

Reducing Marginalization of Fishermen through Participatory Action Research in the Zambezi Valley, Zimbabwe

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Abstract

Equitable sharing of fishing resources has been the major source of tension between Zambezi Valley communities and the Zimbabwe government authorities since the 1950s following the Kariba Dam-induced resettlement. Using participatory action research, it was found that the fishing license system and criminalization of fishermen were the major sources of tension between fishermen and government authorities. Engaging with government authorities to address these tensions, fishermen were recognized as partners in the fishing industry. The conclusion was that enhancing community agencies through participatory action research would be fundamental towards creating socially just and equitable arrangements that could emancipate marginalized communities from abject poverty.

Keywords: marginalization, fishing resources, participatory action research, Zambezi Valley, Zimbabwe.

This paper examines the extent to which marginalized fishermen along the Kariba Dam used participatory action research to demand increased access and benefit-sharing of fishing resources from government authorities. Over the past five decades, the mid-Zambezi Valley communities, mainly the Tonga minority ethnic group residing on the Zimbabwean side of the Zambezi River, have experienced a sustained conflict between authorities to regain entitlement to fishing resources. Yet, fishing continues to be an inherent, if not an indispensable, aspect of the lives of the Zambezi Valley people, both on the Zambian and Zimbabwean side of the mid-Zambezi River. On the Zimbabwean side, these communities are spread across the Binga, Hwange, Nyaminyami and Gokwe districts in the north-western part of Zimbabwe (Figure 1).

The Tonga lost entitlement to fishing following their ‘forced uprooting’ (Colson, 2003) due to the inundation of their homes in 1957-8 by the Kariba Dam (Colson, 1971). However, it was not until late 2007 that the debate on access and benefit sharing of fish resources gained momentum. The origins of motivation for the Tonga to provoke the debate could be attributed to what McGregor (2009) terms ‘politics of recognition’ to address their marginalization. Further, Conyers and Cumanzala (2004) assert that the combination of the Tonga’s perceived identity, minority ethnic status, unique history and lack of basic infrastructure and services encouraged them to strive to demystify the media portrayal of them while at the same time improving their social and economic status.

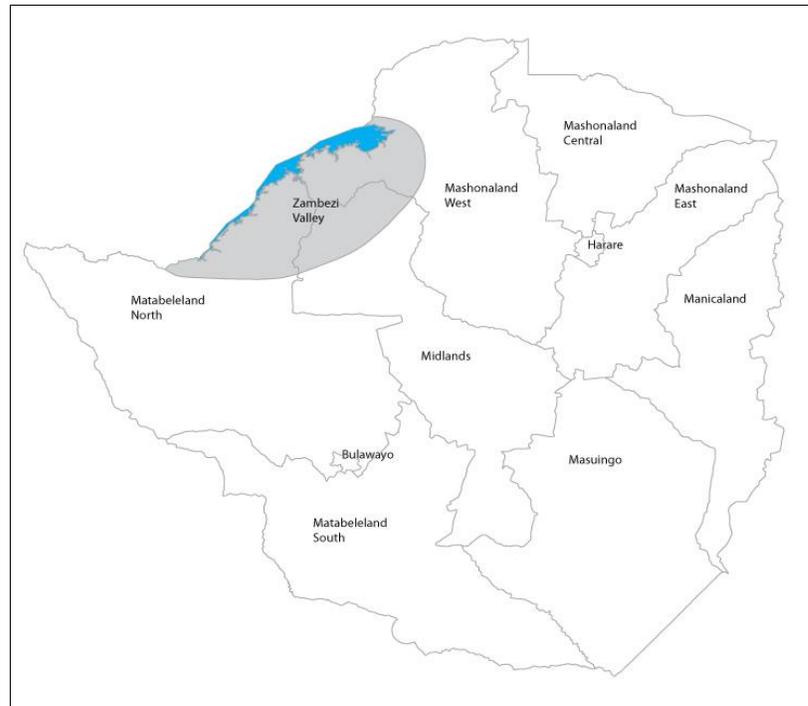


Figure 1: Location of the Zambezi Valley, Source: Authors.

Since the Kariba Dam-induced resettlement in 1957-8, fishing has been considered a risky business, not only from crocodiles and hippos but also from state authorities. The fishermen have been risking their lives and surviving at the end of the margins due to the conflict between them and state institutions: the Department of National Parks and Wildlife Management (National Parks); Zimbabwe Republic Police (Police); and the Binga, Hwange and Nyaminyami Rural District Councils (Councils). Previous studies of the conflict between state authorities and kapenta (*Limnothrissa miodon*) fishermen on one hand and gillnet fishermen on the other have tended to explore the dispute as distinct industries warranting different approaches (McGregor, 2009; Nyikahadzoi, 2009; Nyikahadzoi and Raakjaer, 2009). This allowed for an in-depth understanding of the nature and dynamics of each of the industries. The downside of studying kapenta and gillnet fishing as separate entities could be its failure to reveal a holistic view of the challenges the Kariba Dam fishing industry faces. This paper addresses this gap by examining the struggle of kapenta and gillnet fishermen in developing transformative actions to improve access and benefit-sharing arrangements of fishing resources in the Kariba Dam district. This paper will not only contribute to the access and benefit-sharing literature on fishing resources, but will also resonate with the marginalized people's struggles towards socially accessing and benefit-sharing of resources that address poverty.

