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Using litter trap to capture floating objects and litter like plastics on the surface of stream water and coastal environment

Marine litter is defined as any persistent, manufactured or processed solid material discarded, disposed or abandoned in the marine and coastal environment. It consists of items that have been made or used by people and deliberately discarded into the sea or stream/rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear,cargo); or deliberately left by people on beaches and shores.

Annual amount of sea debris in the World is estimated to be 6 million tons. The presence of marine debris is a cause for concern due to several reasons. It is known to be harmful to organisms and to human health. It has potential to increase the transport of organic and in organic contaminants. It presents a hazard to shipping and is an esthetically detrimental, and thus generating negative socio-economic consequences. Sea litters not only cause ugly views but also negatively affect human and marine ecosystem health. The Turkish Black Sea coast is 1695 km long, extending from the Bulgarian border in the west to the Georgia border in the east. Assessments of stream and beach litter show that a large amount of debris (plastics, wood pieces, metals, glass, clothes, paper etc.) has been observed in different areas of the southern Black Sea coasts. From these, plastics and synthetic materials are the most common types. The Black Sea is one of the best examples of a highly stratified inland sea, and has the world's largest anoxic zone.

The Black Sea coastline is also heavily polluted with plastics. The goal in this study is the identify and assess the different types of litter in the sub-watershed of the Arhavi River Basin. In the BSB963 "Protect Stream-4-Sea" this is being studied with a litter trap installed in the plot area. Litters that are being captured by the trap will be The specific results will firstly be the identification of the major sources of the inland pollutants and litter and their potential contribution to the Black Sea Region. The second will be the development of recognition of important new tools based on new technologies specific for the Black Sea regions that would allow the development of a joint monitoring program for all the countries in the region. Thirdly based on the new developed monitoring tools and the identification of the sources, best management practices will be recommended that should lead to the reduction of non-point sources pollutants and litter from surrounding and connected watersheds thus leading to the reduction of pollutants and litter reaching and ending in the Black Sea.

Figure 1. Litter Trap in Stream; design to capture floating litter in stream flow.

Figure 2. Litter Trap and It's Mechanism that allow it raise during high flow

Common borders. Common solutions.