

COASTAL LIVELIHOODS IN THE REPUBLIC OF SOMALIA

GENERAL INTRODUCTION

The Agulhas and Somali Current Large Marine Ecosystems (ASCLME) project is focused on the two large marine ecosystems of the Western Indian Ocean (WIO) region, covering nine countries that are directly influenced by these current systems. It is estimated that at least fifty-six million people are reliant either directly or indirectly on the goods and services provided by these two current systems. The ASCLME project aims to support these countries in their efforts to collectively manage the marine resources on which their people and economies depend. Fisheries and other key coastal activities, including various forms of tourism, aquaculture, shipping and coastal transport, the energy sector, agriculture and forestry, are very important contributors to the economies of the countries of the WIO. In recognition of the complexity and importance of these activities, a Coastal Livelihoods Assessment (CLA) component was developed for the ASCLME project.

The CLA component had three main objectives:

- to collect as much existing information as possible about the main coastal activities in the nine participating countries as a contribution to the national Marine Ecosystem Diagnostic Analyses (MEDAs);
- to make input into ensuring that this information is stored and organised in a manner that will allow easy access and maximum utility to multiple stakeholders, both during and after the lifetime of the ASCLME Project;
- to review and synthesise the information collected in order to provide useful inputs to the TDA and SAP processes.

In order to achieve these objectives, the CLA component was separated into three distinct phases, with the first phase kicking off in May 2009. During phase one, a “desktop” review of available data was conducted by the regional project coordinators, input was made into the design of a literature management tool to facilitate the storage of information, and preparations were made for the in-country data gathering process. Planning meetings were held between the core CLA team and the in-country Data and Information (D+I) Coordinators in August 2009. The processes involved in the in-country component of recruitment and data gathering was discussed and confirmed at this stage.

Phase two involved in-country personnel having been identified and recruited through a regionally inclusive recruitment process. Nominations were invited and received from country focal points and D+I Coordinators. Twenty three consultants were recruited to assist with the project. For some sectors international experts (drawn from the region where possible) were asked to provide information for all countries in the region while in others, where good local capacity existed, in-country consultants were recruited. This group of consultants collected information from existing resources, such as published articles, government reports, regional reviews, project reports and outputs, policy documents as well as a range of other grey literature that was likely to be useful.

Phase three involved the organisation of the information into country Coastal Livelihood Reports where individual sector reports have been assessed and the key elements from each sector extracted and presented in a summarised format. These country reports will be reviewed by project representatives in each country and once accepted, will be incorporated as a separate Coastal Livelihoods chapter in the overall country MEDA documents. It is anticipated that the information collated in these reports will allow examples of best-practice to be identified for application in other parts of the region. The objective is to build on approaches that work rather than to duplicate efforts. Information gaps will be identified and addressed in subsequent phases of the ASCLME, including during a Cost/Benefit Analysis (CBA)

exercise designed to weigh up the costs and benefits of various development options. Key information from these reports will feed into the CBA and hopefully provide useful guidelines for the Transboundary Diagnostic Analysis (TDA) and the development of Strategic Action Plans (SAP) for the overall ASCLME project.

The following country report begins with an overview of coastal livelihoods in Somalia, which provides a concise overview of the seven sector reports and the findings of the in-country and regional consultants. This overview ends with a conclusion which summarizes the collected information as it relates to the coastal zone in Somalia in general. This overview is followed by the more detailed sector reports, which represent the original contributions by the in-country and regional consultants. The sectors are organized in the following order: Small-scale Fisheries, Tourism, Mariculture, Agriculture and Forestry, Energy, Ports and Coastal Transport and Coastal Mining.

Each sector report has been prepared by specialists in that particular sector drawn either from the country or internationally. Sector reports have been prepared according to a pre-determined template to ensure that the relevant aspects of that sector were captured by the consultants. Reports include descriptive sections on the biophysical environment, human environment, policy and governance, planning and management, and development, trade and projects related to that sector. Each report is concluded with a SWOT analysis which provides a summary of the Strengths, Weaknesses, Opportunities and Threats facing that sector. It is the outputs of these SWOT analyses that are of particular importance to the strategic planning aspects of the overall ASCLME project. These reports were initially submitted to the regional coordinators for review and have subsequently been corrected and updated by the consultants themselves.

Finally, each sector report has a bibliography containing key references and links to relevant information. Full details of the information resources collected during compilation of each sector report, as well as electronic copies of literature (where available), are included in the overall ASCLME reference management system.

OVERVIEW OF COASTAL LIVELIHOODS IN SOMALIA

I. Small-Scale Fisheries

There is an operative small-scale fishery in Somalia with approximately 50 fishing centers and an estimated 30,000 people from coastal communities engaged. Despite rich bio-diversity and an extensive coastline, exports of fishery products only account for around 3% of total exports and contribute about 2% to GDP. Household income in the sector also fluctuates by season, with fishers earning \$1.5 USD per day during monsoon season and an estimated \$40 USD per day during fishing season.

Data, law enforcement and policy development are practically non-existent in the sector, as there is currently no government, institutional infrastructure and regulatory capacity in the country. Despite the variety of fish resources, poor processing facilities, poverty, old fishing gear and the isolation of fishing communities all highlight the weaknesses prevalent in the sector. While a legitimate transitional government has been established, security remains fragile, as both the presence of piracy and an on-going insurgency have constricted economic development. Due to the lack of monitoring capacity, fishing and waste disposal by foreign vessels has also become problematic along the coast.

As a whole, potential for growth in the small-scale fishery is robust, however, there are clearly numerous constraints preventing further development. Nevertheless, opportunities, such as the development of local market places, the provision of micro-finance, improved processing facilities and the standardization of

inboard and outboard engines, all highlight the prospects prevalent in the sector. While the lack of regulation and data in the sector could breed over-exploitation, particularly of species such as sharks, the potential for increases in production and domestic consumption is great. The sheer scope and extent of the country's coast and resources should accentuate these opportunities.

II. Tourism

Security in Somalia is inevitably a constraint on tourism in the country's coastal zone, however, its long scenic coastline, rich biodiversity and favorable climate make it an ideal region for future tourism development. The country's close proximity to the Middle East, along with its historic Islamic culture, also make it a convenient destination for nearby travelers. All opportunities are, however, dependent on improvements in the security situation.

Unfortunately, accompanying the current security situation are the stigmas of violence and conflict attached to the country, which negatively affects both the marketability and the volume of tourist activity. Similarly, weak infrastructure, limited institutional capacity and the reluctance of NGO's to operate has severely constrained development in the sector. Again, if the security situation is improved and law and order is reestablished, these constraints could be marginalized. Under these improved conditions opportunities for growth and development in the sector could spur other entrepreneurial activities in the region. Similarly, international organizations could be engaged to assist in developing the sector. Growth in the sector could also not only sensitize the population to the importance of sustaining the country's natural habitat, but it could also reduce the over-exploitation of natural resources by creating opportunities for employment in the sector.

III. Mariculture

A dedicated report on mariculture has not been included in this country report due to the current difficulty in obtaining detailed information on the potential of this sector in Somalia. It has been determined though, that there are currently no mariculture activities taking place in the country. However, given the extensive coastline and strong tradition of utilizing and consuming marine products in the coastal zone, there is no reason why this kind of development should not be as attractive as it has proved to be in the other Western Indian Ocean states, once political stability returns to Somalia.

It is important to note that according the ASCLME project representatives from Somalia, the Transitional Federal Government of the Republic of Somalia sees activities such as mariculture in the coastal zone as an important alternative income generating activity that has the potential of reducing over-exploitation of coastal resources. It is recommended that at the appropriate time a dedicated assessment of the mariculture potential in Somalia be undertaken to determine the best approach to take in the development of this sector.

IV. Agriculture and Forestry

Accounting for an estimated 64% of GDP, agriculture and forestry is the most dominant sector in Somalia. Despite livestock movement bans, animal exports account for about 60% of Somalia's employment opportunities, generating about 40% of GDP and 80% of foreign currency earnings. Taxation of livestock trade and export is one of the major revenue sources for the regional administrations. The main food crops are sorghum, millet, maize and rice, while the majority of cash crop exports are bananas, sugar and cotton. Bananas were once a key export and source of foreign exchange, however, the El Nino floods in 1998 largely collapsed the sector. Hence, as livestock is the main source

of income and employment for the majority of the Somali population, droughts, fluctuating environmental conditions and market volatility all have a great impact on the people and the economy.

Acacia and Commiphora shrub and woodland habitat are widespread in the country and are extensively utilized for a variety of purposes. While large swaths of the resource have been cleared for agriculture, as well as fuelwood and charcoal production, woodlands still provide numerous goods, particularly in dry times. Deforestation is, however, a significant problem in the northern areas and the Jubba Valley. Forests are not predominant in the coastal zone, however, mangroves remain important, valued at around \$91 million USD.

While policies for coastal zone management have been promoted in Somaliland, security and governance clearly remain predominant issues. Despite these constraints, positives can be seen. For example, IFAD is currently providing technical expertise and funding focused on food security and livelihood opportunities in the northern regions, while the opportunity to expand agriculture, forestry and livestock production has been documented. Similarly, the country's extensive bio-diversity, particularly bird-life, has potential for attract tourism development in the future. However, for any initiatives and opportunities to be realized, security will have to be brought under control.

V. Energy

There is little activity in oil, gas and biofuels in Somalia, with the country's only refinery closing due to the civil war. Although there is currently no hydrocarbon production, the country does have 200 billion cubic feet of proven gas reserves, as well as prospective oil fields in the northern zone and in the Nuggal and Dharoor basins. Total is the only identified agent involved in downstream activity, managing the oil terminal in Berbera and supplying fuel to the airports in Berbera and Hargeisa. While most exploration activities were suspended due to the onset of civil conflict, many companies have shown a renewed interest in the sector. For example, a consortium of companies have obtained the rights to explore the Nuggal and Dharoor basins from the Puntland government, while blocks to explore offshore of Mudug and around the coastal area of Berbera have been conceded by the national government. The validity of these agreements does, however, remain in question, particularly the agreements with the Puntland government, as ownership of the resources remains ambiguous.

Numerous constraints have been identified in the sector, the most challenging being the security situation. Not only did the civil war force the majority of companies to suspend operations, but the present security situation has made operations very difficult. The development of operations in such an unstable environment also increases the risk of spills and accidents. Governance and capacity also remains constrained, which has not only facilitated conflict between different branches of government, but has led to a lack of basic infrastructure throughout the country. Much of the country's economic activity also remains informal, which means the state is unable to obtain revenue to contribute to basic services. Piracy also remains highly problematic, as it has not only become a principal coastal industry, but it is likely to constrain offshore operations in the near future.

Some strengths and opportunities have, however, been identified in the sector. For example, an effective government in Somaliland could potentially be conducive to sectoral development in the region, while the prospects for oil deposits throughout Somalia are very positive. Oil sector development could also be supportive of employment and contribute to the development of infrastructure, while the transitional national government has shown a willingness to support the sector. Nevertheless, any future development in the sector is largely dependent on improvements in the security situation.

VI. Ports and Coastal Transport

There are four major ports in Somalia, each under the control of independent local clans. Kismaayo, the most southerly port, handles exports of charcoal and bananas from the Juba valley and receives vehicle imports from the Gulf. Merka, which lies 100 km south of Mogadishu, has no operational infrastructure, therefore, ships are forced to anchor offshore with cargo brought inshore by smaller vessels. The Mogadishu port, which was rebuilt with the US and UN finance in the early 1990's, is largely controlled by different factions and clans. The port does, however, reportedly have some adequate warehouses that could potentially be used for imports. The port in Eyl is only noted as a stronghold for piracy. None of these four ports are considered to be fully operational.

All these ports were formerly under the control of the Somali Ports Authority, however, the collapse of the central government has led to fragmented control across the sector. The collapse of authority has also recently resulted in an increase in piracy, wherein, numerous international ships have been hijacked off the Somali coast. The waters are subsequently seen as the most dangerous in the world, which inevitably repels most foreign vessels from docking anywhere in the country.

While road transport is still semi-operational in the country, ports and shipping remain constrained by the present security situation. Thus, while some harbours are developed and the country does possess seafaring skills, any growth in the sector is directly dependent on improvements in security. Under these improved conditions, it is important to note that there is enormous potential in the ports and shipping sector, with an estimated 25 000 vessels passing the Gulf of Aden annually.

VII. Coastal Mining

Deposits of tin-tantalum in Puntland, simpsomite in Berbera, and deposits of salt and gemstone throughout the country, all highlight the fact that there are numerous documented opportunities for mining in the country. Similarly, despite the lack of reliable data, a US geological survey also noted that 1,500 tons of gypsum, 600 tons of marine salt and 6 tons of sepiolite was mined, each year, from 1998 to 2002. Nevertheless, data for all minerals remains constrained by the present security situation.

The only reported mining activity along the coast was in cement, which was subsequently concluded in 1996. There have been no indications of mining activity in the coastal region since then. Again, similar to inland mining, the country's security situation has inevitably constrained any mining activity in the region.

While both Somaliland and Puntland have developed mineral decrees of their own, no environmental policies or coastal management techniques have been developed by the Transitional Federal Government in relation to the mining industry. Likewise, while the UN has developed a Reconstruction and Development Programme for the country, there are no indications that it will deal with mining in the coastal regions. In either case, the mining sector is likely to remain inoperable until the security situation is improved.

Conclusions

There are many constraints that remain constant across sectors in Somalia, such as security, environmental management, and infrastructure, all of which have had a widespread impact on all of the sector's considered in the coastal livelihoods study. Given more stability, there are also some strengths and opportunities apparent, particularly in the natural landscape of the coast, as well as the potential for improved governance and the affects it could have on all sectors. Currently, each of the sector reports

have concluded that all strengths and opportunities are directly contingent on containing the security situation and re-establishing law and order.

Despite the clear constraint of security, all the sectors did document strengths and opportunities that could be furthered. For example, the potential to utilize both the country's extensive coastline and its local knowledge to develop a tourism sector is clearly apparent. The country's proximity to the Middle East could also facilitate this development. Similarly, the extent of the coast and the expected magnitude of coastal resources highlights the potential for growth in the small-scale fisheries, while opportunities to expand livestock and agriculture production has been documented. Likewise, the opportunity to restore law and order with the current transitional government highlights not only the potential to re-establish infrastructure, but also the possibility of resuming monitoring and data collection of the country's coastal resources. The prospects for oil deposits are also very positive, as it could potentially be a source of employment, as well as revenue for the government, in the future.

Overall, the affects generated by the collapse of government and the security situation have been immense. This has clearly been the most devastating variable for all sectors, as vital services such as infrastructure and governance have collapsed, generating similar declines in all economic activity. Peace, in this respect, is the most important tool for generating economic growth at this point, as it could not only reinvigorate all the sectors covered in this report, but it could also allow the strengths and opportunities documented in the report to be utilized. This, in turn, would simultaneously allow the government to re-establish itself in the coastal region, repair infrastructure and generate international assistance through both aid and investment. Thus, despite the overwhelming consensus in the report surrounding security, the potential to rebuild and reinvigorate the country socially, economically and environmentally should also be emphasized.

DETAILED SECTOR REPORTS

I. Small-Scale Fisheries – Prepared by Dr. Peter Fielding and Mrs Nadifo Mohamud Yusuf,
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1. Introduction

Somalia lies on the horn of Africa and is bordered by the Gulf of Aden to the north, Kenya to the south, Ethiopia in the west, Djibouti to the north-west and the Indian Ocean in the east (Figure 1). The country consists of two regions that were consolidated into the Somali Republic in 1960, when Britain withdrew from British Somaliland and Italy withdrew from Italian Somaliland in the same year.

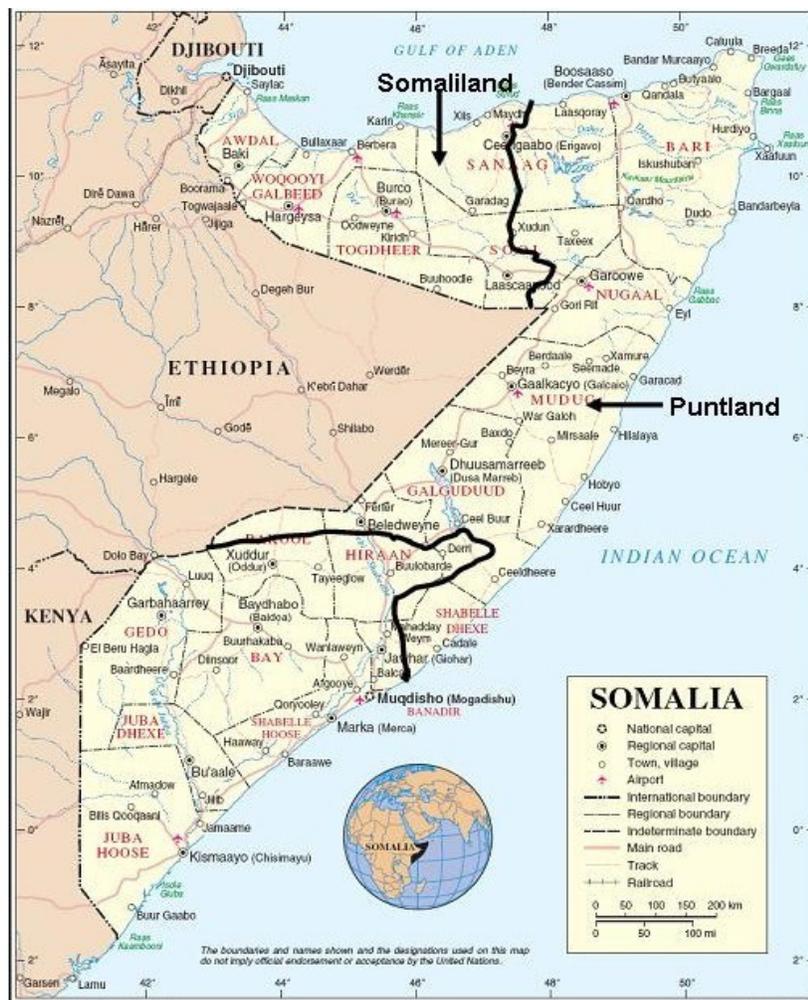


Figure 1: Map of Somalia showing boundaries between Somaliland, Puntland, and the south, as at December 2009. Note that boundaries change frequently.

The country has a history of civil unrest spanning 40 years, the main events of which have been a coup headed by Mohamed Siad Barre in 1969, a violent civil war starting in 1991, and ongoing banditry,

factional fighting, and anarchy ever since that time, despite repeated efforts at national reconciliation. The north-western area has seceded from the Somali Republic, declared itself as an independent Somaliland and formed its own government. Puntland in the north-eastern region embracing the Horn of Africa has done the same (Figure 1). However, neither of these two states is recognised internationally. The Transitional Federal Government (TFG) of the Republic of Somalia is the most recent attempt to restore national institutions to Somalia. The civil war and its aftermath have been the single biggest drivers of almost all aspects of life in Somalia, because they resulted in the destruction of most of the important institutional arrangements and infrastructure, causing major disruptions to the government and economy of the country. Consequently today there are no effective marine safety capabilities in an area of high shipping volumes, very limited availability of any quantitative fisheries data, no fisheries control, reckless international pillage of the Somali fish resources, and widespread marine piracy (Politics of Somalia¹; South-western Somalia²; Somalia Political Situation³; Van der Elst and Salm⁴; Coffen-Smout⁵; Hassan and Mwangura⁶; Piracy in Somalia⁷; MoF⁸; Tharoor⁹).

History and General Description of Fisheries

Until the early 1970s only a few traditional fishing centres and communities existed along the coast of Somalia. Agricultural, pastoral and livestock rearing activities were the economic drivers. Only the Bajuni and the Rermanyo communities, living in the coastal districts and islands of southern Somalia, traditionally made a living from the sea rather than from rearing livestock (Lovatelli¹⁰; Gulaid¹¹). However, as a response to very severe droughts in the 1970s the national government's Coastal Development Programme resettled several thousand drought affected livestock farmers and nomads in 21 fishing co-operatives along the coast, and trained them to become fishermen. Substantial investment was channelled into the re-settlement areas (construction of schools, hospitals, houses, workshops, processing, cold storage and marketing facilities, provision of boats and fishing gear). The cooperatives and government-managed markets gradually fell out of favour and fishermen organised themselves into independent groups, usually with the support of a businessman or trader, who bought and marketed the catch. The trader generally owned at least one freezer truck and often provided fishing equipment and boats, as well as certain social services (provision of medicines, food and loans) to the fishermen of the association (Lovatelli¹⁰; Gulaid¹¹). The civil war destroyed almost all fishing infrastructure.

