

A vision for a coordinated international effort on delta sustainability

EFI FOUFOULA-GEORGIU

Department of Civil Engineering and National Center for Earth-surface Dynamics, University of Minnesota, USA

efi@umn.edu

Abstract Deltas are economic and environmental hotspots, food baskets for many nations, home to a large part of the world population, and hosts of exceptional biodiversity and rich ecosystems. Deltas, being at the land–water interface, are international, regional, and local transport hubs, thus providing the basis for intense economic activities. Yet, deltas are disappearing and deteriorating at an alarming rate as “victims” of human actions (e.g. water and sediment reduction due to upstream basin development), climatic impacts (e.g. sea level rise and flooding from rivers and intense tropical storms), and local exploration (e.g. sand or aggregates, groundwater and hydrocarbon extraction). Although many efforts exist on individual deltas around the world, a comprehensive global delta sustainability initiative that promotes awareness, science integration, data and knowledge sharing, and development of decision support tools for an effective dialogue between scientists, managers and policy makers is lacking. Recently, the international scientific community proposed to establish the International Year of Deltas (IYD) to serve as the beginning of such a Global Delta Sustainability Initiative. The IYD was proposed as a year to: (1) increase awareness and attention to the value and vulnerability of deltas worldwide; (2) promote and enhance international and regional cooperation at the scientific, policy, and stakeholder level; and (3) serve as a launching pad for a 10-year committed effort to understand deltas as complex socio-ecological systems and ensure preparedness in protecting and restoring them in a rapidly changing environment. This paper articulates the vision for such an initiative as developed by a large number of international experts (see contributing authors) and pleads for a comprehensive and coordinated effort that spans continents and environments to demonstrate that indeed these “hot spots of vulnerability and change” can become again “seedbeds of sustainability and resilience.”

Key words delta sustainability