

Analytical Appendix 3
Typologies Report

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The symptoms and causes of the main types of non-violent tropical fisheries conflicts, their consequences and indicators

Type of conflict	Symptom	Cause	Consequence	Indicator
Ideological <i>See examples 1 and 2</i>	<ul style="list-style-type: none"> ● Conflicting objectives or perceptions of the state of the fishery or the goal of the fishery (producing fish, feeding people, providing employment, conserving resource). ● Opposing views held by variety of different stakeholder groups. ● Conflict is often esoteric and hard to define 	<ul style="list-style-type: none"> ● Cultural/historical traditions ● Multiple stakeholders on the resource ● Limited resources and a growing number of stakeholders 	<ul style="list-style-type: none"> ● Reduced climate for negotiation due to prejudice ● Potential threat (social and economic) to one group in society ● Potential for skewed development based on creed or race. 	<ul style="list-style-type: none"> ● Strongly held beliefs about why the fishery is failing – usually placing blame on another group ● Increased alienation of maligned group
Legal/ administrative <i>See example 3</i>	<ul style="list-style-type: none"> ● High incidence of illegal gear use ● complaints of inability to carry out legal activities safely ● Legal loopholes and mal-administration exacerbating a situation 	Weak institutional formation at state level brought on by political factions, lack of funding or lack of political will to address the issue	<ul style="list-style-type: none"> ● Over-fishing ● Corruption ● Reduced ability to earn a living safely 	<ul style="list-style-type: none"> ● Environmental degradation ● Arrest sheets (or lack of) or unwillingness of complainants to approach authorities to report problems.
Economic <i>See example 4</i>	<ul style="list-style-type: none"> ● Increased effort to overcome increasing input costs ● Increased conflicts over pricing structures/market mechanisms 	<ul style="list-style-type: none"> ● Inequality in distribution of wealth exacerbated by rising costs and declining health of economy. ● Often brought on by or exacerbated by legal and administrative issues (see previous box) ● Also shaped by political issues (see next box) 	<ul style="list-style-type: none"> ● Over-fishing ● Rising costs in market ● Declining living standards of those directly connected to the fishery 	<ul style="list-style-type: none"> ● Stock assessment statistics ● Economic statistics ● Household surveys and national census data.
Political <i>See example 5</i>	Fundamental disagreement with the way in which the system operates: allocation of resources, lack of control over future	<ul style="list-style-type: none"> ● High yet skewed political capital in ruling classes ● Weak democratic systems ● System based on clientalism and political patronage 	<ul style="list-style-type: none"> ● Rising rates of corruption ● intractable problems 	<ul style="list-style-type: none"> ● Reported incidents of bribes paid ● Absence of locally organised fishing unions or co-operatives.

