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# **A vision of ecotourism on the Comoros Islands**

## **Abstract:**

Despite their significant potential for ecotourism, the Comoros islands are thoroughly ignored in the international literature on the topic. In this paper we offer the first comprehensive assessment of the Comoros in terms of their socio-economic, demographic, geographic and political setting, and how this setting translates into opportunities and barriers for ecotourism. We present four sites that provide evidence for a realistic ecotourism vision. Notwithstanding the potential of these sites for generating tourist income, we assess a number of critical political and infrastructure challenges that will have to be overcome in order to turn the vision into reality.

**Keywords:** Ecotourism, Comoros Islands, economic development, SIDS, islands.

## **1. Introduction and Context**

Tourism is said to be responsible for environmental degradation. It is argued that mass tourism causes the destruction of landscapes and forests, results in air and water pollution, destroys coastlines, and is a key driver of global habitat loss (Croall 1995, Holden 2003, Lukashina *et al.* 1996). Owing to these negative impacts, “ecological tourism” or “ecotourism” is becoming increasingly important. According to the International Union for Conservation of Nature (IUCN), ecotourism is “environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features — both past and present) that promotes conservation, has low visitor impact, and provides for beneficially active socio-economic involvement of local populations. (IUCN 2016)” Ecotourism is particularly important for small island developing states, as these are most vulnerable to the negative impacts of tourism. Many researchers have assessed the potential and impacts of sustainable tourism on small islands, such as Galapagos Islands (Mathis and Rose 2016), Andaman and Nicobar Islands (Chand *et al.* 2015), Tahiti (d’Hauteserre and Funck 2016), Solomon Islands (Rudkin *et al.* 1996), British Virgin Islands (Townsend 2003), and many more (Diamantis 2000, Hall and McArthur 1993, Kafyri *et al.* 2012, Tershy *et al.* 1993, Valentine 1993). However, despite the significant potential for ecotourism, the Comoros islands are thoroughly ignored in the international literature on this topic. In this article we seek to fill this knowledge gap by assessing the potential of these islands in terms of their socio-economic, demographic, geographic and political setting. Our article adds to the existing body of knowledge on the challenges faced by the islands for successfully turning the ecotourism vision into reality.

## 1.1 The Comoros

The Comoros are an archipelago of four islands located in the Indian Ocean between Madagascar and Moçambique, with a total land area of 2,236 km<sup>2</sup>. Three of the four islands, Grand Comore (1,147 km<sup>2</sup>), Mohéli (290 km<sup>2</sup>), and Anjouan (424 km<sup>2</sup>), form the independent republic of the Union des Comores, whilst the fourth, Mayotte (374 km<sup>2</sup>), is under French administration (Fig. 1). The capital Moroni is located on the largest island, Grand Comore. The islands are inhabited by a mainly sunni-muslim population of about 450,000, growing at about 3%/a, speaking Comorian, Arabic, and French. With a per-capita GDP of around \$400, but also in terms of human development (education, health, etc) indicators, the Comoros rank amongst the least developed in the world, as well as in Africa (Shareef and Hoti 2005). Despite the local economy being largely based on agriculture (about 45% of the land area is used for cropping of rice, maize, cassava, bananas etc, and a negligible amount for goat and cattle pasture) and small-scale fishing, the growing population's food security is fragile, and dependence on food imports (between 20% and 25% of GDP, for example meat and rice) is high. Main export commodities are vanilla, cloves, and ylang-ylang, but these exports are outstripped by imports, with the trade deficit hovering around 20% of GDP. The country's industrial (wood, oil, soap) and skill bases are weak, and innovation and investment are lacking (for an inter-island comparison see UNCTAD 2013, Fig. II.13, p. 86), leading to sub-average economic development (GDP growth of +0.9%/a, however decline of 1.7%/a on a per-capita bases; Holzner 2011).

