INTRODUCTION

Tourism is a vital tool for economic development and poverty reduction (UNWTO 2002). It provides a multitude of recreation facilities. Tourism is defined as “the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes” (UNWTO 2013) and recreation as “Activity done for enjoyment when one is not working” (Oxford Dictionary). Annually, it is estimated to be worth US$ 30 000 million and contributes to 9 per cent of global GDP and represents 1 of 11 jobs in the world (UNWTO 2013). It is one of the largest and fastest growing sectors in the world (UNWTO 2013). Coastal destinations feature as one of the most common types of tourism (UNEP/Nairobi Convention Secretariat and WIOMSA 2009). The coastal area, a prolific source of biodiversity and ecosystem services, provides numerous opportunities for tourism and recreation (Beatley and others, 1994) such as swimming, sun bathing, pleasure boating, snorkelling, reef walking and SCUBA diving. The open ocean also offers many opportunities for tourism and recreational activities that include sport fishing, whale and dolphin watching and cruise tourism.

Coastal tourism can also contribute to degradation of the marine environment, as the natural environment, tourism and recreational activities are inextricably linked. Nevertheless, the economic benefits of tourism and recreation in generating employment, local income and foreign exchange is sufficiently important that the relationship between tourism, biodiversity and ecosystems services warrants aggressive conservation measures to ensure sustainability of the tourism sector. Tourism is however also subject to external influences. The recent international financial crisis has had adverse impacts on the WIO tourism industry (Mazilu and others, 2011).

TOURIST ATTRACTIONS IN THE WESTERN INDIAN OCEAN

The WIO region provides a range of unique attractions and recreational activities for local and international tourism. Coastal tourism is very popular among local populations, particularly in the Small Island Developing States (SIDS) and coastal region of the mainland states of the WIO region. Coastal tourism in the WIO is both a direct and indirect driver of the state of the coast. The region has all the physical, environmental and cultural attractions to make the tourism industry a viable option for their socio-economic development. The marine environment offers many opportunities for employment to local communities and in places provides economic incentives to protect the marine ecosystems. The range of employment opportunities include hotels, restaurants, housing and residential activities, vending, beach hawking, agriculture and fishing activities. The SIDS and East Africa mainland countries, particularly islands, are associated with sea, sand and sun - all features of the coastal and marine environment that
attract tourists.

The main tourism features of the Western Indian Ocean (WIO) include sandy beaches, clean water, abundant sunshine, mangrove forest (Box 28.1), and lagoons and seas (UNEP 2003). The region has a high diversity of coral reefs with significant economic value (Barton 1994), particularly for dive tourists. The economic benefits of dive tourism was estimated to be an additional US$ 75 000 – 174 000 annually in Kenya (Crabble and McClanahan 2007). The tourism sector in Madagascar is still relatively undeveloped taking into account the size and unique biodiversity of the country (Picard 2010). The clear turquoise water of the small islands of Nosy Be and Ifaty, with a 90-km long coral reef and Ile Sainte Marie off the east coast are ideal for diving, snorkeling and fishing. In addition, the rich and distinctive feature of the cultures of the WIO countries also offers many potential opportunities for the development of the tourism sector in the region (Honey and Gilpin 2009).

Mauritius and Seychelles are identified as exclusive beach and sun destinations. Marine-related tourism activities in Kenya, Madagascar, France (Reunion), South Africa and Tanzania, which are primarily famous for wildlife parks and mountain destinations, currently make a smaller contribution to the national economy. However, the potential for growth is considerable. The natural beauty, wildlife and historic heritage of the Mozambican coastline has excellent opportunities for beach, cultural, and eco-tourism. The Bazaruto Archipelago is first on the “Top 10 Tourist Attractions” in the country as measured by the Global Tourism Places (2013). In Kenya, the Lamu archipelago and Malindi township with beautiful beaches are the 5th and 9th among the 10 top tourist attractions in the country (Global Tourism Places 2013). Zanzibar, Mafia and Pemba islands (Wagner 2004) all have well-developed coastal tourism sectors and are rated the 4th, 6th and 8th top tourist attractions in Tanzania (Touropia 2013, www.touropia.com).

