

ANNEX 1. LAKEWIDE SUMMARY OF LTR 1997 SEC SURVEY FINDINGS

Table A1.1 Lakewide summary of LTR SEC Survey findings: local fishing villages.

↓ Survey Enumeration Items	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
1) Population and settlement				
Site populations range from few score inhabitants to over 1400. Male majority in adult population at most sites.	Considerable size range, from a low of around 40 inhabitants to a high of over 9,800. Gender structure of village adult populations indicates slight to marked majority of women at most Kigoma Region sites, whereas for Rukwa Region the situation seems more evenly balanced between sites with female majorities and those with male majorities.	Village sizes range from a few hundred to few thousand inhabitants, except for the largest site, Kasenga (in Sud-Kivu), with a reported population of some 6700. Adult population gender structure fairly evenly balanced, with slight to moderate majorities in favour of women in six out of the eight sample sites.	Estimated total populations for the five sites surveyed range from a low of several hundred inhabitants to scores of thousands. Gender composition of adult populations is skewed, with a moderate to marked majority of males.	
Increase in overall population reported over the past five years nearly all cases, mainly due natural growth.				Three sites report increase in overall population size compared with situation 5 years ago. Growth due primarily to 'influx of people displaced from other places.' Two sites with reported decrease in population size also attribute change to 'security problems.'
2) Access and transportation				
Road access to sample sites extremely limited. In few places where connections exist, road surface conditions are poor and overland passenger and market transport services non-existent. Access to outside markets is largely restricted to water transport.	Road access to sample sites practically nil. In few cases where connections do exist, conditions are poor and overland passenger and market transport services non-existent. Access to outside markets is largely restricted to water transport.	Most villages have overland access to major regional towns, and all but one are served by regular water transport connections.	All landing sites served with road access (main highway along the entire Burundian shoreline from the DRC border through Bujumbura and south to Nyanza Lac). No regular water transport because of ease of overland connections.	
3) Basic facilities inventory				
Scarcity of basic commercial, social, and fisheries technical facilities/services. Schools, medical facilities, retailing establishments, and fishing gear/ equipment supply/service agents relatively few and far between. Amenities including protected water supplies, electricity, telephone/radio call service, post offices, and banks lacking entirely. No Fisheries Department extension staff or any active local fisher committees/ organisations recorded at any of the sites.	There is a dearth of essential commercial, social, and fisheries technical facilities/ services in Rukwa Region. Kigoma Region sites are comparatively better served, but neither region is very well endowed with major amenities including protected water supplies, electricity, telephone/radio call service, post offices, and banks. Active local fisher committees are recorded for about a third of the Kigoma sites, but hardly show up at all in the Rukwa inventories.	Sud-Kivu sites fairly well served with basic retailing services, but not with fuel and gear/equipment supply/service agents. In Shaba, Athénée, close to regional centre of Kalemie, is catered for by numerous retail and service agents. Two other Shaba sites have very poor basic service inventories. For both provinces, primary schools at 6 of 8 sites, medical facilities at 3 sites, electricity telephone/radio call service, post offices, and banks lacking at all sites except for in Rumonge. All sites served by Fisheries Department extension staff but all committees recorded at Kadjaga/Gatumba, Karonda and Rumonge.	Relatively high level of infrastructural development in comparison to other sectors of the lake. Most villages monitored have basic medical facilities, primary and secondary schools, retailing establishments, and fishing gear/equipment supply/service agents. However, amenities including protected water supplies, electricity, telephone/radio call service, post offices, and banks lacking at all sites except for in Rumonge. All sites served by Fisheries Department extension staff. Local fisher committees recorded at Kadjaga/Gatumba, Karonda and Rumonge.	

Table A1.2 Lakewide summary of LTR SEC Survey findings: local fishers – background characteristics.

↓ Survey Enumeration Items

	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
1) Fisher sample composition	A slight majority (52%) of the Zambian fisher respondents are associated with traditional fishing units, which usually operate with planked canoes and have an average crew size of two. Artisanal units also depend primarily on planked canoe as main gear carriers, light boats, and auxiliary craft to assist in fishing operations. With an average of 11 individuals per unit, they are much larger than traditional fishing teams. Distinguished according to main gear ownership role, the Zambian fisher sample population of 195 comprises 19 owners of artisanal main gear, 74 artisanal crew members, 72 owners of traditional gear, and 30 traditional crew members. Based on the criterion of main gear ownership, the Tanzanian fisher sample population for Kigoma Region can be broken down into 45 artisanal owners, 175 artisanal crew, 55 traditional owners, and 30 traditional crew. For Rukwa, there are 34 owners and 97 crew representing the artisanal fishery, and 26 owners and 17 crew representing the traditional fishery.	A substantial majority of the 475 fisher respondents interviewed by the Tanzanian survey team in both regions (73% for Kigoma and 75% for Rukwa) are associated with artisanal gear kits. Fishing units of both the artisanal and traditional variety typically operate either with planked canoe or catamaran (doubled-up planked canoes) fishing boats. Dugout canoes are much less common. Minor numbers of additional ‘auxiliary’ craft (almost always planked canoes) are used to assist with fishing operations. Average artisanal unit size is 6 fishers within both regions. For traditional units, the average size is 2 for Kigoma Region and 3 for Rukwa.	Fisher sample composed of 99 individuals in total, of whom 78% represent artisanal units (32 artisanal owners and 45 crew), and 22% (80%) of whom are associated with artisanal gear kits (28 owners, 97 crew). There are 30 traditional fishers (combined owner- crew categories) represented in the sample. Artisanal units mostly work with catamaran fishing boats. Relatively few single planked canoes encountered amongst sample fishers. Average team size for artisanal units is 2 members, and for traditional units 2.	

