Demand, supply, and restraint:

Determinants of domestic water conflict and cooperation

Codebook – Dependent variable

To evaluate our hypotheses, we employ recently compiled event data on water-related conflict and cooperation in 35 Mediterranean, Middle Eastern, and Sahel countries for 1997-2009: the WARICC data by Bernauer et al. (2012a) (the data are available at: http://dvn.iq.harvard.edu/dvn/dv/interact; http://www.ib.ethz.ch/research/data, and http://www.prio.no/Publications/Publication/?x=5118). In its original form, the dataset is structured such that there is one observation per water-related event. The full dataset contains records of 10,352 water-related events.

The key variable in this dataset, the *Water Events Scale* (*WES*), measures the intensity and impact of a domestic water-related event in an ordinal fashion. This scale consists of 11 points, ranging from -5 (most conflictive event) to +5 (most cooperative event). Events assigned to the +5-category involve a very extensive role for any kind of actor in trying to initiate or implement policies, programs, or actions that substantially improve the quality or quantity of water in the whole country. Only 70 events (0.68 percent of the sample) are violent (i.e., coded as -5). There are 1,780 conflictive non-violent events (18 percent), while 3,665 (35.40 percent) are cooperative. Finally, about 47 percent of recorded events are neither cooperative nor conflictive (i.e., neutral or the 0-category). Evidently, violent water-related events are extremely rare and studying only those would exclude the large majority of water-related social interactions.

We aggregate these data to the country-year, which serves as our unit of analysis (N=446 country-years). For the first set of empirical tests, we use the yearly mean value of the *WES* for each country as the dependent variable.

Codebook – Explanatory variables

Population density is measured as the midyear population divided by land area in square kilometers. Additionally, we incorporate a measure of agricultural productivity. Finally, to operationalize a country's overall level of economic development, we use *GDP per capita*. The data for all these variables are taken from the World Bank Development Indicators.

We measure climate variability with data for temperature and precipitation. To this end, we include the absolute deviation of the current level of precipitation and temperature, respectively, from past long-run levels, i.e., the 30-year moving average. The precipitation data, measured in mm per year, are taken from the Global Precipitation Climatology Center (GPCC) (Beck et al., 2004); the temperature data are measured in degrees Celsius and stem from the University of Delaware's Global Surface Air Temperature Database (Matsuura and Willmott, 2009). Missing climatological data for Malta and Monaco were replaced by data for nearby areas in Italy and France, respectively.

For democracy, we rely on the *polity2* variable from the Polity IV dataset (Marshall and Jaggers, 2013). This item taken from this dataset ranges between -10 (full autocracy) and +10 (full democracy). Data for Bosnia and West Bank/Gaza are missing in these data and we imputed values of zero to mitigate potential consequences of missing data.

Political (in-) stability is measured by an indicator that counts the number of years since a country entered the Polity IV dataset in 1800 or had a three-point change ("most recent regime change") in the *polity2* score in either direction of the scale over a period of three years or less (Marshall and Jaggers, 2013, p. 17). This coding rule also applies to the end of a

transition period, i.e., “the lack of stable political institutions” (Marshall and Jaggers, 2013, p. 17). As soon as such a change occurs, this count item is reset to 0 and the count starts again. Hence, the higher the values on this variable, the more politically stable a country.