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Framing a conceptual toolkit for institutional transformations of Cambodian aquatic food systems

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Abstract

In Cambodia, fisheries play an important role in the national economy, culture and food security via food sovereignty. Therefore, agroecological interventions, such as community fish refuges (CFR), are developed as fish conservation measures that aim to improve fish productivity in rice fields. The complexity of the interactions between the numerous environmental and socioeconomic variables influencing these socio-ecological interventions requires a deeper understanding of the institutional transformations of food systems. In this context, our research focuses on developing an analysis on collective action and governance of Cambodian inland fisheries. Our position aims to address the socio-ecological relations and power issues at the heart of a food sovereignty approach that prioritizes the need to respond to the basic food needs of local people, proposing food as a right of local communities. To this end, we develop a set of conceptual tools for the analysis of institutional transformations in Cambodian aquatic food systems. We draw on the theories of Critical Institutionalism to understand the institutional arrangements of aquatic food systems. We elaborate a conceptual toolkit for the governance analysis of the CFR project developed by WorldFish in Cambodia. We conduct an assessment of the impact of this project on the institutional dynamics of rural communities in Kampong Thom province. Our study considers the trajectory of the project, selecting a sample of rural communities with CFR funded during the period 2016 - 2021, and communities that received the funding from 2021 onwards. The conceptual model can feed back into existing governance models developed for the project and systems for decision support and collective action in aquatic food systems in Cambodia. In turn, highlighting the achievements of an agroecological approach project that has demonstrated a significant increase in terms of food productivity and biodiversity in the intervention areas.

Keywords:

Aquatic food systems; Cambodia; collective action; inland fisheries; institutional analysis

Introduction

In Cambodia, fisheries play an important role in national economy, food culture and food sovereignty. Natural supplies of fish and other aquatic animals (OAA) from rice fields contribute significantly to the economies and the nutritional well-being of Cambodian rural people. Fish is the second most consumed food after rice, its average consumption is 63 kg/inhabitant per year, providing 81.5% of animal protein intake (Ngin, 2019). Given this importance, rural policies and strategies are focused on preserving or even increasing overall supply to satisfy the growing population (Brooks et al., 2015).

Being a key element for the Cambodian food culture, aquatic food systems involve practices, beliefs, attitudes, networks and institutions that surround the production, distribution and consumption of food (Long, 2015, cited in Baird et al., 2019). In this context, our research intends to propose a "conceptual toolkit" for the critical analysis of governance of aquatic food systems of artisanal fisheries. This toolkit is based on the theories of Critical Institutionalism (CI), nourishing the study of the governance of aquatic food system. We embrace the idea of a "conceptual toolkit" as a toolbox that allows us to weave the process of understanding socio-ecological complexity. With the intention of providing key notions for building a research methodology and providing a guide for data collection, interpretation and analysis.

Considering the nutritional, cultural and social importance of fishing in Cambodia, our position for the analysis of governance of aquatic systems is based on that of "fish as food" as proposed by (Levkoe et al., 2017), approaching food sovereignty addressing social-ecological relationships and issues of power. Therefore, emphasizing the need to respond to the basic food needs of the local population, proposing food as a right of local communities to produce and consume before marketing the surplus. Recognizing therefore that food is also political, given that the food system functioning depends on control of diverse goods conferring power to people and institutions (La Vía Campesina, 2018)