Table A1.2 (Local fisher background characteristics -- Cont.)

Survey Enumeration Items	ZAMBIA			TANZANIA			DEM. REPUBLIC OF CONGO			BURUNDI		
2) <i>Gender, age, and formal education</i>	All respondents in the Zambian fisher sample are male. Owners in both the artisanal and traditional fisheries tend to be older (majority >30 years) than their respective crew counterparts (majority <30 years). In terms of formal education, most sample years). Except amongst traditional Rukwa respondents across all fisher categories do not hold a primary school certificate, although the incidence of possession is slightly higher amongst relatively younger crew population.			All respondents in the Tanzanian fisher sample are male. Owners in both the artisanal and traditional fisheries tend to be older (majority >30 years) than their respective crew counterparts (majority <30 years). Levels of formal education attainment are relatively high, with most fishers in all categories reporting possession of a primary school certificate. Rukwa traditional crew are equally divided between those who do and do not hold a primary certificate.			All DRC fisher sample respondents are male. Artisanal owners tend to be older (majority >30 years) than artisanal crew members (majority <30 years). Levels of formal education attainment are relatively high, with most fishers in all categories reporting possession of a primary school certificate.			All respondents in the Burundian fisher sample are male. Artisanal owners are relatively older (majority >30 years) than either their crew counterparts or those in the traditional fisheries category (at least half <30 years). A considerable majority of all sample fishers (≥60%) apparently do not hold a primary certificate.		
3) <i>Marital status and dependants</i>	Most respondents are married and report bearing responsibility for at least one dependant, with markedly higher rates on both of these social obligation measures being registered by owners.			Most fisher respondents in all categories across both regions are married and report bearing responsibility for at least one dependant. Owners register as being married and responsible for the support of dependants somewhat more frequently than crew.			Considerable higher rates both of marriage and responsibility for support of dependants amongst artisanal owners (100%) than those in other fisher categories (about 70% for artisanal crew and 60% for traditional fishers).					
4) <i>Place of birth and reasons for migration</i>	Fishers tend to originate from places other than their current landing site bases, except in the case of traditional owners. Wish 'to return to original family place' (place of parents' birth) most frequently given as reason for migration to present place of residence.			Except in the case of artisanal owners in Kigoma Region, most in the fisher sample claim their birthplace as somewhere other than their current landing site base. Most of those born elsewhere report they were motivated to settle in their present place of residence by a desire 'to return to original family place' (place of parents' birth).			Fishers tend to originate from their current landing site bases. Of those respondents born elsewhere, 'return to original family place' (place of parents' birth) is by far the most common reason cited for migration to sample landing sites.			Except for artisanal crew members, sample fishers for the most part report being born at or in the vicinity of their current places of residence. A wish 'to return to original family place' (place of parents' birth) is the most commonly cited reason for migration to site by those born elsewhere.		

Table A1.2 (Local fisher background characteristics -- Cont.)

