

**ZANZIBAR BEACH HOTEL AND RESORT**

**ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA)**  
**FOR**  
**UPGRADE AND EXTENSION OF ZANZIBAR BEACH HOTEL AND**  
**RESORT**

**MATEMWE VILLAGE, NORTH “A” DISTRICT UNGUJA ISLAND**  
**ZANZIBAR**

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## EXECUTIVE SUMMARY

Zanzibar Beach Hotel and Resort is a company owned by United Arab Emirates (U.A.E) businessmen, proposes to upgrade and extend to a standard of high-class (FIVE STAR) hotel project at Matemwe about 50 kilometres northeast direction away from Zanzibar Stone Town. Zanzibar Beach Hotel and Resort which was formerly known as Hotel Leisure will comprise of more than 200 beds and suits. Other facilities will include restaurants, swimming pool, staff houses, water sports centre, children's playground and other facilities.

Tourism is known all over the world to have significant positive and negative environmental, social and economic impacts to a host community. To this effect, the Environmental and Social Impact Assessment (ESIA) for the proposed upgrade and expand of Zanzibar Beach Hotel and Resort project was conducted to analyse the potential negative impact of the proposed development activities to both villages as well as the impact of the project to the society.

According to Schedule 2(10) of the Environmental Management for Sustainable Development Act No. 2 of 1996 concerning the establishment of this type of project, the project management is regulated to facilitate the undertaking of an Environmental Impact Assessment (EIA) for the project prior to the commencement of the construction processes. On the other hand, and in accordance to Environmental Impact Assessment (Procedures) Regulations of 2002, the Department of Environment is legislated to issue the Terms of References (ToR) for undertaking such studies for the project.

This report therefore, is an Environmental Impact Statement (EIS) together with the Social Impact Assessment Report (SIAR), addressing and outlining various environmental and social issues regarding the upgrading and expansion of the Zanzibar Beach Hotel and Resort situated in Matemwe. This report also tries as much as possible to analyse in detail adverse significant negative environmental impacts and comes out with key recommendations so as to mitigate the identified impacts if the possibility of having alternative option is missed.

This report is composed of eleven sections. Section I, II, III and IV give general introduction, baseline information, approach and methodology used and review of relevant policies and legislations, respectively. Section V outlines on the existing land use in the area of this project. Among issues discussed in this section are settlement, coral bush land, forest woodlot and coconut plantation and fishing as the main land uses in the area. Section VI describes the type of the proposed upgrade and extension for this project, the existing situation and activities going on in and outside the proposed project plot. This section also outlines the project facilities and tries to analyse the demand of the public infrastructures such as water, electricity, telecommunication, road and other utilities.

Section VII is mainly dealing with Social Impact Analysis (SIA) for the project and its related activities during both construction and operational phases of the project. In this section, society's' related issue such as population pattern, social services and their major economic activities have been discussed in relation to the project development. In this section, various social impact related to culture, education, resource conflicts, and alike have been identified and measures to minimize those impacts recommended. These measures include:

- ◆ The developer should assist the project's surrounding local communities in raising the education level of the children as well as the teachers.
- ◆ Negotiation should also be made to allow villagers to sell their commodities such as seafood's and vegetables. The competitive and experienced villagers should be given priority.
- ◆ To improve the health and education status for the local community, the project management should extend their assistance to improve those facilities. The project could provide some basic equipment like microscope, BP gadgets and common medicine, etc.
- ◆ Although the hotel is far away from the village, yet when the hotel starts operation, all cultural norms of Zanzibaris should be addressed to the tourist special arrangements must be adopted to inform the tourists how to dress when they visit the village.
- ◆ The right of fishermen and public in general to have access and pass through the beach should be not altered.

Section VIII gives detail description on the analysis for the collected environmental data. Water, garbage and sewage management, costal erosion, oil and noise pollution, management of pools water and so on are analysed critically in this section. The section also discussed various mitigation measures to minimize the environmental impacts for the identified problems whereby three different options have been addressed for the purpose of minimizing negative impact of garbage resulted from daily production for this project. These are (i) disposal to the dumping site, (ii) composting and (iii) incineration. This report recommends that, sewage from the hotel should be treated using modern biological treatment facilities such as Activated Sludge System (ASS) in which resulted effluent can be used in gardening.

To prevent coastal erosion, the report suggests that, sand should not be excavated from the beach, set back distance should be clearly observed and the area should be planted endemic and semi-endemic species at the edges toward the beach. The project is planning to get its own water sources from the underground, but this report also recommended other possible options such as desalinisation and rainwater harvesting. Finally the report highlighted on how monitoring exercise should be conducted throughout the life of the project.

## MUHTASARI

Zanzibar Beach Hotel and Resort ni kampuni inayomilikiwa na wafanyabiashara wa nchi za Falme za Kiarabu (U.A.E.) ambao wanakusudia kuiongeza kiwango na kufanya upanuzi wa hoteli hiyo hadi kufikia kiwango cha Nyota Tano (Five-Star). Mradi huu uko katika Shehia ya Matemwe kiasi cha 50 kaskazi mashariki ya kisiwa cha Unguja. Zanzibar Beach Hotel and Resort ambayo hapo mwanzo ikijulikana kama Hotel Leisure itakuwa na jumla ya vitanda vipatavyo 200 na kuendelea. Miongoni mwa huduma zitakazopatikana ni pamoja na mkahawa, mabwawa ya kuogelea, nyumba za wafanyakazi, michezo mbalimbali pamoja na kiwanja cha kuchezea watoto.

Biashara ya utalii inajulikana ulimwengu mzima kwamba ni miongoni mwa sekta zinazoleta athari kwa mazingira, jamii na uchumi wa nchi au jamii. Kwa athari hizo basi, tathmini za athari za kimazingira na kijamii kwa eneo linalopendekezwa kupanuliwa mradi huu ilitayarishwa ili kufanya uchunguzi wa kina kwa athari mbaya ambazo zilitarajiwa kujitokeza katika ngazi za vijiji pamoja na athari hizo zitakavyoiathiri jamii inalizunguka eneo la mradi.

Kwa mujibu wa Jadwali Nambari 2 (10) la Sheria namba 2 ya Usimamizi wa Mazingira kwa ajili ya Maendeleo endelevu ya mwaka 1996, mwekezaji wa mradi huu ametakiwa kufanya Tathmini ya Kijamii na Kimazingira kwa mradi wake kabla ya kuanza ujenzi. Hadudi Rejea kwa ajili ya tathmini hizo ilitolewa na Idara ya Mazingira kwa mujibu wa taratibu zilizowekwa.

Kwa hivyo ripoti hii ambayo inajulikana kama Ripoti ya Tathmini ya Kimazingira, ambapo pamoja na mambo mengine inajaribu kubainisha na kufanya uchambuzi yakinifu juu ya masuala mbalimbali ya kijamii na kimazingira yanayohusiana na uanziwashwaji wa mradi huu kuanzia wakati wa ujenzi mpaka hadi wakati wa uendeshaji.

Ripoti hii ina sehemu kumi na moja. Sehemu ya kwanza hadi ya nne ripoti inaeleza juu ya historia ya mradi, njia zilizotumika kufanya tathmini na kueleza baadhi ya taarifa za msingi za Kisiwa cha Unguja ambapo mradi huu utaekezwa. Sehemu ya tano ya ripoti najadili masuala yahasuyo matumizi ya ardhi katika eneo uliopo mradi. Miongoni mwa mambo yanayojadiliwa hapa ni suala la makaazi, matumizi ya ardhi ya maweni, matumizi ya misitu, mashamba ya nazi pamoja na matumizi ya bahari.

Sehemu ya sita ni maelezo kuhusiana na mradi, hali halisi ilivyo hivi sasa katika eneo pamoja na huduma za kijamii kama maji, umeme, simu, barabara n.k. Sehemu ya saba inahusiana na uchambuzi yakinifu wa matatizo ya kijamii yanayoweza kujitokeza wakati wa ujenzi na wakati wa uendeshaji wa mradi. Katika sehemu matatizo mbalimbali yanayohusiana na elimu, utamaduni, mizozo ya maliasili na mengineyo yamebainishwa na kupendekezewa ufumbuzi wake. Miongoni mwa mapendekezo ni:

- ✓ Mwekezaji atoe msaada wa kunyanyua kiwango cha elimu cha watoto na walimu wa maeneo yaliyomzunguka
- ✓ Bidhaa za wananchi kama samaki na matunda zinunuliwe na mwekezaji kama itakavyowezekana
- ✓ Mwekezaji afanye bidii kuisaidia huduma ya afya katika vijiji vilivyomzunguka

- ✓ Pamoja na kwamba hoteli itakuwa mbali kidogo na vijiji, muekezaji ajitahidi kuwaarifu wageni wake juu ya haja ya kuvaa nguo za stara wanapotembelea vijijini.
- ✓ Muekezaji asije akakiuka haki ya wavuvi kupita na kutumia bahari na ufukwe.

Sehemu ya nane ya ripoti inatoa uchambuzi yaknifu juu ya matatizo kadhaa ya kimazingira yanayotegemewa kujitokeza. Mambo yanayojadiliwa ni pamoja na maji, taka, maji machafu, mmong'onyoko wa fukwe n.k. Mapendekezo ya kupunguza athari hizo yametolewa. Miongoni mwa mapendekezo hayo ni kuwa taka zinaweza kutupwa jaani, kuchomwa kwa mitambo maalum au kufanywa mboea kutegemeana na hali itakavyoruhusu. Maji machafu yazimuliwe kwa kutumia mitambo ya kisasa ambapo maji hayo yataweza kutumika tena katika katika kumwagilia bustani za hoteli kama inavyofanyika katika hoteli ya Blue Bay iliyopo Kiwenga.

Ili kuepukana na mmong'onyoko wa fukwe ripoti inashauri kuwa muekezaji asichukue mchanga wa pwani kwa shughuli yoyote, majengo yote yajengwe kuanzia sehemu iliyokubaliwa kutoka usawa wa maji kujaa na eneo lipandwe miti mingi kadiri inavyowezekana.

Hatimae ripoti mpango wa ufuatiliaji wa mradi ili kuhakikisha kuwa wadau wote wanakwenda sambamba na makubaliano yaliopitishwa kwa maslahi ya jamii, mazingira na mradi.

## **ACKNOWLEDGEMENTS**

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ZanConsult also owe a depth of gratitude to the various Departments and Agencies of the Revolutionary Government of Zanzibar and particularly, the Department and Agencies under the Ministry of Water, Construction, Energy, and Lands; the Zanzibar Investment Promotion Agency (ZIPA); and the Commission for Tourism for their patience, professional advise and positive assistance towards the preparation of this document and toward the project as whole.

Sincere thanks should also go to villagers of Matemwe and nearby areas for their commitment and cooperation during the study.

Finally, ZanConsult gives heartedly gratitude to Mr. Haji, M.H an EIA specialist and Mr. Juma, M.H a sociologist for their tireless assistance during data collection.

## ACRONYMS

AIDS	Acquired Immunity Deficiency Syndrome
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
COLE	Commission for Land and Environment
DoE	Department of Environment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Monitoring System
EMSDA	Environmental Management for Sustainable Development Act
ERP	Economic Recovery Programmes
ESA	Environmental and Social Assessments
ESIA	Environmental and Social Impact Assessments
ESS	Environmental and Social Statements
IPA	Investment Protection Act
MALE	Ministry of Agriculture, Livestock and Environment
MCH	Mother and Child Health
MWECCEL	Ministry of Water, Energy, Construction, Environment and Land
NFDP	National Forest Development Policy
NLUP	National Land Use Plan
PHCU	Primary Health Care Unit
RGOZ	Revolutionary Government of Zanzibar
TLP	Trade Liberalization Policy
TZP	Tourism Zoning Plan
UNDP	United Nations Development Programme
URT	United Republic of Tanzania
WTO	World Tourist Organization
ZanConsult	Zanzibar Environmental Consultancy
ZBHR	Zanzibar Beach Hotels and resorts
ZSP	Zanzibar Sustainable Programme

## **1. INTRODUCTION**

Until 1970's the Zanzibar's economy was in good condition due to totally dependant on agricultural products and especially clove to earn over 90% of the country foreign exchange earning. From early 1980's however, the economic situation of Zanzibar started to decline with the falling down of the clove prices in world market and rapid rise of the costs of the petroleum products. The clove market declined from 55,000 to 6,000 tons in 1982 and 1988, respectively. At the same time, the world market price for clove started to decline from US \$ 9,000 to less than US \$ 3,000 per ton in 1983 and 1994, respectively.

In order to stabilise its economic situation, the Revolutionary Government of Zanzibar (RGoZ) tried to adopt various reliable economic reform policies and programmes. As a result of the fore mentioned policies and programmes, Zanzibar Trade Liberalization Policy (ZTLP) was adopted in 1985, Investment Protection Act (IPA) of 1986 was enacted and Zanzibar Economic Recovery Programmes (ERP) for the period of 1987-1989 was put in place.

Following the enactment of the Investment Protection Act (IPA) of 1986, several major investments and other small projects started to be established all over the country and as a result, tourism industry and related activities took the lead. This tremendous growth of tourism industry and its related activities accompanied to serious environmental and natural resources degradation and social abuse in various parts of the country.

The major environmental problems associated with the tourism development in our country were in large part caused by the allocation of tourism projects rather haphazardly without consideration for the development of the necessary required infrastructures, without any central planning mechanism as well as without proper coordination system. The situation remained fluid and without any dully considerations until the introduction of Tourism Zoning Plan (TZP) in 1993, which called for the allocation of tourism development to the specially selected and demarcated areas for such purposes. Other environmental and natural resources management problems associated to the introduction of tourism industry and its associated activities in Zanzibar are depletion of terrestrial and aquatic flora and fauna, spoiling of the beautiful palm fringed beaches, haphazard disposal of garbage, destruction of the coral reefs, cultural pollution, anti social behaviour, drug abuse and AIDS transmission.

To alleviate the situation, therefore, the Government of Zanzibar through the late Commission for Land and Environment (COLE) enacted the Environmental Management for Sustainable Development Act (EMSDA) No. 2 of 1996. This Act, interalia requires every person including the developer whose project is likely to pose significant negative environmental impacts to the surrounding natural environment to undertake Environmental Impact Assessment (EIA) before commencement of the project. In order to abide with the above-mentioned laws, the developer of Zanzibar Beach Hotels and Resorts (ZBHR)



requested the ZanConsult, a local environmental consulting company to undertake the so-called Environment and Social Assessment (ESA) studies.

This document therefore, is the Environmental and Social Statement (ESS) report undertaken for a proposed upgrade and extension of Zanzibar Beach Hotels and Resorts at Matemwe village, North "A" District, North Region of Unguja Island-Zanzibar. The Environmental and Social Assessment (ESA) was undertaken in compliance with the Terms of Reference (ToR) prepared by the Department of Environment (DoE)-Zanzibar (see *Appendix 1*) as stipulated by the Environmental Management for Sustainable Development Act, No. 2 of 1996.

## 2. BASELINE INFORMATION

### 2.1 Geographical location

The Islands of Zanzibar consist of two major islands, Unguja (famously known as Zanzibar) and Pemba, with a group of about 50 small islets surrounding them. Zanzibar is a part of the United Republic of Tanzania (URT) (Figure 1A) but it has its own independent government. These islands lie in the north-south direction between latitude 04°50" and 06°30" South, and east-west direction between longitude 39°10" and 39°50" East. The Islands are some 30 kilometres east off the mainland coastline (Figure 1B). Unguja Island covers an area of 1666 square kilometres and Pemba Island covers an area of 988 square kilometres giving a total land area of 2,654 square kilometres.

