



Flow and sediment impact of navigation improvement works on the Mekong River

Alluvium is providing hydrology and sediment transport expertise on a research study assessing the impacts of planned navigation improvement works on the Mekong River between Luang Prabang and the Golden Triangle. The project will assess the likely ecological and socio-economic impacts of the removal of 146 rapids and development of three cargo ports.

Alluvium's role in the project is to undertake a baseline study of hydrology and sediment transport in the project areas, assess the likely impacts of the development on hydrology and sediment transport and coordinate with other team members to inform them of changes in aquatic habitat.

Hydrology and sediment transport are river characteristics that have major implications for ecology and biodiversity. For example, flooding enables connectivity to the floodplain and rising water levels can serve as a trigger for fish spawning. Sediment transport can provide new habitat for fish species, or alternatively can smother existing habitats or fill in pools.

To date, the baseline assessment has been undertaken, which assessed the current condition of hydrology and sediment transport for the study section of the Mekong mainstream - from Luang Prabang to Chiang Saen - and identify recent drivers of change. The analysis focusses on: hydrology based on literature reviews and analysis of discharge station records for the Mekong mainstream; and sediment transport based on literature reviews, analysis of the Mekong mainstream longitudinal section and temporal-spatial analysis of satellite imagery. The analysis focusses on two key time frames: i) before construction of the first upper Mekong dam, the Manwan Dam (pre 1996); and ii) post construction of the first upper Mekong dam (post 1996).

The next stage of the project will be to undertake an impact assessment including assessment of the implications of the planned works on hydrology and sediment and identifying critical areas of concern.