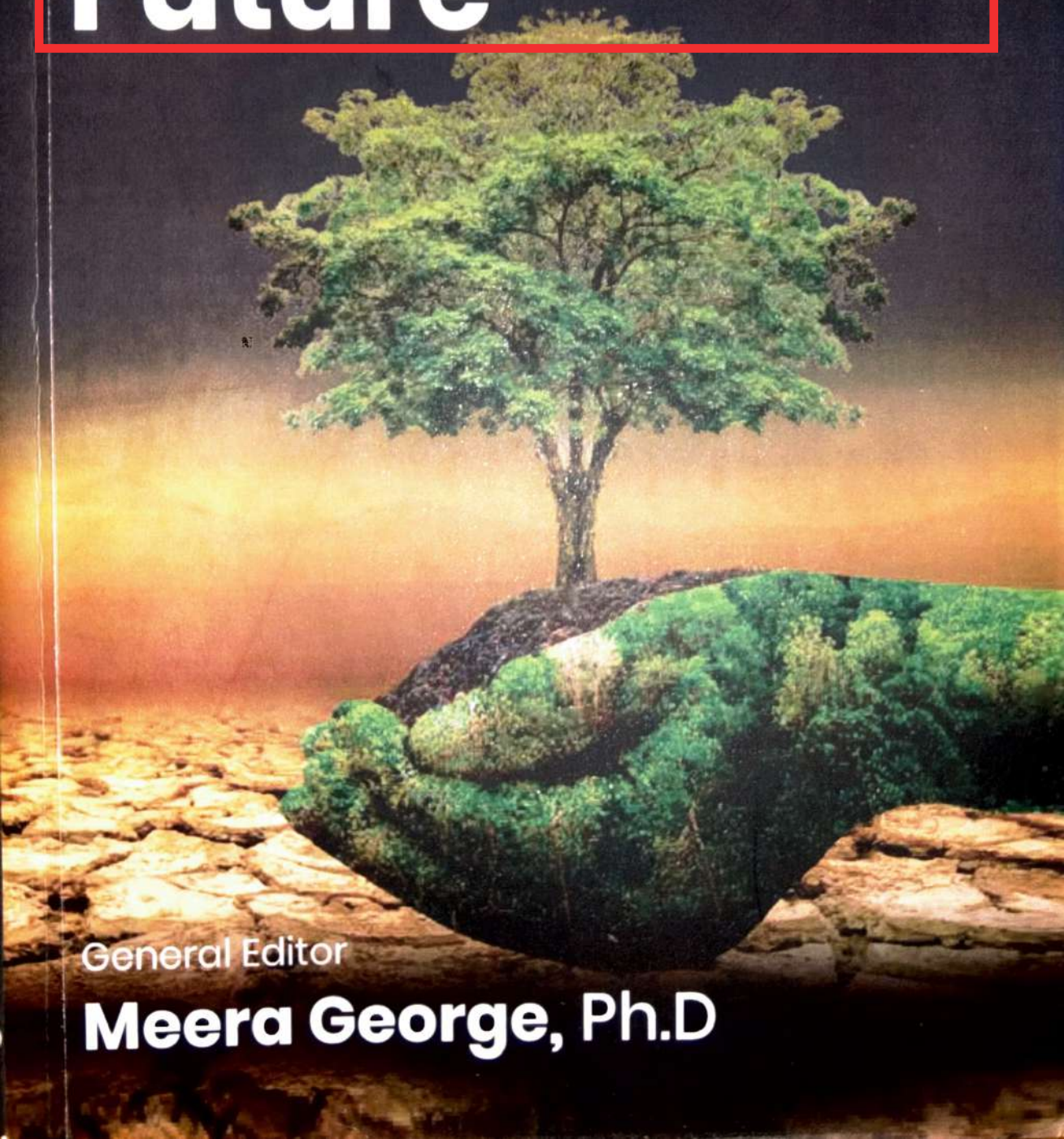
Life Science For A Sustainable Future



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Meera George, Ph.D

LIFE SCIENCE FOR A SUSTAINABLE FUTURE

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Utility of an Open-data Citizen-science Tool in the Assessment of Covid-19 Induced Bio-waste Littering in Select Localities of Thiruvananthapuram District

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Abstract :

The COVID-19 pandemic has a huge impact on the plastic waste management in many countries due to the sudden surge of medical waste which has led to a global waste management crisis. Improper management of plastic waste may lead to various negative impacts on the environment, animals, and human health. Waste syringes, used test kits, face masks, gloves and old vaccine bottles have all piled up to create thousands of tonnes of medical waste, which leads to huge problems in the environment as well as in the health field. The COVID-19-related biomedical waste generated in Kerala shot up from an average daily quantity of 1,452 kg in March last to 11,312 kg in April in 2021, according to the estimates by the Indian Medical Association Goes Eco Friendly (IMAGE) and, a good amount of this is from Trivandrum district. This is mainly due to the careless handling or purposeful dumping of these wastes on the road sides. This study was conducted in select locations in Thiruvananthapuram district to track and record the biomedical waste, littered in the Municipal limits over a period of three months from August to October 2021. Survey routes were fixed from both residential and commercial land use categories and a length of 4 km of side-walks on both sides were perambulated

for collection and recording of the data. A citizen-science app called Marine Debris Tracker was used for the collection and analysis of numerical and pictorial data on the extent of improperly disposed bio-waste in the area. Marine Debris Tracker (MDT) is a free to download mobile application which can be used by anyone around the globe to track and map litter in their communities. The open-access database platform allows access to data collected by any volunteers contributing to this initiative. All of the data that is recorded by a citizen volunteer will be uploaded to this database which can be accessed and downloaded for later scientific analysis. A category -wise waste inventory was also carried out, the results of which indicated a temporal increase in the amount of biomedical wastes accumulated each week in the study area. Furthermore, basic statistical analysis was also carried out to understand the littering patterns which can have far-reaching impacts on the terrestrial as well as marine eco-systems. Marine debris—any human-made item, commonly made of plastic, which makes its way to the ocean—is one of the most pervasive global threats to the health of the ocean. Concerted efforts from the parts of the authorities as well as the general public is needed to tackle the issue in an effective way.

Keywords: COVID-19, Biomedical waste, Marine Debris Tracker, Marine Debris, Citizen-science tool

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