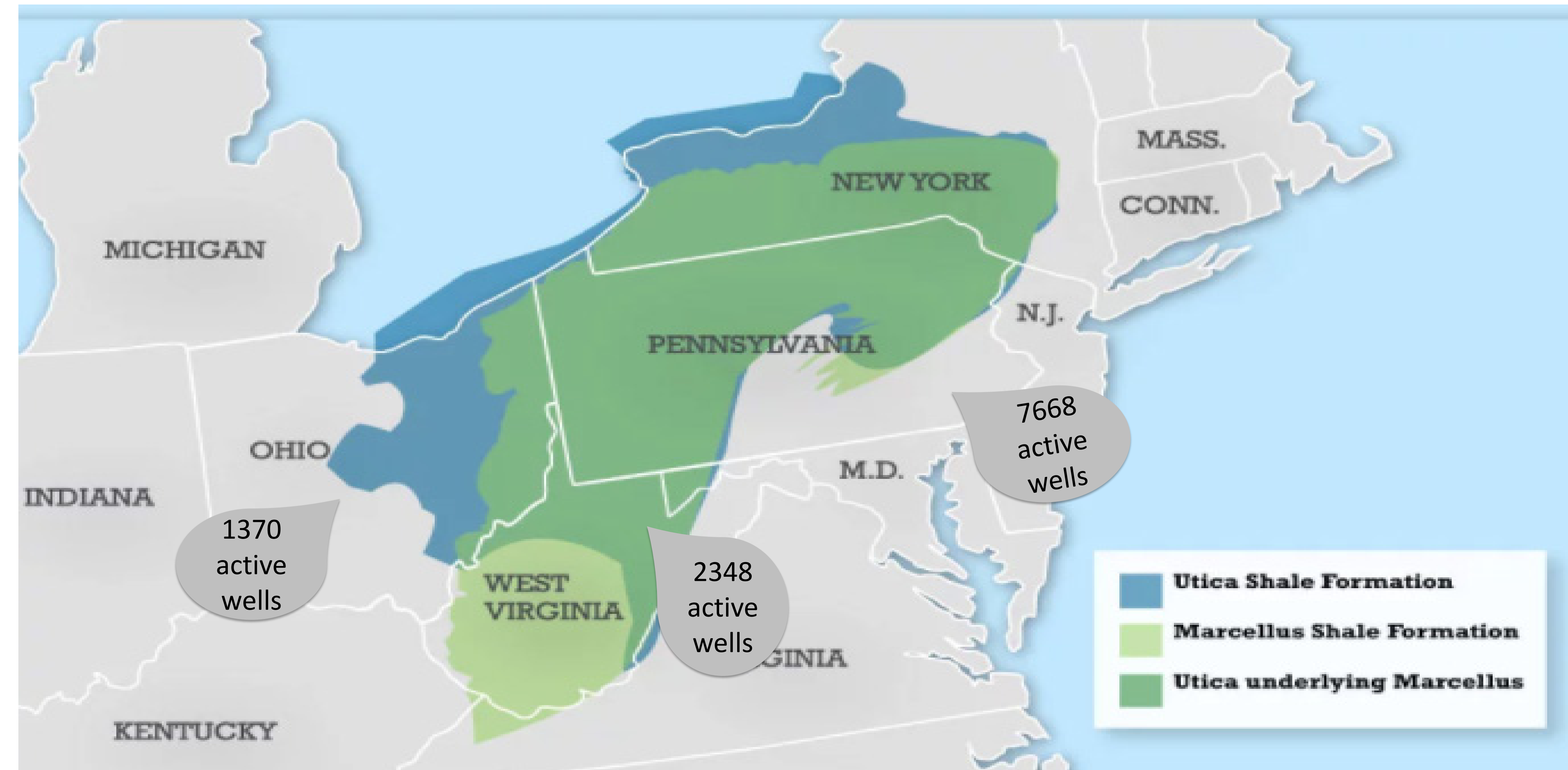


**ABSTRACT:** Hydraulic fracturing has taken a newfound, prominent presence on the energy stage. With ample reserves in the United States, the natural gas industry has encouraged economic growth, the promise of increased job availability, and greater national security. Already dotted with coal mines and traditional oil wells, that has taken advantage of its substantial reserves, experiencing a major boom in natural gas and oil production since the mid-2000s. Conflicting ideas of best practices in governing natural gas development call into question the effectiveness of multi-level forms of governance. A comparative case study of Ohio, Pennsylvania, and West Virginia provides an opportunity to examine different forms of polycentric governance of economic development associated with the oil and gas industry. Utilizing content analysis of interviews with key policymakers, stakeholders, and policy experts, we assess the extent to which states assert power over the governance of development and provide opportunities or restrictions for local and regional engagement in