Type of conflict	Symptom	Cause	Consequence	Indicator
Spatial <i>See example 6</i>	<ul style="list-style-type: none"> ● Accidental but physical damage to property ● Conflicts over gear clashes ● Rising numbers of fishermen, vessels or effort 	<ul style="list-style-type: none"> ● Sharp increase in number of fishermen without corresponding mechanisms to regulate effort ● reduced access to other fishing grounds causing a concentration of effort (see Legal and Administrative row above) 	<ul style="list-style-type: none"> ● Rising conflictual atmosphere ● reduced catch rates ● declining sustainable livelihoods 	<ul style="list-style-type: none"> ● Environmental degradation ● reduced catches ● Increasing poverty amongst fishermen
Financial/credit <i>See example 7</i>	<ul style="list-style-type: none"> ● Access to credit difficult ● Credit arrangements usurious ● Conflicting information from credit provider and fishermen regarding loan conditions (these needs particular attention if the credit providers are members of fishing families) 	<ul style="list-style-type: none"> ● worsening economic conditions ● lack of legislation to control credit agencies ● misconception by fishermen of the 'cost' of providing credit 	<ul style="list-style-type: none"> ● conflictual relations between fishermen and creditors ● increasing hardship for fishermen 	<ul style="list-style-type: none"> ● Increasing poverty amongst fishermen ● Increasing wealth amongst creditor groups
Distributional <i>See examples 5 and 6</i>	<ul style="list-style-type: none"> ● Access difficulties to traditional fishing grounds ● Inability to cover costs on quota assigned by government 	<ul style="list-style-type: none"> ● Change in government policy that failed to take note of all the consequences ● Historical/political precedence that dictates how resource allocation is assigned. 	<ul style="list-style-type: none"> ● Increased poverty in fishing communities ● Increased competition on grounds as fishermen concentrated into a smaller space. ● Increased conflictual relationship between fishermen and official bodies 	<ul style="list-style-type: none"> ● Environmental degradation ●
Environmental <i>See example 8</i>	<ul style="list-style-type: none"> ● Worsening environmental conditions beyond the control of the fishermen or their communities ● Worsening environmental conditions partially attributed to fishing activities 	<ul style="list-style-type: none"> ● Erosion ● Over-fishing ● change in sea temperature or other biological factor that affects fish stocks 	<ul style="list-style-type: none"> ● Environmental degradation ● Non-sustainable livelihoods ● Social and economic disruption 	<ul style="list-style-type: none"> ● Reduced catches ● Eroded coastlines ● Increasing pollution levels

In order to place the above typology into context, the following are examples of how each of the above mentioned types might play themselves out in fishing communities. Each example is the amalgamation of a number of issues and situations observed in a number of different places. No example relates to an actual situation and each should be read as 'hypothetical'.

Example 1: High numbers of new comers have entered the fishery as a response to economic difficulties – rising unemployment in their previous sector for example. The newcomers provide cheap labour to vessel owners who are finding it hard to find crew now that the new generation prefers not to fish. The families of the new comers provide labour to related industries in the fishery. A strong cultural identity with fishing results in the new comers being regarded as not legitimate fishermen and thus taking work from genuine fishermen. The newcomers are also blamed for reduced catches in the fishery, for driving down wages and for the rise in the catch of undersized fish. Calls are made by extremists to have them all removed from the fishery, but economic common sense dictates that the fishery would not survive without their labour and that the impact of mass unemployment in one sector of society is too high a price to pay for prejudice.

Example 2: In a small community that is heavily dependent upon a small number of resources, the room to manoeuvre between the different groups has reduced considerably in recent years as the population has risen and the demands made by each sector have become more vocal. There is a distinct divergence of opinions as to the purpose and the use of the natural resources: some believe the value of the resource is in its ability to provide a source of income and employment; others see their value in their preservation for future generations; others see the value of the resource in its role of feeding large sections of the population. Political will to intervene is limited by the personal views of the politicians, many of whom have invested heavily in one or more of the sectors in dispute.

Example 3: The failure of the Fisheries Department to adapt to a rapidly changing situation, coupled with a culture of bribery and corruption has led to wide-spread disregard for what few legal statutes exist to protect the fishery and the community that relies upon it. Rising reports of illegal gear use that are decimating the juvenile stock, protection rackets operating on Open Access fisheries and the involvement of police and fisheries officers in corrupt practices indicate that management of the fishery is failing. Catch rates are falling due to a rising number of illegal entrants to the fishery and the use of destructive (illegal) fishing methods, yet the fishermen feel powerless to act for fear that the Mafia-like organisation that is effective control of the fishery will punish them.

Example 4: Steady national economic decline has put increasing pressure of the fishery: the costs of inputs are rising fast, yet catch rates are not improving to compensate. The overall level of poverty in fishing communities is falling compared to other sectors. Access to traditional fishing grounds has been restricted due to government initiatives to extract resource rent from what was previously considered Open Access or Common Property fishing areas. As many poor fishermen are now concentrated in fewer and fewer fishing grounds so conflicts over gears and rights are

on the rise. The failure of the Fisheries Department to recognise a growing problem and adequately deal with it is leading to increased lawlessness in the fishery as the competition for resources climbs. Local initiatives to tackle the problems and attempt to resolve the conflicts are achieving a modicum of success, but the general feeling is that such efforts will soon not be able to cope with the rising number of conflicts and poverty.

