



# Fish Passages in small weirs: an integrated approach for maximizing the beneficial effects of the Coimbra Fishway

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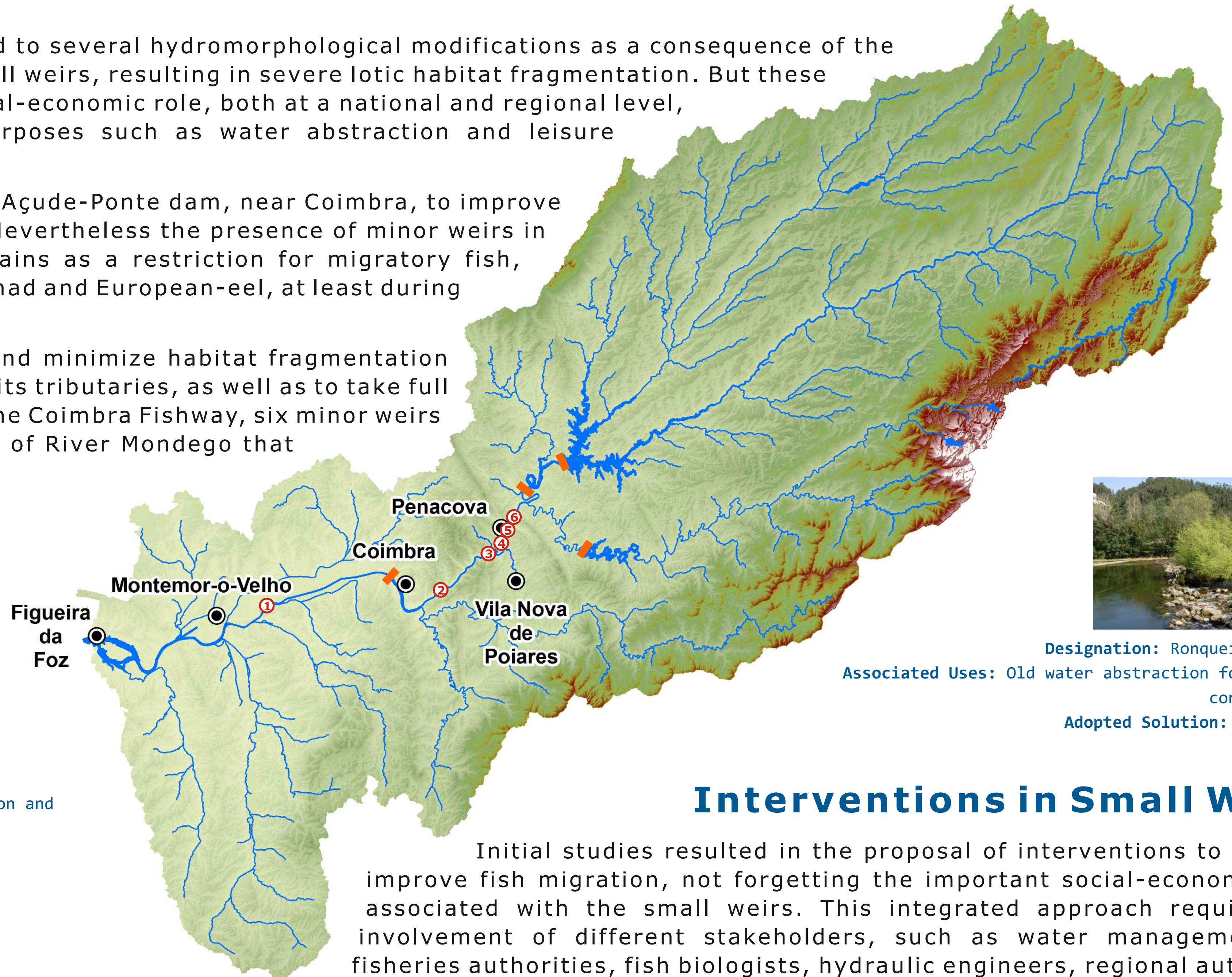
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## Introduction

The River Mondego has been subjected to several hydromorphological modifications as a consequence of the implementation of large dams and small weirs, resulting in severe lotic habitat fragmentation. But these infrastructures play an important social-economic role, both at a national and regional level, since they're used for important purposes such as water abstraction and leisure activities.