The islands are of volcanic origin, with Mount Karthala being both the highest point of the country, and one of the world's most active volcanoes, resulting in significant

geothermal energy potential. The climate is tropical humid with high temperatures year-round, and a November-to-May wet season. About 40% of the land area is forested. Due to the mountainous terrain and large altitude differences, the Comoros feature very diverse ecosystems, ranging from tropical rainforest to savannah. As a result of the islands' geographical isolation, a significant amount of species are endemic and – as a consequence of poverty and human pressure on habitats – threatened by extinction (UNEP 2012; ECDD 2013). A UNEP-sponsored project led to the initiation of a national biosafety framework (National Department of Environment Forests and Agricultural Strategies 2005), including objectives related to species and habitat protection, in particular endemic ones.

Despite significant potential, especially for the extensive coral reef, islets and beaches of the island of Mohéli, and the volcanic landscape of Grand Comore, tourism in the Comoros is at present underdeveloped and contributes only 3% to national GDP (Shareef and Hoti 2005; Holzner 2011, see Tab. 1). This is mainly due to the country's political instability, including numerous coups d'état since its independence from France in 1975, and recurring inter-island tensions, but also due to competition from neighbouring regions with well-developed tourist infrastructure, such as Madagascar, the Seychelles, and Réunion (Euromonitor International 2013), and perhaps to a minor extent due to “bypassing” of Islamic countries by non-muslim tourists (Din 1989).

The country profile described so far contains three aspects suggesting a thorough examination of the Comoros' future potential for ecotourism: First and foremost, the country is in dire need of sustained income; second, its tourism assets are virtually

untapped; and third, it offers unique and spectacular terrestrial and marine habitats including many endemic species. In addition, whilst the literature covers the state of ecotourism in many neighboring regions<sup>1</sup>, there is not a single assessment for the Comoros, despite their exceptional natural endowments. In this work, we therefore offer a comprehensive vision for ecotourism in the Comoros Islands. In the following Section, we describe in detail four sites, selected by tourism expert from the Universite Des Comores for outstanding qualities suited for ecotourism, showing in particular how ecotourism in these sites could contribute to restoring and safeguarding fragile and threatened local habitat whilst alleviating poverty. In Section 3 we then offer a thorough discussion of the barriers and prerequisites for realizing tourist streams and associated incomes. Section 4 concludes with critical remarks and insights.

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<sup>1</sup> Garcia *et al.* 2013; Kenya: Weaver 1999; Madagascar: Maille and Mendelsohn 1993; Mauritius: Gössling *et al.* 2008; Mayotte: Gay 2012; Mozambique: de Boer *et al.* 2007; Tanzania: Bayliss *et al.* ; Zimbabwe: Gulinck *et al.* 2001.

## 2. Ecotourism Sites

International tourism impacts environments, societies and economies in complex ways. Establishing a place for the ecotourism industry within the Comorian economy has the capacity to redistribute economic resources within the Comoros Islands and contribute significantly to biodiversity conservation efforts (Gossling 1999). The four Comorian sites below have been selected because of their outstanding ecotourism potential, each with the untapped capacity to restore and safeguard fragile local habitats whilst at the same time alleviating poverty. An ecotourism vision for Comoros holds true to the three core criteria of ecotourism, which specify the necessity to: protect and enhance the environment; respect local cultures and provide tangible benefits for host communities; and be educational as well as enjoyable for the traveller (Gossling 1999; Weaver and Lawton 2007), whilst alleviating poverty in the small island developing state (Egoh *et al.* 2016; Jiang *et al.* 2011; Fisher and Christopher 2007; Medina-Muñoz *et al.* 2015).