Since the end of the civil war development projects funded largely by NGOs have resulted in a significant increase in fishing effort of all types in coastal areas. With no enforceable government fisheries policy in Somalia, all fisheries are open access, and, combined with the escalation in fishing effort, this could lead to the serial depletion of numerous valuable marine stocks (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹; UN SoE Report¹²; Mohamed and Herzi¹³; Fielding and Mann¹⁴).

The industrial fisheries along the Somali coast developed much earlier than artisanal fisheries in response to the rich fish resources of the region. They were always conducted by foreign vessels under license to the Somali Government before the 1991 civil war and subsequently under no authority at all, or under illegal licenses issued by regional chiefs (Lovatelli¹⁰; Burbridge¹⁵; Stromme¹⁶; Everett and Kelleher¹⁷; FAO 2005¹⁸).

Industrial vs. Artisanal

Because of the boats and gear they use, local fishers are confined to fishing in shallow coastal waters while foreign industrial fleets have historically exploited the offshore resources. The Ministry of Fisheries (MOF) of the TFG of the Somali Republic recognises "artisanal" and "traditional" fisheries sectors and makes reference to the artisanal and small scale sector as opposed to the industrial sector (FAO 2005¹⁸). However in the proposed institutional framework for fisheries management, there is no separation of

artisanal/small scale fisheries and industrial fisheries. The Puntland and Somaliland Governments have developed coastal and fisheries development strategies that identify categories of fishers namely: artisanal, industrial, subsistence, and recreational fishers, (Gulaid¹¹ Mohamed and Herzi¹³, Ministry of Fisheries Puntland¹⁹) Artisanal is correlated with local/inshore/small vessel/poor fishing gear, while industrial is described by foreign/large vessel/offshore/sophisticated gear. Subsistence fishers fish only for own consumption (Ministry of Fisheries Puntland¹⁹).

Location of Fishing Centres

There are approximately 50 fishing centres scattered along the Somali coastline, most of which are fairly small and geared exclusively toward artisanal inshore fishing activities. (Lovatelli¹⁰; Mohamed and Herzi¹³; FAO 2005¹⁸). Some of these fishing centres are temporary and are built of plastic sheets, tin cans, carpets and sticks. They are largely unoccupied between June and mid-September when artisanal fishermen are generally not able to operate. The location of most of the fishing villages is indicated on the map and Table in Appendix 1. These fishing centres can be grouped into a number of zones based on major cities and towns: Kismayo, Brava, Merca, Mogadishu, Adale, Warsheikh, Eil, Bargal, Bosasso, Las Korey and Berbera. Population levels in coastal settlements vary considerably because many people move to the highlands in search of a cooler climate during the hot summer months, and they move to the coast during the main lobster seasons. Refugees also move in and out of coastal communities.

Numbers of fishers are difficult to verify, but appear to be in the region of 4500 active artisanal fishers and 5000 temporary fishers (Lovatelli¹⁰; Tello²⁰). However there have also been estimates of as many as 30 000 people actively engaged in the fishing business (all aspects) in Somali coastal communities and another 60 000 are engaged on a seasonal basis (Lovatelli¹⁰; FAO 2005¹⁸). Most of the population in the smaller fishing centres is involved in fishing activities in some manner, but the larger centres (Berbera, Las Korey Bosasso, Kismayo and Mogadishu) have more diversified economies. The total population of Somalia is estimated as 9.6 million (Hassan and Mwangura⁶; Tello²⁰) so the proportion of the population engaged in fishing (<2%) is relatively low for a country with such a long coastline and such rich fish resources

Fisheries

Craft

The basic elements of the artisanal fishing fleet are:

- 3 - 5 m long dug-out canoes (houris) generally paddled by a crew of between one and three, but sometimes driven by a 5 hp outboard engine; Wood for the construction of these vessels is imported mainly from Kenya.
- traditional sailing boats - these are of two kinds 1) mashua in the south are 5 – 7 m long and operated by a crew of 4 -7, 2) beden in the north are 7 – 9 m long and operated by a crew of 8 - 10. Both types of sailing vessel are locally made and used for transport of goods and livestock as well as for fishing;
- 6.4 m glass reinforced plastic (GRP) boats fitted with 10–15 hp inboard or outboard engines. The boats were distributed in the course of the Coastal Development Project between 1975 and 1982;
- 8.5 m GRP boats fitted with 20–30 hp inboard engines.

A few other craft built and imported from Kenya, Italy or Greece have also made their way into the country. Data on the number and type of fishing boats are not readily available. Estimates indicate about 650 motorized GRP boats of 6.4 m and 8.5 m, about 380 traditional sail boats, and about 2800 canoes.

Many of the motorized boats (about 60%) are out of order due to lack of spare or replacement parts and other equipment (Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸). Safe boat landing sites are only available at very few places along the coast, so larger boats are forced to anchor just beyond the surf zone. Smaller boats launch and land directly from the beach, and because the boats are heavy and mostly grossly underpowered, this often entails some risk (Lovatelli¹⁰ Fielding¹⁴). The tsunami of December 2004 destroyed an estimated 630 boats and 75 percent of all fishing gear along the Puntland coast (Tello²⁰).

Gear

The artisanal fishery uses hand lines, gill nets, long lines, beach seines, and small locally made basket traps. The type of gear used is often season and locality dependent, and fishing is curtailed in the windy months between June and the middle of September. The best fishing times are April to June and October to November, when the weather is generally calm.

Hand lines for catching demersal fish are used by all sizes of craft. Long lines are used for shark, tuna and other big fish species like king mackerel. Gill nets with mesh sizes in the 150–200 mm range are the most important fishing gear and are used as drift or bottom-set nets, targeting mainly shark species but also large pelagics and demersal reef fish. Gill nets are widely employed by both artisanal fishers and illegal foreign vessels (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹).

From September to November lobsters are caught using tangle nets and by breath hold diving. From January to March they are mainly caught using basket traps, made of sticks and baited with shark meat. Until 1999 the use of SCUBA gear for catching lobsters was confined to Garaad but has probably spread along much of the coast by now (Lovatelli¹⁰ Fielding¹⁴). In the southern Banjuni Islands lobsters are caught by chasing them out of their shelters with the aid of an octopus tied to a stick and then netting them (Lovatelli¹⁰ Fielding¹⁴). Fish traps are also used in sheltered waters to catch small demersal fish (Lovatelli¹⁰).

Beach seines (180 m long, 60 mm mesh) are used by fishermen to catch a variety of shallow water species in the sheltered waters on the west side of the Bajuni Islands, and cast nets are used throughout the coast to catch bait fish, prawns and lobsters.

Because of poverty and the political situation, there would appear to be a limited sport or recreational fishing sector (Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸). However, the sector is expanding in the north as a result of the large numbers of Aid and NGO organisation workers. They target mainly pelagic game fish.

Resource Groups and Species

The main groups of fish resources are considered below. Appendix 2 provides a more detailed list of fish species caught by artisanal fishers.

Large Pelagic Stocks

The large pelagic species are tuna and big mackerels, mainly yellowfin tuna (*Thunnus albacares*), longtail tuna (*Thunnus tonggol*), bonito (*Sarda orientalis*), skipjack tuna (*Katsuwonus pelamis*) and Spanish mackerel (*Scomberomorus commerson*). They are usually caught in inshore waters on the north and east coasts by both industrial boats (mainly fishing illegally) and artisanal fishers using hand lines and gill nets. A wide range of Carangidae and bill fishes are also caught in this region. Peak catch rates are in November and March. These large pelagic species make important contributions to artisanal fishery

catches when they move inshore to feed and spawn (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸).

Small Pelagic Stocks

The major marine resources in terms of biomass are the small pelagic species (*Sardinella spp*, *Engraulis spp*, *Decapterus spp.*, *Scomber japonicus* and *Trachurus spp.*, etc.) that occur mainly on the north east coast. (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸). However, these resources are not really available to artisanal fishers because of their limited vessel sizes. The small pelagics have been fished almost exclusively by foreign vessels, with and without licence agreements (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸).

Demersal Stocks

Somali inshore waters support a rich and diverse demersal fish fauna mainly associated with reef systems. From a fisheries perspective the most important are:

Serranidae: Groupers, Sea basses, Rock cods,

Lutjanidae: Snappers, Job fish.

Haemulidae: Grunts, Rubber lips

Lethrinidae: Emperors.

Mullidae: Goat fish.

Nemipteridae: Threadfin breams

Synodontidae: Lizard fishes

These species are caught by hand lines, gill nets and fish traps along the entire coast. (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸). Some artisanal fishers in the north eastern region sell their finfish catches to Yemeni mother boats but the Yemeni boats will only take grouper and snapper, so the pressure on these two groups of fish is very high in places. Other fish are simply discarded by the fishers (Mohamed and Herzi¹³). Illegal trawling by foreign vessels targeting reef fish takes place close inshore, and reefs important to artisanal lobster and fin fish stocks are often badly damaged. Low value bycatch is discarded and washes up on the beaches along with heavy duty trawl gear. Incidental capture of turtles and dolphins also occurs (Van der Elst and Salm⁴; Fielding pers. obs.). Clearly such trawling has a severe impact on inshore ecosystems and biodiversity and for a long time has been the cause of much anger among Somali inshore fishers. It is suggested that the current piracy activities were initially sparked by inshore fishers' decision to take policing of foreign fishing trawlers into their own hands.

Sharks

Sharks have been the main focus of Somali artisanal fishers because there is a ready market, profits are high especially for the fins, and more critically, shark meat and shark fins can be salt-dried so no freezer facilities are necessary (Van der Elst and Salm⁴; Lovatelli¹⁰). Tiger sharks (*Galeocerda cuvier*); grey sharks (Carcharhinidae), mako (Lamnidae), hound sharks (Triakidae) dogfish (Squalidae), and

hammerhead sharks (Phyrnidae) are the main species captured. Sharks are caught by long lining and gill netting. The latter activity poses a serious threat to biodiversity in the region. Rays, guitarfish and sawfish form the major component of the bycatch (Van der Elst and Salm⁴). Often only the shark fins are harvested, since vessels are small, space and salting facilities limited, and the fins are much more valuable than the meat. Thus the fishery is inherently wasteful (Van der Elst and Salm⁴; Fielding pers. obs.)

Crustaceans

Along the east coast of Somalia, the lobster fishery (mainly *Panulirus homarus spp.*) became one of the more important inshore fisheries. Both traders, who buy lobsters from the fishermen, and fishermen themselves, invested heavily in the fishery by way of freezer trucks, boats, outboard engines, fuel, nets and traps. All of the catch is exported to Dubai in the form of tailed lobsters (Lovatelli¹⁰; Fielding and Mann¹⁴). There is considerable bycatch of reef fish in the gill nets used to catch lobsters in the October - December season. Most of this bycatch is discarded (Fielding pers. obs.).

Prawns and large mangrove crabs are caught by fishers in the northwest and marketed fresh in Djibouti (Lovatelli¹⁰). These animals are associated with tidal creeks and coastal lagoons of the northwest. Apparently prawns and almost certainly mangrove crabs also occur in the estuarine and mangrove systems around Juba river in the south (Van der Elst and Salm⁴)

Turtles

Coastal shallows along the entire coast support large sea grass and seaweed beds that are valuable as turtle (green, loggerhead, and hawksbill turtles) and dugong foraging grounds. The north coast of Somalia is one of the more important turtle nesting grounds on a global scale. Turtle harvesting takes place and provides a livelihood to a small group of people. The meat is highly sought after and the oil is used on boats. There are no quantitative data (Van der Elst and Salm⁴; Fielding pers. obs.)

Sea Cucumbers, Shells, Corals

Harvesting of sea cucumbers occurs in the Zeila region in north western Somalia and possibly south of Kismayo. Collection of ornamental shells occurs around Mogadishu and Zeila. Corals are on sale in Djibouti some of which almost certainly come from Somalia. Ornamental fish and sea horses may also be collected to a small extent. There are no data for these invertebrate fisheries (Van der Elst and Salm⁴)

Details of the fisheries and their main areas of operation are provided in Appendix 3.

Sustainability

The sustainability and stock status of the various inshore and offshore fisheries in Somalia is largely a matter of guesswork because there is very little information available on the abundance and distribution, landings, catch composition, bycatch, or areas of operation of the commercially important demersal and pelagic species. Estimates of landings are dated and only general sustainability statements can be made based on similar fisheries elsewhere (Van der Elst and Salm⁴; Lovatelli¹⁰; Gulaid¹¹; FAO 2005¹⁸).

Available information indicates the following:

- Seasonal abundance of small pelagic fish species is estimated at between 120 000 and 200 000 tonnes (Lovatelli¹⁰).

- Research cruises in the 1970s estimated potential yields of between 40-80,000 tonnes per year for the Gulf of Aden (North) coast and between 340 000 - 420,000 tonnes per year for the East coast of Somalia (all fisheries combined), but noted that large seasonal and annual fluctuations are likely to occur in both abundance and availability of the small pelagic stocks. Later estimates were that between 250,000 and 300,000 metric tonnes per year might be taken as a conservative estimate of the catches available to the fishing industry (Lovatelli¹⁰).
- Catch data from various sources between 1974 and 1990 indicated that up to 20,000 tonnes (all sectors) were caught each year, and during this period, the in-shore artisanal sector fin fish catches ranged between 4000 and 12 000 tons p.a and up to 250 tonnes of lobsters (Lovatelli¹⁰; Ministry of Fisheries data)
- Data provided to Fielding and Mann¹⁴ indicated lobster catches were in the region of 500 tonnes per year in 1995 and 1996.
- Between 2003 and 2006 around 18000 tonnes of fish were produced per year directly for human consumption (FAO 2005¹⁸) and a total of 30 000 tonnes was captured annually (FAO fisheries statistics²¹). Other estimates indicate 14 000 – 18 000 tonnes of fish were landed per year between 1988 and 1993 (all fisheries; Lovatelli¹⁰).
- More recent (2004) area specific estimates indicate at least 900 tonnes of fresh fish a year are consumed in Somaliland alone and a similar amount is exported each year to Djibouti, while about 4 300 tonnes of tuna caught by artisanal fishers is canned each year at the Las Korey canning plant. This would amount to a total catch of > 6 000 tonnes a year from the demersal and large pelagic sectors in Somaliland alone (Gulaid¹¹).
- While catches generally would appear to be very much lower than the potential yield, when dealing with a wide range of fisheries it is very dangerous to evaluate sustainability based on a comparison of total catches against total potential yield. In relation to Somali fish stocks, the following should be noted:
- In all inshore fisheries there are no controls on the weight, number, size or reproductive condition of fish captured, nor are there any limits on the number of fishermen that can enter a fishery. In addition, it is highly probable that there are significant negative ecological impacts on the inshore fisheries from an uncontrolled number of foreign vessels fishing illegally (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸). An estimated 850 foreign owned vessels from European, Middle Eastern and Asian countries engage in illegal unreported and unregulated (IUU) fishing in Somali waters each year (Hassan and Mwangura⁶).
- Pelagic fish stocks are reasonably robust to exploitation because of their generally fast growth and migratory lifestyles. However, the use of gill nets for the capture of large pelagic fish almost invariably leads to a range of negative ecosystem impacts that include over-fishing. There are no catch, effort, seasonal, or gear limitations in the Somali pelagic fisheries (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸).
- Tuna stocks globally are facing serious over-fishing threats. Tuna access rights along the Somali coast appear to be illegally sold to foreign vessels by clan leaders and their agents. These vessels use long line and purse seine gear, and generally fish with no regard to the stock sustainability or other environmental issues e.g. high bycatch of cetaceans by purse seiners (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸).
- The current pirate activities are probably assisting marine conservation by drastically reducing fishing effort of foreign based vessels (IOTC²²).
- Because of a number of life history characteristics that include slow growth, residency, sex change and long times to maturity, many species of reef fish are very susceptible to over-fishing. Seasonal and area closures, gear and size limitations and protected areas form a suite of controls, all or some of which have been found necessary to ensure the survival of exploited reef fish populations. None of these controls is implemented anywhere along the Somali coast. Because of their unselective nature, gill nets deployed across reefs are a serious threat to sustainable fisheries. Currently no coastal habitats in Somalia are under any form of protection and no species

identified by IUCN/UNEP in 1984 as endangered receive any form of protection (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸). It is thus probable that at least some species of reef fish are over-exploited.

- Most shark species are vulnerable to over-fishing because of relatively slow growth rates, long times to reach maturity, long gestation periods and small numbers of pups produced. There are no effort or gear controls in the Somali shark fishery. Gill nets used for sharks are particularly unfriendly to ecosystems in general, because they are unselective and often involve high levels of bycatch. Shark populations are considered to be overexploited, and catches have declined over the past few years (Van der Elst and Salm⁴; FAO 2005¹⁸; UNEP State of Environment¹²).
- Although there are little reliable historical data, by 1999 lobster catches appear to have declined significantly (Fielding and Mann¹⁴). Later reports indicate that the lobster stocks may be close to collapse (Tello²⁰).

The biggest threat to sustainable use of fish stocks along the Somali coast is the uncontrolled fishing operations of the last 10 – 15 years. The current piracy regime along the coast will certainly help to reduce illegal industrial fishing effort, but will have little impact on inshore stocks targeted by most artisanal fishers. The tsunami of December 2004 significantly reduced inshore fishing effort but this will be a temporary respite. Unless fisheries are regulated, the Somali people will be faced with rapidly declining inshore resources that will force them to look for other livelihood opportunities. Given the harsh nature of much of the coastal environment, this will generate significant social hardships.

Fish Processing and Marketing

Current artisanal fish processing and marketing structures in Somalia are for the most part small scale and very varied and can only be described briefly. When Government co-operatives fell into disfavour in the late '80s, a growing number of traders and retail shops entered the fish trade (Lovatelli¹⁰). Since then, fish traders have largely driven the lobster industry, buying lobsters from fishers, tailing and packing them individually and storing them in freezer trucks that are stationed at fishing centres along the east coast. Freezer trucks are driven to larger towns (mainly Bosasso) when full (Fielding and Mann¹⁴). Lobster tails are exported to Dubai either by air or via small refrigerated cargo vessels, and may be re-exported to the USA or the EU (but see below). In the late 1990s fishers received about 2 USD per kg whole lobster while traders received 20-22 USD per kg for lobster tails exported to Dubai. Later data indicate that lobster fishers in Puntland may receive 15 – 20 USD per kg landed (Mohamed and Herzi¹³). In some fishing centres lobster traders will also buy filleted fish for storage in freezer trucks and later transport to larger centres. The position of freezer trucks along the coast is governed by road access, which is generally very poor.

Air and sea temperatures along the coast of Somalia are high and as a result, all catches spoil quickly. The lack of ice/freezer facilities and poor road links between landing sites and markets severely limits the amount of fresh fish that is produced. During the 1970s and 1980s, the Somali Government and foreign aid together developed a number of freezer and canning facilities, mainly in the larger centres (Kisimayo Mogadishu Las Korye, Bosasso and Berbera), and frozen fish was exported. During the civil war all of these facilities were looted and in most cases destroyed beyond repair. These freezer/cold storage facilities are being slowly rebuilt in the bigger cities and towns by the private sector. In Las Korye, the canning factory has been rehabilitated completely and is currently fully operational, and its canned fish products are exported to countries in eastern Africa, Europe, Canada and USA. Cold storage facilities are once again available in the larger centres. However, outside these centres, lack of ice is still the major constraint in the marketing of fresh fish. Even in the larger centres, fishermen sometimes leave large amounts of tuna on the beach because there is no available refrigeration and no immediate market (Mohamed and Herzi¹³).

