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A Governance Analysis of the Barotse Floodplain System, Zambia: Identifying Obstacles and Opportunities

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List of Acronyms

AAS	CGIAR Research Program on Aquatic Agricultural Systems
AWF	African Wildlife Foundation
BRE	Barotse Royal Establishment
CBPP	contagious bovine pleuropneumonia
CLCP	Community Life Competency Process
DACO	District Agricultural Coordination Office
DDCC	District Development Coordination Committee
DDT	Diagnosis and Design Team
DOF	Department of Fisheries
FISP	Farm Input Support Program
GART	Golden Valley Agricultural Research Trust
JICA	Japanese International Cooperation Agency
KSLP	Knowledge-Sharing and Learning Platforms
LDP	Livestock Development Program
MACO	Ministry of Agriculture and Co-operatives
MAL	Ministry of Agriculture and Livestock
NARS	National Agricultural Research System
NGO	non-governmental organization
PACO	Provincial Agricultural Coordination Office
PDCC	Provincial Development Coordination Committee
PS	Permanent Secretary
RESCAP	Rural Extension Service Capacity Advancement Project
SADC	Southern African Development Community
SWCI	Shared Water Courses Institutions
ZAMCOM	Zambezi Watercourse Commission
ZARI	Zambia Agricultural Research Institute

Introduction

The Barotse floodplain is an ecosystem characterized by a paradox of widespread poverty amidst high ecological and agricultural potential. The CGIAR Research Program on Aquatic Agricultural Systems (AAS) seeks to address this paradox on the assumption that the rural poor have the potential to transform their lives using the aquatic resources in their environment. Understanding the conditions for natural resources use and management is critical for a program that seeks to transform the livelihoods of households dependent on natural resources. The purpose of this report is to identify and analyze key governance variables influencing the livelihood outcomes of AAS program interventions in the Barotse floodplain system.

Simply put, governance concerns the exercise of authority on matters of public importance. In the case of the AAS program, this exercise of authority comprises decisions, regulations, and the enforcement process, all of which influence how rural communities access and use natural resources, and how the benefits and costs of these uses are distributed. Governance is also an emergent property of the interaction of local and external processes. The way in which governance manifests itself in form and function will depend on the contexts in which actors are operating. In this analysis, the major pillars of governance are the interplay of stakeholder representation in authority systems at multiple levels, distribution of authority, and mechanisms of accountability (Ratner et al., 2012).

Governance is comprised, first, of formal rules and rights systems—the policy and institutional frameworks mentioned earlier. States usually enforce these institutions through law. Second, governance includes informal rules and rights systems, upheld by tradition, mutual agreement, or relations of power and authority (Cousins, 1997). For instance, a prohibition against the use of mosquito nets as fishing gear in rivers or lakes is a formal rule, while *kuomboka*, local rules governing the seasonal migration of communities between the Barotse floodplain and uplands, are informal.¹ Governance also includes processes and behaviors that influence how actors affect and are affected by the rule systems; for instance, how powerful actors can manipulate the decision-making system for personal advantage.

Governance outcomes also depend, therefore, on how representative the decision-making process is. Variations in governance depend on, for example, the extent of male, elite, or external player dominance. When economically and politically marginalized groups are poorly represented in policy-making processes, the resulting rules and institutions can bias natural resource governance outcomes against them. How power and authority are distributed and the extent to which those in authority are accountable to different constituencies define the character of a governance system (Jentoft, 2007).

This preliminary governance analysis responds to one basic question: How is the governance context at various levels likely to influence success or failure in achieving AAS program goals? The report focuses on creating an appreciation of the governance context in the Barotse floodplain to allow analysis of spaces and actors to consider for further action.

Analytical approach

The AAS program seeks to harness the ecological, agricultural, and human capital potential in the Barotse floodplain system. Theme 5 of the AAS program proposal cautions, however, that “the wider policy environment has a powerful influence on people’s lives and that in the absence of favorable policies and supporting institutions, improved technologies are of little long-term benefit” (AAS, 2012a:42). This report analyzes the wider governance context that is likely to influence the outcomes of the AAS program initiatives by examining outputs from the community engagement exercises against the background of the governance context at the local, sub-national, national, and regional levels. It considers the following questions:

- How does the governance context affect local livelihood options now?
- What are the relevant institutions and relationships, including those we may not have considered before?
- What factors are unlikely to change, to which we will need to adapt?
- Where are the opportunities for improvement?
- What groups might have influence in pursuing such progress?

Data for this analysis is based on participatory action research and planning activities in the hub. These activities included community visioning and action planning. The communities went through a Community Life Competency Process (CLCP) program, which is intended to equip communities to work together towards a shared vision of improvement. Hub scoping also included a series of multi-stakeholder consultations with government and NGO actors at different levels. Building on these exercises, we have undertaken additional interviews and focus group discussions with community representatives, farmers’ associations, government workers, and civil society groups to probe particular issues for the purpose of this analysis.

We employ an analytical framework detailed in *Strengthening Governance Across Scales in Aquatic Agricultural Systems* (Ratner et al., 2012), focused on three dimensions of governance (see Table 1). The *Collaborative Governance Assessment Guidance Note* (Ratner, 2012) outlines how this framework can be embedded in participatory analysis and action planning. Operationally, the role of the governance analysis is outlined in the *AAS Rollout Handbook* (AAS, 2012b) and addresses theme 5 on institutions and policy in the *AAS Program Proposal* (AAS, 2012a).