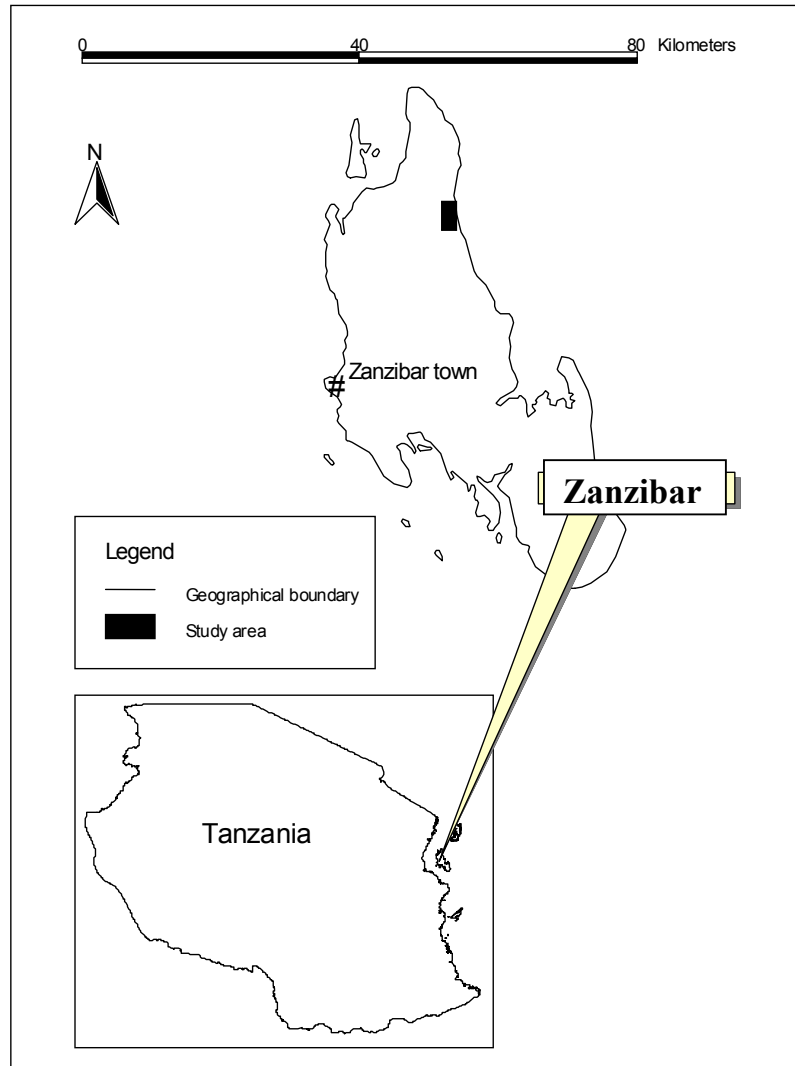


Figure 2.1A: Position of Zanzibar Islands in the United Republic of Tanzania



Figure 2.1B: Orientation of Unguja Island by locality

The proposed upgrading and extension of the Zanzibar Beach Hotels and Resorts (ZBHR) is located at Matemwe village-North "A" District, North Region of Unguja Island. The area lies between latitudes 05°57" and 06°01" South and longitudes 39°02" and 39°24" East. The site is 10.77 hectares plot measuring 450 metres of the length of beach frontage in north-south directions and stretches between 220 - 280 metres inland from highest water marks. It is located to the northeast coast of Unguja Island about 50 kilometres from Zanzibar Stone Town and can easily be reached by road (Figure 2).



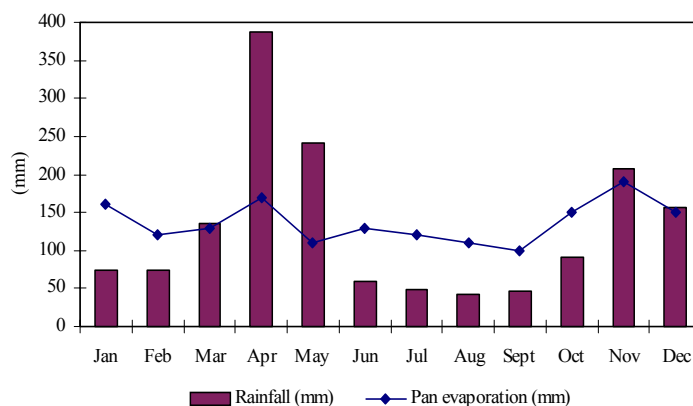
**Figure 2.2: Location map of the proposed development site**

## **2.2 Site description**

## **2.3 Climate**

### **2.3.1 Rainfall and evaporation**

The average annual rainfall is 1500 mm but varies from area to area. For example, the coral rag vegetation area of Unguja in which the proposed project development is located has an annual rainfall well below the rational average, whereas, the northern tip of Unguja has rainfall often in excess of 1800 millimetres per annum. Although the rains are distributed the year, there are two prominent rainy seasons (Figure 2.3). The main rainy season or “Masika” extends from the end of March to May and is responsible for about half of the total annual rainfall. The short rains or “Vuli” fall in the months of October to December. Little more than half of the remaining rainfall is received during this season.

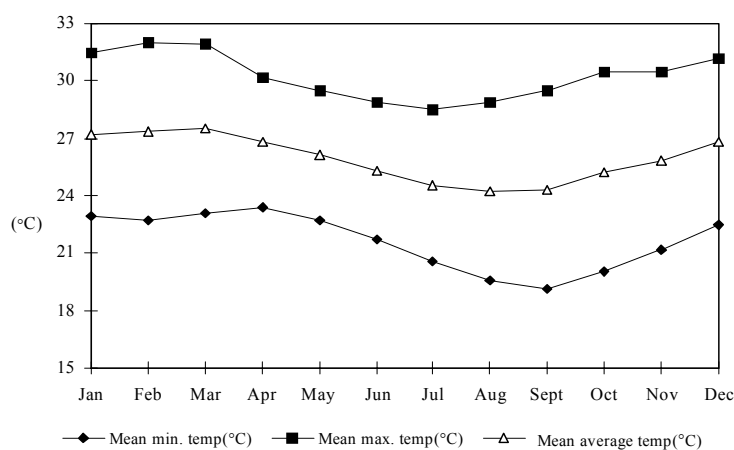


**Figure 2.3: Long term mean monthly rainfall and pan evaporation**

During the dry season from June to October the precipitation is very low and water evaporation exceeds the rainfall resulting in an evaporation deficit. Extended evaporation deficit period have a negative impact on trees and other vegetation, which requires a substantial amount of water, especially if they are not rooted in ground water. The limited and characteristic fauna and flora of the coral rag bush land has occurred as a direct result of extended periods of evaporation deficit. The minimum evaporation is in September (110 mm/month) while the maximum evaporation is in November (190 mm/month). From May to September, the evaporation lies between 100 and 130 mm/month. The overall is 137 mm/month. Rainfall exceeds evaporation during the months of April, May and November

### 2.3.2 Temperature

The monthly maximum temperature ranges from 28.5°C during the coldest month (July) to 32°C during the hottest month of February. The mean monthly minimum temperature ranges from 19°C during the month of September to 23.4°C during the month the hottest month of April.



**Figure 2.4: Long term mean monthly minimum, maximum and average temperatures**

### **2.3.3 Wind**

Maritime tropical climate of Unguja is typical for the climates of the Western Indian Ocean. The Island is dominated by the northern and southern trade winds (monsoons), which have a marked effect on sea and air temperatures. The southwest Monsoon (Kusi) starts from April to November and the Southeast Monsoon (Kaskazi) from December through March. Wind speed is lowest in March (144.3km/day). From April it starts to increase and attains its highest value during the months of June to September (197.1 km/day).

### **2.3.4 Relative humidity**

The relative humidity is high. Early morning (0600 hours) values range from 89 percent to 96 percent with a mean of 91 percent. The relative humidity increases during the afternoon (1500 hours) from 56 to 75 percent with a mean of 62 percent.

## **2.4 Geology and Stratigraphy**

The ridges of Unguja and Pemba were mainly deposited as sediments during the middle and lower Miocene time (12-26 million years ago), when Unguja and Pemba formed part of the prehistoric delta at the confluence of two great rivers, the Rufiji and Ruvu.

During this period deposition, sedimentation and subsequent cementation of lime stone layer occurred while the land forms were shaped by the many deltaic streams that flowed from south to north forming several corridors and the predominantly North-South oriented ridges. These corridors still form several conspicuous landform patterns apparent in Unguja, for example Southern Kiwani Bay-Mwera-Bumbwini-Mahonda-Northern Kiwani Bay and the Bambi-Upenja-Kibokwa-Chaani corridors.

Although the original corridor zones ranged from nearly level to gently sloping, stratified clay and sand deposited to form deltaic corridors. The present remnants of these are seen as differently elevated broken corridors due to the differential uplift and block faulting experienced in the early Pleistocene period (1-2 million years ago), which also caused the separation and emergence of the islands from original delta. Sea levels higher than present caused severe marine erosion during Quaternary period, and the gradual stepwise fall in sea levels resulted in the formation of the terraced coral limestone reef on the outlying fringes of the island.

## **2.5 Natural Resources**

### **2.5.1 Forests**

The forestry resources of the Zanzibar Islands comprise government plantation reserves, dry land natural forest reserves and mangrove forest reserves, coral rag forest and rubber plantations. There are five governmental plantation reserves in Unguja. These are mostly specialised in growing exotic species like teak, acacias, pines and casuarinas trees. There are approximately 5000 hectares of mangrove forest reserves

on Unguja, all of which have been turned into public reserves. Coral rag thicket forest is by far the largest forest cover found on the island. Unguja has approximately 90,000 hectares of coral forest thickets.

### 2.5.2 Coral rag

The term coral rag refers to the stones and rocks that form a ragged pattern on the surface. Typically the topsoil layer is often shallow and penetrated by the ragged coral and outcropping rock (Plate 2.1). Fertility is generally too low to sustain continued cultivation. It is estimated that approximately 45% of Unguja Island is covered by coral rag vegetation. Agricultural zone consisting of coral rag vegetation is of particular interest to this study due to the fact that the Shehia of Matemwe in particular and the proposed development project in specific is totally located within this agricultural zone.



Plate 2.1: Coral rag land



Plate 2.2: Effect of bush fire in the coral rag land

Coral rag farmers developed shifting cultivation to cope with the harsh soil and climatic conditions of this land. Slash and burn methods (Plate 2.2) are used to clear new parcel of land. The burn method has mixed blessings; on the one hand, it reduces the cost of clearing the land and any pests, on the other it frequently leads to uncontrollable bush fires. After clearing, the land is cultivated from 1 to 5 crop seasons depending on its fertility status. The soil fertility of the cleared land could possibly be increased by the use of fertilizer and thus the cultivation period extended, but most of the coral rag farmers are usually too poor to be able to consider this option. The fallow (rest) period ranges from 10 to 25 years. The fallow period allows for the regeneration of coral bush and thicket vegetation and the return of the limited soil fertility. Common crops cultivated in this area include maize, sorghum, cassava, yams, sweet potatoes, pulses and vegetables like tomatoes, pumpkins, papaws, eggplant and okra.

The population growth and the resettling of the people in the coral rag land resulted in pressure on the agricultural sector for increased production. This in turn has lead to an increase in clearing of the coral rag land to an extent where the farming in these areas with traditional farming methods no longer meets demand. As a result the surplus output

of the coral rag farming crops that are currently sold in the agricultural or local markets has drastically dropped. On the other hand, the rapid increasing of the human population has shortened the fallow period and increased clearing of coral rag forest areas, which in turn has resulted in a further decline in soil fertility and lower agricultural crop yields. Net virgin coral rag forest areas are estimated to be declining by 1,000 hectares annually. This development is further aggravated by the fact that more and more farmers are turning to other activities such as cutting of firewood, which further degrades the coral rag areas.

As a result of these developments, shifting cultivation in the traditional sense is no longer sustainable. A new land use system and introduction of more modern and effective farming methods (agro-forestry, crop-rotation, etc) supplemented the introduction of fertilizers and irrigation systems must be implemented otherwise the situation will continue to deteriorate.

## **2.6 Marine environment**

### **2.6.1 Sea grass-algae beds**

Although there were few heads of live coral, the area was dominated by a bloom of green algae. According to the interviewed locals, this is a seasonal occurrence. Sea urchin densities seemed to be counter intuitively high-a phenomenon that has elsewhere been associated with imbalances caused by the over-fishing of certain reef dwelling predator fish like surgeons. During the period of field survey, in some areas 3-5 meters below the surface, there were signs of unusual blown algal growth in the interstices between coral polyps. This phenomenon has been associated with an artificial reduction in the numbers of herbivorous fishes.

Most of the sub-tidal portion of reef flat consists of mosaic of severely degraded, hard coral interspersed with patches of sea grass, bare sand and coral debris. The extensive damage to small coral massive and stag horns in the vicinity appeared to be due to a combination of various types of fishing including the more destructive '*Juya*' techniques, poling of canoes and '*ngalawa*' (outrigger sailing canoes) and trampling under foot.

### **2.6.2 Sandy habitats**

There were no signs of turtle nesting on beaches close to the site. However, there were some descriptions from the local communities that, the area was very rich for the sea turtle nests during the past 15 years. They outlined that, main causes for the sea turtle to disappear from that area are the expansion of tourist activities as well as the rapid population growth of the villages in the vicinity. Several marine mammal species, which have been classified as having intermediate status by the IUCN, occur in the vicinity but there are no signs of dugongs despite the availability of suitable habitat.

### **2.6.3 Coral reefs**

The area to the front of the proposed development has a few living coral reef, which is a continuation of the north-south reef system that started at the tip of Nungwi Peninsula through Mnemba Atoll. The living reef near the site is somehow bit far from the land (as far as 400 meters from the highest watermark), and then proceeds to deeper waters when it goes to closer to Kiwengwa village. Deep sea is somehow goes far from the highest watermark. Further north of the site, while the southern side of the site the reef goes much further from the shore as one goes away from the proposed development site.

The reef is composed of isolated coral bommies in otherwise sand substratum. Neither the exact composition of this reef nor the depth of the sandy substratum was established during the survey. The reef is seemingly having significant contribution to local fisheries of the area as it supports both dermasal fish targeted by trap fishermen, as well as shoaling pelagic, which are the target of net fishermen.

On the other hand, coral growth, especially on the crest of the low fringing reef and on its seaward slopes was more active but there were extensive signs of damage due to anchoring and possibly netting. Compared subjectively with areas such as Mnemba Atoll, the density of soft corals and sponges was low.



### **3. APPROACH AND METHODOLOGY**

#### **3.1 Understanding of the Task**

##### **3.1.1 General Context**

The Terms of References (ToR) for undertaking this Environmental and Social Assessments (ESA) have been prepared by the Department of Environment, Ministry of Agriculture, Livestock and Environment-Zanzibar in accordance with Section 41(2) of the Environmental Management for Sustainable Development Act No 2 of 1996. The purpose of preparing these Terms of Reference (ToR) is to pave way a road mark for consulting company in carrying out a full Environmental and Social Assessment (ESA) for upgrading and extension of Zanzibar Beach Hotels and Resorts situated in Matemwe village, North "A" District, North Region of Unguja Island-Zanzibar in the United Republic of Tanzania.

According the set ToR by the Department of Environment-Zanzibar, the study area outlined to be the project area, Matemwe Shehia and other areas that could, in one way or another, be affected by the proposed upgrade and extension of Zanzibar Beach Hotels and Resorts project or its subsequential effects or results.

##### **3.1.2. Objectives**

The main objective of this ESA is to carry out a detailed environmental impact assessment. Specific areas to be addressed include:

- Compliance related to policy, legal and institutional matters
- Impacts addressing socio-economic and socio-cultural aspects
- Impacts related to ecological aspects of the project area and its surroundings
- Environmental and social problems as a result of project development and implementation
- Issues of health risks and safety
- Public participation
- Proposed mitigation measures for identified negative impacts
- Development of an environmental and social management plan for a sound design, construction, operation and management of the project

### **3.2. General Strategic Approach**

In order to ensure that the objectives of the work be achieved with maximum results, and in view of comments raised on the ToR, ZanConsult proposed and followed the following principles as an overall guiding strategy during the work:

#### **3.2.1. Participatory Approach**

A participatory approach to the task that involved various stakeholders had been adopted. This involved seeking information/experiences from the communities, key stakeholders, and other relevant institutions identified during the field investigations.

#### **3.2.2. Ecosystem Approach**

ZanConsult advisory services were undertaken with an ecosystem approach based on process and system-oriented method. Addressing environmental compliance required cross-sectoral approaches and operations as well as more attention to sub-regional, district and community ecosystem rather than to individual areas. This means that the ESA study in the proposed target communities might also incorporated examinations of environmental and social issues in the neighboring environment, as much as it falls in the ecosystem.

#### **3.2.3. Sustainability**

Sustainable development offers an alternative to conventional development by focusing on: social inclusion and participation, the natural resources base and the global commons long-term versus short-term time horizons, economic equity as well as growth, differences in perception, and the complex dynamics which interlink the project's social, ecological and economic systems. The project operationalised on basis of sustainable development.

#### **3.2.4. Indigenous Knowledge**

Indigenous knowledge consists of dynamic insights, information, practices and experiences, as well as beliefs, ideas, and perceptions. Most of the population living in the target communities has acute understanding of the potentials and constraints of their traditional land and natural resources. Indigenous knowledge has been incorporated during the study so as to make the Project both environmentally sound and economically productive.

### **3.3. General Methodology**

This ESA study has been carried out in full compliance with the ToR in accordance with Section 41(2) of the Environmental Management for Sustainable Development Act No 2

of 1996. This section gives guidelines followed during the undertakings of this ESA study in the project area as well as outlined the administrative procedure that has been followed from registration of the project proposal to receiving environmental clearance. For example, the Consultant expected to prepare and submit a Draft Report and a Final Report. The general methodologies to be followed are presented below.