Survey Enumeration Items		ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
5)	Fishing enterprise and income status	The vast majority of fisher respondents in both regions are involved with their fishing full-time (takes up most of their working time per month). A substantial majority of crew members (artisanal or traditional) have ten or less years of experience in fishing work, whereas a substantial majority of owners (artisanal or traditional) have more than ten years. Secondary employment is common across all categories of fishers, usually in the form of farming. Substantial majorities all types of fishers claim access to at least some land, though average parcel size is less than one hectare. Indicative information on estimated monthly incomes during 'good' and 'poor' fishing periods suggest a great disparity exists between artisanal owners and crew. Owners are relatively much better off (roughly 2/3 making more than US\$ 200 (equivalent) per month net, versus 2/3 crew making less during 'good' periods). Within the traditional fishery, situation almost reversed. Traditional crew seem to do somewhat less poorly than their owner counterparts (majority of owners with a 'good' monthly income of US\$ 50 net, versus majority of crew with amounts greater than this).	The vast majority of fisher respondents in both regions are involved with their fishing full-time (takes up most of their working time per month). Total years of involvement in fishing varies between the sub-groups. Whereas most crew members (artisanal or traditional) have ten or less years of experience in fishing work, most owners (artisanal or traditional), except in the case of traditional owners in Kigoma, have more than ten years. Secondary employment is common, typically in the form of subsistence or combined food crop-cash crop farming. Substantial majorities of fishers of all types claim access to at least some land. Average plot size is around one hectare in both regions. Indicative information on estimated monthly incomes suggest a great disparity exists between artisanal owners and crew during 'good' fishing periods in both regions. Roughly half of owners report earning more than US\$ 200 (equivalent) net per 'good' month, compared with 90% of crew making less than this amount. Owner-crew 'good' period disparities are not nearly so noticeable within the traditional fishery. During 'poor' periods, few sample fishers in any category seem to be making even modest amounts of money.	Almost all sample fishers report full-time involvement in fishing (activity that takes up most working time per month). Artisanal crew as a group have less of a work history in fishing (majority less than 10 years' experience) than do artisanal owners or traditional fishers. (Data on fishers' secondary employment, land ownership, and estimated income were not systematically collected during the DRC sector survey.) During 'good' months, the net income level of most artisanal fishers is reportedly higher (101-200 US\$ equivalent) than that of most traditional fishers (51-100 US\$ equivalent). During 'poor' fishing months, the artisanal-traditional differences are not so pronounced. Within the artisanal fishery itself, owner-crew disparities in estimated income levels are readily apparent for both 'good' and 'poor' earning periods.	At least 80% of respondents across all fisher categories claim full-time work in fishing (takes up most working time per month). Contrary to patterns found elsewhere on the lake, artisanal crew tend to have longer work histories in fishing (majority >10 years' experience) than artisanal owners (only half with >10 years' experience). Across the sample as a whole, secondary employment most often takes the form of farming, either on a 'subsistence' basis only (i.e. for family food production) or in combination with some cash cropping.

Table A1.3 Lakewide summary of LTR SEC Survey findings: local fish processors/traders -- background characteristics.

↓ Survey Enumeration Items

	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
1) Post-harvest sample composition	The Zambian post-harvest sample group is composed of 110 individuals who mostly engage in fish processing and trading together, as opposed to specialising in one or the other.	The Tanzanian post-harvest sample group is composed of 177 individuals -- 119 from Kigoma Region and 58 from Rukwa. Most members of the group engage in fish processing and trading together, as opposed to specialising in one or the other.	A total of 82 individuals constitute the DRC post-harvest sample group. Most respondents engage in a combination of fish processing and trading.	The Burundi post-harvest sample comprises 62 individuals, some 60% of whom are specialised in trading only. About 20% are engaged in processing only, and another 20% combine processing and trading in their enterprise.
2) Gender, age, and formal education	Post-harvest sample respondents are primarily female (78%). Male and female sub-group age structures are quite similar. About 40% of respondents are under 30 years, and about 80% under 40 years. Overall formal educational attainment is low, but post-harvest men tend to hold primary school certificates at a rate about double that of their women counterparts (42% vs. 20%).	Post-harvest sample respondents are primarily male (63%). Male and female sub-group age structures are quite similar. Kigoma Region (about half <30 years old). In Rukwa Region, women processors/traders are substantially younger than their male counterparts (72% <30 years versus 52% >30 years). Overall formal educational attainment is moderately high, though there are some gender-based differences. Whilst about 79% of Kigoma Region males have attained a primary school certificate, the corresponding figure for women is only about 46%. In Rukwa Region gender-based educational attainment differences are far less striking at the primary level.	The sample group is about 56% female and 44% male. Roughly 20% of respondents (female or male) are under 30 years old; about 60% are under 40 years. Marked gender-based differences are apparent in terms of formal education achievements. Whilst some 58% of males have attained a primary school certificate, the corresponding figure for women is only about 13%.	Post-harvest respondents are almost entirely male (87% versus 13% female). The age structure of both gender sub-groups shows that most respondents are over 30 years old. Only 21% of the total sample population reports possession of a primary school certificate (25% for women, 20% for men).
3) Marital status and dependants	Data on marital status and dependants confirm the post-harvest sample as a group of mature individuals with spouse and family obligations.	The Tanzanian post-harvest group primarily consists of individuals who are married and who bear responsibility for the support of at least one dependant. In Rukwa Region, however, only around half of women respondents are married compared to more than 80% of the men.	Around 90% of all respondents, male or female, report being married and bearing responsibility for support of at least one dependant.	Male post-harvest respondents tend by heavy margins to be married (87%) and responsible for the support of at least one dependant (94%). Women also are for the most part married (75%) and look after one or more dependants (86%).

Table A1.3 (Post-harvest group characteristics -- Cont.)