Table 1. Dimensions of governance

Dimension of Governance	Key Question
Stakeholder Representation	Which actors are represented in decision-making and how?
Distribution of Authority	How is formal and informal authority distributed in decisions over resources?
Mechanisms of Accountability	How are power holders held accountable for their decisions and to whom?

A premise in this approach is that power and authority are dynamic variables. Institutional arrangements therefore do not always lead to predictable outcomes. For instance, in Sub-Saharan African local government systems in general, the legislature is *de jure* more powerful than the executive; however, we expect this relationship to be reversed in some cases. This reversal of roles is due, among other things, to the executive’s superior educational qualifications and control over resource allocation. In some cases, though, the legislature can mobilize its ranks and censure the executive (Falk Moore, 1978). What this illustration shows is that power and authority in rural settings are moving targets, and that analysis of power dynamics must go beyond written policy or law.

¹ Our use of “informal” does not imply a hierarchy where informal authority is regarded as inferior, but points to its origins in locally specific norms, values, and institutions.

An important implication is that these power dynamics are open to influence, which can affect the extent to which the governance system recognizes, values, and supports the priorities of rural communities.

Arrangements of representation, power, and accountability are a product of history; for instance, Zambia's colonial experience. They are also influenced by more recent developments, such as the designation and status of the Barotse floodplain as a Ramsar Site. Analysis must therefore assess actor responses against these historic and more recent realities, and consider multiple levels, from local to national and regional.

Natural resource governance context

The Barotse floodplain is located within a broader geographical and political system. It is part of the Zambezi River Basin, which covers eight countries (see Table 2). Upstream and downstream governance contexts have a bearing on what land use options are available in the floodplain.

Table 2. The Zambezi Basin countries

	Area of the country within the basin (km ²)	As % of total area of the basin (%)
Zambia	574875	42.5
Angola	235423	17.4
Zimbabwe	213036	15.8
Mozambique	162004	12.0
Malawi	108360	8.0
Tanzania	27840	2.1
Namibia	17426	1.3
Botswana	12401	0.9

Source: FAO (1997)

Wetland and water governance arrangements in these Zambezi Basin countries are important variables that affect initiatives proposed in the Barotse floodplain. Zambia has a national water policy that rationalizes water use in the country in line with the country's development plans. National wetland management policies, such as the 2011 Zambia Environmental Management Act, define what is possible, legitimate, and ethical. Water management in the floodplain also needs to be coordinated with other sectors, such as health, energy, agriculture, tourism, and environment, at a national level. In addition to the individual national arrangements vis-à-vis the Zambezi Basin, there are regional water-related agreements; for example, the Regional Water Policy for the Southern African Development Community (SADC). This policy includes the Regional Water Resources Institutional Framework, which includes policy provisions covering institutional arrangements at regional and national levels as well as Shared Water Courses Institutions (SWCIs). In line with the SADC protocol on shared water courses, the Zambezi River is managed under the Zambezi Watercourse Commission (ZAMCOM), which is specifically responsible for the management of the Zambezi River Basin (Tumbare, 2008; ZAMCOM, n.d.). The floodplain is also protected under the Ramsar Convention, which brings another layer of global-level commitments and norms. Although we do not expand on global dimensions at length in this analysis, suffice it to state that the floodplain is an international as well as a national and local resource, and all initiatives need to consider this reality.

Planning implications arising from the shared watercourse status of the Zambezi include the need to link with the ministries responsible for agriculture and water both nationally and regionally (Chiuta, 2008). Regional bodies like SADC are critical as platforms for lobbying regional stakeholders. The SADC Regional Water Policy provides an opportunity for such stakeholder coordination consistent with the aims of the AAS program (see sidebar).

"In the interests of stakeholder involvement (to support participatory management), Shared Water Courses Institutions (SWCIs) should develop strong relationships with relevant non-government, civil society and local government bodies within the shared watercourse. This may be through the provision of support to existing bodies and/or forums or through the creation of new stakeholder forums at a national, basin and/or local level."

Source: Southern African Development Community Regional Water Policy 2005 (Article 9)

From a national perspective, Western Province is ecologically marginal and thus the least suitable region in Zambia for the production of most crops. Within the province, however, the Barotse floodplain presents a niche area of high agricultural and ecosystem service potential. Despite this potential, the floodplain is increasingly becoming a liability, mainly due to the unpredictability of the flooding that damages crops and irrigation canals, according to former Provincial Minister John Kufuna (personal communication).

In the Barotse floodplain, land belongs to the *Litunga* (traditional leader of the Barotse Royal Establishment), and the headmen and women or *indunas* allocate the land to households on behalf of the *Litunga*. Although the land typically belongs to the men, women do the bulk of the farm work, as in most societies with deep-seated patriarchal norms. Men mainly do the clearing and plowing. In others cases, women do most of the farm work to free men for fishing. Agricultural production alone is typically inadequate to sustain families for a year (Kent and McCrae, 2012). Off-farm income is particularly important to meet household food requirements in the hunger season. Therefore, most of the population in the Barotse floodplain depends on a mixed-livelihood strategy, combining crop farming, livestock keeping, fishing, and harvesting aquatic and forestry products. Households supplement their harvests with income from selling fish and aquatic plants and working for others.

Because families rely on such a variety of forms of natural resource access, resource governance arrangements strongly influence household livelihood resilience. In the Barotse floodplain, household resilience depends on access to:

- a) human capital available for regular and opportunistic division of labor;
- b) natural resources: woodlands, grasslands, and fishing sites;
- c) lands of different elevations that are affected differently by flooding;
- d) alternative sources of income, including markets for fish, rice, and aquatic plant products and part-time work; and
- e) livestock, especially draft power, for manure and for sale to meet household needs.

