RESEARCH / INVESTIGACIÓN

### Environmental Impacts of Tourism on Zanziba

### Impacto Ambiental del Turismo en Zanziba

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**ABSTRACT:** During the last two decades, tourism on the islands of Zanzibar has experienced a tremendous increase. While the tourism industry brings a number of benefits to the economy – mainly foreign exchange income and employment opportunities – it has also been accused of causing a series of negative economic and social effects to the local communities, such as environmental degradation. The aim of this paper is to describe and analyze the main environmental impacts caused by tourism development on Zanzibar, through the investigation of various bibliographical sources and data available. It is argued that the main environmental impacts of tourism are environmental damage from hotel construction and management, misuse of water resources, deterioration of waste disposal and waste management systems, deforestation, coastal erosion, and loss of ecosystems. It should be noted that tourists per se are not the main cause behind environmental degradation on Zanzibar; a key role to that end is played by wealthy foreign investors that violate environmental policies and government officials whose corruption and complicity lead to lack of enforcement of environmental regulations.

**Key words:** Tourism, environmental degradation, Zanzibar.

**RESUMEN:** Durante las dos últimas décadas, el turismo en las islas de Zanzíbar ha experimentado un enorme aumento. Mientras que la industria del turismo aporta una serie de beneficios para la economía - principalmente ingresos de divisas y oportunidades de empleo - también ha sido acusado de causar una serie de efectos negativos económicos y sociales para las comunidades locales, tales como la degradación del medio ambiente. El objetivo de este trabajo es describir y analizar los principales impactos ambientales causados ​​por el desarrollo del turismo en Zanzíbar, a través de la investigación de las diversas referencias bibliográficas y de datos disponibles. Se argumenta que los principales impactos ambientales del turismo son el daño ambiental de la construcción y administración de hoteles, el despilfarro de los recursos hídricos, el deterioro de los sistemas de la eliminación de basura y de gestión de residuos, la deforestación, la erosión costera y la pérdida de los ecosistemas. Cabe señalar que los turistas no son la causa principal de la degradación ambiental en Zanzíbar; ricos inversionistas extranjeros juegan un papel clave al violar las políticas ambientales, además funcionarios públicos cuya corrupción y complicidad conducen a la falta de aplicación de reglamentos ambientales.

**Palabras Clave:** Turismo, degradación ambiental, Zanzibar.

**(Presentado: Marzo 11, 2013. Aceptado: Junio 2, 2013)**

# INTRODUCCIÓN

The objective of this paper is to investigate the environmental impacts caused by the tourism sector on the islands of Zanzibar. During the last two decades, the tourism industry has experienced a tremendous growth, with tourist number reaching almost 180,000 in 2011 (ZATI, 2012). Views on the impact of tourism on Zanzibar are conflicting. On the one hand, tourism is a major contributor to the islands’ GDP, provides employment opportunities, and offers training and transfer of technology, management and technical skills. On the other hand, it is claimed that the tourism industry has very few links to the local economy, distorts local culture and traditions, increases prices of goods and services, and leads to environmental degradation and loss of ecosystems.

This last particular point – that is, the relationship between the tourism industry and environmental degradation – is the topic of the paper. It is argued that the main environmental impacts of tourism in Zanzibar are closely related and caused by a combination of lax environmental regulations, which are seldom enforced, and profitable business arrangements between wealthy foreign investors and local government officials. Most significant problems caused by the tourism sector on the islands are the following:

* *Environmental damage from hotel construction and management*: almost 60% of the 194 hotels on the islands are built too close to the sea or directly on the shore causing coastal erosion and pollution of beaches and seawater (Yussuf, 2012a);
* *Pollution and mismanagement of water resources*: most hotels on Zanzibar do not employ water conservation strategies or wastewater management, which leads to water overuse and conflict with local communities (Tourism Concern, 2011);
* *Deforestation*: the increasing need for construction materials and new building areas intensifies the competition between wealthy investors and local communities, resulting in resource depletion and degradation (Hikmany, 2012);
* *Poor waste management*: 80% of the total waste on Zanzibar is produced by commercial establishments, such as shops, hotels and restaurants that employ various non-environmental friendly practices to dispose of waste (Gobena and Lundén, 2012);
* *Pollution and coastal erosion from quarries and mining*: the increase in demand for construction materials and the inability of local communities to find employment in the tourism business has led to a recent growth in environmental-polluting quarrying and mining activities (Yussuf, 2012c); and
* *Degradation and/or loss of ecosystems*: coral reefs are often damaged by tourists engaging in scuba-diving and snorkelling activities, while further damage to ecosystems is done through the purchase of animal and plant products from areas where environmental degradation has been observed (Gössling, 2003; Hikmany, 2012).

The methodology used in this paper is mainly a bibliographical revision, based on various reports, data, reviews, and articles available concerning the tourism sector on Zanzibar and its relation to environmental degradation. Additionally, various databases (such as, World Bank and UN databases) are used in order to retrieve data on the Zanzibari and Tanzanian economy. Furthermore, in order to enhance understanding on the challenges posed by tourism on Zanzibar, it was deemed useful to present some general information on the islands, such as geography, economy and society. Next, information regarding tourist numbers, destination markets, and the general impact of tourism is presented. The final part of the paper deals with the particular environmental problems caused by the tourism sector on Zanzibar.