Survey Enumeration Items				
	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
4) <i>Place of birth and reasons for migration</i>	Processors/traders largely originate from places other than their current landing site bases. Most of those born elsewhere indicate a wish 'to return to their original family place' (place of parents' birth) as the motivation for their migration to their present place of residence.	Around 60% of sample processors/traders in both regions originate from places other than their current landing site bases. In Kigoma Region, most of those born elsewhere indicate a wish 'to return to their original family place' (place of parents' birth) as the motivation for their migration to their present place of residence. In Rukwa, a wish to engage in the fish business is the most frequently cited reason for migration.	Some 25% of the post-harvest group claim place of birth at or in the immediate vicinity of sample communities. Around 38% report their birthplace to be within a 50 km radius, and around 37% beyond a 50 km radius. Of those respondents born elsewhere, 'return to original family place' (place of parents' birth) is cited by almost two-thirds of female respondents as the reason for migration to sample landing sites; half of the male respondents migrated to their present place of residence in order 'to engage in the fish business.'	All female informants and a slight majority (52%) of male informants report being born at the sample site where they were interviewed. People born elsewhere most frequently cite the wish for 'better conditions' as the main reason for their migration to present place of residence. The second most frequent reason given is the wish 'to find opportunities in fishing or fish trading.'
5) <i>Fishing enterprise and income status</i>	All respondents claim to be involved in fish processing/trading on a 'full-time' basis (takes up most working time per month). Women slightly lead men in terms of years of work experience (about 30% with more than 10 years' experience vs. 25% for men). A large majority segment of the post-harvest sample group takes part in fishing in one way or another as secondary employment (equipment or gear owners, or some fishing unit interest that may not involve direct participation in fishing trips). Farming is reported as secondary employment to a limited extent, though most respondents claim ownership of at least some land.	All respondents claim to be involved in fish processing/trading on a 'full-time' basis. Men in both regions slightly lead women in terms of years of work experience. 'Full-time' fish processing or trading employment may also be supplemented by other forms of work, especially in farming. Like their fisher sample counterparts, respondents in the post-harvest group usually own at least some land.	A vast majority of the respondents claim to be involved in fish processing/trading on a 'full-time' basis. The proportion of women with ten or less years' experience is about 57%; the corresponding proportion for men is around 56%. (Data on post-harvest operators' secondary employment, land ownership, and estimated income were not systematically collected during the DRC sector survey.)	Over 90% of those interviewed claim 'full-time' involvement in fish processing/trading. Men tend to have more years of experience in post-harvest work (63% with over ten years' experience versus 50% for women). Some 45% of respondents report secondary employment in either subsistence or combined food crop-cash crop farming. Just under a third claim secondary employment in some aspect of fishing (either as direct participants or as gear/equipment owners). A fair-sized majority (>60%) of respondents of both genders report ownership of at least some land, no matter how small the parcel.

Table A1.3 (Post-harvest group characteristics -- Cont.)

↓ <i>Survey Enumeration Items</i>	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
	Estimated monthly incomes during 'good' and 'poor' work periods do not reveal any marked differences based on gender. Most post-harvest respondents estimate making US\$ 100 (equivalent) or less net during 'good' months, and US\$ 50 or less during 'poor' months.	Indicative information on estimated monthly incomes reveals that female post-harvest respondents generally earn less than their male counterparts during 'good' months. Most post-harvest respondents estimate making US\$ 100 (equivalent) or less net per month in the best periods, and US\$ 50 or less during the 'poor' periods.		Reported net monthly income levels for 'good' and 'poor' periods of work are relatively low. Respondents of both sexes mostly (>55%) earn the equivalent of US\$50 or less during 'good' periods. Three quarters of all respondents earn US\$ 20 or less during 'poor' periods.

Table A1.4 Lakewide summary of LTR SEC Survey findings: local fishers -- opinions/views on sector problems and prospects.

