Sustainable Fisheries Livelihoods Programme

LITERACY IN FISHING COMMUNITIES

by

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1. Introduction

In recent years there has been a shift in fisheries policy and research in developing countries, from a primary concern with fish stocks and the marine environment to include wider issues relating to poverty reduction and the livelihoods, wellbeing and capabilities of artisanal fishing communities (Neiland and Bene 2004). Influenced by multi-dimensional analysis of poverty and 'livelihoods approaches' (Ellis and Freeman 2005, Horemans 2004, Lewins 2004), this has included greater attention to the contribution of education and functional literacy in helping people to manage their assets and income. The perspective suggests important links between people's education and literacy, and their ability to engage in processes the co-management of fish stocks and other aquatic resources, and in processes of livelihoods diversification (Bene 2003, Horemans 2004).

There is a widely held view that low literacy rates, and widespread educational disadvantage in artisanal fishing communities are a barrier to many aspects of development, for example limiting the agency of women, people's ability to diversify, to improve their business activities, benefit from extension advice and so on. This paper examines such claims, exploring the empirical evidence that fishing communities have lower levels of literacy than other occupational groups, and the nature of any observed educational disadvantage. It then explores the types of literacy tradition within fishing communities, and suggests that these existing practices may provide a suitable foundation for social and economic development. The paper draws on experience of the Sustainable Fisheries Livelihoods Programme (SFLP) in West Africa, and from the wider research literature in sub-Saharan Africa and South Asia. These regions are hugely diverse, but also contain the majority of the worlds' non-literate people.

Can or should we generalise about education and literacy in fishing communities across diverse national and cultural contexts?

It should perhaps not be a surprise to find that fishing communities, like other rural populations have lower levels of literacy and educational attainment than their urban counterparts. This reflects a widespread pattern of rural disadvantage in education (Atchoarena and Gasperini 2003). The UNESCO Global Monitoring Report (GMR) on Education highlights the on-going significance of educational disadvantage and low levels of literacy in many developing countries: "*771 million people worldwide, a majority of whom are women, lack the basic literacy skills to engage fully in society*" (UNESCO 2005). Statistically speaking, areas with high concentrations of non-literate people are also home to many of the worlds' fisherfolk. In terms of literacy rates, countries in sub-Saharan Africa have significantly lower literacy rates than many of those of South Asia.

There are clearly some structural similarities between fishing communities that might increase educational disadvantage, for example in relation to migratory lifestyles, tendency to social marginalisation, the significance of child labour, and common activities of post-catch processing and marketing. This may be accentuated in nomadic communities whose culture and lifestyles require innovative forms of educational delivery (Fatunla 1996). Patterns of child labour for example, may contribute to erratic school attendance and low educational aspirations. Strong occupational pride and identity within fishing communities may also reduce school completion rates and limit educational aspirations related to occupational mobility

(Acheson 1981, McGoodwin 2001, Pollnac, Pomeroy and Harkes 2001). A strong gendered division of labour is also likely to impact on people's educational opportunities and achievement.

These portrayals tend to focus on the negative. They present a 'deficit model' focusing on what people apparently lack, rather than their strengths. It is important that we do not over-generalise or stereotype descriptions of illiteracy and educational disadvantage and that we recognise the diversity of literacy traditions and educational experience.

Another perspective is possible if we accentuate the positive, for example by recognising that many fishing communities are economically and culturally vibrant, and have the resources and aspirations that would support literacy traditions and educational aspirations. Despite popular portrayals of illiteracy, there seems to be considerable evidence that some fishing communities support well established literacy traditions, and that they value their children's education (see below).

In some cases this reflects regional variation in educational access and quality. In South Indian states such as Kerala for example, despite their relative educational disadvantage, fishing communities have reasonable rates of literacy (see below). As we shall see, there is also evidence that some fishing communities have higher literacy rates than their agricultural neighbours. There is also evidence of variation of education and literacy rates within fishing communities.

Doronila's (1996) ethnographic study from the Philippines provides an example of such diversity. Her study of marginal fishing communities highlights marked differences between the communities related to cultural and religious factors, as well as their access to state resources and development opportunities. While the sea nomads (Boheh Umos) were largely illiterate with a strong oral tradition, other Muslim and Christian fishing / farming communities had well developed literacy traditions. Within the literate communities there were also marked differences in the uses of literacy, and different written languages and scripts (Arabic, Roman and Philippine), not all of which were recognised by the educational establishment (ibid., 80-82, 133). In contrast to the situation in many rural contexts (particularly in sub-Saharan Africa), where the literacy environment is reported to sustain few literacy practices, fishing communities often appear to have established literacy traditions, and have an awareness of the potential uses of literacy in their daily lives.

2. The literacy and education status of fishing communities

Informal and anecdotal evidence of people working with fishing communities suggests that they are prone to low levels of literacy and schooling. It has been suggested that a '*vicious cycle of illiteracy'* exists in fishing communities, which is both the result and cause of continued poverty. Recent case studies undertaken by SFLP in Niger, STP, Gambia and Burkina Faso suggest the existence of just such a vicious circle and that widespread poverty (including for some of the fisherfolk) coupled with the relatively attractive economy related to fisheries, with its daily income - which for some groups involved in the sector is substantial - leads to less interest in literacy and for education among the young, which in turn contributes to high illiteracy within the fishing community (Holvoet, Baldez, Laouali and Sannou, 2006).

This cyclical model has strong resonance with what Bene (2003) describes as an old paradigm in the fishing literature which can be summed up as "*they are fishermen because they are poor*", and "*they are poor because they are fishermen*" (Bene 2003: 957). As Bene suggests, such a perspective has a circular logic that leads to fisheries being considered a synonymous with poverty (ibid.).

