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Institutions and Co-Management in East African Inland and Malawi Fisheries: A Critical Perspective

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Summary. — Institutions matter within natural resource management. While there are many examples of analyses of the nature and influence of institutions within fisheries, there are fewer examples of how institutions inform the practice and outcomes of co-management. This article reports on analysis of institutions and fisheries co-management in East African and Malawi inland fisheries informed by Critical Institutionalism. It concludes that relations between fisheries departments and local co-management structures, and between local government/traditional authorities and local co-management structures, and social, power, and gender relations within and beyond fisheries communities, particularly impact on the practice and outcomes of co-management.
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1. INTRODUCTION

Institutions play a critical role in determining the nature of access people have to natural resources and in influencing decision-making related to natural resource use, both in terms of who makes decisions and what those decisions are. Fisheries are no exception. As observed by Jentoft (2004, p. 138), "fisheries, like other socio-economic practices, could not exist without them [institutions]. Users would simply not know how to behave". Institutions must, then, influence the process, nature, and effects of the *management* of fisheries. Given that many fisheries worldwide are managed through a co-management arrangement, involving users and governments working together, institutions must also influence the nature, processes, and outcomes of co-management. An understanding of the range of institutions that influence co-management, how and with what outcomes can inform the design, support, and implementation of co-management. This is essential given lack of evidence of success associated with co-management in some parts of the world in delivering on more sustainable fisheries (Béné *et al.*, 2009; Hara & Raakjær Nielsen, 2003).

Many approaches have been taken to the analysis of institutions within natural resource management, governance, and livelihoods, with approaches often placed in two main categories: common property scholarship, with a focus on determining arrangements of formal rules more likely to lead to sustainable governance in a given situation, together with a further category such as political ecology (Agrawal, 2005), entitlements scholarship (Johnson, 2004; Lewins, 2007), governance (Sandström, 2009), and Critical Institutionalism (Cleaver, 2012). This second category of approaches share political economy and sociological roots, with concerns including power inequalities, justice, and struggle, and complexity in institutions that influence access to and benefits from natural resources. Hall, Cleaver, Franks, and Maganga (2014) provide a synthesis of approaches that are 'critical' of the first, more mainstream, approach, critiquing common property approaches for assuming homogeneous communities, avoiding politics, and involving inadequate social analyses. A more critical approach, Hall *et al.* (2014, p. 82) argue, 'tends to reflect complex and unequal relations around natural resources management', with greater scope than common property scholarship for revealing diversity in institutions and power dynamics.

In emphasizing the complexity of institutions in natural resource settings, Critical Institutionalism offers two areas of focus that complement other approaches to the analysis of institutions in natural resource settings, whether common property or approaches based on sociological roots. These two areas of emphasis are recognition of the role and influence of socially-embedded institutions *beyond* those designed for natural resource management, whether formal or informal, such as kinship, gender, and power relations, and, secondly, how such institutions interact and engage with other institutions through 'institutional bricolage', reflecting the combinations and pathways of institutions used and navigated by resource users to gain and maintain access to and benefits from natural resources.

Taking a Critical Institutionalism approach and highlighting these two characteristics, this article makes two contributions to the literature on institutional analysis and natural resource co-management. It first identifies the types of socially-embedded institutions that influence structures, processes, and outcomes of co-management, and then examines how these interact with bureaucratic institutions (Cleaver, 2002) (also referred to in the literature as 'formal') in processes of institutional bricolage with implications for the design and practice of co-management.

The analysis presented here draws on published material on inland fisheries communities and co-management in East Africa (Kenya, Tanzania, and Uganda – largely drawing on research from Lake Victoria, but also other lake fisheries in Uganda) and Malawi in Southern Africa, largely by the authors of this paper (see, for example, Hara, 2006a, 2011;

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Hara, Donda, & Njaya, 2002; Nunan, 2006, 2010; Nunan *et al*., 2012; Onyango & Jentoft, 2007, 2010, 2011). A number of fisheries co-management arrangements were initiated on some of the largest and most productive water bodies in Africa including Lake Victoria and Lake Malawi since the 1990s. The authors have been involved in these initiatives and draw on evidence from their research on institutions in the fisheries communities and on the processes and performance of co-management through the lens of Critical Institutionalism.

The article proceeds by reviewing approaches to institutional analysis, before examining how this has been applied within fisheries, noting that there is little literature that examines the interactions between institutions and co-management directly. Analysis is then presented of the bureaucratic and socially-embedded institutional landscape within East African and Malawi inland fisheries, before examining the implications of these for processes and outcomes of co-management.

2. INSTITUTIONAL ANALYSIS: TOWARD A CRITICAL PERSPECTIVE

Institutions are widely seen as being at the core of how natural resources are managed and governed (Agrawal, 2001; Agrawal & Gibson, 1999; Cleaver, 2012; Ostrom, 1990). They influence whether and how people get access to resources, how much they can access, when, for how long and access to which resources. Institutions influence whose voice matters in decision-making and what kinds of practices are accepted despite formal decisions and rules. Understanding of fisheries co-management then entails a need to identify and understand which institutions play a role in access and management. To do this, clarity is needed as to how institutions are understood.

One of the most commonly cited definitions of institutions is that given by North, who described them as being "the rules of the game in a society, or more formally, are the humanly devised constraints that shape human interaction", which "reduce uncertainty by providing a structure to everyday life" (North, 1990, p. 3). This definition is widely used within the literature on environment and natural resources, with Leach, Mearns, and Scoones's (1997, p. 5) definition reflecting North's, seeing institutions as "regularized patterns of behavior between individuals and groups in society". Cleaver (2012, p. 8) expands on this, defining them as "arrangements between people which are reproduced and regularized across time and space and which are subject to constant processes of evolution and change". It is not then necessarily the case that institutions can be seen or touched, nor is it possible to accurately predict which institutions matter most in a natural resource management situation. Institutions can be hard to identify and understand and may change over time, or their role and influence may also change.

