Grounding Nexus Governance: De-Nexused Developments in Nepal

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Abstract

There appears to be little agreement on the precise meaning of the nexus, whether it only complements existing environmental governance approaches or how it can be enhanced in national contexts. Technical solutions for improving coherence and governance within the nexus may have unintended and negative impacts in other policy areas, such as poverty alleviation. The nexus is yet to be extensively grounded, into national policies and practices, and broad-based local demand for nexus-framed policies is currently limited. Through a mini-case study in Nepal, this article seeks to analyse what is the local understanding and practice around the relationship between food, energy and water to inform nexus thinking and practice. These mini-case studies will inform us on the interaction between formal and informal institutional arrangement and how these interactions form the basis of a nexus system.

Keywords

Nexus • Governance • Nepal • Informality

1 Introduction

The idea of "the nexus" between water, food and energy is institutively compelling. It promises better integration of multiple sectoral elements, a better transition to greener economies and sustainable development. Addressing this challenge requires innovation in all policy dimensions (Larcom and van Gevelt 2017). Many related discussions are emerging about what integration is, what it means and what it achieves. Numerous analytical frameworks are being developed for identifying leverage points to break path dependencies, adapt to unknown change and enable robust decision making in the face of uncertainty (Allouche et al. 2014; Leck et al. 2015). However, there appears to be little agreement on its precise meaning, whether it only complements existing environmental governance approaches or how it can be enhanced in national contexts.

There are divergent framings of the nexus between its various proponents, on risk and security, or economic rationality, which mask different types of politics: politics of difference, politics of knowledge, international political economy and geopolitics (Allouche et al. 2015). Our perspective acknowledges it as a fundamentally political process requiring negotiation amongst different actors with distinct perceptions, interests and practices (Rees 2013; Allouche et al. 2014; Stein et al. 2014). This perspective, concerned with equity and social progress, highlights the fact that technical solutions for improving formal governance within the nexus may have unintended and negative impacts in other policy areas, such as poverty alleviation.

This article challenges the managerial–technical conceptions definitions of the nexus by bringing to the forefront the politics of the nexus, around two key dimensions—a dynamic understanding of water–food–energy systems and a normative positioning around nexus debates, in particular around social justice. The author argues that a shift in nexus governance is required towards approaches where limits to control are acknowledged, and more reflexive/plural strategies adopted.

2 Materials and Methods

Methodologically, we develop a mini-case study analysis of the nexus in Nepal, examining case studies that exemplify nexused-dilemmas and where divergent, plural perspectives and contestations have emerged in response. The article is

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based on a series of semi-structured interviews conducted between January and April 2014.

3 Results and Discussion

Nexus and integrated management are ongoing, unresolved problems of complex development and its governance. The opposite of a more holistic or interdisciplinary water–food–energy nexus approach is silo-fication which is the natural consequence of hierarchic organizing and specializing at levels of social organization above the primary one of the farming family. With funding from high-income country donors, it is found to have diffused from a global policy arena into a regional one that includes international and regional organisations, academic networks, and civil society, and national politicians and government officials (Middleton et al. 2015). The nexus is yet to be extensively grounded, however, into national policies and practices, and broad-based local demand for nexus-framed policies is currently limited. This article will not focus on the official nexus policy and its impact on the ground but rather look at how nexus issues are being constructed under hybrid governance systems involving local institutions and individuals. Through a mini-case study in Nepal, this article seeks to analyse what is the local understanding and practice around the relationship between food, energy and water to inform nexus thinking and practice. This case study will inform us on the interaction between formal and informal institutional arrangement and how these interactions form the basis of a nexus system.