Although many people view literacy 'rates' as a convenient proxy for education, this paper does not make such an assumption, and views educational access as a different phenomena than that of literacy. One reason to make such a distinction is because of informal (non-schooled) literacy learning within fishing communities. Maddox (2001) for example, described Bangladeshi fishermen who regularly use literacy, but who do not think of themselves as 'literate' since the category is associated with formal schooling. At the same time, people may have attended school but may not actually attain the status of literate, or the ability to use their literacy skills (i.e. they remain 'functionally illiterate'). Research with fishing communities in sub-Saharan Africa highlights the inability of people who have actually attended school to use literacy for functional purposes (Okech and Zaaly'embikke 2004, SFLP Gambia 2005).

Surveys of literacy 'rates' are notoriously prone to measurement error due to conceptual difficulties in defining literacy and non-literacy, and because of factors that lead to either over-reporting or under-reporting. Literacy rates have been criticised for being unduly individualistic, thereby ignoring the significance of literacy sharing within the household and community (Basu and Foster1998, Basu, Foster and Subramanian 2000).

Literacy rates may be under-reported, as people in fishing communities may want to keep their uses of literacy secret either because of their religious nature, or because they relate to aspects of fishing that give them a competitive edge with other fishermen (Maddox 2005). This emphasis on secrecy is highlighted in the anthropological literature (Acheson 1981, McGoodwin 2001).

Statistical research requires discrete categories (of literacy and illiteracy) while in practice people's functional literacy is context and practice dependent, and so people may be functionally literate in some tasks (such as writing their name) but functionally illiterate in terms of more complex tasks (such as reading information on the regulation and management of fishing). In many contexts there are multiple languages and literacies and this raises significant questions about which ones are being recognised and assessed.

There is also a tendency for discussions of literacy 'rates' to be framed in negative terms and thereby perpetuating the discourse on 'low' literacy rates in fishing

communities. Data on literacy rates should therefore be read critically, noting the particular research methods and tools employed, and how characteristic they are of literacy rates in the wider social context. These factors need to be considered before one is able to assess how typical or a-typical fishing communities are in comparison with other occupational groups.

This paper reviews the research literature that discusses literacy in South Asian fishing communities, and the material that relates to fishing communities in sub-Saharan Africa in order to sketch out the social uses of literacy and the nature of literacy traditions within fishing communities.

2.1. Literacy in fishing communities of South Asia

In the South Asian context, despite regular commentaries about the high levels of illiteracy within fishing communities, the situation appears to vary considerably between areas, and at times fishing communities appear to have higher literacy levels than neighbouring occupational groups.

There has been a reasonable amount of interest on literacy and education within fishing communities in South Asia. The Bengal region the Bay of Bengal Project and other fisheries development activities have highlighted the literacy status of fishing communities (Bay of Bengal Programme 1982, 1986). Much of the research data on literacy forms part of larger research projects. As such, it normally does not involve an in-depth analysis or much methodological sophistication, only commenting on literacy rates in passing. Other research (e.g. Tietze, Gronewold and Marcoux 2000) take a more in-depth approach, and highlights literacy rates as one of a list of key demographic features and enable some comparative analysis.

One of the most rigorous studies of literacy in fishing communities in South Asia is presented by George and Domi (2002). Their paper is part of a broader study of educational disadvantage (George 1998) and discusses 'Residual Illiteracy' in Poovar Village in Thiruvanathapuram district of Kerala. The broader context of the study is Kerala, where rates of literacy are higher than in many other States of India. This can be attributed to multiple factors including cultural and educational traditions, economic policy and widespread access to schooling. Their in-depth statistical survey of the fishing village used census methods to assess literacy rates of fisherfolk and other occupational groups. They found that literacy rates among the population over seven years of age were 78%, with women's literacy rates (79.6%) being higher than those of men (76.6%). They found that within working adults around two thirds of people were literate, and within the fisherfolk, 53.22% of fishermen were literate, and 43.84% of fish-vending women (ibid., p25-28).

George and Domi argue that the literacy rates within fishing communities are low compared with other occupational groups. They cite statistics from Kurien (1995) that indicate that within Kerala in 1981, the literacy rates of fish workers was lower than all working adults as a group (George and Domi 2002:15). They suggest that low rates of literacy are the result of multiple factors (such as community values, economic vulnerability, migration, and male and female child labour in fishing related activities and domestic responsibilities) (ibid. p28). However, they argue that the primary cause of educational disadvantage is the result of marginalisation: '*the fisherfolk community has remained at the margins of society, geographically, economically, socio-culturally, and politically*' (George and Domi p7, citing Kurien and Achari 1998).

While this model of social marginalisation and educational disadvantage suggests commonality with the situation of other fishing communities, the broader literature on literacy and education suggests that other rural groups (such as agricultural

labourers, nomadic groups and ethnic minorities) experience similar types of educational disadvantage. In a Ministry of Education study commissioned for the Education for All Report 2000 in Sri Lanka, data is cited on the literacy rates of men and women in 'disadvantaged groups'. The rates for people in fishing communities (76% male literacy, 66% female literacy) were considerably higher than those of other working groups from urban and rural 'working class' groups (Ministry of Education Sri Lanka 1999: 9). This finding is also supported by National Sample Survey Organisation (NSSO) data in India (55th round), that indicates that literacy of fishermen (male literacy age 7+) is considerably higher than that of agricultural labourers. The figures for fishermen being 65.79% compared with 51.15% for agricultural labourers.[1]

While fishing communities appear to suffer from educational disadvantage associated with lifestyle and social marginalisation, this does not appear to necessarily indicate low levels of literacy. Bhaumik, Kathiha, Mandloi, Paria and Ojha (2002), for example, in their study of fisheries of the Barnoo Reservoir in Madhya Pradesh found that the fishing communities studied had literacy rates of over 60% even though many belonged to 'backward classes' (ibid). In a survey of 200 women employed in freshwater farming in Southwest Bangladesh Ahmed (2005) found that their literacy rate was 30%. While Ahmed notes that this is below the 'national average' for women's literacy (39%), the figure is about average for rural Bangladesh (CAMPE 2003). Roy and Dorairaj (1998) describe socio-economic survey data of fishing communities in the Andaman Islands. They found that many of the fishing communities were migrants from India. Their literacy rates varied hugely in the communities in from 19.85 – 66.07% with a marked distinction between South Andaman and Middle Andaman (ibid.).

