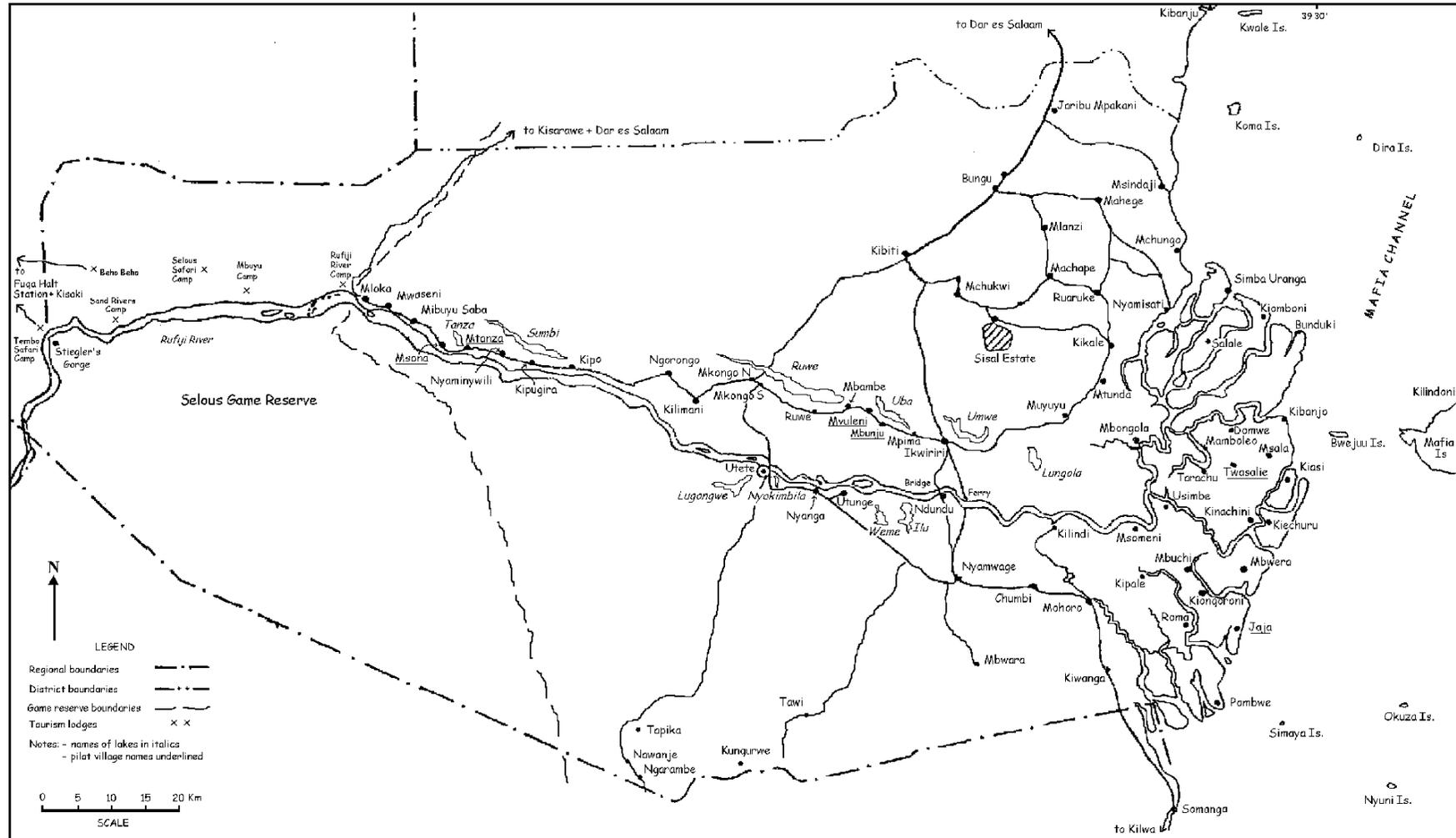
Historical time line	the lifetime of an older person or persons. It is particularly helpful for learning about floods and droughts and how people coped with them.
1.c School visit	School attendance can be an indicator of seasonal migration, the health of the children an indicator of wealth, nutritional status of the whole village and other issues. Teachers are often from outside and have a particular perspective on a village. They also have a role in environment education and their willingness and past efforts in relation to the environment should be noted.
2.a. Meet women representatives of sub-villages and sub-village leaders.	Do the introduction of the purpose of the visit again. Do a social map (see checklist for the issues a social map can cover)
3.a. Review checklist	Review checklist again and complete undone items.
4.a. Say “thank you” and “goodbye”	Don’t forget to mention that we will send a report of our visit and that we will write a note to the village chair and executive as to whether or not we have selected the village. Leave the flipchart copies of the maps behind and only take a copy transferred onto A4 paper.

**Appendix 4: Sample of meeting format.****Mfano wa Ratiba ya kikao na waakilishi wa vitongoji**

Namba ya hatua (Step)	Kufanya nini (Activity)	Muda wa kutumia/dakika ngapi. (Duration in minutes).
1	Kujitambulisha sisi na wao. Introductions	10
2	Kuelezea madhumuni ya safari Explanation of the purpose of the visit.	5
3	Mazungumzo na ramani ya kijiji na mali asili yake. Mapping and discussion about the village and its natural resources.	60
4	Kugawa vikundi na mazungumzo katika vikundi kuhusu mali asili, mashirika huduma na ushirikiano na uongozi. Group descriptions of natural resource issues and of the organisations of the village.	40
5	Kushukuru na kuaga. Kuelezea kuhusu ripoti na ramani. Thanks and goodbye and logistics regarding feedback report and maps.	5



Appendix 5: Map of the villages of the floodplain and delta



Map 2: Villages of the floodplain and delta

## Appendix 6: Village field visit report -Utunge Nyanda Village

### 1.0 Name and Location

**Name of Village:** Utunge/ Nyanda

**Village Chairman:** Shaban Shamte Libopo

**Village Executive Officer:** Has recently resigned.

**Distance from Utete:** Utunge 16km, Nyanda 11.2Km, Kindwitwi 5Km

**Time taken for journey:** 45 minutes by car.

**Location:** Central Floodplain

### 1.1 G.P.S. Readings

**Table 1: GPS readings of Utunge Nyanda Village.**

Place	Latitude (South) Deg.Mins and decimal points	Longitude (East) Deg.Mins and decimal points
Nyanda, Centre of village at Mgahawa	8.00.87	38.48.92
Utunge school	8.00.76	38.51.48
Lake Weme	8.02.56	38.53.42
Mashamba ya Kanga, Utunge	8.00.12	38.51.67

### 2.0 Population

**Table 2: Population of Utunge Nyanda Village**

	Households	Population
Nyanda	209	1012
Utunge	480	
Total	689	

### 3.0 Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and Lakes:

1 River: Rufiji River

Lakes: Ilu, Kanga, Kigunguli, Wamenyana, Mng'undatanda, Weme, Mshamu, Nyancheke, Sareh and Utunge.

##### 3.1.2 Forests

The forests and woodlands were listed as follows; Kitembangalo, Kimbukwa, Nyakikwasu, Mangunda, Tinindi, Mateleza and Kiwesiba. The village bounds some government forest reserves including Mantwange, Kimbungu and Mei. They are not allowed to use these forests for anything.

#### 3.2 Use/ pressure

Lakes Nyancheke and Kanga which are near the village centre of Utunge are used for domestic water supply. Fishing is carried on in all lakes.

The tree species used for timber and building are Mikongo (*Azelia quanzensis*) and Msekeseke (*Swartzia spp.*) which are being logged at present. There are approximately ten timber sawyers. For building Mikulu and Mipingo (*Dalbergia melanoxylon*) are used. Dugout canoes are made from Mngama, Mnene, Msufipole and Ndundu. Fallen trees and branches are used for fuelwood. The distance to such trees and branches is increasing. Palms (*Hyphenae compressa*) are used for thatching roofs.

Revenue collection for natural resources is not done at village level but at the District Headquarters and the villagers do not know how much is collected. The percentage due on the cashewnut revenue has not been returned from the District.

Although there is honey in the forests, there is no harvesting because “it is not permitted by the District Natural Resources office” People do not collect honey because according to Utunge residents the bees are very cross and very few villagers know how to deal with them. At Nyanda we were told that the forest Dept. forbids people to harvest honey.

#### **4.0 Economic Activities**

Agriculture, fishing, timber-cutting, petty-trading, livestock husbandry and weaving are the main sources of income. Fishing is probably the most important activity in Utunge while timber cutting is the most important to the Nyanda people and agriculture to the Kindwitwi inhabitants.

##### **4.1 Agriculture**

The crops are maize, rice, cowpeas, cashew, mangoes, pumpkins and sweet potatoes. The cultivated areas are at Nyanhekwa, the plain around Kanga Lake and down to the Rufiji River. The shambas begin within five minutes of the village on rich black clay soil. After flooding, in June, maize and pumpkins are sown. These are harvested from September onwards. The maize stalks of approximately 1.5 feet are left standing in the fields and the next sowing (November/December) follows without further cultivation. Sometimes fire is used to clean the shamba of weeds. No fertiliser or chemicals for pest or disease control are used. In March further planting of maize intercropped with rice is done. All cultivation is done with hand tools. Wild animals such as baboons, elephants, monkeys and wild pigs cause damage to crops.

##### **4.2 Fishing**

All men from the age of seven years can fish. Women fish by a method known as “kutanda”. The fish species caught are Mpunga, Pele, Ngacha and Beme. There are several outsiders, including Machinga from the south, involved in fishing. They get permission from the Village Chairman to live in the village. Licenses are 6,000/= from the District Council but few pay them. Licenses for transporting fish must be paid otherwise one risks being stopped at the Kibiti barrier. At Weme lake there can be thirty fishermen per night.

##### **4.3 Small business**

Women make maandazi and vitumbua and bring these and other foods to the fishing camps which are up to two hours walk away. There are small shops in Utunge, Nyanda and Kindwitwi supplying basic goods.

###### **4.3.1 Timber**

In Utunge sub-village there is some timber cutting, but the important tree species are said to be wiped out. The people of Nyanda (80 lumberers) are much more dependent on lumbering and they cut Mkongo (*Azelia quanzansis*) and Msekeseke (*Swartzia spp.*) and sell both logs and planks. The main loggers are outsiders especially waHehe who come with licenses from the district Council and their own transport.

###### **4.3.2 Charcoal making**

Charcoaling is carried out by a small number of Nyanda people Six bags of charcoal were seen ready for sale at Nyanda.

###### **4.3.3 Carpentry**

There are several people engaged in carpentry.

#### 4.3.4 Livestock-keeping

Most households have chickens or ducks that forage in the wild during daylight hours and are shut up at night. Mongoose and jackal are said to kill the poultry even in daylight. Youths make traps for birds and keep them. The final use of these birds is unknown.

#### 4.3.5 Weaving

Weaving is done in all the sub-villages where mikeka, vitanga, majamvi (types of mats) and matuti are made. An mtuti is a sack-like article made from palm leaves in which a person sleeps for protection from insects. It is mainly women who weave.

### 5.0 Uniformity of Ethnicity

The majority of inhabitants are of the Ndengereko tribe. There are a few waNgindo, waMatumbi and waPogoro living in the village.

### 6.0 Uniformity of Religion

Apart from a few Christians at Kindwitwi, the population is Moslem.

### 7.0 Social organisation at Household level

It is generally considered that the household is the group of people controlled by a man even if he has more than one wife and more than one house. A household will usually consist of a man, his wives, children and relatives who are dependent on him such as his parents.

### 8.0 Wealth and Poverty

We did not see evidence of abject poverty. Poor people are considered to be those whose children's clothes are worn or dirty and who do not have enough maize flour to eat. They cannot afford to buy rice. They offer themselves as casual labour to those who are richer. Signs of wealth are good clothes, a bicycle, a corrugated-iron roof, a shop a sewing machine and being able to afford to eat rice.

### 9.0 Service Delivery

#### 9.1 Education

There is a primary school at Utunge with 83 female and 85 male students. Registration of students is about 75% of those of school-going age and attendance is good. There are problems collecting the UPE, Umitashimta and desk contributions because of low incomes and little awareness of the education policies. The primary school at Katundu serves the children of Kindwitwi and Nyanda. There are teacher shortages at both schools.

#### 9.2 Health

The Utunge dispensary serves the two sub-villages of Utunge. The Nyanda people travel 4.8kms to the dispensary at Kindwitwi. Serious illnesses are referred to the District hospital at Utete. There is a CBD service relating to family planning in the village.

#### 9.3 Water

Drinking water for Utunge is obtained from Nyanhekwa and Kanga lakes. Kanga dries up in drought years. Nyanda sub-village gets its drinking water from the Rufiji River. Kindwitwi gets its water from Chemchem Lake which is filled from the Rufiji River at times of flooding. The water system built at Nyanhekwa near Utunge is out of order since 1980.

#### 9.4 Travel and Transport

Nyanda and Kindwitwi are on the main road between Utete and Nyamwage and are accessible all the year round from Utete. Utunge is approximately 2.5 kms off this road on a good track which is maintained by the community. By river all are reachable from Utete. Pumpkins from Utunge are transported to Ndundu by dugout canoe for sale.

### 9.5 Milling machine.

The village-owned milling machine at Utunge is broken down. The nearest one is 10.1 km away in Kindwitwi. When the Kindwitwi machine breaks down the maize has to go to Utete.

### 9.6 Other services.

There are bicycle repairers, carpenters, and shops available in the sub-villages.

## **10. Coherence of the Community**

### 10.1 Physical closeness

The Rufiji River is not blockage to communications between the village centres and the shambas south of the river. All parts of the village are accessible by dugout canoe, bicycle, walking or car.

### 10.2 Evidence of trust in the leadership

In discussions with people they said that their leaders are okay but we were told that the Village Executive Officer has resigned due to a tax and license fee collection issue. We were told that the “small fish are being swallowed by the big fish”. This related to the way that natural resources revenues were being assimilated by the District and Ward levels to the deprivation of the villages level. There was a suggestion that this might be the reason for the Executive Officer’s resignation.

The women expressed great annoyance at the District Council including the Member of Parliament in relation to a promise of loans under the government’s Women’s Loan Scheme.

The women are also dissatisfied with their low representation (4) on the village council (24).

In general it was felt that there are three communities acting separately except when told by higher authorities to take joint action. These three communities which act independently are Utunge, Nyanda and Kindwitwi.

### 10.3 Organisations, NGOs and groups.

Aid organisations which have been here recently are The Red Cross and Norwegian People’s Aid who distributed food after the 1997/98 floods. The political organisations are NCCR Mageuzi and CCM. The women’s wing of CCM, UWT and the youth wing UVT are also active. CCM is deemed to be the most powerful organisation followed by the Moslem religion. There are two cultural troupes, Jando and Unyago who perform on occasions such as “coming-out” parties for brides. There is a leprosy centre at Kindwitwi which gets funding from overseas.

## **11.0 Migratory habits**

### 11.1 School attendance patterns

We told by teachers that migration is not affecting school attendance because, even when the parents are in the fields north of the river, there is a home in the centre of the village where the children can stay. A lot of the shambas are close enough for the students to commute daily between school and shamba. The houses in the shambas are of a temporary nature (madungu) but are built on poles raised above regular floods. Men migrate between the houses of their wives.

## **12.0 Conflicts and Solidarity**

There is cooperation between relatives for crop harvests. Community cooperation occurs during funerals and festive occasions e.g. coming-out parties which involve drumming troupes. There is community cooperation for road maintenance. The sub-villages of Utunge who are not involved in repairing the road between Utete and Mohoro, do repairs on their two internal roads which join this major road.

We got no written details of conflicts. We were told about the Village Executive’s resignation which seemed to relate to revenue collection.

There was once a village tractor obtained on loan. When the village failed to repay the loan the tractor was repossessed. All efforts to get donors involved in village development since then have failed.

### 13.0 Women's Freedom, Participation and Confidence

On our arrival at the Utunge village centre it was easy to access the men and youths but no women seemed to be easily available. When we called a women's meeting the attendance was good and the women had no problems expressing themselves to a male stranger. At Nyanda where we met women together with men at the Mgahawa (café), the women were quite confident and spoke openly.

### 14.0 Signs of Enthusiasm and Initiatives

#### 14.1 Environment management measures at any level

There were some signs of environmental care. For example there are still some large specimens of Mpingo (*Dalbergia melanoxylon*) in the forests between the village centre and Lake Weme. The forests bordering the lake are more or less intact and there was very little agriculture near the lake. The woodlands between Nyanda and Utunge are not badly degraded. Trees are planted around Katundu School and cashews are being propagated by farmers.

#### 14.2 Environment damage

The villagers say that the Mining (*Pterocarpus angolensis*) and the Mivule (*Milicia excelsa*) are completely removed from their *Azelia quanzensis* forests, but we do not know the extent of the present logging. The Mkongo, which is in much demand now is being cut far away, an indication that nearby stands are wiped out. There were several fishing camps at Lake Weme and trees are being cut for smoking the fish. The women claim that they travel further for fuelwood than they used to. There used to be a system of marking a tree in order to stake a claim to it, but now nobody respects it.

There seems to be no control of fishing; anyone can fish anywhere and take any quantity of any species at any size they wish.

#### 14.3 Expression of concern about the environment

There are no overt rules about environment protection, but, even though there may be loss of species, there is little obvious destruction of the environment as a whole. People are disturbed that a higher authority which does not consult them is making decisions about the use of their natural resources, particularly their timber and lakes.

#### 14.4 Initiatives for Development

A few progressive people have their own small enterprises. The village milling machine enterprise is stalled since the machine broke down. Despite an offer of funds to repair the machine from an individual the committee has not come to any agreement with the donor probably because of a mistrust of his motives or of each other. The Utunge people volunteer to do road repairs. They also contributed to building a teacher's house and are in the process of building toilets at the school. When we asked groups or individuals what they would like to do to develop their village further there was a variety of responses. The women favoured either a milling machine or a piped water system. The men's first preference was investment in a business enterprise followed by a better health facility. Men also thought that a water system was needed. Others said that wild animals were an obstacle to progress because of the damage they do to crops and that they would like some villagers to be trained in the management of wild animals. If a local person was available it would obviate reliance on the district game personnel who do not help when they are needed. They said that bullets were unavailable, but the DALDO representative explained that bullets are now available at 700/= - 800/= in the DALDO's office at Utete. They feel that improved agriculture is the key to increasing the village's wealth.

#### 14.5 Attitudes to Outsiders and government

Kindwitwi sub-village was established as a centre for aiding victims of leprosy. It was founded by a charitable institution and therefore its inhabitants are accustomed to charity. We did not notice an attitude of dependency in the other sub-villages. All would like the project "to be brought to their village". As we had arrived without prior notice we were initially advised to leave and return the next day. With some persistence we were allowed to spend the night in the village but there was a

very protective attitude towards the team particularly the expatriate member who was not encouraged to pitch a tent even beside the dispensary which has a night watchman.

### **15. Accessibility**

By road the village is accessible by all vehicles throughout the year. From Utete it is 16km to Utunge, 11.2km. to Nyanda and 5km. to Kindwitwi. By car it took 45 minutes to reach Utunge from Utete. Boat travel to Utunge/ Nyanda is also possible with a ten-minute walk from the river to the village centre at Utunge. Mooring potential was not investigated. If one arrived by boat it would be useful to have a motorbike or a bicycle because there are some areas quite distant from the river.

### **16. Capacity**

#### 16.1 Standard of village management

As mentioned above, the Village Executive Officer has resigned recently. The Village Chairman was away. We could not get access to the village office or any of the files as the acting incumbent did not have the keys. Communication with Nyanda and Kindwitwi was slow and the meeting we requested with representatives of all the sub-villages did not take place. There was an impression of confusion among the leadership. It seemed that the Chairman of Nyanda village was avoiding meeting us as the excuses given conflicted.

#### 16.2 Number and demands of other development project

There is the leprosy project at Kindwitwi which will scale down its operations and also two educational projects which apply to all schools in the district. None of these projects appear to be taxing on the community. Therefore it would seem that no other project is presently making demands on the villagers.

### **17. Biodiversity**

There are very large areas of forest within the village boundaries some of which adjoin forest reserves. There are lakes and the river and overlapping lake and river ecosystems carrying a wide variety of fish and other species. We saw a variety of wild animals or signs thereof.

## Appendix 7: Village field visit report –Mtanza/Msona Village

### 1 Name and Location

**Name of Village:** Mtanza/Msona

**Village Chairman:** Salum Mbwana Nyangalio

**Village Executive Officer:** Juma Hamis Shererani

**Distance from Utete:** Mtanza 68km, Msona 72km

**Time taken for journey:** Mtanza two hours and twenty minutes, Msona two hours and thirty minutes.

**Location:** Western Floodplain

#### 1.1 G.P.S. Readings

**Table 3: GPS Readings of Mtanza/Msona Village**

Specific Point	Latitude (South)	Longitude (East)
Mtanza School	7 50'.18	38 32'.07
Magenge Lake	7 52'.18	38 21'.72
Old Airstrip/Magenge	7 51'.87	38 21'.85
Mashambani Mbaligani	7 45'.78	38 20'.34

### 2 Population

**Table 4: Population of Mtanza/Msona Village**

	Households	Population
Mtanza	247	1130
Msona	403	1148
Total	650	2578

(Source: Village Office)

### 3 Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and Lakes:

Three Rivers: Rufiji, Mtalula and Msangazi

Nine Lakes: Mtanza/Msona (the largest), Nyakasena, Magenge, Katungunya, Magoga, Andemela, Kibuyu, Mshamu and Mwamama

The Rufiji River floods into the lakes south of itself almost every year.

##### 3.1.2 Forests

**Table 5: Forest in Mtanza/Msona Village**

1. Kitope	9. Hungo la Matundu
2. Zilizili	10. Kiumbi
3. Mbeyeka	11. Nyamisuguni
4. Tanda	12. Hogoro
5. Mtalula	13. Luanzu
6. Kimala	14. Nyamidege
7. Magawa	15. Kihimbwa
8. Mkokwa Chamwande	16. Kwangarani

#### 3.2 Use/ pressure:

Rivers and Lakes are used for fishing, domestic water and water for wild animals and gardens, travel and transport, bathing and clothes-washing (at the lakeshore). The women recognise that it is

not safe to use the lake water for drinking because of the bathing and washing. They use river water for drinking ever since the water system has failed (see service provision)

The people who live at their shambas in Mbaligani collect water from a very old nearby well.

The fishermen said that they do not fish in the river because of the speed of the river's flow and because of fear of attack by dangerous animals especially hippopotamus and crocodiles. Women fish by using cloths. This is called "kutanda" and is not regarded as fishing by either the men or the women.

The Kihimbwa and Msangazi rivers are not permanent and flow for about three months of the year.