In the WIO region, whale and dolphin watching is a popular tourism attraction. It contributes significantly to the local economies in Zanzibar and Mozambique (Berggren and others, 2007). Whale watching (humpback whales) activities are increasing in many areas, such as in the Sainte Marie Channel (northeast Madagascar), Reunion and Mayotte (Kiszka and others, 2009). Dolphin watching activities are also important in Mauritius (Box 28.2).

Recreational fishing refers to fishing for food or to release, as a leisure activity or hobby. Sport fishing clubs and services attracting tourists exist in all WIO countries, most notably in Kenya, Mauritius, South Africa and the

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**BOX 28.1.**

**MANGROVE FOREST FOR ECOTOURISM IN KENYA**

![Mangrove boardwalk entrance at Gazi Bay, Kenya. © José Paula.](image)

The development of mangroves as ecotourism sites is growing worldwide. At Gazi, a coastal village in Kenya, the women have established a community-based ecotourism project which profits from the value of the mangrove’s scenic beauty and biodiversity. The Gazi Women Mangrove 300 m Boardwalk is a community-based conservation effort. The building of the mangrove boardwalk was funded by the City Council of Overijse (Belgium) and the International Ocean Institute (IOI), through the Kenya Marine and Fisheries Research Institute, employing local villagers for construction. Almost 100 per cent of the profit generated through the boardwalk goes into the Gazi community to improve health care and the physical facilities of Gazi Primary school as well as provide scholarships to poor children from the village. About 100 school children have been supported by the ecotourism project and two main water systems under the “clean water for all” initiative have been supported through the project, providing water to more than 1 500 persons in the village (James Kairo pers comm).

The potential of mangrove forests for tourism is still to be exploited as it is the case in other countries (Ayob and others, 2009, Salam and others, 2000, Mangrove Action Project 2013).
Seychelles (IUCN 2004). In South Africa, recreational fishing attracts many dedicated to the growing sport, increasingly an activity focused on sustainability. All recreational fishing requires a license, and “catch size and bag limit” must be adhered to, in order to protect local marine life.

The Indian Ocean is an emerging cruise destination (Dowling 2006). South Africa and East African ports have established some cruise trade. The expansion of cruise tourism is on many national growth and development agendas (Kohler 2003, Mwakio 2013, Government of Mauritius 2013). Some 10,000 tourists in cruise vessels visited the island of Seychelles in 2000 (Seychelles Vision 21) and the number increased to 200,000 in 2010. In Mauritius, the cruise segment registered an improvement during the period 2010/2011 with 27 calls and 26,751 passengers. For the same period, US$ 234,000 were derived directly from cruise tourism and some US$ 18 million from indirect activities.

CONTRIBUTIONS AND IMPACTS

Benefits and opportunities

Africa and the WIO countries are increasingly attracting international tourists. In Africa, an estimated increase of 6 per cent of international arrivals in 2012 was reported (UNWTO 2013) with 52.4 million international tourist arrivals, exceeding the 50 million mark for the first time. This is the second fastest growth by region after Asia and the Pacific.

Within the WIO region (Fig. 28.1), South Africa was by far the biggest tourism attraction where tourist arrival grew by 10 per cent in 2012 to over 9 million (Table 28.1). Other regional destinations that experienced growth in tourist arrivals were Tanzania (24 per cent), Madagascar (13 per cent) and the Seychelles (7 per cent).

Socio-economy of tourism

The tourism and recreation sector is a global force for socio-economic development, promotion of economic growth and alleviating poverty (Steiner 2006, Richardson 2010, Dwyer and Spurr 2011) with direct economic as well as significant indirect and induced impacts. It promotes infrastructure development and maintenance such as road networks, airport facilities and amenities in the coastal and beach zones, which have the potential to benefit the whole country and its local population (Phillips and Jones 2006, Seetanah and others, 2011).

In the WIO region, the growth rate, measured as tourism income for all the countries, was quite encouraging as shown in Table 28.1. South Africa has the greatest share in tourist receipts (29.8 per cent) followed by Tanzania (4.7 per cent).
VI. Assessment of other human activities and the marine environment

Table 28.1. Trend in International Tourist Arrivals and Receipts in the WIO countries for the period 2011 to 2013.

