Submitted Abstract

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Abstract

Dam reservoirs have been built throughout the 20th century in the Swiss Alps to produce electricity. In the context of climate change, scientists, water stakeholders and politicians have expressed concerns regarding the future of water resources in Switzerland long considered to be a 'water tower' (e.g., Milano et al., 2015), and discussions have been engaged on the (re)operation of hydropower reservoirs (Brunner et al., 2019; Thut et al., 2016). Could such reservoirs fulfil other purposes notably during droughts (e.g., irrigation, drinking water supply, artificial snow production)? If so, could these reservoirs mitigate droughts on a local scale (i.e., in the highlands) or on a regional scale (i.e., water transfers from the highlands to the lowlands)? Recent studies have suggested that dam reservoir reoperation could be an interesting adaptation strategy to climate change in the Swiss Alps (Brunner et al., 2019). In this paper, we investigate the way multipurpose use of hydropower dam reservoirs is envisioned and imagined (Davis, 2011; Jasanoff, 2015) by different stakeholders in Switzerland and Valais Canton. We rely on interviews with water and energy stakeholders (nine on a federal level, and eight in Valais) and academics (n=7), and on a corpus of strategic documents on water and energy (n=68). To analyze these materials, and identify imaginaries relating to multipurpose reservoirs, we used the 'hydrosocial cycle' framework (Budds et al., 2014), which invites us to consider the relationships between water (in its physical dimensions), infrastructure, and the social structure (notably power relations). We show that while all stakeholders expressed concerns regarding future hydrological conditions, they did not share the same views regarding the multipurpose use of dam reservoirs. We identified three main imaginaries: (1) the first is inherited from the early days of hydropower development and supports hydropower above all other uses and carries little vision of multipurpose reservoirs; (2) the second relates to the development of integrated water management and views multipurpose reservoirs as an interesting option for the future; (3) the third is dubious of the capacity of multipurpose reservoirs to address social and environmental challenges such as climate change. We show how these imaginaries are mobilized on different scales. In Valais, the second imaginary is dominant; it is even endorsed by some actors of the hydropower sector who have integrated concerns of other water use sectors (e.g., irrigation, tourism). Finally, we discuss factors which contribute to these diverging imaginaries.