### 3.3 Travel and Transport:

On the north bank of the river at Mtanza there is a mooring point with adequate depth for a large boat. Twenty-foot boats from the tourist camps have moored there. There is a track to this point from the road but a vehicle with a trailer could not get to the riverbank because of deep gorges. On the south of the river at Msona there is a mooring point for a large boat.

**Table 6: Natural Resources Revenue (Fish) Collection in Mtanza/Msona**

Year	Kilos	Tax per kilo	Total Collected
1997	5,000	10/=	50,000/=
1998	3,590	10/=	35,900/=

Levies for fish transportation are collected at the rate of 750/= per "Tenga" (basket) of which the village gets 10%, the collector 15% and the District Council 75%.

#### Timber

The village does not collect levies for timber cutting because the licenses are usually obtained directly from the District Council. The village fails to collect levies because of lack of facilities e.g. a bicycle for reaching the forests where the timber is cut.

## 4 Economic Activities

The three main sources of livelihood are agriculture, fishing and sawing timber.

### 4.1 Agriculture

All villagers cultivate.

Crops; Rice, maize, pumpkins, cowpeas, cashews, sesame, bananas, mangoes, Doum palm and sweet potatoes are grown. The areas cultivated are south of the river Rufiji and in "njacha" north of the river especially at Mbaligani. "Njacha" means a low-lying area which floods from rainwater and in which moisture is retained for several months and creates suitable conditions for growing crops especially rice. There are many animals who damage crops including elephants, baboons, monkeys and hippopotamus.

The areas where *Acacia spp.* (Msona) grows are excellent for agriculture because the soils is "tifutifu" loamy and the river Rufiji deposits organic matter here making the soil very fertile. The trees are felled by ring-barking and waiting for the whole tree to dry out and die before knocking down with an axe. Ring -barking was also seen on mango trees. This is done to encourage flowering in order to increase fruit yield. Foods eaten in times of hunger (vyakula vya njaa) include Furu (*Vitex doniana*), Mabuyu (Baobab, *Adansonia digitata*), Makoche (Doum palm *Hyphenae compressa*) and Vingweta, Mvumo (*Borassus sp.*) The short-rains are not reliable, therefore agriculture during this period is opportunistic. The short rains fall during December and January. February is a dry month. March, April and the first half of May form the long rains season (Masika). Planting is done in the last half of November and all of December. Planting is also done in March. In June, after the floods have receded, planting is done in the valleys/moist depressions (Mlao). Some people have fields on both sides of the river to take advantage of both flood recession (south, mlao) and rain water retention (north, njacha).

## 4.2 Fishing

Everyone can fish, but the women's method of fishing (kutanda) is not regarded as fishing even though it often supplies the family's daily protein requirements. Fishing is only in the lakes because of fear of hippopotamus and crocodiles and the fast flow of the river. Some of the lakes of this village were recently taken over by Selous Game Reserve.

Fish species caught include Pele, Kumba, Kasa and Kambale (Ndobe). Fishing camps are found on the lake edges where smoking is carried out. The numbers of fish are not decreasing as the floods bring more fish in each year. The fishermen just complain that they do not have adequate equipment to fish more of them out! The size of the fish has not changed over the years. Lake Mtanza/Msona is sometimes closed, by agreement of all the sub-villages, in order to give the fish a chance to grow. This lake is almost totally bound by trees.

There are net-makers in the village but it is preferred to buy nets and to use these experts for repair work.

The villagers do not like paying fishing fees. In recent years fishing in waters bounding the Selous Game Reserve has been banned and fishermen are told to buy licenses from the District for 4,000/= . Nets of 3.5 inches to 4.0 inches were being used. These are available in a village shop for 2,800/= . Fishing is mainly at night and in the early morning with a small amount in the afternoons. The fish are landed at smoking huts where fuelwood is used for the smoking process. Three to four people using a net can catch 100-300 fish per day. A tenga (basket) of fish is worth 20,000/= in Dar es Salaam and 5,000/= to 6,000/= profit can be made on each tenga.

### 4.3.0 Forests/Woodlands

The benefits which the villagers get from the forests and woodlands were mentioned as follows;

4.3.1 Building using various species including mkongo (*Azelia quanzenis*).

4.3.2 Dug-out canoe production from mikinde, misufi pori, mihewehewe, mikenge, mifuru and miembe. Mikongo were used in the past but now there are none big enough for canoe-making.

### 4.3.3 Fuelwood

Dead branches and trees which have fallen down are used for fuelwood . It is not necessary to cut branches or fell trees for fuelwood needs.

4.3.4 Medicines are got from trees and plants and people come from Dar es salaam to collect them. Species mentioned were misugsugu (*Combretum constrictum*) and Misegesege (*Bauhinia spp.*)

4.3.5 Mortars are made from Mkongo and Mkenge trees and pestles are made from Mtagalala (*Terminalia spinosa*) trees.

4.3.6 In the sub-village of Msona Mipingo trees (*Dalbergia melanoxylon* ) are totally depleted since 1985 because of the carvers demand .In Mtanza in the direction of Mbuga ya Bwawani we saw mipingo growing and also the remains of logs which had been cut and dumped a long time ago. The women of Msona said that if they find mpingo rotting on the ground they use it as fuelwood. Mvule (*Milicia excelsa*), Mninga (*Pterocarpus angolensis*) species are completely wiped out now and there remains only a small amount of Mkongo (*Azelia quanzenis*)

### 4.3.7 Timber

We were told that there are no loggers or sawyers in the village but we saw saws at some houses. Some villagers find casual employment carrying food supplies such as flour and fish to the loggers. A six foot piece of sawn timber costs 1,000/= to 1,200/= . It is very difficult to get lengths of more than twelve feet.

There are two carpenters in Msona sub-village and four in Mtanza.

### 4.3.8 Honey

We were told that there are lots of bees in the forests and woodlands but the people do not harvest the honey because they are afraid of the bees and also the Natural Resources Department. There are no hives and bees are found in hollow logs and termite mounds.

#### 4.4.0 Other economic Activities

There are tailors, small shops, weavers of mats and baskets and potters in this village.

### 5. Uniformity of Ethnicity

The majority of the population is Wandengereko. Wamatumbi and Wapogoro come next in terms of numbers. There are a few Wazaramo. There were some discussions about the meaning of the name Waruhingo. The present understanding is that the Wanandengereko of the western floodplain are known as Waruhingo.

### 6. Uniformity of Religion

Almost everybody follows the Islamic religion except for a few government staff.

### 7 Social organisation at Household level

Household means the persons headed by a man even if he has more than one wife and more than one house. Dependants on the man might include other relative's children and disabled parents who are considered as part of the household even if they live in a separate house. A woman might become a head of household if her husband dies.

### 8 Wealth and Poverty

We did not see signs of either great wealth or abject poverty. We were told that people who are better off than average are those with kiosks and bicycles. We were told that people do not store food and if they do they keep secret the amount stored. House design includes a food storage ceiling and pumpkins were seen in one ceiling. The village has just experienced the worst floods in memory and did not suffer deaths from hunger. Some food aid was provided but not enough for their needs. The floods have not caused major changes to their lives. They survived on wild fruits such as Makoche, vingweta and furu.

The village did not look richer or poorer than the neighbouring villages.

### 9 Service Delivery

#### 9.1 Education

There are two primary schools, one in Msona and one in Mtanza. The school at Msona has 300 children but only two teachers.

#### 9.2 Health

Mtanza has a dispensary which is also used by the people of Msona. There are four people trained under the C.B.D programme which deals with family planning. There are local doctors (waganga wa kieneji) available. In the wet season cholera (kipindupindu) is a problem. Tsetse fly was prevalent in the woodlands but it is not known whether it carries and or transmits diseases to the human population here.

#### 9.3 Water

Water supply systems were installed in both Mtanza and Msona in 1970 using Lake Mtanza/Msona as the source. Neither system has functioned for the past ten years or so.

The people who live at Mbaligani collect water from a well close to Mbeyeke forest. This well is approximately 12kms from the village centre. The rest of the people collect drinking water from the Rufiji river. They wash clothes and bathe in the lake.

#### 9.4 Transport

There is a daily (except Thursdays) bus service to and from Dar es Salaam, leaving Mtanza at approximately 05.30hrs.

## **10 Coherence of the Community**

10.1 The river is not a barrier to communication. Communication to Mbaligani is a problem because of distance. We were told that to walk from the northern forests of the village (Mbeyeye and Dahi) to the southern boundary with the Selous Game Reserve at Mtalula River takes two whole days.

### 10.2 Evidence of trust in the leadership

There seems to be trust in the village leadership as each request we made through the leaders was carried out by the people e.g. both men and women attended meetings which we called with very little notice. We did not see any evidence of dislike of the village leaders. There were expressions of distrust in the District leaders especially in relation to a loan scheme into which some villagers have paid funds but have not obtained loans nor any follow-up from the district.

At registration these two villages were registered as one. The Msona people are not happy with this situation and have made a written request to be registered separately as their household numbers have now reached the required minimum. One of the Msona sub-village chairmen was very displeased that our team had slept at Mtanza and spent more time walking and visiting Mtanza than Msona.

### 10.3 Organisations, NGOs and groups.

The organisations, which are in operation, are UVT (Ummoja wa Vijana Tanzania, Union of Tanzanian Youth), UWT (Umoja wa Wanawake, Tanzania Women's Union), the Islamic religion, CCM (political party), Wazazi (Parents Organisation), Mtanza Soccer Club and CBD (Dissemination of information on Family Planning). In a group discussion with women they said that CCM is the strongest organisation followed by the Islamic religion. A group of male youths said that the soccer club is the strongest organisation followed by the Islamic religion and CBD. The young men said that they do not see the relevance of UVT, UWT or CCM and that attendance is compulsory. There is no organisation which works with the environment.

## **11 Migratory habits**

### 11.1 School attendance patterns

Community members said that the children stay in the village centre during weekdays in order to attend school even if their parents have gone to stay in the fields. Since our visit was during school holidays we could not confirm this nor get access to school attendance records.

11.2 Many families have two homes, one in the village centre, the other in the fields (Shambani). They live in whichever is important depending on the season. They said that they live in the shamba during the growing season or for six months of the year. However there are two or sometimes three cropping seasons in a year and work in the shamba can go on for nine months of the year. Also some of the houses in the shambas were as sturdy as those in the centre of the village. Also the planting of long-term crops such as cashews and bananas and the poultry husbandry at the homes in the shambas suggests that the long – term residences are in the shambas. The return to the shambas after the 1997/8 flooding was very rapid. This indicates the importance of the shamba residences and resources to the people's lives.

## **12 Conflicts and Solidarity**

There is co-operative harvesting of crops between relatives from near and far. This is called "Chirya Mpunga". At other times a person will cook for relatives who come to help. This is called "Ngomalio" or "Komalio". We did not find examples of community cooperation in agricultural tasks. Community members help to dig the grave and to bury the corpse when someone dies. There is community cooperation on road repairs when outside help is given, for example when a lorry is supplied for transporting murrum. During floods people who own boats transport others for free. Community cooperation does not extend to making contributions in order to get the water system working. There was no visible evidence of conflict within the village although there is possibly

some tension between the people of Msona and Mtanza which was demonstrated by an Msona leader who was dissatisfied that the team spent more time in Mtanza than Msona.

### **13. Women's Freedom, Participation and Confidence**

It was easy to access women for both formal and informal meetings. They spoke freely but were sometimes interrupted or spoken for by men. When separated from men the women were very vociferous. There are no women in leadership positions. Therefore it was necessary to make a special request that women be invited to our meeting with the leaders and for women's representatives to walk with us.

### **14. Signs of Enthusiasm and Initiatives**

#### 14.1 Environment management measures at any level

There is evidence of some environment protection, for example it is forbidden to cultivate to Lake Mtanza /Msona. The Lake is closed sometimes by agreement between the sub-villages. There were some areas of fallow land including Kitope woodlands, left uncultivated since 1980, and an area between the Rufiji river and Lake Magenge. There were flowering shrubs planted around houses and buildings in the village centre. The street trees were 10-15 years old (*Senna siamea*, *Azadirachta indica* and *Eucalyptus spp.*) and were supplied by the District Natural Resources Department. No recent community plantings or nurseries were seen in the village centre. At a household level, cashews, mangoes and limes are grown. Doum palms (miaa, mikoche) and Borassus palms (Vingweta) are tended.

#### 14.2 Environment damage

Acacia spp. trees are cut down for agricultural land clearance. Tree-cutting for construction of houses and for commercial timber production is also carried out. Trees are also used for smoking fish and for making dugout canoes. We were told that there is no longer any *Pterocarpus angolensis* (Mninga) nor *Milicia excelsa* (Mvule) in their woodlands. There will soon be no Mkongo (*Azelia quansensis*) left. Older men told us that there were lots of trees of these three species in the past.

There does not seem to be much effort to protect the fisheries, the main complaint of the fishermen is that they have not got adequate equipment for increasing their catches. We did not see any signs of following rules in relation to the use of lake or river water. People wash clothes and bathe in Lake Mtanza / Msona and there is no evidence of toilets near the fishing camps.

#### 14.3 Expression of concern about the environment

There were no unsolicited remarks which showed concern for the environment. When prompted the main concern mentioned was that outsiders were cutting their timber trees and that the Selous Game Reserve has taken some of their lakes. Perhaps people do not feel they can do anything about their environment because they see that all the power is at higher levels.

#### 14.4 Initiatives for Development

A few private people show development initiatives e.g. carpenters, shop and kiosk owners and four bicycle-owners and many fishing-net owners. Apart from cooperation between groups of three or four young men per canoe for fishing there are no other co-operative business initiatives. Fish once dried are sold mainly to outsiders who transport them to Dar es Salaam. There is no co-operative fish transport or marketing group. None of the present organisations e.g. political party or religious organisation have development projects.

#### 14.5 Attitudes to Outsiders and government

In general we were received well and every effort was made to assist us as visitors. The mention of the word "Mazingira" made our hosts wary as they do not trust the Selous Game Reserve people whom they hold responsible for taking some of their lakes and forests and for introducing new restrictions on the villagers without any discussion. Despite the presence of an expatriate in the team the villagers did not show a begging attitude.

## **15. Accessibility**

By road Mtanza / Msona is accessible for most of the year except when the rains cause flooding at Zumbi Lake between Kipo and Kipogira villages and between Mtanza and Msona at Mtanza/Msona lake which is 69 km from Utete ferry. In the dry season a vehicle can easily reach the fields at Mbaligani which is 10km from the village centre. It is only ten minutes walk from the village centre to the Rufiji river which can be crossed in a dugout canoe. From the river it is about 40 minutes walk to Lake Magenge. Some vehicles come to the southern part of the village from the Kingupira road in the dry season using bush tracks. It is possible to reach the village by boat from Utete. On the north bank of the river at Mtanza there is a mooring point with adequate depth for a large boat. Twenty foot boats from the tourist camps have moored there. There is a track to this point from the road but a vehicle with a trailer could not get to the river bank because of deep gorges. On the south of the river at Msona there is a mooring point for a large boat. If one travels by boat it would be necessary to make arrangements for bicycle or motorcycle transport if one wanted to reach the distant northern parts of the village's forests. A bus service is available every day except Thursdays, arriving in the afternoon from Dar es Salaam and departing at 5.00Hrs from Mloka west of the village.

## **16. Capacity**

### **16.1 Standard of village management**

There was no obvious evidence of mismanagement in the village and we got good cooperation from the village leaders in provision of statistics on population and revenue collection. We are unsure as to the reliability of these figures but this is no different from the general situation in Tanzania. The general impression was of an average standard of management, neither outstandingly good nor bad.

### **16.2 Number and demands of other development projects**

There is no major project which draws people away from their daily routines. It would appear that people, especially young men, have time on their hands and would be available for involvement in new activities.

## **17. Biodiversity**

The village encompasses several ecological zones with lakes, rivers, temporarily river-flooded and rainwater-flooded areas, semi-arid woodlands with undoubtedly varying floral and faunal associations and human influences. There is still a wide variety of woody species within the village's woodlands and forests including *Dalbergia melanoxylon*. We also saw many species of birds and signs of large wild animals including elephant, buffalo, baboon and vervet monkey. At least one troupe of black and white colobus monkeys lives in the village's forest area.

**Table 7: The life of Mzee Ausi Athumani Ausi of Mtanza/Msona village and a brief history of his village as told by himself and other villagers.**

Period /Year	Event
1934	Mzee Ausi is born in Mtanza 2 village south of the Rufiji river.
1968 –May	Plots are marked out in the forest.
1968- June and July	House-building begins in the new village.
20.12.68	Mzee Ausi moves to Msona because of big floods.
1970	The government builds Msona school.
1972	The government builds a water system.
1973/4	No harvest because of bad floods.
16/4/74	Very high floods for seven days. People eat wild leaves and fruits of Doum palm. People plant after the floods and get very good harvests.
1978/79	Worse floods than 1974 but people harvest enough maize before the floods.
27March to May 1979	Huge floods.
1983	A man is killed by an elephant.
1983-1985	Hunger- people follow buses carrying food and join queues to buy it.
1985-1990	The rains are lessening and there is not enough food harvested to allow for storage.. Every year people are killed or injured by crocodiles or hippopotami.
1996/7	Drought occurs.
1997/8	Huge flood of El Nino
1998	Six people were killed by crocodiles and hippopotami.
14.12.1998	No proper rains have fallen yet.

## Appendix 8: Village field visit report -Ngorongo Mashariki Village

### 1. Name and Location

**Name of Village:** Ngorongo Mashariki

**Village Chairman:** Hassan Omari Mkandabwe

**Village Executive Officer:** Hassan A. Lipombo

**Distance from Utete:** (North of river at Ferry point); 36km

**Time taken for journey:** (North of river at Ferry point): One hour and fifteen minutes

**Location:**

#### 1.1 G.P.S. Readings

**Table 8: GPS readings of Ngorongo Mashariki Village**

Place	Latitude (South)Degrees. Minutes. Decimal parts of minutes.	Longitude(East) Degrees. Minutes. Decimal parts of minutes.
School	7.52.15	38.38.98
Bwawa la Mtambo	7.55.96	38.36.47
Kivukoni –North of the river crossing	7.55.08	38.37.36

### 2. Population

Households, 385; Population, 1707

(Source Mabalozzi /Ten cell leaders 1998)

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and lakes:

One River: Rufiji River

The Rufiji River is the only permanent river and it is very far from the village centre. By car one must pass through either Ngorongo Magharibi (10 kms)or Kilimani (12kms) to reach the river at the crossing nearest to Lake Mtambo. The Nditi river is close to the village centre but is does not flow permanently.

##### 3.1.2 Forests and Woodlands.

There are four main forest/ woodland areas namely Mipulupulu, Ntarangufu, Nyangunguti and Nyangwala. The two latter bound the Selous Game Reserve and are not easily used by villagers because of the Reserve's rules.

##### 3.1.3 Wildlife

We were told that Buffalo, elephant, mbawala (duiker) ndoe, sungura (rabbits), Nordoli (?), Kidukwi, wildebeest, Kongoni, Tandala, Mbunju (bigger than a buffalo), Zebra and impala are commonly seen in the village. White Colobus are also seen. One man remembers seeing rhinoceros in 1974. Seventy elephants came during the drought of 1996/97 and have settled between the two villages of Ngorongo Mashariki and Magharibi. We saw baboons, warthogs, squirrels, turacos and several water birds including Msingwi (Open-billed stork), Ngorongo Lupanzi (Hammerkop), Korongo (a Heron) and Bata maji (Egyptian Goose). One young boy listed 17 types of birds which he eats (Tetele, Kizasi, Ninga, Pewee, Kipeta, Tongwa, Njegea, Joto, Tumbo, Kitokoko, Tiakibao, Kieu, Kiembelelo, Kitipa, Sikitika, Telewa and Ndotu).

### 3.2 Use/ pressure

The lakes are used for fishing, bathing, washing and water supply. There is a belief that a certain kind of fish (pangapanga) should not be eaten by those who are bewitched. The forests are used for timber and building poles, fuelwood, fruits (matopetope, Yembayemba, Mabungu, Pingipingi, maplelepele, Mganja, furu, Ndaba, Makoche and Bweki) grasses and leaves for thatching (Doum and Borassus palms), medicines and spiritual rituals. Some people believe that spirits live in certain trees and that these trees cannot be cut unless a ritual is first performed to remove the spirits. The outsiders (wakuja) are not affected by this belief.

#### 3.2.1 Medicines

Some people are local doctors and use plants to produce their medicines. For example a part of the Borassus fruit (Mivumo) is used to treat children with stomach pains, Mndimdu is used for bloody diarrhoea, Kiungiungi (*Pistia spp*) is used for vomiting and lung problems. Elephant dung is used fresh for stomach Michangu? and dried and burnt for the children's illness of degedege and to repel insects.

#### 3.2.2 Honey

We were told that nobody harvests honey or keeps beehives.

Most of the wild animals are eaten except for elephant. The skin of the White Colobus is used as a decoration by dancers.

### 3.3 Collection of natural resource revenues

Because the Village Executive Officer is new he did not have this information. The villagers say that permits to cut timber are obtained by the sawyers directly from the district Council.

## 4. Economic Activities

The main economic activities are agriculture, fishing, timber extraction and weaving mats.

### 4.1 Agriculture

All the villagers cultivate.

The main crops are rice, maize, cowpeas, cashews, mangoes, pumpkins, bananas and tomatoes. The main cultivation area is south of the Rufiji river and cultivation is by hand hoe. The rich deposits left by the annual floods are called "Mbawila". Cultivation around the edge of Lake Mtambo is not permitted under a bye-law.. A small amount of "njacha" cultivation is done near the village centre. Some of this is done by tractor. "Njacha" means a low-lying area which floods from rainwater and in which moisture is retained for several months and creates suitable conditions for growing crops especially rice. The soil in the cultivated areas is fertile. There are bye-laws regarding block cultivation (Kulima Bega kwa Bega) as seen from Ward court records where people were accused of not cultivating in blocks. Tomatoes are sold in the village centre for 30/= per handful.

### 4.2 Fishing

We did not see many fish in the village centre, therefore we concluded that fish are transported from the lakes out of the village via Kilimani. Three villages share the fishery of Lake Mtambo i.e. Ngorongo Mashariki, Ngorongo Magharibi and Kilimani. People do not like fishing in the Rufiji river because of its speed and because of fear of hippopotamus and crocodiles. Fishing seems to be a secondary, seasonal occupation for most people. Women fish (Kutanda) and can save 200/= per day in food by supplying the family's protein needs. On the edge of Lake Mtambo there were two fishing camps with 17 dugout canoes and seven smoking huts. We were told that eleven youths fish from one of these camps and that they are supervised by one older man. We were told that the fish species caught are Mbufu, Kambale, Nguchu, Peel, Kasa Knage and others. The nets they were using were from 2" to 4". Fishing is also done by using fish traps (Kisi) and "fence traps"(nyando). A dugout is usually shared by two fishermen, but a third team member mends nets. Fish are dried by the lakeside and are sold from there to traders who sell in Kibiti and other towns on the route to DSM. The trading fee for a tenga (basket ) of fish is 750/=. In the court records there was a case of

lending fish of a value of 50,000/= . We were told that in the high season up to 300 fishermen fish in Lake Mtambo.

