

Governing the Commons in a Globalized Epoch: A case study of telecoupled vulnerability of Mexican and Vietnamese smallholder farmers

I Introduction

Sustainability in its myriad forms is inherently a governance challenge. Globalization has shaped not just the context within which we debate sustainability but the very evolution of the principles it encompasses and the vehicles of governance available to translate visions of sustainability into action. Globalization has thus emerged as the defining feature of our era (Young, 2010). Liu et al. contend that distant interactions pose both unprecedented challenges and opportunities for sustainability (Liu et al, 2013). The over-exploitation of the global commons such as biodiversity is driven by a combination of global and local drivers and their governance thus needs to span across scales. As distant interactions shape the sustainability dilemmas of this generation (food security, global climate change, biodiversity, land use and public health), it is imperative that we seek to understand these interactions, flows and feedbacks across systems.

The emerging heuristic of telecoupling in land use change and food systems seeks to address the 'governance vacuum' within which Social Ecological Systems (SES) interact. Globalization has thus far been studied as exogenous factors driving change within a system rather than as flows that link systems via social and ecological mechanisms of change, feedbacks and place-based outcomes (Liu et al., 2013; Eakin, forthcoming).

The term 'teleconnections' in climate literature refers to atmospheric processes having climatic consequences on geographically non-contiguous locations like the El Niño Southern Oscillations (ENSO). This idea of distant connections implies that change in one location might have consequences in a geographically distant location (Trenberth and Hurrell, 1994). When applied to Social-Ecological Systems, the idea of telecoupling is used to capture the influence that two or more SESs exert on each other. The challenge emerges when institutions acting over one system do not account for the consequences in the more distant system. The 'distance' referred to in telecoupled systems can be either spatial or social or both: geographic separation and/or a separation of social networks, institutions and governance.

In this paper, I explore the implications of globalization on the robustness of two telecoupled systems, smallholder coffee producers in Central Veracruz, Mexico and Dak Lak in Vietnam. I illustrate that adaptation and vulnerability, traditionally characterized as 'place based' characteristics of a system are also telecoupled across geographic boundaries i.e. adaptive gain for some households contribute to losses in distant places and feedback mechanisms can 'transform livelihood security in one location into livelihood insecurity elsewhere' (Eakin et al., 2008).

I use the robustness framework to articulate three key observations that illustrate the sustainability-governance challenges and opportunities in a telecoupled world. The robustness framework was chosen for its ability to combine the operational and collective choice levels in one framework, making it apt to study robustness in a multi-level teleconnected system (Anderies et al., 2014).

Three key observations highlighted in this study include:

- Changing Public Infrastructure providers: Globalization has resulted in a shift from Government to governance and this is illustrated in food systems as a change in Public Infrastructure providers. The story of globalization or a re-configuration of power amongst state, NGO and corporate actors is well illustrated by the emergence of new Public Infrastructure Providers in both Mexico and Vietnam after neo-liberal policies were implemented. The changing role of Infrastructure providers and their relative capacities to mobilize community members in distant locations (and alter the attributes of the community), greatly influenced local robustness.
- Robustness-Vulnerability trade offs occur not just across time scales but are also spatially distributed. As systems linked via the global commodity chain, both Mexican and Vietnamese farmers are linked to the global coffee market. This link translates livelihood decisions made by farmers in Vietnam to the vulnerability of smallholder farmers in Mexico.
- Feedbacks can cause novel institutional arrangements to emerge. Flows of information, knowledge, values and ideologies have the potential to alter the attributes of the community, resulting in a feedback that might generate new mechanisms of governance.

The Commons Dilemma

The global market for coffee is a commons that was governed by a set of coffee producing and consuming countries under the International Coffee Agreement (ICA). The International Coffee Organization was established in 1963 at a conference convened by the United Nations in response to fluctuations in prices and supply and demand from the 1930s to the 1960s. Price of coffee rose to unprecedented heights in 1953 and gave rise to a substantial increase in planting throughout the world and over-production followed. Stocks increased and, in the second half of the 1950s and the early 1960s, prices fell drastically. This led to an intergovernmental initiative to attempt to stabilize the market and to halt the fall in prices, which had serious economic and political consequences for a large number of coffee producing countries in Latin America and Africa (Bohman and Jarvis, 1999). The global market was thus governed as a global commons.

