



The coastal cliff - from research to government decision

The Israeli government unanimously decided to adopt the principles of the policy document on coping with instability of the coastal cliff at its meeting on 25 April 2010. The policy document was jointly prepared by the Environmental Policy Center of the Jerusalem Institute for Israel Studies and the Ministry for Environmental Protection.

Preparation of the policy document was initiated in 2006 as a multi-disciplinary joint research project by the Environmental Policy Center of the Jerusalem Institute for Israel Studies and the Ministry of Environmental Protection. The aim of the research was to formulate a national policy on coping with the environmental-physical, economic-planning and legal aspects of cliff instability.

45 kilometers out of a total 190 kilometers along the Israel Mediterranean shoreline consist of coastal cliffs of 10 meters or more in height, located along the coast between Hadera and Ashkelon. The cliffs are unstable and are in a process of retreat eastward as a result of the weakness of the strata and the combination of three main processes: undercutting by waves at the base of the cliff, unstable cliff slopes and the infiltration of groundwater at the cliff top. Cliff instability is a natural process which is influenced by the height of sea level in relation to the cliff base, wave action and the presence of sand at the cliff base.

Expert opinions on geology, geomorphology, geotechnical aspects, marine and coastal processes, coastal engineering, economics, land use planning, legal and public administration, and archaeology provided the basis for the preparation of the policy document. A Steering Committee accompanied the preparation of the document, headed by the Prime Minister's Office and included representatives of the relevant Ministries and of environmental organizations.

The trigger which initiated the preparation of the policy document was the legal requirement that the State should have a thorough basis for its decision making on whether and how to minimize future damage, taking into account the consideration of costs and benefits, direct and indirect.

The policy document identified two principle lines of action to cope with the instability of the cliff, which could be implemented separately or jointly, according to interests and circumstances: the first concerns construction of physical forms of protection for stabilizing the cliff in accordance with guidelines on priorities and the second concerns the use of regulatory mechanisms through land use planning and property controls and, as deemed necessary, the gradual removal of properties found to be in immediate risk and the prevention of new building in areas of high risk.

The cost of physical protection measures along sections of high risk to persons and property was estimated at 225 million shekels, at capitalized values.

The policy document recommends that the physical protection measures are implemented in stages along some 11-13 kilometers of coastal urban development and along sites of specially high national and international archaeological value. The measures of physical protection may include marine defenses, geotechnical treatment of the cliff and infrastructure for surface drainage, with due consideration being given to local and coastal environmental values.

The policy document recommends that only minimal physical intervention is undertaken along some 30 kilometers, where priority would be given to regulatory measures and



warnings in areas of risk. Intensity of use and benefit to the economy and to the public were the main criteria for allocating priority to physical intervention along high density urban development and their adjacent shores. Application of protective physical measures along these shores will prevent heavy damage to properties in the area at risk, provide wide and safe sandy shores for public use and enable the realization of urban and tourist development potential.

The cliff policy document is the second policy research project undertaken by the Environmental Policy Center of the Jerusalem Institute for Israel Studies whose outcome is a government decision. The outcome of its policy document on the Dead Sea Basin (2006) which focused on coping with the continued decline of the Dead Sea sea level, taking into account likely changes and risks to life and economy of the local residents, was also a government decision, which required the preparation of a national masterplan for the Dead Sea coastal area.

Adoption of a policy document by government decision is a clear expression of the significant influence of the Center for Environmental Policy of the Jerusalem Institute for Israel Studies on decision makers and an indicator of the success of the Institute and its research team.