These findings show that while literacy rates of fishing communities are often low, one cannot assume that low rates of literacy are necessarily the result of particular characteristics of fishing cultures and livelihoods. It also suggests that analysis should be grounded in local contexts rather than assuming similarities between the literacy rates of fishing communities in diverse socio-economic contexts. The distinction between agricultural and fishing livelihoods is also somewhat arbitrary in many contexts where people are active in agriculture and fisheries related livelihoods. As such, these figures and the distinction between modes of livelihood should be treated with some care. When assessing the literacy rates and educational status of fishing communities it is necessary to locate the analysis within the area and conditions being researched, rather than making comparisons with national level data that often masks strong patterns of rural-urban inequality.

2.2. Literacy in fishing communities in Sub-Saharan Africa

There are few specialised studies of literacy and educational attainment in the fishing communities of sub-Saharan Africa. The studies that have taken place support the broader pattern of educational disadvantage in many rural contexts. One of the classic papers in that regard is Fatunla's study '*Socio-economic issues in the education of children of migrant fishermen in Nigeria*' (1996). The paper describes a series of factors that contribute to educational disadvantage within Nigerian coastal fisheries. Fatunla notes that despite the fact that the fishing sector contributes significantly to the Nigerian economy, and high cash incomes for fishermen, fishing communities face distinct forms of educational disadvantage. Fatunla draws on research data and comparative research within Nigeria to argue that educational

[1] My thanks to Amaresh Dubey and Veronica Pala for making this Survey data available to me.

disadvantage is the result of multiple factors. The endogamous factors relate to the dynamics and patterns of fishing livelihoods, with seasonal migration, and children's labour in fishing and post-catch processing reducing the educational aspirations of children and parents. Coupled with this, Fatunla argues that educational provision is of poor quality, and unresponsive to the culture and livelihoods of fishing communities. Teachers are reluctant to be posted to those areas, and educational buildings and resources are of poor quality:

> '*Many children dropped out of school when they saw greater benefits in fishing than listening to a jack of all trades teacher who could not even inspire the pupils. The fishermen parents feel that education is too rigidly programmed abut express willingness to allow their children to go to school if the school programme makes room for children to assist in the fishing*' (Fatunla p51).

Fatunla's study highlights some significant features of educational disadvantage, with poor quality, and unresponsive educational provision combining with factors that draw children away from schools to fisheries related work. Similar conclusions were mentioned in the literacy study reports conducted by SFLP in Gambia, Sao Tome & Principe, Niger and Burkina Faso (Holvoet et al, 2006)

Fatunla's strong criticism of the educational provision in fishing communities and the conclusions of the SFLP studies have strong parallels with the broader literature on educational access and quality, and more specifically, the literature on education of migrant populations (Dyer 2001, Saviero 2001). What is interesting about the Fatunla study, however, is the investment that parents are making to support the education of their children. The study also contains an apparent paradox - despite the description of user fees and opportunity costs, and the low quality of education, the level of school enrolment and attendance is surprisingly high, with 77% of primary school age children actually attending school (Fatunla, 1996, p46). Even with the low quality of education and unresponsive educational system, many parents are prepared and able to financially support the education of their children: '*..parents and guardians bear virtually the whole burden of education – paying tuition fees, buying expensive books, and paying all sorts of levies for chairs, PTA examinations, and even registers, chalk and other teaching materials'* (ibid., p46-47).

This supports Futanla's view (and that of other research cited in this paper), that while fishing communities often face severe educational disadvantage, and disruptions from schooling, they nevertheless recognise the value in education and learning. This is supported by recent research by Tooley (2005) in Nigeria, who argues that fishing communities are often prepared to invest financially in private education for their children where public education is of low quality or is unresponsive to their needs.[2]

While there are likely to be differing patterns of educational disadvantage between fishing communities in diverse settings, there are also marked differences in educational access and literacy across diverse cultural and economic contexts (Acheson 1981, McGoodwin 2001). Such differences need to be considered in planning policy responses. Tietze, Groenwald and Macoux (2000), for example found that in their study of demographic change in coastal fishing communities that the literacy rates of fisherfolk in Senegal and Tanzania were higher than those of nearby farming communities. Their study contrasts with other studies of coastal and in-land fishing communities in sub-Saharan Africa where low rates of literacy and

[2] Tooley (personal correspondence, says that fishing communities in his Nigerian study were investing considerably in private schooling because of the failure of the state sector to provide them with satisfactory education).

acute educational disadvantage are reported. Okech and Zaaly'embikke (2004), in their study of functional literacy in Lake Victoria Island sub-counties of Mukono District in Uganda reported a high level of illiteracy in the islands, but also inadequate educational provision (ibid. pvii). They noted that while some 80% of their sample group had attended school, there was a high level of motivation within the community for further functional literacy learning. Motivation for learning in their study included '*management of business records', 'job opportunities', and ability to keep private records ('keeping secrets')* (ibid p46). This suggests that functional literacy provision, tailored to complex literacy activities may be more useful and relevant than 'basic literacy' instruction. A study by BIDA (2004) in fishing communities of Kalanga district also supports this view. The study found that while 85% of people in the district are able to read and write, many are functionally illiterate (ibid. p31), and unable to manage necessary literacy tasks.