#### **2.4.1. Capacity Building/Training**

ERC capacity building/training approach is based on adult learning methods and uses SARAR methodology for capacity building/training program. SARAR stands for 5 attributes or abilities that are critically important for achieving full and committed participation in learning: Self esteem, Associative strength, Resourcefulness, Action planning and Responsibility for follow-through. The main target for capacity building is the client and other key stakeholders. Therefore, training strategies and approaches must be geared to enhance capacity of these stakeholders.

#### **2.4.2. Data Collection**

##### **Literature review**

An extensive review of the reports available has been undertaken. The review had provided lessons and helped to clarify the baseline conditions and environment in which the project is being conducted.

##### **Participatory Tools**

Participatory Rural Appraisal (PRA) made use of a family of methods relying on open-ended dialogue and village-level analyses. Therefore, PRA was a very central concept in the socio-economic monitoring and environmental compliance of the Project. The initiation of participatory socio-economic monitoring and environmental compliance is vital. ZanConsult had opted to use this methodology to ensure the client and the key stakeholders' involvement and participation in the monitoring and environmental compliance process.

##### **Quantitative PRA Survey**

A questionnaire based sample survey had been carried out to collect environment and socio-economic data.

##### **Qualitative PRA Survey**

A qualitative survey had been conducted to substantiate and verify the results from the quantitative survey by applying focus group discussions.

### **Field Investigations**

The objective of field investigations is to collect sea, soil, ground water, and surface water samples for all project phases. These investigations were used to determine the extent of possible attenuation of pollutants and other potential impacts. Impacts raised from field investigations were presented in a matrix. Factors that have been considered were: duration (short-term/long-term), mode of influence (direct/indirect), scale of influence (primary/secondary), potential of mitigation (reversible/irreversible), and area of influence (local/regional). Both positive and negative impacts were considered.

### **2.4.3. Data Analysis**

#### **Statistical Package for Social Sciences (SPSS)**

Data has been analyzed after field verification using SPSS, which is a windows based statistical package to analyze quantitative data related to socio-economic and related fields.

#### **Geographic Information Systems (GIS)**

Geographic Information Systems (GIS) are computerized; resource databases that are geographically reference using co-ordinate systems. They were used for the storage, retrieval, manipulation and display of various types of spatial data. This data could carry information about the geographic location of objects as well as other, non-spatial attributes such as land use, elevation, pH, or rainfall. GIS provided an extremely flexible method for handling maps using computer technology. The digitized maps also linked to the other forms of non-spatial data, for example, tables from databases such as Excel and Access.

The GIS system was used to support a great variety of analyses and used to investigate data collected during the monitoring, for support environmental compliance and for the mapping. When new data were collected and other indicators were modified these analysis has been repeated to investigate changes and the potential impact of changes in the project.

## **3.4. Detailed Methodology and Work Plan**

### **3.4.1. Definition of Specific Tasks**

In undertaking the task ZanConsult followed the forthcoming identified tasks (one-by-one) as articulated in the ToR ZanConsult used the Logical Framework (LF) approach in presenting this proposal. The Outputs and Activities part of the LF is shown in the

Table 3.1 below.

**Table 3-1: Logical Framework, Outputs & Activities**

<b>OUTPUTS</b>	<b>ACTIVITIES</b>
<b>Co-ordination and Resource Mobilization</b>	• Initial co-ordination meeting and resource mobilization with all stakeholders
<b>Environmental and Socio-economic Baseline Information</b>	of baseline information
<b>Field Investigations</b>	<ul style="list-style-type: none"> <li>• PRA and focus group study</li> <li>• Marine, coral reef, coastal engineering study</li> </ul>
<b>Compiled and Analyzed Data</b>	<ul style="list-style-type: none"> <li>• Collection and analysis of socio-economic and environmental data using participatory tools</li> </ul>
<b>Potential Environmental and Social Impacts Identified</b>	• Identification of potential environmental and social impacts
<b>Mitigation Measures</b>	• Proposal for mitigation measures
<b>Environmental Monitoring Plan Social Monitoring Plan</b>	• Developing ESMP for the proposed project
<b>Public participated in social and environmental impact assessment process</b>	Stakeholders participation
<b>Draft and Final Reports</b>	• Draft report preparation and submission

### 3.4.2. Work Plan

A preliminary work plan, organized according to the tasks described in the previous section, has been created. The work plan was structured so that the preliminary conclusions of certain key elements of the task were able to feed into subsequent activities. The tasks were divided so that each team member, while working independently, has also directly contributed to the overall task program. The work has been completed within 8 weeks time.

Table 3-2: Work Plan

TASK		WEEKS							
		1	2	3	4	5	6	7	8
1	Initiate Co-ordination and Resource Mobilization								
2	Gather Environmental and Socio-economic Baseline Information								
4	Conduct Field Investigations								
5	Compile and Analyze Data								
6	Assess Potential Environmental and Social Impacts								
7	Develop Mitigations Measures								
8	Create Environmental and Social Management Plan								
10	Prepare Draft and Final ESA Report								

## **4. REVIEW OF RELEVANT POLICY AND LEGISLATION**

For the purpose of this study, the following policy documents and legislation were reviewed:

- ❖ The Environmental Management for Sustainable Development Act of 1996,
- ❖ The Tourism Zoning Plan of 1993,
- ❖ The National Land Use Plan of 1995,
- ❖ Zanzibar National Forest Policy of 1994, and
- ❖ National Master Plan for Tourism Development 1983.

### **4.1. Environmental Management for Sustainable Development Act No. 2 of 1996**

The Environmental Management for Sustainable Development Act No. 2 of 1996 makes provision for the management of the environment for the sustainable development of Zanzibar.

#### **4.1.1. Principles**

**Section 4** of the Act places on every person the duty to promote the purposes of the Act which are stated as:

- ❖ Maintenances of basic ecological processes of land, water and air,
- ❖ Ensure the environmentally sound and healthy quality of life of the people of Zanzibar present and future,
- ❖ Promote the sustainable use of renewable natural resources,
- ❖ Promote the rational use of non-renewable natural resources,
- ❖ Preserve the biological and cultural diversity of Zanzibar's lands and seas, and
- ❖ Strengthen the institutional capabilities for protecting the environment.

**Section 7** of the Act states that all renewable natural resources shall be used and managed in accordance with the principles of sustainable development including:

- ❖ The quality and quantity of renewable natural resources and their surrounding ecosystems shall be sustained,
- ❖ Disruptions to the existing interactions between natural and their surrounding ecosystems shall be minimized,
- ❖ Unnecessary or harmful use or management of renewable natural resources shall be prevented,
- ❖ All injury to the general welfare and rights of persons, both present and future, shall be prevented or compensated,
- ❖ A resource which is suitable for various uses shall be used and managed in a way which preserves many of these uses as possible,
- ❖ Decisions to use of renewable natural resources shall take into account the

need for environmental conservation, the need to ensure sustainability, and the need to balance environmental, economical and social costs and benefits, and

- ❖ Planning of renewable natural resource management shall be participatory and integrated.

The commercial exploitation of any renewable natural resource shall be carried out in accordance with the principle of optimum sustainable management. Uses of renewable natural resources in the public domain which are indispensable to meet basic daily living needs of individuals, families and communities and are compatible with these principles of sustainable development shall be guaranteed

**Section 8** of the Act makes provision for the use and management of non-renewable natural resources to be undertaken according to the principles of sustainable development:

- ❖ The commercial exploitation of any non-renewable natural resource shall be carried out rationally to conserve and recover the resource and the environment,
- ❖ Direct or indirect impacts of non-renewable natural resource use on ecosystems, biological diversity and renewable natural resources shall be minimized and any impacts shall be addressed through environmental restoration,
- ❖ Use of non-renewable natural resources shall be minimized as appropriate in accordance with the overall need for sustainable development of the country,
- ❖ All injury to the general welfare and to the rights of persons, both present and future, shall be prevented or compensated,
- ❖ Planning of non-renewable natural resources management shall be participatory, integrated and balanced among environmental, economic and social costs and benefits, and
- ❖ Uses of non-renewable natural resources in the public domain which are indispensable to meet basic daily living needs on individuals, families and communities and are compatible with these principles of sustainable development shall be guaranteed.

#### **4.1.2. Environmental Impact Assessment (EIA)**

Section 41(3) of the Act refers to the need for an Environmental Impact Assessment (EIA) to be undertaken for activities identified in Schedule 2. Among other activities, this Schedule refers to “developing environmentally sensitive areas including forest, mangroves, small islets and water catchments” as requiring a Scooping study.

The requirements for the content of the environmental Impact Statement (EIS) are



outlined in section 40, and section 41 refers to the process for the determination of the scope of the EIS whereby the responsible authority agrees with the applicant on:

- ❖ The specific issues of those required under section 40 to be emphasized information,
- ❖ The persons to be consulted during the preparation of the EIS,
- ❖ The methodologies to be used in collecting and analysing the required information, and
- ❖ Any other matter describing the scope of the EIS.

**Section 44** through to 60 of the Act prescribes the due process to be followed in an assessment and approval of an EIS. The scope and procedures of this Act are comprehensive in providing a framework for the management of the environment in Zanzibar, while reconciling the need for development that is sympathetic to prevailing social and economic conditions in the country.

The emphasis placed on consultation with local communities that will be most affected by development is key to ensuring that the costs and benefits of development are equitably shared among affected parties.

#### **4.1.3. Implementation Roles and Responsibilities**

The Act places considerable responsibilities on the institution charged with its implementation, namely the Department of Environment. Most significantly, the regulatory authority is responsible for:

- ❖ Determining the scope of the EIS with the applicant,
- ❖ Approving the credentials of the experts that undertake the EIS,
- ❖ Circulating the EIS to relevant government bodies for written comment,
- ❖ Notifying the public for the purpose of reviewing the EIS, and providing written comment,
- ❖ Soliciting the written comments of those people that will be affected by the proposed development,
- ❖ Requesting further information from the applicant if necessary to undertake the review of the EIS, and
- ❖ Approving the activity and issuing the EIS certificate in the prescribed form and subject to any conditions deemed necessary.

The regulatory authority is also responsible, in collaboration with the relevant persons, for periodic auditing of projects to determine compliance with conditions of the EIA approval. The regulatory authority may also request the holder of the EIA certificate to submit any records or reports deemed necessary to ensure compliance with the conditions of the EIA approval.

### **3.2 National Land Use Plan (NLUP)**

The major objective of the National Land Use Plan (NLUP) of 1995 is

*“to support the development of balanced land use by integrating and coordinating the ongoing activities of land use development and plans, in the form of an integrated land use plan and permanent planning and co-ordination capacity for land use development”.*

The NLUP was formulated to provide a comprehensive description of the social, economic and environmental issues that Zanzibar needs to address in terms of resource management; and to provide an adequate framework for sectoral co-ordination regarding land development. It also provides the Government’s strategy to address these issues in considerable detail. However the current lack of resources, both financial and in capacity of personnel, is hampering efforts to implement the vision for long-term sustainable use of Zanzibar’s natural resources and to improve living conditions for the existing and future generations.

The issues are discussed in eight sections as follows:

- ❖ Population,
- ❖ Settlements, housing, social and community services,
- ❖ Industry, mining and quarrying,
- ❖ Tourism development,
- ❖ Agriculture and livestock development,
- ❖ Forestry,
- ❖ Infrastructure and utilities, and
- ❖ Coastal resources management.

To be addressed effectively, and utilizing the available resources, the issues that are identified need to be ranked so as to identify priority issues that can be addressed within a given timeframe, and financial enforcement of development approvals. The Tourism Zoning Plan has been considerably strengthened by the NLUP, however specific focus on tourism development is necessary if this sector is to play an important role in the economic development of Zanzibar.

### **4.4. National Forest Development Policy**

This policy recognized the dependence of the people of Zanzibar on forests for basic needs such as fuel wood and building materials. The purpose of the National Forest Development Policy (NFDP) is to establish priorities for conservation and a framework for actions. The policy is directed at integrated conservation, development and

utilization of forest resources, both wood and non-wood. The general goal of the policy is:

*“To protect, conserve and develop forest resources for the social, economic and environmental benefit of present and future generations of the people of Zanzibar”*

Specific goals include:

- ❖ Social goal—strengthen the role of forest in alleviating poverty and increase equity in resource management and utilization,
- ❖ Economic goal—strengthen the role of forest resources in promoting economic development, in meeting demand for forest products, in creating income and in increasing national revenues and efficiency, and
- ❖ Environmental goal—protect and conserve forest resources including wildlife and flora, and enhance the role resources in maintaining soil and water conservation and other environmental benefits.

The goals are further divided into policy groups that focus on specific areas of the agenda and provide direction for implementation of action plans.

**Policy group 1 deals with community forestry policies specifically:**

- ❖ Community forest for production and income generation, and
- ❖ Community-level planning and management.

The objective of these policy groups is to increase general awareness of the value of forests among rural communities, and to increase community involvement in forestry-based projects and general management of forestry resources. Specific initiatives include provision of trees for planting, creation of markets for forestry products and investigating long-term community-level forestry arrangements to determine conditions for success.

**Policy group 2 focuses on conservation and biodiversity policies, including:**

- ❖ Preservation of natural forests and biodiversity,
- ❖ Mangrove conservation, and
- ❖ Soil and watershed protection.

This policy group focuses on the natural environment, particularly those areas already vulnerable to development, such as mangrove areas. The need to implement strategies to manage catchments areas acknowledges the spatially integrated nature of the environment, and that impacts in one area can have adverse impacts in another environment. Specific initiatives include the creation of a legal framework within which a

differentiated system of management strategies for forest areas can be implemented, particularly a system of multiple-use zone that can be managed at community level.

The development of an integrated coastal area management program is a means of collaboratively managing relevant sectors within the coastal zone. The protection of mangrove areas has been highlighted, and the move to control activities in areas that may impact on the coastal environment, is an important step.

**Group 3 policy initiatives focus on a forest products policy that includes:**

- ❖ Increasing forest production, and
- ❖ Improving forest product utilization and trade.

Implantation strategies are focused on the increased efficiency of utilization of forest products, and include initiatives to encourage use of alternative fuel sources, support value-added creation for domestic wood products and reduce wastage resulting from the harvesting process.

**Group 4 policy initiatives focus on capacity-building and financial policies, particularly:**

- ❖ Building capacity and improving forest administration,
- ❖ Financing for forest activities, and
- ❖ Improving forestry law.

These policies will effectively provide the support to forestry management systems that is necessary for the long-term management of forest areas. Specific initiatives include improving the structure of forestry administration in terms of personnel capacity and resources, implementation of data collection and other research programs, and participating in international initiatives in sustainable forestry.

The implementation of a system for the provision of finance for forestry initiatives, which includes the review of the system of penalties, license rates and transportation permits, is also planned, and this will coincide with studies that include the determination of the direct and indirect monetary benefits of forests as well as the feasibility of the creation of the Forestry Development Fund to promote silvicultural activities. This will also be supported by the planned enactment of a new forest law and a revision of the other relevant laws to give effect to this policy.

The NFDP provides a detailed vision and goals for the attainment of a sustainable management system for its forests. Given the extent of dependence of the people of Zanzibar on forests, and that forests are considered a national asset that could

contribute to the development of other economic sectors such as eco-tourism, this policy provides that way forward to achieve the stated goals.

However the extent to which the provision of personnel and financial resources to support the intent of the policy is necessary steps, after which is not clear. The proclamation and gazetting of the Forestry Policy is a necessary first step, after which priority policy areas can be determined, matched to existing resources and an estimate made of the resources that would be necessary to support other policy area as they come on stream.

#### **4.5 National Master Plan for Tourism Development of 1983**

Much has been said about the direct environmental impacts of tourism on islands, for example, pollution, coral reef damage or spoiling the beauty of a palm fringed beach. Therefore, countries which are engaging into tourism Industry, like Zanzibar, would prefer to develop high-value, often referred to as “exclusive tourism”. Such tourism should be able to bring high returns for non-extractive use of the coastal resources, thereby helping conservation.

The Zanzibar Government requested the WTO (World Tourist Organization) as an Agency of the United Nations Development Program (UNDP) to assist in the preparation and production of a National Master Plan for Tourism Development. The plan, which outlined the development possibilities of Tourism in Zanzibar archipelago, was completed and published in 1983. The plan focused on the possibilities for employment of local people and formulated criteria that could be used in selecting suitable development areas.

The projected plan was for a 10-year period (1983-1992) and identified rural locations such as Bwejuu and Mangapwani as potential areas for tourism development projects. It recommended the establishment of the Zanzibar Tourism Policy and Structural Plan and cautioned about the danger that could be encountered if tourism development and infrastructure were inefficiently and haphazardly spread throughout the island.