In this section, we have shown that international, regional, and national institutions are relevant in defining the boundaries of what is possible in the Barotse floodplain. At the same time, many national and in some cases regional policies may be in place but with weak implementation. The planning implication is that such an institutional context increases the transactional costs for introducing interventions, because there is no guarantee that the policy environment on paper reflects what is on the ground. Local governance arrangements strongly influence household food security. Indeed, the generally weak implementation of national policy only increases the importance of local institutions in directly influencing local livelihood options, as well as mediating rules and directives from “above.” Below we examine the local institutional context in the Barotse floodplain and its implications for AAS initiatives.

Local institutional context

In Western Province, two parallel institutions influence communities’ access to natural resources (see Figure 1). The Barotse Royal Establishment (BRE) represents the traditional system of governance. The BRE is an informal system of governance based on the norms and values of the Lozi people. In the formal government system, on the other hand, the Provincial Minister and the Permanent Secretary (PS) head the provincial administration. Below the PS are departmental heads in sectors like agriculture, health, and education.

The BRE is the traditional government of the Lozi people. The head of the BRE is the Litunga² (King), who carries the title of His Royal Highness. Other ethnic groups found in Western Province, including the Illa, Luvala, Mbunda, Nkoya, and Tonga, recognize the Litunga’s authority. The traditional government operates through chiefs or who comprise a parliament or *Kuta*, presided over by the Prime Minister or *Ngambela*, who is the chief administrator of the BRE. The Litunga appoints and can dismiss the *Ngambela*.

The BRE is a symbol of community interests in the Barotse floodplain. Indeed, the support, and sometimes the mere presence, of the BRE will guarantee community cooperation. For instance, the community visioning and action planning report attributes the success of its activities in the community to the presence of the BRE: “BRE representatives on the Diagnosis and Design Team (DDT) played a very critical role engaging the communities and emphasizing the importance of local-based facilitation teams.”

However, challenges remain. The community visioning and action planning report notes: “Governance issues are critical in the communities; this has resulted in low coordination and adherence to conservation policies and bylaws. Enforcement of these bylaws is a challenge.” Two main tensions account for this challenge. First is the tension between government functionaries and traditional leaders over leadership roles. Second, while BRE indunas are supposed to be custodians of law and order, in some cases they are unable to stop certain infringements; for example, disregard for the closed fishing season by their food-insecure households. Indunas, like other members of the community, are affected by the challenges of poverty, unemployment, etc., and have few means of survival apart from fishing. Indeed, traditional leaders at the village level are sometimes worse off than their subjects. In this condition of poverty, the indunas often lack either the incentives or the capacity to be effective stewards of the environment.

If judged on the basis of press statements, it may appear that the BRE and the government are chronically working at cross purposes. However, in practice the relationship between the two institutions is not fixed, but dynamic. In some instances, there is tension between the two, but in other cases they cooperate; for instance, the government is always involved in the annual *kuomboka* ceremony organized by the BRE. This institutional background has some bearing for planning in the AAS program. Both government and traditional leaders have to be involved in the planning process, and this engagement allows both groups to agree on areas of leadership and recognize each other’s responsibility.

Areas of agreement present particularly promising “entry points” for early action that has a good chance of success. In the longer term, the relationship between these parallel authority systems is an opportunity for institutional innovation in conflict management.

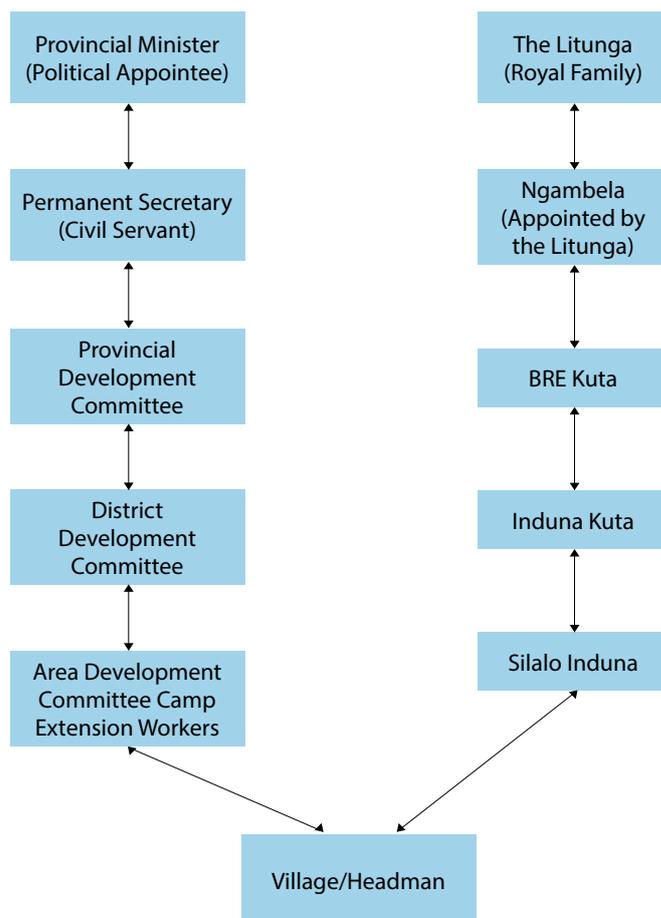


Figure 1. Parallel leadership in the Barotse floodplain, Western Province
Source: Discussions with various stakeholders in Mongu

Community livelihood options and governance implications

Up to this point, we have focused on introducing the governance context in the Barotse floodplain. In this section, we want to relate the livelihood aspirations of the communities in the floodplain to the prevailing governance context in order to help identify pathways to change that take into account the institutional dynamics and power relationships at local and sub-national levels. Building on the community visioning exercises, we have identified three main topics across the hub. These are:

1. improved farming practices and crop diversification;
2. livestock management and diversification; and
3. sustainable management of fisheries.

