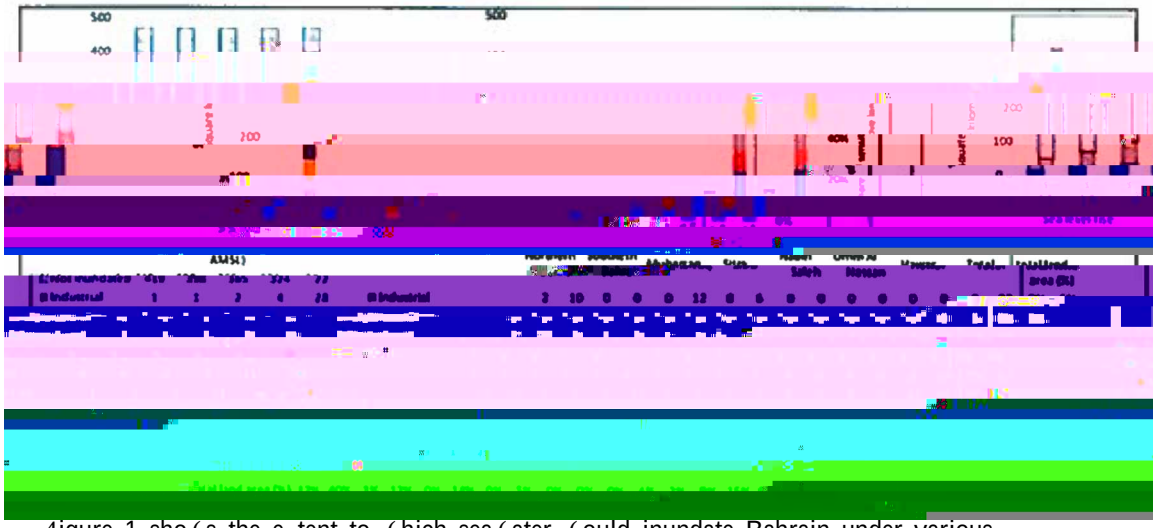
Translated from Arabic

Sea level rise is one of the main and undeniable effects of climate change. As in all small island developing States, sea level rise in Bahrain poses a threat to the coasts of the si main islands, and the ma!orit" of the #ingdom$s population and infrastructure is located along those coasts. %opulation densit" is currentl" high in coastal areas that are & m or less above sea level.

'he aim of the vulnerabilit" assessment of coastal areas is to determine and measure the e tent of sea(ater inundation, depending on land use and location, and address a range of sea level rise scenarios for 20&0 and 2100. 'he stud" covers the entire land area, from the coast to interior areas the elevation of (hich is & m above sea level, and seven different regions, namel", northern and southern Bahrain,)uharra*, Sitrah, +abi Salih, ,mm al-+a.san and the /a(ar 0slands. A three-part methodolog", (hich included gathering and processing data and modelling sea(ater inundation, (as used.

1eft2 'otal sensitive land area in Bahrain under various sea level rise scenarios.
3ight2 critical land area, b" elevation and island, that is & m or less above mean sea level.



4igure 1 sho(s the e tent to (hich sea(ater (ould inundate Bahrain under various scenarios. 'he results confirm that Bahrain is highl" vulnerable to a rise in sea level, and that even a small rise in sea level (ould result in the inundation of certain t"pes of land. 4ollo(ing are some of the main impacts2 (etlands (ould be sub!ect to significant inundation5 appro imatel" 27 6m^2, or half of all (etlands, (ould be submerged if the sea level (ere to rise b" 0.& m, (hile three *uarters of all (etlands (ould be submerged if the sea level (ere to rise b" up to 1.& m.

- Some &0 6m^2 of reclaimed land (ould be affected b" a small rise in sea level2 appro imatel" 2 per cent 81 6m^{2}9 (ould be submerged if the sea level (ere to rise 0.& m, and appro imatel" :0 per cent 814 6m^{2}9 if the sea level (ere to rise 2 m.
- Built-up areas are among the best suited to (ithstand sea level rise. 1ess than 2 per cent 82 6m^{2}9 (ould be submerged if the level (ere to rise no more than 1 m, and onl" 10 per cent 81: 6m^{2}9 (ould be submerged if the level (ere to rise no more than 2 m.

7 0ndustrial ;ones are more vulnerable to sea level rise than built-up areas. Appro imatel" 1& per cent 84 6m^{2}9 of such land (ould be submerged if the sea level (ere to rise 2 m, and less than : per cent 81 6m^{2}9 if it (ere to rise no more than 1 m.

7 All t"pes of land (ould be severel" affected if the sea level (ere to rise & m. 'he Airport of the #ingdom of Bahrain (ould be completel" inundated, (hile (etlands, reclaimed areas and industrial areas (ould lose at least <4 per cent of their total area. Built-up areas (ould lose appro imatel" 74 per cent of their total area. =f the total critical land area, (hich measures 470 6m^2, onl" 72 6m^2 81& per cent9 (ould be submerged, because its elevation is more than & m above sea level.

>limate change (ill e acerbate the currentl" unsustainable suppl" of and demand for (ater. Sea level rise ma" cause sea (ater to intrude into a*uifers and could affect the inta6e and discharge canals of (ater desalination p