<table>
<thead>
<tr>
<th>Destinations</th>
<th>International Tourist Arrivals</th>
<th>International Tourism Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1 000s)</td>
<td>Change (%)</td>
</tr>
<tr>
<td>Comoros</td>
<td>19</td>
<td>...</td>
</tr>
<tr>
<td>Kenya</td>
<td>1 750</td>
<td>1 619</td>
</tr>
<tr>
<td>Madagascar</td>
<td>225</td>
<td>256</td>
</tr>
<tr>
<td>Mauritius</td>
<td>965</td>
<td>965</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1 902</td>
<td>2 113</td>
</tr>
<tr>
<td>Seychelles</td>
<td>194</td>
<td>208</td>
</tr>
<tr>
<td>Somalia</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>South Africa</td>
<td>8 339</td>
<td>9 188</td>
</tr>
<tr>
<td>Tanzania</td>
<td>843</td>
<td>1 043</td>
</tr>
</tbody>
</table>

Source: UNWTO (2014) | * = provisional figure | ... = figure or data not (yet) available.

per cent) and Mauritius (4.4 per cent). Based on international tourist receipts for 2012, South Africa has the greatest share (67.9 per cent) followed by Tanzania (11.6 per cent) and Mauritius (10.0 per cent). In Seychelles and Mauritius, destinations where the marine environment is the main attraction, tourism plays a major role in the economy, representing 63 per cent and 28 per cent of the GDP, respectively (Table 28.2).

Environment

Tourism, often associated environmental costs, supports conservation through private reserves, communal conservancies, and contributions to public protected areas (Buckley 2008). One main source of revenue contributing to marine ecosystem preservation is derived from visitor fees. In some cases, more than 50 per cent of parks funding is derived from tourism, although the average is typically around 10 per cent (Buckley 2012). For marine protected areas, Needham (2010) has shown that tourist SCUBA divers have a strong inclination to protect coral reefs.

Ecotourism is becoming popular among environmentally conscious tourists. It links areas of high ecological value to low-impact tourism and present opportunities for sustainable environmental tourism development. A deliberate shift towards ecotourism is resulting in benefits to ecosystems, tourist and the local communities alike. Ecotourism in coral reef areas, combined with the ecosystem restoration, has been on-going in the Dar es Salaam Marine Reserve System and is considered an alternative source of income for the local community (Wagner 2004).

Employment opportunities

The tourism industry is an important source of direct and indirect employment. It creates opportunities for the development of small and medium scale artisanal industries. For example, in Seychelles and Mauritius, it contributes 26.3 per cent and 12.1 per cent to national employment respectively (Table 28.2). Its contribution to GDP, particularly in Seychelles (63.0 per cent) is quite substantial, whilst proving to be also significant in Mauritius (28.0 per cent). At the other extreme, Comoros records the lowest portion of employment in the tourism industry, and an industry contribution of only 6.8 per cent to its GDP.

Impacts of tourism

Although tourism has immense potential to enhance socio-economic development and contribute to environmental rehabilitation, it also has a wide range of negative social and environmental impacts (Gössling 2006, Gössling and Schumacher 2010, Gössling and others, 2011) as shown in Table 28.3. The health status of the marine environment in the WIO is increasingly under threat and the additional pressure of tourism and recreation is a growing environmental concern.

Poverty in many countries of the region has led to sex trade in coastal regions which have the right ingredients to draw tourists from all over the world (Kibicho 2005, BBC 2014, IRIN 2015). Sexually transmitted diseases including the HIV/AIDS, are spreading within these coastal communities mostly due to the booming opportunities for diverse sexual persuasions (IRIN 2015). Beira’s municipal government and local non-governmental organisations plan to...
Western Indian Ocean

28. Tourism and recreation

Economic

- Lack of foreign investors
- Foreign investment leads to back flow of money
- Lack of adequate infrastructure (access roads and transports)
- Inadequate accommodation
- Privatisation of beaches – loss of public access
- Use of beaches and intertidal zone hinder fishing activities and mariculture
- Lack of adequate qualified staff
- Loss of fishing grounds due to creation of marine parks