#### 4.3 Timber

Most of the timber extractors are from outside the village. However, some of these outsiders have settled in the village and have wives and children here. At present they are cutting *Azela quanzensis* in distant woodlands. *Pterocarpus angolensis* and *Milicia excelsa* are completely wiped out from the village's forests. Kongowele (thick bush poles) are sold for 500/= each according to village files. Several cases of debts were relating to loans of timber, some to the value of 60,000/=.

#### 4.4 Weaving

Both sexes weave and although the villagers say that there is no market for the products, the level of the activity suggests that they are being sold by some established system.

### 5. Uniformity of Ethnicity

Seventy-five percent of the population is Wandengereko. The remainder is made up of Wangindo, Wapogoro and a few Wamatumbi.

### 6. Uniformity of Religion

The majority are Moslems with a few outsiders who are Christian but adopt Islam if they marry local people.

### 7. Social organisation at Household level

Generally the term "Household" means the people who are under the control of one man. The women in a mixed discussion said that they are controlled by the men ("tunamilikiwa na wanaume"). Some community members said that the man is head of the household in which he sleeps and that the household headship moves with him as he moves from wife to wife. When he is not there the woman is head of the household.

### 8. Wealth and Poverty

According to our informants there are no wealthy people in the village. Those who are worst off have palm-leaf rooves, cultivate with a hand hoe and are those who are disabled or ill for long periods. The better off have tin rooves, shops and have goats or cattle. Even though it is only months since the worst floods in history there were no signs of malnutrition or extreme poverty seen.

### 9. Service Delivery

#### 9.1 Education

There is a school in the village and we were told by the Head teacher that attendance of both girls and boys is good.

#### 9.2 Health

There is a dispensary with solar power and also a CBD service which gives family planning advice and materials. Local doctors are also available.

#### 9.3 Water

Domestic water supply is a very big problem in the centre of the village especially in the dry season when Nditi river dries out. Women dig wells in the Nditi riverbed where they wait for hours to fill their buckets with gourds or tins attached to long sticks. The water is not clean. Young men run a water business by carrying water by bicycle from the Rufiji river and selling it in the centre of the village for 100/= per 20 litre container. In the fields (mashambani) people use water from the Rufiji river and from Lake Mtambo whose water is not clean and safe.

#### 9.4 Travel and Transport

The road connection to Mkongo, Kibiti and Dar es Salaam is reasonable and passable almost throughout the whole year. The Mloka /Dar es Salaam bus service is available each day except Thursdays.

#### 9.5 Primary Court

The village has a good court building but for almost three years there has been no court service because there is no judge or clerk. All court cases are referred to Mkongo , the Divisional Headquarters.

#### 9.6 Milling Machine

There is a privately run milling machine in the village centre. We did not see any queue waiting for this service probably because it is not harvest season but also because people living south of the river have more than 10 kilometres to travel including a river crossing in order to avail of the service.

#### 9.7 Shops

There are two shops and several kiosks.

#### 9.8 Other services

There are carpenters, tailors, net-repairers and bicycle repairs operating in the village.

### **10. Coherence of the Community**

#### 10.1 Physical Closeness

The Rufiji river is not a communication barrier. People cross it readily as part of their daily lives. People from Ngorongo Mashariki cross through Ngorongo Magharibi and Kilimani villages to get to their fields and cultivate, fish and live in the same areas as people from these two villages. Since there is no discrete physical distinction between the three village's cultivation and fishing and even living areas it could be difficult to communicate and work with the people of Ngorongo Mashariki alone.

#### 10.2 Evidence of trust in the leadership

From our discussions with women, youths and leaders it seems that there is trust in the village leadership. We did not see any evidence of negative feeling against the leadership. There also seems to be good co-operation between the leaders of this village and the two neighbouring villages in relation to the free river-crossing service and to sharing fishing and cultivation areas. There are at least three political parties in the village, but there is co-operation between their members. NCCR has begun a development programme that is open to all villagers.

#### 10.3 Organisations, NGOs and groups.

This topic was discussed with separate groups, women, male youths and older men. Their opinions on the organisations who matter most in the village are given in tabular form below. The most important is indicated by the figure 1, the least important by the figure 6. The different discussion groups mentioned or omitted different organisations.

**Table 9: Comparison of the importance of organisations in Ngorongo Mashariki Village by three separate discussion groups.**

Organisation's Name	Women's discussion group	Young men's discussion group	Older men's discussion group
UWT	1	6	3
NCCR	5	5	6
CCM	2	1	1
UVT	3	2	4
Wazazi	4		5
Ushirika (Ununuzi wa mazao)			2
Chura (Ngoma Group)		3	
NSFC(Football Club)		4	
MMDA (new Dev. NGO)			

## 11. Migratory habits

### 11.1 School attendance patterns

We were told that school attendance is not a problem in that schoolchildren stay in the centre of the village during weekdays and go to their parents in the fields on Saturdays and Sundays. Since school was closed for holidays we were unable to directly observe the situation. Some families have two houses, the one in the shamba is usually built on props (dungu). Some people told us that they stay in the fields for six months. Men said that they stay for three to four months to protect the ripening crops, but it appears that women spend much longer in the fields as there is no rest –period between harvest and the preparation for the next planting.

## 12. Conflicts and Solidarity

Examples of community co-operation are Ngomalio which involves helping each other at planting and harvest time, assistance to the bereaved during the funeral, co-operative making of dugout canoes, house-building for those affected by floods or fire and co-operative scaring off of wild animals. All of these are done without consideration of blood relationships. There is co-operative harvesting within families and clans where those who come to help go away with a share of the harvest. This is called “vilya mpunga”.

The most frequent type of conflict, according to “cases” file is domestic quarrels between spouses and divorce cases. Outside of the home the cases are mainly about bad debts concerning loans of fish and timber. There were also some cases of burning cashew trees.

## 13. Women's Freedom, Participation and Confidence

It was easy to find women and to arrange for them to attend our meetings and walking trips. The women participated well in a meeting when mixed with men. They said that they are controlled completely by men. There is no young women's sports team like that of the young men.

## 14. Signs of Enthusiasm and Initiatives

### 14.1 Environment management measures at any level

There is some evidence of environment protection. For example, the Nditi river valley is lined with trees. The Nditi forest, although near the village centre, has some very large, old specimens of Mtondo (??) and some thriving young specimens of *Dalbergia melanoxylon*, *Annona spp* (Mitotope) and Ndaba (?). There are 10-15 year old trees planted near the school. Throughout the village there are cashews and fruit trees such as lemons. Wild plants including Doum, Borassus and vingweta(?) are tended. People believe that spirits live in large trees and they are slow to cut down these trees because of fear of the spirits. Outsiders who come to saw timber are not usually afraid of these spirits. There is a bye-law which forbids clearance or cultivation around Lake Mtambo.

#### 14.2 Environment damage

We could not get figures relating to the amount of timber being extracted nor the numbers of trees being cut down. There are no Mininga or Mivule left in the village's land and Mkongo is almost wiped out. Big trees are cut down for making mortars. Building poles (Kongowele) are a commercial product fetching 500/= apiece. Wood is also being used for fish-smoking but we did not get an estimate of the extent of tree-cutting or the species used for this activity. Fishermen can sell even very small fish and said that there are no rules about fish sizes allowable or forbidden in a catch.

#### 14.3 Expression of concern about the environment

There is a bye-law preventing cultivation around Lake Mtambo and it is respected. People expressed annoyance that licenses are given by the district without consideration of the numbers of trees which remain or what species remain. Almost all the licensed timber extractors are outsiders.

#### 14.4 Initiatives for Development

There are a few people who have enterprises including carpenters, tailors, shop owners, bicycle owners, a milling-machine owner and one with a lorry for transporting crops. Some cultivate large areas by tractor. Some women have a group agriculture scheme which got a loan which they are now struggling to pay back due to climate damage to their crop. Young men fish together and sell fish to traders.

#### 14.5 Attitudes to outsiders and government

The villagers whom we met were welcoming and inquisitive about the reasons for our visit. We did not notice a begging or pandering attitude towards donors.

### **15. Accessibility**

Ngorongo Mashariki is accessible by road almost the whole year round. There are a few low points on the road about 17kms from Utete (north bank of the river at the ferry point) where four wheel drive is needed after heavy rains. The 36km journey from Utete takes 1 hour and fifteen minutes in the dry season. Boat travel is possible and there is a mooring point on the north of the river. One would need to make further transport arrangements (bicycle, motorbike) to reach the village centre from the river (10kms). There is no suitable mooring point on the south bank of the river. The road connection to Mkongo, Kibiti and Dar es Salaam is reasonable and passable almost throughout the whole year.

The Mloka /Dar es Salaam bus service is available each day except Thursdays.

### **16. Capacity**

#### 16.1 Standard of village management

No major management problems were obvious. The standard of management seems average. Some statistics were available and files were made openly available to us.

#### 16.2 Number and demands of other development projects

There is no major project operating in the village at the moment. A new NGO (Mkongo Mloka Development Association) has invited people to form groups of five to run enterprises which will be supported by loans. This project is unlikely to preclude involvement of most villagers in other new projects.

### **17. Biodiversity**

There are still extensive woodlands within the village boundaries and there were signs of an abundant variety of birds and large wild animals. There are lake, river and dry land habitats and acetones between them.

## Appendix 9: Village field visit report –Ruwe Village

### 1. Name and Location

**Name of Village:** Ruwe

**Village Chairman:** Seif Shaban Hongo

**Village Executive Director:** Shaban Machela

**Distance from Utete:** (Ferry Point north of the river)

**Time taken for journey:** 1 hour

#### 1.1 G.P.S. Readings

**Table 10: GPS Readings of Ruwe Village**

Place	Latitude (South) Deg. Mins and decimal points	Longitude (East) Deg. Mins and decimal points
Ruwe Lake (Mkongo end)	7.54.62	38.49.21
Bwawa la Mbembe	7.58.19	38.48.47
Bwawa la Ukame	7.57.10	38.48.50
Mashamba ya Mkata	7.58.66	38.50.22
Daraja la Mbambe	7.54.75	38.51.77
Ruwe Shuleni	7.55.03	38.49.15

### 2. Population

Households, 446; Population, 1941

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1. Natural Resource Wealth

##### 3.1.1 Rivers and Lake names:

One River: River Rufiji

Fourteen Lakes: Ruwe, Ukwama, Mbembe, Nyamba, Mkumba, Nyamisingwi, Ng'ondatando, Nyakibambe, Ngarobolwa, Nyamilibwe, Rimata, Kibroi, Likuru and Mbogoni.

##### 3.1.2 Forests

Forests surround some of the lakes and the forests take the lake's name. The forests names are Ukwama, Mbembe, Mwendatanda, Rembangwanga, Remba Likulu, Makulu, Nyaimba, Mbondende, Mbogoni, Kieta, Ngandautope and Msoswangobwe.

#### 3.2 Use/ pressure

##### 3.2.1 Rivers and lakes

The Rufiji River is not used by many villagers for fishing or washing or domestic water supply because of its distance from the centre of the village. The lakes are used for fishing and domestic and livestock water supply and for washing and bathing. Some of the lakes are also used for transport purposes. At Lake Mbembe a rope is tied to both ends of a canoe and to stakes at both sides of the narrow lake as a means of crossing.

##### 3.2.2 Forests and Woodlands

The uses of forests and woodlands were listed by villagers as; to provide timber for building and furniture, rotted branches for fuelwood, grasses and palms for roofing and weaving, medicines, charcoal (seen in use in a blacksmith's fire), for dugout canoes, for sites for beehives (though nobody harvests honey!), wild fruit such as Ndaba, Furu, Matopetope, Matumba, Mabungo, Matakoto ya Mbuyu na mboga pori kama Mwage, Miramba and Nyagongoro. Canoes are used for fishing, for crossing lakes to get to their shambas and therefore trees suitable for making dugout canoes are very important.

### 3.2.3 Revenue from Natural Resources

We were told that licenses are issued at District level and that the village does not know how much revenue is collected. Some revenue was being collected at village level but the villagers suspect their leaders of misappropriation and have suspended them. The temporary leaders have not been collecting revenue. The acting Village Executive Officer said that the marketing fee is 100/= per stall and that the monthly collection amounts to 3,500/= to 4,000/=.

## 4. Economic Activities

The economic activities are agriculture, fishing, small business, weaving, pottery, carpentry, blacksmithing, and poultry-keeping.

### 4.1 Agriculture

Agriculture is the main source of income for the population. The crops include maize, rice, cowpeas, pumpkins, tomatoes, cashews and mangoes. The main cultivation areas are Nyaobo in Beti sub-village, Nyaningwe in Nyaningwe sub-village, Mbembe, Kilengwe, Mpapwane and Mkata. Food is also collected from the forests(see3.2.2).Cashews are being planted even though the price for nuts is low since the trade has opened to private buyers. Cultivation is by hand tools. The soil in the centre of the village is sandy with some organic matter and is not used much for agriculture. The main cultivation areas have black clay soil.

### 4.2 Fishing

Most of the fishermen fish in Lake Ruwe. Night-fishing is the norm with some early morning fishing after breakfast (kuputua). The catch is usually divided into three portions the biggest of which (Lamwenyewe) goes to the boat and net-owner from whom the equipment has been rented. If the boat is not rented the three portions are for the one in the front of the boat (mbele kwambele), the one in the back of the boat (nyuma kwa nyuma) and the shore helper (Ndemba).The fish-smokers are paid 2/=per fish regardless of size. The three main fish species caught are Kambale, Pele and Kogoo. The number of fishermen on Lake Ruwe can reach 200 some nights.

### 4.3 Small Business

Women are involved in making foods such as maandazi, vitumbua, and bread from rice flour. They sell them in tea-shops. There are two shops.

#### 4.3.1 Timber

Some people sell timber planks for prices determined by the length and quality.

#### 4.3.2 Weaving

Many women are weavers but they say that there is no formal market for the products. There is a family group of weavers called Pakaya led by Mr. Shamte Suare.

#### 4.3.3 Pottery

There are approximately ten potters in the village. They make pots to order because they find it risky to make pots which might not find customers.

#### 4.3.4 Carpentry

Carpenters make products on order and, like the potters, do not want to risk making items which might not be sold.

#### 4.3.5 Blacksmithing

There is one smithing workshop called “Kitambulio” which is run on a family basis and the skill has been passed on through several generations. They serve a wide area including the Mkongo, Ikwiriri and Kibiti divisions and make handles for the tools which they make from scrap iron such as leaf springs from cars. Their products include knives, pangas, axes and hand hoes of various sizes.

#### 4.3.6 Livestock –keeping

Many people keep poultry who scavenge for food. They also keep other birds. Wild animals such as jackals and vimbulu kill poultry.

### 5. Uniformity of Ethnicity

The population is mainly Wandengereko except for a few government staff from other ethnic groups.

### 6. Uniformity of Religion

The vast majority is Moslem.

### 7. Social organisation at Household level

The whole community considers that the household is the group of people controlled by a man even if he has more than one wife and more than one house. A household will usually consist of a man, his wives, children and relatives who are dependant on him such as his parents.

### 8. Wealth and Poverty

We did not encounter signs of extreme poverty such as malnutrition, lack of clothing or begging. Those who are better off are the ones who have a bicycle, a shop, a milling machine, a sewing-machine, a corrugated iron roof and who dress well such as those women who have a nice mtandio and kanzu for going to the mosque. Poor people are those who have had a long-term illness and could not progress in life. They have houses which are too small for their children to play in. They eat wild foods such as Mambe, Umwage (leaves which are dried to produce flour), Lilende, Ngandalongo and Nyangongono.

### 9. Service Delivery

#### 9.1 Education

There is a primary school at which attendance is reasonably good. One of the reasons for non-attendance is parent's difficulty with paying school fees. Parents must contribute towards UPE, Umitaashumta and desk-making.

#### 9.2 Health

There is a dispensary with solar power. There is also a CBD service giving advice and materials for family planning.

#### 9.3 Water

The community says that water is a big problem even though Ruwe Lake is very close (7-10 minutes walk). They say that they cannot use the lake because of the menace of hippopotami and crocodiles. They had a piped water system but the pump was stolen about ten years ago. Despite what they told us we saw many people using the lakeside for clothes washing and youths were swimming up to 20 metres from the shore. Some young men transport water by bicycle and sell it for 100/= per 18-20lt. bucket. In the cultivation areas people use lake water e.g. those cultivating near L. Mbembe drink the water there, which does not look very clean. At Mkata a well has been dug by some women. At Kipeta water from the Rufiji River is used for domestic purposes.

#### 9.4 Milling machine

A milling machine is run by a private individual. It will stop work in February if there is no harvest from the vuli season.

#### 9.5 Travel and Transport

The road from Mkongo is passable all year and from Ikwiriri for most of the year and is under repair at present. The grading work which was recently done has made travel very difficult for bicycles, motorbikes and two wheel drive buses and vehicles. People are getting casual labour

opportunities on the road at 850/= for 150 metres of one side of the road. For both sides the pay is double.

#### 9.6 Shops

There are two shops and one of them is very well stocked.

#### 9.7 Other services

There are four tailors in Ruwe. There are also bicycle repairers, carpenters, a blacksmith and net-repairers. Videos are shown by people from Ikwiriri and Mkongo and lead to disturbance by youths as they return from viewing them late at night.

### **10. Coherence of the Community**

#### 10.1 Physical Closeness

Despite long distances to shambas and sometimes requiring a canoe crossing of an intervening lake there is no problem communicating messages around the village.

#### 10.2 Evidence of trust in the leadership

The attendance of women, men and young people at our village centre meeting was very good despite the fact that the leaders are only acting for a temporary period. Also we were assisted with our needs and got good cooperation from the temporary leaders. The women have no representatives in the village government. The formally-installed leaders are suspected of fraudulent use of village funds and are suspended from their duties while the case continues.

#### 10.3 Organisations, NGOs and groups.

The organisations mentioned were Kuda (drumming group), Pakaya (weaving group), CCM, CUF, UDP, NCCR (political parties), International Sports Club (football), international Sports Club (Netball), Kitambulio (blacksmithing group), UWT (women of CCM), UVT (Youths of CCM) and the Islamic religion. CCM and the Islamic religion are, according to the villagers we spoke to, the most important organisations.

### **11. Migratory habits**

#### 11.1 School attendance patterns

There is some truancy but this is not caused by the movement of parents to the fields. A family can have two houses, one in the village centre and one in the shamba. The houses we saw in the shambas were of a very temporary nature, but we did not travel to very distant shambas. Men who have married more than one wife migrate between their wives houses.

### **12. Conflicts and Solidarity**

The community assists at times of funerals and during cultural rituals, for example a “coming-out” of a bride. Relatives assist each other at rice harvest (Virya Mpunga). We did not hear about major internal conflicts in the community except that the leaders (Chairman and Executive Officer) are suspended from their duties because of the loss of 350,000/=.

### **13. Women’s Freedom, Participation and Confidence**

The women told us that our visit was the first in which they had been given an opportunity to express themselves separately from the men. They attended our meeting in large numbers and participated shyly until they were separated from the main meeting.

### **14. Signs of Enthusiasm and Initiatives**

#### 14.1 Environment management measures at any level

The margins of Lake Ruwe are bounded by woodlands which look intact. There is very little cultivation or tree-cutting on the margins of the lake, despite the fact that it has a very large number of users from four villages. Between the village centre and the cultivation areas there was a fallow area. Some exotic trees which were planted around the school and the village about 15-20 years ago and are providing shade. These trees were provided by the District Forestry Office.

#### 14.2 Environment damage

There are no Mininga (*Pterocarpus angolensis*) or Mvule (*Milicia excelsa*) trees left in the village's woodlands and the villagers know that the Mikongo (*Azelia quanzansis*) are becoming very few. The extent of logging and sawing of timber is unknown. The edges of Mbembe Lake are almost treeless. The source of fuelwood to smoke the fish and cook for the many fishermen is distant. When we asked fishermen about the sizes of fish caught they replied that there are no rules governing the size of fish caught. Small fish are used as bait, but most small fish are saleable. Women carry fuelwood from far away. There is no evidence of planting trees in the shambas or near the fishing areas in order to alleviate the shortage. The carpenters and blacksmith use tree – products without renewing the source. Where Ruwe Lake bounds Mbunju village, there is cultivation right to the edge of the lake. There was some grass-burning near the fields at Mkata.

#### 14.3 Expression of concern about the environment

The meaning of “Mazingira” had to be explained several times throughout our village-centre meeting as it was being mixed-up with “Mazingara” which relates to witchcraft and spirits. The villagers are very keen to get control of their natural resources and very unhappy that licenses for timber extraction and fishing are issued in the District Natural Resources Office without any involvement of the villagers. Rich outsiders get these licenses, not the locals.

#### 14.4 Initiatives for Development

There are some progressive fishermen and farmers and others who have small businesses e.g. tailors, carpenters, shopowners, kiosk owners, blacksmiths, weavers, bicycle-repairers and those with bicycles. A lively drumming group promotes local culture.

#### 14.5 Attitudes to Outsiders and government

As visitors we were received well and the villagers were keen to meet us and discuss the environment. There was no strong begging attitude but there were appeals to base the project in their village. During our visit there was drumming for a girl's coming-out celebration, which went on all night long. There was also a video show and the village was not at all peaceful as male youths were rampaging all night long.

### **15. Accessibility**

Ruwe is accessible by car or motorbike from the Utete ferry for most of the year. During flooding, there are trouble spots on the road at about 17 kms from Utete. It is approximately one hour (30 kms) from the north bank of the river at Utete when roads are passable. It is also accessible via the Ndundu ferry from Ikwiriri. It is also possible to reach Ruwe by boat from Utete though there is no good mooring site. To walk from the Rufiji River to the village centre is a long distance involving a lake crossing. Internally most places are accessible by bicycle or foot. The road between Ikwiriri and Mkongo is under repair and Ruwe will benefit from this.

### **16. Capacity**

#### 16.1 Standard of village management

The village managers are under suspicion as a result of a loss of 350,000/= from the village accounts. Despite this the acting officers are continuing with most of the daily roles of village leaders and the management of meetings and visitors was similar to other villages we have visited.

#### 16.2 Number and demands of other development projects

apart from casual labouring work on the road, there is no project which takes villagers time and attention.

### **17. Biodiversity**

There are large areas of forests and woodlands possibly containing species and associations peculiar to this area. We saw many hippopotami and there was evidence of the presence of many other large and small wild animals, fish and birds.

