Introduction

Western Kansas farmers use water from the Ogallala Aquifer (fig. 1) faster than it can be recharged. At current rates of exploitation, the usable life of the aquifer is over in the brown-shaded areas and has as little as 25 years left in the red-shaded ones (fig. 2). Compounding the problem of aquifer decline, projected climate changes over the next 30 years that include higher temperatures and reduced rainfall will reduce available soil moisture. Irrigators’ need for water will increase at the same time its availability diminishes. Some farmers are already coping with low water pressure in their irrigation wells and depleted soil moisture.

Objectives

• To understand how the farmers in our sample interpret the threat of aquifer depletion and climate change.

• To understand why the farmers in our sample embrace science in the form of technological interventions while simultaneously rejecting climate change.

Methods

In the summer of 2011, interviewers on this interdisciplinary EPSCoR project, recorded 151 interviews with Kansas farmers from every part of the state (fig. 3). This poster is based on a subset of interviews from south central and southwest Kansas. We present representative data from two of the orientations toward these problems that our respondents exhibited.

Free Market Farmer

We sit over the Ogallala aquifer, which is a huge aquifer that has made this country very, very wealthy at times. But that’s declining, too. We’re not going to pump it dry. Anybody who says we’re going to pump it dry is wrong, in my observation. As the water declines, people quit pumping because it gets economically unfeasible to do. So people think we’re pumping this aquifer dry willy-nilly. That’s not what we’re doing. We’re trying to take care of it. We’re doing it to keep economically viable.

“I’ve got very good water because the technology is better.”

“…landlords weren’t interested [in water conservation] because they want the most money they could get for right now, you know. And all of us understand that, and especially when you’re buying a $200,000 tractor. You’re forced to do the most economic thing.

Proactive Farmer

The Ogallala is being depleted at such a tremendous rate that irrigation’s gonna be a thing of the past, and if irrigation goes, the plentiful grain supply’s gonna go out here for particularly feed grain, and when that goes, the feed yards go, and when the feed yards go the packing plants will go, and when the packing plants go, most of the immigrants are all gonna be gone. It’s gonna be a snowball effect and there’s things that [are] basically uncontrollable…Plentiful water’s pretty much mined out.

A good farmer is “anyone who survives out here [and] who is able to adapt. Then you could live far enough ahead to anticipate future problems.”

You’ve got to be progressively re-educated all the time. … You don’t wait ‘til the Titanic hits the bottom before you start figuring out, you know; well maybe we should’ve done this or done that.

Attitudes About Climate Change

I think it’s all cyclical, and the cycle is bigger than our lifetime, so how in the hell do you measure that kind of stuff?

I think a lot of that is a bunch of baloney. This old world has been in a constant state of change since it was created and it’s gonna continue to change…

I’m not saying that it doesn’t change but they just present it as a fear factor.

I’m not a firm believer in climate change yet. Well of course if you know geological history, you know we had an ice age here… So there was climate change… [But] we tend to think that we’re the only dog…in the hunt … Mother Nature’s sometimes got different ideas.

Analysis

Free Market Farmer

• Has significant off-farm income and would not be directly affected if his farm failed.

• Believes the market will develop solutions to preserve irrigation. He bases his decisions on economic constraints he feels are beyond his control.

• Solves his problems with technology and expects future interventions will also be technological.

Proactive Farmer

• Has no off-farm income and would lose his livelihood if his farm failed.

• Has closed several wells and is experimenting with new crops and drip irrigation to forestall the apocalyptic vision he shares with us.

• Is flexible in his cropping decisions and seeks new information.

• Exhibits a long term planning horizon and refuses to leave the future of his farm to the caprices of the government or market.

Conclusion

Technological and market fundamentalism can alter perceptions of aquifer depletion and climate change. They can also delay the adoption of practices that will prolong irrigated farming, and the sustainability of rural communities that depend on it, in Western Kansas. The depletion of the aquifer has already led some farmers to shut down their wells and experiment with crops that require less water (like cotton) or that provide a larger return for the water that they do have (like grapes). The transition to dryland farming is imminent in some parts of southwest Kansas.

Stories and memories of severe weather and bad crop seasons, and the subsequent returns to good weather and yields, lead most of the farmers in the sample to be skeptical of climate change. Unlike agricultural technology that farmers can evaluate in their fields, climate science is conducted at locations and scales to which the farmer has no access. Farmers remain skeptical of statements that do not seem to correspond to local experience and that they have no way of evaluating.

Actor-Network Theory (ANT) speaks to both issues. As Latour notes, it is the “angle, direction, movement, and scale” of an observer in a network that determines the observer’s viewpoint (1987:213). The Free Market Farmer is secure in his income and does not currently have water problems. He is still well-connected to the network of irrigated, industrial agriculture, which promotes a discourse of technological and market fundamentalism. Further, the ANT principle that actors are network effects means that his identity is also implicated in his assertions. The Proactive Farmer, on the other hand, has become severed from the network (due to his failed wells) and is searching for ways to sustain his livelihood and farm. His position on the periphery of the irrigated, industrial agriculture network opens the possibility for the exploration of alternative discourses about agriculture, climate change, and water scarcity.