This paper examines contextualizing the conflict within the marginalization conceptual framework. Limited access to fishing resources tends to be largely underpinned by the marginalization of communities displaced by the Lake Kariba construction in the 1950s. It then moves to outline the participatory action research methodology that was employed as a means of

empowering fishermen to seek increased access and fair benefit-sharing arrangements for fishing resources. The paper then presents and discusses two major sources of tensions, namely, the fishing license system and the harassment of fishermen. And finally, the paper discusses results of the actions taken by fishermen in addressing the access and benefit-sharing imbalances. The conclusion is that enhancing of community agencies through participatory action research is fundamental towards creating socially just access and benefit-sharing arrangements that can emancipate marginalized communities from abject poverty.

Conceptualizing Marginalization

This study used a marginalization framework to contextualize the conflict between the fishermen and the state in accessing and sharing fishing resources in the Zambezi Valley. Yet, marginalization, like most social science concepts, is a contested concept. Hall et al. (1994) define marginalization as the peripheralisation of individuals and groups from a dominant, central majority. They view marginalization as a socio-political process, producing both vulnerabilities (risks) and strengths (resilience) as summarized in Table 1.

Table 1:

Properties of Marginalization

Property	Description
Intermediacy	Having boundaries that separate and protect, such as the skin, but also referring to risk of personal or territorial invasion and the dangers inherent in living in contested or border environments.
Differentiation	The strength of cultural and personal uniqueness and the risk of becoming a scapegoat and being stigmatized.
Power	Access to resources, individual and collective awareness and organization, and risks associated with enforced conformity.
Secrecy	Access to, and control of information to protect one's self and group, and the risks resulting from the dominating group's use of insider knowledge to their advantage.
Reflectiveness	Survival skills gained from leading an examined life, and the risks involved in the exhaustive processes of constant vigilance, and analysis of each new social encounter necessary for safety.
Voice	Expression of one's experiences as valid and different from the dominant myths, and the risks of being silenced.
Liminality	Having experiences not shared by others; severe trauma, stigmatization, and illnesses can foster abilities to empathize with others, but carry risks of alienation, altered perceptions, and heavy psychic strain.

Note: Adapted from Hall, et al (1994)

Burman and McKay (2007, p. 317) define marginalization as 'the process by which persons are peripheralized, or pushed to the periphery to varying degrees from the socio-political center, because of their identities, associations, experiences, or environments.' They further contend that marginalized persons are viewed as relatively different from the norm, and marginalization can involve gender, racial, political, cultural and economic oppression. According to Still (2001),

marginalization involves a relative lack of power and influence. Thus, marginalization is most often used to illustrate differences, hierarchies and dependent relationships between regions, sectors, groups and individuals. It illustrates the scarcity of human or physical endowments, or both, as well as a lack of political or economic competitiveness between social groups or geographical areas. Marginalized regions, sectors, groups and individuals ‘lack something.’ They may lack such things as power, education, access to resources, capital, and democratic institutions. Conflicts arise between the center and the periphery when the marginalized group attempts to remove or reduce the ‘lacking something.’

Table 1 reveals that marginalized people have less power and influence than the dominant social group. For example, marginalized people often live in contested environments, their access to resources has to contend with enforced conformity, and they have limited access to information. Marginalized people fit Foucault’s description that they are most prone to be incarcerated or otherwise punished.

Although the origins of the marginalization discourse are mostly associated with feminist theories (Hooks, 1984; Hall et al., 1992; Stevens, 1993), it has gradually found expression in other social science disciplines such as nursing and developmental studies. The properties of marginalization in Table 1 resonate with critical theories; thus, marginalization is inclusive of oppression, and also a consequence of oppression (Hall, et al., 1999). Thus, the concept of marginalization can be useful in illuminating the subjective experience of the Zambezi Valley fishermen, including how they interpret the power-equation, the language, and their desires towards equitable access and the sharing of fishing resources. To this end, this paper adopts the constructionist epistemology through participation towards equitable access and sharing of Lake Kariba’s fishing resources. Constructionism is an ontological condition of social being, social consciousness, social action, institutions, structures, even society itself; it is not a form imposed on social life, but social life and human lives are themselves socially constructed (Somers, 1992). If marginalization can be understood through social construction, social action is also guided by construction, thus social processes and interactions, both institutional and interpersonal, are mediated through social construction.

