

Ecosystems and human well-being, El Maghara, Sinai, Egypt: A dry land, community based assessment

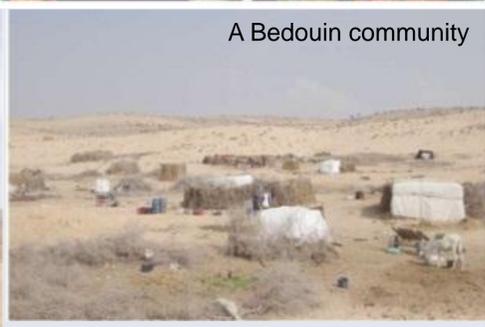
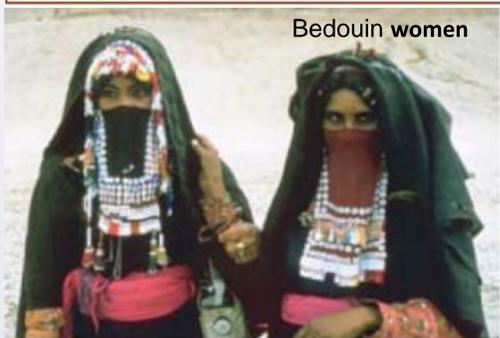
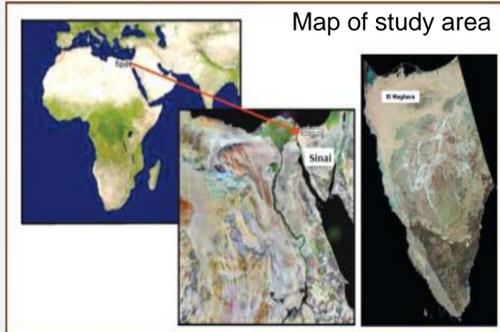
Mohamed Tawfic and Naglaa Loutfy
Agriculture Faculty, Suez Canal University, Ismailia 41522, Egypt



Introduction

Why Sinai??

- It serves as a **land bridge** between Africa and Asia.
- It is considered one of the most **important floral** centers for medicinal plants in the Middle East.
- It represents an important area of **anthropological value** due to the presence of a number of Bedouin tribes that each has unique traditional knowledge.
- It contains, **extractive industries**, especially coal, gravel, and marble
- It suffers remoteness and isolation
- It suffers high poverty rate



Methods:

A variety of field and laboratory techniques were used in the assessment, with special emphases on GIS and remote sensing . Extensive meetings and interviews were used for the socioeconomic profile of the Bedouin. Meanwhile, a number of indicators were used to monitor changes.



Outcomes

Ecosystem Goods and Services

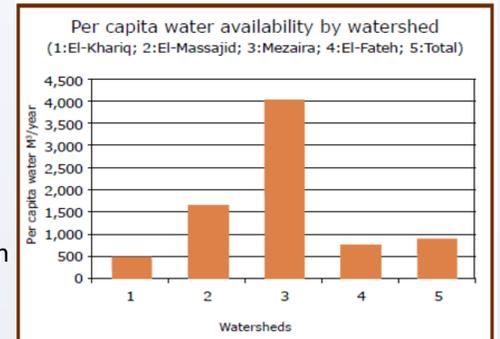
The study has dealt with major goods and services that the ecosystem of the study area provides. Special emphases were laid on water, floral diversity and medicinal plants, mineral resources, agriculture, grazing and soil potentiality of the area.

A detailed study of the water resources in the study area was made, including groundwater and surface water, with some information about per capita, water quality and others. Floral diversity and medicinal plants abundance in the study area were also studied, with information about coverage rate and threats that floral diversity is facing. Soil profile of the main segments of the study area were depicted and the likelihood of agriculture expansion in the area was ascertained. Prevailing trends and past conditions of some of the ecosystem services were studied in details, with special reference to water and floral diversity



Drivers of Ecosystem Changes

Drivers of ecosystem changes, whether man - made or natural are identified. **Water scarcity** and **land use change**, are the most prominent drivers of ecosystem change in El Maghara, with dire impact on human wellbeing, and environmental assets alike.



Bedouin lady bringing a bucket of water back to her home



Water scarcity and failing crops

Some of these impacts were Among the studied impacts are:

- The impact of mining activities on groundwater quality
- The impact of mining activities on soil pollution and microorganisms viability
- The impact of mining and gravel extraction on land use pattern and biodiversity



New roads unlawfully built by gravel contractors in the El Maghara area prevent water from reaching the collection basin

Future Scenarios

With water shortages, poor governance and bad services as the most influential drivers in El Maghara, four storyline scenarios were built to illustrate the possible Alternatives.

Conclusion

The need for raising awareness among the Bedouin seems evident in order to help restore threatened species and overcome water scarcity and other impacts caused by the major drivers. **Local knowledge** seems to be on the retreat as the young generation expresses little interest in learning from the elder clan members. The loss of local knowledge could have significant repercussions on the Bedouin community and there is an urgent need to keep the flow of this knowledge within the community.



Sheikh Elyan, a major source of information

Contacts

Mohamed Tawfic Ahmed
motawfic@tedata.net.eg

Naglaa Loutfy
naglamag@yahoo.com

Faculty of Agriculture, Suez Canal University PO Box 41522, Ismailia, Egypt.
PO Box 41522, Ismailia, Egypt.