**Supplementary Information**

**Concurrent Governance Processes of**

**California’s Sustainable Groundwater Management Act**

**Appendix 1: Examples of the Emerging Academic Literature on SGMA**

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**SI Appendix 2: Examples of Network Governance**

As described in the article text, the network governance dimension of SGMA encompasses the informal interactions among government entities, think-tanks, universities, industry associations, non-profit organizations, professionals, and private citizens that influence and reinforce actions to achieve groundwater sustainability. In California, a large network of entities, representing the spectrum of water interests and expertise, has historically sought to influence water governance. In addition, SGMA has catalysed the development of new networks. These networks have mobilized to disseminate information, share experience and knowledge, provide recommendations and tools, and oversee or monitor progress. A key outcome of this network governance is norm creation and reinforcement. Below are several examples of the network governance that is occurring under SGMA. Due to the decentralized nature of network governance and the vast extent of mobilization under SGMA, it is not possible to present a complete depiction of all of the entities involved in the network governance processes of SGMA. As such, information in Table SI A2 is exemplary, rather than comprehensive.

**Table A2.2 Network Governance in relation to SGMA**

|  |  |
| --- | --- |
| **Network Activities** | **Examples** |
| **Events:** A number of conferences, workshops, webinars and symposium have been organized that focus entirely or contain dedicated panels addressing SGMA. Through these events, individuals and organizations share ideas and learn from one another about key topics and interpretations of SGMA. Information and norms developed through this exchange is then transmitted from participants in these fora to the deliberations and decision-making of GSAs, state agencies and the consultants, lawyers and facilitators participating in SGMA implementation. | * SGMA Survival Roundtable
* Groundwater Sustainability Forum
* The South Valley SGMA Practitioners Roundtable
* GSA Summit (First and Second Annual)
* SGMA Conference – Tools for Developing a GSA
* Kern County Water Summit
* American Pistachio Growers SGMA Survival Toolkit Workshop
 |
| **Guidance Documents:** A variety of organizations and actors have produced white papers, policy-briefs, blog posts and websites explaining SGMA, interpreting its requirements, providing data and information, and recommending best practices for GSP development and implementation. These documents have been disseminated to GSAs, to stakeholder groups and interested parties, to policy-makers, to DWR and to the general public. Anecdotal evidence from decision-makers suggests that many of these products have influenced understandings of SGMA and of groundwater. This information can be particularly influential in generating innovations by providing new ideas for decision-makers such as GSA managers, agency staff, or consultants) as well as in refining, supporting or legitimizing policies or actions being considered.  | California Water Foundation2014. An Evaluation of California Groundwater Management Planning.2015. Know Your Options: A Guide to Forming Groundwater Sustainability Agencies. Sacramento, CA.Community Water Center2015. Collaborating for Success: Stakeholder Engagement in Sustainable Groundwater Management Act Implementation. Duke University - Nicholas Institute for Environmental Policy Solutions2016. Sharing Groundwater: A Robust Framework and Implementation Roadmap for Sustainable Groundwater Management in California.Public Policy Institute of California2014. Funding Sustainable Groundwater Management in California. 2019 Water and the Future of the San Joaquin ValleyStanford University - Water in the West & Gould Center for Conflict Resolution2014. Groundwater Data: California's Missing Metric 2015. California’s Sustainable Groundwater Management Act of 2014: recommendations for preventing and resolving groundwater conflicts. 2015. The Sustainable Groundwater Management Act of 2014: Challenges and Opportunities for Implementation. 2016. From the Ground Down: Understanding Local Groundwater Data Collection and Sharing Practices in California.2016. To Consolidate or Coordinate? Status of the Formation of Groundwater Sustainability Agencies in California. 2017. Projecting Forward A Framework for Groundwater Model Development Under the Sustainable Groundwater Management Act. 2019. Putting Adaptive Management Into Practice: Incorporating Quantitative Metrics into Sustainable Groundwater Management. The Nature Conservancy. 2019. Groundwater Resource Hub: Understanding and Managing Groundwater Dependent Ecosystems. 2019. Groundwater Dependent Ecosystems Under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans Union of Concerned Scientists 2015. Measuring What Matters: Setting Measurable Objectives to Achieve Sustainable Groundwater Management in California.2017. Navigating a Flood of Information. n.d. Groundwater Technical Assistance ToolWater Education Foundation2015. The Sustainable Groundwater Management Act: A Handbook to Understanding and Implementing the Law. University of California - Berkeley Wheeler Water Institute 2016. Designing Effective Groundwater Sustainability Agencies: Criteria for Evaluation of Local Governance Options.2017. Trading Sustainably: Critical Considerations for Local Groundwater Markets Under the Sustainable Groundwater Management Act.2018 When Is Groundwater Recharge a Beneficial Use of Surface Water in California. 2018 Navigating Groundwater-Surface Water Interactions Under the Sustainable Groundwater Management Act. University of California - Giannini Foundation of Agricultural Economics 2017 California’s New Groundwater Law and the Implications for Groundwater Markets.2018 The Economic Impacts of Agricultural Groundwater Markets |
| **Information Clearinghouse:** Third-party websites have been created to consolidate information on SGMA to make it more accessible to agencies and stakeholders. These websites share experiences and promote learning, as well as track implementation. As concrete elements of a network governance process, these websites enable diffusion of ideas, support norm creation in tandem with the materials they house, and provide guidance. Yet they also serve as indirect oversight by providing a point of comparison across basins, highlighting positive and negative events occurring in basins, and aggregating commentary on how the law will be interpreted and enforced. | * The Groundwater Exchange
* Water Wrights
* Maven’s Notebook
 |
| **Coordination of Activities:** Organizations have sought to maximize the effectiveness of their network governance activities. By coordinating their efforts, network actors are able to capitalize on economies of scale, pool resources, or strengthen their influence in norm creation and/or in putting pressure on GSAs, state agencies, or stakeholders involved in implementation of SGMA.  | The Water Foundation organized an ongoing, quarterly forum (the Groundwater Leadership Forum) that brings together key representatives from over 15 NGOs from among its grantees, in addition to a few academics in an auxiliary capacity. Participants in this forum jointly produced and sent comment letters to California State government on SGMA implementation generally. Members of the Forum also decided to collectively focus their efforts on supporting a rigorous review of draft GSPs submitted in the first round. They developed a template for evaluation of GSPs and have been collaborating on jointly producing GSP reviews. |