However, the plan made no specific suggestion as to how local participation in the industry could be encouraged. Some of the recommendations were followed, but as a whole the WTO plan was never implemented. The abrupt changes in government leadership of the trade liberalization policy and the Private Investment Act in 1986 resulted in the plan being incompatible with new ideas.

The liberalization of the economy and the reintroduction of private ownership of tourist enterprises and land led to an explosion in the tourism construction sector. The result, however, of this rapid development was that land and licenses were allocated rather haphazardly without consideration for the development of the required infrastructure

and without any central planning guidelines. The situation remained fluid until the introduction of the Tourism Zoning Plan in 1993 and the Tourist Development plans for selected areas in 1994.

The Government of Zanzibar has, since the introduction of the Investment Protection Act in 1986 and its revisions in 1982, actively promoted and supported the development of tourism in Zanzibar through a series of foreign investment incentives. One of the results of these incentives is a substantial increase in the number of resort hotels in Unguja over the last decade.

There remains however a substantial potential for development of land use plan in Unguja and Pemba and development for the purposes of tourism is continuously supported and promoted by the Government of Zanzibar.

The Tourism Development Plans are intended to promote tourism in particular and the economy and social development of Zanzibar in general. At the same time the government is aware and share concerns about the social and cultural impact of tourism on the islands in general and the affected village populations in particular. In order to ensure that these issues are being addressed, the Government has made it obligatory for developments over a certain size or complexity to provide a dedicated study and analysis of the social-economic impacts of the proposed project for their approval prior to implementation.

#### **Tourism Development in Matemwe**

As per Tourism Zoning Plan, Matemwe is divided into two sub-zones: Matemwe and Muyuni. About 35 hectares of land close to the beach have been zoned for construction of hotels of different sizes. A total number of 800 beds have been set by the plan as "plan capacity for the area"

Unlike the situation in Kiwengwa and south east coast, tourism industry in Matemwe has been growing at comparatively low pace. Currently, there are four hotels operating in the area, which are Matemwe Beach Village, Mnemba Island Diving Centre, Matemwe Bungalows and Zanzibar Beach Hotels and Resorts.

## **5. CURRENT LAND USE**

The current land use of Matemwe includes settlement, cemetery, and fish landing sites, coconut plantation, coral rag bush land, and tourism planning area and forest woodlot.

### **5.1. Settlement**

Settlement category is divided into three localities, Matemwe, Muyuni and Mfuru Matonga, which occupy an area of 25 square kilometres. Within the settlement area, there are three football grounds. There also exist five sites used as local cemeteries. Beside the settlement land uses, there are other uses within the settlements. There are public facilities such as a school, dispensary, 4 mosques, 6 madrasa, landing sites and a market.

As the population grows, the villagers seem to build residential houses behind the existing settlement. These areas are rocky and therefore difficult to dig up which makes the whole venture very costly. The detailed land use plan has set aside about 500m in either side of the village for settlement expansion, but the residents still are unable to build close to the beach because the prices of trees or rather land is very high.

### **5.2. Tourist hotels**

Matemwe and nearby surrounding villages have been engaged with some tourist hotels since 1990's. The prominent hotels are Matemwe Bungalows, Mnemba Island Diving Centre, Zanzibar Beach Hotels and Resorts, Matemwe Beach Village, Kiwengwa Ltd, Bravo Club, Vera Club, Venta Club, and Blue Bay Beach Hotel. On the other hand, Pwani Mchangani is also engaged in tourist hotel development since mid-1990's and some of development in the area are Coral Reef Beach Hotel, Mapenzi Beach Resort, Protea Hotel, Ocean Paradise and Zamani Resorts. These hotel projects have raised big social and environmental concerns between Kiwengwa, Pwani Mchangani and Matemwe villagers. Another hotel resorts are La Villa Hotel, Sun Rise Hotel, Uzioni Beach Hotel and Farasi Club. Those mentioned projects are situated to both southern and northern sides of the proposed development site.

### **5.3 Farming**

#### **5.3.1 Crop farming**

Farming in general is the second most important economic activity in Matemwe village. Apart from the crops being grown in the coral rag bush land, other crops include cassava, yams and some vegetables. Most of the crops are consumed within the village, the remaining parts are sold to nearby villages especially

Kinyasini. There is no commercial farming as such and only some products like tomatoes are sent to Zanzibar town during high productive seasons.

### 5.3.2 Seaweed

Seaweed farming is not a new activity as many people think. Seaweed is listed among export commodities for Zanzibar before the 1964 Revolution but most of the seaweed exported then was from the wild. *Ulva sp.* was the most common species sold at Gulioni by Kumbaros (people with Pakistan origin). Officially, seaweed farming was introduced in 1980 at Fumba on trial basis.

However, it was not until 1988 where the economic favouring was realized mainly on the East Coast of Unguja Island. The fast growth of seaweed cultivation in Zanzibar during the period of 1989-91 indicated profitability at the local level compared to other available means of income. A flexible disposition of productive time among the coastal people made incorporation of the practice within the framework of indigenous occupation possible (Pettersson-Lofquist, 1995).

Seaweed cultivation depends on the periodicity of water tide cycle, seaweed plots are located along the shore adjacent to the village. The Government does not allocate seaweed plots. However the local communities recognize user rights of the plots. The average plot size is 0.7 acre per household (Nasser, 1995).

Seaweed farming became a female occupation, which rendered women a significantly higher income, than they previously had access to. About 90% of the women in Paje were predominately engaged in seaweed farming (Patterson-Loefquist, 1995). However, men claimed that seaweed farming killed shifting cultivation, as most women wanted to farm seaweed instead to tending farm plots in the coral rag.



Plate 5-1: Seaweed farming in front of the proposed hotel development



Alongside the development of seaweed farming, tourism has emerged as yet another potentially competitive opportunity for employment and revenues for community members. The mushrooming of hotels and guesthouses incite conflicts between seaweed farmers and hoteliers. Majority of hotels along East Coast are occupying areas whereas seaweeds farmers exist. There are several cases in which conflicts between two parties i.e. seaweed farmers and hoteliers have emerged and only hotelier compensating the farmers has solved few of them. In other areas the problems are yet to be solved.

#### **5.4 Forest woodlot**

From 1987 to 1995 there has been intensive village afforestation program managed by Sub-commission for Forestry. Under the village afforestation campaign, many villagers especially women were encouraged to form tree-planting co-operatives and were given free seedlings.

*Casuarina equisetifolia* has been species of choice to be planted in coral rag area as it withstand annual fires common in those areas and has faster growth rate. *Casuarina* poles are extensively used in tourism development as a tree of choice for roofing and other constructions. The existing woodlot in the area has an area of about 30 hectares.

#### **5.5 Coconut plantation**

The coconut plantation covers the whole beachfront of both villages and extends between 20 – 50 meters inland. In terms of size, this land use category covers an area of about 100 hectares. This area is very crucial for the villagers as other socio-economic activities are taking place in it. For instance, seaweed drying is taking place within the coconut plantation. However, the proposed development area has got no coconut fringes.

#### **5.6 Fishing**

Fishing is one of the most important traditional economic activities in Zanzibar and a main source of protein for the population. For the villages located along the coastline of Unguja and Pemba, fishing has been important source of income and has formed a staple part of their diet for centuries. With the decline in the production and world market prices on land based sources, cloves, cobra etc, fishing activities have become increasingly important as a source of income to other group of people as well.

Fishing in Matemwe is one of the income generators for the village people and form their staple diets as a primary source of protein. The village displays characteristics similar to those experienced place in Zanzibar with declining fish stocks, lack of modern equipments, boats and lack of vocational training, facilities and activities.

## **5.7 Coral rag bush land**

This is a large tract of land, which extends up to a small hill close to Mchekeni at the western side, Pongwe at the South and Muyuni at the North. The bush land is mainly used for thicket growth and shifting cultivation. Being poor in fertility, it supports mostly short duration annual crops like maize, beans, sorghum and banana.

The shifting cultivation or slash and burn method of farming have declined from 10 years fallow period to the current one or two season farming cycle. This has been caused by the population increase.

The Arab landlords were not interested in the marginal land, and in the past coral rag land were not used for settlement but was only used for short duration farming as a supplement to fishing. Therefore, till to date traditional land use rights based on communal ownership continue to exist. Land nationalization and redistribution, which occurred in 1965, did not affect the coral rag land. Therefore, a farmer may cultivate any piece of land provided it is evidently unused at that moment.

If the farmer wishes to start new farm on recently vacated plot then permission from the former user has to be sought. Village elders, not necessarily be village leaders, but they also have great influence or say in the local regulations and allocation of land in the coral rag areas.

## **6. DESCRIPTION OF THE PROPOSED PROJECT**

### **6.1. Type of the proposed hotel**

The project management intends to upgrade and expand a Zanzibar Beach Hotels and Resorts project at Matemwe. The entire intended operations will exist side by side in harmony complementing each other in terms of design and style. Buildings will have low-rise structures that blend into the environment, maximizing views and privacy while economizing an infrastructure costs. The resort will be designed to appeal to middle and upper income clientele that include free independence tourists (international, regional and local) and small travel; groups, expatriates, and incentive markets.

On the other hand, the proposed site is adequate in size to provide an opportunity to create a spacious concept layout providing each guest room seaward facing view. Meanwhile, there is neither village nor direct neighbours at this moment. Therefore, hotel guests will be assured of tranquil environment.

### **6.2 Existing situation and activities on the site**

Currently, the site has been cleared for the preparation of hotel upgrading and expansion activities and the work will commence once getting the approval from ZIPA. About 100 people will be temporarily employed and working at the site. These include site engineer, quantity surveyors, masonries, plumbers, and labourers. Because of the nature of the work that will be available at the site, about 90% of the workers will be men. The consultants have been informed that about 150 workers will be needed to work in this project in order to complete the work on time.

There are several temporary buildings construct by the company at the site including project's office, stores and few staff houses. Water is available at the site. With assistance from the Department of Water, water will be drawn from underground by boreholes. Electricity is already connected to the site. A transformer with high capacity is placed at the northern part of the plot. They have learned that another one with high capacity will be installed in the near future. An earth road about 2 kilometres joins the site from Kijibwe Mnara.

### **6.3 Project Facilities and Activities**

Besides accommodation facilities of 200 beds and suits (54 square kilometres each), the project intends to provide the following facilities:-

- \* Bed room facilities (separate shower, bath, w.c., double wash basins, separate dressing area with wardrobe, rooms should be provided with either a terrace or balcony.

- \* Reception area, hotel foyer (including ample luggage storage to allow guest to vacate and store luggage until ready to depart),
- \* Public toilets, boutiques,
- \* Lounge areas (air-conditioned internal and external),
- \* Games rooms providing billiards and card table,
- \* Main restaurants with choice air conditioned with the internal capacity of 100 persons and external capacity of 100 persons plus dance area and stage,
- \* Poolside dinning area,
- \* Specialty restaurant (air conditioned with space for 30 persons),
- \* Main conference room (180sq.km.) plus two syndicate rooms each of 50 square kilometres,
- \* Internet centre with 4 positions,
- \* Internal air-conditioned bar with terrace,
- \* Pool bar,
- \* External game areas providing table tennis, boucle, croquet,
- \* Volleyball courts and flood lit tennis courts,
- \* Spa of 250 square kilometres (excluding pool),main swimming pool, rock pool Jacuzzi, hotel bar, children's pool,
- \* Water sports centre (diving, wind surfing, sailing and canoeing, hotel spa(a gymnasium,
- \* Sauna, steam rooms, and a range of beauty treatment,
- \* Car park for about 20 cars (taxis, minibuses plus private cars, room services,

#### **6.4 Existing activities outside the plot**

The western part of the plot is proposed to be a reserved forest. Currently, some temporary buildings (huts) are now cropping up at the western side of the road. Since the number of workers will be high, a substantial number of food vendors will be on place, hence more huts will also be built.

Therefore, the following should be done prior to the commencement of the construction activities of the hotel to save the situation in collaboration with other agencies such as the Shehia of Matemwe, Department of Forest, Department of Environment, and Health Officers:

- \* Vendors should be allocated in a special place.
- \* Toilets facilities for the workers must be provided.
- \* A person responsible for health must inspect the area from time to time.

## **6.5 Demand of public infrastructures**

Infrastructure is a pre-condition for the economic development. The Zanzibar Government has realized this and several steps have been taken to improve the situation.

Therefore, efforts on provision, rehabilitation and upgrading of infrastructure have been among the policies of the government. Therefore, many rural areas, which have gone without for quite a long time, are now enjoying the facilities such as better roads, electricity, water, etc. Fortunately, Matemwe is among the villages that have benefited from that policy.

### **6.5.1 Road**

The program of road maintenance and rehabilitation has got two major objectives: to increase the economic well being of the majority of rural population and to increase accessibility to the tourism development zones.

The road from Zanzibar town to Matemwe is excellent. The government of Zanzibar in collaboration with the United Nations Development Programme (UNDP) has built this road. The roads within the village are not tarmac. The road from Mkwajuni to Matemwe is about 6 kilometres which is tarmac and is passable all the time. This project lies within the same road about 2 kilometres away from Kijibwe Mnara (Plate 6-1).



**Plate 6-1: Road network through Matemwe village**

### **6.5.2. Water**

Water is one of the vital social services, which require due consideration. Both quality and quantity of water have significant implication to the quality of life of the concerned community.

Generally, Zanzibar has abundant supply of underground water confined in permeable aquifers. The quality of the Islands ground water is clean and safe in general perspective. There are numerous boreholes and spring caves supplying water to the urban and rural population.

Beside the introduction of piped water, wells have been intensively used as water sources. Presently, there are 15 wells in Matemwe. Some of them contain pure fresh water and the rest have been intruded by salt water. However, since piped water is available, the wells have been abandoned or are used occasionally. Salt-water intrusion is a phenomenon, which not only observed at Matemwe but also occurs in various water sources alongside the coast. The phenomenon is attributed to overdraft or over-pumping of water. Once the borehole or well is intruded with salt water is difficult to clean and the water is said to be not potable.

### **6.5.3 Telecommunication**

There are five companies which provides telephone services in Zanzibar and Pemba, namely ZANTEL, T.T.C.L, CELTEL, MOBTEL and VODACOM. Three of them have already extended their services to Kiwengwa. Telephone services are available in the hotels and to the few individuals, locals and foreigners. The hotels are also using radios to. The postal services are available at Mahonda.

### **6.5.4. Electricity**

The government policy on development has been to supply electricity in both urban and rural areas. The major objectives of the electrification project were to provide electricity for water pumping, rice irrigation and to other areas that provide social services and to improve the general standard of living of the population.

The electric supply is available in Matemwe (Plate 6-2). The electric power of 33KV has reached the village and has extended northwards as far as Plan hotel (Mapenzi Beach Hotel). Each hotel is using electricity after placing its own transformer.



**Plate 6-2: 33KV overhead electrical cable to the proposed project site**

The generators that were formerly used to supply the power in the hotel are used as standby to be used during power interruption. The whole of Matemwe is supplied with the electricity. But only few houses are supplied due to the fact that individual people must incur their own costs in order have it in their places. The major source of cooking energy for the villagers will remain to be fuel-wood energy. Kerosene is extensively used for lighting purposes.

#### **5.5.4. Transport and Transportation**

Since there are many tourist activities, different types of vehicles are moving in and out of the village. The road traffic increases during the high tourist seasons. Apart from luxurious (tourist) motor vehicles, the traffic is dominated by “Vans” type of vehicles which have been modified to transport passengers and commodities.

According to the villagers there is no transport problem during the daytime. Any one can come in and get out at anytime he/she likes.

## 7. SOCIAL IMPACTS ASSESSMENT

### 7.1 General overview

#### 7.1.1 Population pattern

The population of Matemwe portrays the same pattern of growth that exists in many coral rag areas. The growth rate of many coastal villages lying in coral rag an area is below the national average of 3% per annum.

According to the 1988 Census the population of Matemwe was 454 (239 males and 215 females); and this kept the area to be of the least populated among the villages along the east coast.

However, with the introduction of tourism activities, the population of Matemwe began to grow beyond above average growth rate within the coral rag areas of 2.3% According to the survey done by the Integrated Planning Unit in 1998, the population of Matemwe was 728, with the growth of 5% per annum. However, the 2002 Census indicates that there are 2429 people with the growth rate of 2.3% per annum. This shows that the population has almost tripled. This survey was done in September 2002, which is almost the peak in tourism seasons, which bring in more tourists with a number of immigrants in the area. Therefore, it is safe to conclude that the population in Matemwe is influenced by tourism activities. Assuming that this growth rate persists, then the population is expected to escalate to 3,085 by the year 2010, as shown in Table 7-1 below:

**Table Table 7-1. Population Projection of Matemwe 1988 - 2010**

	Male	Female	Total
<b>1988</b>	239	215	454
<b>1998</b>	371	357	728
<b>2002</b>	1,308	1,121	2,429
<b>2010</b>	1,756	1,329	3,085

#### 7.1.2 Immigration

The introduction of tourism in Zanzibar has called for more activities to be undertaken in different parts of the island, including Matemwe. Those activities include hotel developments, bars and restaurants, souvenirs shops, and alike. As a result many people decide to dwell in Matemwe because of those economic potentials. These people come from Zanzibar town, Pemba, Tanzania mainland and Kenya. Therefore, it is safe to conclude that, the population increase of Matemwe is mainly caused by the immigration.