↓ Survey Enumeration Items

	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
1) Personal circumstances and preferences				
Most respondents across all fisher categories disposed to continue in present occupation, and for the most part at present base of operation.	Most respondents in all fisher categories indicate wish to continue with present line of work in present place of operation.	Almost all sample fishers claim a commitment to stay in fishing work, mostly at their present sites. However, just under half of artisanal crew indicate a desire to change their base of operations.	Most respondents disposed to continue in fishing. Artisanal crew are most affirmative of this commitment (92%), followed by traditional fishers (86%) and artisanal owners (82%). Burundian fishers also for most part affirm a preference for continuing to operate out of their present location.	
Commitment to fishing further reflected in preference patterns for use of a hypothetical one year's saved earnings. Stated use very strongly linked to fishing gear and equipment investments.	However, commitment to fishing is not especially reflected in patterns of stated preferences for use of a hypothetical one year's saved earnings amongst Kigoma sample fishers, who tend to put family welfare purposes before fishing gear and equipment investments. Rates at which Rukwa sample fishers express favour towards gear/equipment-related investments are stronger than for their Kigoma counterparts, but not emphatically so.	Future commitment to occupation is not strongly evident in patterns of use preferences for a hypothetical one year's worth of saved earnings. Family welfare, business, and farming investments take precedence over fishing gear/equipment themes in 'wish lists' mentioned by fishers.	Commitment to continued involvement in fishing is only weakly manifest according to the 'use of one year's savings measure.' Stated use preferences across all categories of fishers strongly linked to family welfare purposes (house improvements, children's education, etc.) and investments in a business or farming than to fishing-related items.	
2) State of resources and use rights				
Generally pessimistic appraisal of past and expected catch trends within the fisher sample population. Over-fishing by local and industrial fleets is the most frequent reason cited in support of these views.	A negative view of past catch trends prevails, though many respondents can not point to a specific factor to explain this perceived state of affairs. Others split between assigning the cause either to 'poor fishing methods,' 'over-fishing,' or 'environmental change.' In terms of expectations for the near future, respondents in both regions tend to be divided between believing that there will be a continued pattern of decline and not having any opinion on the matter.	More than 80% of sample respondents in all categories are of the view that catches have declined over the period since they first started to engage in fishing. DRC fishers as a group are not sure what the next five years will bring. Some believe catches will increase, some that catches will decrease or stay at the same level. Most choose not to venture any opinion at all.	In general, fishers surveyed in Burundi seem to fairly pessimistic in their assessments of recent catch trends. Decline is attributed either to overfishing, environmental change, or to civil unrest and security problems that cause beach closures and population displacements. There is no solid body of opinion about prospects for the immediate future. A considerable minority (40%) of artisanal owners and crew and traditional fishers say that catches are likely to increase. Others are divided between expecting decreases or plain uncertainty about what will happen.	

Table A1.4 (Fishers' views -- Cont.)

Survey Enumeration Items				
	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
2)	State of resources and use rights (Cont.) With regard to resource use rights, sample Zambian fishers tend to think that whereas everybody ought to be allowed to fish in waters outside of their own immediate administrative district, they should not be allowed to fish in waters outside of their own country.	On the issue of fisheries use rights, sample Tanzanian fishers as a group do not seem to be strongly in favour of limiting access to the lake's resources. They are quite positive about allowing 'everyone' to fish everywhere,' and about allowing 'everybody' to fish in waters outside of their own immediate administrative district.' Opinion in the sample population is more evenly divided on the question of allowing people to fish in waters outside of their own country.	Most DRC fishers do not subscribe to the view that 'everybody should be allowed to fish everywhere.' Traditional fishers by a considerable majority (>60%) disagree with the idea that people should be allowed to fish outside of their immediate administrative districts, and by an even stronger majority (almost 80%) disagree that people should be allowed to fish outside of their own country. Most artisanal owners (>60%) agree that people should be allowed to fish outside of their own districts, whereas artisanal crew are divided on the matter. Majorities in both artisanal categories disagree that people should be allowed to fish outside of their own countries.	Most artisanal fishers (>60% of owners, >55% of crew) respond positively to the proposition that 'everyone should be allowed to fish everywhere' on the lake. Opinion amongst traditionalists is divided. Large majorities of all fishers (>70%) agree that people should be allowed to fish outside of their immediate administrative districts, and even outside of their own countries.
3)	Possible regulations on access, gear, and methods Data on respondents' views vis-à-vis possible measures to regulate access to the fisheries or the use of certain fishing gear or methods show a remarkable degree of shared opinion within the sample population. Except for the question of possible closed seasons, on which opinion is divided, Zambian fishers interviewed seem strongly disposed to accept: a) some provision for closed fishing areas/reserves; b) some restriction of net mesh size generally and for specific types of nets including gillnets, beach seines, kapenta beach seines, lift nets, and chiromilla seines;	DRC fisher respondents are by considerable majority margins set against the imposition of any measures to: a) limit access by season; b) limit access through closed areas or reserves; c) restrict the number of operators allowed in the fishery; d) restrict mesh size generally or specifically for gillnets, beach seines, lift nets; or e) otherwise restrict or ban beach seining, lift netting, and 'active' gillnetting.	Burundian sample fishers as a group are quite decidedly against measures that would: a) limit access by season; b) limit access through closed areas or reserves; c) restrict the number of operators allowed in the fishery; d) prohibit the use of beach seines; e) ban or otherwise restrict the operations of lift nets; or f) prohibit 'active' gillnetting. Opinion is divided on the issue of general restriction of mesh sizes. Most artisanal fishers agree, whereas traditional fishers are evenly split in agreeing and disagreeing.	

Table A1.4 (Fishers' views -- Cont.)