# GENERAL INFORMATION

The archipelago of Zanzibar is located in the Indian Ocean, about 25 miles from the coast of mainland Tanzania in East Africa. It comprises the two main islands of Unguja and Pemba, as well as almost 50 smaller islands (see Figure 1).

Unguja Island (usually called Zanzibar Island) – the main island of the group – is 97 km long and 32 km wide, with an area of 1,464 km2. It is a low-lying island, with its highest point reaching 120 mt. The Zanzibar Channel, which separates the island from mainland Tanzania, is 23 miles across at its narrowest point (ZIToD, 2012). The capital of the island is Zanzibar Town, which houses the seat of the government, and is the centre of commercial and political activities. Zanzibar Town consists of the core historical part – Stone Town – and the Ng'ambo area, both with their own history and tourist attractions (Zanzinet, 2012). Besides the main seaport, there is also a small airport that handles a light load of local and international traffic.

Source: MapMart (2012)

Figura 1. Map of Africa, United Republic of Tanzania, and Zanzibar

Pemba Island is 67 km long and 20 km wide, with a surface area of approximately 850 km². It is situated 31 miles north of Unguja Island and is 37 miles off mainland Tanzania. Chake-Chake is the unofficial capital of Pemba, concentrating most government offices. The island is much less developed than Unguja despite producing 70% of Zanzibar’s cloves harvest (Zanzinet, 2012). Infrastructure is also much poorer, with the small airport near the capital handling only light air traffic (EISA, 2009). Despite its nice landscape and white sandy beaches, Pemba is not easily accessible to the outside world, and thus has been overshadowed by the popularity of Unguja (Zanzinet, 2012).

The islands gained their independence from Britain in December 1963 as a constitutional monarchy. On April 26th 1964, the republic of Zanzibar and Pemba was joined with the former colony of Tanganyika (mainland Tanzania), and the new country was renamed the United Republic of Tanzania; Zanzibar has remained since then a semi-autonomous region (ZIToD, 2012).

With a population growth of 3.1%, the population of Zanzibar is estimated at 1,200,000 people in 2010 (Global Climate Adaptation Partnership – UKAid, 2012). Taking into account that in 1995 the population was 787,000 people, the Zanzibari population grew by 65% within 15 years (United Nations Statistics Division, 2012). The people of Zanzibar are of different origins, mostly African people of Bantu ancestry; there is also a minority population of Asians, originally from India and Arab countries. With regards to religion, 99% of the population is Muslim with the remaining 1% Christian (ZIToD, 2012).

The official language is Kiswahili or Swahili, Kiunguja (name for Swahili in Zanzibar), English (official, primary language of commerce, administration, and higher education), and Arabic (widely spoken in Zanzibar), as well as many local languages (CIA, 2012).

**Economy**

In the 19th century, Zanzibar was the centre of a rich empire, as Zanzibar Town had become an important centre for cloves, ivory and slavery covering the Gulf and Far East. Initially, both Unguja and Pemba islands benefited greatly from the trade in slaves but later on turned to the very successful trade in cloves. Thus, until the 1960s, cloves were Zanzibar’s main export; the positive balance of payments stemming from this trade enabled the government to invest in economic and social infrastructure (ZIToD, 2012).

In 1986, the Tanzanian government started moving its economic system away from socialism towards an open economy. The Investment Act (enacted in 1986 and amended in 1989) became responsible for all domestic and foreign investments in Tanzania. Two were the main economic sectors on which investment focused on: mining and tourism. In 1991, a master plan for Zanzibar was prepared; since then the Zanzibar Investment Promotion Agency (ZIPA) has been catering for investment on the islands with a main focus on the tourism sector (TanzaniaInvest, 2006).

However, in the wake of globalization, the change in terms of trade and the freezing of international assistance on account of the flawed 2000 elections in Zanzibar led to a deterioration of economic and social conditions on the island (EISA, 2009). The clove industry has been fast declining, as it has been hit by low prices on the world markets and by a number of agronomic factors that has resulted into low annual production. Despite the fact that cloves trade is no longer profitable, especially for individual farmers,[[2]](#footnote-2) agriculture is still the backbone of Zanzibar’s economy – albeit declining. While the islands still depend heavily on economic assistance from mainland Tanzania and international donors, the Zanzibari government has encouraged the development of alternative fishing, trade and tourism industries (Zanzinet, 2012).

Table 1 presents a comparison of various economic indicators between mainland Tanzania and Zanzibar within the last decade.

Table 2 presents Zanzibar’s Gross Domestic Product (GDP) by kind of economic activity. As it can be seen, agriculture represents about 21% of GDP and its importance has been growing in the last decade. Services account for 44% of the Zanzibari GDP, with the most important sectors being trade and repairs (9.7%), transport and communications (9.2%), public administration (8.8%), and hotel and restaurants (7.3%). With regards to employment, agricultural, forestry, and fishing activities represent more than 40% of total employment, with wholesale and retail trade, and restaurants and hotels accounting for 17%. However, the labour market is highly informal and the degree of informality is increasing; if agriculture is included, then 88.1% of total employment is in the informal sector (International Labour Office, 2010).