Marginalization of the Kariba Dam Fishermen: Evidence from the Literature

The marginalization of the Zambezi Valley fishermen cannot be understood in isolation of the broader peripheralisation or exclusion of the Tonga. As a way of simplifying our understanding the marginalization of the Tonga, we briefly explore the events using Mhlanga’s (2009) three phases: the pre-impoundment phase (before 1958), the post-impoundment colonial phase (1958-1980) and post-impoundment independence phase. Life during the pre-impoundment phase for the Zambezi River Tonga can be traced from the Iron Age, half a million ages ago (Reynolds and Cousins, 1991), and was primarily based around riverbank farming, fishing and hunting. Known in various terms as ‘basimulonga’ (Colson, 1971) ‘basilwizi’ (Tremmel, 1994), and ‘bamudonga’ (Ncube 2004), the Tonga’s crop cultivation was based on recession agriculture, which depended on the flood regimen of the river. Fishing, kuzuba nswi, was one of the major sources of livelihood

for the Zambezi Valley Tonga. Agriculture was combined with fishing, where for instance, bream and tiger fish were caught with nets and buckets in small inlets when the flood receded from the Zambezi River and its tributaries, (Weinrech, 1977) without any restrictions. They supplemented their diet with fish, a source of protein required by the body for growth and maintenance of tissue.

The beginning of the post-impoundment phase began with the loss of entitlement to fishing resources which came to an abrupt end between 1956 and 1958 following the forcible uprooting or removal of the Tonga whose homes and lands were flooded by the building of the Kariba Dam. Approximately 57,000 people were 'moved' by the Federation of Rhodesia and Nyasaland to areas outside the reservoir on both sides of the Zambezi River in what today is known as Zambia and Zimbabwe (Colson, 1971). With a capacity of 180.6 km³, surface area of 5577 km² and length of 280 km, the Kariba Dam was then the largest man-made lake in the world (WCD, 2000). The lake was primarily constructed to generate hydro-electricity.

On the Zimbabwean side, 22 chiefdoms were forcibly moved to make way for the dam, including Simunchembu, Sinamagonde and Musambakaruma chiefdoms that were relocated to areas far from the river, where there was inadequate water (WCD, 2000). The Tonga have become what can be termed 'development refugees' (Weist, 1995) or development-induced internally displaced persons who still need to be rehabilitated. With more than five decades since the Kariba Dam construction, the great dam, which deprived the Tonga of their homes, has not benefited them (Lessing, 1993; Tremmel, 1994). In addition to loss of agricultural lands, clean drinking water and hunting, access to fishing was one of the major sources of livelihood the Tonga people lost. Since the construction of the Kariba Dam, the marginalization of the fishermen continued to grow. To appreciate the extent of marginalization of the Zimbabwean fishermen by the successive governments, Table 2 compares the Zambian and Zimbabwean fishermen since the resettlement in the 1950s. Hall et al.'s (1994) five of seven properties of marginalization - intermediacy, differentiation, power, secrecy and voice - were considered sufficient to reveal the extent of injustices suffered by the Zimbabwean fishermen.

On the Zambian side, the interest of the local population was paramount. There was no racially based segmentation. The whole Zambian shoreline was designated as "Native Trust Land" and could not be utilized without consent of the local people. In contrast, in Zimbabwe, the then Rhodesian authorities divided the shorelines along racial lines into 14 areas, which later changed to eight and then to the present seven in 1972 and 1976 respectively. The native areas were shared with white-owned concessionaires who, in addition to their own fishing concession areas, would also purchase the fish from the black fishermen (Karengé and Games, 1995). Also, any kind of economic investment in onshore fishing in Zimbabwe had been virtually absent (Marshall, et al., 1982; Bourdillon, et al., 1985; Kolding et al., 2003), in contrast to a relatively strong management regime and enforcement capacity which had not changed since Zimbabwe's independence from Britain in 1980. In the 1990s, the National Parks devolved appropriate authority status to the Binga and Nyaminyami RDCs where the RDCs subleased the Exclusive Fishing Zones (EFZ) to fishermen and created a co-management structure. To this end, the National Parks created a

Table 2:

Comparison between Zambia and Zimbabwean Fishermen Marginalization

Property of marginalization	Zambia	Zimbabwe	
		Before independence	After independence
Intermediacy	Shoreline not divided into fishing zones with fishermen having freedom of choice of where to fish	Lake designated Kariba Recreational Park; Shoreline divided into 14 zones, reduced to 8 and then 7 zones in 1972 and 1976 respectively. No freedom of choice of movement on where to fish	Lake designated Kariba Recreational Park and 7 fishing zones have remained unchanged; No freedom of choice of movement on where to fish
Differentiation	Shoreline not divided according to race, color, etc.	Shoreline divided along racial lines with 'native' reserves and concessions for whites. White-owned companies dominate both kapenta and inshore/artisanal commercial fishing.	No discrimination on shoreline but is opened to wider community with no preference to the resettled people. White-owned companies continue to dominate both kapenta and inshore/artisanal commercial fishing.
Power	Access to fishing generally unregulated; no limits on net sizes	Access to fishing regulated by Department of National Parks such as net sizes, number of nets to prevent overfishing, and settlements prohibited. Offenders are punished; survival of the fittest; low income	Conservationist and tourist interests grew stronger than pre-independence. Access to fishing regulated by Department of National Parks such as net sizes, number of nets and settlements prohibited. Offenders are punished; survival of the fittest; low income
Secrecy	Information was available to fishermen; capacity building for fishermen, e.g. Fishery Training Centre at Sinazongwe in 1961	Information restricted to officials and not available to fishermen; no capacity building for fishermen; fishermen avoid punishment	Cooperatives created and capacity building related to conformity to regulations rather than rights of fishermen
Voice	Fishermen have freedom to express themselves	No freedom to express their exteriorized life of survival or hope for the future	Freedom to express their exteriorized life of survival or hope for the future is determined by political affiliation