Social

- Insufficient code of conduct
- Insufficient consultation and participation of local communities in decision making
- High levels of crime in tourist areas, including beaches (Ryan and Kinder 1996, Ratcliffe 2004)
- Possible harassment of tourists, often on beaches (Chepkwony and Kangogo 2013)
- Prostitution and sex tourism on the increase (Kibicho 2005, Picard 2007)
- Incidents of sexual assault and sexual victimization on cruise ships (Klein and Poulston 2011)
- Commercialisation of religious rituals, traditional ethnic rights and festivities
- Lack of educational facilities for tourists
- Friction, conflict and dishonesty between tourists from overseas and local population (Cohen 1984)
- Conflict due to cultural, historical and socio-economic differences between residents and international tourists, and internal divisions within communities
- Conflict with traditional and commercial coastal resource uses (Picard 2007)
- Discontent caused by a sense of social marginalisation of local inhabitants (Ryan 2001)
- Increased population in coastal towns

Environment

- Inadequate monitoring of ecosystems
- Pressure for property development, tourism operations and visitor management rights inside protected areas (Buckley 2012)
- Inadequate Environmental and Social Impacts Assessment
- Area management plans missing
- Protected areas often become inhabited
- Pollution eg sewage from hotels
- Habitat degradation eg on corals due to trampling
- Beach vegetation removal for hotel construction
- Freshwater scarcity
- Overfishing of certain species as a result of tourists demand eg lobsters
- Digging coral sand for construction
- Anchor damage
- Clearing of mangroves for construction
- SCUBA divers and snorkelers cause substantial damage to coral reefs (Davis and Tisdel 1996, Meyer and Holland 2009, Rouphael and Hanafy 2007)
- Oil-spills from dive-boats
- Leasing tourism operating rights often detrimental to community wellbeing and biodiversity conservation (Buckley 2008)

Political

- Lack of socio-political stability
- Too many actors involved in decision making
- Conflicting local versus national legislation
- Corruption
- Land conversion for hotel and infrastructure development resulting in social conflict between the local population and the authorities (Sunlu 2003, Gössling 2006)
- Shift of user-rights from local communities to the government


<table>
<thead>
<tr>
<th>Countries</th>
<th>Contribution to GDP (%)</th>
<th>Leisure travel spending (% of GDP)</th>
<th>Business travel spending (% of GDP)</th>
<th>Forecast for 2023 (%/a)</th>
<th>Number of jobs</th>
<th>% of total employment By 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comoros</td>
<td>6.8</td>
<td>84.3</td>
<td>15.7</td>
<td>3.3</td>
<td>5 000</td>
<td>2.4</td>
</tr>
<tr>
<td>France (Reunion)</td>
<td>7.4</td>
<td>81.2</td>
<td>18.8</td>
<td>3.8</td>
<td>7 500</td>
<td>3.1</td>
</tr>
<tr>
<td>Kenya</td>
<td>12.5</td>
<td>66.4</td>
<td>33.6</td>
<td>4.5</td>
<td>232 500</td>
<td>4.3</td>
</tr>
<tr>
<td>Madagascar</td>
<td>15.5</td>
<td>93.0</td>
<td>7.0</td>
<td>3.9</td>
<td>212 000</td>
<td>4.5</td>
</tr>
<tr>
<td>Mauritius</td>
<td>28.0</td>
<td>60.4</td>
<td>39.6</td>
<td>4.8</td>
<td>69 500</td>
<td>12.1</td>
</tr>
<tr>
<td>Mozambique</td>
<td>7.5</td>
<td>59.8</td>
<td>40.2</td>
<td>5.6</td>
<td>255 000</td>
<td>2.7</td>
</tr>
<tr>
<td>Seychelles</td>
<td>63.0</td>
<td>92.7</td>
<td>7.3</td>
<td>2.8</td>
<td>11 000</td>
<td>26.3</td>
</tr>
<tr>
<td>Somalia</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tanzania</td>
<td>13.2</td>
<td>83.0</td>
<td>17.0</td>
<td>6.4</td>
<td>422 000</td>
<td>4.0</td>
</tr>
<tr>
<td>South Africa</td>
<td>9.8</td>
<td>67.2</td>
<td>32.8</td>
<td>4.4</td>
<td>619 500</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 28.3. Threat and challenges related to tourism development in the Western Indian Ocean. Adapted from Gössling (2006).