oil and gas governance. Each of these states has taken different *de jure* policy strategies, but our analysis illustrates that in fact that *de facto* policies are quite similar across the states. Our investigation highlights how lack of bureaucratic capacity hinders the ability of local governments to engage in governance of economic development within the region, even when given resources and power to do so by the state.



**FIGURE 1:** Map of the Marcellus and Utica Shales, the proposed study area, with corresponding state natural gas well counts.

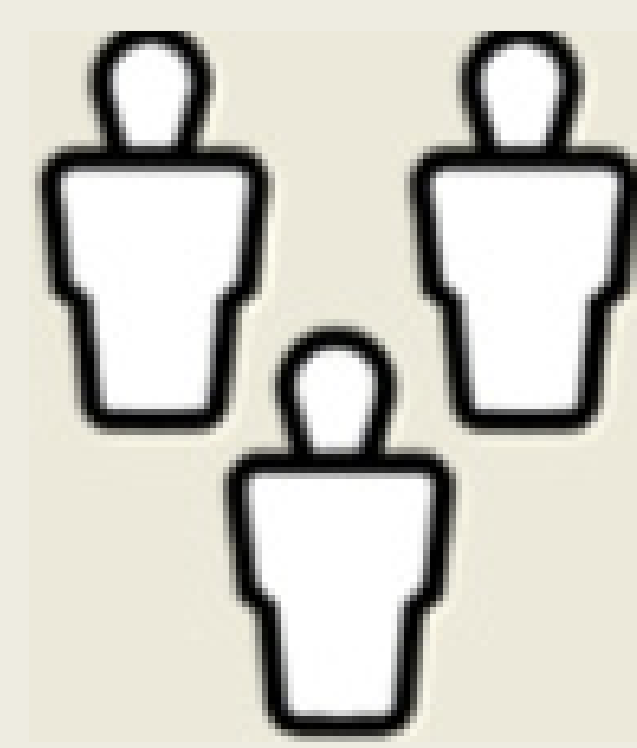
## RESEARCH QUESTIONS

Are local governments refrained from regulating the natural gas industry?

Do municipalities have the capacity to regulate the natural gas industry under the current governance regime?

Are local governments unwilling to participate in the regulation process?

## METHODS

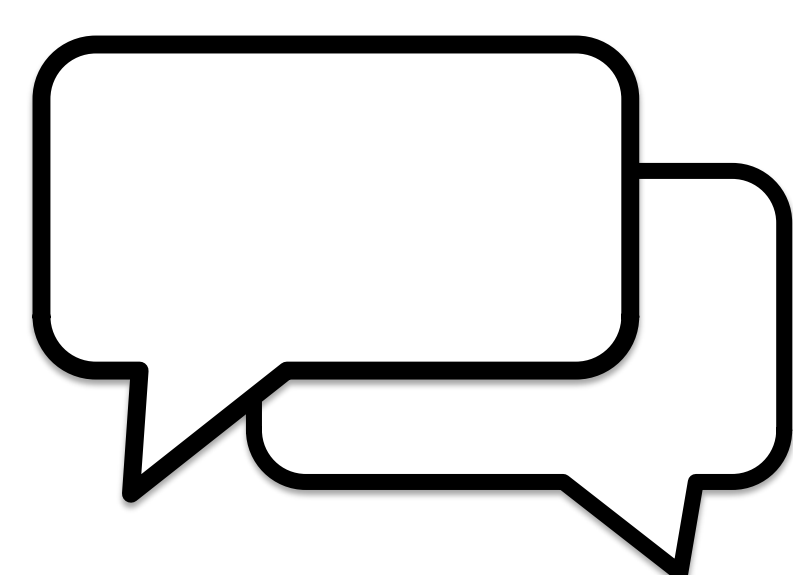


### BACKGROUND DATA COLLECTION

Secondary data analysis of current oil and gas policies in Ohio, Pennsylvania and West Virginia. Identification of key public and private stakeholders.