**Table 11: A History of the village of Ruwe by some old men of the village.**

Year	Event / Situation
1910	People lived in Beta, Nyalingwe and Kipera, which are now sub-villages of Ruwe.
1942	There were very big floods and for the first time wazungus gave food aid.
1962	There were very big floods and food was given by President Kennedy by helicopter.
1968	There were big floods and migration began with people moving into the thick forests of Mitabwe, Dalbergia melanoxylon, mikungugugwi which they cut in order to build houses fast. The government provided lorries for transporting equipment for building.
1970	Agriculture continued in the floodplain. A water project was begun with assistance from SIDA
1974	The District Commissioner Mr.Zeno Mkoswe imposed the formation of a cashew co-operative Umoja wa Korosho. He was very popular among the people. He brought cuttings of cassava to the district and distributed them to each farmer. Unfortunately the cassava was destroyed by wild animals. In one year we built the mosque, dispensary, village office and primary school such was the enthusiasm of the people for development.
1978	There was a big flood but nobody died, but some people lost equipment. People helped each other during the flood.
1979	Mzee Ibagile Musa, who had been the village chairman , died. He had made a great contribution to the village's development.
1980's	The floods were as usual and there were no food shortages.
1997	Just as the maize was ripening in December there was a huge flood.
1998	There were huge floods which were responsible for 52 (?????) deaths. It was especially when madungu were flooded and washed away that people drowned, particularly old people.



## Appendix 10: Village field visit report - Mgomba Kusini

### 1. Name and Location

**Name of Village:** Mgomba Kusini

**Village Chairman:** Hruna Said Kiambwe

**Village Executive Officer:** Ramadhan Mohamed Ngaruma

**Location:** Central Floodplain of Rufiji

**Distance from Utete:** 55km via Nyamwage 75km via Kibiti, Approx 40 km.via Mkongo and Ruwe.

**Time taken for journey:** (via Nyamwage when the road is in bad condition) 1hour 45 minutes.

#### 1.1 G.P.S. Readings

**Table 12: GPS Readings of Mgomba Kusini Village**

Place	Latitude (South) Deg. Mins and decimal points	Longitude (East) Deg. Mins and decimal points
New bridge site	8.00.95	38.57.37
CCM office	7.57.29	38.59.75

### 2. Population

**Table 13:Population of Mgomba Kusini Village**

Source	Households	Population
Village Executive Office	180	2700
Divisional Office	572	3427
Other informants		7,000-8,000

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and Lakes:

Three Rivers: Rufiji, Urabu and Ngaro

One seasonal River: Lusisi.

Three Lakes: Mteke, Mnobo and Sandu.

The villagers and leaders claim that Lake Ilu is within their village.

##### 3.1.2 Forests

The only forest is Ilu.

##### 3.1.3 Wildlife

There are elephant, buffalo, lions, baboons, Vervet monkeys, Kima (Sykes monkey), duiker, dikdik, mongoose (Nguchiro) rabbits, warthog and rats. The birds which villagers listed are Kanga (guinea fowl), Kwale, Kuwani, Tetele, Bundi (owl). The fish which they mentioned are Pele, Kogo, Kambale, Nguchu, Somo, Kaogo, Ngogo, Beme, Vitoga, Tungu and Ngacha.

#### 3.2 Use/ pressure

##### 3.2.1 Forests

There is only one forest in the village lands and it at the south of the Rufiji river away from the main village centre. For fuelwood the villagers depend on mango and cashew trees which they have inherited from their forebears. The species used for fish smoking are Mienje and Minuamisi. We

were also told that grasses and *Phragmites spp.* are used for this purpose because of fuelwood shortages.

Palm leaves (*Hyphenae compressa* Doum) are collected for roofing and for weaving majamvi, mikeka and vitanga.

### 3.2.2 Rivers and lakes

Fishing is done in the villager's own lakes but they also go outside their boundaries to fish and fishermen from other villages use Mgomba Kusini's lakes. The equipment used is nets, hooks and traps (vimvaba). Hooks are used for catching large catfish throughout the year. Traps (vimvaba) are used when the water level is low. Nets of 1.5 to 3.5 inches are used depending on the season. Two men usually share a dugout canoe for net fishing which is done at night and also by day. Canoes are rented out for 100/= per day. There are no laws or rules about closing lakes and the Fisheries Officer who used to be available has been transferred. There are six villagers with fish transport licenses which they have bought from the Natural Resources Department. Women do not fish (kutanda) for fear of crocodiles. Despite big floods the fisheries have disimproved over the past fifteen years. The species Ngacha and vitoga have reduced in numbers while the catfish have increased in number. In the past 400 fish was an average size catch but now it is much less. The reasons are thought to be drought and over fishing.

### 3.2.3 Wildlife use

We were told that people do not kill wild animals because they are afraid of the government Game Officers.

## 4. Economic Activities

### 4.1 Agriculture

Almost everyone cultivates. The main cultivation areas are in the floodplain at both sides of the Rufiji River. Some people live in their shambas especially those south of the river. People from other villages such as Mgomba Kati and Mgomba Kaskazini and Ikwiriri (x3), Umwe (x3) also cultivate in Mgomba Kusini's' land. Some villagers have houses in the centre of the village but others do not and at times of flooding they must rent rooms. The main crops grown are rice and maize.

### 4.2 Fishing

There are more than 30 fishing teams in the village. Nets are usually 50metres long and. Fish are sold individually and not by the basketful(tenga)

### 4.3 Weaving

The majority of villagers especially the women weave. The women concentrate on making mikeka and baskets for their own use while men tend to make majamvi for sale. Women also plait hair as a small business.

### 4.4 Pottery

There are some potters in the village.

### 4.5 Carpenters

There are six carpenters who are all male.

### 4.6 Blacksmiths

There are blacksmiths in the village

### 4.7 Charcoal –makers

There are approximately eight charcoal makers who go outside of the village area to make charcoal.

### 4.8 Tailors

There are three women and 25 men trained as tailors but only a few of them have sewing machines.

#### 4.4 Shops and small business

There are three shops and two kiosks operating in the village. Some women cook for the fishermen at the fishing camps. Others buy fish and fry it for sale at the village centre. Baking (maandazi, vitumbua) is also a source of income for some women.

### 5. Uniformity of Ethnicity

About 75% of the population is Wandengereko; about 20% are Wangindo, while the remaining 5% are WanNgoni and Wa Makonde. There is no tension between the ethnic groups and there is intermarriage.

### 6. Uniformity of Religion

The majority is Moslem.

### 7. Social organisation at Household level

Some said the Kaya is the family who live in one house. Others said that it depends on the male head of household no matter how many wives and families they have.

### 8. Wealth and Poverty

In our very short visit we did not notice extreme poverty. We were told that poor people do not have a house in the village centre and live in the shamba even when there is no agricultural work to do.

### 9. Service Delivery

#### 9.1 Education

There is no school in the village but there are primary schools nearby in Ikwiriri and Umwe.

#### 9.2 Health

There is a mission hospital which the villagers say they cannot afford. They complain that there is no government clinic in the village.

#### 9.3 Water

There are three good wells in the village. Also there are water-traders who sell 20 litres for 50-70/=.

#### 9.4 Milling machine

There is a milling machine owned and run by a private individual.

#### 9.5 Other services

There are shops, kiosks, tea-shops, blacksmiths, carpenters, bicycle repairers, tailors and net-repairers.

### 10. Coherence of the Community

#### 10.1 Physical closeness

The Rufiji River is not a barrier to communication as there is a canoe-crossing service available. All other parts of the village are reachable by car, motorbike, bicycle or by foot. Because Mgomba Kusini people fish and cultivate outside their village and because outsiders cultivate and fish in their village it is difficult to relate the socio-economic village to the physical village.

#### 10.2 Evidence of trust in the leadership

We were told that there is tension between the villagers and their leadership. It is possible that this is true because the introductory comment by the Chairman at our public meeting reminded the participants that, if they were not satisfied with their leaders, they could change it at the next election. The participants showed annoyance at the Chairman for the short notice of our meeting.

The Chairman had told us that none of his village is south of the Rufiji while later we confirmed that south of the river there are several inhabitants of Mgomba and that the very large Lake Ilu belongs to the village. The Chairman's closeness to his people is in question as is his familiarity with the outlying areas of his village. He told us that, in order to be shown around the extremities of the village we would have to pay. Is this an indication of lack of co-operation with the leadership? However the leaders seem to be powerful and were able to draw a large attendance to our meeting despite the short notice that we gave.

### 10.3 Organisations, NGOs and groups.

We discussed this issues with two separate groups and their views regarding importance of the organisations are tabulated below.

**Table 14: Comparison of the importance of organisations in Mgomba Kusini Village by three separate discussion groups.**

Organisations	Women's views	Young men's views
Mwaru (Furaha Mwaru)	6	
UWT	3	
Wazazi	4	
UVT	5	
CCM	1	1
Islam	2	4
NCCR Mageuzi		7
CUF		8
Lengwe (Drumming group)		5
Ndalandala (Drumming group)		3
Guu la Boko Football Club		2
Spoti (Ngoma)		6
Deda (Drumming), TLP, UDP, Pentecost, Chadema		9

## 11. Migratory habits

11.1 There are some villagers who live in the shambas and do not have a home in the village centre. Others just stay in the fields when there is agricultural work to do and have their home in the centre of the village, at times of cultivation and sowing and at the ripening and harvesting stages. Some shambas are close enough to the village centre for their owners to commute daily to and from their fields.

### School attendance patterns

We did not get any information regarding this, as records for Mgomba Kusini children's attendance would be difficult to separate from other children attending the Ikwiriri School.

## 12. Conflicts and Solidarity

The men and the women gave us conflicting impressions regarding co-operation within the community. The men said that nobody helps each other, except for the physical jobs of bearing and burying at funerals. They said that even during floods people do not give each other assistance. The women said that there is a financial contribution given at funerals called "Kisinia" and that they help each other with cultural rituals such as "coming-out" ceremonies for girls. They also said they help each other at planting and harvesting times but that this is mainly between relatives. We did not get information about conflicts.

## 13. Women's Freedom, Participation and Confidence

The number of women who attended our meeting was greater than the number of men. Even so the men continuously interrupted the women. When the women were separated from the men they were very confident in speaking to a male member of our team. There are four women on the village government.

## **14. Signs of Enthusiasm and Initiatives**

### 14.1 Environment management measures at any level

We did not observe any environment protection measures. There were young cashew trees in the fields.

### 14.2 Environment damage

There are very few native(wild) trees or shrubs left in the fields which we visited near the new bridge site. The women told us that they walk a round trip of eight hours to collect firewood. Men collect firewood for sale at 100/= per pile. Some fishermen use grasses to dry their fish because of the shortage of fuelwood. This is another indication that the native trees are depleted. Fish numbers and sizes and the number of their species seem to have declined in recent years.

### 14.3 Expression of concern about the environment

No signs of worries about the state of the environment were noticed.

### 14.4 Initiatives for Development

One group of women got a loan of 100,000/= from MAWARU (Mfuko wa Maendeleo ya Wanawake Rufiji) in 1995 for an agricultural project, but they have failed pay it back.

### 14.5 Attitudes to Outsiders and government

Generally there is no difficulty with strangers and there was great interest shown in our discussions. However there was a tendency to search for donations throughout our discussions. E.g. if you asked about the football club, you were told they have no ball or if you discussed the number of tailors, you were told that they have no money for sewing machines etc. Their attitude to district government was quite negative "Wao wanataka kula tu, wakila hawajali" (They just want to eat and once they have eaten they don't care"). They said that leaders do not listen to their people's problems.

## **15. Accessibility**

Via Nyamwage it is 55 kilometres but involves the ferry crossing at Ndundu and since the road is in very bad condition the trip can take two hours from Utete. Via Mkongo it is approximately 40kms. And involves the ferry crossing at Utete, which can take over 30 minutes but is still much faster than via Nyamwage. By boat it is possible to reach the bridge site or Ndundu but it is important to make other transport arrangements to reach the village centre which is about 5kms from the river at the new bridge site. Secure mooring arrangements would also need to be made.

## **16. Capacity**

### 16.1 Standard of village management

There was confusion about the size of the population, which is quite normal from our limited experience. But the extent of the village and the boundaries are usually known. This was not the case of Mgomba Kusini and we believe that the leadership is not well informed about the village and its people.

### 16.2 Number and demands of other development projects

The TEHIP and DRDP projects are operating in the village but this is not a strain on the human or other resources of the village.

## **17. Biodiversity**

North of the river where there is a dense population and very little woodland or relatively undisturbed areas, we would not expect to find biodiversity hotspots. Perhaps Lake Ilu and its surrounding forests, which we were unable to visit, could be rich in biodiversity.

## Appendix 11: Village field visit report - Mbunju Mvuleni

### 1. Name and Location

**Name of Village:** Mbunju/ Mvuleni

**Village Chairman:** Hashim Salum Muhenga

**Village Executive Officer:** Sultani Makasala

**Distance from Utete ferry:** 36 km.

**Time taken for the journey:** 1.15 hours.

**Location:** North of the Rufiji River in the Central Floodplain.

#### 1.1 GPS Readings

**Table 15:GPS Readings of Mbunju Mvuleni**

Place	Latitude (South) Deg.Mins and decimal points	Longitude (East) Deg.Mins and decimal points
School	7.55.72 (UTM 9123640)	38.54.03 (UTM 488969)
Segeni roadside	7.55.32	38.54.68
Uba Lake, Mbunju	7.54.74	38.53.33
Mbunju Tangini (at the water tank)	7.55.02	38.52.98
Mbambe (on the wooden bridge)	7.54.75	38.51.77
Shamba at Mtumbini	7.55.44.78	38.36.64

### 2. Population

Households, 108; Population, 1100

(Source: Village Executive Officer)

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and Lakes:

Two Rivers: Rufiji and Mchangani

Two seasonal Rivers: Mbungi and Lusisi

The Mbunju River receives floodwaters from both the Rufiji and the Ruhoi Rivers. The Lusisi River is fed from Rufiji.

One Lake: Lake Uba

Uba is a large permanent lake within the village boundaries. The Ruhoi River which is fed by hot springs, bounds the village on the Northwest. These waters are rich in fish and other species. The fish species mentioned as plentiful are Kumba, Ngachu, Pele, Kogo, Kambale, Zozo, Mbufu, Tungu, Beme, Vinyampungu, Kamba, Mbata, Uduvi, Bubu and Mikunga. We saw a terrapin (killed for food) and two tortoises and were told that hippopotamus, crocodile and freshwater snakes are plentiful.

##### 3.1.2 Forests and woodlands

The village contains Roja/Ruhoi forest to the North, Mngoni to the South. These and Lukoko forest have a wide range of species including *Azelia quanzensis* (Mikongo), Miombo Mtondo (*Julbernardia spp.?*), Miombo ngaka (?), Mpingo (*Dalbergia melanoxylon*), Mivule (*Milicia excelsa*), Mininga (*Pterocarpus angolensis*), Minyamweya (?), Msekeseke (*Swartzia spp.*) and Mipugupugu (?). Surrounding the lakes and on the edged of rivers *Hyphenae compressa* and *Phoenix reclinata* palms grow.

### 3.1.3 Birds and Wildlife

The wildlife mentioned by villagers are lion, buffalo, white Colobus monkey, leopard, duiker, warthog, monitor lizard, baboons, wild pig, Vervet monkey, elephant, hippopotamus, crocodiles, porcupine, Ngurungala (?), mbutuka/paa (a type of antelope), kuchakuro, kingwingwindi (?), ndezi (type of rodent), ndondoro (?), waterbuck (kuro), reedbuck (tohe) and mwanga (?). The animals most destructive to farming are elephants, baboons, wild pigs and monkeys. The birds mentioned are Egyptian goose, Egret, Green pigeon and Queleaquelea.

## 3.2 Use/ pressure

### 3.2.1 Rivers and lakes

The lakes and rivers are used for fishing, drinking water, bathing, swimming, washing clothes and other items.

There is very little fishing in the Rufiji River because it flows too fast. Lake Uba is the main fishing site. Pele, Kumba and Kambale are the main species of fish caught. Kasa and Kange are becoming fewer.

### 3.2.2 Forests and woodlands

The forests are used for building timbers and poles, for logs and planks to sell, for fuelwood, fruit, medicines and honey. The main timber species mentioned were *Milicia excelsa*, *Azelia quanzensis*, *Pterocarpus angolensis*. There is access, by a line cleared by oil –explorers, to the north of Lake Uba and recent cutting has occurred there. Although we were told that the Village Government had stopped logging, we saw two lorry loads of logs being moved in a period of less than two days. The fruit species mentioned were Mifuru (*Vitex doniana*), *Hyphenae compressa* (Doum palm), Mitopetope (*Annona senegalensis?*), Mibungo, Mikwaju (*Tamarindus indica*) and Min'gongo (*Sclerocarya birrea subsp.*). Honey is also harvested from the forests. There are villagers who have the ability to treat illnesses using the roots, leaves and barks of trees and forest plants. Although it was not mentioned, trees are used for shade and most houses are surrounded by trees, though usually cashew and mango rather than native trees.

### 3.2.3 Wildlife

Many of the wild animals are eaten though we were told that the villagers do not hunt ! In the past animals skins, such as the Colobus were used as decorations during cultural events.

## 4. Economic Activities

One group of interviewees said that fishing is a more important activity than agriculture while another group said the reverse. It seems that agriculture provides the staple foods while fishing provides food and cash income. Timber –logging and sawing employs others while weaving is a sideline practised in most households. There are also some potters.

### 4.1 Agriculture

All villagers are involved in cultivation especially in the months of August, September, October and November depending on the weather. The main crops are rice, maize, cashew, okra, tomatoes and pumpkins. After land preparation rice and maize are sown starting in November. Weeding is in February and March depending on the level of weed infestation. Harvest is in April (maize) and June or July (rice). Wild animals cause damage to agriculture especially baboons, wild pigs, hippopotamus and birds. Farmers live in their fields from germination to harvesting to protect their fields. Many villagers said that they do not like to sow maize in the long rains because of fear of flooding which would damage it. The areas cultivated are at Mchangini, Mbunju, Mtumbini, Kilalani and Mupi. The floodplain area, Mtumbini, which we visited was very close to the village and had a rich black clay soil.

### 4.2 Fishing

Is done both within the village lakes and in the lakes belonging to neighbouring villages. Uba and Ruwe are the main lakes fished by the Mbunju villagers. Dugout canoes are used in the deeper

parts of the lakes. During the periods of low water level fine nets (1.5 inch upwards) are used while coarser nets (3inch and upwards) are used when the waters are deep. When fishing in the river Rufiji they use hooks and lines rather than nets Nyungunyungu (?) and small fish are used as bait on the hooks. Large fish are caught when the water level is high and vice versa. Other equipment includes weirs (nyando) and vimfaba (traps). The fish species caught include Kumba, Pele, Kogo, Ngachu, Kambale, Zozo, Mbufu, Tungu, Beme, Mbata kamba, Uduvi, Mikunga and vinyampungu. Fish are smoked in lakeside camps and are sold to traders from town (DSM, Kibiti and Ikwiriri).

#### 4.3 Forests/Woodlands Harvesting

Very few villagers are timber traders. They say that the timber and logging activities are mainly done by outsiders. We saw two lorry loads of logs, of probably Miseseseke, being transported through the village towards Ikwiriri. We saw a cross cut saw at one of the fishing camps near Lake Uba. The villagers complain that they have not got the equipment for logging and sawing timber. There are five carpenters in the village.

#### 4.4 Weaving

Most women weave mats, baskets and other items while some men make mats and ropes. Palms (*Hyphena spp.* and *Phoenix spp.*) are used. Artificial colours are used for decoration. The busiest time for this work is after the crop harvest. The products are sent to town (Ikwiriri, Kibiti, DSM??) to be sold.

#### 4.5 Pottery

There are potters who make items to order, as they say that there is no regular market for their products.

#### 4.6 Other economic Activities

There are tea-shops, a guest house and shops in the village. Youths harvest and sell honey.

### 5. Uniformity of Ethnicity

Approximately 75% of the people are Wandengereko while the remaining 25% are Wangindo.

### 6. Uniformity of Religion

Except for two Christians, the population is Moslem.

### 7. Social organisation at Household level

A household is composed of a father, mother and their children . Where a man has more than one wife the number of households depends on the number of wives.

### 8. Wealth and Poverty

Well being means having enough food. Those who are better of than average have a corrugated iron roof, have a bicycle. There are more than one hundred bicycles in the village.

### 9. Service Delivery

#### 9.1 Education

There is a primary school. Despite the fact that the school is a long way from the Mbambe end of the village, the attendance is said to be good. There are 120 schoolchildren (56 girls, 64 boys) and five teachers. The head teacher is female and the other four teachers are male.

#### 9.2 Health

There is no clinic in Mbunju. The villagers go to Ruwe for healthcare. There is no CBD service anymore.

#### 9.3 Water

There was a piped water system which stopped working in 1984. Domestic water is collected from the lakes and rivers. A well which had dried out was seen at Mtumbini.

#### 9.4 Travel and Transport

The village is on the “District” road between Ikwiriri and Mkongo. It is also reached from Kibiti via Mng’aru by a road which crosses the Ruhoi River, but villager’s attempts to repair the bridge have not yet succeeded. Also there are several low-lying areas on this road which would make it impassable after heavy rains.

#### Other services

There are two shops and two kiosks providing basic needs. There is one tailor and six bicycle repairers.

### **10. Coherence of the Community**

#### 10.1 Physical Closeness

From the centre of the village to the boundary formed by the Rufiji River it takes three hours to walk. From the northern boundary in the Ruhoi forest it is approximately five hours to the village centre. The sub-villages of Mbunju and Mvuleni are quite distant but the villagers say that they communicate without difficulty.

#### 10.2 Evidence of trust in the leadership

We did not notice any leadership tensions during our short visit. It was easy to organise meetings (of villagers of both sexes and all ages ) spontaneously with no obvious distrust or animosity towards the village chairman or Executive Officer, who come from two different sub-villages. The Chairman is a young, lively person who seems to communicate well with the older members of the village government.

#### 10.3 Organisations, NGOs and groups.

The following organisations were mentioned as present in the village; UWT, CCM. Wazazi, UVT and the Red Cross. We did not collect information regarding the membership of these organisations.

### **11. Migratory habits**

Farmers live in their fields in madungu (stilt houses) as soon as their crops begin to grow and return to their homes in the village centre as soon as they have harvested.

Many youths leave for larger towns and do not return.

#### 11.1 School attendance patterns

We were told that school attendance is not affected by the migration of the farmers to the fields.

