Proceedings of the Twenty Fourth Scientific Sessions of the Sri Lanka Association for Fisheries and Aquatic Resources, 08th June 2018. Faculty of Social Sciences, University of Kelaniya, Dalugama, Kelaniya, Sri Lanka.

Presidential address

Biological remedies towards safe water.....

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Water is considered as the most essential component in the human livelihood. Rapidly increasing world population, mainly in the developing countries in parts of Asia, North Africa and the Middle East, and sub-Saharan Africa have placed an inordinate demand on safe drinking and potable water. This ever increasing water demand have exceeded the available suppiy of safe fresh water in many regions of the world. Some major river basins in Asia, North Africa and Middle East are facing severe water scarcity, and over extraction of ground water resources has become a growing problem in many parts of the world.

The water scarcity problems are further intensified by increased water pollution due to point and non-point source inputs from urban, industrial and agricultural sectors. Water pollution has imposed severe health issues on human populations and ecological health impairments in aquatic ecosystems.

Ensuring universal access to affordable and safe drinking water by 2030 is a target in one of the sustainable development goals. Therefore, the national and international efforts are being initiated to improve water purification infrastructure, provide proper sanitation facilities, and encourage hygiene in rural, urban and sub urban communities. In addition, the importance of protection and restoration of water-related ecosystems such as forests, mountains, wetlands and rivers is identified in-order to mitigate water scarcity.

However, the costs of treating polluted water and restoring water bodies has become a major concern in many countries. The cost of water treatment and aquatic ecosystem restoration requires investment of large amounts of funds and labor, which is unbearable by most of the developing and technology lagging countries. Therefore, natural and synthetic remediation methods have been studied to improve the quality of the contaminated water in many parts of the world. Compared to the chemical purification methods, use of natural materials is increasingly popular among many research groups as these methods provide more cost-effective, environmentally friendly alternatives of water purification.