### **7.1.3 Households**

According to Population Census (1998) the national average of number of people per household is 4.7. The average household for Matemwe was 4.4 above the northern Region average household size that is 4.1. The actual number of people per household varies from one household to another. Males head most households. Number of households at the Shehia is about 240. According to the 2002 Census the average number of Households is 4.9.

Some males have more than one wife. This is common in places where majorities of residents are Muslims and men are allowed to marry more than one wife. Sometimes the number of wives is considered to be an indication of wealth as to maintain more than one is not an easy task. At the same time, the more wives you have, the more children you expect to get.

Traditionally, women in coastal villages engage themselves in economic activities such as octopus harvesting, seaweed farming, rope making, etc. The earnings from such activities supplement household income. However, this does not exempt men from looking after the family.

Boys above 18 years are considered as adults and therefore are allowed to leave home and establish their own households. However, they still keep strong relationship with their parents. Girls do not leave home until they get married.

### **7.1.4. Physical Structure of Matemwe**

Matemwe is a typical traditional village found along coastal villages of Unguja Island. It is located at the north-eastern coast of Unguja with potential for tourism resources such as palm fringed beaches, shark free sea, natural forests, sea harvests, hospitable people, better infrastructure, etc.

### **7.1.5. Housing**

There are two major types of houses - traditional houses (hut) that are constructed with thatches and poles only. These are mainly found near the coast. These types of houses have neither windows nor toilets. The second types of houses are more permanent in nature. They are constructed using stones/cement blocks and thatched with coconut leaves. Some have been roofed with iron sheets. The type of house one is living in or possessing for that matter reveals how wealthy or poor the person is. The first type of house does not cost much to build and takes little time to be completed while the stone/cement blocked house is more expensive and takes longer to be completed, the advantage of this type of houses is that it is permanent.

As the people's income improves, many people are constructing with stones or

cement blocked houses with corrugated iron sheets. This can be clearly observed at the western side of the village. The village is also expanding along this area.

## **7.2 Social services**

### **7.2.1 Health facility and nutrition**

In order to improve health of the rural people, the government intends to provide health services affordable by any needy person. As a result of this policy many people within a radius of 5 kilometres are served with a dispensary. The villagers of Matemwe are also enjoying such services. There is one Primary Health Care Unit (PHCU), which is staffed with six personnel. A nurse, who heads the unit, two MCH aides supported by two orderly and one rural health assistant. There is no staff accommodation; as a result some staff reside outside the Shehia of Matemwe

The unit provides the general services as well as MCH services. The common diseases in the area are malaria, pneumonia, bronchitis, stomatitis and diarrhoea. Although vaccination against known diseases is regularly provided, measles has become common in the area during summer months. Other epidemic diseases are diarrhoea and dysentery.

As mentioned earlier, the unit provides only general services and hence most serious cases are referred to Kivunge Cottage Hospital while others are referred to Mnazi Mmoja Hospital in Zanzibar Town. The unit also provides health and environmental education to the villagers. There are no private dispensary and pharmacy.

According to the Officer in-charge of PHCU few cases of malnutrition have been reported in the village. This is partly due to the “*lishe*” education being conducted periodically and partly due to the diet of the village being rich in protein. About 44% of the houses have got toilets and are using them.

### **7.2.2 Education**

Education is one of the basic needs and also regarded as a human right. The government policy was and still is to distribute education facilities within 5 kilometers radius. Significant achievement has been realized. Education is regarded as a human right and basic need to be attained by any human being. Effort was made to distribute the education facility within 5 kilometers radius.

Education facility is available in Matemwe. There is a primary school (Standard I-VII) that is also joined by pupil from Kiwengwa and Pwani Mchangani. Pupils who

are keen to proceed further, they either go to Mkwajuni or elsewhere in Zanzibar town. There are 10 teachers (4 females and 6 males). In this respect, the education status in this Shehia is low.

Apart from the formal education facility, there are also five Quran schools which offer learning Quran and Islamic knowledge. Normally, every child is required to attend the Quran school before he/she is enrolled in standard one. The Matemwe Village has neither day care centre nor nursery school for infants.

There are four mosques and four Madrasa in Matemwe. But the mosque at Matemwe Kuu is bigger compared to the others. This bigger mosque, apart from the normal prayers also offers Ijumaa (Friday) prayers.

### **7.2.3. Shops and restaurant**

Shops are scattered in both villages. Some are big while others are small depending on the commodities they sale. There are several shops that sell commodities from rice, wheat flour, sugar, tea leaves to school stationeries. The souvenir shops are found at the central part of the village.

There are several restaurants at Kiwengwa Shehia. Some restaurants are local, selling breakfast in the morning and lunch in the midday. The common customers are fishermen and the other people who are doing tourist business. A few restaurants have been improved to cater for tourist and other visitors. The prices in these restaurants are comparatively higher.

### **7.2.4 Recreation activities**

The major recreational activities are playing soccer and netball. There are three pitches: two for football and one for netball.

Other activities used as pastimes include bao, karata, holding conversation and playing checkerboard.

## **7.3 Major economic activities of the study area**

### **7.3.1 Fishing**

Fishing is a leading income earner for Matemwe people followed by seaweed farming, agriculture, petty trading and animal husbandry. Majority of fisherman are engaged on artisanal fishing. During the interview it has been found that there are two main fishing seasons known as Kusi and Kaskazi each season last for at least one month, but some fisherman believe that the best period for fishing is when the sea is calm.

There is a single pure seine fisherman in the whole of Matemwe, however since

fishing is main income earner but the economy of people of Matemwe is not healthy due to poor fishing techniques and gears used by them.

It has been discovered that fish stock is declining very drastically for several reasons. Some have been suggesting that boom days (siku za neema) are over. Others believe that poor and destructive fishing gears are the main reason why they are not getting good catch.

Some fishermen attribute the decline to the coral reef stretching over larger area. They argue that it is an obstacle to fishing and it should be broken to enable them to get easy access to richer fishing grounds. Fisherman relies on a single port that is situated at Matemwe. Fishmongers are coming from different parts of Unguja for buying fish, some are coming from nearby villages such as Michamvi, Donge, Mahonda and sometimes people from Zanzibar Town become their customers especially during the holy month of Ramadhan.

#### **Problems**

- ◆ The demand for fisheries resources has been increasing over time but not much effort has been paid in either modifying fishing gears or discovering alternative fishing grounds
- The fishermen have been left almost alone to satisfy the increasing fish demands.
- Large number of fisherman are fishing on a single spot
- An increasing number of persons are engaged in fishing.

#### **Recommendations**

- All fishing grounds should be categorized according to their nature.
- Fisherman should be provided with soft loans to purchase modern fishing gears, which will increase their fishing range.
- Strengthen fisheries extension services and educate fishermen in catch handling and maintenance of gear.

### **7.3.2. Seaweed farming**

Seaweed farming is mainly engaged by women and about 15% of men are also involved in the activity. There is no tenure for land occupation. Farmers just select the area and it automatically becomes his/her plot

Seaweed farming is a demanding occupation. Many man-hours are deployed on tending the farms, it is estimated between 5-7 hours a day are spent in the farm. Two species are commonly grown in Zanzibar. These are *Kappaphycus alvarezii* and *Eucheima denticulatum* whose trade names are cottonii and spinosum respectively. Spinosum flourishes well in Matemwe compared to cottonii. As a

matter of fact, cottonii is being promoted now as specie of choice due to lack of demand for spinosum.

It takes between 4 to 6 weeks to harvest the product. However, it depends on several factors like salinity, water flow and light that are assumed not to be limited in Zanzibar. It was observed that, Kipupwe (winter) season, the seaweed grown prolifically. There is only one company buying seaweed in the area called ZASCO (Zanzibar Agro - Seaweed Company).

The price of one kilogram of dry seaweed (spinosum) has fallen from 120 Tanzania Shillings to the current 50 Tanzania Shillings. This has adversely affected the farmers not only because the prices are low but also because the demand for spinosum is low. Many people have been advised to switch to growing cottonii.

When the prices were favourable, a farmer from a single harvesting can earn between 6000 - 8000 Tanzania Shillings. In Paje in the southern Region a farmer earn out of 200 strings plot as much as 40,000 Tanzania Shillings. (Nasser, 1995). The farmers are given strings (tai tai) and ropes under one condition that all harvest must be sold to the ZASCO. The seaweed companies are not supposed to buy the products anywhere.

#### **Problems**

- ZASCO has the monopoly of buying seaweed from the farmers.
- There is government price fixing assisted by the ZASCO
- ZASCO has not taken initiatives to train the farmers on better methods of seaweed farming.

#### **Recommendations**

- Other seaweed companies should be allowed to operate at Matemwe. In other words let the free market prevail.
- Farmers should be given training on modern techniques on seaweed farming

### **7.3.3. Agriculture**

Nationally, agriculture is the main stay of the economy followed by tourism. Agriculture is the second important economic activity in Matemwe. The villagers grow mainly cassava, mango, maize, sorghum and variety of annual crops. Large portion of crops grown in this area is consumed locally and only portion is sold mostly locally.

During the discussions it has been discovered that there is no commercial farming. Only one farmer grows tomatoes and sells them to the existing hotels in

the area. Two major farming methods are practiced in the area. The first is shifting cultivation or bush fallowing method, where the farm is abandoned after two or three years of farming and a new plot is cleared and burnt ready for another cycle. The second method is permanent farming, where a farmer cultivates one plot indefinitely. Livestock keeping is not widespread.

#### **Problems**

- Animal pests such as rats, monkeys, Indian house crows have been reported to be the major pests affecting agriculture in the area.
- The extension officers from agriculture, forestry and fisheries are rarely seen in the area.
- The traditional methods of farming practiced in the area generate little productivity.
- Agriculture must be encouraged to create more off-sea activities

#### **7.3.4. Livestock**

There are few livestock keepers in the Shehia. Among the animals kept include cows, goats, ducks, chicken and guinea fowl. The animals are not kept for commercial but only to supplement household income.

### **7.4. Social impact analysis**

#### **7.4.1. Tourism through the eyes of the local residents**

Tourism in any location is a complex phenomenon, which gives rise to diverse and often contradictory types of effects and to differing point of view. Thus an assessment of local people attitudes and receptiveness towards tourism industry was given special attention during the survey.

All villagers interviewed by the study team were asked about their opinions on the tourism industry. In general villagers are pleased and welcome the tourism industry as they see it is a good thing for national development. However, there is a widely held belief among the villagers that the growth in tourists' number in recent years has not been matched by a comparable increase in economic benefits from tourism.

The general picture, which emerged from interviews, was those villagers' attitudes and receptiveness towards tourism is very much influenced by their age, education and power relationship. There were no significant differences between genders as far as this topic was concerned. Young people, hotel workers and village leaders were generally in favour of the industry while most old people and those who are relatively educated support the tourism industry but feel that some changes have to be made.

While the latter asked for the hoteliers and the Government of Zanzibar to find ways and means of redistributing more benefits from tourism to the village. The former wants the hoteliers and their guests (tourists) to observe village rules and regulations. They argued that tourists should not walk around the village unless they are 'properly dressed'.

This kind of problem is not uncommon especially for countries which follow Islamic codes. The situation in Muslim dominated Mombasa (Kenya) is more or less the same. In the Maldives local Islamic/traditional codes are observed. Nude bathing is prohibited and tourists must wear locally accepted dress when they visit villages.

#### **7.4.2. Culture**

Culture is a social expression of ongoing activities in daily life. It encompasses numerous elements including language, dress model, celebration and funerals, worship, treatment of foreigners, etc. Culture is considered as an indicator that separates one society or ethnic group from another. Culturally, the residents of Matemwe are not distinct from the rest of Zanzibari people. They speak Kiswahili like the rest of Zanzibaris and majority if not all are Muslims.

Tourism is strong in Kiwengwa as compared to Pwani Mchangani, southern east and other East Coast areas. Therefore, presently the culture of the areas has not been tainted, intruded or polluted by foreign culture. However, experience from other area show that the Swahili cum Islamic is really vulnerable to foreign cultures. It can be easily polluted and teenagers and children are usually affected first.

The issue of cultural pollution raised a lot of concern during the discussion. The villagers suggested that tourists especially women should cover their body and should not go around with bikinis or half naked.

Being a village populated by Muslims, the birthday of Prophet Muhammad (Peace be Upon Him) is usually celebrated yearly. It is celebrated as a ritual as villagers fear the retribution if it is not celebrated. The developers could integrate well with villagers to observe such ritual and provide some assistance during the ceremony.

#### **7.4.3. Employment**

As a service oriented industry, it is generally accepted that tourism is labour intensive. This assumption presupposes that one of the major impacts of tourism development, particularly at local level is job creation. Therefore, the Government

has seen the encouragement of the tourism industry as an effective way of creating employment opportunities, especially for the youths in rural areas.

However, the current situation in Matemwe is quite different. During all interviews and discussions the villagers complained bitterly on the question of employment. They argued that the existing hotels have virtually created no employment opportunities for villagers. According to the information gathered during interviews very few people are employed in the hotel industry. It is widely acknowledged by the residents that the local populace does not have skills and experiences to fill intermediate and managerial posts. However, they are of the opinion that there are a number of low posts that could be filled by the villagers. They wonder why beach cleaners, gardeners and the like should become all the way from Kenya or Mainland Tanzania.

Also the indirect employment opportunities that have been created by the existing hotels are very limited. There are four individuals from the village, who have tenders to supply fish to different hotels. This arrangement appears to have created a significant income to them.

The question of employment is a genuine one and needs to be looked upon seriously. The major problems that the hotel will face in trying to reverse the situation are the lack of skilled manpower at village level. Therefore, the sponsors are ready to design a comprehensive training program and on job training activities that will build capacity and skills of the villagers. The objective of the company is to have staff composition with majority of employees from Matemwe village.

#### **7.4.4. Civil service**

Formal employment is very minimal. There are few persons with formal employment. These include teachers, medical staffs, plumber and fishing officer. May be this is due to low level of education of the residents and limited government services within the Shehia.

#### **7.4.5. Informal sector**

Non-formal employment includes the hotel workers, carpenters, drivers, farmers, fishermen and other businessmen. This proves that the informal sector is dominant an income of the community is very much on this sector. Therefore, there is a need to improve means and ways of income generation of residence. This should include improvement of their skills and know-how, marketing strategy and acquisition of fishing gears and farming inputs.



#### **7.4.6 Child labour**

It was noted that, some of the children from the villages of Kiwengwa, Pwani Mchangani and Matemwe are engaged in various activities of the existing hotels i.e. Reef View Kiwengwa, Sea Club (Bravo), Karibu Club (Venta), Blue Bay, La Villa, Zanzibar Village (Vera) and Shooting Star Shooting Star. These children normally are not attending school and Quran classes regularly, which is against with traditional norms and culture of the local communities of these villages. To establish this kind of the resort within the same area will increase the social problem that might affect the school attendances in the future and the religious communities believes on that and anticipated in the future to have a semi-illiterate generation.

Additionally, experience obtained by the local communities through running of the existing hotels near Matemwe shows that, children normally goes to these hotels and play within the plots. In doing so, the owners of the hotel, sometimes, take these children to the police or beat them, this situation creates conflict between the hoteliers and the community. Therefore, the initiation of the resort at the project site might increase this type of problem.

#### **7.5 Analysis of the Social and Cultural Impacts**

Tourism development is often hailed as a potential saviour of countries economic woes (Grange & Odendaal, 1999). For the same reason Zanzibar has adopted tourism development. Experience shows little of the economic benefits tends to end up in the hands of the local community. At the same time the local community suffer the environmental and social costs.

Any development has got an impact. Therefore, any tourism development project has socio-economic and cultural impacts. The major problem world-wide is not tourism but rather the inadequacy of the existing agencies to deal with the challenge of growth (Barker, 1996).

Some analysis of the impacts and recommendations has been provided in this report under various heading. This last part of the report should be looked upon as more of a conclusion than an analysis per se. The intention is to concretise the social and cultural impacts that have direct bearing on the workings of the projects.

The Tourism Zoning Plan has declared Matemwe Tourism Zone. The level of tourism development is very high as compared to other tourism zones such as Nungwi and the east coast. Likewise, several hotels and few guesthouses are already in the area. As such the villagers have some experiences with tourism developments.

