



Fig. 19, Land cover

4 Conclusions

With reference to the overall objective, the study allowed to qualitatively assess the current evolution of the Dar es Salaam’s coastal aquifer sensitivity to seawater intrusion through the analysis of its hydrogeological evolution and of the groundwater physic-chemical characteristics.

Moreover, the main climate and anthropogenic dynamics, which have influenced the evolution of the phenomenon, were assessed through the analysis of Active Groundwater Recharge, parameter that

regulates the availability of groundwater resources depending on both meteorological and land cover variables.

As regards the seawater intrusion analysis, the study was able to identify the areas where the saline intrusion must be referred to the seawater and that may become priorities for vulnerability assessment and adaptation action implementation.

Concerning the study of the temporal evolution of Active Groundwater Recharge, the temporal analysis of climatic and land cover data for the last

ten years allowed to define a decreasing trend in the groundwater availability. In fact, the aquifer recharge is directly related to the precipitation portion that can infiltrate into the soil: this aspect clearly depends on precipitation and land cover.

Moreover, both of these factors have a relationship with climate change, as the first one evolution is a direct effect of it, while the urbanization dynamics partially reflect the population adaptation strategies to cope with it. The groundwater availability decrease, on the one hand, and the increase in the estimated groundwater withdrawal, on the other one, point out that unplanned and uncontrolled groundwater exploitation is a significant factor of hydrogeological imbalance, which can be related to a general increase of the aquifer sensitivity to seawater intrusion phenomenon.

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