Example 5: Historical precedence has dictated how fishing rights are allocated to the users: whilst the current situation very much favours the wealthier fishermen, the middle-men and the processors, the majority of fishermen are not happy with their inability to manage their own livelihoods and would like to see the situation change. Changing the status quo, however, relies upon influencing political leaders, most fishermen have no access to such people and the political leverage the fishermen are able to muster is not sufficient to broker any change. While the fishery operates moderately well, the fishermen are aware that things could be better and more fairly distributed by the government approving a number of small changes. Political will is minimal in this regard because the votes that count are held by those that wish to preserve the status quo.

Example 6: As fish catches have fallen, so the price of fish has risen, encouraging new entrants to the fishery. Restricted access to traditional fishing grounds and stock depletion in some areas has also contributed to the rise in the number of fishermen in a limited amount of space. As the concentration of fishermen and boats has risen, so too have the number of accidents at sea: most of them are accidental, but there is a fear that soon more deliberate acts of violence against fishermen will increase as competition increases for falling stocks. Attempts by the State to limit the number of fishermen on the grounds have always failed because the cost politically and socially was always too high. There are now calls to recognise that the situation is out of control and with no room left to expand, the fishery must contract.

Example 7: The main source of credit for the fishermen are the women in the community who do not fish but have traditionally bought and processed the catch. They often pre-finance fishing trips with money made from selling the value-added processed catch on the market. The women complain that the fishermen fail to understand the concept of risk in lending money and the costs involved in processing the catch and pre-financing trips. The women also complain that the men are notoriously bad at repaying loans and they often have to pursue them to other villages to recoup their money. The fishermen complain that the women abuse their position of power and charge extortionate rates for lending money and offer them prices that are far too low for their catch. The women see this process as competition – the very basis of a thriving market. The men see it as a conflict because they have little means of altering the situation.

Example 8: Development work at various points along the coastal line, carried out a number of years ago has exacerbated the natural effect of coastal erosion and the village faces the prospect of having to move again in a couple of years time. The village has already relocated once,

about 7 years ago. Although the disappearing coastline is now taken as a fact of life, the disruption caused by such upheaval is considerable. To make matters worse, a recent dip in sea temperatures has seen abundance and make-up of the pelagic stocks off the coast change: catches this year are noticeably smaller. There is much debate about whether these smaller catches are due to there being too many fishermen on the grounds, to the size of mesh being used or whether the reason is completely out of the control of the fishermen. An air of pessimism and gloom pervades the community and elders notice that tempers are beginning to flare more quickly as life appears to get harder.

A typology of conflicts, their roots and their resolution methods in Ghanaian coastal artisanal fisheries

Type	Apparent Root of the conflict	Reported Conflict	Management/resolution method
Spatial	Rising numbers of fishermen	Struggle over fish at sea Nets	Negotiation with relevant chief-fishermen
	Rising numbers of fishermen	Casting of nets over one another	ditto
	Competition for space	Landing problems	Political representation
Economic	Rising poverty or lowered sense of civic morality	Thefts from the beach	Negotiation with relevant chief-fishermen, police
	Devaluing currency	Rising cost of inputs	Political representation
	Increased competition for resources	Women fighting amongst themselves over fish buying	Negotiation with relevant chief-fishermen
Financial/Credit	Profit maximisation, rising cost of inputs, decreasing catch rates	Stealing from purse nets	Negotiation with relevant chief-fishermen
	Declining civil morality, rising cost of inputs	Abuse of credit facilities	Negotiation with relevant chief-fishermen/Fish Mammy/
	Profit maximisation, rising input costs, collection of loan monies	Pricing of fish	Political representation/fish mammals/Chief fisherman
Legal/administrative	Weak Enforcement System (of 30m law), rising competition for the resource	Trawlers coming in too close to the beach	Negotiation with relevant chief-fishermen/fisheries officers
	Poorly defined property rights Increased demand for land (by tourism and industry)	Land disputes	Political representation
	Weak enforcement (of 30m law)	Clashes with inshore vessels	Negotiation with relevant chief-fishermen/fisheries officers
	Poor gear demarcation (weak enforcement of law) Poor channel demarcation	Clashes with Merchant Vessels	Fisheries Officers
	Poor gear demarcation	Clashes with other gear	Negotiation with relevant chief-fishermen/fisheries officers
Environmental	Economic Development, natural process	Erosion	None