Note: Source: Authors

hierarchical Sub-Area Fishermen Association structure to co-manage each of the eight EFZs. However, Sub-Area Fishermen Associations were ineffective because of the flawed nature of their creation; they were created for the wrong and mundane reasons. The Sub-Area Fishermen

Associations were established to provide such things as keeping statistics and monitoring poachers because the state could not sustain the regulatory operations due to inadequate resources. Thus, the Sub-Area Fishermen Associations were meant to serve and also ensure their conformity to the regulatory infrastructure that marginalized the fishermen in the first place. McGregor (2009) argues that the co-management structure of Sub-Area Fishermen Associations had little impact on fishermen's access to resources due to, among others, limited participation of fishermen in the delimitation of the Exclusive Fishing Zones (EFZ) and the persistence of criminalization of fishermen.

In contrast in Zambia, there is freedom of fishing and fishermen can fish anywhere. The Zambian inshore fishing, with virtually no enforcement of regulations, experienced a much higher fishing intensity and a changed fishing pattern towards increasingly smaller mesh sizes resulting in a higher exploitation level (Kolding et al., 2003). From Zambia's independence in 1964 to 1986, no mesh restrictions for gillnets existed and beach seines were allowed. After 1986, the minimum mesh size for gillnets was set at three inches (76 mm), beach seining and kutumpula (fish driving) were prohibited. In practice, however, there was little enforcement due to a lack of resources (Musando, 1996 as cited by Kolding, 2003). Notwithstanding, the overall fishing effort, in terms of number of nets, was about seven times higher in Zambia than in Zimbabwe, there were no indications of biological overexploitation in the Zambian inshore fishing in terms of reduced total yields or changed fishing communities. Thus, the assumption that there was over-fishing in Lake Kariba was a myth as inshore fishing stocks are only moderately exploited and severely underutilized in Zimbabwe. Besides, the water has power to restock fish even under intensive exploitation as Lake Kariba is a naturally fluctuating and resilient system with its source of biomass and productivity being located in the hydrological regime, and annual pulse of fertilizing nutrients washed in by the rains (Kolding et al., 2003).

Kolding, et al. (2003) list a litany of restrictions, which exclude and criminalize the Zimbabwean fishermen, which include the following:

- Fishing is not permitted using nets with less than a four-inch (102 mm stretched) mesh size.
- Explosives, chemicals, poisons, intoxicating substances, scoop nets, jigging and fish driving may not be used to catch fish.
- Fishing is not permitted along parts of the shoreline belonging to the DNPWM, notably all the Chete Safari Area, most of the Matusadona National Park, and parts of the Charara Safari Area. Other restrictions are in place for mouths of rivers, large population centers, harbors, and river estuaries.
- Fish net manufacturing is not permitted for persons who do not hold a valid manufacturer and dealer license, and fishing nets can only be sold to holders of valid fishing permits.

Approach to Collecting Field Evidence

The extent to which the Zambezi Valley fishermen were marginalized and excluded from fair access and equitable sharing of benefits of fishing resources required a methodology that was grounded in social transformation and human rights activism. Participatory action research was

considered appropriate as it lends itself to be associated with social change, where its results can be translated into political action (Sarantakos, 2006; Gibson, 2004).

Mainly accredited to Kurt Lewin's action research in the 1940s in USA, participatory action research has been associated with the critical theory and philosophy of liberation where research is grounded in people's struggles (Kindon et al., 2007). Paulo Freire's work in Brazil, Mahatma Ghandi's work in India, and Julius Nyerere's work in Tanzania are among the most cited examples of the effectiveness of participatory action research, and how it can empower the oppressed to transform society and assert their rights (Savin-Baden and Wimpenny, 2007). In participatory action research, Reason and Bradbury (2001) stated that researchers and participants work together to construct knowledge from their experiences and realities where a single phenomenon can have multiple interpretations. They further stated that researchers and participants identify the problem and formulate actions together to change the situation for the better. In many ways, participatory action research is in sharp contrast with the positivist epistemologies of knowledge construction where knowledge is seen as a free-standing unit independent of the researcher (McNoff and Whitehead, 2002). Notwithstanding the argument that participatory action research can lead to social change, participatory action research can be difficult to organize as it requires financial, material and human resources as well as time. Participatory action research for this project was supported by the advocacy cycle tool (Figure 2).