Concerning social indicators, in Zanzibar 13% of the population lives below the food poverty line and 49% consumes less than the level of basic needs. The islands are highly dependent on donor funding, especially for health care. According to the latest International Labour Office’s report (2010), general living conditions – type of house construction, access to clean drinking water, sanitation, and electricity – are quite good, especially for urban dwellers (the situation in rural areas is generally worse on all indicators, if compared to urban areas). In 2006, about 72% of the population could read and write in at least one language (Swahili); however, around a third of the entire population had no education (ILFS, 2006 in International Labour Office, 2010).

Overall, Zanzibar shares common traits with other coastal areas and islands that are characterized by poverty, underdevelopment and environmental degradation. It has socioeconomic characteristics that belong to two extremes: on the one hand, few areas that display a certain degree of economic development due to urbanization and industrialization (i.e. in this case, Zanzibar Town and Chake-Chake), and on the other hand, heavily underdeveloped areas lacking in even basic infrastructure (Daconto, 1997 in Marale, 2013).

**Tourism Data**

Zanzibar tourism began to emerge in the late 1980s and has experienced an impressive growth since then, as the Tanzanian and Zanzibari government opened up the country to investments. In 2003, the Tourism Master Plan for Zanzibar affirmed that the islands would be focussing on developing Zanzibar’s cultural and environmental quality, protecting cultural wealth, and upgrading infrastructure in order to meet tourists’ expectation and maintain a green profile. Next, the 2009 New Zanzibar Tourist Act added that the aim of the Zanzibar Commission for Tourism was the promotion of sustainable tourism industry and the developing of ecotourism (ZATI, 2011).

**Figura 2. Tourist Arrivals to Zanzibar (1985-2011)**

Source: Data for years 1985-2009 (ZATI, 2010); for 2010 (ZATI, 2011); and for 2011(ZATI, 2012)

The major tourists attractions in Zanzibar are the white, sandy beaches, and the coral reefs that surround the east coast, which are ideal for snorkelling and scuba diving. Besides the wonderful beaches, Zanzibar is also a sightseeing destination. Among the places that attract tourists are the historical Stone Town, the Slave Market, the National Museum, the Sultan Palace, the Persian Baths, Prison Island, Jozani Forest, the Old Fort, Mtoni Palace, and Dungan Palace (ZIToD, 2012). The products, activities and attractions that Zanzibar has to offer are very diverse, catering for various types of tourism: beach, nature / ecotourism, culture and tradition, history and archaeology, water sports, honeymoon, performing arts, conferences, culinary (spices), and medical (herbs) (Zanzibar Commission for Tourism, 2004).

With the Zanzibari government’s decision to open up the economy to foreign investors, a large number of hotels and resorts have been built, primarily on Unguja and Pemba islands. The latest data on the number and class of tourist accommodation reveals that in 2009 there were 194 hotel establishments on the islands: out of these, 28 hotels are class A (quality niche, with a price of USD 150-400/night), 25 hotels are class B (middle market, with a price of USD 100/night), and 141 are class C (budget, with a price of USD 15-100/night) (ZATI, 2010).

Figure 2 presents the number of tourist arrival in Zanzibar. As it can be observed, in the last twenty-five years Zanzibar has experienced an almost 9-fold increase in tourism: from 20,000 tourists in 1985 to almost 180,000 in 2011.[[3]](#footnote-3)

As it can be noted in Figure 2, despite the steady growth trend in tourist arrivals, Zanzibar has also experienced a series of shocks to its tourist industry, with dips being noticeable in 1994, 2000, 2003, and 2008. These dips reflect the earlier effects of the violent 1995 and 2000 elections, which not only set back tourism but also harmed the economy. Post-2000 dips reflect the global insecurity provoked by the September 11, 2001 attacks, as well as the travel advisories issued against Zanzibar from November 2002 – February 2003, which led to a decrease of 40% in the annual tourist numbers (TanzaniaInvest, 2006). The global financial crisis also affected tourism in Zanzibar: in 2008 there was a decline of 10.4% in tourist arrivals compared with 2007, which affected the local economy (Lunogelo et al., 2010).[[4]](#footnote-4) This decline, however, did not persist in 2009 and since then, tourist arrivals have been increasing.

Tourism on Zanzibar is highly seasonal, and therefore, during the rainy season – April to June – there is a significant dive in tourist arrivals. For example, for the period 2004-2009, only 11.5% of the total number of tourists visited the islands during the rainy season (average percentage for these years); the most popular period is July to September when on average 32.3% of total number of tourists arrived to Zanzibar (ZATI, 2010).

Table 3 presents the top 15 sources of tourism markets for Zanzibar, which is based on the 2010 international visitors exit survey.

As it can be noted in Table 3, Italian tourists constitute more than a fourth of the total number of tourists arriving on the islands. This has been the case in the last few years, mainly on account of the establishment of Italian hotels in Zanzibar and direct, chartered flights from Italy (Ministry of Natural Resources and Tourism, 2010; 2011; 2012).[[5]](#footnote-5) Visitors from United Kingdom have generally chosen Zanzibar as a tourist destination, primarily because of the countries’ historical link. At the same time, the increase of tourists from South Africa is largely explained by the launching of “*One Time Air*”, which flies directly from South Africa to the island three times a week (Ministry of Natural Resources and Tourism, 2010). Overall, the vast majority of tourists are European (over 70%), followed by Africans – whose share of arrivals has increased from 2% in 1985 to 13% in 2009 – and then by North Americans and Asians, each sharing about 5% of total arrivals (ZATI, 2010).