Critical Institutionalism (CI) offers particular insight into institutions, whether formal or informal, and natural resource governance, as it encourages investigation into institutions *beyond* as well as within natural resource management and highlights the interaction of institutions through processes of 'bricolage' through which people navigate access to and benefits from natural resources. The approach emphasizes "the historical formation of institutions and the complex interplay between modern and traditional, formal and informal arrangements" (Cleaver, Franks, Maganga, & Hall, 2013, p. 168), with institutional bricolage consisting of "the processes in which people (consciously or unconsciously) draw on existing social formulae and arrangements (rules, traditions, norms, roles, and relationships) to patch together institutions in response to changing situations" (Cleaver *et al*., 2013, p. 168).

In contrast to a 'mainstream' approach, or common property scholarship, (Cleaver, 2012; Hall *et al*., 2014), a CI perspective does not suggest that there are rules or principles which *should* be adopted for sustainable natural resource management, but instead responds to the complexity of people's lives and management situations, recognizing that institutions with influence over how natural resources are used are not necessarily 'designed' or 'developed' with natural resource management in mind. They are, instead, closely associated with social life and interactions, with power relations, kinship, and gender norms. Cleaver (2012) brings together thinking that draws on multiple perspectives and approaches – including political ecology, ethnography, and legal pluralism – that contribute to defining characteristics of CI, including institutional bricolage and the importance of power in analyses of institutions and natural resource management. In summary, CI is seen by Hall *et al*. (2014, p. 73) as having three areas of emphasis: "(i) complexity of institutions entwined in everyday social life; (ii) their historical formation; and (iii) the interplay between the traditional and the modern, formal, and informal arrangements".

The CI perspective then emphasizes the role and influence of multiple bureaucratic and socially-embedded institutions in mediating access to natural resources and in processes of management and decision-making. Institutions within and beyond the natural resource system are relevant, between actors operating at different levels of governance, from the local to the international, and from different social settings. Identifying and understanding such institutions requires attention beyond structures for fisheries management, getting at the underlying social and power relations of importance (Béné *et al*., 2009; Onyango & Jentoft, 2007).

3. INSTITUTIONS AND FISHERIES CO-MANAGEMENT

Co-management has been adopted internationally in response to the perceived failure of centralized management of fisheries in preventing the decline of fish stocks and lack of government resources to effectively manage fisheries (Raakjær Nielsen *et al*., 2004; Wilson, Raakjær Nielsen, & Degnbol, 2003). Defined as "an arrangement where responsibility for resource management is shared between the government and user groups" (Sen & Raakjær Nielsen, 1996, p. 406), a spectrum of co-management reflects the degree of user participation and devolved power ranging from consultation and very limited participation to community-led management (Sen & Raakjær Nielsen, 1996). Central to the implementation of fisheries co-management is the design of new structures (Hara & Raakjær Nielsen, 2003; Ratner, Oh, & Pomeroy, 2012; Wilson *et al*., 2010), bringing together stakeholders for decision-making and implementation. The creation of structures for co-management is usually informed by government regulations and guidance, sometimes building on existing committees and arrangements, with committees created at the landing site, or beach, level, and fisheries-wide, with committees in-between depending on the size and nature of the fishery. The process of design and implementation of co-management in developing country settings is very often top-down, usually supported by donor funding (Cinner *et al*., 2012; Hara & Raakjær Nielsen, 2003). One of the problems with this approach is that new structures are not formed within an institutional vacuum, yet the design and

implementation rarely takes into account the institutional landscape and diversity that will impact on the functioning and performance of the structures (Onyango & Jentoft, 2007). How these new structures and systems work, and how well they work, will be influenced by institutions already existing within and beyond the fisheries setting; institutions both related to fisheries and those that are not directly associated with fisheries. These institutions may be challenged by the introduction of a new management approach or may be further entrenched; they may enable the new management arrangement and/or constrain it and limit its effectiveness.

Institutional analyses within fisheries research and policy have largely been informed by rational choice perspectives (Chuenpagdee & Song, 2012; de la Torre-Castro & Lindström, 2010; Jentoft, 2004; Johnson, 2010), where economic incentives are assumed to drive individual behavior, leading to the design of rules and regulations that encourage certain practices. There is, however, increasing recognition of the value of taking a broader institutional perspective, particularly one that "seeks to understand institutions as complex and multifaceted, shaping different behavioral outcomes, as well as being shaped and reshaped by everyday human practice" (de la Torre-Castro & Lindström, 2010, p. 77). Chuenpagdee and Song (2012, p. 312) suggest that studies that have taken a wider institutional analysis have shown that "community norms, trust relations, values and beliefs, historical factors, and social and cultural meanings, as well as community organization, form an essential underpinning of any fisheries institution, in addition to the codified or informal rule system".

Many of the examples of the application of a broader institutional analysis within fisheries focus on analyzing which institutions influence behavior, practices and attitudes, how and with what implications (see, for example, de la Torre-Castro & Lindström, 2010; Nunan, 2006). There is, however, limited literature on analyses of institutions in relation to the structures, systems, and practice of fisheries co-management in a developing country context. Lessons can be surmised for fisheries co-management from the existing literature on institutional analysis in fisheries, but more explicit analysis exploring the interactions between institutions and co-management practice would bring out the lessons more clearly. Of course, co-management is itself seen as a form of institutional arrangement within fisheries (Chuenpagdee & Song, 2012), meaning that co-management is constructed of institutions as well as being shaped and influenced by institutions. This may complicate analysis and conclusions, but does not negate the potential benefits of investigating the influence and interactions of institutions on co-management.

The analysis of institutions and co-management in inland fisheries in East Africa and Malawi draws on the growing attention within fisheries literature on broad institutional analyses (Chuenpagdee & Song, 2012; de la Torre-Castro & Lindström, 2010), which can be informed by Critical Institutionalism and the concept of institutional bricolage. The case studies therefore involve the identification of a broad range of bureaucratic and socially-embedded institutions that have been shown to influence and inform the structures, practice, and outcomes of fisheries co-management.

4. INSTITUTIONS AND CO-MANAGEMENT IN INLAND FISHERIES IN EAST AFRICA AND MALAWI

This section identifies and analyses the nature of institutions that impact on the interpretation and practice of co-management, focusing on the 'beach' level, the level at which co-management is particularly operationalized. After briefly introducing the co-management context in East Africa and Malawi, bureaucratic and socially-embedded institutions are identified that are manifested within the beach-level fisheries. Examples of institutional bricolage are discussed, followed by reflection on implications for fisheries co-management.