In localities where ice is available, fresh fish retailing is carried out on a small-scale and fish traders sell fish to inland communities where there is a demand. Fresh fish is sold either directly on the beach when the boats return from their fishing trips or in markets situated in the vicinity of the fish landing sites. Fishermen operating off the coast around Mogadishu bring approximately 2 tonnes of fresh fish daily to the auction hall for sale. The fish may be sold whole, or cut into pieces. A piece of snapper or grouper will sell for 1-1.5 USD, whereas a large tuna or kingfish (20-25 kg) may fetch up to 25 USD (Lovatelli¹⁰). In the north east prices may be higher and good quality tuna may be sold for as much as 12 USD per kg, while kingfish may fetch 30 USD per kg. Most reef fish are sold for 4 – 6 USD per kg (Mohamed and Herzi¹³). Most large fish are purchased by restaurants and hotels. Local consumption has increased by an order of magnitude in the last 25 years. Where no ice is available all fish and shark catches are salted and sun dried. Fishermen also produce “Haniid”, a Somali speciality made from tuna and sailfish, which is salted and then smoked in pits and sold locally (Lovatelli¹⁰; FAO 2005¹⁸).

Fishermen operating in the southern regions around the Bajuni Islands and in the north west near Djibouti have developed their own marketing network. The Bajuni fishers catch lobsters and keep them alive in floating cages and then transport them by boat to Kisimayo or to some of the smaller villages along the coast where they are sold to the traders. The lobsters are then exported to Kenya (mainly to Nairobi) using small private planes. Bajuni fishers also sometimes sell fresh fish directly to traders from Kenya, However, demersal fish and sharks are usually gutted, salted and dried on the beach, and then exported to Mombasa by boat. Fish traders will pay about 800 Kenyan Shillings for a 16 kg bundle of dried shark meat, while 20-150 Kenyan Shillings are paid per unit of dried fish, depending on species and size (large pelagic species fetch the highest price). Local prices for dried shark meat may reach 1 USD per kg for good quality product. Shark fins are exported by air to the Arabian Gulf, mainly to U.A.E., and fetch between 90 -100 USD per kg (Lovatelli¹⁰; FAO 2005¹⁸).

In the north west around Zeila, fishermen sell their fish in Djibouti markets through informal arrangements. On a daily basis, about 7 boats each carrying 500 kilos of fresh fish cross to Djibouti and market their catch in the city. In addition, 30- 35 fishermen harvest prawns and crabs near Loado and market the product in Djibouti through similar arrangements. There is also considerable sale of fresh fish (900 tonnes p.a) to inland markets in the north west (Lovatelli¹⁰; Gulaid¹¹).

There are limited data detailing total imports and exports and the relevance of the fisheries sector within the total economy. Based on the rich fish resources the fishing industry would appear to have great socio-economic potential. However, at the moment, the importance of the sector within the overall economy is quite small. Exports of fishery products account for around 3% of total exports and fishery’s share in GDP is about 2% (Lovatelli¹⁰; FAO 2005¹⁸). The FAO estimates 283 – 830 tonnes of fisheries products valued at 290 000 – 830 000 USD were imported into Somalia in 2002 and 2005, and 3700 – 5800 tonnes worth 3 700 000 – 10 700 000 USD were exported. Imports appear to have increased by a factor of four in 2006 but exports remained much the same (FAO 2005¹⁸; Status of EU approval²³). In the pre-war era, especially in 1989, exports of fishery products earned around 15 million USD per annum of which lobsters and shrimp accounted for more than half (Lovatelli¹⁰; FAO 2005¹⁸). Somalia is not approved for export of any kind of fishery products to EU (Status of EU approval²³). The main trading partners today are the Gulf States and Yemen. Somalia is neither a member of the regional trade organisation COMESA (Common Market for Eastern and Southern Africa) nor a member or observer of the WTO. A working party for accession was established in December 2007 (Mohamed and Herzi¹³; Status of EU approval²³). It should be noted that currently much of the fisheries export takes place by way of IUU fisheries operating in offshore waters.

Fisheries Associated Livelihoods

During the time of the last central government (before 1991) members of fishing communities were employed in boat building, fish processing, and as crew on industrial vessels, but that all ceased with the civil war. Today, fisheries associated pre and post harvest activities that generate livelihood opportunities along the Somali coast are very limited, because so much infrastructure was destroyed in the war. This destruction extended beyond fish processing facilities to include just about all the elements of civil life. Boat building/repair facilities, net making/repair operations, engine servicing and repair centres were all looted and vandalised and many skilled tradesmen and craftsmen fled to neighbouring countries (Lovatelli¹⁰; FAO 2005¹⁸; Hassan and Tako²⁴). Because security has always been an issue in Somalia, even after the end of the war, aid and investment have been limited and most of these facilities are still not functional. In the aftermath of the civil upheaval, the fish traders have emerged as lynch pins of the coastal economy. Apart from providing fishing gear, credit and a market for fishers' catches, they provide a range of fisheries associated livelihood opportunities.

In lobster fishing villages, traders employ non-fishing males to clean and package lobster tails before they are frozen. Where SCUBA gear is used, males are employed by traders to look after and service the diving cylinders and compressors and fill the cylinders at the end of the day's diving. Traders also employ drivers and their assistants to load, transport and unload the catches from the trucks. In the larger centres there must be small industries that service the trucks and refrigeration units. Most fishers with motorised boats undertake normal maintenance and small repairs on their own engines and boats, but in the larger centres, limited outboard and inboard engine servicing facilities are available. Many of these operations are very constrained by lack of specialised equipment and spare parts. Because most boats have to launch from, and return to, exposed beaches, there are minor opportunities for fishing village males to help with boat handling in the surf zone. Individual fishers repair their own nets. Other exiting fishery related livelihood opportunities are:

- Provision of refrigeration facilities and ice. This has developed into a small industry with some independent fishers purchasing their own small freezers.
- A community of skilled net and fish trap makers and boat builders has re-established itself in the vicinity of Mogadishu
- The Las Korey canning plant on the north coast provides employment for an unknown number of people who operate and service the plant.
- In the north around Zeila, where fishers take their catch to Djibouti, there may be livelihood opportunities for boat operators to assist fishers with transport arrangements.
- Some GRP boats are locally made by privately owned boatyards in the Somalia.

(Information from Lovatelli¹⁰; Gulaid¹¹; Fielding and Mann¹⁴)

2. Biophysical

The Somali coast is approximately 3300 km long and stretches from 2° South to 12° North. The area has one of the most important large marine ecosystems (the Somali Current Large Marine Ecosystem) in the Indian Ocean. A feature of this ecosystem is the seasonal upwelling and consequent high productivity resulting from the Somali current. The coast is generally a fairly straight coast with few bays and sheltered anchorages except in the vicinity of the Bajuni Islands near the Kenyan border. The continental shelf is relatively narrow except in the north-east region around Haafun. Along the east coast, the south-west monsoon occurs from May to August and the strong winds generate a fast flowing north-easterly current. As the surface current approaches the Horn of Africa, it turns away from the coast, resulting in the upwelling of cold, nutrient rich, water in the coastal zone. This nutrient rich environment generates high

productivity and high biodiversity in the area. During the north-east monsoon (December to February), current reversal takes place, but the south-westerly current is not as strong as the north-easterly current, and no upwelling takes place. During the inter-monsoon periods (October-November and March-April), the winds are relatively light and these periods are most favourable for fishing activities along the east coast. Monsoons also impact on current flow in the Gulf of Aden (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸).

Major Ecosystem Components

From Berbera to Mogadishu, the immediate coastal zone is a virtual desert environment and living conditions for fishing communities are very harsh. South of Mogadishu there is sparse inland vegetation and the terrain is more hospitable.

Sandy beaches form a large part of the coastal environment of Somalia and are particularly important to the sea turtle populations (hawksbill, logger head and leatherback) of the area. Between Berbera and Bosasso there are important turtle foraging and breeding grounds. In the south around the Bajuni Islands seagrass beds develop and provide important turtle foraging sites. Sparse seagrass beds are also found along the north east coast (Van der Elst and Salm⁴).

Rocky shores and steep cliffs occur along both the northern and north eastern seaboard and provide roosting grounds for large populations of cormorants. Very large trapped seaweed drifts also occur along the northeast shore and are important in inshore nutrient cycles (Van der Elst and Salm⁴).

Although a large number of rivers enter the sea in Somalia, only the Juba and the Shabelle in the south have permanent flow with significant estuarine and mangrove systems. The rest only flow when there is rainfall, but some have inlets and tidal creeks that provide sheltered waters and easy access to marine resources (Van der Elst and Salm⁴; Lovatelli¹⁰).

Tropical coral reef communities are found south of Kismayo and down towards the Kenyan border but these are replaced by rocky subtidal reefs in the north east (Fielding and Mann¹⁴). Rich, shallow water coral reefs occur in the north west around Berbera and patch reefs are common along this coast (Van der Elst and Salm⁴). Deeper water corals almost certainly occur along the entire coast, but information is lacking. All subtidal reef systems are important for artisanal fisheries.

The pelagic systems of the north east have very high primary and secondary productivity as a result of seasonal upwelling and they support a great biomass of large and small pelagic fish species and seabirds. Large numbers of whales and dolphins also occur in this area (Van der Elst and Salm⁴).

3. Human Environment

Between 1987 and 1990 over one hundred million USD are estimated to have been spent by the Government and aid organisations on developing the artisanal fishing sector along the Somali coast as a viable livelihood option for coastal communities (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸). The civil war of 1991 destroyed almost all civil and industrial infrastructure and reduced fishing communities to virtual subsistence level operations. The situation has gradually improved over the last 15 years but much of the infrastructure remains non-functional and most artisanal fishers living along the coast of Somalia are very poor indeed and live in conditions of extreme hardship. Inshore fisheries have to function in an environment where there are generally inadequate landing facilities, very rudimentary catch marketing, storage and processing facilities, a severe lack of functional fishing gear of all types, a lack of vessel construction materials and tools, and often a lack of fresh water. The situation is better in the larger

centres where infrastructure is slowly being rebuilt and rudimentary civil and industry specific services are now available. However, the country continues to be plagued by violence that discourages investment, NGO activity or UN aid, and any other attempts to support the fishing industry.

Fishermen in settlements along the coast form small business associations that attempt to manage their local problems but the associations operate individually. In most of the fishing centres fish traders drive the artisanal fishing sector by providing the only available market and source of fishing gear. Traders sometimes “bond” fishermen by supplying them with fishing gear on credit, in which case that particular fisherman must sell his catch to the trader (Piracy in Somalia⁷; Fielding and Mann¹⁴; FAO 2005¹⁸). In some cases this has led to instances where traders have claimed as loan repayments vessels and equipment that have been supplied to fishers as part of an aid package (e.g. after the tsunami; Tello²⁰).

Precise data on the current economic situation in Somalia is scarce but with an estimated per capita GDP of \$600 per year, it is one of the world's poorest countries. Millions of Somalis depend on food aid and in 2008, according to the World Bank, as much as 73% of the population lived on less than 2 USD a day. Malnutrition is one of the biggest challenges facing Somali children today, and according to an upcoming UN report, it could be getting worse (Piracy in Somalia⁷; Economy of Somalia²⁵).

Currently piracy is probably the biggest income generator along the coast. Pirates operate along the entire north and eastern seaboard, will venture far from shore, and are prepared to tackle big well armed vessels. It is believed that more than 1000 people, most of them former fishermen, are currently involved in piracy groups. Pirates provide large economic inputs into their communities, but piracy also has negative social and economic impacts on coastal communities such as wild fluctuations in the local exchange rate, diminished import trade resulting in increases in the costs of basic foods and commodities, increased drug use and a breakdown of social norms. The impact of Somali pirate activities has extended far beyond the Somali coastal waters and now affects tourism in the Seychelles (South-western Somalia²; Piracy in Somalia⁷; Ministry of Fisheries⁸; Tharoor⁹; Keith Rose-Innes²⁶; Dr. Nirmal Jivan Shah 2009 pers. comm.) Of interest is that artisanal fishermen in neighbouring Kenya have reported greatly increased catches since piracy has reduced foreign fishing to virtually zero (Kenya Fishermen²⁷; Tuna fishing²⁸; Van der Elst²⁹).

In the Somali Muslim society there is generally strict separation of men and women and their activities. Almost all fishing activities are carried out by males. Women in the fishing villages provide support in the form of maintaining the home environment in generally incredibly harsh conditions. More recently they have also played a role in post harvest fishing activities, such as cleaning, drying, packing and selling of fish, and net repair and painting of boats in the monsoon season. There are no formal data relating to household incomes generated by artisanal fisheries, but fishers appear to earn 1 – 1.5 USD per day in the non-fishing monsoon season. Coastal communities call the monsoon season “Suhey!” which translates as “the season of starvation”. During fishing seasons incomes are much better and may be > 40 USD per day on good days. In most of the coastal fishing communities there is no proper sanitation, no health facilities and most of the children do not go to school. Almost any of the basic indicators related to health, infant mortality, school going children, literacy, incomes, catch rates, type and functionality of boats, infrastructure and service provision, could be used to evaluate and monitor the development and improvement of fisher livelihoods along the Somali coast. The major problem is data collection.

There are indications that the Somali coast has been used as a dumping ground for hazardous waste since the start of the civil war. Several European companies have been implicated and the situation poses a very serious livelihoods and environmental hazard not only in Somalia but also in the eastern Africa sub-region (Piracy in Somalia⁷; Hassan and Tako²⁴ Van der Elst²⁹). The United Nations State of the Environment Report on Somalia found no evidence of toxic waste at three sites along the Puntland coast, but indicated that further investigation is required (UNEP State of Environment¹²).

4. Policy and Governance

Somalia ratified the United Nation Convention on the Law of the Sea which provides an international legal framework for the conservation and management of living marine resources, and entitles Somalia to an Exclusive Economic Zone of about 782,800km². The country also has international legal responsibilities under other treaties that it signed such as CITES, and the Nairobi and Jeddah Regional Seas Conventions. However, with no effective government, no operational fishery or coastal policy, and no management institutions, there is no possibility of the country fulfilling these responsibilities (MoF Puntland³⁰).

The Transitional Federal Government has a Ministry of Fisheries (MOF) which has developed a Fishery Sector Strategy for the Republic of Somalia. Regulation of fishery resources in the EEZ in all its aspects (enforcement, licences, resource allocation, data collection, conservation planning) is the responsibility of the MOF. However, the strategy adopts a rather generalised approach, with objectives of maximising production and benefits from the fishery resources but not actually defining how these may be achieved and without developing a regulatory framework. The TFG has made arrangements for enforcement by contracting in a private company to undertake enforcement activities, but activities appear to be limited to the north eastern region at present (Piracy in Somalia⁷). The Transitional Federal Government has asked for assistance from the international community in its efforts to address acts of piracy off the coast of Somalia (Somalia Political Situation³; Coffen-Smout⁵; FAO 2005¹⁸).

Both Puntland and Somaliland, within the institutional structures of their unrecognised independent governments have Ministries of Fisheries that have developed Fisheries Policies and Strategies which recognise artisanal fishers as a sector, see fisheries as a means to economic growth, and are committed to sustainable use and gender equity. The Ministries have developed their own vessel licensing and regulatory policies and have a coast guard to implement fishery controls but they are entirely inadequate and the policies have no force outside the immediate region (Gulaid¹¹; MoF Puntland¹⁹).

Artisanal fishers play a part in policy and strategy development at both national (TFG) and regional levels through fishing committees, but because of the very uncoordinated nature of the governance and institutional arrangements, all Somali fisheries continue to be largely open access and unregulated.

No Somali management body has been established for the management of highly migratory and straddling stocks and the Indian Ocean Tuna Commission (of which Somalia is not yet a member) is the only agency responsible for management measures for species like tuna (Coffen-Smout⁵). SWIOFC should become the regional agency for management and decision-making for non-tuna resources in the South West Indian Ocean (SWIO), when it becomes formally established (Van der Elst²⁹). There appears to be no institution responsible for fisheries inspection and food safety control in Somalia, and this is part of the reason that imports into the European Union are not allowed. (Status of EU approval²³)

In this legal and institutional vacuum, the international community urgently needs to decide on their obligations, because the destruction of Somali fish resources and the likely ecosystem impacts have regional and ocean basin consequences.

5. Planning and Management

Planning and management of Somalia's fisheries are beset by the same problems that apply to Policy and Governance above. Essentially there is no effective national government, no effective national institutional structures, no fisheries management plans, no regulatory framework, almost no compliance capability, no national arrangements to manage small scale fisheries, no co-management arrangements to

manage fisheries, and no integrated approach to coastal zone management and economic development. These features will not be developed or implemented until there is peace in the region. There is no Marine Protected Area along the entire 3300 km of the Somali coast, although the pirates appear to be turning quite large areas into *de facto* marine reserves. Elders in fishing villages are still regarded with great respect and are sometimes consulted on fishery related matters, but these are mainly conflict resolution issues between fishers and buyers. Elders play no role in managing effort and catch. However, coastal communities have their own individual traditional fishing rules even though there is no written statement of these rules. What these rules entail is not clear, and the rules are community specific.

The status of almost all fisheries is largely unknown. The United Nations Development Operations Office (UNDOS) of the UNDP supported several fishery related research projects between 1994 and 1995. A lobster survey was carried out in 1998. The Centre for Research and Dialogue (CRD), a local NGO, conducted a limited survey of the fishery sector in central and southern Somalia in 2002 but no data are available. Since 2004, UNDP has been carrying out a thorough review of the fishery sector in the central and southern parts of Somalia. All of these surveys have been limited by security problems, and the loss of almost all records, reference works and baseline data. Apart from those activities, no real research activities have been conducted since the major fish stock assessments by FAO/UNDP in the 1970s and 1980s and other bilateral research assistance provided by various governments and agencies during this time. Since the civil war there has been very limited formal collection of fishery statistics in the northern regions of Somaliland and Puntland and none in the southern regions (Van der Elst and Salm⁴; Gulaid¹¹; Lovatelli¹⁰; Fielding and Mann¹⁴; FAO 2005¹⁸).

6. Development, Trade and Projects

Apart from over-fishing, Somalia is experiencing significant environmental problems, but it lacks human and financial resources as well as a political structure and stability that allow these issues to be addressed at even the most basic level. Rebuilding Somalia will take a long and sustained effort by the international community as well the country itself (UNEP State of Environment¹²). Major capital investments are required to re-develop the entire fishing industry in Somalia, including processing and marketing aspects. There is a primary need to assist fishing communities to improve their means of livelihood, and strengthen their capacity to earn income and to generate employment. However, the lure of piracy rewards currently provides a strong motivation to disengage from fishery activities.

There is scope for growth in local consumption of fish, especially in bigger cities, towns and inland communities, if fishing gear, processing facilities and marketing are improved. In Mogadishu demand for fish always exceeds supply and canned fish has had to be imported. Very little aid has gone to the fishery sector since the civil war of 1991, except for a few emergency supplies of fishing gear, by a few international organizations, including FAO, Care International and COOPI (FAO 2005¹⁸). FAO has recommended severely limiting the re-supply of lobster fishing gear lost in the tsunami of 2004 because of the collapsed state of the lobster resource (Tello²⁰). Since 2004, UNDP has apparently been providing support to a number of small-scale pilot fishery development programmes in the central and southern parts of Somalia. Long-term plans include the construction of chill rooms, refrigerated truck containers, insulated fish boxes and other items which cater for the fishing sector (FAO 2005¹⁸). The fisheries tsunami emergency programme recommended broadening fisher livelihood opportunities by redirecting lobster fishing effort towards fin fish and reducing the wastage currently associated with this sector (Tello²⁰). Agricultural activities that so often form an important livelihood component of many artisanal fishers are not really an option for many of the fishing villages along the east coast of Somalia, because of the very harsh, arid climatic conditions.