In 2011 a new fishway was built in the Açude-Ponte dam, near Coimbra, to improve fish migration in the River Mondego. Nevertheless the presence of minor weirs in other stretches of Mondego still remains as a restriction for migratory fish, namely sea-lamprey, allis and twaite shad and European-eel, at least during some parts of the year.

In order to improve river continuity and minimize habitat fragmentation along 51 km of the River Mondego and its tributaries, as well as to take full advantage of the beneficial effects of the Coimbra Fishway, six minor weirs were identified along the main course of River Mondego that required intervention.



**Designation:** Formoselha Weir  
**Associated Uses:** Water abstraction for irrigation and industry, leisure and recreational activities  
**Adopted Solution:** Natural fish pass

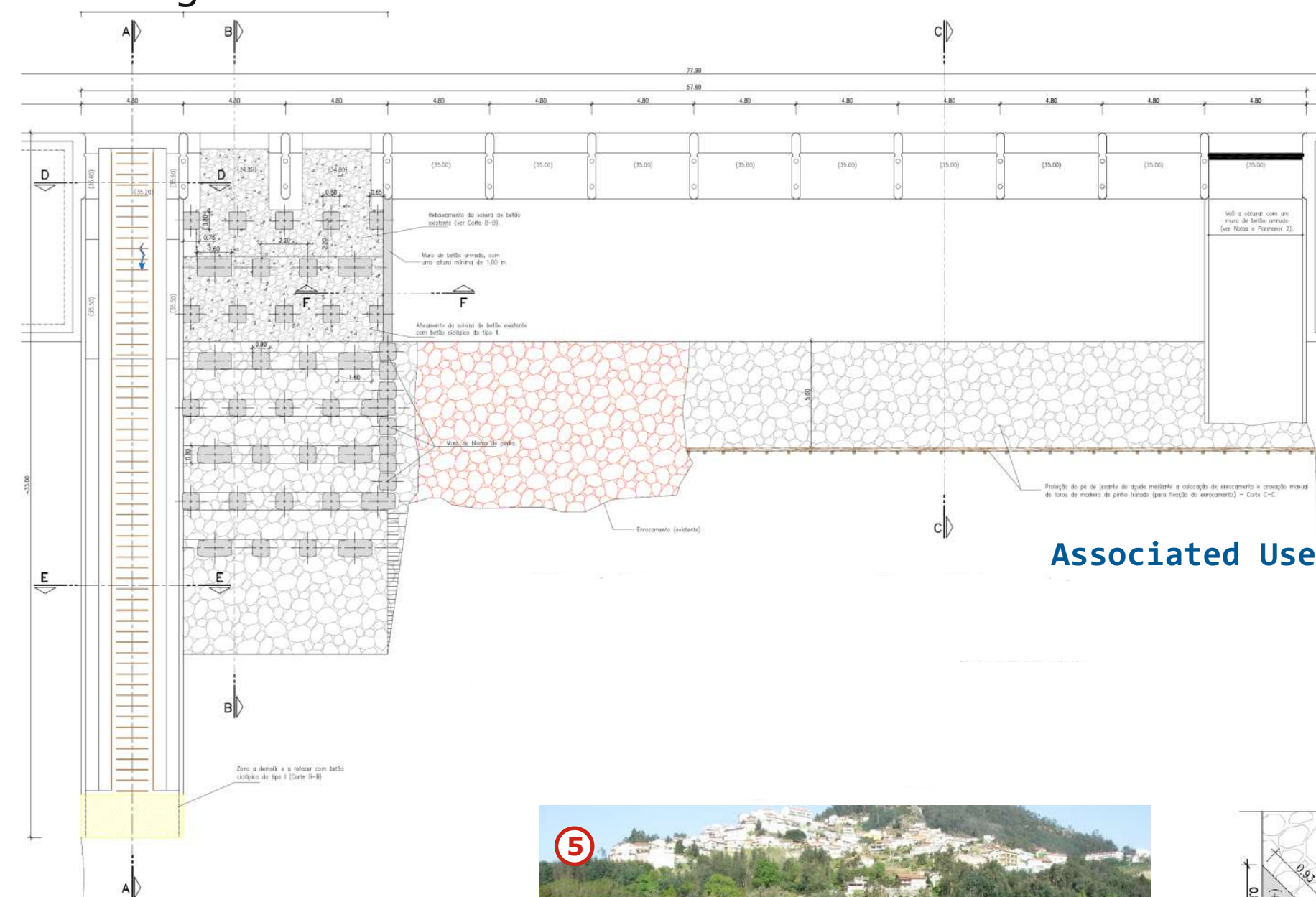
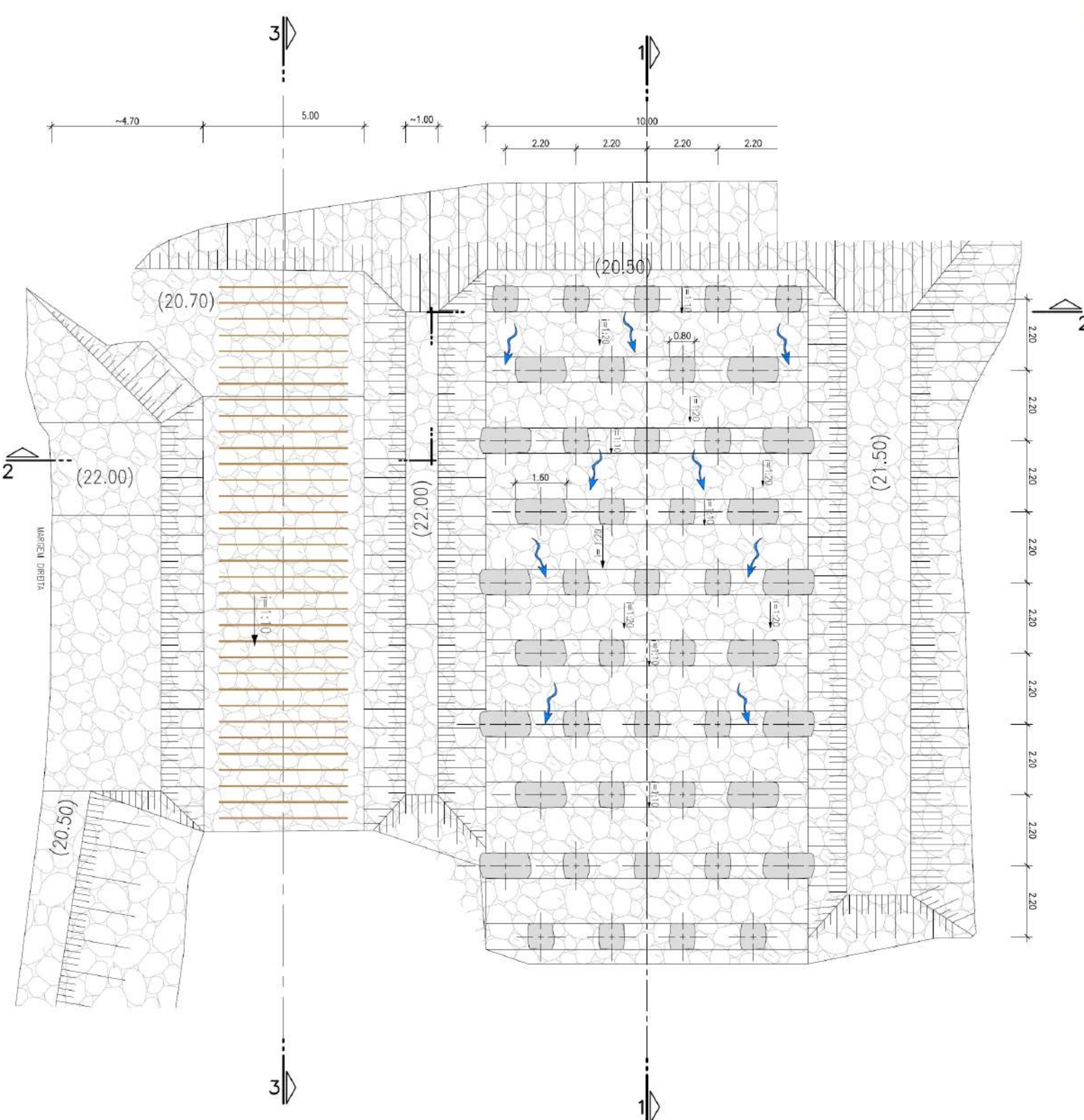