We are in the opinion that additional developments will have no significant impact on the socio-economic activities of the village as it is occurring within the tourism zoning plan and the proposal is not radical to upturn the livelihood of the community.

We also recognize and acknowledge the fact that some socio-economic problems are already on the ground whether the proposed developments take place or not. For instance, the decline in Spinosum prices and associated monopolistic pricing, the decline in shifting cultivation as well as decline in fish stock. Therefore, the developer should not be liable to solve them single handed.

On the other hand, under the assumption that the number of tourists visiting an area or number of beds is proportional to the impacts caused by tourists then this development will have significant impacts (both negative and positive) on the socio-economic activities of the village.

We foresee a significant rise of employment to the local community as a result of this development project under the Zanzibar Beach Hotel and Resorts. The hotel will increase the existing number of beds in the area. This means that the number of local people to be employed will rise as already promised by the developer.

Furthermore, the new development will add additional outlets for the farm and fish products available in the village. This might also have negative impacts on the protein intake of the villagers and particularly on the children if more the hoteliers at high prices will demand fish. On the other hand it might also exacerbate the fishing intensity in the exhausted fishing grounds. The developer could assist the single existing fishing co-operative by providing modern fishing gears and vessel to extend their fishing range under soft loan or contract agreement with the hotels to supply those fish.

No major cultural impact is foreseen from the additional project, as it will not undermine the existing family and community values. The developer has promised to control inappropriate contact with the tourists and proper dress codes through poster information. The villagers could also chip in these aspects by firmly and politely telling the tourists without harassing them the proper dress codes when they go to the village.

## **7.6. Mitigations in relation to social impacts identified**

This SIA study proposes the following measures be adopted as mitigation:

- \* Since generally the level of education is low, the developer should

communicate with the village authorities' ways of assisting them on the line of education and also assist the village in raising the education level of the children as well as the teachers.

- \* To establish a rapport with the village leaders
- \* There should be special efforts to train the locals at the Institute of Hotel and Tourism Management in Maruhubi. This is preferably before the hotel becomes operative.
- \* Negotiation should also be made to allow villagers to sell their commodities such as seafood's and vegetables. The competitive and experienced villagers should be given priority.
- \* To improve the health and education status of the community the project should extend their assistance to improve those facilities.
- \* Although the hotel is far away from the village, yet when the hotel is operational, special arrangements must be adopted to inform the tourists how to dress when they visit the village.
- \* The right of fisherman and public in general to have access and pass through the beach should be not altered.

#### **7.7. Commitments of investor for the entire society**

The developers confirmed that they would employ the suitable villagers during the construction as well as implementation phase. On the other side, the villagers confirmed that if they will be employed by the project, they will be fully committed to their jobs. The developer has shown some interests to assist the village development.

Literature on tourism suggests that tourism developers should undertake assessment before project development to gauge the social, cultural and economic impacts. So far very few developers have done so in Zanzibar.

## 8. ANALYSIS AND MITIGATIONS OF THE IDENTIFIED ENVIRONMENTAL IMPACTS

### 8.1. Management of garbage

#### 8.1.1. Possible impacts

In general, solid waste management in Zanzibar is paramount has been a big problem. This is the result of existing policy, financial problems and lack of peoples' awareness. At the moment, Zanzibar Municipal Council alone generate about 200 tones of garbage per day in which only 60 tones are able to be collected and disposed to the specified dumping site letting the remaining and being scattered all over the island, some are the causal of drainage blockage which in turn during the rainy season incite flooding haphazardly disposed in the streets, water drainages and so on (Plate 8-1 and Plate 8-2).

**Plate 8-1: Biodegradable wastes haphazardly disposed from tourist hotels**

**Plate 8-2: Non-biodegradable wastes haphazardly disposed from tourist hotels**

This problem becomes magnified with the tourism hotels in place in most part of coastal area of the Island. It is now about 20 years since Zanzibar declared Tourism Industry as one of the potential economic activities, but the handling of the garbage is still unsatisfactory. There is no specific comprehensive plan of dealing with waste generated from tourism hotels. In that situation, it is evident from many coastal area where hotels, guest houses and villas situate, garbage are disposed in ad hoc manner into the bushes, sea shore and other unseemly places.

Another thing, which requires due consideration with this issue, is the composition of the garbage. Analysis carried out in 1993 indicated that municipal garbage was dominated by organic materials which are easily biodegradable (see Table 8-1 below).

**Table 8-1: Composition of garbage from Municipal council of Zanzibar**

Component	Percentage Composition by weight
Food waste	80.90
Papers	3.00
Plastics	1.20
Tins	0.5
Metals	0.6
Glasses	0.2
Textile	1.1
Bones	0.12
Stones	0.35
Other mixed waste	12.00

**Source: MWCELE: Feasibility study of solid waste disposal system, January 1993**

However, the study carried out in 1996 for tourism hotels showed a bit of increment of non biodegradable materials compared to municipal garbage (Table 8-2 below):

**Table 8-2: Composition of garbage from Tourism Hotels**

Component	Percentage composition by weight
Food waste	79.6
Plastics	1.4
Papers	3.3
Sea shell	5.2
Tins/ Cans	2.6
Glasses	0.3
Stones	0.3
Bones	0.2
Metals	0.7
Other mixed waste(ashes, sand etc)	6.4

**Source: Juma, H.O, Waste management in tourism zone, Zanzibar**

Although there is no very recent composition analysis carried out, but physical observations indicate tremendous increment of non-biodegradable matter especially plastics. Factors that contribute to this problem include dramatic increases of the use of disposable materials much being made of non-biodegradable materials, free offer of plastic bags and changing of Zanzibaris behaviour of carrying local baskets.

With this development, garbage will be generated during construction and operational phase as well. During construction phase however, the debris materials that will be produced shall be mainly composed of remains of building materials. But because the amount anticipated is relatively large, there is a need of applying good system to ensure proper handling and disposal.

During operational phase, the amount anticipated to be generated per day is approximately 0.66 tones. This approximation value is derived from proposed standard generation rate for hotels that is 5kg /bed.day. This maximum amount is anticipated during high season when the hotel is fully occupied. The amount shall be drastically decreased as low season approaches. Considering the cumulative effect, this amount is very significant to require duly considerations.

### **8.1.2. Mitigations options**

As far as the garbage is concerned, there are three options, which have to be discussed with respect to this development and development area. These are

- Disposal of garbage to the dumping site
- Use of incineration plant
- Composting of bio-degradable part

**Alternative I: Disposal to the dumping site**

Disposal of the garbage to the dumping site is one of the common methods used in most developing countries. In Zanzibar for instance, municipal garbage are disposed off at Jumbi dumping site, situate about 14 km from Zanzibar town. At the moment in the area of the development there is no specific place officially used as a dumping site, however there is some initiatives to prepare improved dumping site to serve for all garbage from tourism hotels within the zone.

These initiatives are administered by Zanzibar Investment Promotion Agency (ZIPA), Department of Environment in collaboration with community-based organization of Matemwe village namely Mungu Tuafiki. Most hotels' investors are also behind these initiatives by supporting it in different ways.

If these initiatives materialize, then garbage from hotels shall be collected and disposed off in contract basis. This option however is rendered with some problems like financial constraint, lack of commitment and lack of technical know how. Therefore there is some probability of failure of the initiative.

**Alternative II: Use of Incineration plant**

Incinerator brands of different size and of different capacity are available in the market abroad. In Zanzibar, local incinerators have been successfully used to destroy medical waste in various dispensaries. Modern incinerator brand is available at Mnazimmoja Referral Hospital, which is intermittently operated due to some technical and fuel problems.

The developer of Blue Bay Resort at Kiwengwa, Zanzibar has been utilizing modern incineration plant to destroy his garbage. Therefore it is very practical for the developer of Zanzibar Beach Hotel and Resort to find incineration plant of the appropriate capacity. In environmental aspect however, incineration plants are associated with air pollution and contamination of ground water by ashes containing toxic oxides. Therefore ashes from the incineration plant shall require due consideration, as ground water is the major water source used in Zanzibar.

**Alternative III: Composting of biodegradable parts**

Composting is the decomposition of the biodegradable materials into organic fertilizer. Under specific moisture contents, temperature and nutrients conditions, bacteria facilitate the process. In developing country composting of food waste is highly recommended because of the following reasons

- Compost can be used to boost crops production through soil conditioning
- Other methods used for waste disposal are relatively environmentally non-friendly
- Local technology of composting is available
- Low cost effective compared to other disposal options

With that aspect, the developer can decide to go to this option to minimize the amount of waste by sorting out biodegradable part and in turn, the compost obtained can be used for nursing hotels' gardens. Normally this option is not used separately because of the remaining part of the non-biodegradable matter. This can be considered as the problem with this option. Another thing, which

has to borne in mind with this option, is the issue of the demand of the compost. If the demand goes down then the method become impracticable.

## 7.2. Sewage

### 8.2.1. Possible impacts

Beside garbage, sewage is termed as one of the big pollutant in Zanzibar Municipality. For instance it is estimated that about 2,200,000 litres is generated per day from 19% population of the stone town and its surrounding areas (ZSP 2001).

The sewage discharged untreated through sea outfalls into near shore water. Various studies that have been conducted in 1990s in the marine water around Zanzibar town indicate the presence of higher level of BOD, COD, *Faecal Coliform* and other sewage pollutants. The situation has some how improved due to improvement of the sewage collection system and elongation of 27 sea outfalls around Zanzibar town and its fringe areas.

Main sources of the sewage in Zanzibar are domestic, commercial and tourism activities. Although the level of pollution in the rural coastal water where many tourism hotels have been built is not well studied and documented but, the existing situation lead one to conclude that, the water is still free from sewage pollutant.

In principle, mismanagement of sewage could lead to serious threat to ground and marine water environment. The nature of the sewage (Table 8-3) and its associated problems like upset of marine ecology, eutrophication, corals destruction, health effects to water users and nuisance condition like odour, colour and smell necessitate its treatment before being discharged to the environment.

**Table 8-3: General sewage composition**

Component	Strength range(mg/L)
Alkalinity (as CaCO <sub>3</sub> )	50-200
Biological Oxygen Demand (BOD <sub>5</sub> )	100-300
Cloride	30-100
Chemical Oxygen Demand(COD)	250-1000
Suspended Solid	100-350
Settleable Solid	5-20
Total Disolved Solid	200-1000
Total Kjeldahl Nitrogen	20-80
Total Oranic Carbon	75-300
Total Phosphorus	5-20

**Source: Kiely,G (1998). Environmental Engineering**

With the case with Zanzibar in particular, proper sewage management become tremendous important for the following reasons:

- Zanzibar is highly dependent on ground water as its only source of drinking water
- Marine environment provide big attraction to the tourists, and tourism is one among major economic activities in Zanzibar
- Untreated sewage could lead to gastro intestinal diseases like diarrhea and cholera, which could also affect tourism industry.
- Untreated sewage could also upset marine ecology and minimize sea products which provide main protein sources to Zanzibaris.

During peak season, the approximated amount anticipated to be generated by Zanzibar Beach Hotel and Resorts is 39,600 litters. This amount is 80% of the total water consumption during peak period. Water consumption is considered as 300 litres/day.bed, which is within the recommended range for tourism hotels. This amount of sewage is too large to pollute the environment if discharged untreated.

### **8.2.2. Mitigation measures**

In order to alleviate the problems of sewage, the investor has to place a proper treatment facility. Number of facilities with different technology are available, however, its adoption depend on various factors including:

- The nature of the land
- Affordability in terms of technology and cost
- Final effluent requirement standards
- Amount of sewage to be treated

With regard to this development, some of the treatment facilities are hereby discussed so as to come out with the appropriate option

#### **Alternative I: Septic tank-soak pit system**

Septic tank system is commonly used in Zanzibar for treatment of soil water (plate 8-1.). The complete system contain rectangular chamber with two or more components. Effluent with about 60% reduced BOD from the chamber is then discharged into seepage pit or drainage field. Proper functioning of the septic tank with soak pit depends on infiltration capacity of the soil. Therefore the area with coral rag land, the system cannot produce satisfactory results.

The use of the septic tank with surface irrigation system enables the user to reuse the final effluent for the irrigation purposes. The problem with this system is the difficulty of laying subsurface pipes and risk of bacterial contamination to the ground water.

Therefore with respect to the development area, the septic tank-soak pit system cannot be applied as the area, is almost dominated with the coral rag. In some of the portion however where land tends to



incline soak pit system with subsurface irrigation can be implement able.

**Alternative II: Activated Sludge System**

There are few hotels in Zanzibar equipped with this system. This is modern secondary biological treatment plant, which is mechanical operated. The system is of modern technology and its investment costs are relatively high compared to septic tank. They are of different size but in general it contain aeration tank as a biological reactor, secondary clarifier that act as solid-liquid separator. The efficiency of this system to remove organic load is up to 90%. Environmentally there are some concerns with this system Sludge from this system contain some amount of pathogens and organic load, therefore it require proper handling.

Final effluent from the system contains traces of chlorine added during tertiary treatment of the sewage. It is not advisable therefore, to discharge it into marine environment. Good thing is to make reuse of the effluent.

### **8.3. Construction**

There are some issues which have to be addressed as far as the construction of various structures in this development is concerned. These issues include Source and types of construction materials, observation of set back distance, Construction engineering and building arrangement.

According to project drawings, many structures of this hotel will be built using sand-cement materials. Very few structures will be built using local materials. Most of these materials have to be imported from where are available. As the area is very close to the seashore there is a great possibility of extract sand from the shore and use either for construction purposes or for decoration of footpath crossing the hotel's premises.

If this will be allowed to happen then, the obvious effect is the disturbance of the beach and dune system and eventually will accelerate erosion. Therefore the developer should not by any excuse, extract sand, stones or any item from the sea to be used for development purposes.

Observation of setback (SB) distance regulation is another important issue to be considered. In this contest, SB is defined as the minimum permissible perpendicular distance from the higher sea water level to the structure placed close to seashore. According to Zanzibar building regulations, this distance is 10m for rock cliff shore and 30m for sand shore but there is a provision of changing it whenever is deemed necessary. Main purpose of setting this distance is to protect beaches from erosion and maintain the ecology of the strip close to the seashore.

There are some reasons for giving careful consideration to the placement and arrangement of various structures of the project. These include

- Aesthetic consideration (sense of placing)
- Hazard or danger caused by erosion or unstable soil
- Disruption of the natural processes.

Poorly situated or designed structures can cause environmental degradation and may be costly to developer by requiring on going maintenance.

#### **8.4. Coastal erosion and sedimentation**

Coastal erosion is present in the coastal area as direct consequences of vegetation depletion or agricultural practice on the slope of the hills. Coastal erosion is manifested by loss of vegetation, creeping of topsoil and subsurface strata and loss of the nutrient status of the land. This is mainly due to human activities for trapping off the resources irrationally. On the other hand beach erosion is commonly the results of fixed structures such as hotels, restaurants and bar built on beach and dunes.

It is also caused by removal of beach sand for construction, clearing of dunes vegetation, and flattening of dunes as well as structures such as groynes, and breakwaters, that extends from inter tidal into the sub tidal zone. Damage to coral reef protecting the coastline from wave action is another contributing factor. On the dune deforestation is caused by falling of the trees for the manufacture of charcoal, for constructions and also for fuel wood. Also the inland dune is getting degraded because of bad agricultural practice in some areas.

Although less widespread, tourism developments also contribute to coastal erosion and siltation and poor management of the construction sites, particularly on steep slopes, is often implicated. Development in which large track of land are cleared are of particular concern. During 1996. The golf course development under construction on steep slope near the coastal town of Knysna in South Africa was washed away during heavy rains and vast quantity of sediment deposited in the near by estuary.

Erosion and mobilization of sediment can have disastrous effect such as slope failures and landslides that are extremely difficult to remedy. Dwellings built close to the coastal cliff edge at Brenton-on-Sea in the Southern cape region of South Africa, have caused slope failures due to storm water run off discharging down the cliff face. Sediment that eventually enter coastal zone may impair productivity by sediments smothering bottom dwelling organisms, disrupting filter-feeding organisms and limiting the photosynthetic capability of corals and sea grasses.

Where beach erosion has already occurred, sea walls are often constructed to protect properties however, by disturbing sediment transport further, these frequently become undercut and collapse. In addition, engineered structures of this nature are unsightly and don't contribute to the aesthetic appeal of a natural dunes and beach system. Once constructed seawalls must be maintained on regular basis, a process that involves considerable cost. In order to prevent beach from erosion the following measures and principles should be observed:

- No sand should be excavated from the beach
- No structure should be erected within 10m from the cliff

- The area should be planted with many trees as possible
- Collection of shells, soft and hard corals should be strictly prohibited

## 8.5. Swimming pools

Among facilities to be placed within the hotel's compound are swimming pools. Water in the swimming pools has to be disinfected so those to take care of microbial effects. Common disinfectant used is chlorine. Swimming pool-chlorinated water has to be intermittently discharged and replaced with fresh batch. Discharge of the chlorinated water into marine environment may bring about ecological effects.

