



## **Impact of Human Activities on the Flux of Terrestrial Sediments to the Coastal Ocean Offshore Northeastern Taiwan**

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Land to ocean material fluxes play an important role in global biogeochemical cycles. Changes in sediment supply not only greatly influence the benthic environment of coastal estuaries but also might threaten human lives and properties. Artificial constructions, such as roads and reservoirs, could affect natural environments and change sediment discharges. Due to its high precipitation, steep slopes, small basin areas, and frequent flood events, Taiwan is characterized with rapid erosion rates and extremely high sediment yields. In northeastern Taiwan, the high mean annual precipitation lead to large amounts of sediments being delivered into the ocean through the Lanyang River. Since 1957, the road constructions along the Lanyang River greatly increased terrestrial sediment flux to the coastal ocean. However, its influence on offshore area is not yet clear. In this study, we combine geochemical and geophysical data to evaluate the modern sedimentation history and discuss the impact of human activities on the Ilan Shelf. The preliminary results of grain size and  $^{210}\text{Pb}$  analyses from five sediment cores taken from the upper South Guishan Channel indicate the existence of local differences on hydrodynamic conditions. In addition, we also applied similarity index which based on a quantitative analysis algorithm to the chirp sonar data on echo character classification and calculated continuous grain size variations of the seafloor surface sediments. By combining all geochemical and geophysical data, we may reconstruct the holistic picture of human impacts on offshore environment from sedimentology records.