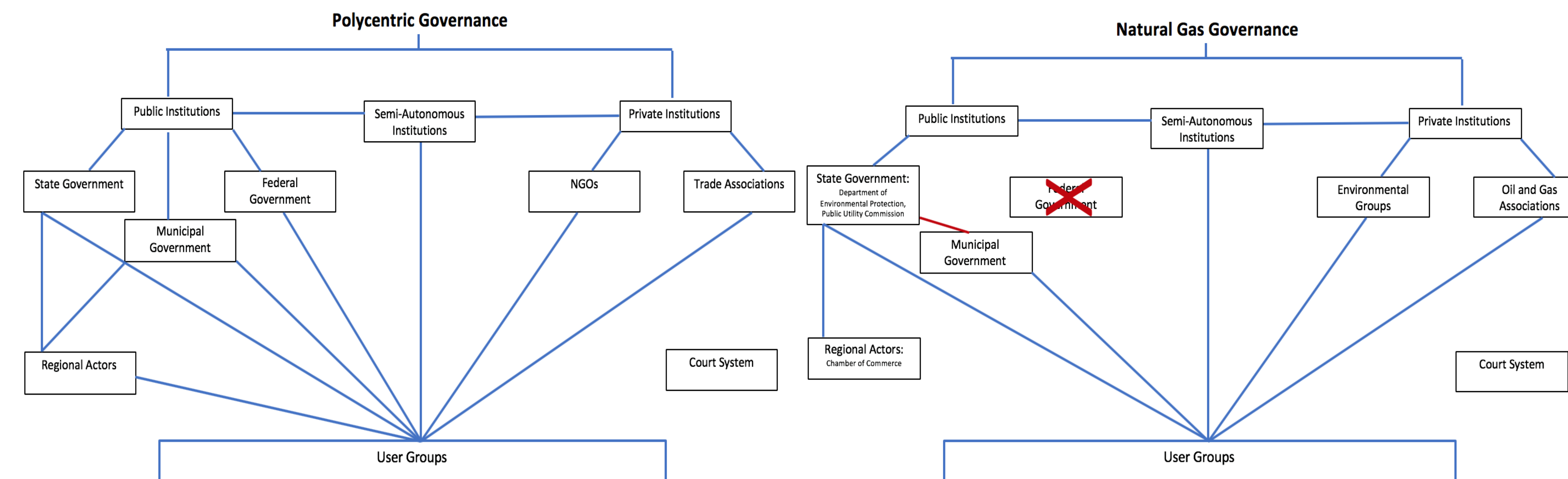
### PUBLIC AND PRIVATE OFFICIAL INTERVIEWS

Ethnographic interviews of public and private stakeholders to determine the effects that oil and gas policies have on local governments. The goal of these interviews is to determine local government's capacity to regulate natural gas development externalities.



### INTERVIEW CONTENT ANALYSIS

Interviews are transcribed and analyzed for common themes.



**FIGURE 2:** Schematic of proposed governance.

**FIGURE 3:** Schematic of current governance.

### POLYCENTRIC GOVERNANCE

- Term refers to multiple overlaying forms of governance, going beyond federalism to encompass public, private and voluntary sectors. This is shown in **Figure 2**.
- We argue that this method of governance best fits the natural gas social-ecological system.
- Constitutionally, Ohio, Pennsylvania and West Virginia should be able to regulate fracking as they have been able to regulate other sectors of the oil and gas industry.
- **Figure 3** shows the current governance strategy. The federal government has removed its from natural gas regulation, leaving it to the states to manage the industry. Municipal governments have little to no power, shifting their regulatory ability to one that must go through the state legislature. Regional actors only have influence at the state level due to the restricted abilities of municipal governments.

### REFERENCES

Marcellus and Utica Shale Formation Map [Map]. (n.d.). In *Marcellus Shale Coalition*. Retrieved March 6, 2018, from <http://marcelluscoalition.org/pa-map/>  
 Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20(4), 550-557. <https://doi.org/10.1016/j.gloenvcha.2010.07.004>  
 Ostrom, V., Tiebout, C. M., & Warren, R. (1961). The Organization of Government in Metropolitan Areas: A Theoretical Inquiry. *American Political Science Review*, 55(04), 831-842. <https://doi.org/10.1017/S0003055400125973>