² Litunga is a Luyana word, which literally translates to “land” or “nation” (<http://www.barotseland.info/Litunga.htm>).

Table 3. Summary of governance issues identified

	Stakeholder	Distribution of Authority	Mechanisms of Accountability
Improved farming practices and crop diversification	<ul style="list-style-type: none"> Elites have better access to the plains Land allocation is male dominated 	<ul style="list-style-type: none"> BRE judgment mediated by status of respondent Contest for authority between the government and the BRE 	<ul style="list-style-type: none"> Programs designed for the poor hijacked by the elites Incentives emphasize upward accountability in the extension systems
Livestock management and diversification (includes small livestock)	<ul style="list-style-type: none"> Farmers' associations have little voice Policy bias towards cattle owners 	<ul style="list-style-type: none"> Weak enforcement of rangeland management rules Crop and cattle contests over land use; weak arbitration from leaders 	<ul style="list-style-type: none"> Few services addressing poorer livestock holders (e.g., women raising chickens) Elites finance their own extension services, reducing pressure for accountability
Sustainable management of fisheries	<ul style="list-style-type: none"> The traditional leaders are not always involving subjects Women and men have distinct and sometimes competing interests 	<ul style="list-style-type: none"> Communities take advantage of contest between BRE and Department of Fisheries (DOF) DOF enforcement ineffective without BRE consent Illegal fishing widespread, indicating disregard for conservation incentives 	<ul style="list-style-type: none"> Self-interest makes leaders allow illegal fishing Leaders not always accountable in community-based programs Some communities benefit from poor coordination among NGOs

The key governance issues for each topic are summarized in Table 3 and detailed in the sections that follow.

Issue 1. Improved farming practices and crop diversification

The communities identified improved farming practices and crop diversification as a key result area to address food and nutrition security in the hub. In this section, we present the context in which crop production is embedded. The government of Zambia has decentralized some of its roles, including the agricultural

ministry. A Provincial Agricultural Coordination Office (PACO) for Western Province is located in the administrative capital of Mongu. Figure 2 depicts the governance structure of the government extension system.

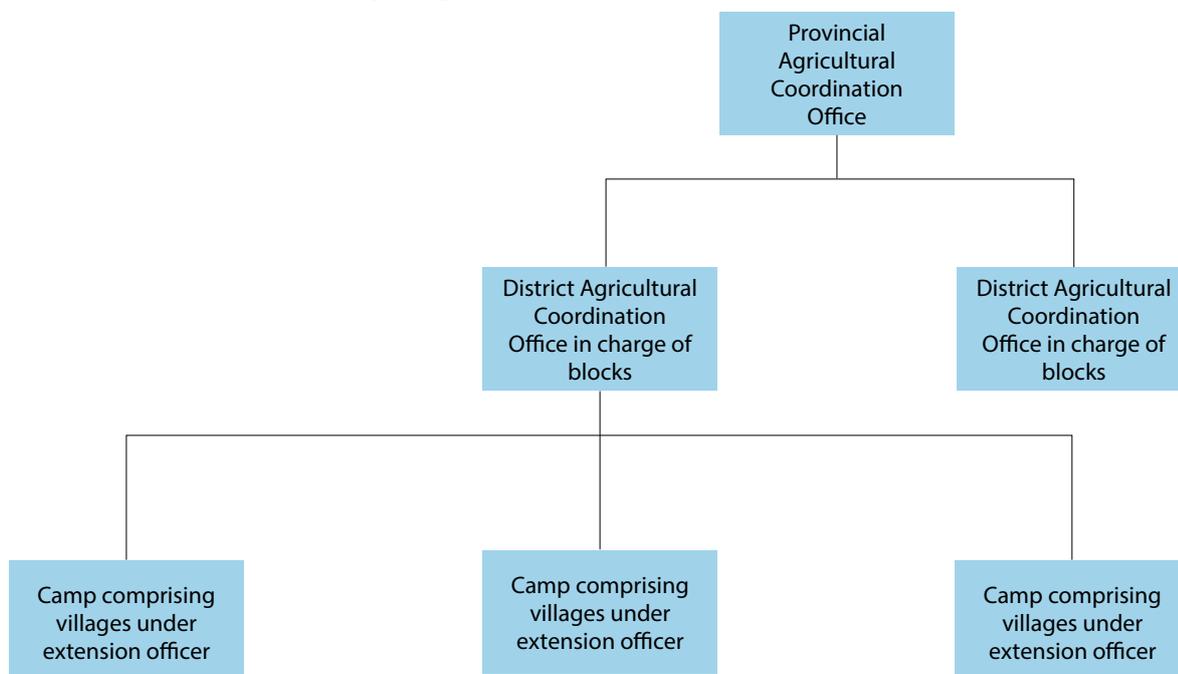


Figure 2. Agricultural extension system in Western Province

The PACO has a network of decentralized District Agricultural Coordination Offices (DACO) in the seven districts of the province. The camp is the lowest planning unit in the Agriculture Ministry. Each camp, comprising about 100 households, is under an agricultural extension officer. The government-supported Farm Input Support Program (FISP) envisions an extension system decentralized to the lowest levels. As shown in Figure 2, the extension system today is organized in a hierarchical format.