The BIDA study has many parallels with Fatunla's Nigerian study. In the context of relatively high cash incomes, many children from fishing communities were not able to access primary education. They identified a range of factors creating such disadvantage, including non-availability of schools, orphanhood resulting from HIV/AIDS and difficult socio-economic circumstances produced by fishing related migration of men and boys (ibid. p31). They also highlight the difficulty faced by fishing communities in managing school governing bodies and accessing educational resources:

> '*given the low education levels of councillors and local leaders, implementation of government policies has not taken root… school governing bodies and committees are too weak.. hence cannot mobilize the community neither can they monitor resource utilization, which paves way for resource misuse and abuse'* (ibid. p32).

A similar case is presented by a MGLSD-ICEIDA (2002) functional literacy needs assessment of a fishing community in Kalangala, Uganda. The study notes that while the official literacy rate is high (85%), and fishing provides sufficient food and cash incomes, the community still faces many social problems, including domestic violence, HIV infection and poor sanitation (ibid. vi). Despite the high literacy 'rates', many people expressed the desire to improve their literacy skills in the context of business and agricultural activities; '*There was an overwhelming desire by those who can read and write to have an opportunity to improve upon their reading, writing and numeracy'* (ibid. pvii).

Research commissioned by the Sustainable Fisheries Livelihoods Programme (SLFP) in Tanji, Gambia presents a similar picture, highlighting the scope and relevance of functional literacy in fishing communities. The study of Tanji fishing community notes that 60% of the population have had some form of education, yet most cannot use literacy in a functional sense (ibid. p5). The study suggests some possible reasons for this lack of functional literacy. It suggests that while there are many necessary uses of literacy (for example in the activities of the credit union, and interactions with Department of Fisheries), these texts are often in languages different to those of educational instruction. The paper goes on to argue that while many community members lack free time for literacy learning, many are motivated, and their expressed needs related to applied tasks related to financial management, such as those involved in credit union activities (e.g. membership application, loan application and withdrawal forms). Many respondents in their interviews (73%) said that they did not understand the credit union documents which were normally written in English; '*Even though there have been literacy interventions, it has done little to help us as we cannot use the skills to gain employment or even undertake simple transactions in the credit union as all the records are kept in a different language*' (English). (Interview Respondent, ibid. p17). Despite these criticisms of their literacy

programme, many of the respondents viewed literacy as an 'effective tool to reduce poverty' (ibid. p19). The study cited biographical data from interviews that supports this view:

> *'I am 41 years old. I have never attended school. Later in life I attended an adult literacy class where I learned to read and calculate. This experience benefited me and my family as I am involved in cultivating vegetables (gardening) and selling in Serrekunda (16 kilometres from Banjul) market. In time I started selling fish as well. Since I was married at an early age (at 16), I had to support my husband. All of these experiences (of adult literacy and other training) had helped me to provide for my family, educate my children and build a house. I would say that this is largely due to the programmes of adult literacy I participated in'* (interview transcript, ibid. p19).

The study noted variation in literacy skills and use within the fishing community, and a strong gender bias, with men, particularly those involved in the 'more demanding and better paid' activities having higher levels of literacy and more control of resources (ibid. p15). The Tanji research is supported by wider studies conducted by SFLP partners in Niger, Guinea, Sao Tome and Principe and Burkina Faso which highlight the difficulties faced by fishing communities in effectively accessing education, despite a motivation to do so, and a widespread recognition in the potential of education and learning to impact positively on their lives.

2.3 Literacy, education and capability deprivation

Artisanal fishing communities in developing countries experience many of the same forms of educational disadvantage than other occupational groups. These tend to include low levels of educational enrolment and attendance, poor quality teaching and learning, and marked gender inequality in terms of enrolment and outcomes. As the paper highlights though, it also seems likely that fishing livelihoods, strong occupational identities, and incentives to remain in fishing in some areas, may impact negatively on school attendance and completion. Education providers therefore need to consider the impact of occupational pressures and incentives, and their relevance to fishing communities, rather than assuming that people necessarily view education as an access route to other livelihoods (Pollnac, Pomeroy, and Harkes 2001).

As the research literature indicates, educational disadvantage is likely to impact negatively on people's capabilities, impacting negatively on their ability to access resources and information, manage and conserve marine resources , diversify livelihoods, respond to the risks of HIV/AIDS and other health hazards, and to improve the wellbeing, life chances and autonomy of girls and women. The impacts of improved educational access and outcomes impact on a range of assets and activities. These characteristics were highlighted in the International Extension College project on 'Women in the Fishing Industry' around Lake Victoria in Kenya (Binns 2005).

The gender inequalities present in many fishing communities have deservedly received some attention in the literature on literacy. Within many fishing communities there is a strong gendered division of labour, and imbalance of power, with most resources and decision making power in the hands of men. This gender inequality is reflected in, and result from high levels of women's illiteracy in many communities. Binns (2005) discusses women's literacy in the Lake Victoria area of Kenya:

> '*Women and men within the fishing communities suffer similar disadvantages in relation to their geographical location and their livelihoods. As fish traders, women have the further burden of preparing, transporting and selling their product to an external market, as well as being the main carer within the family. Not only are women disadvantaged by living in an isolated community which is dependent on the fishing industry, but they face the additional disadvantage of being female in a male-dominated industry and culture'* (ibid. p127).

Binns adds that as a result of gender inequalities, the women in the fishing community are particularly vulnerable:

> '*Without capital, the women are unable to buy fish, and often trade on credit, making them vulnerable to fishermen's sexual demands. As a consequence, HIV is increasingly prevalent within these fishing communities*' (ibid. p127).

The Women in the Fishing Industry project uses a range of methods (radio, supported learning) and includes content on health, literacy and business skills. These are linked to access to resources (such as credit facilities). Binns argues that the project has identified strong synergies between literacy learning and use, and the livelihoods of the women. The content not only identifies functional uses of literacy, but also enables the women to collectively examine social issues such as sanitation and anti-social behaviour. The literacy programme also encourages women to write their own stories (often with the help of scribes) which are used to support the literacy programme and develop the literacy environment. Their approach is designed to be responsive to local needs and aspirations rather than being top-down and standardised.