4.1 *East Africa*

The introduction of co-management in Kenya, Tanzania, and Uganda by the departments of fisheries was supported by a number of internationally funded projects, beginning with the Lake Victoria Environmental Management Project, from the late 1990s. The adoption of co-management reflected similar initiatives in many other parts of the world, but also responded to concern relating to perceptions of the prevalence of illegalities within fisheries and inadequate capacity within the fisheries departments to effectively manage the lake fisheries. To date, most co-management experience and research in the region is associated with Lake Victoria, the second largest freshwater body in the world, bordered by Kenya, Tanzania, and Uganda.

Co-management in the region has taken a top-down, structural approach, with an emphasis on supporting the formation of community-based structures known as Beach Management Units (BMUs). All people working within fisheries at a landing site are required to register with the BMU for that landing site (a BMU may cover one or more landing sites), forming the BMU Assembly from which a Committee, with between nine to fifteen members, is elected every few years. National guidelines and legislation require that the committee members include representation from different occupational groups and at least three of the members should be women. Representatives from BMUs should also meet with fisheries officers at multiple levels in Co-management Committees and form BMU Networks at district, regional, and national levels.

Evidence suggests that the level of activity and effectiveness of co-management in terms of increasing compliance and fish stocks in East Africa is very mixed among the BMUs (Kanyange, Kimani, Onyango, Sweenarian, & Yvergniaux, 2014; Onyango & Jentoft, 2007), in part reflecting the short-term nature of project support for co-management and insufficient ongoing support from government. BMUs have, however, improved the extent of registration of fishers and facilitated licensing. At least 90% of all boats, up from about 60%, are now registered on the Tanzanian side of the lake (Onyango, 2014). There is increased involvement of boat crew, boat owners, and repairers, women, youth, and elders as well as traders in managing the fisheries and cases of improved collaboration between fishers and government officials, especially the District Fisheries Officers, with BMU members sending periodic reports on the status of illegal and BMU activities for assistance and planning. However, concern remains about the level of fishing capacity, the extent of illegalities, and the stock levels of the Nile perch in particular (Mkumbo & Marshall, 2014).

(a) *Bureaucratic institutions*

The formation and operation of co-management structures are situated within national and regional policy and legislation within the fisheries sector, setting out the process of forming BMUs, BMU Networks and Co-management Committees, and the functions of each (e.g., see LVFO, 2007). In addition to these, many other areas of government policy and legisla-

tion affect co-management structures and processes, including national and sub-national development plans (see Nunan, 2014).

BMUs are a key bureaucratic institution at the beach level, with which socially-embedded institutions interact and influence behavior and practice. The prevalent view of what BMUs are and what they should be doing within the Fisheries Departments influences the perception of, and attitudes to, BMUs as well as relationships between government staff and BMU members. BMUs are widely seen as being an extension of the Fisheries Departments, even though this is not formally noted in any legal document (Onyango & Jentoft, 2010). The Lake Victoria fisheries co-management guidelines define a BMU as "an organization of fisher folk at the beach (boat crew, boat owners, managers, charterers, fish processors, fishmongers, local gear makers or repairers, and fishing equipment dealers) within a fishing community" (LVFO, 2007, p. 9); a very loose definition, open to interpretation about the nature and status of the organization. BMUs are, however, required to be registered with the national fisheries department, which does lend support to the view of BMUs being an arm of government among many fisheries department staff.

In addition to the BMUs and Co-management Committees, local government structures at multiple levels affect the nature and performance of co-management through development planning, resource allocation, revenue raising, and enforcement, as well as through interpersonal relationships between members of committees. At the village or landing site level, relationships between BMUs and government are particularly important as this is the level at which co-management is really operationalized. Conflict between local government village councils and BMUs has been experienced at some locations due to power struggles and competition over revenue-raising within fisheries. BMUs were given revenue-raising powers yet the fisheries sector is also an important revenue source for local and national governments, creating conditions for competition and conflict between the structures. Both structures also have an enforcement remit, again creating the potential for conflict and differing approaches, as well as opportunities for cooperation and collaboration. Political influence over the composition and operation of BMUs has also occurred at the local level, with political connections enabling certain individuals to gain more powerful positions within the BMU Committees.

Courts play an important role in the enforcement of legislation, having the mandate to decide on criminal and civil cases, including within fisheries. Serious cases such as use of illegal gears are handled by the district magistrate courts, though as noted by Kjær (2015), not all cases make it to court, with payments made or interference by politicians preventing cases from reaching court. BMUs have the power to decide on minor cases such as conflict arising from fishing gear entanglement between two fishers or physical fights among fishers.

Rules-in-use that represent bureaucratic institutions at the beach level include the requirement that newcomers report to the BMU office on arrival and before engaging in fisheries activities. A payment may be required to operate from a beach, which could be in terms of fish rather than money. There is also scope for BMUs to propose bylaws for endorsement by government and to develop their own local rules and regulations for approval by the BMU Assembly.

(b) *Socially-embedded institutions*

Socially-embedded institutions of relevance include social and power relations between BMU members and Fisheries Officers and between boat owners, crew, and fish agents, with power relations reflecting positions of authority, ability to enforce rules, and wealth. Gender relations among and between women and men also influence behavior and access to benefits from fisheries resources, with implications for engagement with co-management processes and structures.

Interpersonal relations are crucial within the inland fisheries for accessing employment and fish for processing and trade, and are imbued with power dynamics. Boat owners and fish agents, who buy fish for the processing plants, have more power and resources than the boat crew employed by boat owners and many of the smaller-scale traders and processors, many of whom are women. Access to employment is in part dependent on interpersonal relations between crew and between crew and boat owners (Nunan, 2006, 2010), with such relations also connected to the target fishery of crew (Nile perch, Nile tilapia, or dagaa) and types of gears used in the Nile perch fishery – whether gillnets or longlines (Beuving, 2014). These social relations facilitate the movement of fisherfolk between landing sites, moving in search of higher prices and better catches. Nunan *et al.* (2012) report that around 50% of the boat crew move between landing sites around Lake Victoria. This high level of movement is not only facilitated by social relations and norms, but contributes to the shaping of institutional arrangements at beach level. Norms and practices at one site may be transferred or adapted at other landing sites through migration and social relations. This flow and shaping of institutions reflects the influence of negotiated relations and power dynamics between fisheries actors, which in turn impacts on decisions on fisheries practices and on the power, remit, and activities of BMUs.