The PACO is a member of the Provincial Development Coordination Committee (PDCC). Heads of DACO sit on the District Development Coordination Committees (DDCC). These development coordination committees are platforms where all heads of sector ministries and NGOs in Western Province, community representatives like councilors, and members of parliament meet to discuss the development initiatives underway and those planned for the province. Also, the development coordination committees aim to facilitate synergies among stakeholders and minimize duplication of development effort. These mechanisms can respond to community concerns for improved farming practices and crop diversification at both district and provincial levels. Currently, for instance, the Japanese International Cooperation Agency (JICA) is financing the Rural Extension Service Capacity Advancement Project (RESCAP), which seeks to enhance the capacity of the agricultural extension service and develop the rice chain.

Extension that fosters improved farming practices and crop diversification in the Barotse floodplain revolves around the programs of the PACO. The agricultural extension workers are a conduit for the transfer of technologies from the National Agricultural Research System (NARS) to farmers through approaches such as farmer field schools. Agricultural extension workers focus on technology transfer. However, this focus does not facilitate interaction between farmers and other knowledge bases. The agricultural extension workers could play the role of knowledge brokers and link the farmers with other forms of knowledge, such as food processing or enterprise developments, but the knowledge-brokering role is currently a gap in the extension system. Given the systemic and integrated approach that the AAS program proposes, innovation brokering among users and suppliers of knowledge along the value chains becomes critical.

FISP is an example of a government farming practice and crop diversification initiative. FISP is a subsidy program for farm inputs designed for vulnerable but viable farmers. However, reviews of FISP show that elites, instead of poor farmers, are the major beneficiaries of the program (Mulikelela, 2013). Experiences from FISP have a bearing on AAS program planning. Programs designed for the poor can be implemented by individuals who are seeking opportunities to improve their agricultural productivity. Successful farmers are also looking for opportunities in the same environment in which the poor are located. The elite farmers have tacit and technical knowledge that is key for innovation, and they have a capacity to capture initiatives designed for the poor. There is a need to develop programs that accommodate the aspirations of the poor farmers but provide opportunities for the successful farmers as well. Examples include value chain upgrading in areas such as processing and marketing.

The decentralization of government roles is a positive drive towards prioritizing local concerns. However, while in theory development planning authority lies with the provincial administration, in practice the national bureaucracy still retains some authority. This residual authority in the national bureaucracy creates gaps in the decentralization process. Each of the departmental sectors operates independently of the others; for example, fisheries departments in the Ministry of Agriculture are divorced from Zambia Wildlife Authority (ZAWA) parks in the Ministry of the Environment. The provincial heads report to the PS on general administration matters, but for technical issues they report to their directors in their line ministries. Likewise, the extension officers that operate at camp level work under the leadership of the district commissioners and work with community leaders. The ministry at national level determines professional advancement. In essence, the decentralization process has not facilitated the anticipated autonomy of provincial and local decision-making. Where resources are scarce, this tension between the center and the province may tilt the balance in favor of the former. Such tensions may emerge where politicians, such as members of parliament or councilors, may and often do want to politicize FISP as a means of extending political patronage.

The provincial and district coordination committees provide opportunities for social learning. The previous section pointed to the tension between allegiance to the provincial and local systems and central line ministries. Tension between local and national levels is not limited to the public sector. A respondent from one of the NGOs in Western Province recounted a case where through meetings at the PDCC, the non-state sector players began to identify unexploited synergies among themselves. However, the official revealed that the collaboration did not go far because some of the NGOs viewed the other NGOs as competitors for funding. In this view, collaboration would make it more difficult to claim attribution for certain positive outputs. In other words, for the NGOs, their primary challenge is to secure more funding for their activities and to be accountable to their donors; collaboration with other players becomes less urgent.

In some instances, the beneficiary communities are also not in favor of NGOs working together to assist them. At face value this is a positive stance arising from the reality that the communities have seen of the NGOs working better independently than collectively. However, an official from an NGO informed us that farmers' associations sometimes prefer dealing with different NGOs separately because it enables them to play one NGO against the other and occasionally may create opportunities for double dipping.

For the purposes of AAS program planning, this aspect of partner accountability dynamics expressed through niche preservation is important. The competition is not restricted to inter-NGO interaction but is also directed at the AAS program. The cross-sector and multi-level approach the AAS program takes can be viewed as dwarfing the other players that focus on single sectors and political boundaries rather than ecosystems. The AAS program uses a participatory action planning and learning approach designed to allow for stakeholder interaction. For example, Knowledge-Sharing and Learning Platforms (KSLP) are a proposed avenue for stakeholder mutual learning. A key challenge will be to encourage stakeholders like the NGOs to overcome suspicion, which blocks information sharing. The AAS program will need to devise a brokering mechanism that provides win-win incentives for the respective NGOs.

Concerns with niche and capacity to claim attribution also affect partner cooperation. If NGOs are primarily accountable to their donors, it may mean that they will view the AAS program in that context. Those partners that are able to independently develop programs and mobilize funds might find little incentive to cooperate with the program. On the other hand, some that cooperate with the program might be attracted by the opportunity to leverage resources rather than the principles of the AAS program. In such circumstances, a deliberate process is needed, where partners move from strategies designed mainly for organizational survival to those that seek to empower local communities.