It appears then, that despite widespread educational disadvantage, literacy traditions may be endemic to many fishing communities and targeted interventions to improve adult and youth literacy are beginning to recognise and build on these traditions. The reported high levels of motivation for literacy learning in some fishing communities do not necessarily reflect low levels of literacy. They may indicate people's awareness about the uses of literacy, and the higher demands of functional literacy associated with activities such as participation in credit unions and community management of fishing resources. If we focus on capabilities, our attention is directed to the ways people *use literacy* rather than their literacy status per-se. Wider ethnographic studies show that effective engagement with literacy tasks such as these, impact significantly on people's wider capabilities, their agency, ability to access and manage resources and other entitlements and to reduce vulnerability (Sen 1999, 2003). The next section of the paper looks at the uses of literacy within fishing communities, and highlights some implications for educational initiatives.

3. The uses of literacy in fishing communities

The current literature on literacy in development highlights people's social (and functional) uses of literacy across a range of development sectors and activities (DFID 2002). The literature emphasises connections between literacy learning activities, their application and relevance in real-life social contexts (ibid., Street 2001, Oxenham et al., 2002). Definitions of 'functional literacy' therefore emphasise the forms of literacy and numeracy that people require in their everyday life (Verhoeven 1994). This implies flexibility of how one defines literacy adapted to local contexts.

This emphasis on the social uses of literacy has been integrated into livelihoods discourse in writings on 'literacy and livelihoods' (DFID 2002, Maddox 2005). The approach emphasises people's uses of literacy and numeracy in livelihoods related activities, and highlights 'communication interfaces', as people engage with the literacy texts and practices of government institutions and development agencies (Chitrakar, Maddox and Shrestha 2002). As the Community Literacy Project in Nepal highlighted, these interfaces may involve the use of complex texts, which often use languages that people are unfamiliar, and legalistic language, particularly in activities of common property management (ibid.).

The emphasis on 'literacies' highlights radically different uses of literacy, and draws our attention to literacy uses in different languages and scripts. An issue that has particular importance in multilingual contexts is where people may be literate in one language - often the language of instruction - but not in another - often the language of power (Okech and Zaaly'embikke 2004, BIDA 2004). The emphasis on social practice also draws our attention to the combined use of literacy and numeracy activities, rather than viewing them as separate educational topics (Maddox 2001, Tunwebadze 2004).

This focus on the social uses of literacy can effectively be applied to fishing contexts. By identifying people's uses of literacy, and their aspirations for its use, literacy programmes are able to make literacy interventions more relevant to communities, and increase their impact and utility. While there is a great deal of diversity in literacy practices across social contexts, the ethnographic literature suggests the existence of some patterns of literacy and numeracy use in fishing communities.

Verrips' paper on 'Ghanaian Canoe Designs' (2005), provides insights into the literacy environment of fishing communities. His paper focuses on the markings and writing on Ghanaian canoes and notes complex adornment that includes a range of iconography, pictograms, designs and written texts. The written texts include a wide range of names, sayings and proverbs, from those of religious and moral content, commercial associations, names of places and countries, to those indicating sexual prowess and fertility;

> '*The texts are messages and statements, though sometimes cryptic ones, which are used to characterize and distinguish, to tease and challenge, to criticise and joke, to invoke and ward off. Together with the other decorations they turn the canoe – this crucial means of production on which the lives of the fishermen and their families depend – into a 'speaking' object, an entity with a 'voice', a 'messenger', or a vehicle of meaning with a particular identity'* (Verrips 2005:59).

The canoe designs not only highlight a lively literacy environment but also indicate an inter-textual link to broader practices of literacy within the communities (for example that of religious literacy). They indicate the commercial lives of fishermen,

and the role of the decorations in the cultural and religious lives of the fishermen. Barton (1994) employs an ecological metaphor in describing 'the literate environment', and the role of literacy events and practices in everyday life. This metaphor may be useful here. The ethnographic literature highlights the existence of multiple texts and 'literacies' within particular social contexts (Collins and Blot 2003). Within the fishing literature there are frequent references to 'literacies'. Most of these refer to literacy in a metaphorical sense, for example in terms of *ecological literacy, environmental literacy, ocean literacy, graphic literacy, legal literacy, marine literacy and sonar literacy*. Drouin (2001) describes 'sonar literacy' as the ability to interpret the images generating by fish-finding equipment, noting that '*you have to be able to read the screen*' (ibid., p41).

The screens that Drouin describes not only involve complex graphics, but also conventional literacy and numeracy. This highlights the uses of ICT in fishing, which these days includes digital literacies - mobile phone technology and texting between boat and shore, for personal communication, and information of market prices, catches and weather forecasts. Similarly complex and contemporary uses of literacy and numeracy are used in navigation, fisheries protection, and the legal and official correspondence of fisheries protection, while market activities may require management of tax and regulation, international written communication and contracts. As the research literature cited above indicates, these activities can be seen as 'functional literacy and numeracy' in the context of fishing communities, and are likely to be more relevant to fishing communities than those of basic literacy primers. There may, of course be other literacy activities, not directly related to fishing that people view as important in their community (for example related to health, livelihoods diversification, legal literacy, or personal communication).