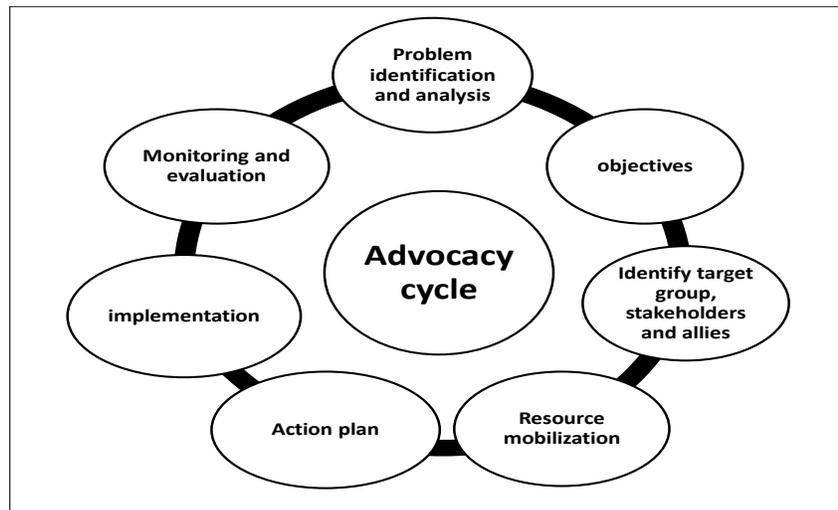


Figure 2: The Advocacy Cycle

The kapenta and gillnet fishermen who participated in this project were from the Binga, Hwange and Nyaminyami district fishing cooperatives. Although the researchers and fishermen used the advocacy cycle as a guide, discussions on problem identification and analysis, setting objectives, and identifying stakeholders were messy, emotional, and full of contestation (Cahil, 2007), swinging back and forth from time to time. Nonetheless, as soon as stakeholders were identified, they were engaged in the participatory action research project, where the problem,

objectives, stakeholders and resources were reviewed. This was important to ensure commitment of participants to ‘actioning’ the findings. The stakeholders were drawn from the National Parks, Rural District Councils, Traditional Chiefs and non-governmental organizations, Basilwizi Trust, and Save the Children. Involving government structures was important and did not only provide legitimacy and ownership of the findings, but also reduced suspicion from politicians since the project was implemented in 2007 and 2010 at the height of political tensions in Zimbabwe.

The second aspect involved capacity building of fishermen and stakeholders. This was at two levels. Firstly, fishermen were trained on advocacy skills as a way of empowering them to demand access and control to fishing resources. This included social problem analysis, research, conflict resolution, negotiating strategies and lobbying. As a result of the training, the fishermen formed the Kujatana Kwesu Fisheries Union comprised of nine executive committee members, including one female. The Kujatana Kwesu Fisheries Union enabled fishermen to present and represent themselves in demanding increased access and benefits to fishing resources as well as issues around conservation. Secondly, awareness workshops were facilitated by officials from the National Parks and Rural District Councils. This included a review of the Parks and Wildlife Act and related instruments and guidelines. The research team played a facilitatory role, mainly in providing technical and logistical support. Following the training, fishermen and stakeholders developed an action plan which included gathering evidence on the extent of marginalization of fishermen, meetings, seminars and conferences with duty-bearers in government authorities. The Zambezi Valley stakeholders’ conference that was held in Harare from 1-3 December 2010 was one of a series of dialogue meetings between fishermen and government authorities. At the Harare conference, high-level decision-makers, involving three government ministers including the Minister of Natural Resources, participated in the discussions.

Field Evidence of Fishermen’s Marginalization

This section presents the problems fishermen were facing which limited their access and control of fishing resources. The problems were mainly in two categories, namely, the fishing license system, and criminalization and punishment of fishermen.

Fishing License System

To regulate fishing activities, a fishing license system, managed by the National Parks, was put in place for both Kapenta and gillnet fishermen. Kapenta and gillnet fishermen, both individuals and co-operatives, applied for licenses to both the National Parks and Rural District Councils. The National Parks is the licensing agency for permits to use water resources in Lake Kariba, and the Rural District Councils issue fishing permits for fishing zones located in their jurisdictions. Both gillnet and kapenta fishermen were aware of the National Parks’ eligibility requirements for them to be allowed to fish.

For me or a cooperative to obtain a [gillnet fishing] license, I need to convince authorities [Rural District Council] that I own a boat and life jackets. I have also to identify the fishing camp I will be operating from.

Similarly, to register for kapenta fishing, fishermen need to provide evidence of ownership of a fishing rig (boat), life jackets and operational area. There were additional requirements for both gillnet and kapenta fishing cooperatives to be eligible to fish. A certificate of registration, constitution and membership list were needed by the licensing authorities. For gillnet fishermen, the National Parks issues the fishing licenses to three riparian Rural District Councils - Binga, Nyaminyami and Hwange.

There is a small difference between the Nyaminyami and Binga Rural District Councils' allocation of licenses considering that they have a large shoreline compared with the Hwange Rural District Council which has one fishing camp at Musuna. The Rural District Councils then issue the fishing licenses to the individual fisherman or fishing cooperative. The distribution of licenses per individual fisherman can differ according to the Rural District Councils. Forty-six percent of licenses are issued to cooperatives. Fishing licenses or permits for gillnet fishermen operation on state lands are issued directly by the National Parks. Applications for kapenta fishing were made at the National Parks District Office in Binga for onward processing in Harare. Table 4 shows the distribution of kapenta fishing permits in the three riparian districts of Binga, Hwange and Nyaminyami.