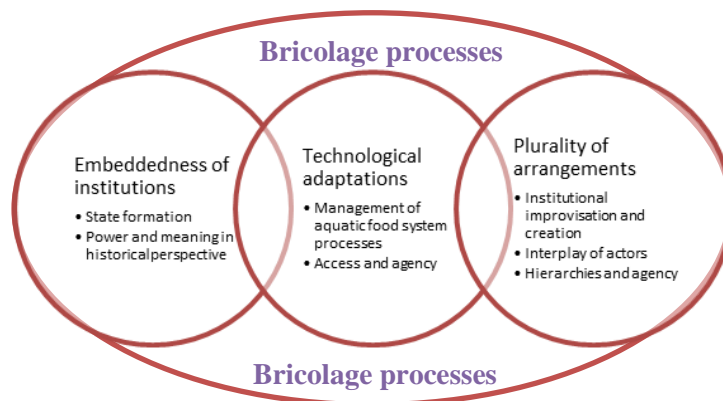
To the objective of our research, we developed a literature review of the theories of CI, and systematized its main concepts through a thematic analysis. We conduct an assessment of the impact of the Community Fish Refuges (CFRs) project lead by WorldFish in the Kampong Thom province in central Cambodia, by means of a qualitative case study analysis. Our study considers the trajectory of the project, selecting a sample of rural communities with CFRs funded by the project in the period 2016 - 2021, and communities funded from 2021 onwards. The CFRs are an agroecological form of stock enhancement that intends to improve the productivity of rice-field fishery systems (RFFs). RFFs refers to the capture of wild fish and other aquatic animals from the flooded rice-field agro-ecosystem and its associated bodies, such as canals, channels and other forms of water. The CFRs are communal village-based natural or/and human-made water bodies, managed by community members with technical assistance from state organizations and NGOs (Kim et al., 2019).

Literature Review

CI is nourished by the theoretical sources of the Social Ecological System Framework (SESF), at the same time that they share motivations for the study of common goods. These drives are mainly the study of institutional complexities and institutional transformation (Cleaver & de Koning, 2015). However, both frameworks have significant tensions, which have to do with important ontological and epistemological aspects. These ground in their assumptions of society, what determines the way in which they approach the analysis of power and collective action (Cleaver, 2000; Herrera et al., 2019).

Figure 1 shows concepts of CI that support the understanding of the aquatic food systems embedded in the CFRs intervention. These are being selected and analyzed following a process of induction and deduction of concepts as categories in thematic analysis, explained in the methodological section.

Figure 1: Bricolage processes in institutional arrangements

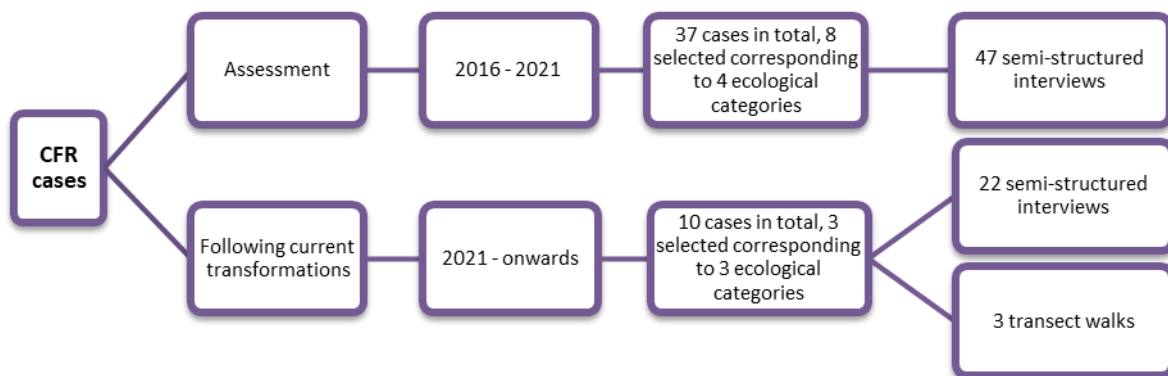


Current selection of concepts for building our "conceptual toolkit" (Cleaver, 2017; Cleaver & de Koning, 2015; Cleaver & Whaley, 2018)

Material and Methods

We undertake a holistic and embedded case study with multiple units of analysis considering ecological categories existent in our cases (Brooks, et al. 2015). We developed a literature review of the theories of CI, and systematized its main concepts doing thematic analysis. Our study considers the trajectory of the project, selecting a sample of rural communities with CFRs funded during the period 2016 - 2021, and communities that received the funding from 2021 onwards. Figure 2 shows the methods and numeric representations by groups of cases. In total, we conducted sixty-nine semi-structured interviews, and three transect walks since May 2022 until August 2022.

Figure 2: Methods and numeric representation by group of cases



We develop deduction by considering the theories of CI as lenses for the analysis of the aquatic food systems related to the CFRs. And we take on induction when we analyze and re-define categories based on the empirical evidence collected during fieldwork. The thematic analysis conducted for this research follows the steps established by Braun & Clarke (2006), also guided by Maguire & Delahunt (2017). Approval for the research work was obtained from WorldFish and corroborated by the local ANKO team. The WorldFish and ANKO team collected signatures from participants at each of the face-to-face meetings allowing for participation and legitimacy in the space.