Protection and enhancement of these ecosystems will result from the classification of areas most in need of conservation efforts. Just as species biodiversity is not equally distributed around the world, neither should be biodiversity conservation efforts. In other words, biodiversity conservation efforts are directed chiefly to the tropics where seventy per cent of the world's biodiversity is located (Gossling 1999). Despite the fact that the Comoros are located in the tropics, and the islands are home to almost 40 bird species that are in need of urgent action, very little efforts have been directed towards conserving these species (UNEP 2012). Significant efforts are needed to protect and conserve these high levels of biodiversity. Tangible benefits for host communities will ensue from enhanced livelihood opportunities and support for local businesses already in place



(Weaver and Lawton 2007; Kiss 2004). A significant correlation between higher tourism intensity and a higher average standard of living has been found in many small island developing states in Africa, the Caribbean and Asia-Pacific (Jiang 2011). Indirect use values of the ecosystems found in these regions, and therefore also in the Comoros, (including carbon sequestration, soil erosion conservation, watershed protection, and fisheries protection in combination with ecotourism revenue) have the capacity to compensate for any foregone profits from development or non-sustainable direct use of natural resources (Gossling 1999). The impact of tourism on economic activities can be quantified using economic modelling. For example, Pratt (2015) employed input-output analysis in combination with computational general equilibrium modelling to appraise the impact of tourism on the economic development of seven small island developing states. The author indicates that tourism generates a significant amount of economic activity.

Given that Comoros' location in the tropics and the existence of significant biodiversity, conservation efforts and income generation can in principle will work together to protect the ecological diversity found in the Comoros islands, alleviate poverty throughout local communities and facilitate educational and unique visits for travellers. In the following subsections we provide some evidence for this assertion; we show that Mt. Karthala, La Grille, Mohéli Marine Reserve and the combined exceptional features of Anjouan would exceed the requirements of the three tenants of ecotourism mentioned above.

### *Mount Karthala*

Located in the southern sector of Comoros' largest island, Grande Comore, the hike up to Mount Karthala showcases one of the world's largest volcanic craters. As the outstanding

end-point of a 7-hour hike, this crater stretches 3km in diameter and is 250m deep. Viewed alongside both a tropical seascape and a 360degree panorama of the island, this site has the highest potential for an ecotourism destination on Grande Comore. Occupying 13,000 ha with an elevation peak at 2,400 m, Mount Karthala is home to numerous species of endemic flora and fauna (WWF 2016). The trail begins at an elevation of 400m where the dominant vegetation type is comprised of dense tropical rainforest coverage and where the majority of the Karthala's endemic birds and a large variety of endemic orchids are found. The five endemic and endangered birds viewable from this point in the hike are the Comoro White-eye, the Comoro Scops-Owl, the Grande Comoro Flycatcher, the Comoro Drongo and the Mayotte Drongo. Vegetation type becomes shorter and less dense around 1,300m, highlighting dry *Phillipia* heaths. As they near the end of their climb visitors will encounter a 400m long earthen tunnel, the unique remnant of historic volcanic activity, which guides visitors up to the edge of the crater. With stable walls and an even pathway, this tunnel offers visitors a distinctive precursor to the exceptional views awaiting them at the end of the tunnel.

As Mount Karthala is an active volcano with hazardous features, all travellers are required to have a local guide during their visit to the crater. Tangible economic benefits for local communities will stem not only from increased employment in guiding tours, but additionally from the organized development of camp grounds for travellers. A mid-scale sleeping area can be established near the freshwater source, around 1600 m above sea level, on a flat scenic location, allowing panoramic views of the west coast of Grande Comore as well as La Grille. A diverse network of walking trails can also be implemented, in order to connect hikers with neighbouring natural beauty in addition to

being accessible to many demographics. The three foundational trails, which the trail network may build upon in the years to come, include the path from Mroumi to Mt. Karthala, from the sleeping area to “La Convalescence,” and lastly from Mt. Karthala to Kurami (the Grand Comore south coast). The establishment of sleeping areas, viewing platforms, and a unique network of walking trails would seek to minimize visitor impact and regulations would need to be put in place in order to safeguard Mt. Karthala’s unique ecosystems.