Industrial activity on the coast is poorly developed. Three of the four ports of Somalia (Berbera, Bosaso Mogadishu) are the foci of increasing industrial activity since they have good roads and airports. Berbera and Bosaso are being developed mainly by the “independent” Puntland and Somaliland governments. All three ports are also sites of major environmental pollution (waste discharge, bunker oil spillage, leaking oil storage tanks, ballast water discharge). Kismayo, the fourth port, has great development potential (airport, reasonable roads, sheltered anchorage) but is currently not receiving much attention for local political reasons (Van der Elst and Salm⁴; Lovatelli¹⁰; FAO 2005¹⁸).

The European Union’s Strategy for Assistance to Somalia is to help to establish a peaceful and secure environment in Somalia, and to reduce poverty through the provision of basic social services and increasing economic activity. Under this framework, the critical intermediary political goal (2005-2009) is to support the delivery of a new constitution adopted by referendum, and democratically elected institutions (Status of EU approval²³).

With funding from Novib (Oxfam-Netherlands), the Resource Management Somali Network (RMSN) was founded in 1996. Its mission relates to avoiding land degradation and desertification, protecting and ensuring more sustainable use of forests, effective management and protection of biodiversity, efficient water management, and dealing with pollution problems and population pressure on natural resources (Tello²⁰).

7. SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Rich and varied fishery resources • High productivity and biodiversity • Long coastline and large EEZ • Enforced (weather related) seasons of limited inshore fishing • Private sector investment in artisanal fisheries • Legitimate government supported by international community 	<p>Weaknesses</p> <ul style="list-style-type: none"> • No effective government and fisheries management, institutional structures or capability • No implementation of fisheries policy • Artisanal fishers play limited role in policy development • No enforcement capabilities • Isolation of individual fishing communities • Very limited historical fisheries data • Very limited stock status information • Very limited and localised fisheries data collection • Very limited marketing capabilities • Fishing gear very old, unsafe, or not functional • Limited fishing gear service and re-supply capabilities • Very large range of makes and models of fishing gear but particularly inboard and outboard engines • Limited understanding of resource use, processing and marketing issues by fishers and traders • Great poverty that makes sustainable use issues irrelevant. • Land based security issues – NGOs and foreign aid unwilling to commit staff and resources • Limited sheltered vessel launch/retrieval launch sites • Most artisanal fishing vessels underpowered • No scientific information available - Destruction of archives and libraries museums and universities • Very limited communication facilities and access to all types of information
<p>Opportunities</p> <ul style="list-style-type: none"> • Large and valuable fisheries resources in a region of high productivity • Increase local fish consumption • Development of local market places • Increase provision of all types of cold 	<p>Threats</p> <ul style="list-style-type: none"> • Industrial and domestic pollution of marine environment in larger towns and all fishing villages • Dumping of toxic wastes in shallow coastal waters. • Probable over-exploitation of most fisheries

<p>storage facilities – freezer trucks, ice, cold rooms</p> <ul style="list-style-type: none"> • Improve landing sites for artisanal fishers in general. • Improve local catch processing facilities • Reduce demersal and shark fisheries discard rate • Standardise inboard and outboard engines • Provision of new eco-friendly types of fishing gear • Provision of spares for engines • Provision of tools and materials to repair boats particularly fibreglass • Import of wood for canoes • Provision of micro and small scale credit facilities by institutions other than traders • Mariculture opportunities • Proper licensing and control of foreign vessels • Piracy 	<p>sectors inshore and offshore: sharks and demersal sectors particularly vulnerable</p> <ul style="list-style-type: none"> • Illegal unregulated unreported (IUU) fishing by many hundreds of foreign vessels • Damage to inshore environment by IUU fishing sector • Widespread use of gillnets (drift and bottom set) in most fisheries sectors • Beach sand mining at Berbera, salt mining at Haafun, limestone mining at Mogadishu • Catchment degradation and poor agricultural practices in the Juba area – enrichment, siltation and consequent coastal impacts • Piracy • Internal security
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9. List of data sets

No formal datasets located. Ministries of Fisheries in the north (Somaliland and Puntland) probably collect some fisheries related data since Van der Elst developed a monitoring programme for the regions in 1997. However, it is highly likely that traders hold fisheries data (Catch bought and shipped, effort, number and type of boats etc) that might be accessed in the right circumstances. It should be noted that many traders are quite reticent about handing out information to anything that might be construed as an authority.

10. List of Projects

FAO Fisheries Tsunami Emergency Programme of 2005 (Tello²⁰) provides a list of ongoing and proposed fisheries related projects. However, their status is not known. All the projects relate to the provision of fishing gear, processing and cold storage facilities, and fisher training in post-harvest processes. There are also some projects developed by local Somali NGOs in various coastal locations which try to address basic needs like the provision of boats and fishing gear, or training in boat handling, swimming, fish processing, boat building, or the formation of cooperatives. The organizations include CARE Somalia, Somali Community Concern (SCC), Diakonia Bread for Germany (DBG), SOMLINK Organization, CED (Centre for Education and Development), SRCS/ICRC, OTP (Ocean Training and Promotion).

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APPENDIX 1

Location of Fishing Communities along the Somali Coast

General map of Somalia indicating the location of many of the fishing villages. Note that the spelling of place names in Somalia is very variable across different documents. Map from UNEP SoE in Somalia¹². See below for names of other fishing villages.



Table A. Fishing villages visited during FAO Tsunami Emergency Relief programme (Tello²⁰)

* Indicates important seasonal camps (4 months/year). Areas in red indicate villages too dangerous to visit.

VISITED FISHERIES VILLAGES OF SOMALIA INDIAN OCEAN COAST

Geopositioned by OSRO/SOM/501/NOR and OSRO/SOM/505/CHA
(Nor to South) – June – August 2005

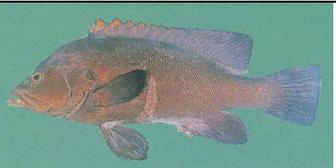
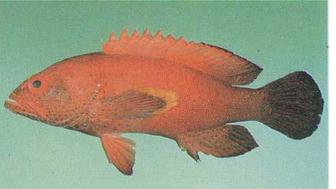
VILLAGE	LATITUDE NORTH	LONGITUDE EAST	DATE
PUNTLAND STATE (NE)			May 18 to June 6
Bargaal	11o 16' 57.2"	51o 4' 38.5"	
Hurdiya	10o 33' 42.2"	51o 8' 4.1"	
Handa	10o 25' 23.3"	51o 15' 34.8"	
Hafun			
Foar	10o 18' 50.6"	50o 53' 51.5"	
Barmadobe	10o 4' 22.4"	50o 53' 19.3"	
Bandar Beyla	9o 29' 49.6"	50o 48' 36.2"	
Arris	10o 15' 27"	50o 48' 36.2"	
Darin Bar	8o 56' 5"	50o 28' 30.6"	
Kudhed	8o 53' 37.6"	50o 26' 32.7"	
Fal Falah	8o 46' 31.3"	50o 23' 49.1"	
Suj	8o 41' 10.7"	50o 21' 46.3"	
Garmal	8o 34' 36.4"	50o 19' 31.1"	
Kabal	8o 28' 45.7"	50o 6' 45.1"	
Maraya	8o 16' 32.5"	50o 6' 45.1"	
Darin Raquas	8o 16' 32.5"	50o 6' 45.1"	
Gaba'	8o 8' 15.3"	50o 3' 35.1"	
Badey (Eyl)	7o 57' 48"	49o 50' 45.6"	
Dinawda Digidigley	7o 20' 17.2	49o 35' 54 "	
Domaryo	7o 15' 59.6"	49o 32' 48.4"	
Gar'ad	7o 14' 15"	49o 31' 27.5"	
Ilfoshe	7o 10' 14.9"	49o 28' 20.7"	
Kulub	7o 1' 53.5"	49o 22' 38.8"	
Gara'ad	6o 56' 45.4"	49o 19' 16.1"	
CENTRAL & SOUTH COAST			June 24 to August 10
Mogadishu	2o 1' 26.574"	45o 20' 0.600"	29/06/05 25 m
El Ma'an	2o 10' 45.312"	45o 35' 43.442"	05/7/2005 15 mt
Jazira	1o 56' 59.74"	45o 10' 46.424"	30/06/2005 23 mt
Dhanane	1o 52' 23.463"	45o 1' 38.349"	2/7/2005 2 mt
Warsheikh	2o 18' 3.72"	45o 47' 52.459"	6/7/2005 24 m
Adale	2o 45' 33.44"	46o 19' 20.458"	7/07/05 9 mt
Ega	3o 38' 31.473"	47o 11' 15.884"	8/7/2005 38 mt
Haradhere	Conflict area, with restrictions of	Conflict area, with restrictions of	5/7/2005 0 mt

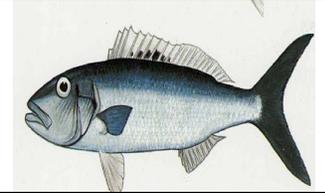
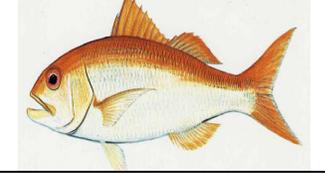
	movement	movement
Mareeg	3o 45' 14.189"	47o 18' 4.408"
Hobyo	Conflict area, with restrictions of movement	Conflict area, with restrictions of movement
Merca	1o 41' 44.923"	44o 44' 53.507"
Jilib Merca	1o 47' 56.261"	44o 54' 23.217"
Gendershe	1o 50' 4.61"	44o 57' 59.397"
Mungiye	1o 36' 8.574"	44o 36' 46.852"
Lihmooro*	1o 38' 24.610"	44o 39' 45.652"
El Ahmed*	1o 36' 37.356"	44o 37' 27.962"
Barawe	1o 6' 55.799"	44o 1' 40.202"
Kismayu	0o 21' 39.655"	42o 33' 9.927"
Nafta Qur	migrated	Migrated
Goobweyn	0o 14' 59.969"	42o 36' 15.663"
Qandal	0o 26' 55.707"	42o 29' 7.108"
Yamani	migrated	Migrated
Istambuli	0o 50' 34.489"	42o 5' 48.507"
Qanbalayu	0o 53' 48.758"	42o 8' 12.899"
Jama Araale*	0o 47' 54.60"	42o 10' 59.967"
Kudhaa	1o 1' 58.991"	41o 58' 25.366"
Badhadhe	District	District
Burgabo	Fundamentalist controlled area*	Fundamentalist controlled area*
Kiyanboni	Fundamentalist controlled area*	Fundamentalist controlled area*
Madoga	1o 0' 49.95"	42o 1' 45.383"
Ilisi	0o 30' 5.779 "	42o 24' 56.823 "
Juula	0o 59' 59.995"	42o 2' 22.561"
Jovay	0o 52' 20.119"	42o 9' 20.508"
Fuuma	0o 32' 34.969"	42o 22' 58.391"
Koyama	0o 37' 57.712"	42o 20' 23.378"
Koyamani	0o 38' 29.466"	42o 20' 17.82"
Usiwangumi	0o 43' 36.479"	42o 16' 49.969"

APPENDIX 2

Fish Species Caught by Artisanal Fishers along the Somali Coast

Source: Nadiifo Mohamud Yusuf

Features of Somali Fishes	Names
	<p>Somali Name: Shoox Commercial Name: Megalopidae Scientific Name: <i>Megalops cyprinoideus</i></p>
	<p>Somali Name: Qaraare Commercial Name: Hemiramphidae Scientific Name: <i>Hemiramphus far</i></p>
	<p>Somali Name: Wayeer Commercial Name: Serranidae Scientific Name: <i>Aethaloperca rogaa</i></p>
	<p>Somali Name: Shooli Booraad Commercial Name: Serranidae Grouper Scientific Name: <i>Anyperodon leucogrammicus</i></p>
	<p>Somali Name: Wayeer Commercial Name: Serranidae Scientific Name: <i>Cephalopholis argus</i></p>
	<p>Somali Name: Wayeer Commercial Name: Serranidae Scientific Name: <i>Cephalopholis hemistiktos</i></p>
	<p>Somali Name: Gaduudow D. Dhabe Commercial Name: Serranidae Scientific Name: <i>Cephalopholis miniata</i></p>

	<p> Somali Name: Mako Shiiqal Commercial Name: Serrannidae Scientific Name: <i>Cephalopholis sexmaculata</i> </p>
	<p> Somali Name: Buraasow Commercial Name: Lutjanidae Scientific Name: <i>Aprion virescens</i> </p>
	<p> Somali Name: Buraasow Commercial Name: Lutjanidae Scientific Name: <i>Etelis carbunculus</i> </p>

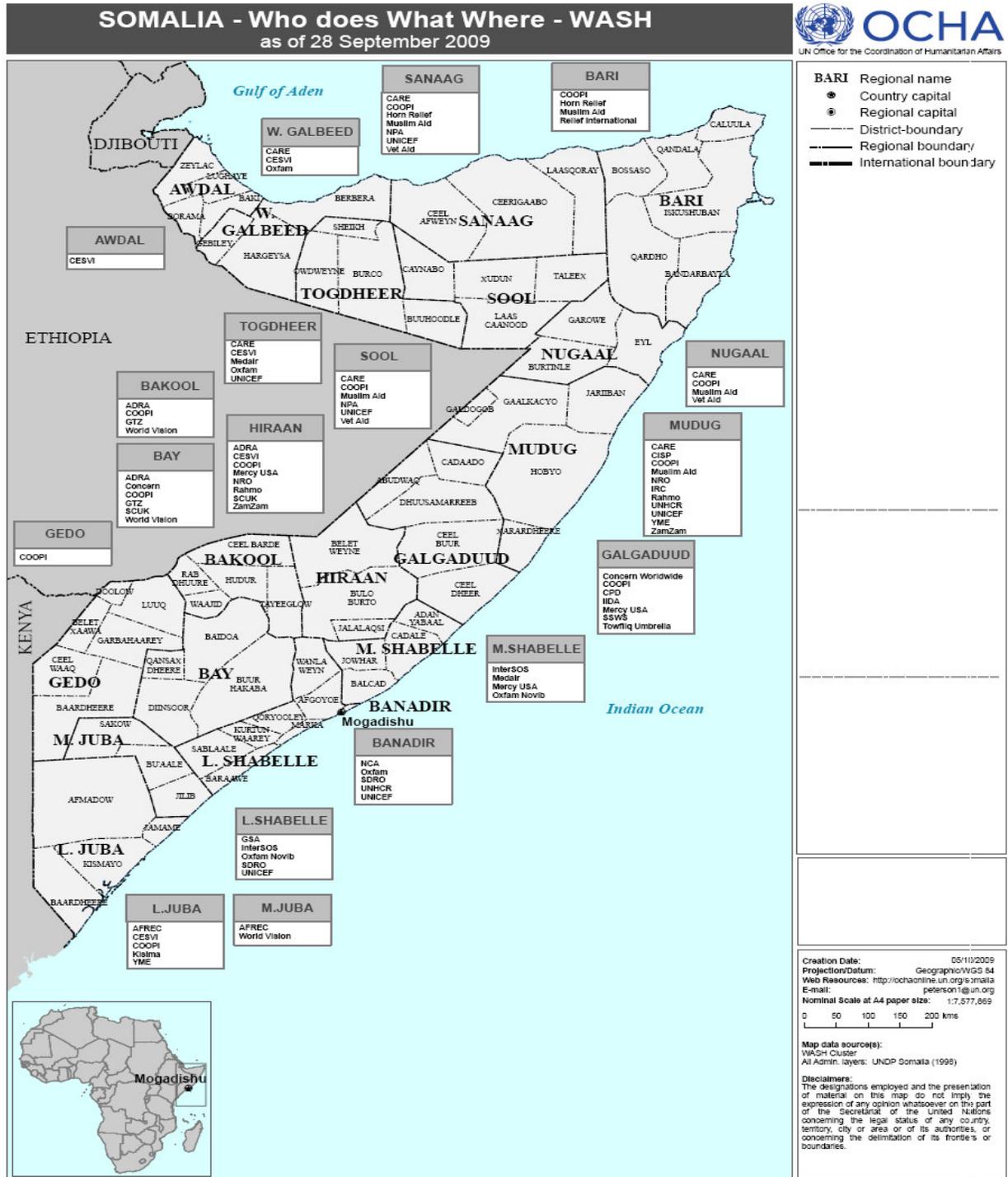
APPENDIX 3

Details of various Somali fisheries and the areas where most fishing activities take place

Resources	Area harvested	Status
Large pelagics	North east and North coast	Unknown
Small pelagics	North east coast offshore	Unknown
Demersal fish	Entire coast	Probably over-exploited
Sharks	Entire coast	Probably over-exploited
Crustaceans	East coast Bargal to Chiamboni	Probably over-exploited
Lobsters	South coast Juba river and north west near Zeila	Probably sustainable
Mangrove crabs & Prawns		Probably sustainable
Turtles	North coast	Unknown
Sea cucumbers	South coast around Kismayo? and North west coast near Zeila	Unknown
Ornamental shells	East coast around Mogadishu and North west coast near Zeila	Unknown
Corals	North west coast near Zeila?	Unknown

APPENDIX 4

List of NGO's and aid organisations operational in Somalia⁴²



II. Tourism – Prepared by Mr Tim Foggin and Mrs Nadifo Mohamud Yusuf,
E-mail: 1foggin@gmail.com; kilwe51@yahoo.com

1. Country Overview

Somalia's economy has been seriously affected by years of political strife as well as a severe long-term drought. Somalia now ranks among the poorest countries in the world. Subsistence agriculture and livestock rearing occupy most of the working population, although development is hampered by primitive techniques, poor soil and climatic conditions, and a chronic labour shortage. Bananas are the main cash crop and provide nearly half the country's export earnings; cotton, maize, sorghum and other crops are produced for domestic consumption. Oil and gas deposits have been located but their exploitation has been in abeyance due to the lack of an effective central government. There is little industry other than small-scale operations to meet domestic needs, mainly food-processing and oil refining.

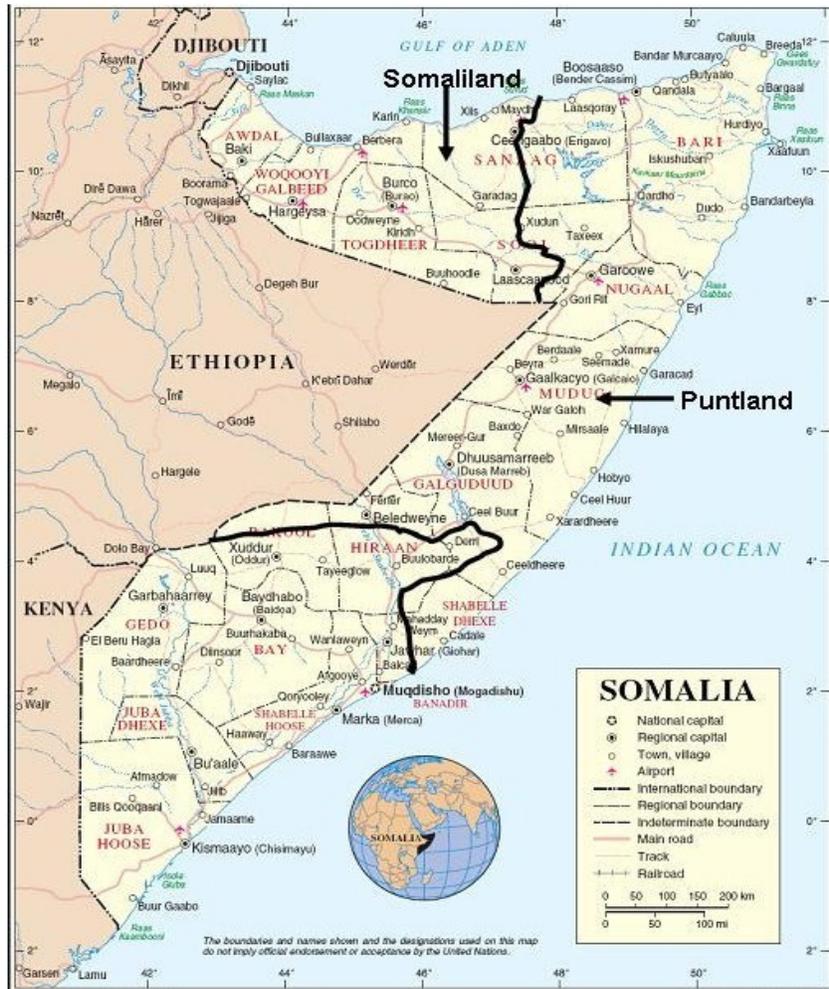
In this economic context tourism has almost entirely stalled however expatriates working within the international aid sector do keep tourism alive and within Mogadishu provide a sizeable contribution to this local economy. Little to no research exists as to how significant tourism is within the local or macro economy this is relevant for all typical tourist statistics in Somalia that relate to inbound flows, bed nights and overall tourism spend.