**Designation:** Ronqueira Weir  
**Associated Uses:** Old water abstraction for human consumption  
**Adopted Solution:** Removal

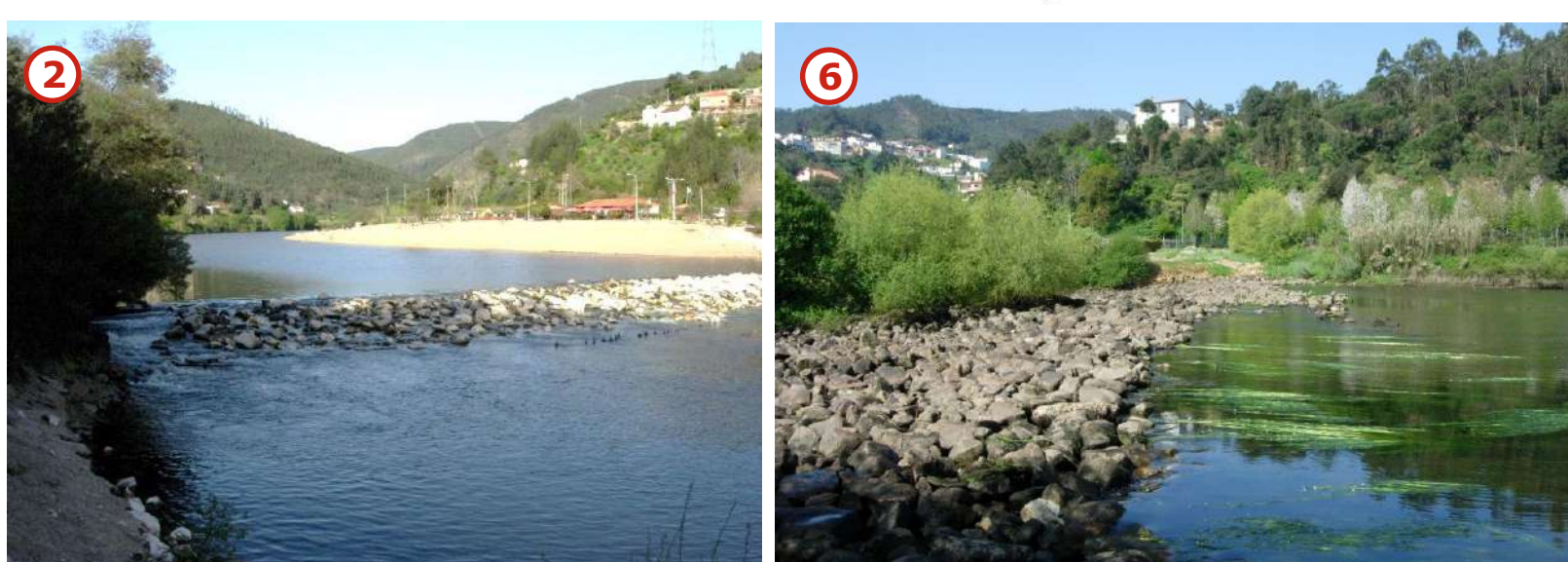
## Interventions in Small Weirs

Initial studies resulted in the proposal of interventions to allow or improve fish migration, not forgetting the important social-economic uses associated with the small weirs. This integrated approach required the involvement of different stakeholders, such as water management and fisheries authorities, fish biologists, hydraulic engineers, regional authorities and local users.

Since each of the six weirs have different characteristics as well as different associated uses, different solutions were required for each weir (natural fish passes, a technical fish way, the removal of one weir and canoe and kayak passages). These interventions will occur during the summer of 2015.



**Designation:** Louredo Weir  
**Associated Uses:** Leisure and recreational activities  
**Adopted Solution:** Natural fish pass



**Designation:** Palheiros Weir and Penacova Weir  
**Associated Uses:** Leisure and recreational activities  
**Adopted Solution:** Natural fish pass



**Designation:** Reconquinho Weir  
**Associated Uses:** Leisure and recreational activities (bathing waters)  
**Adopted Solution:** Technical fish pass