### **12. Conflicts and Solidarity**

Most conflicts are within households. People help each other with drumming rituals, weddings (presents), funerals (financial and other contributions), and in big agricultural tasks such as cultivation, planting and harvesting). These activities are done without considering whether one is a relative or not.

### **13. Women’s Freedom , participation and Confidence**

Women participated in our discussions and walking and driving trips around the village without a problem.

### **14. Signs of Enthusiasm and Initiatives**

#### 14.1 Environment management measures at any level

Apart from the retention of large old cashews and mangoes around the houses for shade, we did not see or hear about special forest, woodland or land management measures. There have been attempts at management of fishing (see 14.3 below)

#### 14.2 Environment damage

There is logging and timber-sawing being carried out but the village leaders do not seem to know the exact extent of it. It is possible that the logging has become more intensive in recent years because the sought-after species are still available in this village. Fish size is thought to have become smaller than in the past suggesting that fish are not being given enough time to grow because of fishing pressure.

#### 14.3 Expression of concern about the environment

In 1997 notices were posted by the Village Government to forbid harmful fishing including the use of poisoning, bombing, Kokoro (seine nets), and nets of 1-1.5 inches. Since then the leaders claim that poisoning and bombing have stopped. Villagers and leaders are ready to reduce the timber-cutting and logging but are unsure how to do it. They would like to take measures to retain some *Milicia excelsa* and *Pterocarpus angolensis* before all are cut from their forests.

#### 14.4 Initiatives for Development

In 1998 the villagers carried out the village “Nguvu kazi” work as planned. They are not happy that very few of them were involved in the road –repair work during 1998/1999. Private enterprise comprises of some commercial fishermen and gardening entrepreneurs. Weaving is also a common enterprise. Youths claim that, if they got bank loans, they could become timber-sawyers and carpenters.

#### 14.5 Attitudes to Outsiders and government

There was good co-operation with the team during the meetings and walking trips and there was friendliness and careful attention given to their visitors.

### 15. Accessibility

The Ikwiriri/ Mkongo road is being repaired so that it will be passable all the year round. The project boat could get there by the Rufiji River but it would be necessary to arrange further transport (bicycle or motorbike) to get to the village centre from the mooring point. We did not get specific information regarding the best mooring place.

### 16. Capacity

#### 16.1 Standard of village management

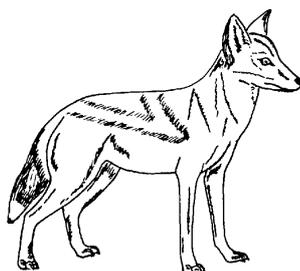
It seems average for Rufiji with no obvious conflicts or mismanagement incidences.

#### 16.2 Number and demands of other development projects

The DRDP road project involves a few paid casual labourers from Mbunju. Otherwise the villagers are free and enthusiastic to be involved in other projects.

### 17. Biodiversity

There are still *Pterocarpus angolensis* and *Milicia excelsa* trees remaining in the woodlands of Mbunju. This is unusual as most people consider that virtually none of these species remain in Rufiji District particularly in the northern part. Msekeseke is also still growing. The overall area of forest/woodland in this village seems very large and there is also a large area of floodplain traversed by three rivers one of which, the Ruhoi, is said to be fed by high mineral content hot springs. It is locally purported to have some endemic species of fish. There are signs of abundance in species and numbers of wildlife.



## Appendix 12: Village field visit report – Jaja Village

### 1. Name and Location

**Name of Village:** Jaja

**Village Chairman:** Jafari Mohamed Ngaima

**Village Executive Officer:** Swaleh Mohamed Mtauka

**Distance from Utete:** Chemchem: 67.9kms (by GPS).

**Time taken for the journey:** By boat the journey down the Usimbe channel via Mbwera took 21hours to Mbwera. From Mbwera to Jaja takes less than an hour if the tides are high and the narrow channel is full. We traveled it when the tide was receding and needed to pole for over 100metres in the channel which is less than twice the width of the boat. The return journey by Ruma and Kipoka channels took 13 traveling hours with an overnight stop on the riverbank en route. The shallowness of the main Rufiji and the need to take care to avoid sandbanks and trees were the main reasons for delay. Also the Usimbe channel is narrow in places and is not navigable, because it is too shallow, except at high tide.

#### 1.1 GPS Readings

**Table 16:GPS Readings of Jaja Village**

Place	Map Number assigned	Northing	Easting
Katikati ya kijiji	17	9094134	539256
Kapa/Salt-making site	18	9096832	540385
Banda Beach	19	9095316	540349
Banda Beach	20	9094003	540349

**Sub-village names;** Bumbwamani, Mjimwema, Kitogani. There are three formally recognised sub-villages. Kidomwe is informally considered a sub-village by some, but it is not officially recognised as such.

### 2. Population

Households, 300;

Population, 1842 Women 550; Men 400; Youths 650; Children under 5 years 242.

(Source: Village Executive Officer)

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

Water resources: Rivers and Coast

Jaja central island is surrounded by different types of water bodies. To the east of the Island is the Indian Ocean and Jaja's main beach, Banda Beach. This beach is lined with Casuarina and coconut trees. Jaja village's other islands are Kisima, Nyamakala, Ulaya and Bedeni. Offshore, prawn-trawling by large vessels is taking place for twelve hours a day at present. To the west a channel exists between Jaja and its islands of Kisima and Ulaya. This channel is abundant in fish during certain times according to tides and weather changes. There are areas on the west of the island which flood at high tide and provide water of sufficient saltiness to support a salt-making industry. The sea and the creeks are used for transportation of goods and people to and from inland areas such as Utete and more often to Mafia island and Dar es Salaam.

Forests and woodlands

The creeks and channels surrounding Mbwera are lined with "kapa" or mangrove forests. The species of importance to Jaja people are Mkandaa (*Ceriops tagal*), Mkomafi (*Xylocarpus granatum*), Mkoko (*Rhizophora mucronata*) and Mchu (*Avicennia marina*). *Casuarina spp.*

(mvinje) grows/is naturalised on the sandy beaches and is also planted for shade beside homes. Mitopetope (*Annona spp.*) and mifulu (*Vitex spp.*) occur in sandy soils where coconuts are scarce or have died out.

#### Birds and Wildlife

##### Birds

Birds listed included; Njengea, Mlemba, Usige, Tutu, Kipeta, Nyangenyange, Korongo, Kipera, Kimbanga and Mchingwi. Hammerkop, Malachite kingfisher, red bishops and pied crows were seen also.

##### 3.1.4.2 Wildlife

Wild pig, Green monkey (few), Guenon monkey (kima), Civet (fungo), Mongoose (nguichiro), snakes, galagos (komba), baboon (nyani) and sea turtles (kasa).

Fish species mentioned include; Ray fish (taa), Pandu, nguru, Papa (shark), Hongwe, Kolekole, Chewa, Futundu, at least three types of prawns (kamba), shrimps (uduvi), dagaa, kungu, mbarata, sanje, ndolo, chewa, chongole, bundi and ngege.

#### 3.2 Use/ pressure

##### 3.2.1 Rivers and coast

The women say there are no uduvi this season but could not suggest a reason why. Very small weave nets are used for fixed and cast netting but no mention of a reduction in fish stocks was made. Large trawlers are trawling for prawns offshore and are allowed within one kilometre of the shore. They dump a huge percentage of their catch into the sea. Apart from the direct destruction of unwanted fish and coral species, the rotting mess sometimes drifts shoreward and is a health and fishing hazard. Sea turtles get caught in nets and die. Also it is suspected that they are killed when they come on shore. Their meat is eaten. Three carapaces of less than a week since slaughter were found on Banda beach. An old informant said that turtles were not killed during his youth but that now it is a regular occurrence.

The mangrove forest adjoining the creeks are the community's toilet which is flushed daily with the outgoing tides. This may be having both positive and negative effects on the water and the fisheries.

##### 3.2.2 Forests

Mangrove –pole cutting was in progress in at least one camp on Kisima island. Piles of poles (boriti) were seen in several creeks and at the port of Kempu where a jahazi was docked ready to take a load to Zanzibar. Pole-cutting and removal of trees is occurring in the areas which are cultivated but not having seen these areas it is not possible to estimate the level of pressure on the forests. Poles are used for home construction, fencing and many other domestic purposes. Small industries such as salt-making, in which 200 or more people are engaged, are possibly consuming large amounts of mangrove fuelwood. Mkandaa (*Ceriops tagal*) and Mchu (*Avicennia marina*) are preferred for boiling brine. The daily consumption of one salt-maker, to produce about 20kgs of salt, is three headloads of fuelwood. Domestic fuelwood is also obtained from the mangrove forests, though the women claim that they only use dead wood. Coconut husks (makumbi ya nazi) are also used as fuel.

#### 4. Economic Activities

##### 4.1 Agriculture and animal husbandry

“In Jaja, everyone is a cultivator.” The people of Jaja depend on agriculture and animal husbandry for their main food supplies and look on their other economic activities for cash income. There is evidence that their cultivation and storage systems are not able to provide all their staple food needs, as rice and flour are imported. Times of hunger have occurred in the past, caused by a locust swarm(1932), droughts (1946, 1998/9) , flooding 1962,1965, 1968,1997/8). Seeds of maize and rice were distributed in the past two years.

On Jaja island, which has a very sandy soil, there are gardens with permanent crops such as coconuts, cashew, and a few custard apple, lime, guava and lemon trees. Cassava is also grown in

fenced gardens for protection from the domestic animals and birds which are numerous on the main island. About half of the households are said to have livestock. The species kept are chickens, guineafowl, goats, sheep and cattle. The cattle are very small, docile and seem to be healthy. There are no veterinary services available. An in-calf heifer is worth 75,000/= and one person's (usually a man) herd seemed to average seven adult females and followers. Some women own cattle and when they do all the products are her property also. Both men and women milk cows. No preserved products seem to be made and milk is consumed in tea on the day it is produced. Beef meat was on sale at 400/= per kilo, about one third of the present price at Utete. The animals are grazed under coconut orchards and also get nutrition from seeds/ fruits found on the beach.

The main cultivation areas are far away from the village centre at a place called Kinongo which is actually in Ruma village. We did not visit this area but believe that mangroves are not cut to provide areas for cultivation. It takes three hours to reach the shambas and some families move there for the season. Rice is the main crop. It is sown in January or February and flowers when the "Kusi"(SE Trade winds) are blowing. The harvest is in June/July and is done with a hand knife. The crop is transported from the fields using dug-out canoes. The shambas are cleaned –up (kukatua) again in September ready for the next crop. Other crops are sweet potatoes (in valleys), cassava and cowpeas. Animals which damage crops are wild pig, warthog (mbangwe/ngiri), guenon monkey (kima), and baboon. Stored crops are damaged by rats.

#### 4.2 Fishing

Fishing is carried out by men, women and children of over ten years of age from almost all households. 75% of the population are involved. The catch is used domestically and marketed in Dar es Salaam and Kilwa and to the prawn buying agents. Ice is bought from the prawn processing plant at Nyamisati. Fishing methods are; Fixed nets, cast nets, Kutanda (two women using nets or cloths), Fixed tanga (Kuzuia na tanga), mishipi and Jarife. Fixed nets are used in the creeks and on the seashore and are set with and without dugout canoes depending on the site. The nets are 1.25 to 3 inches weave and are 50-100 metres long. One or two fishermen operate these nets and can catch up to 100kgs of fish per setting. December to March is peak netting season. At the same time (Dec-Mar) women operate in pairs, fishing by the Kutanda method. They generally use mosquito nets in the sea to catch tiny shrimps (uduvi) which are dried and sold in the market or used for domestic consumption. Kuzuia na tanga: A tanga is usually 1 –1.5 inches, 18-36ply. One person sets a tanga for catching prawns, dagaa, chewa, kungu, mbarata, sanje and other fish. May to March is the usual period for this type of fishing. From 100-1000kg can be caught in one setting. Mishipi (Hooks and lines) are used from May to March to catch Kungu, Kolekole, ndolo, chewa, chongole and other species from the creeks and the sea. Catches are 100kg upwards. Jarife which is a 36 ply 6-14 inch weave net of ten sections totaling 30 metres long is used for sea-fishing to catch Pandu, nguru, Taa, Papa (shark), Hongwe, Kolekole, Chewa, Chongole, Futundu and other species. September to June is the season for Jarife (shark net) fishing. One shark-fisherman who employs six youths on his boat sells salted shark in Dar es Salaam. The shark fins are also sold in Dar es Salaam for export to Japan. He also has a market for shark liver oil (sifa) which is very valuable. He and three youths make nets of all kinds from string bought in Dar es Salaam. A 12inch 300mx6m net costs 90,000/= to make.

#### 4.3 Mangrove Forests Harvesting

Mangrove trees are cut for poles (boriti) which are exported to Zanzibar and also sent upstream for sale. The village gets a 50/= levy for each koriija i.e. 20 poles. Depending on the diameter size of the poles a jahazi can carry 60 to 100 koriija . For example 60 koriija of Size Number 2 poles will fit in a jahazi or 100 koriija of size Number 4. A koriija of Mkandaa (*Ceriops tagal*) is presently sold at 1,500/= to 2,000/=.

#### 4.4 Weaving

Every household weaves. The preparation of coconut fronds for fencing , roofing and other purposes is a male occupation while the collection, drying and weaving of ukindu (*Phoenix reclinata*) into mats and baskets is a female pursuit. Coconut fronds (makuti) were piled at the main port for export. The women take their woven goods to Zanzibar for sale.

#### 4.5 Pottery

There are seven recognised female potters on Jaja, but other women make rough pots and salt sieves from clay for their own use.

#### 4.6 Salt-making

Two-hundred or more people (possibly all households), mainly women, are engaged in salt – making. The tidal flats (jangwa) where salty sand is scraped-up are found on the west, landward side of the island. The salty sand is piled and stored under a shelter. The process involves four filtrations through fired clay “sieves” over a clay-lined hole in the ground. The concentrated solution is then boiled in a tin tray over an open fire for several hours until salt crystals form. Three to five boilings are possible per day. Six to ten viroba (50kg sacks) of salt can be produced per person per month. All Jaja’s needs are supplied and salt is sold to Zanzibar, Mafia and inland areas. No iodisation is taking place.

#### 4.7 Honey-hunting

Some honey is collected from mangrove forests and is sold locally.

#### 4.8 Carpentry

There are two carpenters making windows, doors and household furniture. There are four boatmakers. Mninga (*Pterocarpus angolensis*) and Mvule (*Milicia excelsa*) timber is used for making large boats (jahazi).

### 5. Uniformity of Ethnicity

The majority of the people are Wanyagatwa.

### 6. Uniformity of Religion

The population is uniformly Moslem.

### 7. Social organisation at Household level

A household (kaya) generally means a man and those people who are deemed dependent on him, including his wives, children and the elders he supports.

### 8. Wealth and Poverty

The “wealthy” people of the village are those engaged in small business e.g. small shops and mamantilies (food sellers). Tin rooves, purchases of shop goods and good clothes, many coconut trees, own transport and many animals are also signs of wealth. The poorest people are those who are long-term ill or disabled or in a weak state. The older men said that there are only about ten households in such a poor state. They said that there are only two really wealthy people in the village. Overall they think that their village is a very good place because it is very peaceful and there are no thieves. Other villagers feel that the village has great natural wealth including its marine and freshwater fisheries, its forests and its wildlife. The animals and the long-term crops especially the coconut trees are also wealth.

### 9. Service Delivery

#### 9.1 Education

There is a school with only two teachers. The community was given a cheque worth 400,000/= to build one classroom and is getting technical assistance from the district Engineers office. The people feel that the standard of education is becoming lower. School attendance is low. Some children have to travel across creeks to get to school. The tides and rough conditions can make this difficult. Children fish in the rivers and go to the shambas during busy cultivation periods. Some families move to their fields which are up to three hours away from the centre of the village. Some families have moved to Jaribu mpakani in an almost permanent way. All these factors affect school attendance.

## 9.2 Health

There is a dispensary which is not felt to be adequate. It should have two doctors but it has one nurse at present. People who are very sick take the two to three hour trip to Mafia or go via Kikale to Mchukwi mission hospital. We did not get information about the main diseases. Mosquitoes abound and bite in shady places all day long. Some of these are *Culex spp.* which carry filarial larvae. An old man had one very swollen leg which might be elephantiasis although people deny that it is a big health problem. Malaria is said to be a major cause of illness. Medicine kits have to be collected at Kibiti which is at least three days round trip.

## 9.3 Water

There are several freshwater wells dug by the villagers, usually the women. The walls of the wells collapse regularly because of the sandiness of the soil. It is necessary to do repairs and to insert timbers to hold back the sand at one side to make access easier and safer.

## 9.4 Travel and Transport

Travel across creeks and upstream is by dug-out canoe. The main crossing points are to Mbwera, Pombwe, Ulaya and Kisima. For sea travel, sailing vessels such as jahazis and dhows are used. Bicycles are also owned by some people. There are no motor vehicles on Jaja. No motorised boat is stationed there. It is one of the villages involved in the delta travel project which has two motorised passenger vessels (M.V Mbumi and M.V. Serenge) based at the divisional centre, Mbwera West. There is a joint transport organisation at Jaja itself which carries goods such as coconuts and salt from Jaja to Mohoro and brings back shop goods such as rice, sugar, flour, pumpkins and mangoes. The monthly membership fee is 500/=. Jaja has at least one covered "dock" for storage and sorting of goods in transit.

### Other services

The Mangrove Management Project based at the Natural Resources Office at Kibiti has done some advisory work in this village, but the last visit by a forest officer was in 1997.

There are two privately-owned shops and several kiosks providing basic needs. There is a shaded market place. There are two hotels and some mamantilies on the main street.

## 10. Coherence of the Community

### 10.1 Physical Closeness

The main island is small and easy to traverse. Therefore those living there are within easy physical access of each other. However those living on the islands of Kisima, Nyamakala and Ulaya have to cross creeks to access the village leadership or the health and education services. During the cultivation period many families move the three hour journey away to their fields in Ruma, where they are even further away from the village centre.

### 10.2 Evidence of trust in the leadership

The leaders were able to assemble villagers easily and in our travels with the Village Executive Officer we did not notice any major tensions between him and his people. There is a suggestion of lack of transparency regarding the collection of levies and taxes particularly about the amount retained by the village on submission of returns to the District Council. Villagers do not know where the money retained by the village is used.

### 10.3 Organisations, NGOs and groups

The following are the views of two groups interviewed about the organisations which exist in the village. They were asked to rank the organisations for importance, 1 being the most important and 6 being the least important. Note that the men did not mention the UWT and that the women ranked football clubs last while men said that they were the most important organisations.

**Table 17: Comparison of the importance of organisations in Jaja Village.**

<b>Organisations</b>	<b>Women's views</b>	<b>Old men's views</b>
Vikundi vya uchumi, ushirika (duka) na bustani	3	6
UWT	4	
Mpira wa miguu (Argentina , Beach Stars and Small boys football clubs)	6	1
Chadema		5
CCM	1	2
Islam	2	3
CUF	5	4

**11. Migratory habits**

Families migrate to their shambas during the cultivation season which can be from September to June. This could mean that they are only in the central part of the village for three months. Rich people have homes and businesses in Dar es Salaam. Young people migrate to Dar es Salaam in search of work.

**12. Conflicts and Solidarity.****13. Women's Freedom, Participation and Confidence**

It was easy to access women informally in their shambas or at their salt-making enterprises. They spoke confidently and openly about their work. It is not easy to find women participants in formal meetings. One of the reasons for this is that in the Moslem religion women and men do not sit together on formal occasions. The tradition of men making all the decisions and doing all the talking may be another reason. Women being too busy is the explanation given by the men. This would seem to suggest that the men do not see women's participation in meetings or major decisions as important. When we made a fuss and delayed meetings women were found.

**14. Signs of Enthusiasm and Initiatives****14.1 Environment management measures at any level**

Creek edge and beachfront trees are not cut. Trees and ornamental grasses and flowers are planted near homes. Seasonal fishing is practised and there is consciousness about levels of fish stocks.

**14.2 Environmental damage**

Mangrove cutting for agriculture, for sale and for salt-making is probably at levels above the optimum for sustainability of the resource. The closeness of prawn trawlers to the shore and the intensity of their fishing methods is a threat to local prawn and other fisheries. Sea turtles (Loggerhead *Caretta caretta*) are being killed for meat.

**14.3 Expression of concern about the environment**

Expressions of concern about the dumping of unwanted catches by trawlers and about plastic rubbish on the beach were heard. Worries about the length of the prawn trawling season were expressed also. There were no strong concerns expressed about pressure on fish stocks or on the mangrove resource.

**14.4 Initiatives for Development**

The Village Executive Officer says that initial responses to community efforts is good but that it is difficult to keep people's enthusiasm up from one day to the next. There is one co-operative shop and there are three women's gardening groups.

#### 14.5 Attitudes to Outsiders and government

Despite arriving unannounced, we were welcomed openly and were able to have a meeting with villagers and village leaders within hours. Some people feel that they are forgotten by the government and that this is why their services are falling in quality. However they receive food and seed aid whenever there is a flood or a drought and therefore have some expectations of government. They are participating in a school repair programme managed by the District Council. They say that the district does not like to come often and then only for trade levies or tax problems. In 1997-1998 there was a target of 80 people for payment of Development levy (Kodi ya Maendeleo) but only 18 paid. The reasons for non-payment are that people do not see the benefit of paying tax, they believe in keeping the money for local services e.g. education. Other levies collected for the Council in the past three months have almost reached the target of 60,000/= per month. There are conflicting reports as to whether the District Council's 20% is now left behind or is taken away and returned later.

#### 15. Accessibility

From Utete it is a tortuous boat journey during low water in the Rufiji river. A rise in the level of the river would make navigation easier and faster but it would still take a full day's traveling to get to the south delta. Jaja is probably no more difficult to reach than other villages in the southern delta.

#### 16. Capacity

##### 16.1 Standard of village management

The Village Executive Officer and Village Chairman were available and alert to our needs for information. Figures about population and taxes and levies were readily accessible. The management seems average to good by Rufiji standards. There is a suggestion of lack of transparency regarding levy and tax collection. The village is a very peaceful place with no court cases for the Baraza la Wazee to deal with. There is no thieving in Jaja.

##### 16.2 Number and demands of other development projects

There is a classroom repair project which will need some labour and management contribution by the village. Three women's groups are getting technical and material assistance for gardening projects. The mangrove Management project is not visibly active in this village. No present project is so taxing as to prevent villagers from getting involved in a new project.

#### 17. Biodiversity

A fish species as yet unlisted in the "Fishes of Rufiji" manual was present. There are sea turtles present. The mangrove forests look extensive, relatively intact and have at least six of the eight known mangrove tree species present.