### *La Grille*

La Grille is the second highest point of Grande Comore, with a peak nearly 1000 m below the crater at Mt. Karthala. La Grille is an inactive volcano lined with rich tropical rainforests and acts as a nesting ground for the same endemic birds found in Karthala. From the top of La Grille at 1,300 m, visitors are greeted with unique views of massive volcanic cones and tropical seascapes. Situated around the peak, these fern-clad cones tower 20-100 m above the crater floor and are surrounded by rainforest vegetation. Because the origin of the mountain is volcanic, freshwater within La Grille is filtered through clean volcanic sand and dispensed at one point along the trail. This is the only natural source of fresh water on the island and is drinkable directly from the spring.

Unlike Karthala, this site is situated just 1 km away from the neighbouring village of Maeni, significantly increasing tourist accessibility. The hike up La Grille takes only three hours, making this destination accessible for tourists with a wide range of experience and fitness levels. The development of minimal-comfort bungalow accommodations along the outskirts of La Grille will offer visitors an alternative to

staying on the coast. Physical accessibility and a diverse list of activities and accommodation sites can be combined to enhance La Grille's potential as an ecotourism destination. As the Comorian Government owns this region, the natural resources found at La Grille are publically available. Currently the region faces the looming threat of freshwater depletion and mountainside soil erosion from the overgrazing of cattle and goats. The establishment of ecotourist infrastructure and activities, including small safaris, nature trekking, bird watching, a hotel, restaurant and shop for handcrafted arts, will help to restore and safeguard this region by firstly, protecting these unique ecosystems from overuse, while simultaneously educating visitors on the distinctive features of La Grille and fostering ecological and cultural appreciation for this region.

The natural wonder of this place works in combination with its close proximity to Maeni, a freshwater source, a diverse range of attractions for different demographics, and a possible inland alternative for overnight accommodation, to make La Grille a promising site for the future of ecotourism in the Comoros.

#### *Mohéli Marine Reserve*

Situated just 65 km to the south east of Grande Comore, the smallest Comorian island, Mohéli, offers a unique tourist destination. The Mohéli Marine Reserve was established in 2001 through the United Nations Development Programme, as the first protected area in the Comoros. The Reserve includes stretches of beach, extensive coral reefs and dispersed mangrove stands. This project was well received by the local community with issues regarding zoning, management of the reserve and boundaries discussed with local fishermen before the initial implementation of the reserve in 2001.

This reserve has the potential to offer ecotourists a wide range of water activities including snorkelling along the predominantly red and white coral reefs, surfing, deep-sea fishing tours with local fishermen, kayaking along the coastline and marked safe swimming areas. The neighbouring village of Neioumachoua currently offers organized diving opportunities for visitors to Mohéli. There is tremendous potential for this industry to be enhanced and facilitate ecotourist access to a number of the Reserve's protected marine mammals, including the Dugong, a number of whale and dolphin species, and four species of sea turtles. Divers in this region are frequently greeted with views of large saltwater crabs, lobsters, crayfish and other crustacean. Local sustenance fishermen currently troll this area seeking Tuna, Barracuda, Marlin, Wahoo and Bonito. Through the establishment of an organized deep-sea fishing/snorkelling and diving ecotourist industry at this site, opportunities would be created for marine-based tours providing another source of income for locals. Much needed infrastructure to make this transition possible will include a partnership with existing accommodations in Neioumachoua and small-scale ecotourist operations. Whilst alleviating poverty, this introduction would simultaneously safeguard the marine ecosystem by regulating annual catches and fostering visitor appreciation for the local fishery.

Members of the community have recognized the potential for ecotourism to thrive at this site and a local development group has begun building rustic accommodation bungalows for tourists along the nearby beaches of Neioumachoua. The current situation calls for more organized rustic accommodation development along the Reserve with a commitment to developing with sustainable tenants in mind, as well as an overall

economic structure for facilitating access to Mohéli's unique features. The Marine Reserve currently protects sea turtle breeding beaches, prevents destructive fishing practices along the coral reefs and maintains biodiversity by protecting the endemic Livingstone Fruit Bat. As for La Grille and Mount Karthala, bringing ecotourism into the Mohéli Marine Reserve would benefit not only local economies but also raise current standards for marine conservation.

