

iGrip webinar series on GEOSTRUCTURES

Sustainable hard and soft measures for coastal protection

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Prof. Vallam Sundar, obtained his Ph.D from IIT Madras and has served as a faculty since 1981 and currently a Professor Emeritus in the department of Ocean Engineering since July 2018. He has supervised 27 Ph.D, theses. He has about 550 publications in refereed Journals and Conferences to his credit. He is member of the editorial board for 10 top Intl journals. He was awarded honorary doctorate award by University of Wuppertal, Germany for his contributions through part time teaching & research for about 15 continuous years and Life time achievement award by Indian Society of Hydraulics. He is an elected Fellow of Indian National Academy of Engineering. Apart from this, he is a recipient of about 10 awards. He served as Chairman of Asia Pacific division of the International Association for Hydro-Environment Engineering and Research, IAHR, from 2006 till 2011 and is a distinguished fellow of IAHR. He has visited several universities around the Globe as visiting Scientist and Professor, and has participated in about 100 Intl conferences.

His solutions to a number of coastal erosion problems have led to fruitful results. His reports on tsunami mitigation master plan for the two maritime states, TamilNadu and Kerala remain basic document for planning and implementation. He served as a member of the panel of five International experts to review the Coastal Adaptation Study for Singapore from 2014 for three years. He was also member of the Board of Governors of IIT Madras during 2016-18, which is ranked as NUMBER ONE in INDIA for the fifth consecutive year. The details of his contributions are available in <http://www.doe.iitm.ac.in/vsundar>

Abstract

The coastal stretches are important amongst the most environmentally sensitive zones. A need for stabilizing coasts arises when excessive degree of erosion is witnessed, a common problem being faced globally. Coastal protection measures can be classified as a hard or soft measure depending on the material and methodology adopted. The selection of a befitting measure of coastal protection plays a crucial role, thereby dictating the degree of effectiveness of the said measures. A few important case studies adopting both the above methods that include the conventional hard structures as seawalls, groynes that needed a re-look after the tsunami 2004, the application of soft measures like geo-synthetic products, artificial reefs and beach nourishment towards combating coastal erosion along a few stretches along the Indian coast will be highlighted. Research needs on the application of Geo-synthetic products for coastal protection measures, interaction of waves with vegetation and the possibility of wave energy convertors to serve also as a coastal protection measure will be highlighted.

Keywords: *coastal erosion and protection, geosynthetics, multi-purpose artificial reefs, case studies, vegetation, hard and soft measures*