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Hydrological, geomorphological and ecological river characterization: PELLIDRAC (Alcotra Project)

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PELLIDRAC Project, allowed to highlight both the positive characteristics that the critical ones of the two analyzed rivers: Pellice river in Italy and Drac river, in French territory.
We also analyzed different methods of river management to identify the best one for risk mitigation (hydraulic and concerning populations) and for water bodies and riparian environment protection.
Main activities were inspections, to allow a direct knowledge of investigated areas, application of environmental and morphological indices, hydraulic simulations and evaluation of planimetrical variations and elevation changes of riverbed.
The work shows two not homogeneous river ecosystems, characterized by high erosion of the banks and progressive lowering of riverbed bottom that leads to local outcrops of the substrate (most evident on Drac); to fight against erosion, many bank protections have been built.
In addition, we observed human actions, such as riverbed remodeling and extraction of material, that cause negative impacts on riparian areas.
About ecological and environmental aspects, we identified some areas with good river functionality and high level of naturalness, mainly characterized by the presence of wetlands and riparian vegetation well-developed and diversified.
In analyzed territories, we proposed some interventions, such as creation of new wetlands, widening of some riverbed sections and a material recharge, attempting to mitigate founded problems.
PELLIDRAC Project conclusion is not a point of arrival but a point of departure for further planning of specific interventions on river ecosystems, aimed at good management of water courses and at improvement of riparian populations living conditions.