There were clear boundary rules, membership and scope rules. Member countries negotiated quotas for their share in the coffee market, thus maintaining a predictable supply and price for coffee. The break down of the ICA in 1989 followed by the introduction of neo-liberal policies and free trade opened the market and coffee producing countries to fluctuations in price, shocks and vulnerabilities they were previously protected from. These shocks and vulnerabilities in the global market are both a result of shocks at local scales as well as drivers of commons dilemmas such as over-exploitation of communal land resources and groundwater at local scales.

I Biophysical Context:

(i) Veracruz, Mexico

The resources used include *ejidos* or communal land used for coffee cultivation, trees and plants used to produce shade coffee, water resources etc. Hard infrastructure includes tools and implements, storage units etc. that are collectively owned and provided by the INMECAFE. Technical knowledge, credit and an assured market were other soft Infrastructure that the government provided via INMECAFE.

(ii) Dak Lak, Vietnam

Vietnam tried to exploit its natural resources to maximize the production of sun coffee and severely degraded both groundwater resources and soil fertility. It is estimated that in Dak Lak groundwater was exploited for over 70% of its capacity (D' haeze et al., 2005). Large tracts of forests were cleared for conversion to coffee plantations.

Soft infrastructure included *Doi Moi*, a policy for the privatization of collective agriculture and agricultural expansion. Also, rules for the relaxation of import and export controls played a big role in allowing Vietnam to enter the coffee market.

II Attributes of the Community: Declining role of the Government as the primary infrastructure provider

In the 1980's Mexico was the world's fourth largest coffee producing country. Instituto Mexicano de Café (INMECAFE) was an agency of the Mexican government, developed to support coffee cultivation by small landholders. The organization provided farmers with technical assistance and credit, guaranteed purchases, provided transportation to market, and collaborated with the ICA in order to sell the coffee on the International market. In the wake of economic liberalization, the agricultural credit unions and vehicles for dissemination of credit and technological support began to disintegrate in the absence of the larger institutional support that the government provided. While other regions took advantage of the political and economic flux, farmers in Central Veracruz had replaced subsistence sugarcane cultivation and forest for commercial coffee production subsidized by the government. Without the government support for coffee production and the ready market that INMECAFE provided, farmers found themselves in debt and without

livelihood options. By the late 1980's, economic liberalization plans were underway and most governmental agencies were being privatized. Farmers had been organized to produce in relation to specific institutional structures and were now unsure where to turn. Production in Mexico stagnated during this period of political and economic flux.

In a different part of the world, Vietnam was undergoing structural and political changes, gearing up to join the global market it had thus far been precluded from. The government, a strong infrastructure provider introduced reforms under *Doi Moi* policy for the privatization of collective agriculture. Relaxation of export and import controls, open door policy to promote Foreign Direct Investment as well as regional and International trading agreements, all allowed for Vietnam's integration to the Western markets. Vietnam only contributed about 1% of the global coffee export at this point.

The combination of market liberalization and the collapse of ICA provided an opportunity for the expansion of coffee cultivation as coffee could now be competitively traded at the international market. The window of opportunity was enhanced on the one hand by government incentives, preferential loans to growers and exporters and subsidized import of inorganic fertilizer, hastening the uptake of cash crop farming. Thus, while domestic circumstances inhibited Mexico's response to favorable market conditions, Vietnam's coffee production expanded rapidly. By 1994 Coffee became the second largest foreign exchange earner for Vietnam (Eakin et al., 2008).

Rules in Use:

- **Boundary Rules:** Countries that availed of higher, stable prices under the ICA had to be signatories to the International Coffee Agreement. All coffee producing countries could apply to be members of the ICA.
- **Scope Rules:** Each country could only supply as much coffee as their export quota permitted. Price was regulated by regulating export quotas.
- **Position rules:** The International Coffee Organization convened meetings and decided on quotas. Quotas were not equally distributed and were a result of negotiations between countries. Some countries were allowed larger quotas than others.
- **Choice Rules:** Countries could withdraw from the International Coffee Agreement with a prior notice of 90 days.
- **Payoff Rules:** Joining or withdrawing from the ICA was voluntary and members were not penalized for withdrawing.

II Dynamic Analysis

Commons Dilemma: With the elimination of barriers to trade and relaxed entry requirements, the global market started being flooded by coffee supply. Vietnam's entrance into the global market and its huge supply of coffee resulted in a drastic drop in coffee prices leading to a global 'coffee crisis' resulting in widespread poverty in both Mexico and Vietnam.