Gendered relations and norms affect attitudes, behavior, and practices at the landing sites of Lake Victoria, with sex transacted for access to fish at many landing sites (Nunan, 2010). There are often far fewer women than men at the fish landing sites, with women not only involved in processing and trading fish, but also in cooking food, providing accommodation, particularly to migrants, and entering into relationships with fishermen. Gendered relations of power operate among men and women as well, with more powerful opinion leaders and boat owners, for example, influencing the behavior and practices of male boat crew, and wives of boat owners receiving preferential access to fish from the catch among women at a landing site. It has been estimated that women make up around a third of the population at the landing sites (LVFO, ND) and that while most BMUs, at least in the mid-2000s, complied with the requirement for at least three of the Committee members to be women, the majority of BMU Chairs were men and very few women went onto represent BMUs in BMU Networks and Co-management Committees (Nunan *et al.*, 2012). Lwenya, Mbilingi, Luomba, and Yongo (2009) suggest that cultural norms prevent women from putting themselves forward for nomination for top positions, as well having less economic power with which to influence voters.

These interpersonal relations affect the structures and processes of co-management in many ways, from who stands for election onto the BMU Committees to how the BMU Committee members behave in relation to fisheries practices. Socially-embedded institutions may both facilitate and constrain the potential for effective fisheries co-management. The range of interpersonal relations may encourage participation in BMU activities, such as monitoring for illegal activities, but they may also encourage, or at least turn a blind eye toward, such practices.

(c) *Institutional bricolage*

Actors at all levels adapt and draw on a range of institutions to support their fisheries-related livelihoods that

impact on the nature and performance of co-management, as well as draw on these institutions to enable or frustrate co-management activities. When BMUs were introduced to local fishing communities by the Fisheries Departments, the initiatives were reinterpreted and transformed by various actors who occupy different positions of power and authority in the fisheries communities. Within these different positions, there has been a continuous state of interaction and negotiation among the actors. The remit and activities of BMUs filter through these diverse interests and are given new meanings in the fisheries societies. Local cultural norms, beliefs, and practices influence the range of meanings given to BMUs, the level of acceptance, and how the new institutional arrangements become embedded in the community. Behavior and relationships that the BMU bring with it are understood within a larger unit of reference in which it is embedded. Therefore the BMU as an institution is accepted in as far as it does not interfere with a fisheries community's ways of working and living.

An example of this includes the enforcement of gear restrictions only for interpersonal relations between fishers and BMU Committee members, village council members, and/or fisheries officers to be used to enable a bribe to be paid for the return of confiscated gears (Barratt, Seeley, & Allison, 2014; Jentoft, Onyango, & Islam, 2010). Politicians are not keen either to support strict enforcement as it could damage their chances of re-election as well as potentially go against powerful interests, such as the reported involvement of the army in Uganda in trade in undersized fish (Kjær, 2015). Some fisherfolk, then, navigate through a range of bureaucratic and socially-embedded institutions to continue fisheries illegalities through fines, bribes, friendship, kinship, and power relations with members of village governments, BMU Committee members, police officers, and politicians.

Access to fisheries, and to benefits from fisheries, illustrates processes of institutional bricolage with bureaucratic institutions to be complied with including fishing permits, boat licenses, and trading licenses. Social and power relations interact with these bureaucratic institutions, with relationships between boat crew, crew and boat owners, and women and men, critical for gaining access to employment and fish for processing and sale.

Interactions of fisherfolk with fish agents at the more commercialized landing sites provide a further example of institutional bricolage. Fish agents are not employed by processing factories but supply Nile perch to certain factories. They may also own boats and have strong connections to the lake fisheries. They often provide an essential service to boat owners and crew through providing loans for fishing gear, which are repaid through selling fish to that particular agent, thereby providing a guaranteed supply of fish, but may result in lower prices and income for the boat owner and/or crew (Jentoft *et al.*, 2010). Interpersonal relations and trust enable this credit-based relation to facilitate employment, fisheries activities, and the livelihood of the fish agent. The more formalized role of the agent is complemented by this informal credit supply, supported by interpersonal relations.

4.2 *Malawi*

Co-management was introduced as a donor-funded project [1] by the government in the 1990s in response to the dramatic decline in the fish catches of Lake Malombe and the Upper Shire River. The Government launched a pilot co-management program for the two areas in order to address the negative catch trends in the two water bodies (Hara *et al.*, 2002; Russell & Dobson, 2011a). The arrangement was extended to the Southeast Arm of Lake Malawi (see Figure 1 for a map of Malawi) a few years later as part of the second phase of the German funded project (Hara, 2006b) and then to the rest of Lake Malawi and lower Shire by the government on its own as part of its management operations.

On Lake Chilwa, co-management was introduced in 1995 as a crisis response to the three-year drought (1992–94) that caused complete drying out of the lake, supported by donor funding. Co-management was initiated by fishers on Lake Chiuta in the mid-1990s when they invited the Department of Fisheries to partner them in management of the fishery on the lake in order to legitimise the eviction of about 300 migrant seine net fishers from Lake Malombe that the local fishers had just successfully (amid violence) undertaken on their own (Njaya, 2005). All in all over 330 Beach Village Committees (BVCs) had been formed in all waters bodies nationally by 1999. Of these 256 are on Lake Malawi. Performance of these BVCs is mixed, with many not functional as a result of reliance on inadequate government financial support.