That the National Parks' licensing system lacked accountability and transparency was a concern for both kapenta and gillnet fishermen. They claimed there was a shortfall in the number of fishing licenses that were issued in Harare, and those distributed by the National Parks Sub-office in Binga. In any case, the official license limit had never been reviewed and the actual recorded number of nets and fishermen, although fluctuating most of the time, had been below the values. Fishermen also expressed concern over additional license fees they were charged by authorities. For example, in Deka in the Hwange Rural District Council, the National Parks required the gillnet fishermen to pay daily fees for fishing, yet they would have already paid for fishing licenses at the Rural District Council.

We're not benefiting much from fishing. The National Parks charged us daily fees when we would have paid for a license to the Rural District Council.

In the Malala Fishing Camp in the Binga Rural District Council, the gillnet fisherfolk had raised concerns over the renewal of licenses which changed from annual, to six months and then to monthly. They were required to renew their licences monthly, and this was burdening them financially to the extent that it was unmanageable.

They [authorities] are insensitive. How can they charge us on a monthly basis? Where do they think we can get the money, when at the same time they restrict us to fish as much as we would? At the end, we're only working for the authorities instead of feeding our families.

In the Nyaminyami District, the gillnet fisherfolk have complained over the number of permits they were supposed to apply for.

We're being ripped off by the three-in-one payment system. We pay for three permits to sell the same fish. First, we apply for a permit to fish, another one to sell [fish] [to traders] at the [fishing] camps, and then the third one is a hawker's license that enables us to sell the fish outside the fishing camp. Our colleagues in kapenta fishing only require one permit to fish and sell the kapenta.

The fishermen, through the Kujatana Kwesu Fisheries Union as Section 6 illustrates, have continued to engage with government authorities to address the problems in the fishing license system. This is despite the participatory action research project that ended in 2010.

Criminalization and Punishment of Fishermen

The accounts by the fishermen about criminalization and punishment were not new; they were consistent with the literature (McGregor, 2009; Nyikahadzoi, 2009). What was new was the degree of abuse of fishermen by the National Parks officials. One gillnetter had this to say:

When the National Parks officials impound our nets, they don't return them to us even after paying the fines. They sell them to Zambian fishermen or fishermen at our neighboring camps. When they arrest us – they loot; they take everything. The National Parks officials share the fish so they can feed their families. We remain here with nothing.

During one of the meetings which involved fishermen, the National Parks, Rural District Councils, Lake Navigation, Police, and the Ministry of Youth, Empowerment and Development, fishermen highlighted alleged corrupt activities taking place within the National Parks, especially in passing information to Zambian fishing boats over their patrol schedules and raiding times. The fishermen also lamented at the fines that were too low to deter any illegal fishing activities by the Zambian fishermen. They recommended stiffer penalties for illegal Zambian fishermen such as heavy fines and confiscation of their boats.

The National Parks officials come here to us without any reason. They don't explain what they want. One day they came here [fishing camp name supplied] and started firing bullets in the air, searched our huts and forced us to roll on the ground and stand on our heads. One official asked my wife 'why are you not pregnant?' Then they started accusing us of hosting Zambian poachers. But, we never host any [Zambian] poachers; instead the National Parks are letting the Zambians fish on our side without repercussions. With bribes from the Zambians, the National Parks officials give them [Zambian fish poachers] their patrolling timetable so they don't clash with them.

The following shows that fishermen were aware of the need to conserve fishing resources, and their participation would contribute to the management and sustainability of the resources. Also, the National Parks were allegedly working with white concessionaires to harass the fishermen.

National Parks officials also work together with white concessionaires to harass us. For example, there is an arrogant agent of a wildlife safari operator [name supplied] who gets into the Lake [Kariba] and starts pulling our nets and beating us up if he finds us in areas he claims to be prohibited [from fishing]. But fishing has nothing to do with him ... his job about hunting wild animals.

This was contrary to Nyikahadzoi and Songore's (1999) study whose findings show that about 89 percent of the fishermen indicated that the relationship between them and law enforcement agents was either 'friendly' or 'very friendly.' A further study could be quite revealing as to the reasons for the change. However, the lawlessness and socio-economic decline which characterised Zimbabwe during the 2000s could have contributed to the change of relations between fishermen and law enforcement agents.

Police were also a problem. Sometimes, they forced us to lower fish prices. It's very unfair. We are not free at all in this country. Rural District Councils lack transparency on tariffs. They don't give enough days to lodge our objections to the tariffs. For example, our Rural District Council [name supplied] gave us three days to object to the rates they were proposing instead of 30 days [stipulated by the law].

Gillnet and kapenta fishermen caught breaking the rules remained subject to draconian punishment, which ranged from confiscation of boats and nets (McGregor, 2009) to physical abuse by the National Park officials.

Implementing Research Findings

A participatory action research which does not result in action can be, arguably, regarded as a failure. On the basis of the problems fishermen identified through the participatory action research, an action plan was drawn to engage authorities. The results of the engagement were a testimony of the power of action research as a tool for social change. There are at least four indicators of the impact of the project processes and outcomes. They include improved organization of fishermen, influencing the fishing license system, and protecting the rights of fishermen.