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| Table 3: Top 15 Source Markets to Zanzibar (2010) |
| No | Country of Residence | % of Total |
| 1 | Italy | 26.9% |
| 2 | United Kingdom | 15.3% |
| 3 | Germany | 8.0% |
| 4 | United States of America | 5.3% |
| 5 | South Africa | 5.2% |
| 6 | France | 5.2% |
| 7 | Spain | 4.4% |
| 8 | Australia | 4.1% |
| 9 | Netherlands | 3.2% |
| 10 | Belgium | 2.8% |
| 11 | Canada | 1.9% |
| 12 | Kenya | 1.6% |
| 13 | Austria | 1.5% |
| 14 | Switzerland | 1.2% |
| 15 | Sweden | 0.9% |
| 16 | Others | 12.5% |
|  | **Total** | **100%** |
| Source: Ministry of Natural Resources and Tourism (2012) |

According to the most recent tourist exit survey from 2010, 81% of tourists come to the island for pleasure and holiday, 8.5% to visit family and friends, and 1.8% on business (ZATI, 2012). The average stay on Zanzibar is 6 days, which has generally been the trade in the last decade. More than half of tourists fall within the “25-44 years old” group, followed next by the “45-65 years old” group with about 30%. With regards to spending, the average expenditure for tourists on package holidays is about USD 230/night and for those that come under the non-package arrangement is about USD 195/night (ZATI, 2010; 2011; 2012).

**Tourism Impact**

Tourism in Zanzibar is a major contributor to the islands’ GDP with indications that this will continue to increase as the industry keeps on growing. Tourist earnings in 2004 were US$ 71,284,780, and reached US$ 128,100,000 in 2010 (ZATI, 2008; 2012), which implies an average growth rate of 10.3% per year. According to the Minister of State in the President's Office (Finance and Economy), tourism employs directly 10,500 people, while it is an indirect source of income for a further 40,000 people on the islands (Sebastian, 2010). Indeed, with the cloves industry declining, tourism has provided employment opportunities for local communities, while it constitutes the main source of foreign exchange income to the local economy. The tourism industry has also stimulated the growth of regional and international transport services by air and sea and has provided training and transfer of technology, management and technical skills. It has also contributed to the development of small businesses linked to the tourism industry, such as tour operators, food suppliers, etc. (TanzaniaInvest, 2006).

However, there are mixed views on whether tourism has indeed benefited the local economy or on the extent to which it is claimed to have links to the economic development of local communities (i.e. pro-poor growth). On the one hand, it has been argued that the prices of goods (mostly fish, raw materials, and land) have been increasing as a result of the demand created by tourists. Tourism has also been accused of causing cultural erosion: with about 99% of the population being Muslim, it is claimed that cultural and religious mores are at danger from tourists’ new ideas, perceptions, and modes of behaviour. In the last two decades, prostitution, drugs, and crimes have increased tremendously, all of which are blamed on the increase in tourism (Zanzinet, 2012). Figure 3 presents a summary of the main benefits and costs of tourism on Zanzibar.

Finally, critics of tourism on Zanzibar maintain that the islands do not really benefit from earnings from tourists because most of them pay directly to foreign tourism agencies in their own countries (Zanzinet, 2012).[[6]](#footnote-6) Indeed, it is claimed that tourism growth is not related to poverty alleviation on the islands: luxury hotels are built next to villages of extreme poverty. Once construction finishes, luxury enclaves contribute little to local infrastructure or employment. It is argued that unless there are stronger links between tourism and local communities so that benefits are more equally shared,[[7]](#footnote-7) the long-term sustainability of the industry is in danger (SBA, 2009).[[8]](#footnote-8)

# ENVIRONMENTAL IMPACTS OF TOURISM

Tourism is generally considered as an environmental-friendly development strategy, at least in comparison to extractive industries, such as mining for example. Nevertheless, the severity of the environmental impacts of tourism depends largely on the type and scale of tourist activities, as well as on the tourist infrastructure available. At the same time, it also depends on the government regulations in place – and more important on the enforcement of these regulations – as well as on how environmentally friendly the practices of tourism businesses are (Sitts, 2009).

Figure 3. Benefits and costs of tourism on Zanzibar

 Source: Elaborated from ACRA-AITR (2008)

Vulnerability on Zanzibar is created by both natural and social factors; these factors include environmental degradation (mainly coastal erosion and deforestation), climate change, growing population pressure, and the rapidly expanding tourism industry (Mustelin, 2009). Despite the fact that in most cases vulnerabilities are caused by a combination of factors, in this article we focus mostly on the impacts that the growing tourism industry has had on the environment.

**Environmental damage from hotel construction and management**

The first new tourist hotel on Zanzibar was built in the 1990-1992 period; at that moment, it can be claimed that Zanzibar’s “modern” tourism industry began (TanzaniaInvest, 2006). Currently, there are almost 200 hotels indicating the large rise in tourist arrivals and the increase in the attractiveness of the islands as a tourist destination. However, on Zanzibar, hotel construction and management can be generally characterized as not environmentally friendly. In many cases, hotels – and especially the large foreign-owned hotel complexes – have caused environmental damage and serious conflicts with the local communities on account of increased competition for natural resources and mismanagement of existing ones.