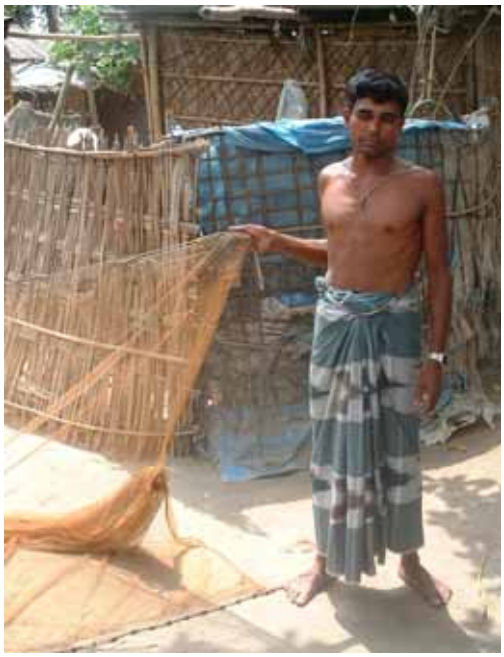
There are also more in-depth studies of literacy and numeracy in fishing communities. Doronila's (1996) ethnographic study of marginal Philippine communities (mentioned above) provides detailed examples of literacy and numeracy practices within fishing communities, and describes the relevance of such practices to livelihoods. For example uses in managing credit, and market related activities, and the role of literacy in religious activity. As her book clearly highlights, the complex patterns and traditions of literacy use in the fishing communities are shaped by local cultures, religion and history. Literacy is not a single thing, but a diverse set of social practices. Nevertheless, as Doronila notes, the economic uses of literacy and numeracy are pervasive: '*In the market, aside from oral computations using "adding on" method (reported in all sites), recording of debts and credits or making lists seems to be part of literate practice in commercial activities'* (Doronila 1996:119).

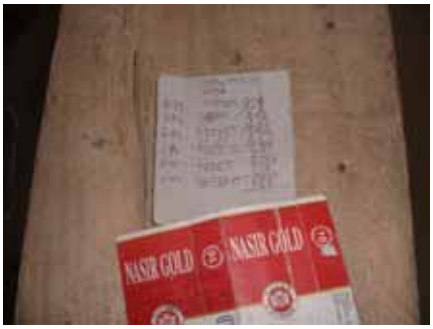
Maddox's (2001) ethnographic paper on literacy and market activities in rural Bangladesh also notes the prevalence of literacy uses in fishing related activities. The paper notes that even the uneducated and poorest fishermen tend to use literacy to note down sales of fish and credit arrangements; *'..literacy use is not homogeneous among the fish sellers. It depends on their educational background, and their position within the market… Some keep notes, make calculations and keep records on small scraps of paper that are hidden in their top pockets. Other people use literacy in a more obvious way using large, well ordered ledger books. What is relatively rare in the bazaar and in other types of rural economic activity however is the non-use of literacy*' (Maddox 2002:148).

Photograph 1: Market traders in n/w Bangladesh keeping written records.

Photograph by Bryan Maddox

More recently research (unpublished) conducted by the author in another fishing community in Bangladesh further supports this view. The fishermen interviewed described how they valued literacy and numeracy in the management of market-related fishing activities. While they reported that women's literacy in the community was almost non-existent, male literacy was on the increase. They reported keeping informal, written records on the back of cigarette packets and the coaching in literacy by people who had attended school (see photos below). Although many of the community had never attended school, they had learned informally or from younger, schooled children.





Photographs 2 & 3. A non-schooled Bangladeshi fisherman, and his informal written records (above). Photographs by Bryan Maddox

The fishermen said that before the use of literacy in the community, they had used notches on bamboo sticks and knotted string to keep financial records. The uses of literacy described here, and in my earlier research (Maddox 2001) are similar to those described in the Philippine case (above), and relate not only to the immediate market activities of fishermen, but of the wider cultural and religious practices of the

communities. Where literacy practices are required, informal scribes or 'literacy mediators' are involved.

Photograph 4: Literacy mediation in fishing activities, N/W Bangladesh.

Photograph by Bryan Maddox

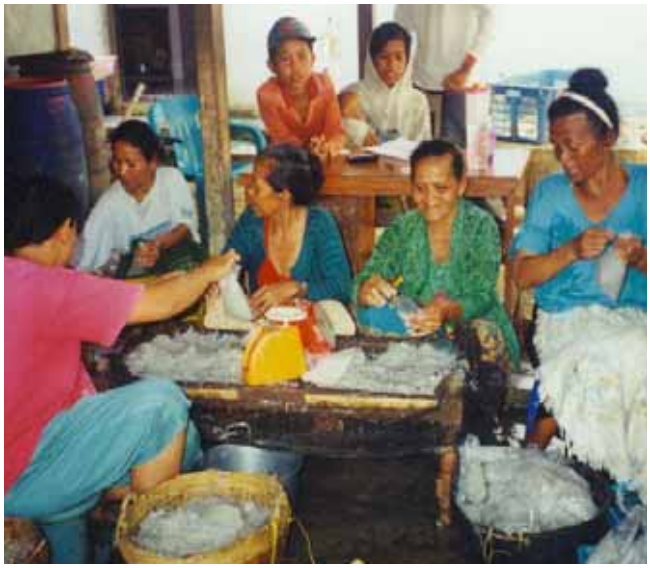
In communities where there is a low level of literacy, youth and children may be involved as scribes in fishing related literacy and numeracy practices. This highlights the importance of literacy practices in the communities, but also raises some questions about the impact of such activities on children's schooling. It may be possible to build on these activities and develop the literacy and numeracy training of children and youth through informal and non-formal education. The Community Literacy Project in Nepal for example built on existing practices by training women and girls as scribes and in legal literacy.

Photograph 5. Fish market trading. The school age child acts as the scribe, keeping written records.

Photograph by Bryan Maddox

Similar practices of literacy mediation (scribing) have been observed in other countries, suggesting that literacy is an integral activity in many market related fishing activities. The photograph below (photograph 6) shows women on the Java Sea coast, Indonesia, packaging anchovy larvae for export to Singapore. The

transactions are being recorded in a notebook by a girl child who is also looking after a baby.



Photograph 6. Women on the Java Sea coast, Indonesia, packaging anchovy larvae for export to Singapore. The fish are sent in weighed packages, packed in ice, and represent a high-value product, exemplifying how fishing villages are connected to global markets. The transactions are being recorded in a notebook by a girl child who is also looking after a baby. Photograph by Eddie Allison.