Consequently is the destruction of fishes and soft and hard corals. Although the effect of chlorinated water can be realized after long time but there is a need of taking precautions as earlier as possible. Another problem with swimming pool is construction engineering. The area of the development is totally composed of coral rag land. Construction of swimming pool involves digging and dredging of the coral rag land. If this process is not carefully performed could bring about destruction of the coral rag land and result in geological instability.

To alleviate the problem of marine pollution through chlorinated water the following measures should be taken:

- The chlorine dosing should be in such away that, the chlorine residuals in the water are in acceptable amount. This can be achieved by using modern and appropriate dosing equipment and performance of the continuous chlorine strength monitoring.
- Water from the swimming pools should not be directly discharged into seawater instead, it can be used in nursing of hotel gardens or allowed to percolate into the seepage pits.

## 8.6 Water

### 8.6.1. Possible impacts

The total amount of water required by this development is approximately 39.20 cubic meters. This is equivalent to water consumption rate of 300litres/bed.day, the value that within recommended standard for tourism hotels. According to development feasibility study water will be drawn from the nearby spring cave. Measurement from the Department of Water indicate satisfactory amount of water in the cave. In general, spring cave has been reliable source of fresh water in Zanzibar however there is a need to take special effort to prevent ground water from overdraft. Therefore it is not wise for the big development of this kind to solely depend on cave. Other alternative sources should be put into considerations for the benefit of the project, the society and the environment in general. Therefore, few alternatives are hereby discussed for considerations:

### 8.6.2. Mitigation measures

#### **Alternative I: Reuse of sewage from sewage treatment plant**

As previously mentioned, about 80% of the water consumed will be discharged as sewage. Final

effluent from the plant can be utilized in nursing of the hotel gardens as well as maintaining golf playground. Today the recycling and reuse option is highly recommended and is ranked as an option number one toward clean environmental technology. With this option fresh water extraction shall be minimized to almost 50%.

The problem with this option is the high initial investment cost as the sewage is pre subjected to treatment facilities to acquire effluent standard, pumping machine and recycling system. Nevertheless, considering an environmental value of water resource conservation, the net value obtained promise for a long-term benefit of the project, society and environment.

**Alternative II: Rainwater harvesting**

Although the amount of precipitation in the eastern strip of the Zanzibar Island is relatively low but the idea of rainwater harvesting should also be put into consideration. These processes involve collection of rainwater during rain season and used during dry season. It is less cost option, which just involves construction of storage and collection system. This option can be used to complement the water requirements from other sources.

In Zanzibar this option has been used limitedly in some of the remote areas like Changuu and Mnemba Island. Despite the relative purity of rain water it can not be used for drinking as it is free from minerals and mostly contaminated with some traces of acid. Rain water is very appropriate to be used for laundry, kitchen and gardening.

**Alternative III: Desalinization**

While the development is close to the sea, it is quite practical to think for desalinization option. This option is costly as it involves installation of desalinization plant. Therefore this option become applicable where other water sources fail to meet the required demand. At the moment in Zanzibar there is no place reported to use this kind of technology. There was a case reported some years ago but rendered unsuccessful.

### 8.7. Noise pollution

Noise can be defined as undesirable sound. This definition cannot be taken as universal as undesirability is quite relative from person to person however, sound above 120 db is considered as undesirable. In principle, sound doesn't have physical environmental harm but is highly associated with hearing disturbance, headache, vomiting, and annoyance and alike. Tourism hotels are not potential source of noise. However because of the sensitivity of the place, there are some areas, which needs special concern. In this development main sources of noise will be from standby generator, motor vehicles across the road nearby and noise from boat engines. It is some how difficult to control all source of sound as they are accompanied with natural activities for the life of the hotel. However the following measures could be adopted in order to minimize the impact of the noise if they are properly observed:

- The plan of the houses should be in such away that recipients are as far as possible from the road, mooring zone and generator house
- Boat engines owned by investor and power generator should be of brands, which have as minimum sound as possible
- The walls of generator house should be made of soundproof materials
- The movement of motor vehicles within the compound should be restricted as much as possible

### 8.8. Oil spillage

Oil is another pollutant, which threaten marine environment in general. Study which has been conducted in 1996 reveal that about 139,664 of used lubricating oil is produced in Zanzibar out of it 20,250 litters are reused in various ways by local community and the remaining 119,141 litters is haphazardly disposed of either in the local sewer network or into the land and marine environment (Sheha et al, 1996). Sources of this oil have been mentioned as motor vehicles garages, petroleum depot, machinery workshop and few commercial centres.

As well known oil is less dense compared to marine water. So it always use to float on the water surface and form air impermeable membrane. This membrane hinders the exchange of the gaseous oxygen between water and air consequently is the suffocation of marine organisms. On other hand, to sea birds is the most vulnerable organism to oil pollution as they often play on the water surface catching fishes and rest. On doing so their feather could get clogged and unable to fly.

This hotel is not supposed to be potential source of oil. However great precaution should be taken to ensure that oils from minor sources such as boat engines, standby generators, and incinerator are handled in environmental friendly manner. Among steps, which have to be taken, are

- All types of oil should be stored in secure manner to avoid leakage and spread.
- All machine an engines should be serviced in recognized garage and workshops
- Discharge of oil into the marine water should be highly restricted
- The quantity of oil stored should be of the reasonable quantity.

### **8.9. Fire risk**

Fire is the serious problem, which requires due consideration during the planning stage of the project. In Zanzibar fire has been reported to destruct some of tourism hotels and the recent incident took place in Nungwi where a number of Bungalows and other properties were destructed. The problem become more serious on considering the fact that, the area of the development situates far away from the Fire Fighting Brigade of Zanzibar, which have fire fighting equipments to attend in case of the problem. Therefore, considering those facts some of the recommendation are put forward to alleviate the problem:

- The project compound should be installed with modern fire fighting hydrant system, which can utilize both fresh water, seawater and pool water.
- Building should be equipped with the fire precaution mechanisms like fire alarms and so on
- Workers should be well trained on how to prevent fire and how to use fire-fighting equipments.

## **9. ENVIRONMENTAL MONITORING PLAN**

The location of Zanzibar Beach Hotel and Resorts in an environment that is both environmentally and socio-economically unique require management procedures, particularly ecological and social, be established and effectively practiced by the project. Therefore, the Environmental Impact Assessment (EIA) proposes the establishment of a modern and appropriate Environmental Management Plan, Strategies and Procedures that could provide the followings:

- ❖ Structures to ensure on-going consultation with the local community in the spirit of “good neighbourliness”,
- ❖ A monitoring base against which environmental and social changes could be measured, and
- ❖ Conservation of the environment that could be for the benefit of Matemwe village, the surrounding areas, and the larger environment.

### **9.1. Management System**

A management system needs to be put in place to monitor potential impacts during construction, operation, and if applicable, after decommissioning. Management System is the process through which the impact of the development on the environment, the condition of the facilities, and functioning of the lodge activities can be tackled and assessed.

This system, which is widely and internationally used and accepted tool for maintaining good environmental quality for the proposed project, needs to be put in place to monitor potential impacts during construction, operation, and if possible at post-operation (decommissioning) phases. It is therefore, essential that the conditions or standards have to be set during the approval of the Environmental Impact Statement (EIS) against which to monitor and should relate to the way the facilities are managed and used. The rationale for the implementation of this Environmental Management and Information System (EMIS) is to ensure that operations over the short-term are sustainable over the long-term.

The sustainability of a project in an environment can be expressed through three dimensions, namely:

- ❖ Physical capacity–relates to the facilities and the operation thereof,
- ❖ Socio-cultural capacity–is highly subjective and determined by both the environment, economic and psychological make-up of user, observer or evaluator, and

- ❖ Ecological capacity—determined in relation to set management objectives of when ecosystem functioning is considered to be impaired and over what time scales the irreversibility of the impacts are measured.

## 9.2. Purpose of a Monitoring System

The purpose of monitoring is to ensure the condition and operation of the facilities against the set management objectives for each facility and the goals should therefore be quantifiable. The objectives for Zanzibar Beach Hotel and Resort monitoring system could be as follows:

- \* To provide meaningful and accurate information on the ecological and visual impact changes which may occur around the lodges and ancillary facilities inside the forest reserve and other networks along the Pongwe-Kiwengwa Forest Reserve.
- \* To identify casual factors where measurements do not comply with the management goals
- \* To obtain information which would enable technical decisions on needed actions, such as where the wastewater treatment plant function properly, or to make strategic decisions such as to limit visitor numbers.

Therefore, a dual-monitoring system is recommended because managers and users rate the facilities differently. Top-down monitoring is the periodical monitoring by an official group or person. Bottom-up monitoring is the informal monitoring of lodge, beach and is usually complaint based.

## 8.3. Scope of Monitoring

It is recommended that the following should be monitored, but the responsible lodge staff in association with Pongwe-Kiwengwa Forest Reserve staff should work out the details and frequency:

- \* Conditions around lodges and ancillary facilities. It should include both ecological and aesthetic impacts such as tree mortality and other vegetation disturbances, conditions around wastewater treatment plant, berm erosion, vandalism, pollution and littering, and water quality.
- \* Continuous condition assessment of the facilities used by the lodge visitors, which a “scoring” questionnaire which is completed by selected staff of both Zanzibar Beach Hotel and Resort and Forest reserve. It could be done each time they use the facilities, or at set intervals or at least once at a season.
- \* Occasionally visitors who are interested could be also asked to complete the questionnaire and to assist in general monitoring and



management decision-making.

- \* Guide-tourist interactions (tourist and villages), through questionnaires at regular intervals by the users.

#### **9.4. Environmental Monitoring System (EMS)**

Environmental monitoring is the process in which the impact of the development on the environment, the condition of the facilities, and functioning of the proposed project activities could be tracked, assessed, Analyzed and finally mitigated in compliance with the conditions attached with the Environmental Impact Assessment Certificate for that particular project.

The need for monitoring during construction and operation of a project is often acknowledged in EIS, but usually direct guidance is not provided and little appropriate monitoring is actually carried out. Monitoring can be instituted for three main reasons. Firstly, to ensure that legal standards for effluents are not exceeded. Secondly, to check that mitigating measures are implemented in the manner described in EIS and related documents (for example, project authorization). Finally, and most importantly in the context of EIA, there is a monitoring to provide early warning of environmental damage so that actions may be taken, if possible, to prevent or reduce the seriousness of the unwanted impacts. Monitoring of this type can be used for another important purpose, namely, checking the accuracy of impact predictions made prior to a decision to authorize a project. The application of knowledge from impact monitoring can improve the accuracy of future EIA's by indicating those predictive techniques that are the most successful and those impacts actually to have occurred.

Therefore the purpose of environmental monitoring for Zanzibar Beach Hotel and Resort Project is to measure the condition and operation of the faculties against the set management objectives for each facility and the goals should therefore be quantifiable. The objectives for the Zanzibar Beach Hotel and Resort monitoring system could be expressed as follows:

- ❖ To provide meaningful and accurate information on the ecological and visual impact changes which may occur around the island and ancillary facilities inside the island,
- ❖ To identify casual factors where measurements do not comply with the management goals, and
- ❖ To obtain information that would enable technical decisions on needed actions, such as whether the septic tanks plus soak ways function properly, or to make strategic decisions such as to limit visitor numbers, or to change a route.

Followings are the most important steps and/or procedures that will be taken for the purpose of sustaining a good monitoring system in the Island:

- ❖ Allowing utilization of meaningful measurements of impacts, which are depending on the variables selected for measurement of change,
- ❖ Using reliable and sensitive measurement techniques that would enable similar results from independent users,
- ❖ Setting reasonable costs that will allow for regular inventory of all facilities, and
- ❖ Allowing for precise relocation of measurement units during follow-up assessments.

Therefore it is highly recommended for the developer to adopt a dual-monitoring system. A top-down monitoring should be the periodical monitoring by an official group or person, and bottom-up monitoring will be the informal monitoring of lodge, beach and marine conditions by users, and is usually complaint based.

#### **9.5. Environmental Management Plan (EMP)**

This Environmental Management Plan (EMP) has been formulated by the consultant to be part of the Environmental Impact Assessment (EIA) undertaken for the construction and operation of a leisure hotel at Zanzibar Beach Hotel Resort. The EMP serves to highlight specific requirements that the regulatory authorities will monitor during the construction and operation of the leisure hotel, and whereas if the environmental impacts have not been satisfactorily prevented or mitigated, corrective actions would be recommended and taken. The document therefore serves as a guideline to minimizing the potential environmental impact of activities. The purposes of this plan are as follows:

- ❖ Identifying those construction activities that may have a detrimental impact on the environment,
- ❖ Detailing the mitigation measures that will need to be taken, and procedures for their implementation.
- ❖ Assigning responsibility for the action to be taken, and
- ❖ Establishing the reporting system to be undertaken during both the construction and operational phases.

On the other hand, the contractor should be made aware of the relevant environmental obligations that are stipulated in this EIS document, and by the regulatory authorities in the authorization granted in terms of the Environmental Management for Sustainable Development Act of 1996. The contractor should also be aware that the Construction Engineer will monitor the implementation of the procedures, and that the regulatory authorities will periodically audit the

conditions of the authorization.

#### **9.5.1. Management Practice**

The developer of Zanzibar Beach Hotel and Resorts believes that the environment is an integral part of the lodge and management of those activities that have the potential to impact on the environment will be on an ongoing basis, particularly the construction process. The activities that are potentially having an impact on the environment have been identified, and management guidelines provided are to ensure that the impact is minimized and appropriate rehabilitation of the site takes place. The management guidelines provided are best practice in terms of construction activities to ensure that the environmental impacts of activities are minimized. The contractor should be aware that the Zanzibar Beach Hotel and Resorts is surrounded by a lot of live corals, and that this must be reflected in the approach to construction.

For the purpose of this EMP, a nominated representative of the contractor will be the designated environmental officer for the construction phase of the project. The nominated representative of the contractor will therefore be responsible for ensuring that the provisions of the EMP and the conditions of the regulatory authorities are complied with. The engineer will be responsible for issuing instructions to the contractor where environmental conditions call for action to be taken.

#### **9.5.2. Responsibilities**

##### **a. Contractor**

It is the responsibility of the contractor to exercise due care and diligence in undertaking the construction of the hotel. Where activities have resulted in extensive and unnecessary damage to the environment, the contractor will be responsible for the reinstatement of the area to the satisfaction of the developer, and the relevant authorities.

##### **b. Environmental Officer**

It is the responsibility of the designated environmental officer to complete the monthly reports and submit them to the client, with copies to the designated party from the relevant regulatory authority. The purpose of the reporting is to provide a record of the activities on site, and in particular to be able to demonstrate compliance with the provisions of the EMP.

#### **6.6 Framework for an Environmental Management System**

This subsection outlines the framework for the Environmental Management System for the management of activities associated with the operation of the

Zanzibar Beach Hotel and Resorts leisure hotel. The purpose of an Environmental Management System is to identify the operational activities of that Hotel which may have an impact on the environment and to outline guidelines for the management thereof. The ongoing monitoring of specific activities and the collection of data associated with these activities allows for the assessment standards, the setting of targets and the achievement thereof, and the reporting on environmental performance.

The point of departure of the Environmental Management System is the Environmental Policy that describes the vision and basis of decisions taken in terms of environmental management. From this specific goals and objectives are detailed for activities, and management responsibilities allocated to individuals. Where necessary resource will be allocated to ensure that the necessary steps are undertaken to support the management system.

#### **9.6.1. Environmental Management Structure**

Environmental issues are the specific responsibility of the Environmental Officer who will undertake:

- ❖ Training of staff,
- ❖ Data collection and monitoring of environmental parameters,
- ❖ Community-based consultation (in association with Community Liaison Officer), and
- ❖ Preparation of environmental inputs to monthly management reports.

The overall implementation of the Environmental Management System is however the joint responsibility of the hotel manager together with commitment from top management. A system of monitoring of identified activities will also be implemented so as to ensure that problem areas can be identified rapidly and appropriate actions taken. The system will also provide the means of establishing long-term targets for specific aspects of operational activities.

#### **8.6.2. Communication**

The communication of the objective and goals of the Environmental Management System is an integral part of the implementation process. The communication process does not only involve staff, but other parties such as suppliers of goods and services, the guests to the hotel, the local community and the relevant regulatory authorities. This section outlines a strategy to ensure that communication with all role-players is planned and implemented.