<table>
<thead>
<tr>
<th>Economic</th>
<th>Social</th>
<th>Environment</th>
<th>Political</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of foreign investors</td>
<td>Insufficient code of conduct</td>
<td>Inadequate monitoring of ecosystems</td>
<td>Lack of socio-political stability</td>
</tr>
<tr>
<td>Foreign investment leads to back flow of money</td>
<td>Insufficient consultation and participation of local communities in decision making</td>
<td>Pressure for property development, tourism operations and visitor management rights inside protected areas</td>
<td>Too many actors involved in decision making</td>
</tr>
<tr>
<td>Lack of adequate infrastructure (access roads and transports)</td>
<td>High levels of crime in tourist areas, including beaches (Ryan and Kinder 1996, Ratcliffe 2004)</td>
<td>Inadequate Environmental and Social Impacts Assessment</td>
<td>Conflicting local versus national legislation</td>
</tr>
<tr>
<td>Inadequate accommodation</td>
<td>Possible harassment of tourists, often on beaches (Chepkwony and Kangogo 2013)</td>
<td>Area management plans missing</td>
<td>Corruption</td>
</tr>
<tr>
<td>Privatisation of beaches – loss of public access</td>
<td>Prostitution and sex tourism on the increase (Kibicho 2005, Picard 2007)</td>
<td>Protected areas often become inhabited</td>
<td>Land conversion for hotel and infrastructure development resulting in social conflict between the local population and the authorities (Sunlu 2003, Gössling 2006)</td>
</tr>
<tr>
<td>Use of beaches and intertidal zone hinder fishing activities and mariculture</td>
<td>Incidents of sexual assault and sexual victimization on cruise ships (Klein and Poulston 2011)</td>
<td>Pollution eg sewage from hotels</td>
<td>Shift of user-rights from local communities to the government</td>
</tr>
<tr>
<td>Lack of adequate qualified staff</td>
<td>Commercialisation of religious rituals, traditional ethnic rights and festivities</td>
<td>Habitat degradation eg on corals due to trampling</td>
<td></td>
</tr>
<tr>
<td>Loss of fishing grounds due to creation of marine parks</td>
<td>Lack of educational facilities for tourists</td>
<td>Beach vegetation removal for hotel construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friction, conflict and dishonesty between tourists from overseas and local population (Cohen 1984)</td>
<td>Endangered species such as turtles often tourist’s attractions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conflict due to cultural, historical and socio-economic differences between residents and international tourists, and internal divisions within communities</td>
<td>Freshwater scarcity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conflict with traditional and commercial coastal resource uses (Picard 2007)</td>
<td>Overfishing of certain species as a result of tourists demand eg lobsters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discontent caused by a sense of social marginalisation of local inhabitants (Ryan 2001)</td>
<td>Digging coral sand for construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased population in coastal towns</td>
<td>Anchor damage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clearing of mangroves for construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCUBA divers and snorkelers cause substantial damage to coral reefs (Davis and Tisdel 1996, Meyer and Holland 2009, Rouphael and Hanafy 2007)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil-spills from dive-boats</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leasing tourism operating rights often detrimental to community wellbeing and biodiversity conservation (Buckley 2008)</td>
<td></td>
</tr>
</tbody>
</table>
launch HIV/AIDS awareness-raising campaigns in areas like Miramar, to reach tourists, most of whom are European, as well as locals, including sex workers and fishermen (IRIN 2015). Whilst any social problems have their origin in the sex trade, other root-causes of the problems should also be addressed. For example, the creation and funding of alternative small-scale tourism projects has been suggested as a starting point to finding a long-term solution to the social problems in the coastal tourism areas of Kenya (Kibicho 2005).