↓ Survey Enumeration Items			
	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO
			BURUNDI
	c) some restriction on industrial fishing, beach seining, and lift netting; and d) an outright prohibition on 'active' gillnetting (beating or churning of water to scare fish into net).		Only on the question of industrial fishing is opinion somewhat divided. Artisanal owners are almost evenly split on whether industrial gear ought to be restricted or banned outright, whereas most artisanal crew and traditional fishers are against these propositions.
3)	Possible regulations on access, gear, and methods (Cont.) Zambian fishers interviewed are strongly disposed to reject attempts to impose: a) limitations on numbers of fishers allowed; and b) outright banning of industrial gear, beach seines, or lift nets.	At the same time, the principle that some kinds of restrictions should apply seems to be generally accepted. Sample fishers appear to be quite soundly in favour of restrictions on minimum mesh sizes for gillnets, beach seines, kapenta beach seines, and lift nets. Reaction to other possible measures is less uniform. Opinion is divided over the questions of establishing closed fishing areas/reserves, restricting the use of industrial gear or prohibiting it altogether, and banning of 'active' gillnetting (beating on water to scare fish into net).	There is general agreement on the suggestion to restrict industrial fishing operations, but no overall consensus on whether to ban such fishing altogether. Artisanal crew are in favour; artisanal owners are not. Traditional fishers are evenly divided on the issue. Opinion is also divided on whether or not restrictions ought to be placed on beach seining operations. A slight majority of artisanal owners are in favour of this move. Considerable majorities (>60%) of artisanal crew and traditional fishers are against it.
4)	Role of government and fisheries authorities Appears to be a strong measure of sentiment against the idea that fishing rules 'should only be decided by the Government.' Fishers substantially of the view that regulatory measures ought to be a matter of shared responsibility between officials and local user communities.	Fishers are mostly of the view that regulatory measures ought to be a matter of shared responsibility between officials and local user communities. As for possible fisheries enforcement mechanisms, there is strong consensus in favour of:	Burundi fishers firmly support (70% to over 90% majority range) the idea that 'fishing rules should only be decided by the Government,' on grounds that this is properly a responsibility for the state to assume.

Table A1.4 (Fishers' views -- Cont.)

Survey Enumeration Items				
ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI	
With regard to possible fisheries enforcement mechanisms, sample fishers show solidarity in advocating: a) more fisheries patrol boats; b) more fisheries scouts to help with enforcement; c) <u>no</u> direct police involvement in enforcement of fisheries regulations; d) punishment of fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and e) punishment of traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit).	more fisheries patrol boats; punishment of fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and a) increase the number of fisheries patrol boats and fisheries scouts; b) punish offending fishers (fines, gear confiscation, and/or withdrawal of fishing permit); and c) punish offending traders and consumers (fines, product confiscation, and/or withdrawal of trading permit). Group majority opinion less solid but still favourable towards 'more fishery scouts for enforcement.' Opinion is moderately to strongly in favour of the idea of 'more direct police involvement in fishery enforcement' amongst all Kigoma fisher sample respondents and amongst artisanal fisher respondents in Rukwa. Traditional Rukwa fishers are generally opposed to it.	Polling on possible fisheries enforcement mechanisms shows very solid support for actions to: a) increase the number of fisheries patrol boats and fisheries scouts; b) punish fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and c) punish traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit). Opinion is strongly against more direct police involvement in fisheries enforcement, however.	There is also firm support for fisheries enforcement mechanisms that would involve: a) increasing fisheries patrol boats and fisheries scouts; b) punishing fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and c) punishing traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit). Half of Burundi sample traditional fishers and slight to moderate majorities of artisanal fishers disagree with the idea of involving the police more directly in fisheries enforcement.	
5) Obstacles to occupational success Widely shared sense of frustration with gear availability problems (in terms of both quantity and quality) and with low catch and profit levels.	Much concern expressed over security situation on the lake. Also evident is a great deal of worry over gear problems (lack of availability or inadequate availability).	Lack of gear or its inadequate availability is far the most common obstacle to occupational success mentioned by sample fishers. Security problems (theft, harassment by military personnel, etc.) is the second most common obstacle mentioned.	Artisanal owners tend to view security problems (theft, harassment by military personnel, etc.) as the most serious obstacles to their occupational success. For artisanal crew and traditional fishers, lack of gear or inadequate availability in sufficient quantity or quality are most frequently cited as principal obstacles.	

Table A1.5 Lakewide summary of LTR SEC Survey findings: local fish processors/traders -- opinions/views on sector problems and prospects.