Somalia lies on the horn of Africa and is bordered by the Gulf of Aden to the north, Kenya to the south, Ethiopia in the west, Djibouti to the north-west and the Indian Ocean in the east (*Figure 1*). The country consists of two regions that were consolidated into the Somali Republic in 1960 when Britain withdrew from British Somaliland and Italy withdrew from Italian Somaliland in the same year². The country has had a history of civil unrest spanning 40 years the main events of which have been a coup headed by Mohamed Siad Barre in 1969, a violent civil war starting in 1991 and ongoing banditry, factional fighting, and anarchy ever since that time, despite repeated efforts at national reconciliation. The north-western area was seceded from the Somali Republic and declared itself as an independent Somaliland and formed its own government. Puntland in the north-eastern region embracing the Horn of Africa has done the same (*Figure 1*). However neither of these two states is recognised internationally.

The Transitional Federal Government (TFG) of the Republic of Somalia is the most recent attempt to restore national institutions to Somalia. The civil war and its aftermath have been the single biggest drivers of almost all aspects of life in Somalia because they resulted in the destruction of most of the important institutional arrangements and infrastructure causing major disruptions to the government and economy of the country¹¹.

Confronting poverty and internal conflict is arguably the most important and challenging issues for the Somali people. However while accountable leadership at a governmental level across the country is absent this in itself possibly becomes the country's most pressing issue.

Figure 1. Map of Somalia showing boundaries between Somaliland, Puntland, and the South, as at December 2009. Note that boundaries change frequently.^a



1.1 Coastal Tourism Overview

Modern Somalia is essentially a broad strip of coastal desert. The two main rivers that water the country are Juba and Shebelle both of them flow into the Indian Ocean in the East. The country has a typically hot climate all year round punctuated by irregular and scanty rainfall.

Roads and transportation is poor and consequently infrastructure for tourism development is severely limited. The tourism industry in Somalia is serviced by both local and international operators albeit the services are limited and only a handful of operators are currently offering flights to this destination.

The void left by the collapse of Somali Airlines has largely been filled by Jubba Airlines and Daallo Airways, which both run regular services to all major towns. Aaden Cabdulle Cismaan International Airport in Mogadishu reopened its doors in 2006 for the first time in many years. In 2008, however, the airport was again under threat of closure due to bombings by Ethiopian forces. Two airlines fly to Mogadishu Airport, Daallo Airways the only international carrier to fly in and out of Somalia and Jubba Airways, a Somali airline. The airport needs large-scale development and improvement, many

flights are cancelled and airport facilities and services are very poor. The future of these developments depends on the security situation in Somalia.

Air transportation will nevertheless continue to be the main mode of transportation due to the fact that the roads are dangerous and the infrastructure is in desperate need of development. There is also a risk of piracy in Somali waters, which has brought a halt to sea transportation.

It is difficult to travel outside Mogadishu by car existing roads run from the capital to Burao and Baidoa. Previously sealed roads running between Kismayu and Mogadishu and Hargeysa and Mogadishu are now in a state of disrepair. Passenger transport is restricted almost entirely to road haulage. There are few cars and buses, although there are reasonable bus services between the major centres in the South. However Somaliland which is where the majority of the tourism activity is does have reasonable transport facilities both public and private.

The vast majority of inbound, domestic and outbound tourism flows are made up of business tourists and international aid workers. In turn their families and friends create a small sub component of this tourist market. This market makes a significant contribution to the local economies in and around Mogadishu. It is this sector that also contributes to word of mouth marketing to friends and families in the guest originating country. This form of marketing is possibly the most effective way in which Somalia could be 'sold' to its foreign markets as it has no cost factors attached and sells trust and information simultaneously, two vital marketing elements. Somalia's pure leisure tourism market is much more limited and in the main the average tourist seeks much safer destinations. A number of guest country embassies, advise against travel and most travel websites also strongly discourage travel to this country and either rightly or wrongly warn against a number of various criminal activities that one could likely to be exposed to, such as kidnapping and being held hostage.

While this type of negative marketing is not necessarily untrue it will mean Somalia will need years to recover from this type of unfortunate destination image and branding.

Arrivals started to increase in 2005, and there was hope that the country would start to revive the travel and tourism industry but due to kidnappings and piracy in subsequent years inbound arrivals significantly declined between 2005 and 2009 and are expected to decrease further until the country finds stability.

However one would be wrong to think that leisure tourism is non existent in this country as there is a certain type of traveler that finds such destinations attractive. Somalia would do well to cater for this particular type of tourist and the more common business and expatriate visitor allowing these visitors to begin to blaze the trail for a culture and landscape that still has something to offer for those willing to seek it out. There are no known figures for the types and numbers of tourists traveling in and out of this country and a number of travelers do enter from the Ethiopian side without making their presence or entry known. This is a very significant omission of information from a tourism perspective.

Beach Tourism

The Somali beach near Mogadishu is very attractive and Somali families usually recreate here on weekends. However it must be remembered that Somalia as a country and culture is very sensitive to dress and therefore it is important to be aware that women must swim fully clothed as Sharia law is strictly enforced. Women are not permitted to show much of their bodies or to mingle with men. The beach would make for an ideal destination, however, the general threat of banditry, armed conflict and especially piracy along the rural coast make tourism risky.

There are several hotels within the country all offering the typical facilities associated with other hotel chains in the region. However, these facilities become more erratic in the rural areas. There is currently uncertainty with regard to guest security that is either correctly or incorrectly being portrayed and this has a negative marketing element to Somalia's accommodation establishments in the rural areas. Most country websites associated with guest accommodation to Somalia have warning signs of some nature about travel to this country. The Somali government has established a police force albeit it is still developing so crime rates are still high. There is a criminal component in Somalia and kidnapping is not uncommon for the purposes of ransom, which clearly makes the situation unattractive to the average tourist, however, this does not mean that tourism has completely stalled. The most common tourists in Somalia are expatriates working within the international aid sector, however, there are tourists from some parts of the world visiting this country purely for recreational reasons and subsequently taking advantage of a low cost holiday in a scenic coastal area. Local cultural activities such as food markets and the fishing villages are the predominant tourism products in populated areas.

Organized tours allow visitors to snorkel and scuba-dive in the Gulf of Aden and see some of Africa's best-preserved cave paintings at Lass Geel. One can also explore a medieval walled city noted for its 90 mosques. Apart from ethnic Somalis, everyone must obtain a visa to enter these regions but Somali visas, obtainable at Somalia's embassies abroad, are not accepted. The tourist activities mentioned above are located in the northwest, and to travel there one must possess a Somaliland visa, obtainable only from the Somaliland missions in London and Addis Ababa. Within Somalia only the breakaway Republic of Somaliland is stable and peaceful enough to foster tourist trade.

Somalia Attractions:

Bakara Market in Mogadishu is a street market, which displays an array of food items, clothes and ornaments. The Bakara market is one of the only tourist attractions in Somalia that has become popular because of its role in the Somalian War.

Shanghai Old City is an important landmark and one of the major Somalia attractions. The old city is known for its scenic beauty and architecture. This Somalia attraction is presently controlled by the wealthy business class and the warlords of the city⁹.

Sinbusi Beach is one of the most sought after tourist attractions in the country. This is five kilometers away from the city of Merca. The accommodation consists of beach huts with modern bathroom and kitchen amenities. The small beach huts are rented out to guests on arrival. Activities include sun bathing, snorkeling and scuba diving. Previously tourists would frequent beach restaurants that serve freshly cooked sea fish recipes like shrimps and lobsters however this is no longer a typical tourist experience due to the lack of restaurants and limited seafood.

Common tourist activities predominantly involve beach and market related activities. There is wildlife in the Sheikh mountains and the Daallo mountains near Hargeisa, however, the wildlife populations are being actively hunted on a daily basis.

2. Biophysical Environment

There is no active state implemented conservation policy within Somalia and subsequently no monitored regulations relating to the environment. Somalia would be advised to commit resources to managing state conservation as soon as it is possible. Almost all tourism economies in Africa are heavily dependent on the environment as an asset or resource that can potentially provide significant returns to the macro tourism economy.

The Somali coast is approximately 3300 km long and stretches from 2° South to 12° North. The area has one of the most significant large marine ecosystems (*the Somali Current Large Marine Ecosystem*) in the Indian Ocean. A feature of this ecosystem is the seasonal upwelling and consequent high productivity resulting from the Somali current. The coast is generally fairly straight with a few bays and sheltered anchorages except in the vicinity of the Bajuni Islands near the Kenyan border.

The main environmental issues and challenges with respect to tourism is that the wild animals of Somalia have been dramatically reduced due both to the necessity of food sources for local people, and due to the fact they have migrated to neighboring countries. Natural forests have also been reduced due to charcoal production for exportation. In turn, this has indirectly resulted in various forms of erosion meaning natural drainage systems have been destroyed and water points for livestock and wild animals. The main natural resource base in the hinterland has also been significantly degraded, having dire consequences for tourism in these areas.

From Berbera to Mogadishu, the immediate coastal zone is a virtual desert environment and living conditions for local communities are harsh. South of Mogadishu there is sparse inland vegetation and the terrain is more hospitable. Sandy beaches form a large part of the coastal environment of Somalia and are particularly important to the sea turtle populations (hawksbill, loggerhead and leatherback) of the area. Between Berbera and Bosaso, there are important turtle foraging and breeding grounds. Sparse seagrass beds are also found along the north east coast (Van der Elst⁵). Rocky shores and steep cliffs occur along both the northern and north eastern seaboard and provide roosting grounds for large populations of cormorants. Thus, there is the potential for nature based tourism activities both on land and offshore should these resources be better conserved. In addition to this, these resources need to have routes or activities for tourists developed around them so that they can be able to provide incomes for local people.

In essence commoditization of the natural resource base is needed. This would materialize in scuba diving activities or night time excursions to visit nesting turtle sights. These types of activities have proven lucrative for other African coastal countries with similar resource opportunities.

Somalia is made up of mostly flat lands and rises to form a table land and plateau in the hinterland. However, there are several mountains in the north of the country that rise to an altitude of about 2,000 meters above sea level. Although a large number of rivers enter the sea in Somalia, only the Juba and the Shabelle in the south have a permanent flow with significant estuarine and mangrove systems. The remainder only flow when there is rainfall, however, some have inlets and tidal creeks provide sheltered waters and easy access to marine resources (Van der Elst⁵;) Here again are the natural resources that throughout the continent form the basis for various types of ecotourism activities, albeit bird watching or kayaking.

However, a local appreciation for these resources and their potential to be commoditized and subsequently add to community livelihood options needs to be recognised. There is a tendency in many rural communities to view the environment only as a resource that can be consumed directly for fuel or craft making. The non consumptive use of these resources could provide income benefits for a wider range of people in a much more sustainable way. A large part of Somalia's livelihood rebuilding strategy as far as tourism is concerned would lie within entrepreneurial activities being developed around the environment.

Tropical coral reef communities are found south of Kismayo and down towards the Kenyan border but these are replaced by rocky subtidal reefs in the north east (Fielding⁶). Rich, shallow water coral reefs occur in the north west around Berbera and patch reefs are common along this coast (Van der Elst⁵).

Deeper water corals almost certainly occur along the entire coast, but information is lacking. Snorkelling and scuba diving has tourism potential throughout many of these reef systems. However, potential tourist operators would need to be given the necessary initiating structures to set up enterprises. This would involve training and start up loans, which is an area where donor agencies could play a role. There are a number of international aid agencies who do provide funding for these type of start up activities. The UNDP, USAID and SNV have recently shown an interest in harnessing tourism as a tool for economic development both at a micro and macro level.

3. Human Environment

Livelihood benefits emanating from the tourism economy in Somalia are very limited and the majority of the tourism industry is held within the hands of the business elite. This is not necessarily untypical of many other coastal African countries, however, there is always a certain level of economic distribution that occurs down the value chain. The fiscal amounts are nevertheless comparatively small that end up in the lower ends of the supply chain, which are still extremely significant in terms of the impact they have on livelihoods at the household level.

The challenges for the Somali region as a whole are immense. Social and political instability and the overlapping of the clan system with a teething democracy make the Somali context a very complex one. This complexity is amplified by rapid urban growth making it difficult to consolidate the potential advantages of a well-structured urban context to help activate the rehabilitation and development process. If developing Somali institutions do not attain self-sustainability, the entire society risks continued precariousness and the possibility of eventually sliding back into instability and civil war, a situation still largely existent in the southern regions.

Poverty and unemployment are rife in Somalia. The World Bank⁴ estimates that:

1. over 40 percent of Somalis live in extreme poverty (less than a dollar a day)
2. almost 75 percent of households subsist on less than \$2 a day.
3. approximately two-thirds of Somali youth are without jobs.

A combination of inter-clan rivalry, corruption, arms proliferation, extremism and pervasive impunity has facilitated crime in most parts of Somalia, particularly in Puntland and Central Somalia. This criminal activity eventually moved from land to the sea.

In a sense, the non-crime economy has been crowded out by the piracy-fuelled business. There is also the danger that handsome ransom payments are creating new and better equipped warlords, with potentially adverse consequences for political reconciliation in Somalia⁷. While it is true that a number of local businesses benefit, the piracy asset bubble and conspicuous expenditure patterns of the pirate gangs suggests that this economic activity is unlikely to be sustainable. Domestic and outside investors are also discouraged because of impunity and crime. This scenario bears very negatively on the overall tourism economy.

Somalia's neighbors are also impacted by the costs of piracy. Increased insurance premiums and diverted trade affects economic growth, while continued maritime insecurity contributes to the "bad neighborhood syndrome" which discourages investment and tourism. Egypt has been affected by reduced traffic primarily caused by piracy. Revenue from the Suez Canal is expected to fall from \$5.1 billion in 2008 to \$3.6 billion in 2010; a 30 percent decrease in two years². (Suez Canal receipts are Egypt's third highest foreign currency earner after tourism and remittances².)

The human costs are also noteworthy. Piracy has resulted in loss of life, trauma inflicted on hostages and their families. It also threatened to undermine human security in the Horn of Africa by disrupting much-needed foreign relief assistance. Targeting relief shipments worsens food insecurity in Somalia, where an estimated 3,2 million people (over one third of the population) rely on food aid and humanitarian supplies⁴.

Tourism could play a significant role in assisting to rebuild the Somali economy and subsequently begin to contribute to the livelihoods of Somali communities. Although tourism infrastructure is seemingly limited, there are formal accommodation providers scattered throughout the country in which routes could be developed. Localised accommodation could be provided in the homes of those families that may have sufficient space and may want to generate income in this way. These types of home based experiences are common throughout other parts of Africa and are considered one of the most effective ways for creating a more pro poor tourism based economy.

As food and accommodation are the sectors in which most of the tourist spending is found, this would also provide local people with the power base in terms of driving the tourist experience. This would mean that local entrepreneurs could themselves become a part of the new tourism operators, thus, enabling them to have a share in the tourism economy that currently is only held by the wealthy elite.

4. Policy & Governance

Tourism in Somalia has become largely if not completely a function of the private sector with minimal state intervention. However, a Ministry for Tourism does exist and has intentions of carrying out typical state administered roles. “The Ministry of Tourism and Wildlife of the Somalia transitional federal government is planning to revive its Tourism and Wildlife activities” Mohammed Hussein Sacid stated at a press conference in Mogadishu in August 2010. There have also been pledges from several Arab countries that they will support the Ministry of Tourism and Wildlife of the Somali Transitional Federal Government. For example, Syria has pledged that they will offer projects to revive the Tourism and Wildlife sector of the Somali transitional government. It is not known at this point as to what these projects might be and where they would be carried out.

While state direction and the provision of a strong enabling environment is preferable it is not however impossible for the tourism industry to grow and find its own way in the immediate short term. There are, however, dangers associated with this but for the case of Somalia it is probably necessary and more important that the private sector is the catalyst for opening the country's doors for tourism business.

Liberalisation of markets across the continent has proven to be a strong engine for economic growth for which tourism depends heavily. This has been proven by other less developed nations. For example, countries such as Turkey, Mexico and China have been very successful in their respective market reforms and take top positions among developing countries when it comes to growth rates in international tourism arrivals and tourism expenditures. Somalia can learn from this and take heed of these examples should it wish to create a strong tourism economic base. However, open markets and peace are two uncompromisable factors within tourism development.

In the near future an effective set of policies must look to address the underlying and sustaining factors of both a political and socio-economic nature, reflecting local and regional capacity and facilitate a coordinated solution. Change agents in Somali society that favour the breakdown of unethical economic activities should be locally supported. Training, mediation and capacity-building activities in

this regard are vital. Tourism administration and policy development go hand in hand with peace and law and order, as governance without the latter would be futile.

5. Planning and Management

Planning and management of Somalia's tourism industry are beset by the same problems that apply to Policy and Governance above. Essentially there is no effective national government, no effective national institutional structures, no tourism management plans, no regulatory framework and no integrated approach to coastal zone management and economic development. These features are unlikely to be developed or implemented until there is peace in the region.

There is no Marine Protected Area along the entire 3300 km of the Somali coast, although the pirates appear to be turning quite large areas into *de facto* marine reserves. Elders in villages are still regarded with great respect and are sometimes consulted on socio economic related matters. However, coastal communities have their own individual traditional rules even though there is no written statement of these rules. What these rules entail is not clear and the rules are community specific.

Nevertheless, in order to secure both sustainability of the tourism industry and the coastal resources, which will ultimately form the basis of the tourism product, increased attention must be given to sound planning and better integration of tourism in coastal development.

Aspects that require initial attention as Somalia builds its planning structures, include:

- Promoting the participatory management approach among the operational stakeholders in the coastal tourism sector.
- Enriching the operational capacity of institutions and people dealing with tourism development and/or coastal area management, in the private sector and at the local authorities/governments level.
- Raising awareness about the importance of sustainability and integrated management in the planning and management of tourism activities in coastal areas.

6. Development, Trade and Projects

Somalia drastically lacks human and financial resources as well as a political structure and stability that will allow its various socio-economic issues to be addressed at even the most basic levels. Rebuilding Somalia will take a long and sustained effort by the international community as well the country itself (UNEP State of Environment¹²). Major capital investments are required to re-develop the entire fishing and tourism industry in Somalia.

Industrial activity on the coast is poorly developed. Three of the four ports of Somalia (Berbera, Bosaso Mogadishu) are the foci of increasing industrial activity since they have good roads and airports. Berbera and Bosaso are being developed mainly by the "independent" Puntland and Somaliland governments. All three ports are also sites of major environmental pollution (waste discharge, bunker oil spillage, leaking oil storage tanks, ballast water discharge). Kismayo, the fourth port has development potential (airport, reasonable roads, sheltered anchorage) but is currently not receiving much attention for local political reasons (Van der Elst¹³).

The European Union's Strategy for Assistance to Somalia is to help establish a peaceful and secure environment in Somalia and to reduce poverty through the provision of basic social services and increasing economic activity. Under this framework, the critical intermediary political goal (2005-

2009) is to support the delivery of a new constitution adopted by referendum, and democratically elected institutions.

With funding from Novib (Oxfam-Netherlands), the Resource Management Somali Network (RMSN) was founded in 1996. Its mission relates to avoiding land degradation and desertification, protecting and ensuring more sustainable use of forests, effective management and protection of biodiversity, efficient water management, and dealing with pollution problems and population pressure on natural resources.

Whilst Somalia is in desperate need of any form of development support with regard to rebuilding its tourism economy, little is likely to arrive until the international aid agencies are convinced a climate of peace and effective governance is in place.

7. SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Favourable climate. • Close proximity to Middle Eastern markets. • Rich levels of coastal biodiversity, albeit these are declining and constantly being degraded. • Long scenic coastline. • No mass tourism. • Medium haul destination. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Very limited tourism institutional capacity • Limited follow through of tourism policy • No effective government and institutional structures conducive to tourism development. • Culture of violence and conflict • Tourism product lacks (positive) unique selling points. • Very limited tourism marketing capabilities. • International aid sector currently unwilling to commit resources and personnel to developing tourism infrastructure. • Limited coastal tourism activities. • Limited communication infrastructure is un-conducive to a tenuous crime associated destination.
<p>Opportunities</p> <ul style="list-style-type: none"> • Ministry of tourism is considered to be committed. • To engage international aid sector to assist with PRSP that includes tourism. • Use tourism economy to build much needed entrepreneurial sector. • Sensitize community attitudes to the environment as a much needed resource base for livelihoods. 	<p>Threats</p> <ul style="list-style-type: none"> • Culture of poverty associated with sub-culture of crime. • Limited participatory inputs from tourism operators in policy development. • Remaining isolated for extensive period from international tourism markets. • Financial sustainability of accommodation sector, ultimately bottoming out due to erratic and low tourist volumes. • Extensive period of being perceived by the international market as a negative destination. • Reputation of a destination used for dumping of toxic wastes in coastal environment. • Over-exploitation of marine resources typically used for tourist cuisine crayfish, etc. • Destination associated with piracy. • No provision of guaranteed security for any foreigner. • Destination known for illegal weapons market.

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Maps

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9. List of Projects

There are no known tourism specific projects in Somalia that this research was able to identify, this does not mean however that no tourism projects exist.

III. Mariculture

A dedicated report on mariculture has not been included in this country report due to the current difficulty in obtaining detailed information on the potential of this sector in Somalia. It has been determined though, that there are currently no mariculture activities taking place in the country. However, given the extensive coastline and strong tradition of utilizing and consuming marine products in the coastal zone, there is no reason why this kind of development should not be as attractive as it has proved to be in the other Western Indian Ocean states, once political stability returns to Somalia.

It is important to note that according the ASCLME project representatives from Somalia, the Transitional Federal Government of the Republic of Somalia sees activities such as mariculture in the coastal zone as an important alternative income generating activity that has the potential of reducing over-exploitation of coastal resources. It is recommended that at the appropriate time a dedicated assessment of the mariculture potential in Somalia be undertaken to determine the best approach to take in the development of this sector.

IV. Agriculture and Forestry - Prepared by Dr. Elizabeth Ann Daley,
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1. Introduction

Somalia covers an area of 637,657km² and comprises the areas known as Somaliland, Puntland, and Central and Southern Somalia. However, with the newly-elected president of Somaliland, Ahmed Mohamud Silaanyo, vowing to campaign “vigorously” for international recognition of his breakaway republic it seems likely it will not for long remain as part of Somalia, which will require a restructuring of policies to focus on these separate coastal zones (New York Times 2010). Somaliland broke away from Somalia in 1991 after the overthrow of Siad Barre plunged the country into chaos and anarchy and Mr. Silaanyo’s election thus marks the second democratic transfer of power in Somaliland since 1991.

Somalia (as it currently stands) has the longest coastline in Africa – at 3,025 km – and has a hot, arid to semi-arid climate with a rainfall of between 50-150 mm per annum along the coast and up to 500 mm per annum in the northern highlands. The total population of Somalia in 2008 was 8.45 million, of which about 1 million (or 12 per cent) live in the coastal zone (Wio-Lab 2008). Somalia is one of the poorest countries in the world with a per capita income of just USD\$226. The economy is dominated by agriculture, which accounted for some 64 per cent of GDP in 1991. The main food crops are sorghum, millet, maize and rice, while the majority of cash crop exports come from bananas, sugar and cotton. Crop cultivation is mainly limited to the irrigated areas of the Jubba and Shabelle rivers. The area under irrigation is relatively small compared to the irrigation potential of Somalia. Opportunistic rain-fed cultivation is also widely practiced, especially for sorghum and millet. Table 1 (below) presents some comparative crop and livestock production figures.

Table 1: Agricultural Production in Somaliland

	1982	1989	1999	2002
Crops (*000 tonnes)				
Sorghum	169.2	247	93.3	145 (2004)
Sesame seed	57.1	48	22	25
Bananas	78.7	116	45	36.9
Livestock (*000 head)				
Cattle	4,574	5,036	4,609	
Camels	6,239	6,890	6,294	
Sheep	10,580	14,316	11,834	
Goats	19,000	20,570	16,164	
Total	40,393	46,812	38,901	
Notes:	1989 is a good comparator, as it appears to have been a peak year for agricultural production			
Source: Various, World Bank Country Economic memorandum, tables 30 and 33				

Source: EC no date

As Table 1 indicates, livestock is a major economic activity within the agricultural sector, reflecting the traditional role of pastoralism in Somali society, accounting for around 50 per cent of the total population (EC no date). Despite continuing livestock bans, approximately 2 million animals are exported each year, accounting for about 60 per cent of Somalia's employment opportunities and generating about 40 per cent of GDP and 80 per cent of foreign currency earnings. Taxation of livestock trade and export is one of the major revenue sources for the regional administrations in Puntland and Somaliland (EC no date).

Banana exports represented Somalia's second foreign currency earner after livestock, but these collapsed after the El Nino floods of 1997/98. In all agricultural sub-sectors, including fishing, output could potentially be higher than historic and current levels, with careful environmental management to ensure sustainable growth. Even charcoal production, although environmentally damaging at present, is an important economic activity that has potential for sustainable growth. The contribution of manufacturing to GDP in the late 1980s in Somalia was no more than 5 per cent and it remains very low today (EC no date).

2. Biophysical

The main land forms in Somalia comprise flat plateaus and coastal plains with highlands only found in the north, where there are mist forests. Somalia's two permanent rivers – the Jubba and Shabelle – are shared with Ethiopia. The remaining water courses are ephemeral, but important as water sources (wells) and for their relatively richer vegetation 0.8 per cent of the land in Somalia is theoretically protected by a National Conservation Strategy. However there is no body governing the protection of biologically diverse zones, even though Somalia is in Conservation International's Horn of Africa Hotspot with over 60 endemic genera and over 2,750 endemic species.

Part of Somalia, the Masai region of plant endemism (savannas and shrub lands), hosts 24 important bird areas although generally fauna is depleted there due to illegal and over land-use. With the longest coastline in Africa, as noted above, the marine environment is rich due to nutrient upwellings which supply important off-shore fisheries that are the subject of substantial illegal, unregulated and unreported (IUU) fishing activities by foreign vessels. There are also some fringing reefs and coral patches along the Gulf of Aden and near the Kenya border.

Somalia is dominated by *Acacia* and *Commiphora* shrub and woodlands although extensive areas have been cleared for agriculture and localized dryland forests have been cleared for fuelwood and charcoal production. Trees are the most important terrestrial resource because of the goods they provide, particularly in dry times. Forests and woodlands cover about 23 per cent of the country and are dominated by *Acacia* species. However, little coastal forest remains, with Table 2 (below) suggesting that the coastal forests now maintain no value. Mangroves remain important in certain areas.

Table 2: Valuation of Ecosystem Goods and Services in Somalia

	Coral Reefs		Mangroves		Coastal Forests		Total
	Area (km ²)	Value (Million US\$)	Area (km ²)	Value (Million US\$)	Area (km ²)	Value (Million US\$)	Value (Million US\$)
Somalia	710	431	91	91	2	0	523

Source: Wio-Lab 2008

The best lowland forests in the country used to extend along the Jubba and Shabeelle river valleys, for most of their length. However, between 1960 and 1987, the forest along the Jubba valley was reduced from 93.5 km² to 9.0 km² (Wio-Lab 2008). The few remaining forests in the southern zones are being rapidly depleted, with an average deforestation rate of 0.97 per cent per annum, as a result of intensive charcoal production mainly for export. A similar situation is said to exist in northern areas, but because of the widespread destruction of *Acacia* forests that has already taken place in these areas, the scale is less (EC no date).

3. Human Environment

The key environmental challenges for Somalia stem from the effects of climate change on water, arable soils and biodiversity, increased population pressures, natural resource based conflicts, increased urbanisation and changing social patterns brought about by conflict. Degradation of water catchments, range areas, agricultural lands and the marine environment, along with illegal and over-exploitation of the natural resource base are key issues that impact on people's ability to meet subsistence needs and enhance productivity and economic growth (EC no date).

Given the ongoing conflict situation, very few Somalis have been able to rebuild their household economies in a prolonged and sustainable manner. Further, because of the fluctuating environmental conditions it is estimated that one in every five harvests will be a partial failure and one in 10 will fail completely. Livestock, the major source of savings, income and consumption for a majority of the Somali population, is similarly affected by drought and market fluctuations. The cyclical and seasonal return of higher rates of vulnerability has more recently been sustained by widespread poverty resulting from decades of economic stratification, devastated household asset bases, lack of basic social services and the alienation of producers from the country's productive resource base (Le Sage and Majid 2002).

Local artisanal fisheries are relatively low level as Somalia does not have a strong tradition of fishing (Wio-Lab 2008). However, fishing activities that have taken place have largely ceased, with some fishermen having moved to the urban centers in search of jobs, some engaging in small scale seasonal farming activities around towns whilst some rear small numbers of livestock (goats) and chickens. Lack of male employment in fishing poses an extra burden on women, because they have to look for an alternative method and means of maintaining the family, such as through opening tea shops, buying vegetables or cigarettes on the road sides, and washing clothes for other people (Le Sage and Majid 2002).

4. Policy and Governance

In the prolonged absence of a central government, and alongside the campaign for Somaliland to be recognized internationally in its own right (noted above), Somalia's war-torn economy has no policies for the management of coastal zones. Since the outbreak of the civil war in Somalia in the late 1980s and the subsequent collapse of the national government and its functions, any public sector support to coastal zone management has completely disappeared. Key aspects of sustainable rural livelihoods, such as efficient agricultural production systems with sound natural resource management, effective marketing channels, functioning water supplies and sanitation facilities, affordable social and productive services, and functioning civil society structures have increasingly deteriorated country-wide. Coastal areas have unsurprisingly become more and more unproductive, given the lack of proper central government to ensure a regulatory framework and to provide security to people and their property (Pecher and Batzien 2005).

Policy and legislation with respect to the environment in general is weak and outdated. Somalia has signed a number of international agreements and Multilateral Environment Agreements (MEAs), although there has been little progress in implementation. A process of Strategic Environment Assessment (SEA) could be used as an internationally recognized tool to move environmental policy-making forward from this. An SEA would identify, in all sectors, policies and laws where environmental issues are, or could be important (EC no date).

Among a series of recommendations for EC support to environmental policy-making in Somalia are included the following (EC no date):

1. Provide support to ensure that SEAs are carried out for existing and future policy and legislation so that environmental concerns and opportunities are recognized, understood and integrated into policy and law. While at a project level EIAs should be introduced as a mandatory requirement;
2. Develop capacity within Somalia to carry out SEA, and awareness amongst those concerned with policy on the importance of SEA;
3. Develop capacity in national accounting (including national statistics offices) and for evolving Poverty Reduction Strategy Plan (PRSP) processes so that environmental goods and services are recognized (economically, sectorally, nationally). Strengthen livelihood – environment linkages, which would include public sector expenditure reviews on the environment;
4. Given the level of risk (climatic, drought, floods) in Somalia, develop and support national capacity for risk management (early warning systems, risk management, adaptation) that can react rapidly;
5. Identify the opportunities and constraints to increased growth based on the environment and natural resources, and assess the impact of the key productive sectors on the environment;
6. Develop capacity to monitor the environment (for example with respect to climate change, land use, impact assessments of new activities) at different levels (village upwards) and be able to provide input on the achievement of the MDGs and poverty reduction strategies;
7. Develop the institutional and human resource capacity for environment and natural resource planning (e.g. integrated land use planning, water basin management, management of off-shore fisheries, and environmentally benign technologies for fuel) at various administrative levels (village to national);
8. Support Somalia to re-affirm its commitments to the international agreements it is party to, and ratify other important agreements, such as those on hazardous waste and UNFCCC; and
9. Assist Somalia to prepare for, and attend Conferences of the Parties of the various MEAs.

5. Planning and Management

Law enforcement on any coastal issues is a major problem in Somalia given that the government has no legislation on coastal zone management. However, in Somaliland, five Ministries are directly concerned with environmental issues and rangeland development: the Ministries of Fisheries; Livestock; Agriculture; Rural Development and Environment; and Water. The Ministry of Planning and the Ministry of the Interior, are also relevant to support environmental planning and management. The lead agency in environmental issues in Somaliland is the Ministry of Rural Development and Environment, as

empowered by various pieces of legislation of the Somaliland State (EC no date). The basic policy of the Ministry is progressive, in that it acknowledges the relationship between rural poverty, population growth, competition for scarce resources and land degradation. It has identified several key issues:

- Man made environmental damage
- Forest/rangeland degradation due to improper land use practices or lack of policy
- Uncontrolled water run off, wind and soil erosion, soil wastage
- Livestock pressure on rangeland, and low level of livestock production

Policy documents also acknowledge the need for planned environmental action and the crucial role of participation in planning and implementation of rural development projects by local people. For example, the *Guddida Dastuurka Qaranka, Nuqulka Kowaaad* (1996) mandates that:

- a) Decision making processes should be decentralised giving greater autonomy to the local level (from village upwards)
- b) Delegation of more powers to local level institutions not only in decision-making but also in implementation of programmes, but with the supervision, monitoring remaining at the centre level
- c) Collection of quantitative data to take place on a regular basis
- d) Periodic reassessment of the overall effect of policies and other factors concerning the economy and natural resources, to determine changes to enable the participation of local people.

This policy document also proposes that all barriers to free association of rural people in organisations of their choice be granted, and that opportunity of rural people to participate at the local level will be promoted (EC no date).

Presently, in Somaliland the Ministry of Rural Development and Environment is empowered by the Forestry Law No. 4/98, effective since May 1998. According to this law, thirty specified trees species may only be felled with authorisation, while a further nine specified species may not be felled or made into charcoal. The law identifies eleven Natural Forest Reserves, and proposes town and village forest reserves which will provide charcoal for urban populations, all which will have clearly defined borders. The law further proposes that there will be seasonal grazing reserves that are to be opened at fixed times, drought reserves that may only be opened during serious droughts, and rotational pastoral reserves. The law proposes that water development be undertaken only with permission from the Ministry, to reduce the proliferation of water development in any one area. Livestock are envisaged as part of the management plan of the forest reserves, and it is proposed that permits be introduced to allow grazers entrance to reserves, and that these permits be given by the community (Sommerlatte and Umar 2000).

The Ministry is to create a force that will investigate, guard and enforce the law to protect the land pastures, trees, wildlife, water and environment, and these shall be known as 'guardians of the environment.' Officers of the ministry and police are authorised to take action on any contravention of the law, and a series of taxes for permits for fodder collection, use of water tanks, collection of gums, and grazing of livestock on reserve lands is proposed. The most far reaching proposal in the Law 4/98 of May 1998, is Article 9, (Demarcation and Protection of Land) which proposes that all grazing land be divided into grazing zones or 'Minimum Integrated Rural Development Areas'. This calls for each administrative district to be divided into a minimum number of grazing areas or blocks, which are 12km by 12km in

size, where sustainable resource programmes are to be initiated and managed (Sommerlatte and Umar 2000).

A major problem in Somaliland is the growing trend of enclosing communal rangeland for private cultivation or fodder production. These enclosures disrupt nomadic grazing movement patterns, block stock routes to markets and water points. By taking out the small but vital grazing areas around seasonal streams, pastoral production is affected in large surrounding rangelands. The Ministry therefore also proposes to divide the land into five zones – rangeland, reserved grazing land, forest reserves, natural reserves and agricultural land (Sommerlatte and Umar 2000).

6. Development, Trade and Projects

Given the security situation there are great difficulties in operating projects in Somalia. However IFAD continues to support agricultural development efforts in Somalia through small grants (IFAD 2010). The main focus of IFAD's operations are on the country's northern regions to ensure food security in Somaliland and Puntland. In line with development guidelines established by the UNDP/WB Joint Needs Assessment of Somalia, activities focus on generating livelihood opportunities through livestock production (by increasing production and processing of livestock and dairy products and helping improve the export service sector), and agricultural production (by increasing and diversifying smallholder cash crop production, and developing irrigated and rainfed farming). IFAD runs 4 projects with a total cost of USD\$123.9 million utilizing an approved loan of USD\$30.3 million and directly benefiting 184,750 households.

7. SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> Positive policy base in Somaliland for sound and sustainable coastal zone development there, subject to establishment of international recognition and financial support 	<p>Weaknesses</p> <ul style="list-style-type: none"> Long history of conflict and continuing instability country-wide combine with climatic uncertainty and variability, including propensity to recurrent drought, to limit scope for families to develop and sustain their livelihoods
<p>Opportunities</p> <ul style="list-style-type: none"> Diverse natural resource base country-wide with endemic flora and fauna (including birdlife) that offers potential for tourism development if and when security and good governance can be established. Potential to expand agricultural, livestock, forest and marine resource cultivation on a sustainable growth basis through well-planned environmental and land-use management 	<p>Threats</p> <ul style="list-style-type: none"> Continuing conflict and insecurity in central and southern Somalia, including from Al-Qaeda presence in the country, suggest that any project or foreign-intervention successes will be very limited until things settle down Illegal offshore fishing and piracy in Somali coastal waters are also a problem for stability and good governance of the marine environment

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1. Introduction

Somalia has a rhino-horn shaped coastline of more than 3.000km (1.684 miles), the longest in Africa, earning the title of the Horn of Africa. It is bordered by Djibouti to the northwest, Kenya to the southwest, the Gulf of Aden with Yemen to the north, the Indian Ocean to the east and Ethiopia to the west.

Northern Somalia was occupied by the British from 1920 and southern Somalia was conquered by the Italians in 1927. This occupation lasted until 1941, and was replaced by a British military administration. The union of the two regions in 1960 formed the Somali Republic. In 1991, the Somali Civil War broke out, which facilitated the collapse of the federal government.

Since 1991, Somalia has been engulfed in anarchy. In May 1991, northern clans declared an independent republic of Somaliland. Although not recognized by any government, this entity has maintained a stable existence. The regions of Bari, Nugaal, and northern Mudug make up the neighboring, semi-autonomous state of Puntland, which has been self-governing since 1998. The state is not, however, aiming for independence.



A two-year peace process, led by the Government of Kenya under the auspices of the Intergovernmental Authority on Development (IGAD), concluded in October 2004 with the election of Abdullahi Yusuf Ahmed as President of the Transitional Federal Government (TFG) of Somalia. This also produced the formation of an interim government, known as the Somalia Transitional Federal Institutions (TFIs). TFIs relocated to Somalia in June 2004. In 2009, the TFI's were given a two-year extension to October 2011. This situation was further complicated in 2007, when the "Islamic Courts Union" launched an insurgency. The group soon controlled a large part of the country, however, they were partly repelled with the help of Ethiopian troops. Today, the security situation is still highly unstable.

1.1 Oil and Gas Sector overview

Somalia currently has no hydrocarbon production, and the national oil refinery closed because of the civil war.

Somalia has an estimated 200 billion cubic feet of proven natural gas reserves, and no proven oil reserves. But according to geological surveys, prospects of oil fields exist in the Northern zone (oil seeps identified), and in the North-Western zone (Nuggal and Dharoor basins). Exploration activities were carried out by foreign firms, including Agip, Amoco, Chevron, Conoco and Phillips, in the 1980's. The firms were forced to suspend operations following the collapse of the central government. Exploration companies have, however, recently renewed their attention to these fields (cf Annexe 1).

Given the complexities of the current political situation (one "official" central government with very little power, one autonomous, and one semi-autonomous region, with ramping rivalries within each entity), it is difficult to assess the position of the supposed players in Somalia's exploration process.