### **9.6.3. Suppliers of Goods and Services**

Hotel management will ensure that all suppliers of goods and services are aware of the objectives of Environmental Management System, and will investigate means whereby suppliers can contribute to achieving targets for waste levels. Dialogue with all suppliers will be ongoing regarding the goals of the Environmental Management System, and will take the form of individual or group discussions.

### **9.6.4. Guests**

Guests to the hotel will be informed as to the objectives of the Environmental Management System by means of brochures that will also provide other relevant information, especially when they visit other areas outside the hotel premises such as appropriate dress and behaviours towards the local peoples.

Feedback will be sought from these parties so as to assess the effectiveness of the Environmental Management System, and to determine where improvements in environmental performance can be effective. This will most likely be done by means of formal discussions, questionnaires and focus groups with selected guests.

## **10. INTER-AGENCY AND NGO/PUBLIC INVOLVEMENT**

This report is based on the findings of the survey team, their evaluation and local know-how. The survey team are all active members of the Zanzibar society and are dealing with these issues both professionally, educationally and privately on a daily basis. The choice of the group of specialist technical consultants from Zanzibar was based on their technical expertise and human qualities, but also the fact, that they are Zanzibari's based in Zanzibar and know the issues intimately, thus enabling them to provide the "grass root touch", played strongly in their favour.

The survey team carried out the field studies spread over several visits to the study area during the whole month of September, 2003, evaluated the mitigating measures proposed by the developer, consulted with the population of the Shehia and all relevant government agencies and organizations and supplemented their findings with relevant literature research.

Several contacts have been established, and meetings held with the population and leaders of the Shehia of Matemwe, the result of which has been the development of a mutual rapport and declared support for the project. The developer has confirmed his offer to support the construction of an extension to the local village school and mosque and a mutual understanding has been established regarding maximization of the employment and trade opportunities the project entails.

Zanzibar Beach Hotel and Resorts has also consulted with all relevant public authorities and in particular with a view to this report had several meetings with various departments of the Zanzibar Government.

## 11. CONCLUSION

The survey team concludes that the site of the proposed development does not have any significant ecological value. However, the increase in human habitat and activity the proposed resort would generate, will have an impact on the environment. Protection of the environment and the promotion of sustainable growth form an essential part of the Government of Zanzibari's promotion of tourism development. The proposed development has more than 100 beds and as a result it is the requirement of the government that an environmental impact assessment study be undertaken. The Department of Environment has drawn up the Teams of Reference for the study and the report format.

The developer has welcomed the EIA requirement. Promotion of social-economic awareness and environmental considerations is one of his main objectives of the development.

The field studies and exchanges with the local community that forms the basis for the environmental impact assessment were carried out by local highly qualified specialist team covering the range of special know-how required. Several meetings with relevant public authorities were carried out as well. The team also evaluated the environmental considerations that the developer had included in his proposed design and outlined in his feasibility study.

They supplemented their findings with official statistics and relevant literature research, compiled the draft report and outlined the potential impacts and the mitigating measures to be considered.

In line with the declared goals of the development, Zanzibar Beach Hotel and Resorts has from the outset of the project's design and planning stages taken into consideration the requirements for protection of the environment, ecologically, socially and culturally. Mitigating measures in the form of suitable equipment has been incorporated throughout the design and commitments made for implementation of measures that require human interaction. Management and monitoring systems will be put in place where appropriate.

As a result the developer has achieved to design a resort based on the principles of sustainable development in harmony with the surrounding environment both ecologically and socially to the extent reasonably achievable. In this aspect the survey team has noted that it differs substantially from a number of other proposed projects of a similar kind. Additional measures, suggested by the survey team, have been taken under due consideration by the developer and accepted throughout, in some instances even improved upon.

The increase in human activity that the project would generate will as stated above have an impact on the environment. Some of these impacts can be mitigated or even avoid through mechanical equipment processing, bacteriological and/or chemical conversions. Others can be mitigated through human consultation, considerations and care. Some can be compensated economically and some will have to be accepted as the price for economic and social development. Choice of material and equipment can further mitigate impacts through preferences for biodegradable and recyclable products.

Common for all of them however is that they only become effective through implementation of proper management, maintenance and monitoring systems with well-defined performance criteria both on mechanical, chemical and human level by which any subsequent changes can be measured and appropriate action implemented, if deemed necessary.

The developer has presented a project that contains most of the proposed mitigating measures and he has accepted the inclusion of any further proposals made by the survey team. He is committed to developing and maintaining suitable management, maintenance and monitoring systems and he is fully committed to consultation and exchange with the local population, other users of the area and the governmental institutions to secure its success.

It is however noted that the success of the measures and commitments undertaken by the developer in a wider context is depending on the interactions and initiatives generated by the local community, other users in the area and the governmental institutions.



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## **APPENDIX 1: TERMS OF REFERENCE (ToR)**

### **APPENDIX 1A: TERMS OF REFERENCE (ToR) FOR CARRYING OUT ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR PROPOSED UPGRADE AND EXTENSION OF ZANZIBAR BEACH HOTEL AND RESORT-MATEMWE, ZANZIBAR**

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#### **1. Introduction**

These Terms of References (ToR) have been prepared by the Department of Environment, Ministry of Agriculture, Livestock and Environment -Zanzibar in accordance with Section 41(2) of the Environmental Management for Sustainable Development Act No 2 of 1996. The purpose of preparing these Terms of Reference (ToR) is to pave way a road mark for consulting company in carrying out a full Environmental Impact Assessment (EIA) luxurious hotel project at Pwani Mchangani, Zanzibar.

#### **2. The study area**

Study area shall be Pwani Mchangani Shehia (terrestrial and marine parts) and surrounding villages. The Shehia of Pwani Mchangani is located in North "A" district, North Region of Unguja Island, Zanzibar. This Environmental Impact Assessment (EIA) study shall examine the existing conducted EIA studies for the area. The study area will include the project area and other areas that will be affected by the proposed project or its sub sequential effects or results.

#### **3. The Consulting Team**

A team comprising of experts on coastal engineering and/or oceanography, environmental economy, environmental engineering, coral reef and/or intertidal ecology, and other related marine and coastal environmental management fields should carry out this Environmental Impact Assessment (EIA) study. The names and their curriculum vitae (CVs) for the team of experts should be submitted to the Department of Environment for approval before conducting the study in accordance with Section 43 of the Act No. 2 of 1996.

#### **4. The Time Frame**

This study should be completed between one and six months from the date of approval of the Social Impact Assessment (SIA) consulting team by the Department of Environment-Zanzibar. The set time includes all administrative and technical measures and human resources as well as logistical mobilisation of the consulting team of experts.

#### **5. Review of Policy, Legislation and Administrative Frameworks**

The consulting team should undertake a review of policy, legislation and administrative frameworks within which the environmental management of the proposed works will be carried out. The study team shall use the Feasibility Study for establishment of this project as baseline information for this EIA study. The following and any other relevant policies, legislations and programmes may be reviewed:

- Macro policies (Zanzibar Vision 2020 and Zanzibar Poverty Reduction Plan-MKUZA)
- Environmental Policy and Act.
- Fisheries Policy and Act.
- Local Government Reform Programme.
- Land Policy and Acts.
- Forestry Policy and Act.
- Energy Policy and Act.
- Tourism Policy and Act.
- Water policy and Act.
- Wildlife Conservation Policy and Act.
- Antiquities Policy and Act.

## **6. Detailed scope of work**

The full Environmental Impact Assessment (EIA) study has to be carried out and the consulting team shall be required to assess and describe fully, but not necessary be limited to, the following environmental and natural resources base parameters:

### **6.1 Background information**

The consulting team shall detailed describe background study reports available for the study area and nearby areas (copies of this reports should be sent to the Department of Environment along with the EIA study report) and relate their findings to this investment project.

### **6.2 Baseline information**

The consulting team shall study, but not necessary be limited to, the following aspects:

#### The hotel and marine activities

Give detailed description of the hotel structure such as location, dimensions, and facilities to be placed on, and by, the hotel. Describe fully the methods and the processes to be used in handling environmental problems for the project lifetime.

The consulting team shall give the account, but not necessary be limited to, for the following:

- (i) Exact location of the areas to be used with the distance from the highest water mark for:
  - (a) Hotel bungalows
  - (b) Swimming pool
  - (c) Restaurants, bar and halls
  - (d) Mooring sites and water sports activities
- (ii) Capacity, number and size of the buildings to be used, and
- (iii) Possible oil spills from the project activities

#### Environmental/ecological aspects

The consulting team shall study in detail and give out the detailed description, but not necessary be limited to, for the following environmental aspects:

- (i) Water depth and substrate characteristics at the area.
- (ii) Coral reefs and sea grasses bed situation in the study area and its surroundings (extent and coverage)
- (iii) Hydrology of the area in relation to ocean current and wave energy and movement.
- (iv) Profile of the sand depth on the sea bed along the area in relation to water depth.
- (v) The type and nature of equipments and technological applications to be applied during construction, repair and maintenance and the extent of anticipated habitat disturbances produced thereof.
- (vi) Solid and liquid waste generation, management and disposal approaches and techniques during the construction, repair and maintenance periods.
- (vii) Management of coral rag forest and thickets.
- (viii) Biodiversity richness (fauna and flora) within the area (birds, vertebrates and invertebrates, animals, plants, grasses, mangroves and insects) marine and terrestrial.

## **7. Environmental Impact Statement (EIS)**

- The consulting team shall assess and analyse the interactions of activities outlined in section 6 (above) within each other and with the projects activities.
- The consulting team shall describe on how much the project structures and activities, whether in isolation or cumulatively, will affect the habitats and/or their associated ecological processes during:
  - (i) preparation period,
  - (ii) installation period,
  - (iii) operation period,
  - (iv) maintenance period, and
  - (v) end of project (decommissioning)

- The consulting team shall described the identified negative environmental impacts as:
  - (i) direct or indirect;
  - (ii) on-site or off-site;
  - (iii) short-term or long-term; and
  - (iv) reversible or irreversible.
- The consulting team shall gauge the negative environmental impacts as:
  - (i) insignificant
  - (ii) significant;
  - (iii) minimal;
  - (iv) moderate;
  - (v) adverse; and
  - (iv) severe adverse.

The gauging of the above negative environmental impacts must be based on the established scientific and/or social reasons.

#### **8. Mitigation measures**

Upon realising any adverse and severe adverse negative environmental impact from the proposed submarine cable and its associated developments/activities, the consulting team shall:

- Propose (an) alternative(s) that will impose less negative impacts to the environment and surrounding natural resources,

*“or”  
(if there is no possibilities of having alternative  
solutions to the proposed project*

- Give action(s) and/or mitigation measures to reduce the identified negative impacts of the activity/development to be undertaken.

#### **9. Environmental Monitoring Plan (EMP)**

The consulting team shall identify key environmental issues to be included in the monitoring plan and/or programme for this investment project. In this respect, a detailed plan of action shall be proposed. The plan shall include, but not necessary be limited to: work programmes, control and management strategies, and monitoring and evaluation procedures including indicators that should be reviewed when needed.

#### **10. Inter-Agency and NGO/Public involvement**

The consulting team shall demonstrate the extent to which inter-agency and NGOs, CBOs and public views were consulted. For instance:

- State lead authority.
- Environmental protection ministry/agency.
- Other relevant government agencies.
- Donor agency/agencies.
- National and/or local NGO's representing environmental and commune concerns.
- The affected population.

#### **11. Report Structure**

The report should contain, but not necessary be limited to, the following sub sections:

- Cover page (with title and the name(s) of the author(s))

- Executive summary (in English and in Kiswahili)
- Acknowledgement
- Table of content (including list of figures, tables, plates and other illustrations)
- Introduction (showing, among others, the background information)
- Baseline information (showing, methodologies applied, and where possible, quantitative data on the aspects to be studied)
- Environmental Impact Statement
- Mitigation measures
- Environmental Monitoring Plan (EMP)
- Inter-Agency and NGO/Public involvement
- References and bibliography
- Appendices (if any)

**APPENDIX 1B: TERMS OF REFERENCE (ToR) FOR CARRYING OUT SOCIAL IMPACT ASSESSMENT (SIA) FOR  
PROPOSED UPGRADE AND EXTENSION OF ZANZIBAR BEACH HOTEL AND  
RESORTS-MATEMWE, ZANZIBAR**

---

**1. Background**

These Terms of Reference (ToR) have been prepared by the Department of Environment-Zanzibar so as to fulfil the requirements of the Environmental Impact Assessment (Procedures) Regulations of 2002. The purpose of preparing these Terms of Reference (ToR) is to pave way a road mark for consulting company in carrying out a detailed Social Impact Assessment (SIA) for consulting company in carrying out Social Impact Assessment (SIA) luxurious hotel project at Pwani Mchangani, Zanzibar.

**2. The Study Area**

Study area shall be both mainland Tanzania and Zanzibar. Specifically, the study shall be conducted in Tanga the proposed area for submarine cable from Tanga to Pemba that includes land and sea area. The SIA shall propose the best route for the cable to pass through. These will include the project area and other areas that will be affected by the proposed project. Not less than 25% for both Pemba Island and Tanga mainland of the active population of the proposed area shall be consulted for the transmitting a submarine electrical cable.

**3. The Consulting Team**

A team comprising of specialists on Sociology, Rural Economy, Environmental Economy, and other socio-economic related fields should carry out the SIA. The names and their CVs for the team of experts should be submitted to the Department of Environment-Zanzibar for approval before conducting the study.

**4. The Time Frame**

This study should be completed between one and two months from the date of approval of the Social Impact Assessment (SIA) consulting team by the Department of Environment-Zanzibar. The set time includes all administrative and technical measures and human resources as well as logistical mobilisation of the consulting team of experts.

**5. Detailed scope of work**

The consulting team shall assess and describe fully, but not necessary be limited to, the followings:

**5.1 Background information**

The consulting team shall describe the background socio-economic and cultural study reports available for the study area (copies of this reports should be sent to the Department of Environment-Zanzibar along with the report) and relate their findings to this to this investment project.

**5.2 Baseline information**

The consulting team of experts shall study the social aspects of the local communities including, but not necessary be limited to, the followings:

- (vi) Geographical location and description of the area affected by the project
- (vii) Affected population: size, pattern, distribution, and growth
- (viii) Available social and public services and infrastructure
- (ix) Socio-economic activities
- (x) Existing land and/or sea rights and use
- (xi) Culture and religion

**5.3 Risk assessments**

The consulting team shall identify possible risks to the social life, economy, and marine environmental hazards for the project during:



- (i) preparation period,
- (ii) installation period,
- (iii) operation period,
- (iv) maintenance period, and
- (v) end of project

#### **6. Social Impact Assessment (SIA)**

- The consulting team shall assess and analyse the interaction of activities outlined in section 5.2 (above) by the local communities and the projects activities and describe how the project structures and activities, whether in isolation or cumulatively, will affect the moral, ethical, socio-cultural values and economies of each of the available community groups (villages) during:

- (i) preparation period,
- (ii) installation period,
- (iii) operation period,
- (iv) maintenance period, and
- (v) end of project (decommissioning)

- The consulting team shall described the identified negative social impacts as:

- (i) direct or indirect;
- (ii) on-site or off-site;
- (iii) short-term or long-term; and
- (iv) reversible or irreversible.

- The consulting team shall gauge the negative social impacts as:

- (i) insignificant
- (ii) significant;
- (iii) minimal;
- (iv) moderate;
- (v) adverse; and
- (iv) severe adverse.

The gauging of the above negative social impacts must be based on the established scientific and/or social reasons.

#### **7. Mitigation measures**

Upon realising any negative social impact from the proposed project and its associated developments/activities, the consulting team shall:

1. Propose (an) alternative development/activities that will impose less negative impact to the surrounding communities, or
2. Give action(s) and mitigation measures to reduce the negative impact of the activity/development to be undertaken.

#### **8. Monitoring Plan**

The consulting team shall identify all issues to be included in the monitoring plan/programme for this development project. These issues include agreements between the community and the project management (if any). In this respect, a detailed plan of action shall be proposed. The plan shall include, but not necessary be limited to: work programmes, control and management strategies, and monitoring and evaluation procedures including indicators that should be reviewed when needed.

#### **9. Inter-Agency and NGO/Public involvement**

The consulting team shall demonstrate the extent to which inter-agency and NGOs, CBOs and public views were consulted. For instance:

3. State lead authority.
4. Environmental protection ministry/agency.
5. Other relevant government agencies.
6. Donor agency/agencies.
7. National and/or local NGO's representing environmental and commune concerns.
8. The affected population. Portray all agreements between local communities and the proponent.

#### **10. Report Structure**

The report should contain, but not necessary be limited to, the following subsections:

9. Cover page (with title and the name(s) of the author(s))
10. Executive summary (In English and in Kiswahili)
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14. Baseline information (showing, methodologies applied, and where possible, quantitative data on the aspects to be studied)
15. Social Impact Assessment
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