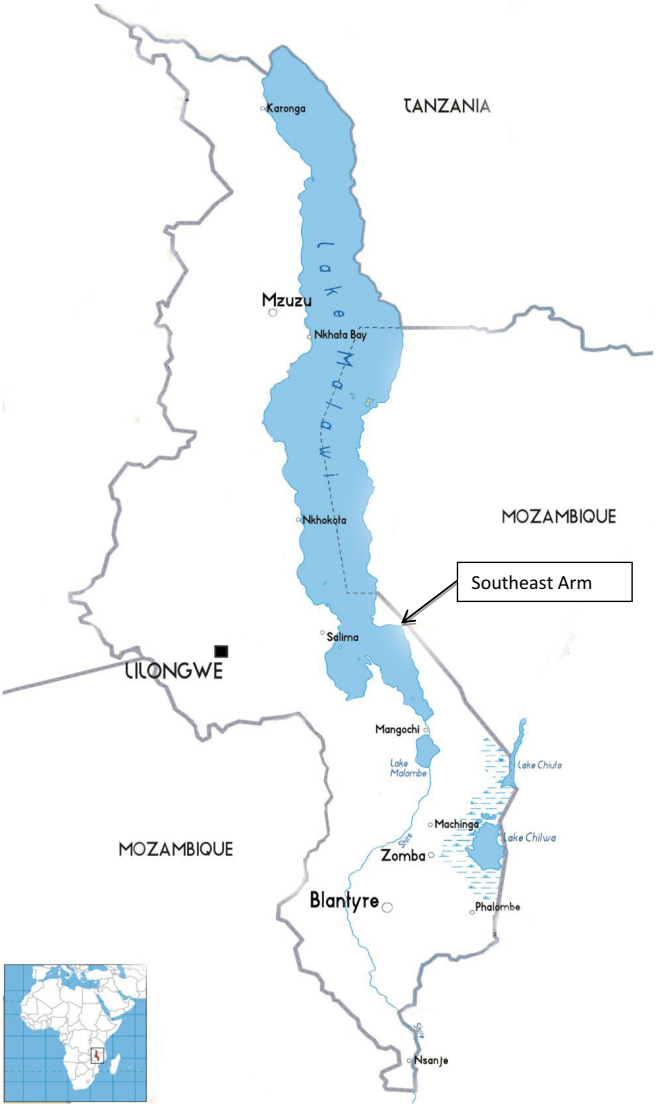


Figure 1. *Map of Malawi showing the major Lakes and cities and selected district headquarter locations.*

Despite over 15 years of implementation, co-management has not had a positive effect on the catch trends on Lake Malombe, with production remaining below 2,000 tonnes annually compared to an average of around 10,000 during 1982–92 (Department of Fisheries, 2010). On the Southeast Arm, catches (especially of the high value chambo) have continued to decline (Hara, 2006b, 2011), while on Lake Chilwa, fishers still struggle to assert themselves in relation to controlling the social behavior and destructive fishing activities/methods of migrant fishers from Mangochi. On Lake Chiuta, the fishers appear to have succeeded in keeping out seine nets from the Lake and catches have stabilized optimally (Njaya, 2007; Russell & Dobson, 2011a).

(a) *Bureaucratic institutions*

The co-management approach in Malawi has been implemented through the formation of BVCs as the organisational structure for participatory management (Hara *et al*., 2002; Russell & Dobson, 2008, 2011a). BVCs are supposed to be democratically elected organisations meant to represent the fishers and residents of a beach/village (some beaches are shared by more than one village while some villages have more than one beach). The organisational format of BVCs includes village headpersons as *ex-officio* members (Hara *et al*., 2002). The formation of BVCs is usually facilitated by the Department of Fisheries, except in Lake Chiuta.

The introduction of 'participatory fisheries management', as co-management is referred to in Malawi, was legitimized through the revised Fisheries Conservation and Management Act No 25 of 1997. Part III of the revised Act provides for community participation in fisheries management and sections 9 of Part II and 25 of Part V of the subsidiary legislation of 2000 of the revised Act gives the Director of Fisheries power to appoint 'honorary fisheries officers' for local areas, with power to enforce fisheries regulations in their area. To this effect, BVCs can be appointed in the capacity of honorary fisheries management bodies in their areas of jurisdiction (Government of Malawi, 1997) either to effect regulations emanating from the Act or to implement by-laws.

Beyond the fisheries sector, the administrative decentralization policy (Government of Malawi, 1998a) detailed in the Local Government Act (Government of Malawi, 1998b) aims to create elected District Councils (DCs). Below the DC are supposed to be Area Development Committees (ADCs) at Group Village headperson level and Village Development Committees (VDCs) at village level (Hara, 2008). The ADCs will be chaired by Group Village Headpersons while VDCs by village headpersons. These structures are supposed to be democratic structures for bottom-up planning of development initiatives and environmental management (Government of Malawi, 1996). Although VDCs and ADCs had been formed and the latest re-elections for these took place in September 2013, elections for councillors were only held once in 2000 after legislation for decentralization was passed due to political in-fighting (Tambulasi, 2011).

Under administrative decentralization, the status of BVCs remains unresolved: whether their work will be assumed by VDCs or they will continue to exist (Hara, 2008). If they are to continue existing, the question becomes then whether as independent bodies or under VDCs. Implementation of administrative decentralization remains unfulfilled because of lack of a shared vision for decentralization and battles around voting powers and fears of loss of power at a higher level among government departments/ministries (some departments have started implementing some aspects of decentralisation while others have not), politicians and Traditional Authorities. Local government elections for councillors were finally held in May 2014, having been postponed several times since 2000.

Magistrate courts are also statutory institutions that have powers to decide both criminal and civil cases (Gloppen & Kanyongolo, 2007). This followed the abolition of Traditional Courts, [2] which were presided over by chiefs, as part of transition toward democracy. Whereas before the prosecutor had the choice of either taking fisheries offences to Traditional courts or Magistrates courts, all fisheries offences can now only be tried in Magistrate courts. In practice though, traditional and other community leaders perform tasks similar to those that the constitution entrusts to judicial courts in an informal way based on their interpretation and application of customary laws (Gloppen & Kanyongolo, 2007). Even then, traditional authorities do not have powers based on state laws nor are they recognized as part of the formal judicial structure even in the interpretation and application of customary law. In principle traditional authorities can only mediate between disputing parties. For co-management, this has been problematic since one of the assumptions had been that chiefs could be empowered to sanction offenders in Traditional courts and/or village customary courts as part of devolving power and authority for fisheries management (Hara *et al*., 2002; Russell & Dobson, 2011a, 2011b).

Crew members play a limited role in formal co-management structures, at least in part due to the definition of fisher by the Department of Fisheries, which defines a fisher as a gear owner (Hara, 2006a). This is despite the fact that gear owners do not usually go out fishing, but employ crew members. It is crew members who take most of the operational fishing decisions out on the lake, including illegal fishing methods/activities. This is crucial in that in most cases crew members are not invited to serve on co-management committees, yet these committees take most of the critical decisions around regulations.