Additionally, most investors violate construction laws and damage the environment by building structures very close or even on beaches. According to a recent report, the Zanzibar House of Representatives stated that over 60% of the 200 hotels in Zanzibar should be demolished because they are built too close to the sea or because they have not undertaken any environmental impact assessment before construction and operation (Yussuf, 2012a).[[9]](#footnote-9) This phenomenon is further exacerbated by the Zanzibari government’s poor record with regards to application of environmental regulations, monitoring and fining. Furthermore, short periods of management make environmental protection and sustainability a low priority; as Gössling (2003, in Sitts, 2009, 70) writes, in Zanzibar some hotels rotate managers at least once a year, making it “…*unlikely that managers are concerned with sustainability, which can only be achieved through a long-term interest in the place as well as a profound understanding of the processes that have a negative impact on the environment*”.

Additionally, tourism accommodation and service businesses in Zanzibar often lack the necessary resources to make environmental investments, for example solar panels or better and more effective water usage. The well-known problem of “tragedy of commons” also plays an important role in the lack of incentives to preserve natural resources on Zanzibar; even though a business might be able or willing to invest in environmental protective measures, it might fear that other companies will not follow its example and thus, it will continue to feel the negative impact of their activities (Sitts, 2009).

Overall, improper waste disposal, overuse of water, and habitat destruction, especially during the construction phase, are common examples of hotels’ environmental impact (Sitts, 2009). Below, these impacts – among others – are further discussed and analysed.

**Pollution and mismanagement of water resources**

The rapid growth of tourism on Zanzibar has put an immense pressure on water resources at the expense of the needs of the local community. On the islands, groundwater is the primary source of water, which is gathered from seasonal rains that filter through the limestone rock and get stored in aquifers (Global Climate Adaptation Partnership and UKAID, 2012). According to the Zanzibar Water Authority (ZAWA), water is obtained from three main sources: drilled boreholes that account for 81% of water sources, natural springs that account for about 13%, and local shallow wells that account for 6% (Mwehe, 2011).

The establishment of a large number of hotels on Zanzibar has essentially not been accompanied neither by water conservation strategies nor wastewater management. Indeed, according to a report by the UK charity organisation Tourism Concern (2011), very few hotels on the islands adopt water conservation policies, with only one hotel treating wastewater adequately so as to be able to use it for garden purposes. Also, the same report revealed that very few hotels had sewage treatment plants and that most establishments relied on the use of soak ways (the majority of which drain slowly into groundwater). As a result, there is an increasing risk of diarrheal and other infectious disease outbreaks.[[10]](#footnote-10)

Furthermore, Gössling (2001) comments that a number of studies have shown that many aquifers near villages and hotels are greatly elevated, which signals a potential for chronic anthropogenic inputs to coastal waters (especially due to a general lack of proper sewage system). This is especially threatening for the local ecosystem, since coastal waters are generally oligotrophic and the rise in nutrients can lead to increased growth of algae, which in turn decimate coral population and thus, affect negatively coral fish communities on which Zanzibari coastal villages depend.

Tourism demands for freshwater are high, especially during the dry season. Gössling (2001) reported that the average tourist uses 685 l/day of freshwater, which is about 15 times the average daily demand of a local resident.[[11]](#footnote-11) There are already clear signs of overuse of the freshwater aquifer, with indications of saltwater intrusion in some areas; this phenomenon has occurred on account of unsustainable levels of diversion, caused by higher numbers of people (including growing number of tourists, residents, and immigrants from the mainland), but also increased levels of consumption per person (Sitts, 2009). As a result, there have been increasing instances of conflict between villagers (mainly in Nungwi and Kikengwa) and hotel owners, with villagers resorting to cutting the pipes.[[12]](#footnote-12) Although there are examples of cooperation, villagers often have to follow the rules imposed to them by the hotels; in some instances, during the hotels’ closed seasons, communities are left without water (Tourism Concern, 2011).

A detailed study is needed into the sustainability and environmental impacts of taking water from the aquifer, as well as into the possibility and feasibility of businesses and hotels harvesting their own rainwater (ZATI, 2008).

**Deforestation**

Zanzibar consists of a range of vegetation, from short coral bushes and thickets to higher, closed tropical forests. It has two main forest reserves – Jozani and Ngezi – as well as various isolated natural forest stands; deforestation occurs particularly in those isolated pockets of forests. The main reasons behind the uncontrolled harvesting of trees are related to the increasing need for building materials (as a result of the construction of tourist accommodation establishments), settlement expansion, and agricultural activities. As a result, in Kiwengwa, for example, there is a growing competition between hoteliers and local community for the usage of resources and facilities, fact that leads to resource depletion and degradation (Hikmany, 2012). At the same time, deforestation – together with higher annual precipitations and loose soils – leads to soil erosion. This can be a particularly serious problem especially since it can facilitate floods; this negative effect of deforestation can be mostly observed on the western side of both islands.

Increased deforestation has also been caused by the fact that in some cases tourism development has led to restricted access to land and sea for the local communities. An indicative example is the case of the upscale Mnemba Island Lodge, to which an Italian businessman was granted a 99-year lease with exclusive rights; Zanzibaris were prohibited from landing on the island or fishing on the reef **(Gössling 2003, in Sitts, 2009).**[[13]](#footnote-13) Furthermore, some luxurious hotels have restricted access to the local beach, thus causing economic hardship for the women who farm algae in the tidal zone (Sitts, 2009). These actions push local communities to look for different sources to gain their livelihood; in many cases, this means harvesting more trees in order to increase agricultural areas. Deforestation has also been aggravated by the fact that the price of land near the shore (where Zanzibaris can live off fishing or the provision of tourist services) has increased at a great rate as a result of the entrance of wealthy foreign investors on the tourism market (Sitts, 2009). Thus, many Zanzibaris who sold their land or the trees on their land to foreign investors at a low price in the past find themselves now in economic hardship and have to resort to other activities (which include illegal logging and cutting down of forest areas for agricultural, energy, settlement, and building purposes).