Key points to be addressed

- *The geography of the Barotse floodplain within the trans-boundary Zambezi River Basin requires a broader perspective on how upstream land use and water management affect local livelihoods downstream.*
- *Gender norms limiting women's access to land pose a constraint on livelihood options.*
- *Improving service delivery requires making extension services and NGOs more accountable to local communities. Farmers' associations and women's groups have a key role to play.*
- *Building stronger coordination of development efforts requires addressing the relationship between the BRE, the PACO, and other government agencies.*

Issue 2. Livestock management and diversification

After Southern Province, Western Province is the second major beef cattle producer in the Zambian economy. Barotse cattle comprise 25% of the indigenous stock in the country. The value of cattle in the Barotse floodplain is more than economic. Cattle are a source of manure, meat, and milk; a hedge against emergencies; a source of savings; a form of currency in marriage and litigation; and a status symbol. Cattle are pastured on common pool rangelands. There is no restriction on the size of the herds households can pasture in these rangelands. Even in times of pasture scarcity, there is little incentive for an individual to reduce the herd size. Cattle are considered men's property; women keep chickens, because they are easy to sell or to consume in the household. Small ruminants like goats are not popular because they are management intensive.

Cattle production has been affected by the prevalence of diseases, especially foot-and-mouth disease and contagious bovine pleuropneumonia (CBPP). Cattle are pastured on common pool rangelands during the wet season. In the dry season, the pastures include the stover on farms. As is the case for cattle, poor veterinary support negatively affects the chicken enterprise. Diseases like Newcastle disease and coccidiosis are common. Well-to-do farmers collaborate and purchase their own veterinary services.

In principle, the BRE is responsible for rangeland governance. However, some of the respondents feel that the authority of the BRE over the pastures is waning. For instance, burning of pastures is no longer coordinated. Poachers burn the grass to trap animals, depleting the grazing areas. Some households burn the grass as a way of stopping wild and domestic animals from damaging their crops. Crop farmers resort to this method because the traditional method is to report any crop damage by livestock to the induna. However, there is a feeling among some respondents that indunas do not compensate the aggrieved consistently. In some cases, it appears that the social status of the litigants influences the manner in which the matter is handled.

Several players are involved in decision-making in the livestock sector. The Department of Livestock Development and the Department of Veterinary Services are part of the PACO, custodians of livestock policies of the state. The BRE also has its own induna responsible for livestock and pastures. The induna does not play a key role in the development of livestock policies save to manage conflicts arising from using the rangelands on the floodplain and the uplands. Golden Valley Agricultural Research Trust (GART), Heifer International, and Zambia Agricultural Research Institute (ZARI) carry out research and advocacy activities in the province. Livestock farmers' associations promote the interests of livestock farmer producers.

Decision-making authority regarding development programs has rested with public sector players and research organizations. The BRE is marginally involved in policy formulation, but has more of a role in facilitating the implementation of government policies. The BRE views it as abnormal that while it is the grassroots-based local authority, the state does not seek its involvement in policy formulation. For instance, J. Chanda writes in the *Times of Zambia* (2012) that the Livestock Development Program (LDP) sponsored by the Dutch Government was a well-intentioned program in Western Province. Chanda goes on to note, however, that the LDP waned when the donors left, because civil servants who were left in charge appropriated project investments for private use. Chanda asserts that exclusion of the BRE in the project was a driver for its collapse.

The objectivity of Chanda's claims is debatable, but his comments echo sentiments commonly expressed by stakeholders (see sidebar). For instance, NGO actors emphasize the critical role of the BRE in project success. Civil service staff also emphasize the importance of involving the BRE in any initiative that involves community participation. Chanda's claims are important in underlining the value accorded to the BRE by the community.

Farmers' associations also complain of exclusion from the decision-making process even on matters that affect them. Community engagement reports document that some communities in the plain shunned projects promoting pig rearing because the projects did not respond to local priorities, and people had legitimate concerns about pig's defecating in and contaminating water sources. This feeling of exclusion in decision-making was also expressed by one of the farmers' association representatives who attended the Stakeholder Consultation Workshop: "We are ignored," she said, "because they say we are uneducated villagers."

"While land-use methods such as agriculture have not changed greatly in nature over the long time that the area has been settled, they are intensifying due to population pressures. In addition, people living in the Barotse floodplain area have reported considerable declines in useful plants, fish, and wildlife since the 1960s."

Source: Turpie et al. (1999)

"Hunting and poaching have increased since control over hunting has passed from the Barotse Royal Establishment and its local representatives to central government after independence. The transfer of control and the tendency of central governments to grant hunting licenses and other resource use concessions to outsiders, including foreigners, has led to a lack of interest and involvement in conservation and resource management among local people. This negative change is despite a cultural heritage that placed great importance on sustainable resource use."

Source: Simwinji (1997)

Key points to be addressed

- *The BRE's weak capacity to manage rangelands leads to tension between livestock farmers and crop farmers. Some farmers give up on crop farming because of the fear of crop damage by livestock. Strengthening management of this common pool resource is a priority for improving local productivity.*
- *Veterinary services are particularly weak in responding to the priorities of poorer livestock holders, such as women raising chickens. Opportunities to improve service delivery require stronger involvement of farmer organizations and women's groups, and coordination with existing livestock development projects in the hub.*
- *Private sector interest in Western Province presents an opportunity for improving both cattle and poultry enterprises. Strengthening the downward accountability of government departments is key to ensuring that this investment delivers opportunities and benefits to poorer households.*

Issue 3. Sustainable management of fisheries

In this section, we present two initiatives illustrating divergent approaches to governance of fisheries and aquaculture. One example, from the upper Zambezi fishery, shows that traditional leadership is not a neutral role and can work against policy designs on devolution. The second example, from an integrated aquaculture project, shows a practical way of getting around this challenge.