↓ Survey Enumeration Items			
	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO
1) Personal circumstances and preferences	BURUNDI		
	Post-harvest group respondents of both sexes are very strongly inclined to stay with their present line of work, though over a third of male respondents claim a preference for operating out of some other location than their current base. Some commitment to fishing-related work is further reflected in patterns of stated preferences for use of a hypothetical one year's saved earnings. Stated use of post-harvest informants are mention fish processing and trading investment themes. Male informants in Kigoma region appear to give family welfare purposes highest priority. Family welfare also figures prominently for both sexes in Rukwa.	Post-harvest group respondents of both sexes are very strongly inclined to stay with their present line of work, usually with a preference to continue operating out of their present location. Amongst male respondents, a strong commitment to fishing-related work is further reflected in stated use preferences for use of a hypothetical year's worth of savings. First order preference, the majority of respondents opt for investment either in fishing gear/equipment or in further processing/trading activity.	Over two thirds of the post-harvest group express a desire to continue with their present line of work. Respondents as a group also are strongly in favour of staying on in their present bases of operation. Stated preferences for use of a year's savings from work earnings reinforce the impression of commitment to fishing-related jobs. As a first order preference, the majority of respondents opt for investment either in fishing gear/equipment or in further processing/trading activity.

Table A1.5 (Post-harvest group views -- Cont.)

↓ Survey Enumeration Items	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
2) <i>State of resources and use rights</i>	Almost 96% of the post-harvest sample group are of the opinion that catches have declined from the time they first became involved in the fish business, and 80% do not see any change for the better coming within the next 5 years. Just as for the fisher sample, post-harvest group respondents tend to regard the sheer pressure of too much fishing as the primary factor that explains catch declines in the past, and that will continue to provoke declines in the future. With regard to resource use rights, Zambian fish processors/traders are as a group extremely opposed to the propositions that 'everybody ought to be allowed to fish in waters outside of their own country,' and 'everybody ought to be allowed to fish everywhere,' and 'everybody ought to be allowed to fish in waters outside of their own country.'	Almost 96% of the post-harvest sample group reportedly think that catches have declined from the time they first became involved in the fish business. The sheer pressure of too much fishing is taken as the primary factor explaining recent catch declines. Much more uncertainty exists in relation to what future trends will be, with many respondents venturing no opinion at all and the others split on whether catches will increase or decrease. With regard to use rights, Tanzanian fish processors/traders are as a group not much in favour of any restriction on user access to the lake's fishery resources. Majority opinion supports the propositions that 'everybody ought to be allowed to fish everywhere,' and 'everybody ought to be allowed to fish in waters outside of their own immediate waters outside of their own administrative district.' On the question of suggestions that 'everyone should be allowed to fish everywhere,' or that people should be allowed to fish outside their own country, or majority of Kigoma respondents are in favour and a small majority of Rukwa district respondents against.	Fish processors/traders surveyed in the DRC appear to be extremely negative in remarking on changes in the fishery over recent years. Nearly 90% believe that catches have declined from the time they first became involved in the fish business. Nobody thinks that catches have increased over this period. Respondents tend to adopt a fatalistic ('it's God will') explanation for past catch decline. In terms of trends anticipated over the coming five years, the substantial majority (78%) of respondents chooses not to venture any opinion. DRC respondents follow up on their negative evaluations of past trends with support for propositions to limit access to the lake's fish resources. Substantial proportions are against suggestions that 'everyone should be allowed to fish everywhere,' or that people should be allowed to fish outside their own country, or even outside their own administrative district.	Almost two thirds of DRC informants are of the view that catches have decreased over the time since they first started in the fish business. Overfishing and associated stock decline along with problems of civil unrest are the factors thought to underlie this trend. A much more optimistic appraisal prevails amongst women in terms of future trends, with some 88% reporting that they believe catches will increase over the next five years, principally owing to expected improvements in the security situation. Male respondents appear less certain in their outlook. A large minority (46%) believes catches will increase, but others either think that they will decrease or have no opinion on the matter. Considerable majorities (>70%) of Burundian processors/traders would limit access to the lake's fisheries resources, in that they oppose suggestions that 'everybody should be allowed to fish everywhere,' or that people should be allowed to fish outside of their immediate administrative districts, or their own country.
3) <i>Possible regulations on access, gear, and methods</i>	There is amongst sample post-harvest operators substantial sentiment in favour of those measures which would impose: a) closed fishing periods or seasons; b) general restrictions on minimum mesh sizes allowed in the fishery;	Opinion varies across both gender and regional lines on measures which would impose closed fishing periods or places and restrictions on beach seine or industrial fishing operations. Strong support is registered for general measures to restrict	Moderate to substantial majorities of both male and female respondents oppose those measures which would: a) limit access by season or area; b) restrict the number of fishers allowed to operate;	There is slight to moderate majority opinion in favour of propositions to limit mesh sizes generally (55%) and to impose some restrictions on industrial fishing operations (52%). A slight majority disapproves of the idea that industrial fishing ought to be

Table A1.5 (Post-harvest group views -- Cont.)

