

The group discussed the different chapters on the biophysical aspects of the ocean: chapters (4)-(7) of the outline. First, all participants introduced themselves and the chairperson summarized what we need to discuss and achieve as an outcome today.

A general discussion setting the context for the rest of the work took place, addressing some of the specific features of the WCR region. Participants suggested various points to consider. These points were referred throughout the discussion.

There was agreement among the group that the assessment exercise called for addressing first what we know now, before exploring the changes that might happen in the future.

It was stressed that several characteristics of the WCR makes it unique, with a biophysical phenomenology of its own: The Caribbean Sea is semi-enclosed; there are major river outflows from the Magdalena and Mississippi directly into the CS with a strong seasonal influence from the Amazon and Orinoco rivers plumes; The Caribbean Sea is connected to other regions of the North Atlantic Ocean receiving its influence. The input of submarine groundwater discharge in the WCR is significant and needs to be better studied and assessed.

Atmospheric influences over the CS are insufficiently studied such as the importance of rainfall, which input of freshwater onto the surface layers is estimated to be greater than direct rivers inputs. Rainfall patterns are partially controlled by the fluctuation of the trade winds, and hurricane activity.

Until now the impact of ocean acidification is not known, the monitoring of acidification is incipient in the WCR, although it would have a large impact on coral reef stability, thus on associated fisheries and livelihoods. The eventual loss of reefs would increase the vulnerability of coastlines.

The WCR is particularly vulnerable to the effects of Climate Change. Inundation of lowlands and islands, could lead to the loss of special habitats and ecosystems like mangroves, sea-grasses and coral reefs. It is also expected a significant change of the rainfall patterns over the region. These effects together with less frequent but more intense hurricanes will have an overall negative impact on the economy of the region, especially in the island states.

Sea-level rise is not uniform around the world. Sea level in the Caribbean Sea is raising at a lesser rate than elsewhere, although there are areas in the WCR with significant subduction. The group considered that it would be important to study the historical record as well as the future projection of the sea-level rise for the Caribbean Sea. For sea-level rise the IPCC-AR5 report will provide much enhanced information because it will address the dynamic aspects of glaciers and continental ice melting effects.

There was a consensus that the region has access to an important volume of data and information, however these data is not always readily available or synthesized in usable form. There is also an

important amount of information that is not published (grey-literature) or exists only as internal reports of the public or private sector. Although this is a weakness due to often fragile institutional arrangements, in the context of the World Ocean Assessment also represents an opportunity, if an effort to produce these synthesis is organized, for example to draft Working Papers on the different subjects.

This highlights the needs for capacity development in the Region, topic that was addressed several times during the discussions. It was suggested that some sort of collective regional institution or institutional arrangements could facilitate significantly the work that is required to provide a solid science foundation to the decision making process at the regional and national level. This requires an institution capable of providing regularly information on the biophysical condition in WCR. Existing initiatives like IOCARIBE GOOS, designed to provide regular information services, can serve as interesting examples.(Ver Anexo)

In summary the group considers that the WOA might be a first step in an renewed effort to mobilize institutions and experts of the region to enhance cooperative work and to find synergies in order to produce the needed information to address the common problems due to the increased use of the ocean and its resources and to prepare and adapt the WCR to the impact of global change.