The upper Zambezi fishery is under the dual authority of the Department of Fisheries (DOF) and the BRE. The DOF has its provincial office in Mongu, manned by a Provincial Fisheries Development Officer, who is supported by district fisheries officers at Kalabo, Lukulu, Mongu, Senanga, and Mwandu. Africa Parks, ZAWA, and the BRE have formed a partnership to rehabilitate and manage wildlife and fisheries in the Liuwa Plain National Park. Dutch donors are funding the partnership.

A unique feature of the Liuwa plain system is that unlike the rest of the Barotse floodplain system, it is located in a protected area as part of the Liuwa Plain National Park. However, about 20,000 people reside in the park and earn a livelihood from the Liuwa floodplain fisheries and other aquatic agricultural system activities under co-management arrangements with ZAWA and Africa Parks Zambia.

The DOF is responsible for issuing fishing licenses and carrying out research, and the BRE is responsible for stewardship of the ecosystem in general as a common property regime. *De facto*, however, it is predominantly a free-access system where migrant fishers get permission from local headmen and indunas to settle in seasonal camps, which are widely scattered along the banks of the Zambezi. In the Liuwa Park, the indunas receive a dividend from the Africa Parks Authorities as part of the benefit-sharing scheme. Group discussions revealed that community members feel that the indunas are not transparent in the manner in which they use the dividend. In the case of fishing licenses, the DOF typically issues these to outsiders, not locals, and the revenue generated from these licenses is usually not shared equally with traditional authorities. A related concern is that fish traders from outside the area appear to be taking a large part of the profit in the value chain, further limiting income for local fishers (see sidebar).

Each year from December to February, the DOF declares a closed season that outlaws fishing on inland water bodies. Even though this closure period is fixed, the DOF must consult the BRE before the ban commences. Closed seasons implemented without consulting the BRE lead to weak compliance. Communities fishing from the floodplain sometimes flout the fishing ban. Although there are regulations on net mesh size, prohibited mesh size nets are commonly used. In other years, the fishery is effectively open access, with users taking advantage of the impasse between the BRE and the DOF. In some years however, depending on the level of consultations, the BRE assists the DOF to enforce the closed season.

The African Wildlife Foundation (AWF) is promoting a different approach through its integrated fish-farming project in Mwandu, Western Province. Of relevance to this analysis is the institutional innovation the project introduced. In the Liuwa system, the Litunga and the indunas are the key players in decision-making and benefit appropriation. In the AWF's Nyambe community development project located in Mwandu, on the other hand, a trust makes the decisions. The trust comprises community members, extension workers, and the induna. The trust makes the

decisions not solely based on the induna's preferences. Although it is too early to assess the AWF initiative, the arrangement where a traditional leader shares power with his or her community and extension workers is an innovative way to address the parallel authority system. This example shows that the authority of the BRE can be negotiated positively with the aid of actors in brokering roles.

"Fishers sell to traders at very cheap prices, and it is these traders who gain the most. While this linkage assures the fishers of a ready market, it begs the question: How profitable is it to the producer? Could there be opportunities for fishers and the local people to maximize benefits from fish trading?"

Source: Adapted from the Barotse Hub Partner Analysis Report (2012)

Key points to be addressed

- *Fishing is critical to alleviate household food deficits, but income opportunities for local fishers are limited. Poor road networks, underdeveloped markets, and weak governance in the fish value chain benefit "middlemen" traders at the expense of fishing households.*
- *Addressing local livelihoods through fisheries and aquaculture requires a broader perspective on regional water management, as well as fish value chains reaching urban markets. The remote location of Barotse fisheries means central regulation has limited impact; involvement of the BRE and communities is key.*
- *Collaboration is critical between initiatives focused on livelihood improvement and those focused on wildlife conservation, including those supported by AWF, WWF, and Africa Parks. Innovations like those promoted by AWF, which update the relationship between the traditional authority and the community and service providers, merit close attention to harvest lessons.*

Synthesis and conclusion

We started this analysis by pointing out that gaps in policy frameworks and institutions can bias natural resource governance outcomes against marginal groups. We also highlighted the paradox of the Barotse floodplain being an ecosystem of high potential yet with widespread poverty. In this section, we now look at the major governance obstacles that contribute to this anomaly. We also point out governance opportunities that, if addressed, can lead to positive AAS program outcomes.

Enabling effective representation

Currently, agricultural research practice in Zambia is largely based on a pipeline approach that separates producers from consumers of knowledge. Recent reviews of international experience indicate that such approaches often fail to justify investments in research that prioritizes development outcomes (Hall et al., 2013; Mbabu and Hall, 2012). In order to respond to the livelihoods aspirations of the poor, the AAS program has to invest in efforts to reconfigure the relationships between researchers and farmers, consistent with the research-in-development paradigm (AAS, 2012a). While keeping this focus on local livelihoods, it is important to recognize that the Barotse floodplain is embedded within broader regional ecosystems and governance structures. Regional and national water and wetland management bodies, as well as catchment boards, are key governance actors. The AAS program needs to be linked to these bodies for compliance and coordination. Organizing effectively to pursue the hub development challenge requires processes that enable diverse stakeholders to build mutual understanding of the obstacles and opportunities in their governance context, to explore options for influencing change, and to take actions that help achieve collective priorities.