4. Conclusions and recommendations

It appears that there is considerable diversity in the literacy status of fishing communities and that illiteracy is not necessarily an occupational hazard of fishing livelihoods. Many fishing communities support rich literacy environments, and the uses of literacy are integral to their livelihoods. The existing literacy practices and skills of some fishing communities provide a solid foundation on which other livelihoods activities can be built. The emphasis for adult literacy programmes should be on linking literacy and numeracy learning with people's aspirations and real-life contexts for literacy and numeracy use. Even in contexts where there are low levels of literacy it appears that there may be significant motivation for learning, and scope for application that would support people's livelihoods.

Within fishing communities, despite regional differences, there tend to be distinct patterns of literacy and numeracy use, and some of those relate forms of literacy associated with new information technologies and processes of fisheries co-management as well as more conventional activities associated with business activities. These literacy uses imply approaches to literacy instruction that are tailored to such activities, rather than in the standardised format of many conventional literacy programmes. This requires literacy programme managers to adopt participatory processes of needs assessment, and to be extremely flexible and responsive to people's collective and individual expressed needs (DFID 2001). This may require collective literacy and numeracy learning, in-situ coaching and support, to encourage direct application of new knowledge and skills.

Fisheries departments can assist this process by supporting strategic partnerships and financing literacy programmes and non-formal educational interventions in the fisheries sector. Fisheries support agencies can also support the literate environment, and improve people's access to written information by adapting it to the needs of different linguistic groups, and by presenting documents in simplified forms that are accessible to semi-literate populations. This requires recognition of diversity of language and script. That is of particular importance in sub-Saharan Africa which contains massive linguistic diversity.

As we have seen, there are also patterns of disadvantage in education for fishing communities. This implies educational responses that accommodate and respond to the expressed needs and aspirations of fisherfolk. Educational responses should also be informed by the wider education literature on educational access and quality (for example issues of community involvement, gender issues, opportunity costs and user fees). Fishing communities themselves are unlikely to respond positively to schooling policies that do not accommodate their patterns of work and migration. There are strong parallels here with the educational literature on education with nomadic communities where responsive and non-antagonistic approaches by the state are required. In education too there is some reason to focus on strengths, as fishing communities may have clear aspirations for their own education, and the education of their children.

5. References

Ahmed, N 2005. The role of women in freshwater prawn farming in southwest Bangladesh. *Fish Farmer*. (Vol. 28., No. 2): 14-16.

Acheson, J 1981. Anthropology of Fishing. *Annual Review of Anthropology* (10):275-316.

Barton, D 1994. *Literacy: An introduction to the ecology of written language*. Oxford, Blackwell.

Barton, D., Hamilton, M and Ivanic, R (eds) 2000. *Situated Literacies: Reading and Writing in Context.* London, Routledge.

Bay of Bengal Programme 1986. *Towards Shared Learning: An approach to non-formal adult education for marine fisherfolk of Tamil Nadu, India*. Sweden, Swedish International Development Authority and Food and Agriculture Organisation.

Bay of Bengal Programme 1982. *Coastal Village Development in Four Fishing Communites of Adirampattinam, Tamil Nadu, India.* Sweden, Swedish International Development Authority and Food and Agriculture Organisation.

Basu, K and Foster, J 1998. On Measuring Literacy. *Economic Journal*, (108): 1733-1749.

Basu, K., Foster, J., & Subramanian, S. 2000. Isolated and proximate illiteracy and why these concepts matter in measuring literacy and designing education programmes. *Economic and Political Weekly*. January 8[†] (35 (1&2): 35-39.

Bene, C. 2003. When fishery rhymes with poverty: A first step beyond the old paradigm on poverty in small-scale fisheries. *World Development*. (Vol. 31 No. 6): 949-975.

BIDA 2004 *Literacy and Fishing Communities*. Kalanga District Government, Micheal Kamya and Sebunya Kawooya (eds). ICEIDA/Action Aid. (Papers presented at the Symposium to mark the International Literacy Day September 2004)

Binns, F 2005. *Approaches to the Challenges of Literacy and Livelihoods in Africa*. Commonwealth of Learning Conference Report, Vancouver.

Bhaumik, U., Kathiha, UP., Mandloi, A.K., Paria, T., & Ojha P 2002. Impact of culture-based fisheries: A case study of Barnoo Reservoir in Madha Pradesh. *Applied Fisheries and Aquaculture* (Vol. 2, No. 2): 29-32.

Boubakary BARRY 2006. *Étude d'impact de l'alphabétisation sur les ménages les groupements professionnels et sur la gestion participative des ressources halieutiques*. (available at http://www.sflp.org/fr/007/archiv/006/Rapport_Impact_Alpha_BF.doc)

Chitrakar, R., Maddox, B., & Shrestha, B. 2002. Literacy for Livelihoods. *Community Literacies (7/July)*. Newsletter of the Nepal Community Literacy Project.

Collins, J and Blot, R 2003. *Literacy and Literacies: Texts, Power and Identity*. Cambridge,UK, Cambridge University Press.

DFID 2002. *Improving Livelihoods for the Poor: The role of literacy*. Background Briefing Paper.

Doronila, M 1996. *Landscapes of Literacy: An Ethnographic Study of Functional Literacy in Marginal Philippine Communities*. Hamburg and London, UK, UNESCO, and Luzac International.

Drouin, M 2001. Sonar Literacy. *Pacific Fishing*: pp 41-44.

Dyer, C 2001. Nomads and Education for All: Education for development or domestication?. *Comparative Education* (Vol 37/2, Aug): 315 -327.

Education Watch 2003. *Literacy in Bangladesh: Need for a New Vision*. Dhaka, Campaign for Popular Education.

Ellis, F. & Freeman, H 2005. *Rural Livelihoods and Poverty Reduction Policies.* London, Routledge.

