Panel 1 summary by Jose Agustin Breña Naranjo

- Climate & Hydrology: Climate change and extreme droughts have exacerbated freshwater depletion in both transboundary (Rio Grande/Bravo and Colorado) river basins. For instance, the Rio Grande/Bravo has not fully recovered in hydrological terms since the 2011/12 drought. However, the resilience of such hydrological systems largely depends on regional groundwater systems and its response to climate variability. Shallow, unconfined aquifers can be more sensitive to abrupt hydro-climatic fluctuations than deep, confined aquifers.

- New Hydro-Diplomacy and Governance tools: Advances in understanding natural and man-made water systems with new observational tools such as in situ and remote sensors, innovative ways of societal participation (e.g. crowdsourcing) and improved water management models can greatly improve water resources decision-making between US and Mexico. Also, transparency in water rights, allocations, reservoir storage and water table depths can potentially avoid regional water conflicts with further implications at the binational scale.

- Water-Energy-Food nexus: Shared resources such as unconventional oil and gas trapped in shale formations (e.g. Eagle Ford play) and industrial expansion driven by pro-business binational agreements (NAFTA, USMCA) can substantially enhance population growth resulting in a rising water demand. On the other side, agriculture and its water footprint are competing with other consumptive uses in two regions already characterized by a severe water stress and, facing dire conditions to be expected within the next decades. Authorities and water stakeholders across both sides of the border should prioritize investments aiming at reaching acceptable water footprint caps by implementing sustainable joint management of surface and groundwater systems.