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Capacity building in observations for a sustained stewardship of the deep ocean

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Deep-sea ecosystems are vulnerable to large-scale resource extraction and the oceanic consequences of fossil fuel burning. Serious threats to coastal communities and infrastructures from earthquakes and tsunamis are often associated with the volcanism occurring on the seafloor. High-tech devices and expertise from multiple scientific areas are necessary to further our understanding of how to solve these coast-abyss interactive threats. The hostile environment of the deep ocean makes the observation more challenging and demanding in terms of eco-friendly technologies and human resources.

The UN Ocean Decade programme "One Ocean Network for Deep Observation (OneDeepOcean)" is a network of seabed & water column observatories from Ifremer, EMSO-ERIC, Ocean Networks Canada and JAMSTEC. It aims at providing integrated knowledge on the functioning of deep-sea ecosystems under global changes, obtaining environmental properties, to enhance efforts in mitigating natural disasters, and to engage citizens with a deep ocean increasingly under pressure due to human activities. Time-series imagery and sensor data from our platforms support world-leading research into how deep-sea organisms respond to habitat disturbance and long-term environmental change. Together we work to expand a joint capacity building initiative that will include for instance students' mobility and shipboard training. In this poster, we will highlight opportunities for knowledge exchange and capacity building that will allow students and early career ocean professionals to access deep-sea and water column observational facilities. We intend to associate our efforts to establish practices and shared notebooks for time series analysis and AI based image analysis.