

Working Paper 2

July 2001

Workshop proceedings

East Kolkata Wetlands and Livelihoods

Wednesday 11th April 2001

**West Bengal Pollution Control Board Training Room
Salt Lake City
Kolkata**

¹Bunting, S.W., ²Kundu, N., ³Punch, S. and ¹Little, D.C. East Kolkata wetlands and livelihoods: workshop proceedings. Stirling, UK: Institute of Aquaculture [Working Paper]

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DFID Natural Resources Systems Programme

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Forward

This stakeholder workshop was envisaged as a first step to engaging in a participatory planning process for the project. Key objectives were to elicit the constraints and benefits associated with peri-urban production systems in east Kolkata, reach consensus amongst participants on selecting poor groups for further study and identify the range of stakeholders associated with the system. The secondary objective of the workshop was to inform a wide range of stakeholder groups as to the nature of the project and to assess the most appropriate means to disseminate project outputs.

Outcomes of activities undertaken in the workshop represent an important source of knowledge to guide future project activities. Participants identified ten groups of the poor that depend on the east Kolkata peri-urban interface, and ranking the relative poverty of the groups identified offered greater depth to the analysis and will permit the project to focus on the more vulnerable groups such as fishermen's wives and landless labourers. The stakeholder assessment not only suggested that some important actors were not represented at the workshop but also suggested the need for the project to try and engage with a much broader range of groups; this knowledge will be used to conduct a more informed institutional assessment. For those participants that were present the role-playing exercise provided an opportunity to consider, the sometimes opposing motivations that govern the actions of different stakeholder groups. The invitation to participants to identify which approaches to the dissemination of project findings would be most appropriate highlighted a range of media types that require further consideration. This will be an important aspect of future work if knowledge generated by the project is to be exploited successfully by key actors and senior stakeholders in formulating peri-urban natural resource management strategies that benefit the poor.

Finally, the organisers would like to thank the Pollution Control Board, Department of Environment, Government of West Bengal for hosting the workshop and to thank all the participants for their time and contributions, without which the depth and quality of knowledge generated would have been greatly reduced.

Welcome and introduction

The workshop was formally opened and participants welcomed by Dr. Bndyapaadhaya, Director, Institute of Wetland Management and Ecological Design. The nature and objectives of NRSP project R7872 were then summarised for participants and the proposed schedule and objectives for the workshop described. Following these formal proceedings registration forms completed by the participants on arrival were redistributed and the recipients asked to introduce the person on their form to the workshop. Following these courteous introductions, which maintained a good rhythm to the proceedings and helped break the ice, the participants were invited to begin the first workshop activity.

1. Your personal view of the Kolkata wetlands

During this preliminary orientation activity, participants were given an outline map showing the main roads, railways, rivers, canals and administrative boundaries in the peri-urban area to the east of Kolkata (Figure 1.1). Participants were asked to mark on the map key features that would help define their individual perception of the current situation, namely their main place of work, key problem areas, areas with potential and any other key features requiring consideration.