- In 2005, Puntland's government signed an agreement with Consort Private (Australian) for exclusive rights to explore and drill for oil in the Nuggal and Dharoor blocks. This agreement

was signed against TFG government’s will, which stated that the “natural resource belonging to the nation is the responsibility of the federal government”. Since then, Consort Private’s exclusive rights have been sold and shared to a consortium of 3 companies, including Africa Oil (Canadian), Range (Australian), and Lion (Canadian). Despite the “official” agreement with the Puntland Government, the companies are facing strong opposition from local landlords, and field operations have been delayed several times. It must also be added that the region of Sool, which contains the majority of the Nugaal block, was invaded by Somaliland forces in late 2007

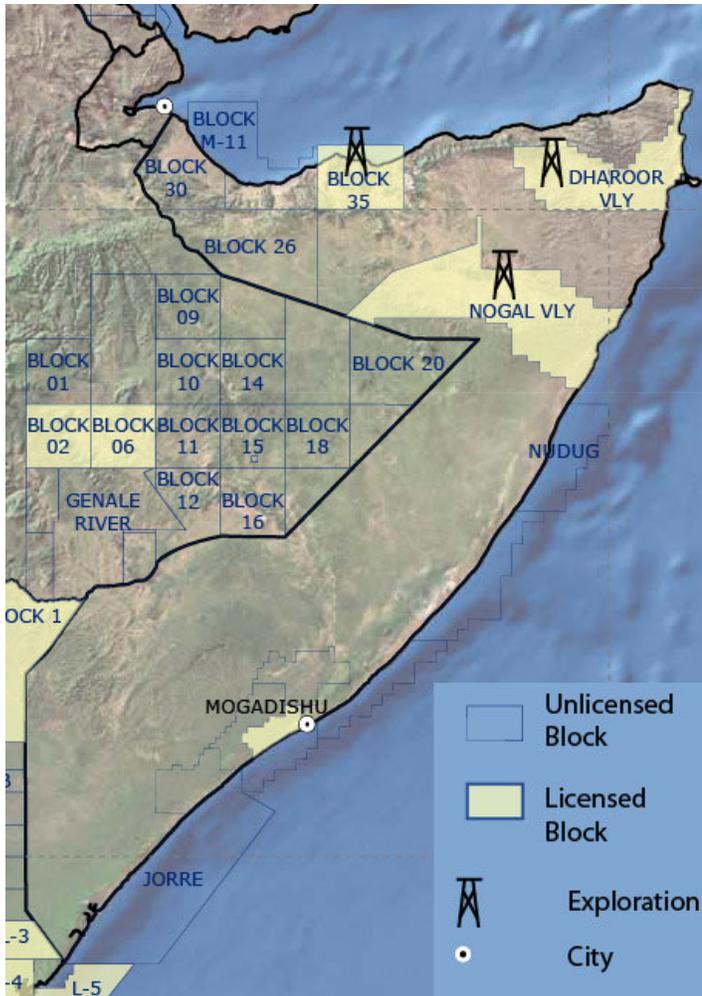


Figure 1: Map of the Oil & Gas activities in Somalia (adapted from Deloitte 2009)

- In 2007, TFG President Abdullahi Yusuf signed an agreement with CNOOC (Chinese), giving the company exclusive rights to the large offshore blocks off the coast of Mudug. TFG Prime Minister Gedi tried to nullify this agreement in an attempt to give exploration rights for all of Somalia to Indonesia’s PT Medco Energi Internasional Tbk and the Kuwait Energy Company. Gedi was later forced to resign.
- In 2003, Rovagold Energy Corp., UK gained rights to explore, develop and produce oil and gas in the coastal area of southeast Berbera, Somaliland. This included blocks 35, 36, M-10 and M-10A, previously operated by Amoco, a company that was forced to suspend operations in 1989.
- In 2001, Total signed an exploration agreement with the Transitional National Government (TNG). The twelve-month agreement granted Total the rights to explore in the Indian Ocean off southern Somalia. However, several factional leaders denounced the agreement, and stated that the TNG did not have the authority to sanction the agreement, nor the power to guarantee the safety and security of the exploration operations.

- The Somaliland Ministry of Water and Mineral Resources announced in February 2009 that the country’s first bidding round for hydrocarbon concessions had been extended by three months. The deadline for the final submission of bids was pushed to 15 December 2009, with concessions to be awarded on 15 March 2010. The bidding round included eight concession blocks comprised of more than 89 624km² of onshore and offshore areas. The rounds were originally scheduled to be finalised and awarded in August and December 2009.

Total is involved in the downstream sector in Somaliland. It rehabilitated and manages the operations of the oil terminal in Berbera, Somaliland's primary port. Total also supplies fuel to airports located in Berbera and Somaliland's capital of Hargeisa.

1.2 Biofuels sub sector

No records on the biofuel sub-sector have been found, and this sector is unlikely to develop due to the security situation.

1.3 Trends and prospects

Development in the oil and gas sector depends on the unpredictable evolution of the country’s political situation.

2. Biophysical

With the longest coastline in Africa, the country’s marine environment is rich due to nutrient upwellings which supply the off-shore fisheries. It is, however, subjected to substantial illegal, unregulated and unreported (IUU) fishing activities by foreign vessels. There are also some fringing reefs and coral patches along the Gulf of Aden and near the Kenya border. All of the southern sections of Somalia are prone to floods (1)

Reliable data for the country is not easily accessible, but Somalia’s energy consumption is obviously very low, relying mostly on renewable energy (wood, charcoal). CO₂ emissions are, thus, very low.

Table 2: National data on energy consumption and impacts of climate change

Energy use (kt of oil equivalent)	Combustible renewables and waste (% of total energy)	Fossil fuel energy consumption (% of total)	CO ₂ emissions (kt)	CO ₂ emissions (metric tons per capita)
			172.20	0.02

Source: World Bank, year 2006

There are no reports of any major oil spills off the Somaliland coast (2), however, allegations of waste dumping off Somalia by European companies have been reported for many years. The 2004 Indian Ocean tsunami actually washed ashore broken hazardous waste containers. A UN technical fact-finding mission visited the “Puntland” region of Somalia, from 25-29 May 2005, to investigate allegations of toxic waste hazards uncovered by the tsunami. The mission visited three key populated coastal locations at Hafun, Bandarbeyla and Eyl. No traces of toxic waste were found, however, the UN added that “the urgent need remained for a more comprehensive assessment of the natural environment of Somalia, which would include further investigations of alleged toxic waste sites on land and the dumping of toxic waste at sea” (1)

3. Human Environment

Since 2003, headlines about Somalia are mostly related to the growing phenomenon of piracy. Analysis of coastal livelihoods in the country must take this trend into account.

The root cause of the redeployment of fishermen to piracy seems to be linked with the depletion of fish resources, as well as illegal fishing by European and Asian fleets (“It estimated that the fishing by foreign fishing vessels in Somalia waters and the close proximity accounts for USD 94 million annually”, and also “The international community might lose legitimacy if its naval response appears to be under the influence of states connected to the off-coast fishing fleets”(3)). The first acts of piracy were committed against Spanish and Danish trawlers by local fishermen who claimed to be coastguards. The struggle against waste dumping by foreign vessels was also presented as a reason for attacking them.

These two issues have clearly been pointed out by the Contact Group on Piracy off the Coast of Somalia (CGPCS), which stated in 2009 that “Piracy is a symptom of a wider lack of security and rule of law in Somalia and continues to constitute a threat to regional stability. As important, piracy is symptomatic of the overall situation in Somalia including the prevalence of illegal fishing and toxic waste dumping off the coast of Somalia, which adversely affects the Somali economy and marine environment”.(4)

On the other hand, development of piracy restrains fish trading along the coast, which reduces income opportunities for the remaining fishermen.

Piracy also generates a major flow of income into the region. Several analysts studied the “piracy economy” and found that, in 2008, pirates collectively earned between \$50 and \$150 million. To put those figures in perspective, the entire Puntland economy is estimated to be only around \$ 20 millions (2). A “piracy economy” has clearly developed, with a range of services (notably in Eyl harbour, in Puntland), and even foreign networks throughout the diaspora investing in real estate (notably in Kenya).

Some authors believe that the cost of piracy is not so high for the international community, and that the “key players” in the region are taking advantage of the present situation (5). This, however, increases the risk of fishermen shifting to this type of activity.

Of course, human activities in Somalia cannot simply be reduced to piracy, as “Despite the lack of effective national governance, Somalia has maintained a healthy informal economy, largely based on livestock, remittance/money transfer companies, and telecommunications. Agriculture is the most important sector with livestock normally accounting for about 40% of GDP and more than 50% of export earnings” (CIA factbook Somalia country profile)

3.1 Socio-economical indicators

Somalia is ranked among the poorest countries in the world. GDP per capita is particularly low.

Table 4: National economic indicators

GDP (million current US\$)	GDP growth (annual %)	GDP per capita (current US\$)	GDP per capita growth (annual %)	GINI Index (2007)
917.04	- 1.48	139.03	- 1.91	(not available)

Source: World Bank, year 1990, and HDI

Table 5: National social indicators

Population, total (million)	Population growth (annual %)	Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	Human poverty index (HPI-1)	Human development index
8.92	2.19	(not available)	(not available)	(not available)

Source: World Bank, year 2008, and HDI, year 2005

Table 6: National gender indicators

Life expectancy at birth, female (years)	Life expectancy at birth, male (years)	Literacy rate, adult female (% of females ages 15 and above)	Literacy rate, adult male (% of males ages 15 and above)	Gender-related development index (GDI)
51.30	48.43	(not available)	(not available)	(not available)

Source: World Bank, year 2008, and HDI, year 2005

3.2 Details of corporate and social responsibility programmes of the oil and gas companies

The oil and gas companies engaged in exploration activities in Somalia don't show any commitment for environmental or social issues. Their only goal at the moment is to seal strong deals with national and local authorities in order to safely conduct their operations.

4. Policy and Governance

Given the status of the country, governance arrangements and strategic frameworks are powerless. Although Somaliland and Puntland managed to maintain some degree of stability and have allowed economic activities to develop, Somalia is largely dependent on emergency international aid. Assistance for strategies at the national level are heavily reliant on recovery plans supported by the UN. In relevance to the coastal zone, no benefits from an applicable management strategy are prevalent.

At the local level, an effective network of environmental NGOs was present in Somalia in 2005. *“With funding from Novib (Oxfam-Netherlands), the Resource Management Somali Network (RMSN) was founded in 1996. Its mission relates to avoiding land degradation and desertification, protecting and ensuring more sustainable use of forests, effective management and protection of biodiversity, efficient water management, and dealing with pollution problems and population pressure on natural resources.”* (1). The present situation of this network is nevertheless uncertain.

4.1 Policy and Legislation

As noted above, there is no common legislation that is accepted all over “official” Somalia (and applying in Somaliland and Puntland).

For oil activities, the following texts have been identified:

Somalia: Somalian Petrol Bill (2007)

Somaliland: Mining Code and regulations (1984)

Puntland : Petroleum Development law (2008)

For Somaliland, the following texts have been identified:

Environment:

- Law on Fauna (Hunting) and Forest Conservation (Law No. 15 of 25/1/1969)
- National Environment Research and Disaster-preparedness (NERAD) Agency Law – Law No: 35 of 2006 (passed by both Houses in 2007)
- Law on the Prevention of Deforestation & Desertification (Law N: 04/1998)
- Ministerial Programme on marine reserves and conservation April 2004
- Agricultural land : Agricultural land ownership Law (n° 17/2001)

4.2 Governance

“Official” governance structures can be identified through the different governments of Somalia (Transitional Federal Government, or TFG), Somaliland and Puntland. Claimed competencies do, however, overlap at this level.

In the field, traditional governance structures are still very active, which can stop initiatives of the central or regional government (cf. the case of oil exploration in Puntland). In this respect, it is very difficult to clearly identify operational governance in the country.

5. Planning and Management

Given the national context, planning and management capacities are weak, if not non-existent, at the national level.

A joint Needs Assessment for Somalia, carried out by the UN, the World Bank and Somali partners has been conducted. From that work, a Reconstruction and Development Programme (RDP), a five-year national plan for Somalia, was prepared. Within this framework, the United Nations Transition Plan (UNTP) for Somalia is the common plan for 2008 to 2009 for the agencies, funds and programmes of the UN in Somalia. The UNTP sets out the strategy of the UN in Somalia and identifies how it will achieve this strategy (6).

Policy Planning Initiative	Objective
Reconstruction and Development Programme (RDP) of Somalia (2008 – 2012)	RDP is a document to mobilize and coordinate international assistance for a five-year period in Somalia.
United Nations Transition Plan for Somalia (2008 – 2009)	Relies on 5 strategic pillars : <ul style="list-style-type: none"> • Key federal, Somaliland and Puntland institutions administer and manage core government functions more effectively; • Local governance contributes to peace and equitable priority service delivery in selected locations; • Improved security and protection under the law for all; • Children, youth and vulnerable groups have increased, more equitable access to quality education and health services; • Vulnerable and marginalized groups have improved sustainable food security and economic opportunities.

6. Development, Trade and Projects

Most aid agencies and NGOs have left Somalia for security reasons. Projects implemented in Somalia are reliant on United Nation's agencies, with 6 main programmes:

- Recovery and Sustainable Livelihoods
- Governance
- Rule of law and security
- Support towards reaching the MDGs
- HIV / AIDS
- Gender equality

Details on the first two projects are provided below:

Development project	NGO / Donor / Private Sector	Project details
Recovery and Sustainable Livelihoods Programme	UN agencies	<ul style="list-style-type: none"> • Area-based Early Recovery for Affected Communities — Building on communities' coping mechanisms. This initiative addresses their vulnerability to natural hazards and disasters, the livelihood assets and opportunities available to households, and the policies and structures in place for livelihood development and disaster management. • Employment Generation for Early Recovery Project — This project seeks to create income and jobs for vulnerable groups such as women, youth, IDPs and their host communities in South Central Somalia. • Private sector development – supports the emergence of a viable private sector in Somalia by promoting inclusive market development and an inclusive financial sector. In particular, UNDP helps develop microfinance and supports the Somali meat export sector, one of the main sources of employment and export income. • Watershed management and flood protection – this project helps communities both protect themselves against the threat and effect of floods, as well as harvest water for agriculture and livestock. • Protection, Reintegration, and Resettlement of IDPs in Bossaso, Somalia - The project aims to improve human security and living standards and provide durable solutions for reintegration and resettlement of IDPs and returnees in Somalia, with a particular focus on IDPs currently in Bossaso, North-east Somalia.
Governance Programme	UN agencies	<ul style="list-style-type: none"> • Local governance (http://www.so.undp.org/index.php/Local-governance.html) - UNDP, together with four other UN agencies, works to place communities at the core of local development to ensure that the services provided are relevant to a given community and that the local councils are accountable to the people and transparent. • Somali Institutional Development Project (SIDP) — The SIDP seeks to implement institutional development and capacity building first by targeting the 'machinery of government' (parliament and central agencies), followed by professional institutions responsible for public administration. • UNDP Somalia Constitution-making Support Project - UNDP and Somali partners designed the Somali Institution Development Project for south central Somalia, Puntland and Somalilan.

7. SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Long Coastline • Potentially rich marine ecosystem • Serious prospects of existing oil deposits • Effective government in Somaliland, though not internationally recognized 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Insecurity and recurrent armed conflicts • Failed State and rampant rivalries among governance bodies, at every level • Country's economy mostly informal, unable to contribute to State building • Piracy as principle coastal industry • Lack of basic infrastructures in most of the country
<p>Opportunities</p> <ul style="list-style-type: none"> • Oil sector development could generate employment and contribute to improve infrastructures 	<p>Threats</p> <ul style="list-style-type: none"> • Development of oil operations (drilling, exploitation, transport, processing, storage etc) in an insecure environment increases accidents and oil spill risks. • Involvement of private companies from emerging countries are not always respectful of environmental and social regulations

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- (2) ITOPF, 2010, "Oil tankers spill statistics : 2009", 8p.
- (3) Sorenson K. / FOI, 2008, « State Failure on the High Seas : Reviewing the Somali Piracy", 47 p
- (4) Contact Group on Piracy Off the Coast of Somalia, 2009, "Policy statement", 4 p.
- (5) Percy S. & Shortland A., 2010, « The Business of Piracy in Somalia", 60 p.
- (6) UN, 2009, "UNITED NATIONS TRANSITION PLAN FOR SOMALIA, 2008-2009" 79 p.

9. List of datasets / 10. List of sector related projects

UN Joint Programme on Local Governance and Decentralised Service Delivery -

http://www.uncdf.org/english/local_development/uploads/project/SOM_LG-DSD_PRODUC_05_EN.pdf

United Nations Transition Plan for Somalia, 2008-2009 - <http://www.so.undp.org/index.php/Download-document/61-Un-transitional-plan-for-Somalia-2008-2009.html>

Petroleum law - http://www.somalilandlaw.com/Somalia_Petroleum_Law.pdf

Oil tankers spill statistics: 2009 - www.itopf.com

The State of the Environment in Somalia - http://postconflict.unep.ch/publications/dmb_somalia.pdf

Land, Property, and Housing in Somalia -

<http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2601>

Managing Complex Emergencies Chapter 6. Somalia: Did Leaders or the System Fail? -

<http://www.ccoportal.org/file/1939>

Piracy, Economics, and the Law - http://www.peterleeson.com/Economics_Piracy_and_the_Law.pdf

Somalia: Prosecuting Pirates and Ensuring a Viable Economy - <http://www.atlantic-community.org/app/webroot/files/articlepdf/Memo%2016%20Somalia.pdf>

State Failure on the High Seas : Reviewing the Somali Piracy -

<http://www.foi.se/upload/projects/Africa/FOI-R--2610.pdf>

The Business of Piracy in Somalia -

http://www.diw.de/documents/publikationen/73/diw_01.c.358500.de/dp1033.pdf

Policy statement -

http://www.marad.dot.gov/documents/POLICY_STATEMENT_for_Contact_Group_on_Piracy_off_Coast_of_Somalia.pdf

The Evidence of Toxic and Radioactive Wastes Dumping in Somalia and its Impact on the Enjoyment of Human Rights: A Case Study -

http://www.wardheernews.com/Articles_2010/June/Bashir/Toxic_waste_dumping_in_Somalia_and_its_impact_on_human_rights.pdf

Situation Report - <http://www.iss.co.za/uploads/SITREPSOMALIANOV07.PDF>

Somali Government (TFG) - <http://www.tfgsomalia.net/English%20Language/>

Laws of Somaliland - <http://www.somalilandlaw.com/>

Somaliland government - <http://www.somalilandgov.com/>

UNDP in Somalia - <http://www.so.undp.org/>

Africa Oil - <http://www.africaoilcorp.com/s/Home.asp>

Lion Energy - <http://www.lionenergycorp.com/home.php>

Range Resources LTD - <http://www.rangeresources.com.au/>

Annex 1.