The case of Nepal's only large reservoir, the Kulekhani Hydroelectric Power Stations, is instructive in understanding how, despite the multiple benefits of a nexus approach, the ground imperatives of government agency practices promote de-nexusing the water–food–energy sectors that converge around the reservoir into silo approaches. Conceived purely as a peaking hydroelectric plant, considerations of using the stored water either within the reservoir for fisheries or downstream for irrigation and drinking water were never part of the official project design by the various actors involved in the project design, whether government agencies, multilateral development banks (i.e. the World Bank) or bilateral donors (in this case, Japanese aid agency JICA). There have been writings by activists and academics in the local media suggesting nexus activities. They range from: using the higher water level in the reservoir to supply gravity flow drinking water to the chronically water-scarce capital city of Kathmandu located at a lower altitude; promoting tourism and fisheries in the lake; increasing dry season irrigation in the downstream reaches from the stored releases; providing more municipal water supply to the town of Hetauda; and enhancing eFlows to the national wildlife parks in the downstream reaches (Gyawali 2015). The interesting point in terms of nexus governance is that some of these initiatives were taken forward informally, as small livelihood activities by the communities living around the dam. A nexus governance approach was being developed at the local level, while being unrecognised and unacknowledged for.

The population surrounding the Kulekhani Watershed, and most of rural Nepal, has a deep and integrated relationship with the geography and land where livelihoods and culture depend on this relationship with the environment. Resilience and adaptability is a constant trend living in the middle hills of Nepal. With their susceptibility to the effects of climate change and major developments like the Kulekhani HEP, villagers have continued to live and make use of the land despite the changes to the ecosystems as a result of the construction of the dams, creation of the reservoir and the socio-economic effects of the process of major infrastructural development. The creation of the reservoir also brought about (as an afterthought) the potential for new livelihood options, including aquaculture and improved fishing opportunities, and the use of dry season regulated/stored water for downstream municipal uses (Gyawali 2015).

The real conflicts with the project began long after its completion with the restoration of multiparty democracy and the ability of the populace to voice public grievances. In July 1993, a major disaster struck the project when an intense cloudburst, lasting 30 h with intensity of up to 60 mm/h, dumped as much as 540 mm of rain in just 24 h. There was much mass wasting and landslides in the catchment area that practically filled up KL-1's entire dead storage volume that was planned to last 100 years. Bridges and sections of the national highways were washed off as were 67 small and large irrigation projects, and some two thousand people lost their lives. Subsequent bathymetric surveys indicated that actual sedimentation was orders of magnitude higher than designed for. The torrential rains dislodged hill slopes and washed away the penstock of KL-1 shutting down its operation completely (equivalent to 40% of the total grid power) and necessitating serious and expensive countermeasure constructions. An innovative "sloping intake" was constructed that allows the intake point of the headrace tunnel to move up as the lower part of the reservoir fills up with sediment. It is during this phase of rehabilitation/reconstruction that conflicts came to the fore highlighting the nexused nature of the reservoir.

The people who lived within the catchment around the reservoir area but who lost their lands at the valley bottom when the river was dammed began cage fish farming with encouragement by activists and some Japanese volunteers. There were no official agreements with the national utility that managed the dam, and the officials were not bothered

either since it did not affect their power generation. When the 1993 disaster struck and the sloping intake had to be constructed to make the plant functional again, the utility resorted to sudden and quick dewatering of the reservoir killing all the fish that the villagers had been farming. A massive conflict issued at the local level.

The initial official utility position was that it was their pond and they could do what they liked that the people fishing there had no official right to do so. Due to political pressure, a compromise of sorts was worked out. The fisher folks would be paid a one-time compensation of almost a million rupees, and they would be free to continue with their fish farming in an informal way. However, if anything untoward happened due to reservoir operations by the utility, they could not claim any compensation in the future.

The fish farming continues de-nexused in the informal economy engaging some 307 families around the reservoir area. They are now self-organizing into a self-help cooperative with members having fixed shares so as to prevent overfishing through self-regulation.

4 Conclusion

For many rural farmers, fishers and community groups, food, water and energy resources are not considered as separate pillars but are part of the system they live and work in and need to be managed accordingly. Therefore, at the local level, the nexus is a practical everyday reality. In terms of governance, a de-nexused food–water–energy nexus exists in the largest and only big reservoir in Nepal, and the nexusing is happening only with local and informal initiatives, but not at the official national Nepal government or international aid agency levels. This case study highlights the disjuncture between the official and the unofficial, the formal versus the informal and the national versus the local. The second point is that about the nature of nexus governance itself. Governance should not be about control, but recognizing and encouraging diverse forms of initiatives and leadership in plural forms. This is why a shift in nexus governance is required towards approaches where limits to control are acknowledged, and more reflexive/plural strategies adopted.

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