Case description

CFRs contribute to the food security via food sovereignty of rural households. This becomes an urgent and important subject, as rural populations throughout the country continue to undergo persistent undernourishment (Freed et al., 2020; The World Bank, 2021). The CFRs is managed by a CFR committee, composed by five to ten people elected by the community living in the CFRs zone of influence. These committees' responsibilities are to develop the management plans and to create bylaws, define boundaries, hold regular meeting, and to manage the technical aspects of the CFRs. They coordinate with the Fisheries Administration state organization, and by local NGOs with support of the international cooperation (Kim et al., 2019). These committees are an institutional arrangement required for the development of the project in the territory, as for the legal registration of the ponds. The committees stand in a social network of actors that manage the ecological goods, such as the commune councils, village representatives, pagodas' institutional structure, and water users' groups.

Results and Discussion

Embeddedness of institutions



Photo 1: Boeng Malech CFR. Trainings for project development

State formation. Power and meaning in historical perspective. Formal-state norms and practices combine with customary norms and informal practices to produce institutions that "reconcile" the political imperatives of donors and governments with the needs and realities of rural communities (Bersaglio & Cleaver, 2018). Bricoleurs, as agents of institutional change, position themselves on the basis of their complex identities in space and their greater or lesser capacity for agency. This agency goes beyond productive identities (example: fishermen), and is related to the positioning of each subject in society, often multiple roles of power (fishermen, representative of village, representative of water user group). In the photograph, a training session for the development of the CFR project. On the left, photographs of the kings of Cambodia, in the middle and on the right, images of the fishing system. The workshop had a large participation of women, although the committee has a majority of men.

Technological adaptations



Photo 2: Trapeang Neang Noy CFR. CFR borders, area where the cows can access for drinking water. It is also an area where people collect lotus flowers from the pond.

Management of aquatic food system processes. Access and agency.

As people re-shape institutional arrangements, they also re-shape ecological systems based on local needs and ecological characteristics. The diversity of arrangements and creativity in institutional practices is reflected both in terms of organizations and power relations and in the management of food systems processes (Cleaver & de Koning, 2015). Management will be given by people's capacity for agency, given by access to resources and their real capacity to influence or not the organizational processes for communal action. In the photograph, we see an edge of the CFR where animals and people are allowed access, as opposed to the closed fishery conservation zone (left side of the photograph). This pond is next to a school that also accesses the pond for educational purposes, families that live near the pond and take advantage of the landscape, people take their animals and pick flowers in this part of the CFR.

Plurality of arrangements



Photo 3: Preah Kang Korl CFR. Refuge in the surroundings of the village's pagoda.

Institutional improvisation and creation. Interplay of actors. Hierarchies and agency.

Ecological management processes are linked to the ordering of hierarchies in the natural and supernatural worlds (Cleaver, 2017). In the improvisation of practices and creation of new arrangements, ways of seeing the world and society define what is or is not allowed in resource management. In the photograph, a CFR located within an area sacred to the village is a pool where there is no illegal fishing because people consider it inappropriate to fish there and fear supernatural consequences. This contributes to the conservation function of the fishery. However, the local technical team indicates that this pond does not have an active management CFR committee.

Conclusions and Outlook

Our process of elaboration of the "conceptual toolkit" allows us to weave the process of understanding the CFRs aquatic food systems. The interrelationship between the actors present in the territory is marked by power hierarchies that grant agency and influence capacity to some over others. The institutions respond to a process of state decentralization that maintains the central links of power with the state. Thus, the embeddedness of institutions is marked by power relations linked to formal-state ties, but mixed with local practices of management of ecological goods, and with village and religious governance institutions. Some individuals exercise multiple roles and responsibilities under various institutional arrangements. The management of water resources and fishery resources, and the institutions that manage both systems, intermingle to facilitate food access for local communities. While the project is seen to be successful in its nutritional and productivity-enhancing missions, we are exploring the sustainability of the institutional arrangements and how they do or do not motivate collective action by the fishing villages.

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