Oceans have always played an extremely important role in human life and history. However, it is only relatively recently that we have begun to appreciate fully their role in our well-being and even survival. Oceans support human life on Earth. They not only provide a source of food and constitute one of the most convenient and intensely used routes for transport, but also generate nearly half of the oxygen in the atmosphere. Oceans absorb huge quantities of carbon dioxide and influence climate and weather patterns.

While oceans as a whole may be viewed as one vast and extremely rich ecosystem that is home to numerous species and a huge biomass, they are also characterised by an exceptional range of ecosystems with complex structures and functions, very many of which have not yet been explored and studied sufficiently, if at all.

Globalisation poses many questions in the context of the World Ocean. This chapter focuses on some issues of particular importance.

CLIMATE CHANGE AND THE WORLD OCEAN

When we talk about globalisation and oceans, at the heart of the matter is the increasing and profound negative impact of changes in the global climate on the functioning of oceans and their ecosystems, coastal and island ecosystems in particular, as well as the issue of corresponding changes in the oceans that affect and accelerate negative changes in the global climate. The ultimate purpose of addressing these issues is, of course, to determine means that would enable us to decrease and mitigate the negative impacts of these changes if we cannot halt them completely.
The well publicised reports of the International Panel on Climate Change (IPCC) have projected that world temperature will rise by 1.1 to 6.4 degrees Centigrade during the current century, in turn resulting a rise in sea levels by 18 to 59 cm; that there will be more frequent heat waves, heavy rainfall, continuing disappearance of glaciers, an overall increase in droughts, extreme high tides, increase in tropical cyclones and their severity, and significant changes in the earth’s living ecosystems. The IPCC reports further indicate the strong likelihood that past, present and future greenhouse emissions will contribute to climate warming, with profound impacts on the functioning of the World Ocean and its ecosystems, producing potentially irreversible changes.¹

In particular, it is anticipated that global warming may have the following major impacts on the World Ocean and its ecosystems:

- Increasing *acidification* of the oceans, which will reduce the general health and productivity of marine species, with especially negative impacts on sensitive plants and animals, leading to widespread destruction of tropical reefs around the world as well as decimation of many fish and other marine calcium-bearing organisms and species that live around them;
- Widespread *melting of ice* in the Arctic and the Antarctic, with ensuing impacts on their ecosystems and potential changing of current patterns;
- Consequential acceleration of the rate of *sea-level rise* and its impacts on coastal communities and ecosystems;
- Sea ice reflects much of the sun’s heat back into space, so climate warming and the resultant melting of ice in the Arctic and the Antarctic will also lead to further *ocean warming*, because ocean waters will be absorbing more solar heat. This will have profound effects on fish populations, since water temperature is a fundamental factor in determining the ability of marine ecosystems to support various organisms. Even slight changes in ocean temperatures may prompt significant shifts in the distribution patterns of various fish species and other marine organisms;
- Corresponding *shifts in ocean salinity*, with near-surface waters in the high-evaporation regions increasing in salinity, while marine areas in high latitudes will show decreasing salinity due to the greater precipitation, higher runoff, melting ice and other atmospheric processes.

However, we should bear in mind that this is not a one-way process. Although most of the negative changes in the global climate are primarily