- (i) Shocks to Resource and resource users: Robustness–vulnerability tradeoffs

When price of coffee reached its historical minimum in 2001, it had significant vulnerability ramifications for both Vietnam and Mexican smallholders.

In Vietnam, national policy emphasis on export production had led to crop specialization and a reduction in local diversity and livelihood options. An over-exploited resource base tailored to maximize sun coffee production further compromised local diversity and redundancy in the system. The resources and infrastructure catered solely to coffee production and export. Thus factors that rendered Vietnam robust to prevailing socio-economic conditions between 1989-1994, were now pivotal to its vulnerability.

Mexican farmers in Veracruz felt the effects of this coffee crisis. Eakin et al report that of the thirteen municipios that produced most of the state's coffee, 77% were classified as 'highly marginal' by 2000 (Eakin et al., 2009).

- (ii) Shocks to conventional Public Infrastructure Providers: Emergence of global (WTO) and local infrastructure providers

The declining role of the state was followed by the emergence of global and local infrastructure providers. The World Trade Organization emerged as a global infrastructure provider, lowering trade barriers, changing the entry requirements and enabling 'free trade'. They provided the global rules for trade (soft infrastructure) and multi-lateral trading system, negotiated and signed by the world's trading countries. These are contracts that guarantee the member countries trade rights (scope rules and choice rules).

Local institutions like environmental NGOs and humanitarian organizations emerged to address the degraded environmental conditions in Mexico and Vietnam and the livelihood insecurity of smallholder farmers. Traditionally the government carried out welfare programs and conservation agendas. A network of non-governmental public infrastructure providers, were now actively pursuing these programs. The deterioration of ecosystems and livelihoods that ensued the price collapse triggered a range of public infrastructure providers such as humanitarian organizations and NGOs concerned with environmental protection to take action. They evolved from being interest groups to infrastructure providers in the wake of power reconfiguration with the 'hollowing out' of the state and globalization (Rosenau, 2003). Infrastructure was provided in the form of organizing farmers into groups, programs, and relief and certification schemes. International organizations

and NGOs such as the Rainforest Alliance or those concerned with social justice (OXFAM) entered the coffee value chain even though their agenda wasn't concerned with commodity trading (Rueda and Lambin, 2013).

(iii) Feedbacks: Emergence of new institutional mechanisms to govern coffee

A number of initiatives such as the formation of the Fair Trade Foundation, Transfair etc followed suit. The organic movement around the world expanded to reach Mexico. Humanitarian NGOS with strong constituencies in European and US markets expanded their traditional agenda to enter the global trade system as key actors in trade governance, bringing with them ecological citizens with a social consciousness who are consumers in the global market. Globalization is thus also a flow of actors, agendas, values and ideologies. This flow of information has triggered the formation of new knowledge democracies, which are the crucial to engendering new governance arrangements (Jaap, 2013). Certification for quality, sustainable production as well as farmers' livelihood security became the mechanism through which concerns and preferences in consuming countries were linked to farmers. NGOs partnered with buyers and roasters, who have made a pledge to reach 100% sustainable coffee purchase before 2050. This market-based mechanism was a new governance framework. It was the integration of two separate international networks and systems- one based on humanitarian and ecological investments and the other based on commodity chain that inspired this change in global governance (Eakin and Rueda, 2014).

The emergence of certification schemes illustrates how changes in local conditions have global effects in this age of rapid communication. The flow of information and values across geographic boundaries has altered the attributes of the global consumer community. They are now both more aware and held responsible for their consumption choices. They are enabled by new infrastructure providers with global networks to exert influence and force the market to adopt new standards. The adoption of these global standards feeds back to local conditions where new soft infrastructure in the form of certification schemes and a new set of rules have allowed resource users to organize into groups that can take advantage of new institutional mechanisms.

Conclusion

The robustness framework provides a useful lens to study the global market as a commons. The global-local interactions that are characteristic of globalization shape robustness-vulnerability tradeoffs across scales and geographic locations. A telecoupled approach to understanding robustness helps illustrate the mechanisms by which shocks and vulnerabilities are transported from one place to another, rather than being studied as exogenous variables to a system. A telecoupled approach also allows one to study feedbacks that emerge as a result of these interactions both within a system as well as amongst systems across scales and locations. In the global coffee case study discussed above, feedback mechanisms have illustrated the potential to change the attributes of a community, empower new public infrastructure providers and transform governance. As distant interactions continue to mould the context within which we endeavor to govern the commons, understanding the mechanisms and conditions that allow feedbacks for governance to emerge will be key to successful global governance.

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