### *Anjouan Island*

The third island of Comoros, Anjouan, has a wide variety of natural endowments that suggest a high capacity for ecotourism at this location. Anjouan's largest lake, Dzilandze, sits 900m above sea level and provides freshwater for the entire watershed. Waterfalls surrounded by tropical rainforest resonating with the calls of lemurs and large open spaces suitable for campgrounds are all within short walking distance of the lake. The same species of endemic and endangered birds found on Grande Comore are found on Anjouan and around Dzilandze, with the addition of the nocturnal Anjouan Scops Owl. Whilst bringing income into the community through the creation of management and development job opportunities, classifying Dzilandze as a protected ecotourist destination would safeguard the topmost point of this critical watershed and maintain sustainable usage of the regions resources.

In addition to the natural wonder of Dzilandze, Anjouan has a number of other features that have the potential to be cultivated into ecotourist destinations. One such location is the beach town of Moya, which sits just 70km from Anjouan's capital of Mutsamudu. Numerous historical monuments line the white sand and coral beaches, reminding and

educating both locals and visitors of the island's colonial past. Persian traders established the first formal economy on the island in the eighteenth century, which sought to exploit the abundant fragrances native to the island and export their essences to nations in the global north. Dominant species exploited during this time included jasmine, ylang ylang, and cloves. Still active today, the vast majority of Anjouan's exports go to France as the most basic form of French perfumes.

As Anjouan is commonly known as the Perfume Island, Moya's capacity for ecotourism lies not only within the boundaries of the town, with guided historical tours and education on sustainable essence extraction, but also along the outskirts of the town in the form of numerous water activities. Within the confines of a structured ecotourist industry, Moya Plage has the potential to offer visitors access to safe swimming, snorkelling, deep-sea fishing, and surfing areas. The development of ecotourist guidelines for these activities, including seasonal catch limits, a maximum proximity to reef standard, a recommendation to local businesses to incorporate more reusable materials into their business models, and reserve dumping regulations, would all work together to create sustainable livelihood alternatives for community members and protect the same areas from overfishing, industry pollution, and the deterioration of the coral reefs.

### 3. Discussion

Many destinations in the Global South (including the Comoros) have the distinct advantage of attracting the ecotourist given their minimally impacted, yet grandiose, natural endowments (Cater 2007). In order to begin realizing their range of ecotourism possibilities, the Comoros must take into consideration issues of funding, advertising, political instability, competition from neighbouring regions, and perhaps most critical to this development, how to ensure that sustainable tourism practices are interwoven into the industry itself. In particular, Weaver and Lawton (2007) assert that advertising and marketing can promote ecotourism in small island states, an area that has been neglected for a long time.

Wilkinson (1989) suggests that superior entrepreneurial skills, resources, and commercial power of metropolitan companies work together to enable multi-national corporations to dominate many tourist destinations in the Global South. These intersecting factors combine to establish dominant urban control exerted out at wealthy urban centres worldwide over tourism endeavours in small island nations. This control is aided by direct contact between tourists and airlines, hotels, travel agencies and tour agencies. This phenomenon is defined in the Comoros by the present lack of available transportation from nearby urban areas in other countries. At the time of writing, there were no regular air services to the Moroni-Halaya Airport Grand Comore out of wealthy neighbouring countries such as South Africa or the United Arab Emirates. International airlines and accommodation corporations control the “key links in the tourist flow chain,” including information, advertising, transportation, tour groups and hotels (Evans *et al*, 2012; Pappa



2014). In order to work alongside this existing system instead of against it, ecotourism endeavours in the Comoros will need to first focus their energy into raising visibility with traditional visitors from France, Germany and England, as well as from South Africa and the Indian Ocean. To promote a positive image of ecotourism in the Comoros, environmentally skilled advertising personal should seek to highlight biodiversity and cultural heritage as main attractions throughout the nation. Once an ecotourism presence has been established, successful strategies to increase transportation opportunities will create strong partnerships based on a fair advantage for both parties, including the Department of Tourism and Transport in the Comoros negotiating with a French Charter to reduce Moroni landing taxes as well as an international movement to break high air fares.