**POLICY RESPONSES**

Sustainable coastal development needs to adopt a long-term planning and management timeframe (Marafa 2013) to promote sustainable tourism (Nash and Butler 1990, May 1991, Butler 1993) in order to maintain environmental and cultural integrity (Puppim de Oliveira 2005). This will help generate income, employment and conserve the local ecosystems and cultural heritage (UNEP 2003). A multi-faceted approach and action are needed, that includes enhanced sensitization of the assets and importance of the marine environment, instilling a feeling of ownership of the environment to promote stewardship of the coastal and marine environment amongst the various marine users and the development of interactive and participatory planning (Buckley 2012). The WIO countries have to rethink their position to strive for a bigger global market share. They should deploy more effort to diversify their coastal and marine tourism products and continue to innovate and improve coastal-based destinations in order to sustain the tourism industry.

**Promote mutually beneficial tourism and conservation**

Of particular interest is the ability of tourism to motivate large-scale positive change in land use by generating financial and political support for conservation (Buckley 2012). While this is increasingly urgent in the WIO region in view of the on-going environmental challenges, the growing popularity of coastal tourism has prompted governments such as Kenya to approve seemingly unlimited and ad hoc development in favour of the tourism sector (Su 2010). Hotels and other tourism infrastructure are being constructed without due consideration of adequate set-back distances which result in increase in coastal erosion (Phillips and Jones 2006). This will be compounded by the impacts of climate change, particularly sea level rise and the increased frequency and intensity of coastal storms. Research priorities are the need to develop quantitative sustainability indicators (Butler 1999) and establish environmental accounting measures for coastal and marine tourism (Buckley 2012).

**Promote whale and dolphin watching**

Whales and dolphins play a very important role in the health of the ocean environment and provide a source of income through whale watching tourism (see eg www.whalefacts.org/why-are-whales-important/). If responsibly developed and managed, it could bring much needed income to the region. To make it sustainable, proper adaptive management should be developed. This could include:

- Limiting the number of licenses issued and the maximum number of tourists and vessel trips per day;
- Including the presence of marine mammal experts on board to assess if the type of performed behaviour is compatible with the boat approach; and,
- Instigating periodic monitoring and reporting of potential impacts of the activity on the cetacean population.

**Encourage cruise tourism and manage impacts**

Though cruise vessels can cause much damage to the environment, some cruise vessels have made some significant investments (The Ocean Conservancy 2002) in advanced solid waste and wastewater processing equipment. They have adhered to the Cruise Industry Waste Management Practices and Procedures, to promote waste minimization, reuse, and recycling throughout the industry (The Ocean Conservancy 2002). Nevertheless, pollution due to cruise vessel effluents into the marine environment continues. The Ocean Conservancy (2002) has made the following recommendations, to address the problem:

- Reduce and regulate cruise ship discharges
- Improve monitoring and inspections
- Strengthen enforcement mechanisms
- Improve air quality control
- Develop education and training programmes
- Improve research and development

It has also been noted that various payments, including the high cost of visas and the time taken to process passports, have discouraged cruise ships operators from including some destinations, such as Bazaruto in Mozambique and Anakoa (Nosy Be) in Madagascar (UNEP/Nairobi Convention Secretariat and WIOMSA (2009). Efficient and effective port services for cruise vessels that visit the
Whale and dolphin watching is becoming an increasingly popular recreational and eco-tourism activity (Higham and Lück 2008, Hoyt and others, 2009, Mustika 2013). O’Connor and others (2009), estimated that 13 million people participated in whale watching in 119 countries with direct revenue estimated at US$872.7 million and indirect revenue of US$2 113.1 million. The level of interest in this activity has led to popular support for the protection of marine mammals from commercial whaling and other threats such as by-catch and ship strikes (Draheim and others, 2010, Christensen and others, 2009, Cunningham and others, 2012).

There is growing concern over the effects of the tourism industry on whale and dolphin behaviour and conservation (Williams and Ashe 2007, Jensen and others, 2009, Williams and others, 2011). A case study off the island of Zanzibar has shown that dolphin watching alters the behaviour, both individual and population level of Indo-Pacific bottlenose dolphins (Stensland and Berggren, 2007, Berggren and others, 2007).