(b) *Socially-embedded institutions*

Socially-embedded institutions with influence over the nature and effectiveness of co-management are wide ranging, from the Traditional Authorities to interpersonal relations between crew members and boat/gear owners and crew members. Gender relations are also significant with cultural norms limiting the participation of women in fisheries activities and co-management structures.

Interpersonal relations of crew members are important for gaining and controlling entry to employment as crew members are usually responsible for recruiting a team without the involvement of the gear owner. Crew members recruit each other based on kinship, ethnicity, language, and other cultural factors. In some areas (e.g., Malombe), the crew members control who can work from and at their beaches. In this way, migrant boat/gear owners cannot bring their own crews, but rather have to employ crews from the beach/village/area.

Cultural and religious norms influence the degree and nature of access that women generally have to fisheries and decision-making in Malawi. Women gear owners (some buy gears or inherit gears from deceased husbands) have difficulties in taking full control of their gears as a result of cultural and religious attitudes that frown upon women going to the beach to oversee the sale of catch from their gear. Women often have to act through a male relative or the head of the crew in terms of managing the fishing unit. As a result most are exploited and fail to secure maximum benefits from their units (Hara & Jul-Larsen, 2003). In addition to there being few women on BVCs due to cultural norms, they are also not accepted because fishers generally do not believe that non-fishers should be on the

BVC, including fish traders,[3] as they are very mobile. Fishers argue that if BVCs are made up of non-fishers who have no involvement with (or knowledge of) fisheries, such BVCs are likely to pass by-laws that are not appropriate or perceived as fair by fishers.

Socially-embedded institutions associated with credit arrangements, migrants, and religious beliefs also influence fisheries practices. Loans for fishing gear and to assist in times when fish are scarce commit fishers to selling fish to certain people and/or at certain prices. Migrants to Lake Malombe report that it is almost impossible to own and operate gear as a 'foreigner', with local elites gatekeeping against this. Migrant gear owners have to act through a local person, in which case s/he will struggle to have control of operations in their unit. However, fishers are often reluctant to introduce limits on access for migrants due to the need to maintain historical reciprocity, i.e., at one time or another they will also need to migrate and fish elsewhere and they will need to be allowed to fish in other areas and from other fishers' villages and communities.

(c) *Institutional bricolage*

Socially-embedded and bureaucratic institutions influence, and are utilized by, three key sources of power and authority, namely the DoF, chiefs, and the fishers. Thus the activities, efficacy, and acceptability of BVCs are influenced by negotiating through the institutional landscape associated with these actors and within the communities that they are embedded. Processes of institutional bricolage that draw on institutions associated with these actors can be seen in a number of areas of fisheries activities including enforcement of regulations, access to employment and fish, and fish trading.

The role of powerful TAs (both as ex-officio members of BVCs and as local customary leaders/rulers) has made it difficult for the BVCs to assert their own authority. In this context, village heads claim that the BVCs draw their authority from them; hence, the BVCs should fall under their authority while BVCs believe that they are and should be independent entities (Hara *et al.*, 2002; Russell & Dobson, 2011a). Due to the continuation of the exercise of customary authority within villages by the village headpersons, the BVCs have difficulty disciplining fisheries regulation offenders within their jurisdiction without the (sanctional) authority of village headpersons. This leaves most BVCs dependent on the village headpersons for effective exercise of their functions (Hara *et al.*, 2002; Njaya, 2007; Njaya, Donda, & Béné, 2012; Russell & Dobson, 2011a). On Lake Chita, village headpersons had been excluded from BVCs. As a result, the BVCs have much greater legitimacy among fishers, they enforce regulations of their own and have managed to exclude seine fishers since they drove them out in 1995. Village headpersons do not have powers to override the decisions of BVCs. On Lake Chilwa, the BVCs were initially dominated by TAs who were using these to extract benefits from fishers through fines as penalties for infringing regulations and also allowing migrant fishers from Mangochi to settle and fish on the lake. Fishers have increasingly tried to take over the BVCs in order to use them as vehicles for controlling access for migrants (Njaya, 2007).

Enforcement of regulations is enabled and constrained through institutional bricolage, with both formal and local informal rules being used to both enforce and bypass regulations. Bureaucratic institutions of policy, legislation, and enforcement patrols are ignored at times by BVCs, chiefs, and elders. Although BVCs have power to enforce formal regulations in their areas of jurisdiction, most are reluctant to do so for fear of reprisals from fishers and safety of confiscated gears. In Lake Chiuta, though, BVCs successfully excluded seine netters and strictly enforced both formal and locally developed rules on their own without the assistance of the DoF or local chiefs. The key to such cohesion among fishers is due to the exclusion of chiefs from BVCs because chiefs had played a part in allowing seine netters onto the lake corruptively even after it had been agreed to ban seine netting on Lake Chiuta by all stakeholders (Njaya, 2005). Bribes to fisheries enforcement officers, BVC members, and chiefs for facilitating illegal activities are regularly reported in most areas. Chiefs and elders, for example, at times suspend regulations such as the closed season if they wish to support fishers in providing for functions such as a funeral, wedding, or initiation ceremonies.

Access to fish and benefits from fishing is negotiated mainly through socially-embedded institutions since officially there are no regulations limiting entry. Licensing is only used for revenue collection. BVCs are supposed to issue transfer letters to their members and receiving BVCs to demand transfer letters from migrant fishers from their home BVCs. At the same time chiefs run their own parallel permit systems for both migrant and local fishers based on collection of weekly honorarium from all fishers fishing from their villages. Employment within fishing units is controlled between gear owners and crewmembers, with recruitment into crews controlled by existing crewmembers. Within villages where beach seines are operated, there has always been local historical understanding and agreement in terms of who can operate their nets from specific village beaches, with the exclusion of all other beach seines from a specific beach. Among those that can operate from a specific beach, there is further agreement in terms of fishing in turns and the order in which the nets will be thrown among those with access. In this way, outsiders from a beach are excluded and conflict among those that have access is ameliorated. DoF, BVCs, and chiefs support such traditional and historical fishing practices that actually both limit access, effort, and also able fishers to fish without conflict.