Recent research suggests that transport is a key determinant of an island's competitiveness. More specifically, access to an island destination via reliable and affordable transportation is integral for the success of tourism industry on an island (Ritchie and Crouch 2007; World Economic Forum 2013). Additionally, comfort is also a main factor that determines an island's competitiveness. International tourists, predominantly citizens of the Global North, are accustomed to a high level of ease and availability of transport infrastructure (Khadaroo and Seetanah 2007). Their analysis indicates that the transport infrastructure on small island states such as Mauritius plays a vital role in the success of the tourism industry.

The question of marketing and exposure to a newly developed ecotourism industry in the Comoros will only be worthwhile if the presently lacking transport infrastructure is

remedied, otherwise ecotourists will continue to go elsewhere. One successful strategy, implemented by Comoros' neighbouring country South Africa in the 1990s, included the development of the South African Hotel Company and the effective expansion of the Hotel Galawa, which attracted up to 400 visitors/arrivals each week. The cost the trip from Europe to South Africa was fair and competitive, and an accessible charter from South Africa to Comoros significantly impacted the island nation's tourism industry. The hotel was closed due to the cessation of the Emirates flights connecting the United Arab Emirates and South Africa via the Comoros (Comoros EMG 2009; IMF 2006).

In addition to reliable international transport, travel within the island is a major factor in trade and development. Efficient regional transport is vital for the expansion of the tourism sector in the Comoros. With an archipelago of four islands, Comoros can enhance tourism activity by introducing reliable transport between the islands (Ioannides 2015), so that ecotourists can access the attractions on all Comorian islands.

Despite their significance for international tourists, accessibility and transportation are not the only considerations when choosing travel destinations. The most significant contribution to Africa's low tourist arrivals and receipts are those associated with long-term and wide-spread political instability (Teye 1988; Kumar 2014). Between 1975 and 2000, three successful, six attempted, one plotted and two alleged coup d'états rattled Comoros, which significantly impacted the tourism industry on the island (Marshall 2005).

Political instability impacts tourism development in two broad areas. The first involves low demand for the African tourist product, coupled with negative mainstream publicity

discouraging foreign travellers from visiting African nations, widespread border closures and extensive travel documentation required from foreign visitors makes travelling to destinations experiencing political unrest especially difficult (Mahajan 2014). The second factor which has further worked to stagnate any tourism development in Africa since 1990 is the inability of many governments to develop a coherent body of economic ideas surrounding the tourism industry whilst attempting to stabilize a military intervention (Teye 1988; Marshall 2005). Entirely interconnected with frequent military interruption and political instability, the result of these intersecting complications has been a stagnant supply of both African tourist products and tourism services since the 1960's. One of the overarching obstacles to tourism development in Africa has been "the frequent military coups d'état and their consequent political instability which permeates every facet of a country's socioeconomic structure," (Teye 1988, pg. 353). This assertion is still valid today. In order to actively combat issues of political instability, while simultaneously considering notions of environmental responsibility, Comoros is currently working in partnership with the United Nations Development Program, the European Union and the African Union, in order to establish a number of peacekeeping offices across the nation in order to solidify efforts towards stability. The creation of the office of a National Ombudsman with the justice system has already taken place, as has the creation of a National Land Tenure registry. As a result, a sense of nationhood is expanding throughout Comoros with the integration and provision of Comorian history, geography and civic textbooks in the education system.

An ecotourism industry, which places considerable effort into safeguarding fragile natural environments, is highly possible and can currently be seen in the Maldives (Zulfa

and Carlsen 2011). The main problems hampering sustainable tourism development include a lack of awareness and education, and the “inability of micro-state governments to implement and enforce environmental protection legislation (because of lack of trained personnel, scientific technology, base-line data, and regulatory mechanisms),” (Wilkinson 1989; Weaver and Lawton 2007). Only if effective governance can be put into place, and political stability accomplished, the Comoros islands can begin to call attention to their environmental responsibility in bringing this ecotourism industry into their region.