Firstly, as already outlined in earlier sections of this paper, the devolution of appropriate authority to the Binga and Nyaminyami Rural District Councils, created through section 95(1) of the National Parks Act of 1991 and Statutory Instruments 12/91 and 40/94, led to the establishment of the Sub-Area Fishermen Association. To some extent, the devolution created an 'invited space' for the fishermen to participate in fishery management. Fishermen were able to at least attend meetings where they were invited, and receive travel allowances and other perks as a reward of their participation (McGregor, 2009). However, at the time this study was conducted, the Sub-Area Fishermen Association only existed in theory as there were barely any activities in practice. Nonetheless, the space provided by the Sub-Area Fishermen Association still exists today and can

be used by fishermen at the invitation of government authorities, mainly to fulfil government agendas.

However, by creating the Kujatana Kwesu Fisheries Cooperative Union, the fishermen invented an additional space to be heard by government authorities. Fishermen had become more organized by presenting and representing themselves in the management of fishing resources. They were able to organize their own meetings where they invited government authorities such as the National Parks and Rural District Councils. Also, government authorities had recognized fishermen as a body. In the Binga Rural District Council, fishermen became a recognized body in council meetings, particularly meetings where fishing licenses and permit fees were discussed. Fishermen had also become more organized in resource mobilization. For example, they had managed to construct a fish warehouse that was funded by the British Embassy in Zimbabwe. The warehouse was commissioned by the Minister of Environment and Natural Resources on 7 March 2013.

Secondly, using advocacy skills obtained from the participatory action research, since 2009, fishermen have been challenging the fishing license and permit system through the Kujatana Kwesu Fisheries Union. On 7 March 2013, the Minister of Environment and Natural Resources acknowledged engagement with fishermen on the fishing license system.

I have received reports from the fishermen that our policies and legislation are either in competition or in duplication which has confused and inconvenienced our people by having a multi-level licensing system ... This arrangement has been acknowledged as an anomaly by my ministry, and we have agreed to explore ways of addressing it so that fishermen are not overburdened. (Minister of Environment and Natural Resources, 7 March 2013)

Also, in 2009, fishermen successfully negotiated with the National Parks to have the kapenta permit fees reduced from US \$500 to US \$250 per rig per quarter. Similarly, the Binga RDC reduced the quarterly permit fees for gillnets from US \$50 to US \$30. Likewise, the quarterly permit fees for gillnets in the Nyaminyami District were reduced from US \$50 to US \$40. The reduction in permit fees means that the fisherman's income increased, which would enable them to improve the welfare of their families. Thirdly, the criminalization and punishment of fishermen remain top on the fishermen's agenda. They have engaged with government officials from local to national levels. Some efforts at the local level are supported by the following quote:

We invited the National Parks officials, the District Administrator, representatives of the Binga RDC and Zimbabwe Republic Police to 'talk with them' about the issue of harassment and abuse of fishermen and their wives by the National Parks officials. The [National Parks] officer who was perpetrating violence was present, but they hid him for they feared we were going to assault him. The National Parks Area Manager apologized to us on behalf of errant staff members. Since then we haven't experienced any harassment. (Member of Kujatana Kwesu Fisheries Union, name withheld)

As a result of the fishermen's advocacy, the Minister of Environment and Natural Resources was also looking for ways to reduce the harassment of fishermen by law enforcement agents from the National Parks and the police.

Law enforcement is one of the key result areas of my ministry. While my ministry continues to perform well on this front, despite resource constraints, of greater concern are the alleged harassment, mistreatment and abuse of fishermen by our law enforcement agents along the lake. We are aware of this disturbing trend and my directors have been sent out to the communities on a fact finding mission. (Minister of Environment and Natural Resources, 7 March 2013)

As a result of these advocacy efforts by fishermen, meetings involving fishermen, police, the National Parks, rural district councils, and the Ministry of the Local Government resulted in the reorganization of the National Parks Binga Office. It was reported that one of its officials was charged for misconduct linked to the harassment of the fishermen. It was also reported that the National Parks officials had since undergone some training in working with fishermen.

Reflecting on Both the Process and Product of Participatory Action Research

This paper has outlined the extent to which fishermen along the Kariba Dam used participatory action research to organize themselves to tilt access and benefit sharing arrangements towards a socially just system. To ensure that participatory action research becomes a means towards social change rather an end in itself, as this paper demonstrates, there are fundamental issues which need consideration. This suggests that the participatory action research process deserves as much attention as the product itself. This study illustrates that the participatory action research process, although it can be a messy and emotional (Cahill, 2007), effort should build consensus on the nature, extent and effects of the problem using tools such as a problem tree analysis, stakeholder analysis and planning matrices for developing action plans to address the problem. The issues that were addressed by this study appear to be manifestations of tensions in the natural resources management literature which has had an influence on the legal, policy and institutional frameworks. Also, there are issues which are manifest in the geopolitical construction of the Zambezi Valley, where the Tonga people are portrayed as backward and primitive people (Manyena, 2013), which could have had implications in the way the fishermen were treated by government officials, particularly those who hailed from outside the Zambezi Valley. A wide view of issues sets in motion the strategies of solving problems, although that may not necessarily guarantee the success of participatory action research in bringing about social change.

