For the past several years, California's Sustainable Groundwater Management Act has been the talk, not only of the town and of the state, but also of the national and international groundwater and environmental policy community.

What's the big deal?

SGMA fundamentally changes groundwater management in California – a big deal to be sure. Equally important, as we discuss in a recently published paper, is the broader conceptual significance of the SGMA experiment. That significance lies in SGMAs governance structure.

One key challenge for the authors of SGMA was navigating the complex distribution of authority over water and land in the state. To achieve this, SGMA bridges state agencies, local agencies, and outside entities, providing a role for all of them in governance. Understanding this complex system of simultaneous governance processes is important for policy makers striving to successfully implement the new law, and for decision makers at all levels who are adapting to the new regime.

This post very briefly summarizes our paper.

The new law

In 2014, California passed the Sustainable Groundwater Management Act (SGMA). Passage of SGMA advanced California's limited ability to control groundwater depletion toward a nominal commitment to the highest standard of sustainability. The new law requires planning to achieve sustainability at the groundwater basin level. Much has been written about SGMA's requirements – basic background is available here, among many other sources.

SGMA's governance model

Governance under SGMA can be conceptualized as three concurrent and interacting processes: vertical, horizontal, and network governance (Figure 1).

The *vertical dimension* of SGMA governance is its primary governance process—a higher level of government requiring action by a lower level of government. Such mandates occur commonly in the field of natural resources, in part due to the distribution of authority across levels of government.

The *horizontal dimension* of SGMA governance encompasses the collective action

among newly mandated Groundwater Sustainability Agencies (GSAs). Here, GSAs that share a groundwater basin must coordinate their knowledge, policies and actions so as to ensure that, even though each GSA operates independently, groundwater sustainability is achieved for the basin as a whole.

The *network governance dimension* of SGMA includes the informal interactions among government, private and public entities. These interactions influence and reinforce actions to achieve groundwater sustainability. Information sharing, knowledge generation, the diffusion of ideas, and peer pressure all help generate the norms and expectations that tangibly influence decision-making.

Naturally, these concurrent governance modes interrelate. Ideally, they will reinforce one another.

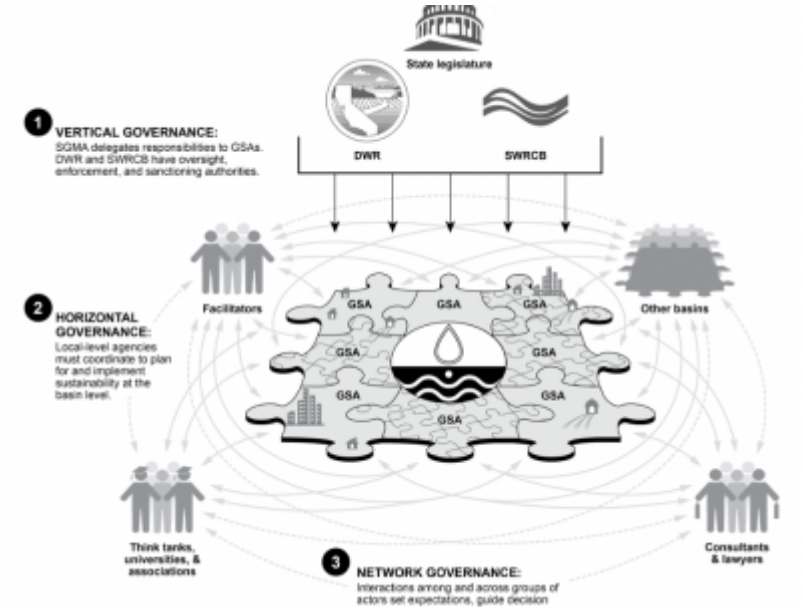

Figure 1. Interaction Across the Multiple Governance Processes Embedded in SGMA. See article for more details.

The importance of a holistic view

The importance of this three-part governance model is not that it is unprecedented – there are other analogous models from which SGMA has drawn inspiration. Rather, SGMA shows how even a single, albeit complex, legislative mandate to address a heretofore relatively ungoverned commons can require multiple, intersecting governance processes.

For Californians managing resources affected by SGMA, operating within the new legal regime may be more effective if it is not viewed simply a new type of local-level governance, but in light of the interacting vertical, horizontal and network governance processes.

For policy-makers and practitioners outside of California viewing SGMA as a potential model for governance schemes, it is important to recognize that SGMA’s elements are interconnected and mutually reinforcing both by design and by necessity. Porting any partial analog of SGMA’s model to other areas without careful examination of the potential gaps that might result may have consequences for effective governance.

This post is based on an article published in Society and Natural Resources (paywall). Full text of the article is also available through UC eScholarship.

Anita Milman & Michael Kiparsky (2020) Concurrent Governance Processes of California’s Sustainable Groundwater Management Act, Society & Natural Resources, DOI: 10.1080/08941920.2020.1725696