The history of hydrocarbon [oil & gas] exploration activities in Somalia
[Abdulkadir Abiikar, Petrosom, 2007] <http://www.somalitalk.com/oil/petrosom.html>

#	Date	Researcher/Oil Company and/or organisation	Type of work or activity
1*	2007	Canmex in joint venture with Range Resources in Puntland	Canmex will start drilling for oil in Puntland at the beginning of 2008 in blocks previously awarded to Conoco. [Conoco suspended operations in 1990.]
1	2005	Range Resources obtained farm-in deal with Puntland State. [Range is an Australian firm]. The agreement covers on hydrocarbons and mineral exploration in Puntland.	Range Resources won the exploration and development rights of some blocks originally negotiated by Conoco and other foreign oil companies during Siyad Barres regime in the 1980s. In 2006, many of those exploration contracts expired, although many of the companies simply suspended operations.
2	2005	East African Petroleum Conference [EAPC] in Uganda for promotion of exploration of East Africa	The presentations unveiled the petroleum Potential and Investment Opportunities in East Africa, in particular the East Coast and Horn of Africa.
3	2003	Rovagold Energy Corp., UK to explore oil in Somaliland in coastal area of southeast Berbera.	Explore, develop and produce oil and gas from blocks 35, 36, M-10 and M-10A, previously operated by Amoco, a company that suspended operations in 1989
4	2002	Michael Brady's technical talk at Kansas State Univ. for Kansas Geological Society	A summary of past hydrocarbon exploration activities and the hydrocarbon potential of Somalia
5	2001	Arta Transitional National Government awarded exploration concession to Total-Fina-Elf (French company).	Total-Fina-Elfs concession consisted of several coastal blocks (12, 9 and 6) previously awarded to Amoco and AGIP, south of Mogadishu from Afgoye Marka to the delta of Juba River in Kismayo, and beyond to Ras Kiyamboni.
6	1999	Al Consulting, a Canadian firm undertook hydrocarbon potential of the Eastern African margin, studying 11 countries, including Somalia	Al-Consulting produced a hydrocarbon potential report on Somalia
7	1992	World Bank: African Exploration Opportunities: Somali and East African Rift Basins, 1992 Robertson Research geochemical department carried out the studies.	A study of the geological setting, basin development and tectonic history, petroleum habits and field economics for Somalia, Ethiopia and northern Kenya. Robertson Research geochemistry department (UK) carried out geochemical studies on cores and samples extracted from 27 exploration wells drilled in Somalia. The data analysed and accumulated in database consist of source rock occurrence, type and maturity, along with oils typing and correlation, and oil to source rock correlation.
8	1991	World Bank coordinated initiative launched by AAPG, Eastern Hemisphere Group in London	Encouraging private investment to develop the petroleum potential of 8 African sub-Saharan countries. Somalia and Sudan ranked at the top of the list of the eight.
9	In 5 decades	The Ministry + oil companies + donors from the international community + World Bank	Funded to Drill 70 exploratory wells in Somalia in about 60 years of exploration, some of which were promising. Currently, Somalia is under-explored and neglected
10	1991	The National Exploration Archive of the Ministry of Minerals & Water Resources	The archive, stores and the database were burnt, looted and destroyed.
11	1989	Brady et al	Evaluation of Hydrocarbon potential of Somalia
12	1980s		
13	1960 - 1990	Ministry of Petroleum, Minerals & Water Resources: Built Stores, archive and database	The ministry built a National Exploration Archive in which confidential and un-confidential documents, cores and seismic data were stored.

14	1988 - 1991	Report on World Bank-coordinated activity, headed by Thomas E. O' Connor, ZR Beydoun from Marathon Oil and others.	This activity was funded by the World bank, UNDP, Canada, France and UK in addition to some western oil companies. The activity focused on regional hydrocarbon study of the countries bordering the Red Sea and Gulf of Aden. [Saudi Arabia did not participate]. The study indicated that there is good potential for oil and gas deposits in Northern Somalia
15	1980s	12 International oil companies, including Conoco, Amoco, Arco, Chevron, Shell (Pecten), Phillips and Agip, ENI, sought and obtained exploration rights in Somalia	Oil companies leased exploration blocks in the North, Northeast and Central Somalia to explore and develop oil and gas.
16	1977	Hilal AF, Pvan G and Robba E published the stratigraphy of the Somali sedimentary basins	Geologia stratigrafica della Somalia, Quaderni Di Geologia, Vol. 1, pp. 19 -50, Facolta Di Geologia, Univ. Naz. Som, Mogadishu
17	1976	Barnes SU of Sinclair Somal Corporation (1955 -1960)	Geology and oil prospects of Somalia, East Africa, AAPG, Vol. 60, no.3, pp.389 -413
18	1975	Rompetrol of Romania (state-owned oil company)	Considerations on the oil prospects of the Democratic Republic of Somalia; unpublished, Bucharest, Romania
19	1973	Beltrandi M. and Pyre A	Geological evolution of SW Somalia; in Blant G, ED.; Sedimentary basins of S and E African Coast; pp. 152 -178, Ass. Serv. Geol. Afrique; Paris
20	1972	The geological survey team of the Peoples Republic of China	Report on petroleum and coal survey of the Somali Democratic Republic; Beijing
21	1972	The Scientific Team	Deep Sea Drilling Project; Legs 23 -25, Geotimes, Vol. 17 (7)
22	1960	Lyons P. and Benison A. of Sinclair Somali Corporation	Somalia: Geological and geophysical report, unpublished, Mogadishu, Somalia
23	1957 - 1977	AGIP Mineraria, AGIP Somalia	Unpublished reports, Mogadishu; Somalia
24	1968	Andrews SM; Sinclair Somalia corporation	Unpublished final report, Mogadishu; Somalia
25	1950 - 1970	Oil companies (AGIP and Sinclair)	For 2 decades companies worked actively, though their reports were confidential
26	1960	Azzaroli A. and Merla G.	The geologic map of the Somali peninsula
27	1958	Azzaroli A. and Merla G.	Geologic map of Somalia and Ethiopia, including the Ogaden.
28	1948	In Kenya, Dixey published a report	The Jurassic succession of NE Kenya and the Juba River (the Jubaland)
29	1954	The Somaliland Oil Exploration Company Ltd.	Geological reconnaissance of the sedimentary deposits of the protectorate of British Somaliland
30	1946	C.I. Migliorini of AGIP Mineraria	Geologic studies on the Somali State of Ethiopia (the Ogaden)
31	1933	Guiseppe Stefanini of the National Research Council of Italy	A report + Geologic map of the Horn of Africa
32	1925	Guiseppe Stafanini	Compiled a report on the geology of Italian Somaliland (Southern Somalia)
33	1870	WT Blanford of the Geological survey of India	Wrote the earliest geologic report of East Africa, including Somalia

VI. Ports and Coastal Transport - Prepared by Professor Gavin Maasdorp, E-mail: gmaasdorp@imanidevelopment.com

1. Overview

The coastline of Somalia stretches approximately 2,300 km from the Kenya border to the Horn of Africa. The coast is fairly regular with very few deeply indented bays and few river estuaries suitable for ports. The main ports are located at or near the largest rivers: Kismaayo to the south of the mouth of the River Juba; Mogadishu (the capital), a built port with artificial breakwaters between the Webbe Shibeli and the sea; and Eyl at the mouth of the River Eyl, without a formal port structure, but used extensively by local fishermen who venture far into the Indian Ocean. The town has become a major pirate stronghold.

The main economic activities of the coastal area have historically been fishing and agriculture in the areas watered by the few rivers. In the areas between the rivers the people are nomadic pastoralists with sheep, goats, camels and cattle.

2. Extent of ports and transport activities

There are four major ports in Somalia which used to fall under Somali Ports Authority: Mogadishu, Berbera, Kismaayo and Bossaso. Kismaayo and Mogadishu are on the Indian Ocean seaboard and the others in the Gulf of Aden.

All ports now fall under independent port authorities set up by local clans, as do the smaller ports such as El Ma'an and Merka. Due to civil instability and inter-clan fighting, Mogadishu is only partly operational and Kismaayo is closed to UN vessels, although still used by commercial operators. Piracy has become a major industry and a scourge in the Indian Ocean area within reach of Somali pirates. Despite the presence of the warships of several navies, the area is still regarded as having the most dangerous waters in the world, and few foreign-registered ships are willing to dock. Since May 2005 many ships have been hijacked, and several of them have thereafter been used as "mother ships" for hijacking additional vessels within Somali territorial waters and as far as a thousand kilometres into the Indian Ocean. The US has banned all routing of UN and humanitarian vessels to Somalia.

Kismaayo

Kismaayo is the most southerly port, lying at the end of an artificial breakwater that shelters a large deepwater harbour. The port handling and transport is made difficult by the fact that all berths are at the extreme end of the breakwater, which therefore forms part of a causeway on which the road runs from the port to mainland.

Kismaayo is used for export of charcoal and bananas from the Juba valley, and receives vehicle imports from the Gulf. The port can accommodate vessels up to 180 metres in length with a maximum draft of about 8 metres. It has two berths measuring 340 metres and 280 metres respectively, and two roll-on-roll-off (ro-ro) ramps. The port is not used for humanitarian aid operations due to security concerns and inability to guarantee cargoes through the port.

Merka

Merka lies on the coast of the Lower Shabelle region about 100km south of Mogadishu, and is controlled by clans and warlords who have vested interests in keeping the port of Mogadishu closed. The port has no infrastructure or facilities, and vessels therefore discharge from their anchorage offshore and cargo is picked up either by barges or smaller vessels for beaching. From the beach, cargo is collected by trucks.

Mogadishu

Since the collapse of the government in 1991, Mogadishu has seen a succession of armed conflicts and is still controlled by feuding warlords. It is reported that, even within the port, specific areas are staked out and controlled by different parties without a central managing institution.

The port was modernised and partly rebuilt in the 1990s with UN and US aid, and has good berthing and protection from the seaward side and navigation aids. There are reportedly reasonably safe and effective warehouses and adequate handling equipment for current volumes of imports.

El Ma'an

This port is in the Middle Shabelle region 45 km north of Mogadishu. It is naturally protected, and is currently run by Benadir Maritime and local port operations as a consortium. Most shipments are made to Mombasa, and thereafter transhipped and sent to El Ma'an.

Eyl

Technically Eyl does not have a port but, as the town, located a short distance inland, is a pirate stronghold, Eyl is a home base for piracy which has become a big business as attacks have been increasing.

3. Policy and Governance of Ports and Transport

Due to the lack of a central government, there is no clear policy or planning of port activities, except by the local warlords who control all trade through their territory. There are no railways in Somalia, and all land transport is by truck and bus.

4. Planning and Management of Ports

The major ports used to fall under Somali Ports Authority. As mentioned in Section 5.1, they are now controlled by independent port “authorities” set up by local clans.

5. Development and Trade

Somalia faces major development challenges. Its economy is pastoral and agricultural, with livestock-principally camels, cattle, sheep, and goats-representing the main form of wealth; 60% of the population is still nomadic and pastoral, 25% agricultural and 15% urban. Because rainfall is scanty and irregular, farming generally is limited to certain coastal districts near Hargeisa and the Juba and Shabelle River valleys. The agricultural sector of the economy consists mainly of banana plantations located in the south,

which has used modern irrigation systems and up-to-date farm machinery. The country has largely unexploited reserves of iron ore, tin, gypsum, bauxite, uranium, copper and salt.

Somalia's private sector has continued to operate despite the lack of a functioning central government since 1991. There is some industrial activity in the fields of telecommunications, animal and fish processing, textiles and transportation. However, the balance of trade is negative - exports amounted to \$300 million in 2006 as against imports of \$576 million - and recent economic reverses have left its people increasingly dependent on remittances from abroad. Approximately 30% of the population are said to be dependent on foreign aid for survival, but piracy has made it difficult and costly for aid shipments to be delivered into the region.

6. Ports Impact and Benefits to Coastal Communities

The main impact of the ports on the coastal communities relates to the import of foods and fuels and some limited employment in the export agricultural industries such as bananas. A small fishing industry exists in the north where tuna, shark, and other warm-water fish are caught, although the pelagic fishing industry has been seriously affected by poaching by international fishing fleets. Somalia is within range of the main Indian Ocean tuna migrations, but does not benefit significantly from that due to foreign competition and lack of local capital investment in ships, port development and processing facilities. It has been suggested that foreign poaching may have added motivation to the increase in pirate activity by ex-fishermen.

Due to the difficulty of the coastal terrain and the lack of effective administration, it is unlikely that significant development of the coastal areas of Somalia will be possible except in the inhabited and partly developed river valleys where water is available. The exploitation of the mineral resources of the country will also be complicated by the lack of water and transport facilities as well the extreme instability of the governing forces in the whole coastal region.

7. SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Some developed harbors • Seafaring and fishing skills 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Absence of government, law and order. • Pirate activities in Somali and adjacent waters. • Low levels of economic activity. • Arid climatic conditions
<p>Opportunities</p> <ul style="list-style-type: none"> • Re-establish State, law and order. • Re-establish economic framework 	<p>Threats</p> <ul style="list-style-type: none"> • Continued marginalisation due to violence and corruption

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VII. Coastal Mining - Prepared by Mr. Thomas Cushman,
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1. Introduction

Somalia, officially the Somali Democratic Republic, has a rhino-horn shaped coastline of more than 3,000km (1,684 miles), the longest in Africa – which earned it the designation, the Horn of Africa, is bordered by Djibouti to the northwest, Kenya to the southwest, the Gulf of Aden with Yemen to the north, the Indian Ocean to the east, and Ethiopia to the west. About half of the largely homogenous population is nomadic and the other half evenly divided between settled farming regions of Juba-She/he and the towns. Islam is the prevailing faith and most Somalians speak Somali, which, together with Arabic, is an official language. English and Italian are the main European languages. Northern Somalia was occupied by the British from 1920 and southern Somalia was conquered by the Italians in 1927. This occupation lasted until 1941, and was replaced by a British military administration. The union of the two regions in 1960 formed the Somali Republic. In 1991, the Somali Civil War broke out, which saw the collapse of the federal government.

Since 1991 Somalia has been engulfed in anarchy. Years of peace negotiations between the various factions were fruitless, and warlords and militias ruled over individual swaths of land. In May 1991, northern clans declared an independent republic of Somaliland. Although not recognized by any government, this entity has maintained a stable existence. The regions of Bari, Nugaal, and northern Mudug comprise a neighboring semi-autonomous state of Puntland, which has been self-governing since 1998 but does not aim at independence.

Although internationally unrecognized, these states have been mostly stable. Foreign business with Somalia remains on hold as the struggle between the fighting factions continues. Economic progress has stalled in most parts of the country in the wake of the unrest and instability that followed the fall of the military regime in 1991. After failed attempts by US and UN military forces to impose a settlement while overseeing the distribution of international food and other humanitarian aid in the 1990s, Somalia has been left largely to its own devices. A transitional government still faces strong armed opposition from rival factions and in their efforts to reunite the breakaway of Somaliland and Puntland State with central authority in Mogadishu. Piracy is rampant in the Indian Ocean with pirate bases being on the Somalia coast.

Figure 1: Map of Somalia



2. Mining Sector Overview

A US geological survey indicated 1,500 tons of gypsum, 600 tons of marine salt and 6 tons of sepiolite was mined, each year, from 1998 to 2002 in Somalia. There are no data on current mining. There are tin-tantalum deposits located at Dalan and Manja-Yihan in Puntland, which were exploited previously by Technoexport Bulgaria during the 1970s and the presence of simpsonite (a high-grade calcic aluminium tantalate) in heavy mineral sands deposits developed along the beaches east of Berbera implies the presence of undiscovered tantalum resources in the adjacent basement. Mineral production and trade data continue to be unavailable because of the lack of a functioning central government since 1991 and the conflict that pervaded most of the country.

The civil war forced the closure of Somalia's cement plant and oil refinery. Somalia produces small quantities of gemstones and salt. Such gemstones as aquamarine, emerald, garnet, opal, red spinel, ruby, sapphire, and tourmaline were produced in Somaliland. Mining of Somaliland's gemstones was limited by civil strife, damaged infrastructure, and a lack of modern equipment. The outlook for Somalia's mineral industry is for little change in the short run. Barriers to development included continuing civil unrest, weak infrastructure, and a domestic market limited by severe poverty.

2.1 Coastal Mining Characteristics

Somalia's only coastal cement plant, the Berbera Cement Agency closed down in 1996. There are no indications of any other industrial-sized coastal mining operations since then. There are opportunities for the exploitation of coastal mineral resources in Somalia; however, unless political situations improve the likelihood of formal mining operations in Somalia is very unlikely.

3. Environment

Mineral production and trade data continue to be unavailable because of the lack of a functioning central government since 1991 and the conflict that pervaded most of the country. The war forced the closure of Somalia's cement plant and oil refinery. The Indian Ocean tsunami of December 26th, 2004, disrupted salt production in Hurdiye in late 2004 and early 2005; it is unclear to what extent output has recovered (United Nations World Food Program, 2005).

4. Human Environment

4.1 Socioeconomic Indicators

Social indicator	Somalia
<i>Social indicators</i>	
Total population (2008)	8,926,000 (estimated)
Population growth rate (2005-10)	2.3%
<i>Economical indicator</i>	
GDP (2008)	US \$2.660 billion
GDP growth (2008 at 1990 prices)	2.6%
GDP (per capita 2008)	\$298.0

5. Policy and Governance

5.1 Policy and Legislation

Coastal Mining Regulations	Description – Comments
Mining activities laws and regulations	<p>Somalia is under a “transitional period” and it has no official laws or regulation related to mining activities.</p> <p>However Somaliland the unofficial independent republic set out its own mining laws such as:</p> <ul style="list-style-type: none"> • The Decree of April 2000 related to the mining code and regulation of the Republic of Somaliland. • The Somaliland mining regulations <p>The neighbouring Somalian region - Puntland - has recently issued its own Mineral Resources & Petroleum Development Law (March 2008).</p>
Environmental regulations	<ul style="list-style-type: none"> • Law No: 35 of 2006 related to the National Environment Research and Disaster-preparedness (NERAD) Agency Law. • Law N: 04/1998 on the Prevention of Deforestation & Desertification.
Land tenure management	<p>Somaliland has its own land tenure management regulation:</p> <ul style="list-style-type: none"> • Law No: 17/200 amended in 2008 related to the urban management
Coastal Mining specific regulation	No Coastal Mining specific regulation

5.2 Governance

Entity	Responsibility/ Description
Centre for Research and Dialogue	CRD is committed to promoting democracy and consensus decision-making at the policy level by encouraging and supporting the participation of citizens in the affairs affecting their lives.
Somaliland Government	The Somaliland Government manages the unofficial independent Government of Somaliland.
Puntland State of Somalia	The Puntland State of Somalia manages the unofficial semi - independent state of Puntland.

5.3 Planning and Management

Investment facilitator

There is no investment facilitator in Somalia.

Environment Management

There is no Environment Management agency in Somalia

Integrated Coastal zone Management (ICZM)

Due to the political situation in the country, ReCoMaP (Regional Coastal Management Program of the Indian Ocean) is not supporting any ICZM activities in Somalia aiming at ICZM Framework Structures or ICZM Processes.

5.4 Development, Trade and Projects

Policy Planning Initiative	Objective
United Nations Transition Plan for Somalia (2008 – 2009)	The United Nations Transition Plan (UNTP) for Somalia is the common plan for 2008 to 2009 of the agencies, funds and programmes of the UN in Somalia. The UNTP sets out the strategy of the UN in Somalia, what it aims to achieve, and how it will do this. It says what the UN will contribute during 2008 and 2009 to the objectives set out in the Reconstruction and Development Programme (RDP), the five-year national plan for Somalia which was produced by the Joint Needs Assessment for Somalia carried out by the UN, the World Bank and Somali partners.
Reconstruction and Development Programme (RDP) of Somalia (2008 – 2012)	RDP is a document to mobilize and coordinate international assistance for a five-year period in Somalia.

Development project	NGO / Donor / Private Sector	Project details
Natural Resources and Environmental Development Agency (NERDA)	United Nations	Natural Resources and Environmental Development Agency-NERDA, a newly founded Non Governmental Organization based in Somalia has the duty to maintain sound environment and establish sustainable economic development by benefiting from natural resources. NERDA's main responsibility is to preserve health environment of the flora and fauna in Somalia as well as to protect against global warming.
UN Joint Program on Local Governance and Decentralized Service Delivery (LG/DSD)	ILO, UNCDF, UNDP, UN-HABITAT and UNICEF.	The program is envisaged to achieve as wide coverage in Somalia as resources and conditions allow with a comprehensive approach to rendering local governments as credible and professional service providers, increasing public investment in basic services, and strengthening civic awareness and participation in local decision-making and development.
* There are no available coastal management zone plans for Somalia. The only NGOs left in coastal areas of Somalia are the related NGOs ECOP-Marine and Ecoterra-Somalia which seem more involved with issuing press releases concerning piracy than with environmental activism.		

6. SWOT Analysis

Strengths <ul style="list-style-type: none">• Long coastline	Weaknesses <ul style="list-style-type: none">• Devastated infrastructure as a result of prolonged civil war• Piracy as principle coastal industry• No environment authority• No coastal management zone
Opportunities <ul style="list-style-type: none">• Potential exploitable mineral deposits• Alternative employment	Threats <ul style="list-style-type: none">• Ongoing civil war

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