

EGU21-13592

<https://doi.org/10.5194/egusphere-egu21-13592>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



The transition toward resilient water management regimes: where are we now?

Matteo Mannocchi

(matteo.mannocchi2@unibo.it)

Hydro-Meteorological Hazards (HMH) such as drought, floods and storm surge have always constituted a threat to social-ecological systems (SES) but, due to increasing uncertainties caused by climate and by rapidly changing socio-economic boundary conditions, it is necessary to step up effort to mitigate the risks. More attention should be devoted to understanding and managing the transition from traditional management regimes to more sustainable and resilient regimes that take into account environmental, technological, economic, institutional and cultural characteristics of river basins.

Since the 1990s many scholars, from both natural and social sciences, have urged to integrate knowledge and shed light on the functioning of the SESs in order to increase resilience to perturbances (Berkes and Folke 1998). As sustainability science is mainly a problem-driven and solution-oriented field that follows a transformational agenda (Lang 2012), it becomes evident that the nexus between environmental, political and institutional dimensions cannot be ignored to accelerate the path toward sustainability.

There is consensus that the complex, non-linear and rather unpredictable nature of HMHs, exacerbated by climate change, should require a more adaptive (Armitage 2007), flexible and holistic (Holling 2002) management approach that can speed up and reinforce the learning loops to allow for more rapid assessment and implementation of the consequences of new insights and scientific evidence (Pahl Wostle 2007). Cooperation among a wide range of stakeholders with different knowledge, expertise and views is often indicated as a prerequisite to establish a resilient and adaptive water management regime (Olsson et al. 2004). These principles mainstreamed since the beginning of the 2000s and synthesized by concepts like “co-management”, “adaptive and integrated management”, or “adaptive co-management”, are the pillars of what is considered a paradigm shift in water management (Pahl Wostle and Nicola 2011) and have inspired institutional settings, policies, and practices.

However, the debate is still ongoing to determine at what stage of the transition we are in, whether the aforementioned principles have been adopted and translated into practices on a wide scale, and whether and how such practices have contributed to increasing the resilience of the SES. It will be critically examined the literature trying to identify the main trend of the last two decades. The review will be accompanied by the case-studies upon which theories have been built and tested.