In order to assure natural ecosystems benefit from an ecotourism industry and not suffer whilst the industry develops, appropriate strategies for enforcing guidelines based around the environmental carrying capacity of the region must be put into place (Liu 2003). This notion references the number of tourists that can be accommodated at any one time with minimal environmental damage, rather than the significantly higher threshold when visitor enjoyment begins to decrease (Wilkinson 1989). Examples of appropriate strategies could include a hard-fast limit on the number of accommodation beds allowed on each island, a cap on the number of rental car imports in each area, the wide-spread and earnest recommendation for human-powered forms of transportation upon arrival to each island, followed lastly by cultural pressure to direct tourist dollars away from products and towards experiences.

Many small island nations have found that the integration of the tourism industry has significantly displaced existing sectors of their economy, making it more difficult for new

sectors to develop. Particularly hard-hit by this phenomenon, sustenance-based agriculture, has fought globally to compete with the appeal of transitioning into various tourist sectors (Howe *et al.* 1997; Duval 2004). One specific strategy to insure the protection of these other sectors, as well as the nation's natural endowments, includes the notion that the "tourism developer must treat the protection of environmental quality as an 'internality,' that is, as the added cost of doing business," (Wilkinson, 1989). Wilkinson offers us an example of what this type of internality might look like, which describes "the added cost of a sewage treatment plant rather than a sea outfall [as] more than offset by the maintenance of high levels of tourist appreciation of unpolluted water; the actual economic benefit is virtually impossible to calculate, but the cost of the opposite policy is tourist dissatisfaction and low repeat visitor rates," (Wilkinson 1989). There is no need for the establishment of an ecotourism industry in the Comoros to diminish the prosperity of other sectors of the Comorian economy; the introduction of this industry provides Comorian locals with the opportunity to support their small-scale economies, not through the exploitation of their grandiose natural endowments, but rather through a symbiotic partnership between nature and culture which makes a sustainable ecotourism industry possible. Further research focusing on assessing the views and attitudes of the Comorian people towards ecotourism would provide insight on their perceptions and beliefs about sustainable tourism.

#### 4. Conclusions

The Comoros present us with a story of lost opportunities for ecotourism: on one hand, as we have shown the country features outstanding natural and landscape assets that would make the development of a flourishing ecotourism industry seem promising and realistic. On the other hand, political instability, resulting in continued lack of internal tourist infrastructure and the intermittency of convenient international air services connecting the Comoros with clientele in wealthy urban centers worldwide, have led to the ecotourism potential remaining largely untapped. As a consequence, much-needed income to alleviate local poverty has failed to materialize.

Research has found that these issues are not characteristic for the wider region. Examples like the nearby island nations of Mauritius and the Seychelles show that it should in principle be possible to utilize ecotourism to lift the Comorian people out of underdevelopment and poverty. *“As a result, the Comoros is looking towards ecotourism as the future of its tourism offering. With the government and NGO’s working to assist, ecotourism is likely to become established as a cornerstone of the country’s travel and tourism product over the forecast period”* (Euromonitor International 2013).

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	Annual arrivals per resident	Receipts per tourist	Annual receipts per resident
Norfolk Island	16.00	\$714	\$11,424
Antigua & Barbuda	3.03	\$1,552	\$4,700
Barbados	1.64	\$1,538	\$2,518
Seychelles	1.73	\$826	\$1,428
Cook Islands	3.6	\$322	\$1,159
French Polynesia	0.75	\$1,512	\$1,131
Maldives	1.26	\$667	\$840
Dominica	0.86	\$550	\$471
Jamaica	0.41	\$1,049	\$428
Fiji	0.41	\$981	\$400
Mauritius	0.38	\$1,019	\$391
Samoa	0.50	\$406	\$203
Réunion	0.60	\$252	\$151
Tuvalu	0.10	\$1,001	\$100
Marshall Islands	0.10	\$973	\$97
Kiribati	0.10	\$637	\$64
Tonga	0.30	\$105	\$32
Comoros	0.05	\$391	\$18

Tab. 1: Comparison of per-capita arrivals and tourist receipts amongst small island states (compiled after Gössling 1999 and McElroy 2006).