At present, Zanzibar is conducting tree census in natural and residential areas in order to record the types and sizes of trees, while local communities are urged to plant more trees in an effort to conserve existing forests, since data shows that about 95% of Zanzibaris still rely on forests for energy. A similar census performed 15 years ago revealed that the islands were short of forests by 40% (Yussuf, 2012b). It is expected that on account of the growth of tourism industry and population increase, the shortage is currently much higher than in the past.

# Poor waste management

The growth of tourism industry has accentuated even further the grave problems of waste management on the islands. Currently, Zanzibar faces a real problem with regards to unplanned waste management, insufficient funding to manage solid waste, and inadequate regulatory controls of the tourism industry that often does not comply with national environmental standards (Honeyguide Foundation, 2009).

With regards to waste amounts, it is estimated that about 216 tones/day of waste is generated on Zanzibar (2005 figure); only 25% of this amount is collected and transported to the municipal landfill in Jumbi with the remaining being eaten by animals, burned, dumped illegally or accumulated in heaps in parts of town (UNDAC, 2008).[[14]](#footnote-14)

In 2011, 80% of the total waste on Zanzibar was produced by commercial establishments, such as shops, hotels and restaurants (Gobena and Lundén, 2012). At present, hotels deal with their garbage problems in the following ways: a) beach cleaning: holes are dug in the sand and plastic bottles are buried together with seaweed; b) garbage pickup: garbage companies are paid to pick up garbage from hotels but hotels’ managers and owners are aware of the fact that it will end up in dumpsites in the forest or thrown at sea; c) burning garbage: some garbage – including plastics – is burned at the back of hotels causing smog, bad smells and even headaches; d) staff collecting garbage: even though some hotels’ employees gather bottles to sell them, eventually these plastic bottles end up in nature; and e) dumpsites in residential areas and villages: although these dumpsites are mostly used by local communities, all types of household waste can be found here, including those coming from hotels, such as plastic bottles (Gobena and Lundén, 2012).

Despite the fact that there is no working recycling system and that so far most garbage disposal methods used by hotels do pollute the environment, the majority of tourists are confident that their hotels – usually foreign-owned – recycle waste and mistakenly blame the local community for all the littering (Gobena and Lundén, 2012). Littering, however, and in general poor and inadequate waste management is a very serious matter not only for the adverse effect it has on the health of local communities and conservation of ecosystems, but also because it can diminish the attractiveness of Zanzibar as a tourist destination. A 2012 tourists poll revealed that for 80% of tourists the image of the islands worsened on account of the garbage problem (Gobena and Lundén, 2012).

With regards to the sewage system, in Zanzibar Town, only a minority of residents is connected to the sewerage network, which consists of only 25 km of pipes. The rest of the islands – and the vast majority of hotels – uses mostly septic tanks and soak pits. Since there is no sewage treatment plant on Zanzibar, sewage is generally discharged into the sea; according to calculations, about 9,000 – 12,000 cubic metres of liquid waste is released every day into the sea (IRIN, 2010). As a result, nutrient levels near the sea are higher than normal for tropical seawaters; in the waters near the Zanzibar Municipality, for example, faecal and total coliform levels of up to 70/100 ml and numerous thousands per ml of seawater have been reported (IRIN, 2010). Although in 2006, the Zanzibari government issued a directive that required hotels to treat properly their own sewage, this rule has been widely ignored. Most hotels discharge sewage into the sea with only minimal treatment.

**Pollution and coastal erosion from quarries and mining**

In Zanzibar the problem of environmental degradation stemming from quarrying and mining has not received the necessary attention, mainly on account that so far these activities are performed in less fertile, coral rag areas. It is argued that this type of environmental degradation comes as a result of the increasing need for building materials (mostly for hotels) and as a side effect of the general lack of links between the tourism industry and local communities.

Limestone quarrying and sand mining are currently considered as an emerging environmental problem in Zanzibar. Limestone is used as a building material, while sand is often used to make concrete. Limestone quarries in general need a series of abatement methods to deal with problems such as noise, dust, and appearance; often the problem is exacerbated by the pollution caused by trucks leaving the quarries. On the other hand, sand mining causes coastal erosion, has a negative impact on the local wildlife, and causes problems for coastal communities who rely on fishing for their livelihoods. Furthermore, the removal of physical coastal barriers, such as dunes, leads to flooding of seaside communities. Coastal erosion in turn can pose a serious threat to tourism hotels and infrastructure, especially if it accompanied by sea-level rise as a result of climate change (Global Climate Adaptation Partnership and UKAID, 2012).[[15]](#footnote-15) To deal with the threat of coastal erosion, hotels on Zanzibar have invested in hard structures such as seawalls for protection of the beach; however, these structures have accelerated erosion elsewhere along the coast (Mustelin, 2009).