**Table 18: A Chronological History by some old men of Jaja**

<b>Year/ Period</b>	<b>Event</b>
Long ago before the Portuguese or Arabs	Jaja became a village
1890's to 1914	The German colonial period. A tough life. Little economic activity. Coconut tree seeds were introduced.
1914-1918	War between the Germans and the English. Locals involved most often with the English. Coconuts begin to be sold.
1932	Nzige(Locust) swarm came from the south and damaged crops and there was hunger. People ate coconuts, cassava and wild plants.
1942	A bomb floated to Jaja from the sea and an English man came from the boma in Utete to detonate it safely. Food was plentiful especially maize and rice. The Indians were the traders and had four shops. No local people had shops.
1946	Drought. The Kigingiri Famine. Red sorghum was brought in by the colonists to feed us.
1961	Uhuru –Freedom. Crops yielded well.
1962	Nyerere is Prime Minister. Floods occurred and there was a small famine. Maize was brought in as food aid.
1965	Small famine. Some food aid , but we would have survived without it.
1968	Small famine. Some food aid , but we would have survived without it.
1970	Good crop yields
1972	Ujamaa did not come here in a strong way. We asked for a school and it was built.
1987	We asked for a hospital and it was built. Crop yields were good. Coconut trade was going well.
1997/8	Big floods. Maize and seeds were delivered as aid.
1998/9	Drought and strong sun. Cultivation is a problem.

### Appendix 13: Village field visit report – Mbwera Mashariki

#### 1. Name and Location

**Village Name:** Mbwera Mashariki

**Village Chairman:** Hamisi Mauridi Njengwa

**Village Executive Officer:** Kasimu Mohamedi Kiguta

**Distance from Utete ferry:** 67.4 km. (GPS readings)

**Time taken for journey:** 21 hours during the dry season when the level of the Rufiji river is low.

**Location:** In the southern delta on the Indian Ocean.

##### 1.1 GPS Readings

**Table 19: GPS Reading in Mbwera Mashariki**

Place	Northing	Easting
Near the entrance to the Mbwera channel from Usimbe channel	9100853	540221
Darajani between Mbwera Mashariki and Mbwera Magharibi	9103815	541152
Mto Mgwari	9106483	542085
Crossing point to Jaja	9099910	541593

#### 2. Population

Households, 450; Population, 2235

(Source; Village Executive Officer 1998 figs.)

There are four sub-villages with the following populations;

**Table 20: Mbwera Mashariki Subvillage populations**

Sub-village	Population	Households
Mkilika	585	104
Marongoni	632	169
Mdai	563	96
Mbumbulu	455	81

#### 3. Natural Resource Wealth and Use/ pressure

##### 3.1 Natural Resource Wealth

###### 3.1.1 Rivers, coastal and marine waters.

Two Rivers (creeks): Mbwera and Mbwali

The rivers are used for fishing and transport. The main fish species caught include Mkizi, Kamba (prawns), Kitaa (ray) and Uduvi (shrimp). The Indian Ocean is to the east of the village and is also used for transport and for fishing. The main species caught on and offshore are Nyamvi, Mzia (*Sphyraena spp.*), Kolekole (*Trevelli spp.*), Changu, Vibua, Chuchunge, Tingwi, Kikande, Kena, Pandu, Kungu, Chokozi, Mbarata (*Hilsa kelee*), Papa (shark), Kelea, Pweza, Sanje, Kitaa (ray) and Kamba (prawns). Other important marine life includes two types of oysters, Ngowe and Chanjagaa.

###### 3.1.2 Forests and woodlands

The mangrove forests are called kapa and are used mainly for cutting domestic and commercial poles and for areas to cultivate. The mangroves line all the riverbanks. The tree species mentioned as present include Mikandaa (*Ceriops tagal*), Mikomafi (*Xylocarpus granatum*), Mchu (*Avicennia marina*), Msinzi (*Bruguiera gymnorrhiza*) Msindukazi (*Heritiera littoralis*) and Mikindu (*Phoenix reclinata* palm). The main mangrove forests are called Kipatio and Ngwali. Outside of the tidal

zone there are other wild woody species such as Mitonga, Mitopetope (*Annona spp.*), Mifulu (*Vitex spp.*) and Miega (*Kigelia africana*). Mvine (*Casuarina spp.*) is also found close to the coast.

### 3.1.3 Birds and Wildlife

Mbwera does not have many large wild animals. Among those listed were wild pig, green monkey, guenon monkey, hippopotamus, crocodiles, Komba (galago), mbawala (Duiker), mongoose (nguchiro), civet (fungo), turtle (kasa), tortoise (kobe). Rarely a lion is seen. The list of birds mentioned is Mpwete (?), Shoresore (?), Kipeta (?), Kitwetewete (?), Nyangenyange (Egret), Kipanga and parrots.

### 3.2 Use/ pressure

Trees are used for pole-cutting for domestic and commercial use. They are also used for fuelwood and for boiling salt. Dyes are obtained from the mangrove barks and are used for many purposes. Honey is collected from the mangrove forests where bees are plentiful. Clay suitable for house-building and for pottery is found under the mangroves. Mangroves are cleared for cultivation. *Phoenix reclinata* leaves are harvested for weaving mats and other items and are also exported when dried. The creek and coastal waters are fished heavily for domestic consumption and for sale. Loggerhead turtles (*Caretta caretta gigas*) are killed for meat. The village levies for various natural resources are as follows;

**Table 21: Natural Resource Levies in Mbwera Mashariki**

Item	Quantity	Levy (Tshs./=)
Fish/Dagaa	50kg sack (kiloba)	100
Fish/ngonda	Kachira (?)	500
Phoenix reclinata (ukindu)	50kg sack (kiloba)	100
Mangrove poles	20pole bundle(Korija)	50
Prawns	Kilo	20
Salt	50kg sack	100

Freshwater is extracted by digging shallow wells in the sand. Village sanitation is in the kapa which is cleansed daily by the tides.

## 4. Economic Activities

The villagers say that their most important activity is agriculture “in order to get food.” Fishing takes second place and mangrove-pole cutting third. Other activities are livestock husbandry, weaving, salt-making, pottery, beekeeping (mainly honey harvesting), dugout canoe making and small businesses such as shops and food selling

### 4.1 Agriculture and livestock

The cultivated areas are outside of the village in the kapa (mangrove forest) of Mbwera Magharibi. People move to their shambas during busy times. The main crops are rice and maize. Animals cause damage to these crops particularly wild pig, guenon monkey, green monkey and hippopotamus. Young men and packs of dogs (up to eleven dogs seen in one safari) do regular patrols to scare and kill these animals. In 1957/8 cotton was grown on a large scale because they had a reliable market. When cotton prices fell in 1977 the farmers stopped growing it.

Home gardens are cultivated near the houses and contain fruit trees and long-term crops such as coconuts cashews, guava and limes and lemons. Coconuts, cashews and guavas have contributed greatly to cash incomes in the past. Coconut trees are dying due to some disease or pest. It may be a viral disease which is carried by the Rhinoceros beetle which is depleting the standing tree numbers on an alarming scale. Some replanting is successful. Cassava maize and cowpeas are grown on a small scale. Livestock kept beside the home include cattle, goats and chickens. Cattle are kept for meat and milk which is drunk in tea or sold locally. No preserved products are made from milk. Dogs and cats are kept to reduce vermin problems in growing and stored crops.

The village collects the following agricultural levies;

**Table 22: Agricultural Levies in Mbwera Mashariki**

Item	Quantity	Levy (Tshs.)
Cashews	Kilo	40
Cotton	Kilo	40
Coconuts	Unit	3
Cattle	Unit	100
Goat	Unit	50
Chicken	Unit	20
Mango	Unit	5
Tomatoes	Tenga (Basket)	50

#### 4.2 Fishing

Fishing is the second most important activity involving people from most ( about 70% of the population) households. Young people are the most active. The Nyautoti, Mahimbwa and Mkirika creeks and the sea and bays are the most important fishing grounds. There are seven Ngalawas and 30 dugout canoes in the village, made from Mango, Mkomafi (*Xylocarpus granatum*) or Mchu (*Avicennia marina*). A dugout canoe can be made for 30,000/= and an ngalawa for 100,000/=. The methods used for fishing are as follows:

- Mishipi (hook lines) of size No. 2 to 13 to catch fish such as Nyamvi, Changu, Kolekole, Papa, vuzia, Nguru, Taa and Chewa.
  - Nets of 2-5inch weave are used to catch Kolekole, Vibua, Nendale, Mbarata, Mikizi, Kamba (prawns), Kelea and other species.
  - Matandio (?) of 0.25 inch are used to catch prawns and mosquito nets are for netting uduvi. Both men and women are involved in this type of fishing.
  - Gill nets (wavu wa kuzuia) Usually 0.5 inch, these nets are placed across a creek as it enters the sea or in the sea itself. Both large and small fish are caught. More than one hundred kilos can be obtained in one setting. It is admitted that these nets are harmful. e) Jarife (shark nets). Approximately ten villagers are employed in dhows which use shark nets in the sea more than 10kms from the coast. One catch can be 500-1000kgs of Nguru, Papa (shark), Taa (ray), Kungu, Jodari and others.
  - Kukokota (Beach seining); Two people operate a net of 1.25inch (Ply 2) weave and 300m long to fish off the beach. A dugout canoe is used to collect the catch.
- Fish and fish products are mainly exported from Mbwera and the district via Mohoro. Most fish are dried except prawns which are transported fresh in ice obtained from Dar es Salaam, Nyamisati and Mafia. Levies for fishing and for transporting fish are as outlined above in 3.2.

#### 4.3 Forests/Woodlands Harvesting

Kipatio and ngwale forests are made up of mangrove species. Mikomafi, Michu, Mikoko, Misinzi and Mikandaa are the main pole species. The village government should know the number of poles to be cut , what species and the place from which they will be cut before permission to cut is given. In theory it is by this means that the village makes sure that it gets its levies. Sales are to Zanzibar and other places. Mangrove poles are also used for fuelwood and to boil brine in salt-making.

#### 4.4 Weaving

Women cut Ukindu (*Phoenix reclinata*) fronds for sale and for weaving into mats. Mikindu are found growing near the salt flats. Men weave coconut fronds into three types of roofing and fencing materials for export and for domestic use. Almost everybody in Mbwera Mashariki weaves.

#### 4.5 Pottery

About half of the women know how to make pottery from the clay soil which is available. The pots are for domestic use and for salt-filtration.

#### 4.6 Salt-making

This is a dry season occupation for many women. They collect the salty crust from tidal areas. The salty sand is piled and stored under a shelter. The process involves four filtrations through fired clay “sieves” over a clay-lined hole in the ground. The concentrated solution is then boiled in a tin tray over an open fire for several hours until salt crystals form. Up to ten viroba (50kg sacks) of salt can be produced per woman per month. A lot of fuelwood is required for this process.

#### 4.7 Other economic Activities

Beekeeping is a traditional activity carried out by men from approximately twenty households. They put traditional hives in trees in the mangrove forests. Honey is sold locally but other products, such as wax are thrown away for the lack of a market. Other activities are small businesses such as shops, genges and migahawas. The Mbwera Magharibi market is used because Mbwera Mashariki has no market of its own.

### **5. Uniformity of Ethnicity**

The majority of people are Wanyagatwa. A few are Wandengereko.

### **6. Uniformity of Religion.**

The majority of people are Moslem.

### **7. Social organisation at Household level**

A household is classed as a nuclear family i.e. man, wife and children.

### **8. Wealth and Poverty**

The village is rich in natural resources including its mangrove forests, the sea, the rivers and the salt flats. It also has coconut trees and cashews. Individual wealth varies. The well to do have houses roofed in iron sheets, can buy nice food such as rice, they pay casual labour to cultivate, they have private transport (bicycle, canoe). Poorer people have coconut leaf roofed houses, no transport and eat maize porridge every day. In general it is felt that the village has become run-down because education and agricultural facilities have become weak. There are fewer markets for crops.

### **9. Service Delivery**

#### 9.1 Education

There is a school with three teachers which is shared with Mbwera Magharibi. There would not be enough space in the school if all the children attended, but attendance is low. Parents do not see the value of education in the government school. Children are sent to Koran school (Madras).

#### 9.2 Health

The dispensary is shared with Mbwera Magharibi. There is no doctor, but an MCH nurse is available. Extremely ill patients go to Mchukwi via Kikale, or Mafia via Kiasi which can take two days. The situation has worsened during the 1990's.

#### 9.3 Water

Fresh water is obtained from shallow wells which are dug by the women and men. The district Council offered help to make a permanent well but did not find a suitable source.

#### 9.4 Travel and Transport

There are two boats with inboard engines, which were donated by the Finnish government. We were told that they are the property of the villages through the company called Delta Transport, but there is an ongoing dispute, involving the District Council, about their ownership and management. These boats travel to Mohoro, Kiasi and many other villages and transport goods and passengers. Only one of the boats was in working order during our visit.  
Other services.

There is a Wildlife Officer at Maparoni who can be called in emergencies to remove marauding animals from crops and settlements. There are two shops and some kiosks and food suppliers providing basic needs in Mbwera Mashariki and further shops and food outlets in Mbwera Magharibi which is adjacent.

## **10. Coherence of the Community**

### **10.1 Physical Closeness**

The village is compact and easy to traverse. There are good tracks which are maintained running through the village and going towards Jaja, Kiechuru and Mbumbura harbour where crossings can be made to Nyetoti. Mbwera, Mbwari and Mahimbwa creeks greatly assist communication.

### **10.2 Evidence of trust in the leadership**

Even though the village cooperates with Mbwera Magharibi on development projects such as the school, bridge, dispensary and market, the revenue collected for such projects is never pooled. There have been some troubles in management of the Delta Transport boats but no District leaders came to solve the issues for 15 months. The district is assisting the repair of the footbridge between M. Mashariki and M. Magharibi.

### **10.3 Organisations, NGOs and groups**

VIMWARU, is a company of the villages of Rufiji set up in 1980 which has members from Mchungu, Mbwera, Msindaji, Ndundutawa and others. Its aim is to improve the crops trade particularly rice, cotton, cashew and coconuts. Mbwera Memory Club is a group of Mbwera people who live in Dar es Salaam which aims to bring development to Mbwera. It has Prof. Mikidadi, the MP for the area as a member. It has a proposal for a tourist hotel on Doma Island for which it is looking for funding. MMDA Mkongo-Mloka Development association aims to improve the economic status of Rufiji people by giving soft loans to groups who get involved in economic initiatives. It is an NCCR organisation. VIKOMBWEMA is a cashew-processing group which is not registered. SHAJIZIA is a women's football club. BafanaBafana is a men's football club. CCM is a political party. Hilary Mayo is a women's weaving and pottery group. Older men and women said that the most important organisation in the village is the Moslem religion followed by the football clubs, a women's weaving and pottery group and CCM.

## **11. Migratory habits**

People move to their fields during busy agricultural seasons; October for cultivation, January for planting, February/ March to weed and June to protect ripening crops from birds and wild animals. This affects school attendance patterns negatively as children cannot cross creeks and travel long distances to school.

## **12. Conflicts and Solidarity**

People cooperate during marriages, funerals, football events, schoolroom building, lending canoes and fish. There is no cooperation in fishing, cultivation or crop harvest and the cooperation for funerals is at a minimum.

## **13. Women's Freedom, participation and Confidence**

There are five women on the village government of 25 members. However it was very difficult to get women in attendance at our meeting with the rest of the villagers and it was necessary to call a separate meeting. Men were dominating discussions.

## **14. Signs of Enthusiasm and Initiatives**

### **14.1 Environment management measures at any level**

Permanent crops are maintained and replanted around the settlements. Planted trees appear to be well valued and cared for.

### **14.2 Environment damage**

Trees, especially Mkomafi (*Xylocarpus granatum*), Mchu (*Avicennia marina*) and Mkandaa (*Ceriops tagal*) are cut from mangrove forests for cultivation, fuelwood and for commercial reasons.

Very small weave nets are being used for fishing.

We were informed that some fishermen are using bombs (dynamite) off the islands. There was a turtle carcass on a beach. Turtles may be being prevented from laying eggs.

#### 14.3 Expression of concern about the environment

People said that they would like to learn more about their environment and some said that they agree with those who want to prevent the huge prawn farm that is being established in the delta. They were expecting a visit from the NGO Southern Regions Development association. They think that the offshore prawn trawlers should be prevented from fishing until after May to allow the prawns to develop. They advise that from April to August no prawn fishing should take place.

#### 14.4 Initiatives for Development

The availability of a transport service and shops shows some development effort. Some young men and women manage to build and run their own homes through working hard on their trading efforts.

#### 14.5 Attitudes to Outsiders and government.

As outsiders and government representatives we were received well and given every assistance needed. There is some difficulty between the village and the higher authorities regarding the boat travel project.

### 15. Accessibility

The village is accessible from the Usimbe channel by entering the Mbwera creek. While the Rufiji river is low it takes several hours to reach this creek from Utete. Tides must be taken into account before embarking on a journey. There are small routes to Mohoro and other villages by canoe and by foot.

### 16. Capacity

#### 16.1 Standard of village management

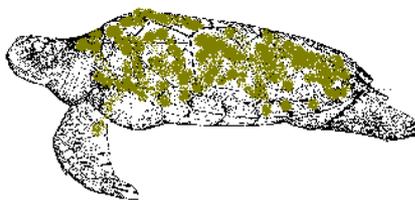
All the leaders are locals. The Village Chairman who is in his sixth year of leadership is happy in his work and feels that he is a unifying force between the government and his people. The sub-villages are agreeable to work on joint development projects. The Village Office was able to provide population statistics without a problem or a delay. Ward Development committee meetings are supposed to take place each month but there has been none yet in 1999. Young people are uninterested in meetings. The leaders are old people mainly men.

#### 16.2 Number and demands of other development projects

The District has contributed nails and timber for repair of the bridge and the repairs are being done. There is some activity in relation to women's gardening projects with advice and materials from the DALDO's office. The boat transport project also involves some villager's time, but there are no major projects which consume the energy of the whole village. It would be possible for these villagers to take on another project if they wished.

### 17. Biodiversity

There is much biodiversity in Mbwera's environment especially in terms of fish, marine and plant species. The Pacific Loggerhead turtle is present. Seven of the eight known mangrove species were mentioned as present. Several terrestrial mammals are also present.



## Appendix 14: Village field visit report – Kiasi Village

### 1. Name and Location

**Name of Village:** Kiasi

**Village Chairman:** Juma Omari Yahaya

**Village Executive Officer:** Hassan Musa Msati

**Distance from Utete:** We traveled by car to Nyamisati (4Hrs); from there we went via the rivers Bumba, Mgambo and Tarachu to Tarachu of Twasalie (4 Hours). From Twasalie to Kiasi we travelled for two and a half hours via the Kibanjo River and the sea in order to enter the mouth of the Kiasi River. The port of Kiasi is situated at the mouth of the river, but the village centre is a one hour walk from there. There are sandbanks at the mouth of the river and fishing nets are also placed there making navigation difficult especially when tides are receding.

**Time taken for the journey:** 11.5 Hours.

**Location:** Kiasi is south east of Nyamisati, inland from Ras Dima.

#### 1.1 GPS Readings

**Table 23: GPS Readings of Kiasi Village**

Place	Northing	Easting
Kiasi Uwandani (beach/port)	9118938	547024
Kiasi Katikati (Shuleni)	9115481	546636

There are four sub-villages; Uwandani, Poroti, Nunu and Nyunguni. Uwandani is the biggest sub-village.

### 2. Population

Households, 290;

Population, 2870 (1550 women, 1320 men.

(Source; Village Executive Officer)

The older people say that the population has increased by a factor of five since their childhood i.e. in about fifty years.

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and coastal waters

Three Rivers: Uwandani, Bachambao and Dima.

To the east is the Indian Ocean. There is a wide range of fish species including Kamba, Sanje, Mbuke, Mbasu, Ibrahim, Kitaa, Hongwe, Chongole, Kirubuni, Mkunga, Pandu, Taa, Kolekole, Vipanga, Mbarata, Papa, Msembe, Nguru, Nyange, Daga macho, Nendele, Mzia, Ndofulofu, Mkundaji, Sarawanje, Mbuzi bahari, Kikande, Fatundu, Kambale, Kumbasu, Songoro, Kibua, Chewa, Mtepa, Mkonge and Ngurubuni (*Therapon spp.*).

##### 3.1.2 Forests and woodlands

The rivers are edged with mangrove forest. The list of tree species given included Mkoko (*Rhizophora mucronata*), Mkandaa (*Ceriops tagal*), Mchu (*Avicennia marina*), Mkomafi mtonga (*Zylocarpus granatum*), Msindikazi (*Heritiera littoralis*).

##### 3.1.3 Birds and Wildlife.

The wild animals listed were hippopotamus, wild pig, baboons, guenon monkey, warthog and cane rat.

### 3.2 Use/ pressure

All kinds of fish including prawns are eaten locally and also sold commercially. It is not known whether fish stocks are under pressure, but villagers are worried that the number of fishermen is increasing. They say that there are 300-500 fishermen here in some seasons.

Mangroves are cut for sale to Zanzibar. The extent of the cutting for this purpose is unknown and we were not encouraged to visit cutting sites. Mangroves are also used for building, for salt-making and some are cleared for cultivation. The older men say that the mangroves are becoming more extensive and of greater size. They claim that the more they harvest the bigger and the better the remaining trees grow.

## 4. Economic Activities

One hundred people in a public meeting gave details of their occupations. Although many carry two or three occupations at once, the following table represents their main activities during the present season.

**Table 24: Economic Activities in Kiasi Village**

Economic activity	Number of respondents
Mangrove-pole cutting	3
Agriculture	47
Fishing	35
Sailor	1
Business	4
Coconut –Harvester (mkwezi)	2
Builder	3
Herder	3
Teacher	2
Total	100

Agriculture and fishing are the main occupations and most people do both.

### 4.1 Agriculture

The areas cultivated are very far away in Chowe, Ukongore and Msani, in Twasalie and Msala villages and we did not visit them. It was explained that cultivation is in the clayey grasslands and not in cutover mangroves. Rice sowing is in January and harvest is in June/July. The harvest is transported by headload and canoe. The island of Kiasi has sandy soil and long-term tree crops including coconuts, mangoes and cashews are grown. New coconut seedlings have been planted recently. The cashews are not pruned or treated for disease. The District Council once promised sulphur powder but did not deliver it. Cassava is also grown. About one tenth of households have large livestock such as goats or cattle. Men own the cattle which are not used for brideprice. An in-calf cow is worth 50,000-70,000/=. A cow yields 1-1.5 litres of milk per day. A litre sells for 200/=. No milk preservation is done. A kilo of meat is 400/=. Some women have goats. About 60% of households have poultry i.e. hens or ducks.

### 4.2 Fishing

A list of 13 fishing methods was given; Kutanda, Kueleza, Mishipi, (the three most important methods), Kuzamisha, Kukilicha, Dema, Kuzuia, Kukokota, Dhulumati, Hiari, Wando, Jarife and Kimia. Some of these methods are described below.