Fish trading is not formalized, as traders are not required to have a license to go into fish trade though there is legislation to be complied with. Buying fish is highly competitive, with auction systems common. Such competition fuels illegal activities such as use of under mesh size nets, fishing during closed seasons, and landing and selling of undersized fish. While in some waters bodies such as Chiuta the BVCs limit such activities, in most of the other water bodies BVCs battle to enforce these regulations. In addition the common arrangement found in many small-scale fisheries whereby traders give loans for gears and out-of-season cash loans to gear owners and crew members, to be paid back during the fishing season, also exists in Malawi. In such contexts, the traders can gain advantage through the loans, which prioritises him/her for buying of fish. Such prioritisation can also be through kinship or spousal relationships.

5. DISCUSSION

Table 1 summarizes the bureaucratic and socially-embedded institutions that operate within East African inland fisheries and Malawi that affect behavior and decision-making and examples of institutional bricolage that result.

Examples of how institutional bricolage affects co-management in East Africa and Malawi were seen to stem from relations between fisherfolk and staff of government Fisheries

Departments, interactions between members of BMUs/BVCs, and local government and/or Traditional Authorities and the range of interpersonal relations interacting with policy, legislation, and formal processes in accessing benefits from fisheries and enforcing regulations. This section further reflects on how institutional bricolage affects the composition and operation of local co-management committees, relations between BMUs, fisherfolk and local government, whether village councils or fisheries officers, enforcement of rules and regulations, and accessing benefits from the fisheries.

In both East Africa and Malawi, the composition and function of local co-management structures is affected by power relations, gender relations and norms, and kinship. These institutions influence who stands for election, who voters support, and who is listened to within decision-making fora. On Lake Victoria in East Africa, male boat owners have dominated the position of Chair of the BMU Committees and the space and opportunity for the participation of migrating fisherfolk, mainly boat crew, in these committees is limited (Nunan *et al.*, 2012). Boat crew are largely excluded from BVCs in Malawi due to the definition of a 'fisher' adopted in national legislation and no requirement for their participation. The more powerful traditional authorities in Malawi are, however, involved in fisheries co-management despite not necessarily being involved with fisheries directly.

Gender relations are reflected in the composition of community-based fisheries management structures, with women at times benefiting from affirmative action, though this does not necessarily challenge the dominance of men in decision-making or ensure that women's views and concerns are taken into consideration. Gender norms and relations have muted the potential empowering opportunity of co-management for many women and the opportunity for fisheries management to benefit from the experience and knowledge of women in fisheries. Decision-making within fisheries is observed to be patriarchal, with the voice of fisherwomen "unheard" even within co-management approaches, leading to a call for a gendered perspective in systems of policy formulation within fisheries (FAO, 2012; Onyango & Jentoft, 2011). This lack of recognition of women in fisheries is reflected in the lack of gendered perspective taken to the design, support, and analysis of co-management. Power relations interact with formal institutions of policy and legislation to maintain the dominance of powerful actors in fisheries management at the beach level.

Relationships between those in fisheries communities and government fisheries officers are particularly important as they are unequal in terms of authority, recourse to the law, remit, and access to resources. The introduction of co-management calls for a change in this relationship, moving toward more of a cooperative, equal relationship, with trust being critical to successful collaboration. This may not necessarily materialize, due to different understandings of co-management, insufficient training and perhaps an unwillingness to change. The perception of the status and remit of local co-management structures by Fisheries Departments affects the relationships between resource users and fisheries officers, with implications for the practice and outcomes of co-management.

The attitudes to local co-management structures in Malawi and East Africa reflect the findings of Béné *et al.* (2009). In their review of fisheries co-management in Cameroon, Niger, Nigeria, Malawi, and Zambia, they argue that the governance balance very much remains with the state. Deconcentration was in many cases carried out to local government rather than to local communities, with accountability remaining an upward process, from communities to government, rather than from co-management committees to communities. They observe that local power brokers, such as traditional authorities and other local elites, have benefited from the space created by governments being unable to play a full role in local fisheries management. From this, they conclude that instead of improving governance, the co-management initiatives have "simply *modified* the status quo by altering the distribution of power and responsibility among the main fisheries stakeholders" (Béné *et al.*, 2009, p. 1943, original emphasis).

In the case of East Africa and Malawi, the boundaries and relations between fisheries management committees and local and/or traditional authorities have brought some degree of confusion and conflict. While there are examples of supportive and cooperative relations between these structures, there are more examples of inharmonious relations. These arise from issues concerning who collects and keeps fish levies, who enforces regulations and issues sanctions, and who permits migrant fishers to fish from an area. Within a fishery or country, there are differences between how fisheries management committees and local and/or traditional authorities cooperate for fisheries management, reflecting different relationships and institutions, particularly power structures. The interaction between local and traditional authorities with co-management structures leads to forms of 'institutional bricolage', through which fisherfolk mediate ways to secure access to fisheries, resolve conflict, and avoid sanctions.

Enforcement of rules and regulations is affected by a range of socially-embedded institutions interacting with bureaucratic institutions. Friendship, kinship, and peer relations create unwillingness of some fisheries stakeholders, including members of community-based co-management structures, to enforce regulations where there is a relationship to the offender. Opportunities to demand or accept bribes in return for allowing fishing during closed seasons or returning seized gear by co-management structures, government officers, or traditional authorities limits the effectiveness of management systems.

Access to benefits from fisheries is influenced by a range of power and social relations interacting with bureaucratic institutions. Power relations influence access to fisheries and to decision-making between boat owners and crew (Nunan, 2006), traditional leaders, and fishers (Njaya *et al.*, 2012) and the attitudes to local co-management structures of fisheries officers. Access to benefits is also mediated through interaction between power, social, and gender relations with formal systems of fishing permits, boat licences, and trading licences. It is not enough, for example, for women to have a license to trade fish; they may be obliged to exchange sex for access to buying (Béné & Merten, 2008; Nunan, 2010). Gender relations then form part of the institutional bricolage through which people pursue their livelihood strategies and the fisheries are managed. Fish agents, or middlemen, also influence access to the benefits from fisheries through the provision of access to credit and markets, encouraging unsustainable harvesting and fisherfolk migration, with implications for the practice and outcomes of co-management (Crona, Nyström, Folke, & Jiddawi, 2010).