A typology of conflicts, their roots and their resolution methods in Bangladeshi floodplain fisheries

Type	Apparent root of Conflict	Reported Conflict	Management/resolution method
Legal/administrative	Lack of regulation	Illegal appropriation of OA resources by mastans	Police
	Weak enforcement mechanisms	Bribery of local fisheries officers and police	Police
	Miscreants/weak enforcement system	Operational difficulties in distant water bodies (dacoity, theft)	Police
	Increased use of illegal gear	Catching of undersized fish	Fisheries Officers
	Investment protection/lack of enforcement of law	(Wet season) Illegal restricted access to floodplain by landowners of flooded land	Fisheries Officers
	Weak enforcement system	Charged access to OA waters (by mastans)	Police
	Current system for distributing leaseholder rights	Reduced/terminated access to the lease-held water body	Fisheries Officers/ADC Land
Credit/financial	Inability to raise finance to acquire lease land-owners protecting investment (illegal or otherwise)	Reduced/terminated access to leased waterbodies (Wet season) Restricted access to floodplain around kuas (Dry season) No access to kuas	Fisheries Officers/ADC Land Fisheries Officers
	Increased effort in OA waters	Too many fishermen chasing declining fish stocks	None (political representation)
Economic	Increased effort in OA waters, lack of means of restricting fishery.	Rising numbers of neo-fishermen on grounds	
	Siltation of canals, FAP structures	Changes in flooding and drainage patterns affecting fishing	Sluice Gate Management Committee
	Profit maximisation by kua owners, declining fish stocks	De-watering practice	Fisheries Officers
Spatial	Increased competition for scarce resources, lack of enforcement	Use of illegal gear	Fisheries Officers
distributional	village territorial rights – enforced with no legal standing	Difficulties in fishing outside village vicinity	Fisheries Officers/Police
	Sluice gates and other flood control structures	Trade-off between needs of fishermen and farmers	Sluice Gate Management Committee
	Limited access to fish during the dry season, declining fish stocks	Poaching from kuas	Fisheries Officers/Police

A typology of conflicts, their roots and their resolution methods in the Turks and Caicos fishery

Type	Apparent root of conflict	Reported Conflict	Management/Resolution methods
Legal/administrative	Current 'loopholes' in the fisheries law	Non-belongers on TCI fishing grounds	Political representation
	Historical factors affecting data availability and custom	Size and distribution of the conch quota	Fisheries Advisory Committee, Political representation
	Loopholes in the fishing and tax laws	Presence of part-time fishermen in the fishery	Political representation
Political	Political need for votes	Presence of part-time fishermen in the fishery	Political representation
Ideological	Belonger cultural issues regarding work	Too many non-belongers on the fishing grounds	Political representation
	Difficult trade-offs in marine zone	Conflicting objectives of diverse marine users	Political representation (DECR for specific conflicts)
Economic	Paternalistic nature of fishermen/processors relationships	Distribution of conch quota	Fisheries Advisory Committee, Political representation
	Increased competition for scarce resources and Open Access nature of resource	Use of illegal fishing methods	DECR
Spatial	Poor mapping and local ignorance	Distribution and marking of national parks	DECR