

Report for:

Institutional analysis, survey, interview, and focus group research

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El Colegio de Sonora continued doing fieldwork on the "Río San Miguel" basin (the region of study in Mexico). This is an on going research where in addition of defining and identifying “resilience” of socio-ecological systems (SES) along the San Miguel river, the connectivity between the components of the SES at the watershed level was also explored. Stakeholders rely on local institutions to deal with the appropriation and provision of water for their systems. These local organisations are embedded on larger SES such as an aquifer and/or watershed. Studies have treated human-environment interactions occurring in specific settings as isolated or self-contained in the sense that links to the outside world are weak enough to allow them to be set aside for purposes of analysis ([Brondizio et al 2009](#)). Locally, stakeholders have a dense network from which withdraw agreements and collective action for supporting their local SESs ([see Network 1](#)).

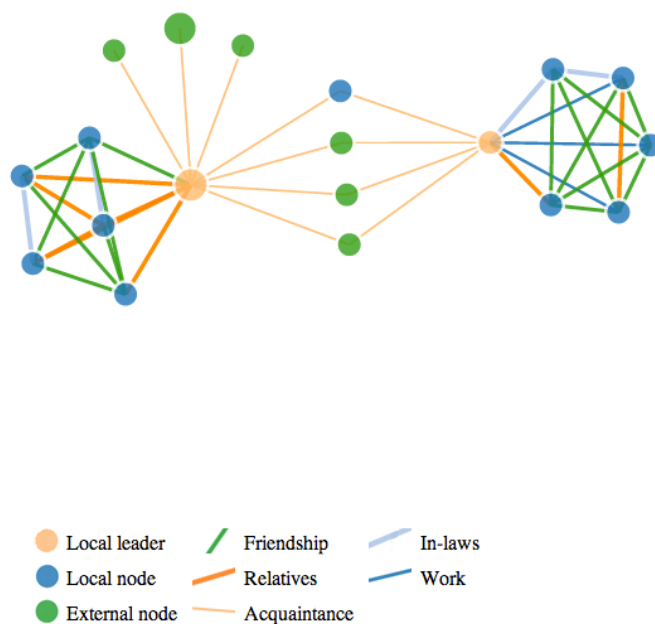


Figure 1. Single personal networks for two local organisations' leaders in Cucurpe

Also, these organisations have built links with external institutions, probably as result of past projects, investments, and/or administrative or regulatory interventions carried out in their SES. Local SES rely on local organisation as much as they need external aid and legal recognition. Hydraulic infrastructure is expensive and beyond the financial possibilities of the local stakeholders, therefore this study search to respond to the question: Which agencies/institutions do stakeholders tap resources from?

Also, it inquires the local organisations' leaders personal social networks dealing with the issue of scarcity, appropriation and management of water. The questionnaire includes a name generator asking for the five most important fellows with whom he discusses/deal/work water issues. The questionnaire encourages the leader to talk about experiences they had solving water issues, eliciting along the narrative the actors involved in the process.

On the other hand, just as distant managers are apt to be ignorant of and insensitive to local considerations, local managers tend to know little about linkages to larger systems and the interests of those who are not physically present at the local level but exert economic pressures involving land use and the production of commodities (Brondizio et al 2009), in this regard, this research questions about the leader's awareness of the water problems along the watershed (problem sheds).

Spatially defined SESs might be institutionally resilient, but isolated from the problems at a watershed scale. Integrated watershed management requires watershed social interconnectedness, the goal of this research is to define the role of local institutions in the resilience of riparian SESs, also it seeks to unveil the degree of institutional and social interconnectedness within the watershed (within and between counties), and identify the institutional hubs playing an important role solving water issues.

