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World Disaster Reduction Campaign 2010-2011

Sharm El-Sheikh is getting ready!

Sharm El-Sheikh, Egypt



Population: 83973 persons

Type of Hazard: Flash Floods

The city of Sharm El Sheikh is situated on the southern tip of the Sinai Peninsula, in South Sinai Governorate, Egypt, on the coastal strip between Gulf of Aqaba and Gulf of Suez with a total area of 1465 km² and population of approximately 83973 (2009). It is on a promontory overlooking the Straits of Tiran at the mouth of the Gulf of Aqaba. It was formerly a port, but commercial shipping has been greatly reduced as the result of strict environmental laws introduced in the 1990s.

Sharm El Sheikh is called the "City of Peace", referring to the large number of international peace conferences that have been held there. It is one of the most important tourist centers in the Red Sea owing to its warm weather, wonderful sightseeing, diverse coral reefs and long stretches of natural beaches. It also has the area of "Ras Mohammed" which is a declared protected area by the Prime Minister of Egypt. Ras Mohammed is characterised by a hyper-arid climate and a remarkable variety of marine, coastal and terrestrial habitats which support a diversity biota; the most spectacular features are the coral reef ecosystem as well as other life-support ecosystems, and interesting geological sites of fossils, corals, raised terraces and a magnificent fault.

The increased water demand from tourism and an expanding population has created the need for new water resources. This need has been met by desalination and pumping water from the Nile. In theory, the amount of water that can be produced by desalination is limited only by the need to find suitable sites for desalination plants close to the sea, where saline groundwater can be tapped and brine can be returned downstream of the point at which water is extracted. In Sharm el Sheikh, the private sector plays an important role in this area and takes the responsibility for the supply of water to hotels and tourism resorts.

Disaster Risks in Sharm El Sheikh

Sharm El Sheikh was built on an area which was formed by sedimentation resulting from the floods. It is a part of the arid regions in Egypt which are dominated to a much larger degree than humid regions by major catastrophic events. Although most of Egypt lies within the great hot desert belt; it experiences some torrential rainfall, which causes flash floods all over Sinai Peninsula. Flash floods in hot deserts are characterised by high velocity and low duration with a sharp discharge peak. Large sediment loads may be carried by floods threatening fields and settlements in the wadis and even people who are living there. So Egypt's Red Sea coast (including Sharm El Sheikh) and desert areas are prone to devastating flash flood incidents. In south Sinai, wadis are developed as a deeply incised valley network in the mountain area, and as an alluvial fan network in the foreland plain. Due to human activities and the extension of human settlements, the impacts of flash floods have become much more serious, causing loss of human life, loss of livestock, damage of infrastructure, and socioeconomic problems.

The city has experienced a serious flash flood in January 2010 which has been the worst since 1994. It wiped out 5 kilo meters of roads, affecting 45 tourist resorts and cutting off many different electricity and communication lines in the city.

A positive element though is that the flash flood has been predicted two days in advance, by a computer-based flash flood early warning system. The early warning resulted in extra time to take action and spread the news for the competent authorities. This extra time allowed to spread news about an imminent flood and so provided local communities more opportunity to take precautionary action. Consequently no casualties have been reported in the city.

Disaster Risk Reduction Activities in the City

As one of the most important tourist cities in Egypt, Sharm El Sheikh is on the top priority of the development agenda of the Egyptian Government because tourism is one of the most important economic activities and sources of income. This imposed a significant priority for sustainable development in Sharm El Sheikh which witnessed many strict and fruitful arrangements and measures for disaster risk reduction and environmental protection.

The marine ecosystems of the northern part of the Red Sea are globally significant for their biodiversity and relatively undamaged condition. In addition, coral reefs provide major resources to support tourism and also support commercial and subsistence fishing. Their protection and conservation is well recognized as a priority by the Government of Egypt and the tourism sector amongst other stakeholders.

A lot of work has been done in Sharm El Sheikh aiming to study flash floods hazards and their environmental impacts on the development as well as the environmental considerations that must be taken into account while developing this promising area. These efforts rely on studying rainfall records, landsat images, topographic, geologic maps and field observation.

One of the most important elements of disaster risk reduction activities in Sharm El Sheikh is the early warning system for flash floods which allows forecasting the amount, timing and location of rainfall, and based on this simulation, the risk for flash flood is calculated and if needed, a warning is sent to the competent Crisis and Disaster Management Centre of South Sinai Governorate. A network of remote sensing equipment was installed to feed real-time information into a computerized model. Data is linked into a master plan for flash-flood management. Key objective set by the disaster risk reduction projects in the area are establishing an early warning system, including response chains and strategies; undertaking works to help adapt and protect land users in vulnerable areas; plus improving abilities to make best use of its water-storage options and facilities.

Flash flood control measures also include construction of check dams and holding basins located at strategic points within the overall wadi system. These are located at points where they can have a significant effect in attenuating flow, and are sufficiently robust to withstand the forces generated by extreme flash flood events. Such measures can also bring additional benefits in reducing storm run-off thus increasing the amount of water available to recharge aquifers.

National NGOs and private sector partners are strongly involved in environment protection and disaster risk reduction activities. They are acutely aware of the problems associated with flash floods in desert areas, since flooding not only causes major soil erosion and pollution incidents but the effects of these can be significant on initiatives to improve regional development prospects, address poverty levels and implement sustainable water management practices.