Whale and dolphin watching in Mauritius has grown by an average of 56 per cent annually since 1998 (O’Connor and others, 2009). The daily average number of whale watching boats ranges between 30-40, and up to 80 boats in peak season. In 2009, the Mauritius Marine Conservation Society recorded 64 operators offering daily trips to view and swim with spinner and Indo-Pacific bottlenose dolphins, with most companies employing more than one boat. In addition, there are large catamarans, normally in association with hotels that offer day cruises that include diving and snorkelling and a variety of water sports, but that also may have cetacean encounters while at sea. The high concentration of boat and swimmer interaction can potentially have impacts (both long and short-term) on the resident cetacean populations.
VI. Assessment of other human activities and the marine environment

South African coastline are required, to continue to attract cruises and sustain the industry.

**Promote research and monitoring**

Monitoring and research related to tourism activities remains negligible in WIO countries except for Kenya and South Africa (Gössling 2006). Global tourism-related research topics have long been identified (May 1991) and have not changed much except for the confounding element of climate change (Buckley 2012). Such research priorities are equally applicable to sustain coastal tourism development in the WIO region, and a starting point would be preparation of an updated tourism research agenda.

There are a growing number of students from overseas countries involved in research on the tourism industry in the WIO region, though it remains mostly uncoordinated (Gössling 2006). Local researchers should be provided with facilities and encouragement to undertake research and publish findings, and research should be catalogued and made widely-available, electronically. As an incentive, some international journals are already providing generous access and lower publication rate to researchers from developing countries (Gössling 2006).

**Establishment of Marine Protected Areas**

The effectiveness of Marine Protected Areas (MPA) in increasing fish stocks and diversity has been recognised (e.g. Gell and Roberts 2003). Coral reefs which protected within MPAs are increasingly being considered as attractive sites for recreational SCUBA diving (Davis and Tidshall 1996, Green and Donnelly 2003) and other tourist activities, generating significant revenue. In the Caribbean and Central America, the revenue generated from the associated fees is estimated at US$ 1–2 million (Green and Donnelly 2003). The protection of existing MPAs and establishment of more MPAs should be promoted with increases in fees and licenses where they exist, for increased revenue for the benefit of the tourism industry and local population.

**Curbing Piracy**

Piracy in the Western Indian Ocean has emerged and escalated as a major security concern for countries in the WIO region. Initially confined to the region off Somalia, it rapidly spread further south, beyond the equator. In Seychelles, it particularly affected the tourism and fishing industries. Tuna fishing activities alone are reported to have declined by 54 per cent from January to August 2009 due to the risk of piracy. Some tourism activities such as boat charters to outlying islands were also severely affected. However, it has been noted that attacks carried out by Somalia-based pirates have continued to decline since the peak in 2011 when there were 175 incidents (NATO 2014), down to only 23 incidences in 2013 (Madsen and others, 2014). Pirate attacks on cruise liners are also a serious threat to the cruise ship industry in the region and this risk has increased significantly (Idarat Maritime 2013).

**Improving coastal and shoreline management**

New approaches in shoreline management are needed to address environmental factors, as are policy frameworks to manage beaches in a sustainable way for coastal tourism development. Four issues are responsible for the changing relationship between coastal tourism and shoreline management: an increase in, and the changing nature of tourism-related pressure at the coast; advances in shoreline management approaches including the adoption of Integrated Coastal Zone Management (ICZM) principles; the geomorphologic behaviour of coastal systems; and, climate change and sea level rise (Jennings 2004).

In the WIO, the nature and magnitude of coastal tourism has fundamentally changed over time. Coastal urbanisation and the presence of the tourism industry and its activities within potentially fragile environments such as sandy beaches, coral reefs, mangroves and seagrasses have led to pollution and serious threats from erosion and flooding (Mwakumanya and Bdo 2007, Breetzke and others, 2008, Government of Mauritius 2010).

**Introducing beach awards systems**

The Blue Flag Programme (www.blueflag.org), which has been claimed provide an excellent opportunity to promote sustainable coastal development (Thomsen 2001), improve coastal infrastructure and attract international tourists (Seetanah and others, 2011) has been adopted by many countries around the world (McKenna and others, 2011). It is centred on 33 well-defined criteria, including standards for water quality, safety, environmental education and information, the provision of services and general environmental management. These criteria need to be sustained for one year for a beach or marina to be eligible for status renewable the subsequent year.