Fatunla, G 1996. Socio-Economic Issues in the Education of Children of Migrant Fishermen in Nigeria. *Journal of Sustainable Agriculture* (Vol. 9/1): 31- 55.

FAO 2005. Impact of HIV/AIDS on Fishing Communities: Policies to Support Livelihoods, Rural Development and Public Health. *New Directions in Fisheries Policy Brief*. Rome. FAO.

GCE 2004. *Learning to survive: How education for all would save millions of young people from HIV/AIDS.* Global Campaign for Education.

George, M.K. 1998. *An Enquiry into the extent and causative factors of educational backwardness among the marine fish workers of Kerala*. Pune, India, Indian Institute of Education Centre for Educational Studies. (PhD Thesis)

George, M.K. & Domi, J. 2002. Residual Illiteracy in a Coastal Village: Poovar Village of Thiruvanthapuram. *Discussion Paper* (45). Thiruvanuthapuram, India, Centre for Development Studies.

Groenwold, G 2000. Sociodemographic characteristics and change in coastal fishing communities. *Fisheries Technical Paper (403).Demographic change in coastal fishing communities and its implications for the coastal environment*. Tietze, U., Groenwold, G., and Marcoux, A. (eds). Rome, FAO.

Horemans, B 2004. The work of the Sustainable Fisheries Livelihoods Programme (SFLP) in West Africa. *Poverty and Small-scale Fisheries in West Africa.* Neiland, A., and Bene, C. (eds.). Dordrecht, Netherlands, Boston, USA, London. FAO & Kluwer Academic Publishers.

Kamya, M. & Kawooya, S. (eds) 2004. Papers presented at the Symposium to mark the International Literacy Day September 2004 ICEIDA/Action Aid, 2004. Kalanga District Government.

Krishnakumar, A 2005. *Tsunami Exposes Chennai Fisherfolk's Poor Social Conditions*. PRB On-Line. 19/7/2005.

Luke, A. 1996. Genres of Power? Literacy education and the production of capital. *Literacy in Society*. R. Hasan, & G.Williams (eds.). Edinburgh, UK, Longman.

Maddox, B. 2007. What can ethnographic approaches tell us about the consequences of literacy? *Comparative Education* (Vol. 43/7): 253-272.

Maddox, B 2005. Assessing the impact of women's literacies in Bangladesh: an ethnographic inquiry. *International Journal of Educational Development* (25): 123–132

Maddox, B 2001. Literacy and the market: the economic uses of literacy among the peasantry in north-west Bangladesh. *Literacy and Development: Ethnographic Perspectives*. Street, B (ed). London, Routledge.

McGoodwin, J. 2001. Understanding the Cultures of Fishing Communities: A key to fisheries management and food security. *FAO Fisheries Technical Paper* (401). Rome. FAO.

Ministry of Education, Sri Lanka. 1999. *Education For All: The Year 2000 Assessment. Country Report by Sri Lanka*. Available on the UNESCO Asia-Pacific Data Base.

MGLSD-ICEIDA 2002. *Needs Assessment Survey for Functional Adult Literacy in Kalangala Uganda.*

Neiland, A., and Bene, C. (eds.) 2004. *Poverty and Small-scale Fisheries in West Africa.* Dordrecht / Boston / London. FAO & Kluwer Academic Publishers.

Okech, A and Zaaly'Embikke 2004. *Report of Needs Assessment Survey for Functional Literacy in the Island Sub-Counties of Mukono District, Uganda*. Icelandic Development Agency and Mukono District Local Government.

Oxenham, J et al. 2002. Skills and Literacy Training doe Better Livelihoods: A Review of Approaches and Experiences. *Human Development* (209).

Pollnac, R., Pomroy, R., & Harkes, I. 2001. Fishery Policy and Job Satisfaction in Three Southeast Asian Fisheries. *Ocean and Costal Management* (44): 1-544.

Prinsloo, M & Brieir, M (eds) *The Social Uses of Literacy*. Amsterdam and Cape Town, John Benjamins.

Roy, SD., & Dorairaj, K 1998. Socio-economic aspects of fishermen of Andaman with respect to sustainable development. *Island Ecosystem and Sustainable Development*: 147-156.

Saldanha, D 1999. Residual Illiteracy and Human Development. *Economic and Political Weekly*.

Saviero, K 2001. Education Provision to nomadic pastoralists: A literature Review, *IDS working paper* (126). Brighton, UK.

Sen, A 1999. *Development as Freedom*. Oxford, UK, Oxford University Press.

Sen, A 2003. Reflections on Literacy. *Literacy as Freedom.* Robinson, C (ed), Paris, UNESCO.

Street, B (ed) 2001. *Literacy and Development: Ethnographic Perspectives*. London. Routledge.

Tooley, J 2005. *Is private education good for the poor? Why the poor prefer private schooling in India, Nigeria and Kenya*. E.G. West Centre for Market Solutions in Education.

Tunwebadze, S.K 2004. *Approaches to Adult Literacy and the Role in Community Empowerment*. Papers presented at the Symposium to mark the International Literacy Day. Micheal Kamya and Sebunya Kawooya (eds). ICEIDA/Action Aid, 2004. Kalanga District Government.

UNESCO 2005 – forthcoming. *Global Monitoring Report on Education (Special focus on literacy).*

Verhoeven, L (ed) 1994. *Functional Literacy: Theoretical Issues and Educational Implications*. Amsterdam, Benjamins.

Verrips, J 2002. Ghanaian Canoe Decorations. *Maritime Anthropological Studies* (Vol. 1/2): 43-66.

This paper was commissioned by SFLP as one of the inputs into the formulation of programme activities and policy briefings on a series of issues linking fisheries governance with wider social and economic development concerns. The purpose of these reviews was to complement SFLP field experience with review of relevant global literature and to draw on experiences from other projects and programmes around the world.