

## **Danube Delta in Anthropocene**

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Many deltas around the world are currently suffering from sediment deficits that render them unstable to current and predicted rates of sea level rise. One fundamental question arises in this unfavorable context: How and how much of a delta can be sustained in the future? The answer will differ from delta to delta depending on its particular set of often conflicting physical, societal, ecological, and economical constraints. I examine the history of large wave-dominated example: the Danube delta. I reconstruct the evolution of the delta together with the history of human impacts and the interaction between natural and anthropogenic agencies in reaching the current state of the delta. I further discuss one solution proposed to alleviate the complete or partial drowning of deltas: the use of river diversions to increase the quantity of sediment supplied to the delta plain to support marsh accretion. I examine the results of a half century old program of diversion in the Danube delta that led to the creation of an extensive diversion channel network akin in scope and size to a natural deltaic network. New data on sedimentation rates and estimates of sediment fluxes suggest that the intensive canalization in the second half of the 20th Century led to increased sediment deposition that compensated the decreasing sediment discharge linked to damming within the internal fluvial part of the delta; however, the external marine delta has become increasingly sediment starved during the same interval. I emphasize the similarities and contrasts between the “human-controlled” and natural deltaic channel networks of wave-dominated deltas and discuss the sustainability of this type of deltas as a sediment budget problem within a sea level rise context.