The fishing areas are Dima river and Kipeta area of the coast.

Hookline (mishipi)

About 30 fishermen use this method. One person will have 6-100 hooks, of size 4-6, set in the sea. They catch Sanje, Kolekole, Vitaa and Vipanga mainly but also Sarawanje, Kumbasu, Hongwe, Mzia, Nyamvi, Songoro, Fatundu, Mbuzi bahari, Pandu, Kikande and Kungu. 20-30 kilos can be caught in a setting. A setting lasts for about six hours to twelve hours and is removed at high tide.

#### Beach seine nets (Nyavu za kukokota).

These nets can be 100-600 metres long and 2 ply. They are used in rivers and in the sea. Two people operate them from a canoe. In a four hour period they can catch 15-40 kilos of prawns, kaa and mbalata.

#### Gill Nets (Nyavu za kutega)

Two people operate this 1-1.5 inch weave net from a canoe. They catch between 150-500kilos of prawns, dagaa, mboke or mbarata in a four hour period. The net is set when the tide is receding and removed when the tide is at its highest.

#### Scoop Nets (Kutanda)

Two people operate a 20 to 30 metre 3-6 ply net from a canoe to catch prawns, mbarata, kaa and viyenge. Up to 40 kg can be caught in one trip. The season is October to March. April to September is a bad time.

#### Drift Netting with Gill nets (Kueleza)

Two people from a dugout canoe use a 2ply net of 250-500 metres long. They can catch up to 80kgs of prawns, Mbarata, Msembwe, Mkizi, Kinengwe, Kumbasu, kitaa, Sanje, Kibua, Nguru, Songoro and Kolekole.

#### Bottom set Gill Net (Kuzamisha)

Up to 40 kgs of prawns, mbarata and Msembwe are caught in a 2ply, 100metre long net operated by two people.

#### Frightening (Kukilita)

This is done from a canoe in rivers by listening to and surprising the fish at the river's edge. Mkizi and Dagaa are caught in small quantities (10kg per trip.)

#### Trap, Weir (Dema)

A person stands at the edge of the river and puts the dema (a cloth sack on a long pole) into the water and collects small amounts of fish for home consumption. It is usually a children's activity.

#### Long line (Dhulumati)

This is done in the deep sea (> 50metres deep) by two people in a canoe. They use 100-300 hooks of size 4-6. In a period of six hours they can catch up to 50 kgs of shark, Ray, Hongwe, Nguru, Songoro, Kitaa, Sanje, Chewa (Rock cod), Mbasu, Kolekole, Mzia, Mbuzi bahari, Ibrahim.

#### Hiari/ Jarife (shark net)

A big boat (mashua) with four to six operators usually goes out to sea for a twelve hour period. The species caught are similar to those with a dhulumati.

#### Weir (Wando)

This is used in the sea by one or two people from a canoe. It needs special skills and can only be done for a three month period. The gear is called Chelewa

#### Cast Net (Kimiya)

This is done from the beach. The gear is known as "Kimiya". Up to 30 kg of Prawns or Ndadi can be caught.

Fish Preservation is by sun-drying, salting and in ice (prawns). Fish are sold to Lindi and to Dar es Salaam. Prawns are bought fresh by agents who come with their own ice.

#### 4.3. Forests/Woodlands Harvesting

Mangrove poles are cut and sold at the following prices.

**Table 25: Mangrove Pole Prices in Kiasi Village**

Type of pole	Size Class	Price per korija (bundle of 20)
Boriti	2,3 &4	2,000/=
Pau	5	1,500/=
Majengo	3 &4	3,000/=

These are the types and classes in demand in Zanzibar and in Arabian countries.

#### 4.4 Weaving

Cutting and weaving of ukindu (*Phoenix reclinata*) is carried out in most households. Women are the main cutters and weavers.

#### 4.4 Other economic Activities

There are three cafes at Ploti and others at Uwandani. There are genges, fish friers and six shops, three of which are at Ploti. There are two carpenters. There is a market at Poroti, but it was inactive during our visit.

### 5. Uniformity of Ethnicity

Most people are Wanyagatwa or Wandengereko. Some Wamakonde come occasionally to work as casual labourers for cultivation and weeding of coconuts and rice.

### 6. Uniformity of Religion

Most people are Moslem. There are four mosques, one each at Ploto, Ikumbi, Kwa Mpetto and Uwandani.

### 7. Social organisation at Household level

A kaya is a unit of a woman, a man and their children who live in one house. Men can have up to four wives. A woman's shamba and its proceeds are her own. Money is used for brideprice (25,000-30,000/=).

### 8. Wealth and Poverty

Signs of wealth are possession of a lot (500-1000) of coconut trees, one or two big boats (majahazi) or a house in Dar es Salaam. Other signs of wealth are ownership of livestock, a shop or a medium sized boat (mashua). Poor people are those who have no work, who beg for money, have a low standard of education or who are permanently ill or disabled. A group of young men thought that Kiasi is poorer than Mohoro or Mbwera.

### 9. Service Delivery

#### 9.1 Education

There is one school with four teachers, two female and two male. The school is being improved with a 7 million T.Shilling donation from Danida.

#### 9.2 Health

There is a dispensary that has had solar power since 1994. A fridge and a light are still running off the solar panel, which was donated through the Regional Commissioner. There is a good supply of medicines and one medical aide. A female traditional healer is also available. Serious cases are referred to Mafia, which is about four hours, away by dugout canoe.

#### 9.3 Water

There are thirty hand dug shallow wells supplying fresh water. Some rainwater is harvested from the mosque at Ploti.

#### 9.4 Travel and Transport

There are no public transport services.

#### 9.5 Other services

There are four mosques, two Koran schools, 6 shops, 3 cafes, and a market. The Mangrove Management Project established an office and accommodation here but it does not seem to be very active now. There are two carpenters.

### 10. Coherence of the Community

#### 10.1 Physical Closeness

Within Kiasi itself the distances are short and communication seems easy. The cultivation areas are far away in other villages. When people move to their shambas they are very far away from the education and health services.

#### 10.2 Evidence of trust in the leadership

When asked, people said that they like their leaders because they are committed to development of the village.

#### 10.3 Organisations, NGOs and groups

Two groups (women and young men) when asked about the organisations which exist in the village mentioned the following ones. They then ranked them for their importance (1 being very important, 2 less important and so on). The women did not even mention the football clubs, while the young men thought them to be the most important organisations.

**Table 26: Comparison of the importance of organisations in Kiasi Village.**

Organisation	Women's views	Young men's views
Sheraton Football Club	-	1
Vitaloo Football club	-	2
Islam religion	2	3
CCM political party	1	4

### 11. Migratory habits

The whole household moves to the shamba for the growing season i.e. from November to June/July. This means that only three to four months are spent in the centre of the village each year. Some rich people have houses in Dar es Salaam and live part of the time there.

#### 11.1 School attendance patterns

Migration to the shambas must have a negative effect on school attendance.

### 12. Conflicts and Solidarity

There is no assistance for hungry people or cooperation during cultivation. "Msisi" is the local name for helping at harvest time for which payment of part of the crop is made. People help each other at funerals and contribute money to the bereaved. Only relatives contribute towards private celebrations e.g. a girl's coming out party. The young men who fish for and buy prawns are strictly supervised by the village leaders. If they are causing conflict they are sent away from the village. Boats fish very closely together but there are no conflicts between fishermen and they give each other space.

### 13. Women's Freedom, participation and Confidence

Despite almost twenty-four hours notice it was very difficult to get women's participation in a public meeting. Because of rain and distance we did not visit shambas or homes where we might have been able to meet women.

### 14. Signs of Enthusiasm and Initiatives

#### 14.1 Environment management measures at any level

The mangroves that we saw looked intact. There was no evidence of grass burning in the plains, but this was a wet season visit. People seem aware of the value of and their complete dependence on their natural resources particularly their fisheries and their forests. The village leaders are particularly conscious of the value of the levies, which they collect from the prawn industry.

#### 14.2 Environment damage

Mangroves are being cut and the leaders were very secretive about the activity and did not assist us in visiting cutting sites. There is a consciousness that the fishermen's yields per head have reduced, which might mean that over-fishing is taking place. The beach is used for landing fish, catching fish, drying fish, goats roam freely on it and people defecate on it. There is no evidence of management of the main beach/port.

#### 14.3 Expression of concern about the environment

Outsiders are blamed for over-cutting the mangrove forest. The offshore trawlers are seen as a threat to the local fisheries. People are grateful to Mafia Island's Marine Patrols for their efforts to prevent dynamite fishing, which was a big problem until 1998.

#### 14.4 Initiatives for Development

The villagers themselves say that they are enthusiastic at the beginning of a project, but that they get tired easily and need a "push" from the outside. At present they are repairing the school. They have built a very good Madras from their own funds and strength.

#### 14.5 Attitudes to Outsiders and government

The leaders are not alert to the needs of visitors. They resisted our efforts to sleep in the centre of the village and insisted that we stay in the MMP house at Uwandani. They delayed the public meeting for several hours without explanation. When requested to show us the areas where mangrove poles are cut they were resistant, then unhelpful. The villagers were cordial and hospitable and showed great interest in the project. They said that the District leaders do not come to visit and therefore do not understand their problems.

### **15. Accessibility**

The trip from Utete via Nyamisati takes four hours by car. From Nyamisati by boat directly to Kiasi could take three hours depending on tides and the calmness or roughness of the sea. To visit the shambas one needs to allow another three hours.

### **16. Capacity**

#### 16.1 Standard of village management

The leaders were available and gave us the statistics we requested regarding population, taxes and levies. The village is secure, peaceful and has no thieves or court cases. There was a sense that the leaders were hiding something from their visitors.

#### 16.2 Number and demands of other development projects

The school is being repaired. There is also the Mangrove Management Project though neither occupy a majority of the villagers full time. The capacity to work with another project is available.

### **17. Biodiversity**

Thirty-nine different fish names were mentioned during the few short discussions. It is estimated that there are fifty known species in the Lower Rufiji. Kiasi may well have all fifty! The mangroves are extensive and support many species other than mangrove trees.

**Table 27: List of fish species mentioned by Kiasi villagers**

Number	Local Name	Scientific Name (where identifiable from the Fish I.D. Manual, Hillman, 1999)
1	Kamba	<i>Penaeus indicus</i> (white prawn) <i>Penaeus monodon</i> (Tiger prawn)
2	Sanje	
3	Mbuke	
4	Mbasu	
5	Ibrahim	<i>Anguila spp</i>
6	Kitaa	(Rays)
7	Hongwe	<i>Bagrus spp</i>
8	Chongole	
9	Kirubani	
10	Mkunga	<i>Anguila spp</i>
11	Pandu	<i>Scomberoids spp</i>
12	Taa	(Rays)
13	Kolekole	<i>Trevally spp. (Carangidae)</i>
14	Vipanga	
15	Mbarata	<i>Hilsa kelee</i>
16	Papa	<i>Carcharhinus spp (sharks)</i>
17	Msembe	
18	Nguru	<i>Scombridae –many genera</i>
19	Nyange	
20	Dagaa	<i>Sardinella malanura and others</i>
21	Macho	<i>Trachuropa crumenophtanus (Carangidae)</i>
22	Ndendele	
23	Mzia	<i>Sphyraena spp.</i>
24	Ndofulofu	
25	Mkundaji	<i>Parupeneus sp. (Mullidae –goat fish</i>
26	Sarawanje	
27	Mbuzi bahari	<i>Echeneis naucrates (Liveshark sucker)</i>
28	Kikande	<i>Ballistidae</i>
29	Fatundu	
30	Kambale	<i>Clarias spp.</i>
31	Kumbasu	
32	Songoro	<i>Rachycentridae (the cobias)</i>
33	Kibua	<i>Carangid spp (the scuds)</i>
34	Chewa	Rock cod
35	Mtepa	
36	Mkongge	<i>Trichuridae</i>
37	Ngurubani	<i>Terpon spp</i>
38	Kungu	<i>Lutjanus spp.</i>
39	Nyamvi	

## Appendix 15: Village field visit report – Kiomboni Village

### 1. Name and Location

**Name of Village:** Kiomboni

**Village Chairman:** Omari Hemedi Upindo

**Village Executive Officer:** Kassimu Bakari Nyandangai

**Distance from Chemchem, Utete:** 73.2kms (by measuring distances between GPS, but all river meanders could not be taken into consideration)

**Time taken for the journey:** Four hours by car to Nyamisati in the wet season, then one hour by boat via Simba Uranga. The river and sea trip is dependent on tides and can be rough depending on the time of year.

**Location:** In the Northern delta at the mouth of one of the main channels of the Rufiji River. South East of Nyamisati.

#### 1.1 GPS Readings

**Table 28: GPS Readings of Kiomboni Village**

Place	Northing	Easting
Kiomboni Ufukweni	9137713	544222

### 2. Population

Households, 410;

Population, 2175

(Source; Village Executive Officer).

There are three sub-villages called Kiomboni Pwani, Kiomboni Gongoni and Twana.

### 3. Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and lakes:

Four Rivers: Kiomboni River, Twana River, Kibanjo River and Simbaulanga River.

All these rivers are tidal and have varying levels of salt and freshwater depending on the level of the Rufiji River and of the tides. The rivers are very important for transport from island to island within the delta. There are many fishes in these rivers and offshore. The villagers gave us the following list; Hongwe, Papa, Chewa, Kumbasi, Masembe, Mitepa, Kungu, Pandu, Kuku, Gayogayo, Msuli (a type of shrimp), Uduvi, Ngege, Sanje, Kolekole, Dolo and Mikonge. Pomboo (dolphins), Kasa (turtle), Kaa (crab), Kuwi and Msembe are also present.

##### 3.1.2 Forests and woodlands

The village has mangrove forests on the edges of all the rivers. In general the mangroves seem intact except for an area about 400m north of Kiomboni Pwani where signs of over-cutting were seen. There is some erosion in this area. Native trees on the higher, drier parts of the islands include Mpilipili, Mtopetope (*Annona spp*), Mfulu (*Vitex spp.*) and Mtomondo.

##### 3.1.3 Birds and Wildlife

Hippopotamus and crocodiles are the only large wild animals. Baboons are present. There are many birds including tetele and parrots.

#### 3.2 Use/ pressure

One of the main uses of the rivers and the sea is for transport by dug-out canoe and Jahazi (large boats). Mangrove trees and mangoes are used for making the canoes. Almost all houses are made from mangrove poles. One of the three main enterprises is boriti (mangrove-pole) cutting for

export to Zanzibar. Wild fruits are collected from Mfulu (*Vitex spp*), Mtopetope (*Annona spp.*) and Mpilipili. Tidal flats are used for salt –making which involves use of forest product for fuelwood. Fishing, particularly prawn fishing is a major commercial enterprise. The village collects levies for harvest of its natural resources; Fresh prawns 10/= per kilo, Dried prawns 100/= per sackful and mangrove poles 100/= per bundle of twenty (korija). It was explained that levies are not easily collected because the harvesters do not like paying and because the village leaders are too shy to demand payment from people whom they know well. The leaders expect district government workers to pressurise the harvesters to pay. The leaders are very critical of government workers for not forcing prompt levy payments.

#### 4. Economic Activities

Like most delta villages the people are dependent on their natural resources. Their economic activities are mainly fishing, agriculture and mangrove-pole cutting. Salt-making, pottery, cutting and weaving with ukindu (*Phoenix reclinata*) and honey-hunting are also important. A typical woman's routine will involve agriculture, fishing, salt-making and ukindu-cutting and weaving. A typical man's lifestyle involves fishing, agriculture and mangrove-pole cutting.

##### 4.1 Agriculture

All families are involved in agriculture. Rice is the major crop and is grown in areas which were formerly mangrove forests. No tree removal is necessary now, as the areas were cleared over thirty years ago. The crop depends on flooding by the river and the tides. If there is too much rain the crop is destroyed. Yields can be as much as 20 bags (2 tonnes) per acre or as little as a quarter bag (25kgs) per acre depending on the year. Overall, yields are thought to be less than in the past. Field preparation is in December, rice sowing is in January and February and weeding is done in March. Protection against wild animals and birds is necessary from April until harvest time in June. The cultivated areas are far away from the village centre at Koki, Kisanga, Namba saba, Mapalya, Mtukunye, Makasi, Mikongo, Longa and Sweni. On our visit to Koki we saw that the rice was direct sown but that thinning and "beating-up" takes place later. The varieties sown there are Machale, Kaja, Kishingo, Supa and Hindia.

Hippopotamus damage occurs in rice fields. If there is one grazing while the rice seedlings are small, there is a big increase in yields, but if the hippopotamus comes back the crop can be destroyed.

A type of crab (kowe) causes serious damage to young rice seedlings. Chemicals such as DDT and "Kilazoni" (Rixon?), which are available at Mfisini, are used in a rice bran bait to kill the kowe. Birds such as Kwelea (*Quelea quelea*), Vipata and Kimote are a problem from flowering until harvest. Constant watching and scaring are the methods used to deter them.

Other annual crops are maize, cassava and cowpeas. Mangoes and coconuts are grown as food and for commerce. Since 1980 coconut trees have been dying due to a disease. Despite efforts to get advice from the Division and the District no solution to the problem has been found.

##### 4.2 Fishing

Fishing is said to be the most important activity. The fishing areas are Kiomboni, Twana, Simbaulanga and Kibanjo. These are tidal areas. The numbers of fish do not seem to have decreased compared with years past. However, the individual returns have declined because there is a big annual increase in the number of fishermen. Also large trawlers are fishing for prawns close to the artisinal fishing areas.

River fishing methods include hook-and-line, dhulumati (long line), kuzuia and kukokota (beach seining). Kalinge, nyando (weirs), shark nets (jarife), dhulumati and hooklines are used offshore. Generally the types of fish and the yields depend on the equipment used. Fish species listed, of which we saw some, were Hongwe (*Bagrus spp*), Papa (shark), Chewa (Rock cords), Msembe, Kumbasi, Msembe, Mtepa, Kungu, Pandu, Kuku, Gayogayo, Msuli, Uduvi, Ndege, Mbonde, Mbalata, Kuwi, Mbulambula, Sanje, Kolekole, Dolo, Mikonge and Kamba. One hook line between one or two fishermen in a dugout canoe can yield 50 to 60 kgs. A table comparing yields from different gear is given below.

**Table 29: Types of Fishing Gear used in Kiomboni Village**

Gear Type	Vessel	Number of operators	Yields Kgs
Mshipi (Hook & line)	1 Dugout canoe	1-2	50-60
Dhulumati (Long line)	1 Dugout canoe	1	50
Kukokota (beach seining)		2	300
Kuzuia	1 Dugout canoe	2	60
Nyando (weir)		1	50
Kalinge		2	20-60

The season for shark-net fishing is July to March and for Nyando fishing is March to October.

Fish Preservation methods are as follows:

**Table 30: Fish preservation methods in Kiomboni Village**

Preservation Method	How
Ice storage	Fresh prawns are kept in ice in aeroboard boxes for weeks en route to distant packing plants.
Sun-drying	Shrimps, Msuli (type of shrimp) and Mbarata are laid out on the sand or on a rack to dry in the sun
Salting	Large fish are filleted, salted and laid on the sand in the sun to dry.
Smoking	Fish are impaled on sticks and are smoked over a fire for several hours

Markets for fish are not a problem. Prawns are bought by an agent of a Korean company in Dar es Salaam and by agents of Tanpesca, which has an office in Mafia. The fishermen get 1000-1200/= per kilo. Dried fish, including Mbarata, Vinengwe and Kolekole are sent to Dar es Salaam and Kilwa. Mbarata sell for 10/= each at Kiomboni.

#### 4.3 Forests/Woodlands Harvesting

The mangrove-pole cutting areas are Twana, Ulongoni, Kongweni and Dimba. Zanzibar is the main market. There are jahazis (big boats) in the village which transport poles. Both villagers and outsiders are involved in this enterprise.

#### 4.4 Livestock- keeping

Almost every household has poultry of local breeds. There are six goat owners in the village. Goats are killed for feasts. One person herds the cattle of the whole village. They are sold to outsiders, as there is no tradition in slaughtering cattle here.

#### 4.5 Salt-making

Women make salt in the sandy tidal flats at Kongeni, Mdadi and Nyamomboka. They boil the brine in wide pans called jalo that are arranged on stones over a very hot fire. Per day about 3-4 pishis (15-20 kgs) of salt can be made by one person. Each pishi (approx. 5kgs) is sold at 600/=. June to March is the salt-making season.

#### 4.6 Cutting and weaving ukindu (*Phoenix reclinata*) palms

This is also a women's activity where Phoenix and Hyphenae fronds are cut and dried before weaving into baskets and mats of different types. Colours are used in the weaving to make the products more decorative. Petty traders sell these items in the towns.

#### 4.7 Boatmaking

Dugout canoes are made by ten artisans at a cost of 10,000/= to 40,000/=. Big boats are also made and repaired. There are six artisans with these skills. There were nine jahazi (big boats/dhows) in the village during our visit. A jahazi can cost from 300,000/= to 700,000/= to make.

#### 4.8 Other economic Activities

There are stalls, eight shops, five cafes, a tailor and net-repairers.

### 5. Uniformity of Ethnicity

Most people are of the Wanyagatwa tribe.

### 6. Uniformity of Religion

The majority of people are Moslem. Our visit was during Idd el Haj which was celebrated with a music troupe on the beach and people were dressed in new clothes.

### 7. Social organisation at Household level

A kaya is a unit of a man, a woman and their children. Men can have up to four wives.

### 8. Wealth and Poverty

Wealthy people are those with a shop, a jahazi or a house in Dar es Salaam (the Tandika, Mbagala or Temeke areas are favoured). The wealth has come from farming and fishing. The reasonably well off have their own nets, dugout canoes and hoes. "Without a dugout canoe it is not possible to live here", we were told.

### 9. Service Delivery

#### 9.1 Education

There is one school with 173 students, 90 of whom are girls and 83 boys. According to the Head teacher, parents say that they do not have enough money to pay school fees and they are not very interested in sending their children to school. The 1998/9 admissions aim was 45 children, but only 23 were enrolled. It is boys who leave school early to become involved in economic enterprises. There are five teachers. There are five classrooms, three of which are in bad condition. There are four teachers houses and no school toilets. The school committee has ten male and three female members.

#### 9.2 Health

There is a dispensary that was built as a cooperative effort in the early eighties. It has four medical aides, one of whom is female. Traditional birth attendants are available. The most common illnesses are stomach and intestinal problems.

#### 9.3 Water

There are many shallow wells dug by villagers. Also in the shamba areas during high tide, we were told that freshwater is collected from beneath the salt water which floats on top.