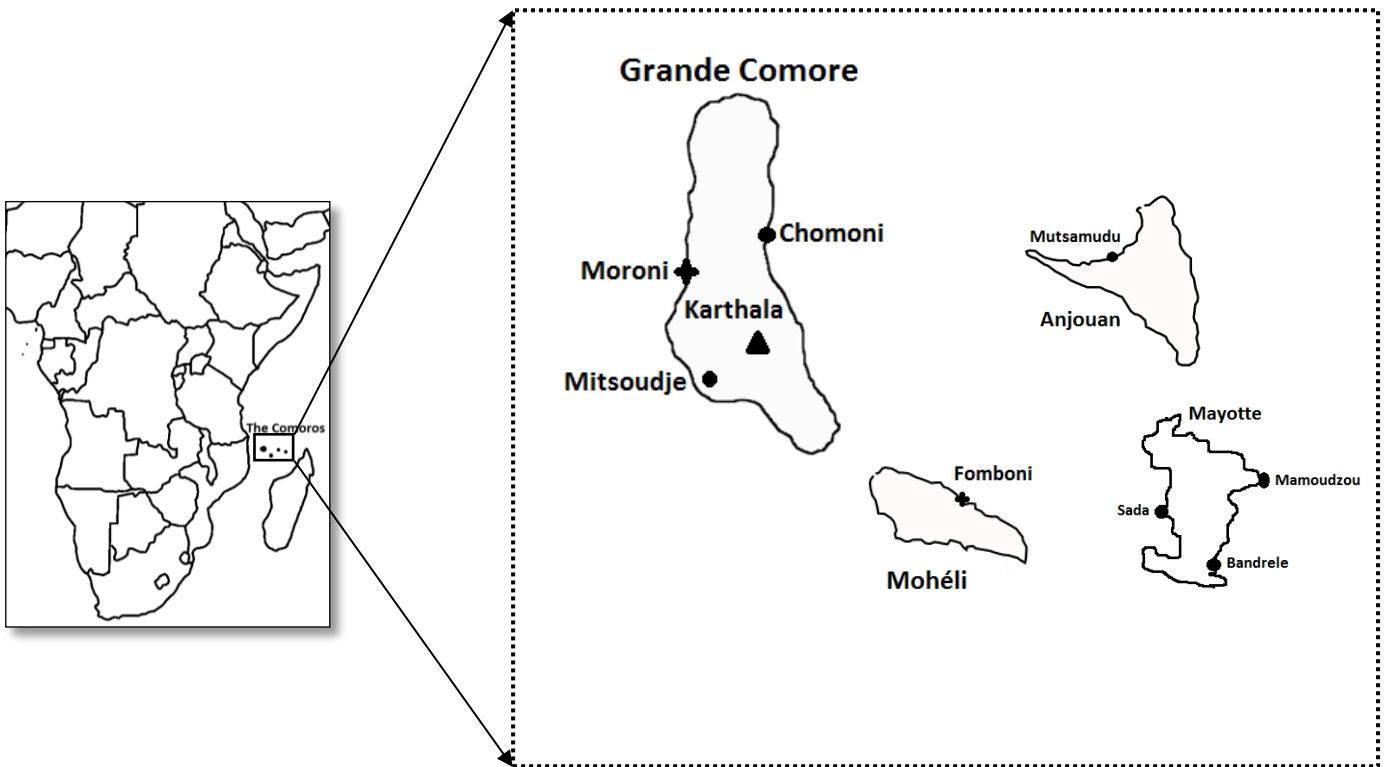


Fig. 1: Map of the Comoros showing an archipelago of four islands. Major tourist sites are labelled on the map.