Currently, only South Africa and Reunion are implementing the Blue Flag Programme, though other WIO countries should consider participating. They should also...
establish and place emphasis on their own criteria and conduct basic research into the preferences and priorities of beach users and assess the cost-effectiveness of improvements in terms of increase in visitor numbers and improved environmental quality.

**Promoting domestic tourism**

While domestic tourism stimulates local economies and should be encouraged, it is often neglected in favour of international tourism with coastal infrastructure often developed to favour overseas tourists. WIO countries should rethink their tourism development approach. Coastal tourism within the region represents a considerable opportunity for growth and development that needs to be exploited. Studies should be conducted to identify strengths and weaknesses to develop sustainable domestic tourism in the coastal zone, and strategies developed to encourage a strong domestic tourism market that attracts locals towards coastal recreational and tourist activities.

**CONCLUSIONS**

According to *Tourism Towards 2030* (UNWTO 2014), the number of international tourist arrivals worldwide is expected to increase by an average of 3.3 per cent a year over the period 2010 to 2030. In absolute numbers, international tourist arrivals will increase by some 43 million a year, compared to an average increase of 28 million a year during the period 1995 to 2010, reaching 1 400 million by 2020 and 1 800 million by the year 2030 (UNWTO 2014). International tourist arrivals in Africa will grow at double the rate (+4.4 per cent a year) of that in advanced economy destinations (+2.2 per cent a year). Africa is expected to more than double its arrivals in this period, from 50 million to 134 million. Countries in the WIO region should get prepared to improve their infrastructure and facilities to cope with the substantial increase.

For decades, the source for international tourism in the region has traditionally been from Europe. For instance, in Mauritius in 2013, 47.9 per cent of international tourists were from Europe and 14.4 per cent from Reunion (Digest of Statistics 2014). Emerging economies, particularly Asian countries should be the focus of future marketing efforts, as these countries have shown an increase in the number of tourists travelling abroad. China is becoming a large potential market which should be explored. Boosted by rising disposable incomes, fewer restrictions on foreign travel and an appreciating currency, Chinese tourism spending abroad has increased almost tenfold in the 13 years since 2000 (UNWTO 2014). The Russian Federation climbed one place in 2013 to become the fourth largest outbound market, following a 25 per cent increase to US$ 54 000 million (UNWTO 2014). Mauritius and Reunion are already planning joint ventures to attract more Chinese tourists. Countries in the region should develop regional strategies to attract more tourists in addition to those from the traditional sources (mainly Europe). Many countries such as Mozambique, Tanzania and Kenya are expected to benefit from new offshore oil and gas discoveries in particular, from which earnings can be invested into improving infrastructure with hopes of also attracting more tourists from non-traditional economies.

**References**


VI. Assessment of other human activities and the marine environment


Department of Geography Publication Series No 37, pp. 27-43. University of Waterloo. Waterloo, Ontario


December 2014


NATO (2014). NATO Shipping Centre Piracy statistics. Available at http://www.shipping.nato.int/Pages/Piracystatistics.aspx


VI. Assessment of other human activities and the marine environment


Richardson, B. (2010). The Contribution of Tourism to Economic Growth and Food Security. USAID Mali, Office of Economic Growth. Michigan State University, USA


Salam, M.A., Ross, L.G. and Beveridge M.C.M. (2000). Eco-tourism to protect the reserve mangrove forest the Sundarbans and its flora and fauna. Anatolia 11(1), 56-66


Thomsen, F.B. (2001). Blue flag campaign: A practical tool for integrated coastal management. In Inter-Coast: International Newsletter of coastal management. University of Rhode Island. Coastal Resources Center, USA


UNEP/Nairobi Convention Secretariat and WIOMSA (2009). Transboundary Diagnostic Analysis of Land-based Sources and Activities Affecting the Western Indian Ocean Coastal and Marine Environment. UNEP Nairobi, Kenya