The Participatory Action Research Process

The marginalization of the Kariba Dam fishermen should be viewed as a symptom of tensions in the natural resources management debate, particularly around Hardin's (1968) 'Tragedy of the Commons' theory. Since the creation of Lake Kariba, both colonial and post-colonial governments on the Zimbabwean side of the Zambezi River have restricted access to

fishing resources over concerns of overexploitation of fish stocks. However, Kolding (2003) disputes that there is overexploitation of fish stocks as inshore fishery stocks are said to be only moderately exploited and underutilized in Zimbabwe. The Zimbabwean government has justified the use of strict regulatory mechanisms on the basis of Hardin's (1968) 'Tragedy of the Commons' theory where it is argued that in the absence of any control mechanism, common or open access to a productive resource, like fish, leads to its overexploitation. This is despite some empirical evidence suggesting that some forests, rangelands and fishing areas which are neither state property nor private property have persisted for decades and even centuries (Gilles and Jamtgaard, 1982; Sandford, 1983; Ostrom, 1990; Moxnes, 2000; Rogers, 2010). As a result of adopting a conservation and bio-centric 'fish first-fisher last' rather than 'fisher-first fish last' resource management regimen, the fishermen have been presented by government authorities as criminals, irresponsible, unreasonable and irrational beings who deserve punishment should they fail to conform to and comply with the rules. Yet, the opposite might be true: it is the state that has displayed some irrationality and arrogance towards its people; it has transformed a previously complex integrated knowledge system of resource management that supported the livelihoods of the Tonga people to the existing dysfunctional assemblage of fragmented systems (Mhlanga, 2009). This perhaps calls for more research that involves fishermen as co-researchers so they can challenge some of the assumptions of the studies.

Notwithstanding, the argument that the natural resources management is riddled with contestations, which can misinform policy and practice in certain situations, can provide a solid foundation for a sustainable resource management regimen. Here the marginalization of fishermen, as this study demonstrates, may be a failure by technocrats to interpret the natural resource management regulations. In some ways, the conflict between fishermen and state authorities, for example, on the fishing licensing system and unjustified criminalization and abuse of fishermen by law enforcement agents, could point to limited understanding of the fishery regulations by both the technocrats and the fishermen themselves. In this study, dialogue during meetings such as the participatory review of the National Parks and Wildlife Act involving stakeholders together with fishermen, provided an opportunity for them to build consensus on key barriers towards improved access and benefit-sharing of fishing resources along the Kariba Dam. This was important for another reason. The review of the legal instruments helped the stakeholders refine the issues that needed to be changed. Equipping fishermen and their stakeholders with knowledge and legal information on the natural resource management system fostered some level of confidence in a manner where they would advocate for socially just access and benefit-sharing arrangements of fishing resources.

Moreover, considering the geopolitical implication that the Tonga people are backward and primitive built grassroots political work that would be durable and result in a sustainable and democratic fishermen's organization, which was critical. Advocacy training provided the fishermen with skills for building political power to change society. Building a grassroots organization, social problem analysis, conflict management, social transformation, communication, dialogue, and lobbying were some of the skills that fishermen and stakeholders

received from the technical support team. These skills, it can be argued, could have reduced the inferiority complex and ‘fear of officials’ during the fishermen’s advocacy work, because the Tonga people tend to consider themselves inferior to other ethnic groups such as the Shona and Ndebele (Manyena, 2013).

The Product of the Participatory Action Research Process

Participatory action research that does not result in positive political change, particularly for those who have been systematically excluded, oppressed or denied by unjust social arrangements, could be considered a failure (Pain et al., 2007; Kindon et al., 2007). This paper demonstrates practical benefits of participatory action research. The implementation of the research findings by the fishermen and stakeholders brought positive change in the licensing system, suggesting that the access and benefit-sharing arrangement was leaning in favor of the fishermen. The government officials acknowledged the anomaly in the licensing system, and promised to rectify the situation.

Also, the concerns regarding mistreatment and abuse of fishermen received attention from government officials, which had negative and unintended impacts that led to the reorganization of the National Parks offices. As a result, some government officials either lost their jobs or were transferred to locations outside the Zambezi Valley. Nonetheless, the results could be a demonstration that the fishermen’s concerns were taken seriously by government officials.

However, underlying the actions taken by the fishermen to resolve issues around the fishing licensing and criminalization of fishermen appears to be that the political power of the fishermen was gradually being recognized by stakeholders. The formation of the Kujatana Kwesu Fisheries Union provided the fishermen with some leverage of political power and agency to present and represent themselves in ensuring a socially just system of accessing and benefit-sharing.

Conclusion

This paper demonstrates that tensions over improved access and benefit-sharing of fishing resources along the Kariba Dam are underpinned by the politics of marginalization of the Tonga. Thus, this study has shown the practical benefits of both the process and the product of participatory action research. Although the participatory action research process can be ‘messy,’ the findings appear to demonstrate that building consensus on issues that need resolving, as well as having the capacity to move key stakeholders into action, is critical. Importantly, this study also demonstrates the benefits of researchers and research-users to have collaborative power and agency to challenge the status quo while also widening the access and benefit-sharing arrangement options for the marginalized fishermen. The results of this study may resonate not only with challenges facing marginalized fishermen elsewhere, but they may be applicable to access and benefit-sharing issues more widely.

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