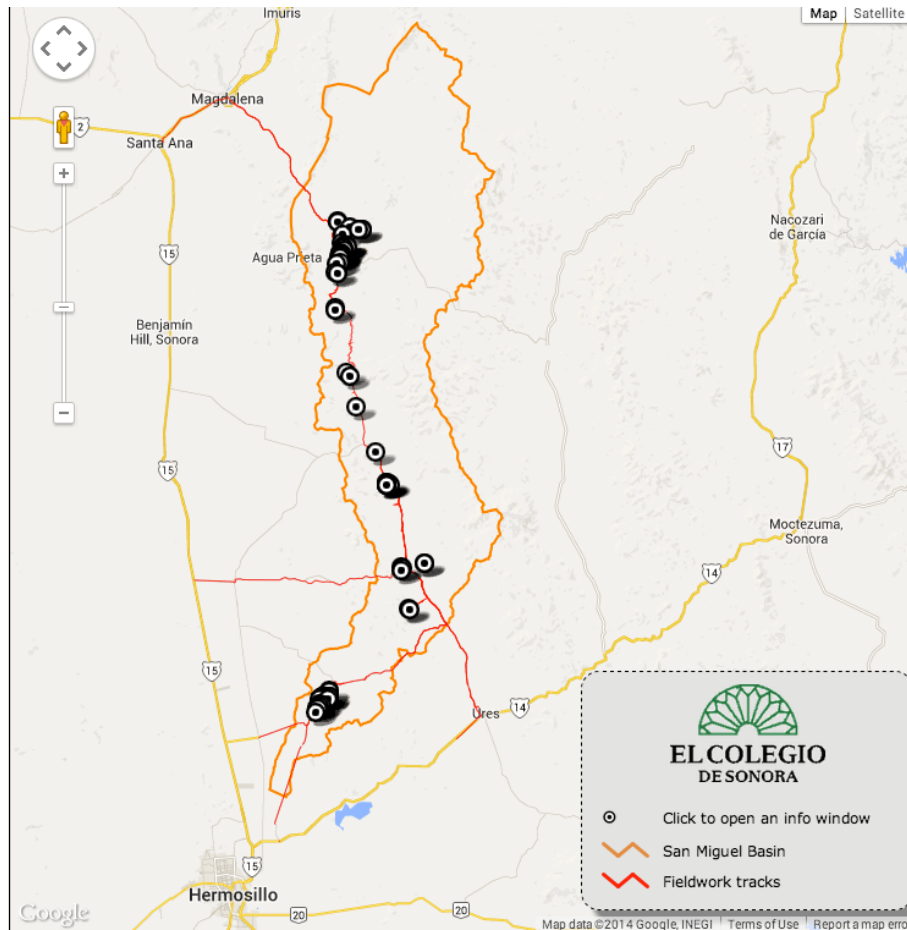


Figure 2. Snapshot of the interactive map

The goals set for this period (Oct. 2013-Sept. 2014) were:

1. Visit all the locations within the region of study (ROS), the reason was that most of the fieldwork had been carried out in the town of Rayon.
2. Gain knowledge about the structure of the local institutions. Rapid Rural Appraisal (RRA) was the initial methodology used to learn about the problems facing the stakeholders from the riparian social-ecological systems.
 - a. Geographical data ([see Map](#))
 - i. Geotagged photos.
 - ii. GPS waypoints and tracks.
 - b. Identification of key informants and leaders of local organisations.
 - c. Learn how the community is organised.
3. Interview the local organisations's leaders using a semi-structured questionnaire. The sampling frame was estimated in 40-50 leaders within the 4 counties (Cucurpe, Opodepe, Rayon and San Miguel de Horcasitas) from which 30% have been interviewed.

Fieldwork

In the next Table is described the places visited for fieldwork and some of the products from each visit.

Date	Place	Activities
2014-03-21	Rayón	1 semi-structured questionnaire for identifying key stakeholders ("Juez de campo")
2014-03-28	La Galera, Rayón	1 unstructured interview with a stakeholder, identification of local leaders (name generator), geotagged photos, gps tracks and waypoints, tour around parcels and irrigation infrastructure, 1 semi-structured questionnaire for identifying key stakeholders ("Juez de campo")
2014-04-04	Opodepe, Sta. Margarita	1 unstructured interview with a stakeholder, identification of local leaders (name generator), geotagged photos, gps tracks and waypoints, tour around parcels and irrigation infrastructure
2014-04-10	Cucurpe	1 unstructured interview with "secretario del municipio"
2014-04-11	Cucurpe	1 semi-structured questionnaire for Local Organizations' Leaders ("Juez de Agua El Sagarito/Hornitos"), geotagged photos, gps tracks and waypoints, tour around parcels and irrigation infrastructure
2014-04-24	Cucurpe	2 semi-structured questionnaire for Local Organizations' Leaders ("Presidente de Comunidad de Cucurpe" and "Juez de Campo")
2014-04-25	Cucurpe	1 semi-structured questionnaire for Local Organizations' Leaders ("Juez de Agua de El Pintor")
2014-05-08	Cucurpe	Geotagged photos, gps tracks and waypoints, and 1 semi-structured questionnaire for Local Organizations' Leaders ("Presidente de la Comunidad de San Javier en Cucurpe")
2014-05-09	Cucurpe	1 unstructured interview with a stakeholder, identification of local leaders (name generator), geotagged photos, gps tracks and waypoints recorded from a tour around parcels and irrigation infrastructure
2014-05-16	Rayón	1 semi-structured questionnaires for Local Organizations' Leaders ("Juez de Campo")
2014-05-23	Rayón, 3 Alamos	2 semi-structured questionnaires for Local Organizations' Leaders one with "Secretario Ejido 3 Alamos" and another with "Juez de Campo" in Rayon
2014-06-09	Opodepe, Sta. Margarita	1 semi-structured questionnaire for Local Organizations' Leaders ("Presidente Ejido Opodepe")
2014-07-21	Cucurpe	Geotagged photos, gps tracks and waypoints, and tour around parcels and irrigation infrastructure with "Presidente de la Comunidad" and University of Arizona students
2014-07-22	Cucurpe to San Miguel	1 unstructured interview with a stakeholder, geotagged photos, gps tracks and waypoints, trip from Cucurpe to San Miguel with University of Arizona students