Although the level of illegal quarrying is high, it is claimed that the government is not doing enough to prevent further damage to the environment. Residents of Kwarara and Tomondoo area on Unguja Island argue that the lack of employment – which reaches 17% of the young people capable of working, according to the Ministry of Labour – leads the youth towards these activities (Yussuf, 2012c). Indeed, the growing demand for construction materials has made quarrying and mining a rewarding activity for the local population, especially since many Zanzibaris cannot find an alternative source of employment – such as, in the tourism industry – because of lack of skills and education, and because the tourism sector has only few links to the local economy.

**Degradation and loss of ecosystems**

Coral reefs in Zanzibar are an important resource for the economy and local community. These reefs play a crucial role in coastal protection, fisheries, and form an important part of the islands’ tourism attractiveness, since they provide ideal diving and snorkelling opportunities. However, the increase in the number of tourists poses a considerable threat to marine ecosystems on account of careless divers; some tourists damage the coral reefs by touching, breaking or stepping on them. Declining fisheries put the livelihoods of the estimated 23,000 full-time Zanzibari fishermen in jeopardy (Gössling, 2003, in Sitts, 2009). Land ecosystems (such as tropical forests) are also in danger because of growth in trekking activities and forest wildlife viewing.

In addition, the increasing presence of affluent tourists has encouraged the development of a huge market dealing in wildlife souvenirs, such as coral trinkets and various animal products (ZIToD, 2012). It has also led to growth of illegal trade in shark jaws and spice resources harvested in places where environmental degradation has been observed. Hikmany (2012) adds that more than 3,400 shark teeth and 110 jaws are sold to tourists annually.

There are also some extreme cases, where poverty and resentment of local communities leads to environmental degradation and destruction of wildlife. In 2007, Jozani residents killed a number of Zanzibar Red Colobus monkeys (Piliocolobus kirkii) in order to express their discontent for unfair compensation terms and displacement from traditional lands. Lack of economic opportunities for local people and low-income wages also push them to degrade the environment as a means of sustenance. This occurs because the vast majority of large tourism businesses are foreign-owned and most benefits are ripped by investors and not reinvested into the local economy or environmental protection (ZIToD, 2012).

# CONCLUSIONS

Since the 1991 decision of the Zanzibari government to open up the islands to foreign investment, tourism industry has experienced a tremendous growth, currently reaching almost 180,000 tourists per year. While tourism is the most important source of foreign exchange income, contributes significantly to the islands’ GDP, and offers employment opportunities, it has been accused of causing adverse economic and social impacts. One of the most negative effects of tourism on Zanzibar has been environmental degradation: the tourism industry destroys natural habitats through hotels’ construction, erodes coastlines, causes deforestation, misuses water resources, and greatly adds to the exiting serious problems of waste disposal.

An interesting point that can be observed is that on Zanzibar, tourists’ actual role in environmental degradation – besides the fact that their sheer number adds extra stress on the islands’ natural resources – is relatively small if compared with other actors; tourists are mostly responsible for the occasional damage to the coral reefs and for sustaining the trade in wildlife souvenirs. The largest issue lies with the economic interests of both wealthy foreign investors and certain local government officials, who often stand in the way of adopting and applying strict environmental protection measures. Widespread corruption among government officials has given rise to a culture of “protection” of wealthy hotel owners that take advantage of the lack of monitoring and law enforcement, in order to promote their interests and cut down on costs. Moreover, the government has not taken the necessary measures to avoid that most incomes produced by tourism continue flying out of the country and to assure that they benefit Zanzibar and its population.

Taking into account the importance of tourism to the Zanzibari economy, steps need to be taken in order to protect the environment and maintain the tourist attractiveness of the islands. If a stricter environmental protection policy is not undertaken and enforced, environmental degradation is expected to lead to a significant decrease in the number of tourists, who will prefer other destinations that can offer similar products and experience (such as for example, other islands in the Indian Ocean, like Maldives, Seychelles, and Mauritius).

It should also be noted that the tourism industry is not threatened only by environmental degradation and loss of ecosystems. The sector faces many challenges that can seriously impede its further development, such as poor infrastructure (for example, roads and airport), shortage of skilled staff, electricity and water shortages, serious accidents affecting tourists (for instance, the sinking of two Zanzibari ferries in 2011 and 2012), and the recent chaos experienced on the islands (violent protests by Islamists demanding Zanzibar independence from mainland Tanzania). However, dealing with problems of environmental degradation should be one of the priorities of the Zanzibari government and local communities: if this issue is not addressed soon it is anticipated that it will gravely reduce the quality of life of local communities, strip them off of sources of livelihood (such as fishing), and hurt the very promising tourism industry. Thus, the challenges of the tourist sector lay on three crucial fronts, that is, the economic, social, and environmental front. These challenges need to be met without delay so as to ensure the sustainability of the Zanzibari tourism industry.