↓ Survey Enumeration Items				
	ZAMBIA	TANZANIA	DEM. REPUBLIC OF CONGO	BURUNDI
	c) at least some restriction on beach seine mesh sizes, operations; and d) at least some restriction on lift net operations.		c) prohibit or otherwise restrict beach seine net operations; or d) prohibit or otherwise restrict lift net operations.	banned, and considerable to substantial majorities disapprove of measures that would:
3) <i>Possible regulations on access, gear, and methods (Cont.)</i>	On other possible measures, opinion is divided as to whether it is worthwhile to establish closed fishing areas or reserves, and a moderate majority of processors/ traders oppose restrictions on the number of people allowed to fish. Most post-harvest respondents would support some form of restrictions on industrial fishing operations, but are opposed to an outright ban being placed on them. Opinion is heavily against any prohibition on beach seines or liftnets.			
	On the other hand, strong dissent is expressed over measures which would impose restrictions on lift net operations, or any outright ban on beach seining or lift netting. Moderate majorities of processors/ traders oppose restrictions on the number of people allowed to fish.	Respondent opinion is divided with regard to other possible measures. Women appear to be against general restrictions on minimum mesh sizes allowed in the fishery, and also against any prohibition on industrial fishing operations. Men seem to be in favour of such measures.	a) limit access by seasonal or area closures; b) restrict the number of fishers allowed to operate; c) ban or otherwise restrict beach seine net operations; or d) ban or otherwise restrict lift net operations.	
4) <i>Role of government and fisheries authorities</i>	Local processors/traders as a group appear to be firmly set against the idea that fishing rules 'should only be decided by the Government,' primarily because they see that fishing restrictions should be approached as a shared responsibility between officials and local community members, and also because they think that fishers are the ones with the best knowledge of local conditions. With regard to possible fisheries enforcement mechanisms, post-harvest operators follow their fisher counterparts in strongly advocating that: a) there should be more fisheries patrol boats; b) there should be more fisheries scouts to help with enforcement;			
	As for possible fisheries enforcement mechanisms, the post-harvest group generally follows the pattern of local sample fishers in advocating that: a) there should be more fisheries patrol boats; b) there should be more fisheries scouts to help with enforcement; c) police should be more directly involved in the enforcement of fisheries regulations;	There is moderate to very solid agreement with proposed enforcement mechanisms which would involve: a) increasing fisheries patrol boats; b) punishment of fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and c) punishment of traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit).	Opinion is moderately to very firmly behind suggested enforcement mechanisms that would involve: a) increasing fisheries patrol boats; b) increasing the number of fisheries scouts; c) a more direct police role in ensuring compliance and control; d) punishment of fishers who violate regulations (fines, gear confiscation,	Virtually all (94%) of Burundi post-harvest informants identify with the suggestion that 'fishing rules should only be decided by the Government,' giving as their principal reason the observation that this is properly a state responsibility.

Table A1.5 (Post-harvest group views -- Cont.)

↓ Survey Enumeration Items			
ZAMBIA		TANZANIA	DEM. REPUBLIC OF CONGO
c) police should <u>not</u> be more directly involved in the enforcement of fisheries regulations;	d) there should be punishment of fishers who violate regulations; and	there should be punishment of fishers who violate regulations (fines, gear confiscation, and/or withdrawal of fishing permit); and	BURUNDI and/or withdrawal of fishing permit); and
e) there should be punishment of traders and consumers who violate regulations.	e) there should be punishment of traders and consumers who violate regulations.	there should be punishment of traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit).	e) punishment of traders and consumers who violate regulations (fines, product confiscation, and/or withdrawal of trading permit).
		Female and male respondents views differ on the subjects of fisheries scouts and police control. Whereas male respondents agree with more fisheries scouts, a moderate majority of female respondent disagrees. The use of more police control is strongly advocated by female respondents and strongly opposed by male respondents.	
5) Obstacles to occupational success			
Responses to a query on most serious obstacles to occupational success indicate that problems associated with low catches and profit levels (e.g. 'poor supplies of fish,' 'high prices of fish,' 'low income,' 'overfishing,' and 'catching of juvenile fish') are dominant worries for women post-harvest respondents. 'Marketing problems,' including lack of transport and/or high transport costs, and poor storage and/or selling facilities as well as simple low demand for product, are the principal obstacle to most male respondents in Kigoma Region. For the Rukwa male post-harvest sample, problems revolving around the 'lack of security,' which may include theft, civil unrest, and harassment by police or military personnel, figure as the most common concern.		A tabulation of responses to the query on problems of 'low catches/profit' as the most serious obstacle they face in pursuing their occupations as processors/traders. They also point out 'security problems' (theft, civil unrest, and harassment by police or military personnel, etc.) and 'marketing problems' (lack of transport and/or high transport costs, and poor storage and/or selling facilities as well as simple low demand for product) as common sources of concern.	

ANNEX 2. REFERENCES CITED/CONSULTED

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