6. CONCLUSION

Understanding the diversity and interaction of institutions through a bricolage perspective and how these may impact, or have impacted, on co-management is critical for evaluating the potential for success in terms of moving toward more sustainable fisheries and livelihoods. Critical Institutionalism

Table 1. *Fisheries institutions from a Critical Institutionalism perspective*

	East Africa	Malawi
Bureaucratic institutions	*Fisheries:* Beach Management Units (BMUs), BMU Networks, Co-management Committees Fish processing plants	*Fisheries:* Beach Village Committees Fishermen's Associations (higher level than BVCs. Fishermen's Associations at area or water body level)
	Policy and legislation: Beach Management Statute (2005), National Fisheries Policy (2005) BMU rules and regulations Local government bylaws	*Policy and legislation:* Fisheries Conservation and Management Act (1997) - empowers the Director of Fisheries to appoint BVCs as honorary fisheries protection officers
	Beyond fisheries: Government at village, parish/division, district and national levels, policies, legislation, and plans Civil society, the judiciary, and NGOs	*Beyond fisheries:* District Assemblies, Area Development Committees, and Village Development Committees. Policies, legislation, and plans Magistrates Courts for dealing with fisheries offences Other sectoral policies and legislation such Land Use Planning and Tourism affect use of beaches by fishers
Socially-embedded institutions	Social relationships that may impact on gaining employment, credit or access to buy fish include: – kinship – gender: women rarely go out onto the lake, but process and trade fish – power relations, such as boat owner – crew employment negotiations, relations between fishers, and government officers	Social relationships that may impact on gaining employment, credit and access to buying fish include: – kinship and ethnicity – women do not go out fishing, but may own fishing equipment (mostly through inheritance) and carry out post-harvest activities. – Power relations: within fishing units include negotiations between gear owners and crewmembers regarding benefit sharing systems and employment of crewmembers; within crews there are hierarchies that also determine sharing of benefits among crewmembers – Power relations: within households limit women's participation in post-harvest activities
	Social relations facilitate knowledge of areas of good catches and higher prices and thereby migration around the lake Important for access to employment, fish, and accommodation	Social relations facilitate sharing of knowledge of good fishing areas and how these change seasonally. Migrant fishers are required to pay honorarium to local chiefs (in form of money or fish) to be permitted to fish from a given chief's village, which is not always in agreement with BVCs
Examples of institutional bricolage	Existing power relations influence the election of BMU Committee members	Existing power relations influence who is elected to BVCs, with chiefs, powerful gear owners, and in some instance DoF fisheries extension staff acting as king makers
	Existing relations between fisheries communities and fisheries officers influence how co-management develops – affected by level of trust, understanding of roles, and whether informal tax and bribes exist	
	Enforcement of fisheries regulations is enabled and constrained through institutional bricolage, with rules and regulations and patrols, but also bribes to fisheries officers and BMU Committee members and election of BMU Committee members who condone illegalities	Enforcement of regulations is enabled and constrained through institutional bricolage, with both formal and local informal rules being used to enforce regulations and influence access to fishing. Bribes to DoF fisheries enforcement officers, BVC members, and chiefs are regularly reported
	Access to fisheries and benefits from fisheries are negotiated through both bureaucratic and socially-embedded institutions. These include permits and licences, registration with a BMU, connections to employers, and access to fish to buy through kinship and friendship, and access to buy fish through sexual relations	Access to fish and benefits from fishing are negotiated mainly through socially-embedded institutions since officially there are no regulations limiting entry. Institutions include issuing and demand transfer letters and payments, and the role of crewmembers in bringing together teams of crew on behalf of boat owners
	Loans by fish agents associated with processing factories assist fishers with gears and ensures fish supply to agents	Traders are not required to have a license to go into fish trade. Some traders gain advantage through loans to fishers that prioritise them for buying of fish; kinship, and spousal relationships are also important for gaining access to fish

encourages deeper exploration of the maneuvres going on within the system in support of elite interests and supports calls for more attention to be paid to enabling downward accountability.

Taking a Critical Institutionalism perspective suggests that the existing institutional landscape should be understood, with institutional analysis informing the design and practice of co-management. It also supports calls for a more flexible, self-organizing, adaptive approach to be taken to co-management (Armitage, Berkes, & Doubleday, 2007; Olsson, Folke, & Berkes, 2004) and for co-management to be viewed more as a process than as a set of formal structures (Carlsson & Berkes, 2005), with flexibility in design to respond to institutional challenges and dynamics.

Critical Institutionalism analysis also reveals the potential for resource users to modify structures and rules in response to their own understanding and institutional circumstances. Resource users utilize and navigate through a range of institutions to gain access to resources, opportunities, employment and credit, with impacts on the institutional landscape, livelihoods, and on the condition of the natural resources. The concept of 'institutional bricolage', then, well reflects how people access fisheries, how they find ways to continue illegal practices despite efforts to control these, and how co-management structures and processes are influenced and shaped by bureaucratic and socially-embedded institutions.

The institutional analysis of co-management within East African and Malawi inland fisheries suggests that three areas in particular deserve attention in approaching and supporting co-management. These are the relationships between the fisheries departments, particularly the fisheries officers, and fisherfolk at the beach level; relations between co-management structures and those of government and traditional authorities; and, recognition of the importance of gender relations in terms of how people access and benefit from opportunities within fisheries and to what extent they 'participate', or have the potential to participate, in co-management.

Recognizing the range and diversity of institutions that impact on fisheries practices and co-management should lead to a more informed and effective approach, but would take time and a different range of skills to those associated with developing fisheries management measures.

NOTES

1. The Participatory Fisheries Management Programme was jointly funded by UNDP, FAO, GTZ, ODA and the World Bank (Department of Fisheries, 1993).

2. The constitution grants the parliament the powers to enact law for the establishment of traditional local courts whose mandates would be to decide cases involving customary laws and some minor criminal offences (Gloppen & Kanyongolo, 2007). Since the abolition of the traditional courts on 1994, parliament has never passed legislations that would re-instate these.

3. The survey by the Malawi/World Bank Fisheries Development Project: women's program found that 47.7% of fish traders were women.

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