#### Other services

There is a generator, television and video set donated by an anti-prawn farm organisation, which provides an opportunity to show environment and music videos. There is no milling machine. There are no toilets. There are no roads. Transport is by canoe or boat on the rivers and the sea. There are stalls, shops, a tailor and cafes.

### 10. Coherence of the Community

#### 10.1 Physical Closeness

The main village area is reasonably compact but the distances to the shambas are great. Communication between the shambas and the centre of the village must be difficult and limited. Communication with Mafia by jahazi is relatively easy. To visit the District Headquarters, one must travel by canoe to Nyamisati that is served by a bus for much of the year.

### 10.2 Evidence of trust in the leadership

There is some discord between the villagers and their leaders. The mosquito net project was used as an example of a badly managed distribution of goods from the district. Materials for improving the dispensary were donated also by government but the construction work was not done. The village leaders like to blame the higher officials but are not willing to carry out their own responsibilities because they “know the illegal operators”. They expect outside officials to come and do their work for them.

### 10.3 Organisations, NGOs and groups

We were told that the following organisations exist in the village; CCM, UDP, NCCR Mageuzi, Uislam, SRDA. There are also three football teams; Kiomboni, Umoja F.C and Israel F.C. SRDA is the Southern Regions Development Association and has been active in resisting the AFC prawn farming initiative in the Rufiji Delta. Kiomboni is the centre for SRDA’s activities in the delta. It has 150 members and a membership fee of 1,500/=.

## 11. Migratory habits

Villagers, particularly women, move to their shambas for the farming season which can be six or more months. Some adults move to Dar es Salaam to live with their children who have jobs there. Young men travel to follow the prawn fishing seasons at Kibanjo and Kiasi. Fishermen come to Kiomboni for the prawn fishing season each year.

### School attendance patterns

Children have difficulty attending school during the agricultural season when the family moves far away to the shamba.

## 12. Conflicts and Solidarity

We witnessed the cooperation (Harambee) of approximately 100 men in pulling a jahazi off the beach for repairs. It belonged to a private individual. When a death occurs condolences are given. People help each other in sowing rice. Conflicts occur in the fishing camps. According to villagers this is because of the mixing of different tribes.

## 13. Women’s Freedom, participation and Confidence

For our public meeting it was necessary to delay the meeting and to make a big fuss in order to have women present. Once the point was made the numbers of women were reasonable. During the feast of Idd el –Haj there was no place for the women at the mosque. Women were working just as on a normal day, washing clothes and carting water. There were not very many women around in the village centre as they were busy working in the fields far away. Women in their shambas are confident and gave us a lot of information about rice-growing. Girls can inherit a shamba when they are 15 years old. The proceeds from the shamba are for herself and her husband when she marries. There are no women on the village environment committee, but there are a few on the village government.

## 14. Signs of Enthusiasm and Initiatives

### 14.1 Environment management measures at any level

There is an environment management committee, which was created in connection with the Mangrove Management Project. There is a consciousness about the value of the mangroves.

### 14.2 Environment damage

There seem to be no rules about usage of the beach. It is used for landing and weighing fish, for drying shrimps, for defecation and urination, for dumping organic rubbish which goats pick -over and for playing football and music. There is illegal mangrove-pole cutting, the extent of which we could not assess. The chemicals used to kill the crabs, which damage rice seedlings, could be a health and environment hazard. Turtles and their eggs are eaten. Dolphins are eaten.

#### 14.3 Expression of concern about the environment

The village is very keenly aware of the value of its mangroves and its prawns mainly through the efforts of external NGO's who have assisted the delta people to fight against the AFC prawn farming proposal. They are very suspicious of outsider's intentions towards their environment and they interviewed two members of our team for 45 minutes before welcoming us to the village. Through JET and SRDA they are in contact with Prepare, Green Peace and an Indian Human Rights NGO. They complain that mangrove-pole cutting licenses are given at Kibiti and those who have licenses just cut as much as they want, wherever they want. They are annoyed that offshore trawlers throw their unwanted catch back into the sea where they rot and affect the fisheries. They say that there are too many new people coming to fish and that they are threatening their livelihoods.

#### 14.4 Initiatives for Development.

There are no recent community development efforts.

#### 14.5 Attitudes to Outsiders and government

The villagers do not trust government because of the experience of the government having sold their land to a private company for prawn farming. This village is the centre for the campaign against the prawn farm and so is very suspicious of outsiders particularly government officials. They did not believe that government might want to help them to protect their environment and were resistant to our visit. They trusted the expatriate in our team more than the district officials. On the other hand, when it comes to enforcing the law on mangrove-pole cutting they expect the government to provide an enforcement officer.

### 15. Accessibility

From Utete by boat it is possible to get to Kiomboni in one day. It is also possible to travel by car to Nyamisati (four hours in the wet season) and take a boat trip of one hour via Simba Uranga. Tides need to be considered.

### 16. Capacity

#### 16.1 Standard of village management

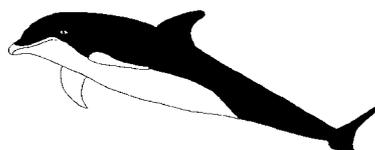
The village government does not meet regularly and most management decisions are made by a small group of leaders. These same leaders manage the statutory committees on security, economics and social affairs. It appeared that it is old men who run the village.

#### 16.2 Number and demands of other development projects

There are no community projects active at present. Kiomboni gets some advice and visits from the Mangrove Management Project. The village leaders are very involved in the campaign against the AFC prawn farm. Their thoughts are towards fighting the government not towards co-operating with it.

### 17. Biodiversity

Dolphins visit this area at certain times of the year. Turtles are also present here. The mangrove forests look reasonably intact. There are many species of fish and birds.



## Appendix 16: Village field visit report – Twasalie Village

### 1.0 Name and Location

**Name of Village:** Twasalie

**Village Chairman:** Juma Abdaarahaman Mbembe

**Village Executive Officer:** Shaban Hamis Koge

**Distance from Utete:**

**Time taken for the journey from Utete:** 10 hours by motor boat on the river.

**Location:** Central Delta with Indian Ocean access at the mouth of Bumba River.

#### 1.1 GPS Readings

**Table 31: GPS Readings of Twasalie Village**

Place	Northing	Easting
Nyafiwi	9124367	543025
Katola (tidal)	9127304	543412
Kibanju	9124812	545452
Entry to Bumba River	9123188	532308
Twasalie centre	9118949	538656
Nyampendu mashambani	9119033	541157
Mkumbatio	9121071	533852
Tarachu creek to right, Bumba creek on left.	9122954	532217
Tarachu landing point	9118540	536191

The village has four sub-villages called Twasalie, Kisimbia, Tarachu and Domwe.

## 2. Population

Households, 308;

Population, 1600 (690 women, 910 men)

(Source; Village Executive Officer)

### 3.0 Natural Resource Wealth and Use/ pressure

#### 3.1 Natural Resource Wealth

##### 3.1.1 Rivers and coast:

Two Rivers: Tarachu River and Bumba River.

The Indian Ocean port of Kibanju is under the village's jurisdiction and has very rich prawn fisheries. Fish names of commercial value which were mentioned were kambale, umba, perege, tungu, ngacha, mbatambata, mbufu, ngogo, kolekole, chewa-boye, uduvi, mboke, ndadi, mkizi and mwenpaje. The district Council levy for a basket (tenga) of fish is 750/= and the village levy is 300/=. For prawns the village levy is 10/= per kilo and the District council 50/= per kilo.

##### 3.1.2 Forests and woodlands

There are mangrove forests (Kapa) bordering all the rivers. The species include Mkoko (*Rhizophora mucronata*) and Msinzi. Trees are cut for house-construction and for building the school and the dispensary. Trees are used for domestic fuel and for drying fish. Trees of the non-tidal woodlands include mkalatu, Ndolondolo, Mbungo, Msukulio and mjembajemba. The fronds of *Phoenix reclinata* and *Hyphenae compressa* are cut for weaving. Honey is also obtained from the forests. The levies collected from natural resources are as follows; Mangrove poles 250/= to

the District Council per korija (20 pole bundle): Ukindu (*P.reclinata*) 2/= to the District Council per bundle (kichanga) or 400/- per sack. 200/= to the village.

### 3.1.3 Cultivable land.

Twasalie has very large areas of open plains with black clay soil supporting grasslands. These areas are suitable for cultivation. Part of this area has been surveyed for the AFC prawn farm. The villagers of Kiasi and Msala cultivate some of this land as a long-term tradition.

### 3.1.4 Birds and Wildlife

Wild animals present are hyena, of which we saw footprints and faeces, wild pig, crocodiles, green monkey, guenon monkey, lion, civet and leopard. None of these are eaten. However warthog, Ndohe (?), Mbawala (duiker), Nungwi and hippopotamus are eaten. Birds which are eaten include Kopwangola, Nyangenyange (egret), Mkuta, Mwangachumi, Zafarani, Beko, Bata bahari (Egyptian geese), Kanga (Guinea fowl), Ngowani, Mcheketu, Njiwa (Pigeon or dove), Korongo and Kitipa. Birds not eaten include Tipitipi (Coucal), Nchingwi, Mulukwi, Kipanga and Lioto (bishops). Four European rollers were seen in the grassland at Nyampendu.

### 3.2 Use/ pressure

Despite the availability of grasslands for cultivation there is rice cultivation in very degraded mangrove forest areas along the Tarachu and Bumba rivers. The extent of removal of mangrove forest for poles and other uses is not known. There is a very large community built around the prawn fishery of Kibanju. The settlement itself is a very unhealthy human environment. It is possible that over-fishing of prawns is occurring.

## 4. Economic Activities

### 4.1 Agriculture

The main areas cultivated are Tarachu, Semeni, Kiongoni, Minazisaba, Nyamnang'ana, Nyampai, Mamboleo, Majitele, Kingangale and Nyampendu. The main crop is rice and the calendar of work for the rice crop is as follows;

**Table 32: Seasonal calendar for rice cultivation in Twasalie**

Period	Activity in the rice fields
November-December	Preparing the soil
December-January	Sowing
February	Transplanting within the planted rows by splitting and gapping-up or from a seedbed.
February-March	Weeding with a small hoe
May	Protection from birds and wild animals once it flowers.
June-July	Harvest

Harvest is done by hand and there are two ways:

Cut the straw in the middle or just cut the ears. The wild animals which cause problems are vervet monkeys, baboons, wild pigs and hippopotamus. The destructive birds are ndenge, kombe and njegea. Rats are also a problem.

### 4.2 Fishing

Most villagers are involved in fishing. When we visited it was high season for prawn fishing at Kibanju and most of the young men were gone there. It is probably the most important prawn-fishing port of the whole Tanzanian coast. There were over one hundred canoes fishing simultaneously at the mouth of the Kibanju River on the day we visited. Three large power boats were waiting with ice for the agents to purchase prawns to be transported to the factory ship which is stationed in Rufiji waters near Bweju Island. Large amounts of cash were seen changing hands. The settlement houses several hundred people during the high season. Some move off once the south East Trade winds (Kusi) begin, but others stay full time at Kibanju. Other fish caught

include Mbarata, Changu, Kolekole, Papa, Upanga, Chewa, Pandu, Hongwe, Uduvi, Ndadi, (mkizi), Perege and ngacha There are several fishing methods practised including Nyavu za Kukokota, Kueleza, Jarife, Ndoana ya mishipi, nyando, Kufuta (kukupu) and the Gema.

**Table 33: Types of fishing gears used in Twasalie Village**

Gear type	Method
Kukokota (Beach seining)	A 0.25 inch net of 15-20 metres long is used from a canoe by two fishermen. It is mainly for prawn fishing and up to 100KG s can be caught in a day.
Kueleza	A 2.5 inch net of 200metres long is used from a canoe by two fishermen. They can catch 10-40 KGs of mbarata, prawns and dagaa per day
Jarife (shark nets)	A 4to 6 inch net of 300-600 metres long is used from a large boat by at least three people in the deep sea. Between 40-6- KGs of shark, Hongwe, Mia, Kolekole , Pandu, Chewa or Cumbers can be caught in a day.
Ndoana ya mishipi (Hooklines)	Two fishermen from a canoe use hooks of number 2, 3 or 4. They use a line of 400metres bearing 200-300 hooks in waters of 3-5 metres deep. They catch up to 100kGs of Hongwe, Taa, Papa, Chewa or Mzia per day.
Gema	Women practice this method.

Fishing gear is bought from Zanzibar, Mohoro, Kikale or Nyamisati. Also arrangements are made with prawn buyers for the supply of gear.

#### 4.3 Forests/Woodlands Harvesting

Some villagers are occupied in mangrove-pole cutting for sale to Zanzibar. We did not see any jahazi loaded with poles but saw small piles of poles beside the Bumba River. Large poles (nguzo) of Mkandaa sell for 600/= while small poles (boriti) are 300/=. Misinzi (*Bruguiera gymnorrhiza*) and Misindukazi (*Heritiera littoralis*, are used for canoe-making while Mkomafi (*Zylocarpus granatum*) is used also for making large boats, for timber and for domestic use.

#### 4.4 Weaving

Most women villagers cut palms (*Phoenix reclinata* and *Hyphena compressae*) and weave them into mats. Mats are sold from 2000/= to 8000/=. A woman can make two to six mats per year depending on the size and the other work she has in the season.

#### 4.5 Pottery

There are some women potters who make small pots, large jars and lids for jars. Small pots sell for 150-300/= while large pots are 1000/= to 2000/=.

#### 4.6 Other economic Activities

Honey is harvested by some people. There are no special hives. A 0.75 litre bottle of honey fetches 500-700/=. There are two small shops and two restaurants in the centre of the village. At Kibanju there are several shops and food outlets.

### 5. Uniformity of Ethnicity

The majority of people resident in Twasalie are Wanyagatwa, but many different tribes are mixed at Kibanju.

### 6. Uniformity of Religion

The majority of people are Moslem. The mosques were the first items drawn on the village map.

## **7. Social organisation at Household level**

A household is counted as a man and all his dependants. He can have two to three wives. A man is always the head of household.

## **8. Wealth and Poverty**

People consider their village a poor place and those who are better off are the ones with a shop, a restaurant, government employees, owners of coconut groves and those who can afford to eat food bought in shops. The poorest people are those who are disabled and who have to eat wild fruits as their porridge. Their houses are made completely of fronds. But it is only in years of drought that poor people suffer like this. The major reason for poverty is the wild animals, especially monkeys who destroy crops. Bullets have become too expensive and difficult to get and so shooting is no longer a solution to the vermin problem.

## **9. Service Delivery**

### **9.1 Education**

There is a school established in 1977. It has two teachers and 145 students. Attendance is about 65%. i.e. 90 students. The school buildings are in very bad condition. The bush pole and mud constructions are falling down. Despite the state of the school it is not in the DBSPE construction programme. 400,00/= was given for building, but this is not enough to consider permanent structures. It is being used to build a bushpole and mud classroom. There were no lessons in progress when we visited as the children and the school committee were building. When the teachers go to Kibiti to collect their wages each month the school is closed. The parents say they cannot pay the school fees because of drought and then floods. The school has a shamba and the teachers give classes about forests and bees and advise children about selection of trees to cut and leaving others to grow.

### **9.2 Health**

The dispensary has one doctor, who closes the dispensary to go to collect medicines and wages. It is built from bushpoles and roofed with coconut fronds. It supplies free medicines. The main illnesses are cholera (kipindupindu) and malaria. Evidence of filiarasis (elephantiasis) was visible particularly in old men. Women who need assistance at birth complain about the frequent absence of the doctor.

### **9.3 Water**

There are hand dug shallow wells. We saw two of them near the village centre.

### **Other services**

There are two shops providing basic needs. There are two cafes at the village centre. The business people complain that business is not brisk because the commercial activity is at Kibanju. Kibanju has many shops and eating places.

## **10. Coherence of the Community**

### **10.1 Physical Closeness**

Within the village there are long walks from the centre to the shambas (up to three hours) and to Kibanju (3 hours) on the coast. It is a forty minute walk to the centre of the village from the nearest river port of Tarachu. People travel long distances to cultivate and to fish and a number of villagers return to the village centre each night.

### **10.2 Evidence of trust in the leadership**

There were different views about the leadership. Some villagers said that they do their best despite their low level of education. Others said that they were not able to meet targets. For example, the blocks have been ready for building a dispensary for some years now though no progress has been made. There is cement, which was contributed by the District Council, at the port of Tarachu and it has not yet been brought to the village centre. The village leaders collect taxes and levies. They did not say what actual amounts are collected but gave the quantities levied per unit of goods.

### 10.3 Organisations, NGOs and groups

The list of organisations given was; CCM, CUF, NCCR, CHADEMA, Moslem religion, Ukindu Groups, Football Clubs, U.W.T., Mawaiba, Fahamuni, UVT, Gardening Group and Mswe, a Drumming Group

Mawaiba is a group of women who have built an office and a restaurant. If the restaurant succeeds they will start a shop. Fahamuni is a women's group which wants to open a restaurant and shop and has begun the building work. A women's gardening group, which does not have a name, has stopped its activities because it is waiting for equipment from the District Agriculture and Livestock department. A group of older women and men ranked the importance of the organisations as follows.

**Table 34: Comparison of the importance of organisations in Twasalie Village.**

<b>Organisation</b>	<b>Importance (1 is most important)</b>
Moslem religion	1
CCM political party	2
Football Clubs	3
Ukindu groups	4
U.W.T	5
Other political parties (CUF,NCCR,CHADEMA)	6

### 11. Migratory habits

Most people live in their fields from March until July. Young men move to Kibanju during the prawn fishing season and also follow the prawn harvest to other sites as the season progresses.

#### 11.1 School attendance patterns

There are many children living at Kibanju who have no access to schooling. Some children move to the fields with their parents for the cultivation season. The shortage of teachers leads to periodic school closures. Schooling is interrupted at present because of building classrooms.

### 12. Conflicts and Solidarity

At times of funerals people give their time for the wake (matanga) and also money (rambirambi) to the bereaved. When a woman gives birth she is brought water and money as congratulations. There is also co-operation for agricultural work and for celebrations e.g. Mihadhara, Ziara and for weddings. However, recent scarcities of food have meant that people cannot continue to help each other as they traditionally did.

### 13. Women's Freedom, participation and Confidence

For the public meeting which we called it was difficult to get women's attendance. Having waited an extra hour, thirteen women attended. There are five women on the Village Council and they feel very outnumbered by the male members. When involved in discussions with the team the women were forthcoming and confident. Their efforts towards progress are through fishing, weaving and setting -up restaurants and shops. They say that Kibanju would be a better place to run a business.

### 14. Signs of Enthusiasm and Initiatives

#### 14.1 Environment management measures at any level

There was some training given to villagers by MMP about care of the mangroves. They do not need to cultivate in the mangrove areas because they have plenty of grassland areas.

#### 14.2 Environment damage

There is a threat that AFC, African Fishing Company will take over most of Twasalie's grasslands and turn them into a prawn farm. Beacons from the government / AFC survey were placed in these

lands. The village is part of the campaign to prevent the prawn farm going ahead. At Kibanju the intensity of the fishing effort may be damaging the sustainability of the prawn stocks. Also the density of the settlement at the port is an environmental hazard to the occupants themselves. In the very small beach area there are dwelling places (dungus), shops, fish cleaning sites, rubbish dumps, fish drying racks and restaurants. There are no toilet facilities and at low tide the beach is a disgusting mess of unsavoury mud. The fuelwood needs of this settlement must be coming from the mangroves.

#### 14.3 Expression of concern about the environment

We were not told of any byelaws which are in place for the protection of the village's natural resources. There was no mention of licensed natural resource users within the village. There is an awareness of the importance of maintaining the mangroves for future generations. The people are worried and taking action against the threat of a huge prawn farm on their land.

#### 14.4 Initiatives for Development

The main commercially active area is at Kibanju where some villagers are gaining from the influx of outsiders. Some women have formed groups to cut ukindu (*P. reclinata*) and to open small businesses. They say that the problem of unreliable food supply is holding back development.

#### 14.5 Attitudes to Outsiders and government

There was a very hospitable reception for our team, even to the extent of escorting us back to Tarachu on our departure. However villagers said that they do not trust the District leaders who just come to CCM meetings and then leave the villagers to fend for themselves without District support.

### 15. Accessibility

It is possible to travel directly to Twasalie's river port of Tarachu from Utete by boat. While the river is in flood and if the tides are timed well this journey will take a minimum of ten hours. Another route is by car to Nyamisati (110km., four hours) and then by boat via Bumba and Tarachu rivers (five hours). From Tarachu there is a forty minute (approx. 3km.) walk to the village centre.

### 16. Capacity

#### 16.1 Standard of village management

The village management does not seem to be strong or very dynamic but, at the same time, we did not detect any major problems with the leadership. The building of the new dispensary is stalled but the school committee is progressing with the construction of a classroom. There have been problems of conflicts at Kibanju, but the village has taken measures to control them and has elected a committee there.

#### 16.2 Number and demands of other development projects

There is some assistance to education and there have been plans made for a travel and transport project (VTTP), but the villagers think that another project would not be a burden to them.

### 17. Biodiversity

There are many types of aquatic life. There is also a large variety of terrestrial species. The prawn fisheries seem to be the richest on the whole coast of Tanzania and must be supported by a highly fertile habitat.

**Table 35: A summary of the History of Twasalie by some old Women and Men of the village.**

<b>Year/ Period</b>	<b>Event/s</b>
Before 1916	The Portuguese came, then the Arabs, and then the Germans. There was a German called Benneti who had a shamba at msala. He grew coconuts. The German administration brought coconuts and gave them for free. Some of us remember the Germans. Our parents worked for them and acted as porters. They got no definite salaries, but some payment was made “ walinyonga nguu za wazee”
1916	War. There were bombs on ships. No one from this area died in the war.
1920/1	The English came . They brought a pol tax of 6/= per head per year and later raised it to 30/= per head per year. If you failed to pay you could be jailed for six months. Cotton was grown . There was a ginnery in Msomeni.
1946	Poll tax of 11/= . Pressure to sell crops to get money to pay the tax. Education was for a few people. The health service was far away.
1960	30/= poll tax . “We were being sucked”
1961	Uhuru. No problems . We were all very happy and played drums with Bibi Titi and Nyerere.
1977	Got a school and dispensary. Tractors were brought to the delta by Bi. Titi. Cotton and rice were being grown extensively. The market was at Usimbe. WaHindi were buying the cotton. There was a market in the village and a co-operative was set up.
1980-1985	Good rice crops
1997	Drought, had to eat wild foods. Expatriates came to measure land for the AFC prawn farm, and to put down his beacons.
1997/8	Floods. Boats came right into the village centre.
1998/99	Education and health better than under the colonials. Drought, eating wild foods such as uwila, uwanga, ungulwa, tendeza ukindu. Sowed seeds four or five times.