Navigating multiple authorities

As has been described, authority structures in the Barotse floodplain system include traditional as well as bureaucratic systems. The parallel institutions of the BRE and national and provincial government bodies will continue to be part of the governance system into the future. In some instances, these centers of authority are at cross purposes, and in other circumstances they collaborate. In theory, both traditional and bureaucratic systems acknowledge the legitimacy of the other, although there is variation in practice. There are opportunities for a working relationship that includes both sides. In order to succeed, the AAS program has to play a brokering role and build the capacity of local actors to mediate and improve inter-organizational relations over time.

Strengthening downward accountability

The Ministry of Agriculture and Livestock (MAL) and the NGOs coordinate improved farm productivity and diversification activities in the Barotse hub. Although NGOs follow independent programs, the MAL plays an advisory role. Furthermore, these actors meet in the PDCC. Government departments are accountable to their head offices and not to the provincial leadership. Budget planning is decentralized, but the final allocation is from central governments. This distribution of power suggests strong upward accountability and weak downward accountability. In practice, however, local politicians are key players in their capacity to influence public opinion and their access to higher offices, which allows them to control local officers' conduct by virtue of their ruling political party connections (Chileshe, n.d.).

In seeking to improve coordination among these various actors, the AAS program needs to concurrently help strengthen downward accountability, so that the actions of government agencies and NGOs alike respond more effectively to the needs and priorities of poor households and communities in the floodplain.

Conclusion

Governance arrangements have developed in the Barotse ecosystem over time. These arrangements are valuable for their linkages with the grassroots and national-level institutions. At the same time, for a program designed for social and ecological transformation, concomitant institutional change is necessary. The issues explored in this report demonstrate that much of the scope for transformation lies in shifts in the relationships among communities, traditional authorities, the state, and private sector actors. This transformation is critical to create the space for communities to give voice to their interests and see these reflected in new opportunities for livelihood improvement.



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Appendix 1: Summary of Key Issues, Constraints, and Opportunities From the Community Visioning Exercises

<i>Key issues identified</i>	<i>Score</i>	<i>Constraints (not ranked)</i>	<i>Opportunities (not ranked)</i>
<i>Improved farming practices and crop diversification</i>	10	<ol style="list-style-type: none"> Poor soil fertility Gap in knowledge of and adoption of new technologies and difficulty in accessing improved seeds (early maturity seeds) Low irrigation system adoption Inadequate extension services; underutilization of the floodplain land to increase production Governance: require improved support from government and better delivery of inputs 	<ol style="list-style-type: none"> BRE on community mobilization and policy formulation; village-level committees and existing community structures; people of influence (e.g., politicians, religious leaders, traditional leaders) for lobbying and advocacy Contact farmers/lead farmers/resource farmers for knowledge sharing through farmer field school concept, exchange visits, study circle concept Area farmers' associations → District Farmers' Association → Zambia National Farmers' Union, for advocacy, bargaining, and information DACO, for agricultural coordination and policy direction; camp extension officers; Camp Agricultural Committee Research institutions (e.g., ZARI, Conservation Farming Unit, GART) available in the area
<i>Livestock management and diversification (includes small livestock)</i>	6	<ol style="list-style-type: none"> Poor access to veterinary services and disease control; extension services' limited knowledge on improved animal husbandry (e.g., livestock rearing and disease management, feeding and housing) Non-availability and non-utilization of technology for improvement of local breeds Uncontrolled bushfires—depleting or destroying pasture fields and reducing feeds; limited grazing fields during the floods; lack of feed/pasture storage for use during flooding Poor market for the animals Cattle rearing seen as a “cultural value” as opposed to business 	<ol style="list-style-type: none"> BRE Contact farmers/lead farmers/resource farmers (e.g., farmer field schools); area farmers' associations → village-level committees and existing community structures; people of influence (e.g., politicians, religious leaders, traditional leaders) DACO (on crop livestock integration); Camp Extension Officers; Livestock Department (District Level) → livestock production & disease management technical support; District Marketing & Agribusiness Department under MACO Private sector organizations; e.g., Zambeef, livestock traders (agribusiness), financial institutions (loan providers) Research institutions (e.g., ZARI, Livestock Research Unit); other organizations working in the communities (opportunistic linkage)
<i>Sustainable management of fisheries</i>	5	<ol style="list-style-type: none"> BRE bylaws—ineffectiveness in implementation; illegal and unsuitable fishing nets Lack of protection of fish habitats (rivers, lagoons, and small streams) Limited community ownership and participation in the management of fish resources Fishing as “sole livelihood”—much pressure on the fish resource (natural) by the population (for income) 	<ol style="list-style-type: none"> BRE, including local indunas & village headmen Contact farmers/lead farmers/resource farmers (e.g., farmer field schools); fishers' associations; commodity groups (fish); village-level committees and existing community structures; people of influence (e.g., politicians, religious leaders, traditional leaders) Department of Fisheries; Camp Extension Officers; research institutions (e.g., Fisheries Research Unit); rural health clinics (on sensitization on appropriate use of nets) Conservation institutions such as Africa Parks and Zambezi Wetland Mgt.; other organizations working in the communities (opportunistic linkage) Sports fishing tourism operators (doing conservation)



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