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2. Cloves production on Zanzibar is slowly declining, with annual sales having plummeted by 80% since the 1970s. **While it used to be the world’s largest producer of cloves, now the islands are on third place, far behind Indonesia that supplies 75% of the world market. One of the problems afflicting the Zanzibari clove production – besides international competition – is the government’s tight grip on the industry, with farmers having to sell their entire production to the state-owned Zanzibar State Trading Corporation, at a government-set price. Farmers complain that the price is so low that they can barely make a profit out of it and therefore, need to either trade their cloves production on the black market (which is much more profitable but also illegal) or turn to the production of other crops (Sanders, 2005).**  [↑](#footnote-ref-2)
3. It should be noted that these figures reflect direct arrivals from overseas. According to the Ministry of Tourism, these figures do not include **arrivals from the Tanzania mainland on a two-centre “bush and beach” holiday or domestic arrivals via the Zanzibar seaport (neither of these figures are currently measured). It is estimated that with these arrivals the number of tourists can be boosted by 25%, i.e. taking into account that 175,000 tourists arrived directly from overseas in 2011, it can be deduced that the total number of tourists on the islands was 220,000 (Zanzibar Association of Tourism Investors - ZATI, 2012).**  [↑](#footnote-ref-3)
4. **According to research, an estimated decline in the number of tourists by at least 15% affects employment by 20% to 30% (Lunogelo et al., 2010).** [↑](#footnote-ref-4)
5. **After 1991 when the Zanzibari government began welcoming investment, Italian investors that were already active in Kenya focused their attention on Zanzibar and began setting up hotels on the islands (TanzaniaInvest, 2006)-** [↑](#footnote-ref-5)
6. Bryden (1973), Perez (1974, 1975), Turner and Ash (1975), Turner (1976) and Hills and Lundgren (1977) discuss the unequal economic impact that tourism generates as well as the paradox that developing countries, such as Zanzibar, strive for expanding tourism as a means of obtaining foreign exchange while most of incomes generated by their tourism industries finally leave these economies. Moreover, Briguglio and Briguglio (2002) point out that in small developing insular states foreign travel agencies generally control such a large proportion of the tourist traffic that they have enough negotiating power to dictate main tourism policy issues in these small states. [↑](#footnote-ref-6)
7. **Figueroa et al (2003) and Figueroa and Alvarez (2002) have defined and argued in favour of a ‘grass-root tourism’ as a form of a conscious and socially driven form of sustainable tourism where local communities are empowered to manage the tourism industry and to have accesses to the benefits that tourism is capable to generate.** [↑](#footnote-ref-7)
8. **According to a recent study, the challenges for pro-poor tourism on Zanzibar are the following: a) business environment does not favour SMEs, b) Zanzibaris have little access to employment in the tourism industry due to very few training opportunities, c) most hotels – especially luxury and middle-range ones – are foreign-owned, and d) local suppliers are unable to meet the requirements of tourism sector businesses. As a result, the total pro-poor benefit from tourism in Zanzibar was calculated as 10.2% for the sectors under analysis (accommodation and hotel meals, restaurants, retails, tours and excursions, services and others) (SNV – VSO – ZATI, 2010).**  [↑](#footnote-ref-8)
9. Hotel demolition is a very unlikely event. It is argued that deal-making and bribes are the normal course of events between wealthy investors and government officials. Corruption is a very serious problem on Zanzibar and affects sustainability and environmental issues, with efforts to regulate the growth of hotels being largely ignored. At the same time, it has been argued that many highly-posted government officials have ownership stakes in the islands’ luxury hotels, and thus use their influence to suppress environmental and other measures that would impose costs on hotels (Sitts, 2009). [↑](#footnote-ref-9)
10. During a 3-month electricity outage in 2008, cholera outbreaks were reported in the village of Jambiani, which were attributed to contaminated groundwater when villagers were forced to use well water; these outbreaks resulted in several deaths (Tourism Concern, 2011). [↑](#footnote-ref-10)
11. There are various estimates regarding tourist water consumption; for example, according to the Zanzibar Water Authority (ZAWA), water demand for tourist resorts and hotels uses are estimated to be in average of 300 litres/bed/day (ZAWA, 2010). All estimates, however, indicate that tourist water consumption is many times higher than resident consumption. [↑](#footnote-ref-11)
12. The Zanzibar Water Authority claims that in some cases leaking pipes, non-operational pumping machines, and faulty reserve tanks are partly to blame for the shortage of water in many parts of Zanzibar. In the area of Nungwi – one of the coastal areas with a large number of hotels and grave water problems – water shortage is expected to be solved through the implementation of a water project supported by Japan through UNDP (Tanzania Daily News, 2012). [↑](#footnote-ref-12)
13. Some amendments were eventually made, with fishermen allowed to fish on the reefs but not allowed to land on the island (Gössling 2003, in Sitts, 2009). [↑](#footnote-ref-13)
14. In Zanzibar the dumpsite areas have been constantly expanding and changing location since the 1980s. The current main dumpsite area, Jumbi, is situated only 12 km away from Zanzibar Town. It is an open waste dump centre inside the residential area of Jumbi village, very poorly managed with free access for the public. The problem is exacerbated by the fact that Jumbi villagers rely for drinking water on private wells near the dumpsite, thus putting their health at risk; some of these wells have already been closed by local authorities on account of the poor quality of water (UNDAC, 2008). [↑](#footnote-ref-14)
15. The establishment of shorefront infrastructure, and especially large hotel complexes, has been long known as one of the main anthropogenic changes to coastal ecosystems caused by human activities, which can lead to: a) high vulnerability of buildings and communities to the impacts of floods and storms; b) degradation or destruction of coastal ecosystems; c) declining water quality near the shore and quality of freshwater inflows to estuaries; d) reduced access for local community to the shore; and e) decline of fisheries (Olsen and Christie, 2000, in Marale, 2013). [↑](#footnote-ref-15)