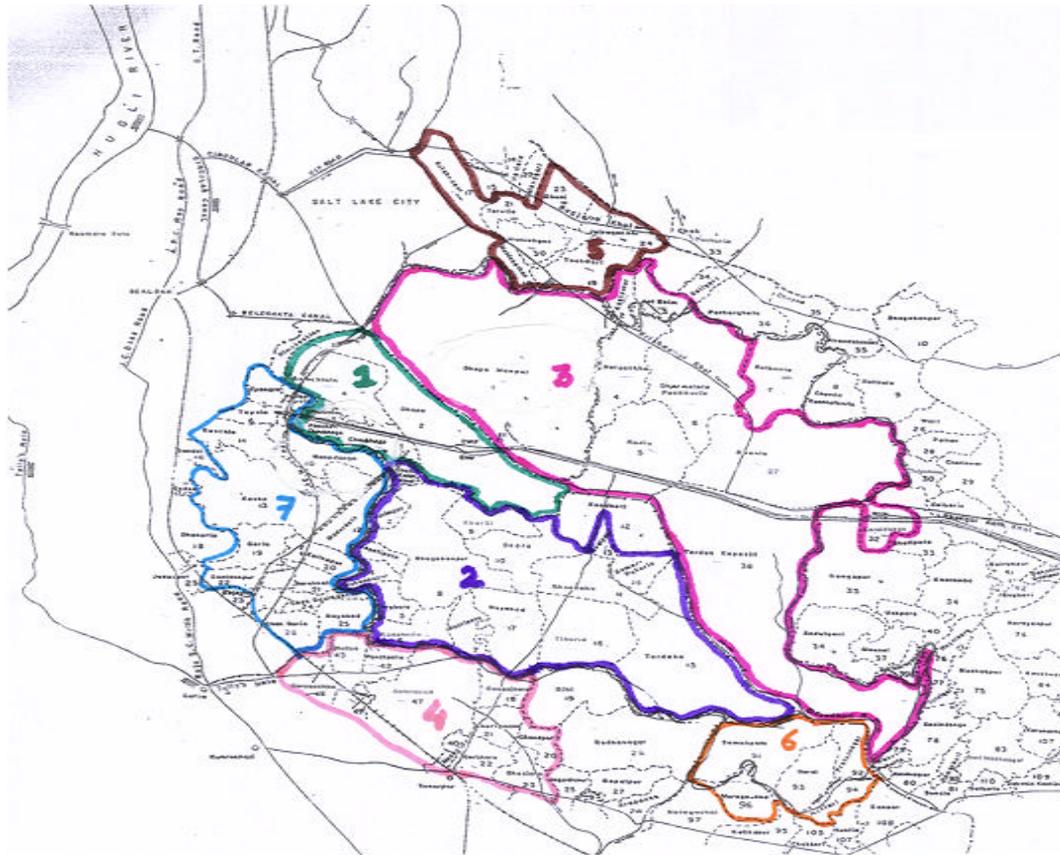


Figure 1.1. Outline map given to participants together with seven key areas demarcated for analysis.

1.1. Outcome

Analysis of the responses received demonstrated that the majority of participants worked close to, or within the boundary of the East Kolkata Wetlands, or *Waste Recycling Zone* as it has recently been termed. Table 1.1. shows that only ~8% of participants worked in peri-urban areas outside of the East Kolkata Wetlands. A large proportion of participants (~54%) worked in areas dominated by fishponds or bheries; 34% came from areas where bheries were reportedly under better management (area 2) and 20% came from areas where the availability of wastewater was a problem (area 3). Responses indicated that ~15% of participants worked in both the Dhapa garbage farming area and area adjoining the new Rajarhat township development. Only ~4% of participants worked in the wastewater agriculture and non-wastewater agriculture areas.

Table 1.1. Distribution (%) of peri-urban areas identified by participants as their main place of work, key problem areas and areas with potential.

Area	Working area	Problem area	Important area
1) Dhapa garbage farming area	15.4	16.7	12.7
2) Bheries under better management	34.1	35	25.3
3) Bheries experiencing problems with wastewater supply	20.1	20.8	21.1
4) Wastewater agriculture area	3.7	0.8	4.8
5) Area adjoining Rajarhat	14.5	19.2	20.5
6) Agricultural area (without wastewater)	3.7	5	6.6
7) Other peri-urban areas (outside East Kolkata area)	8.4	2.5	9
Total (%)	100	100	100

The distribution of problems areas identified appeared to follow a similar pattern to that of the locations where participants were working. The most commonly identified problem area, with 35% of responses, was the region where bheries were reportedly under better management (area 2). The proportion of participants identifying the region adjoining Rajarhat as a problem area at 19.2% was higher than the proportion working there (14.5%), possibly suggesting a more widespread concern amongst participants. The wastewater agriculture area (area 4), agricultural area (area 6) and other peri-urban areas outside of East Kolkata (area 7) were only considered problem areas by <5% of participants. Participants identified three important areas from which significant benefits are derived; area 2 where bheries are under better management, area 3 where the supply of wastewater to bheries is problematic and area 5 adjoining Rajarhat; each received 20-25% of responses.

1.2. Summary

From the level of analysis possible it remains unclear as to whether participants had identified problem areas and areas with potential based on the areas in which they work. However, it appeared that all areas of the peri-urban interface to the east of Kolkata are associated with both problems and opportunities. From the identification of areas where participants work it was apparent that there was a lack of urban stakeholders at the workshop, and stakeholders from outside of the East Kolkata Wetlands and peri-urban areas dominated by agricultural practices (areas 5 and 6) were poorly represented.

One of the key issues raised by this activity was the disagreement amongst participants concerning the delineation of the area presented as the East Kolkata Wetland and whether this area may actually be defined as a wetland. One participant holding a lease for a fishery managed for wastewater aquaculture at the peri-urban interface raised an important issue. In his opinion, as the majority of the fishponds are raised above the prevailing water level in the area and wastewater has to be pumped into the ponds, it is incorrect to consider this area a wetland. Should the hydrology of the area depend largely on the manipulation of the prevailing water level through pumping, this may diminish the claim that the area constituting the East Kolkata Wetlands provides a natural spillway for floodwater that would otherwise inundate urban Kolkata. Concern was also raised that the East Kolkata Wetland boundary excluded some peri-urban wetland areas.

2. Constraints and benefits of peri-urban production

In this session four stakeholder groups were formed, consisting of producers, government workers, NGOs and researchers. Participants assigned to each group are shown in Appendix 2. Each group was asked to discuss and list the major constraints and benefits associated with production at the Kolkata peri-urban interface. Having made comprehensive lists for both constraints and opportunities the groups were then asked to rank the contents of these lists in order of importance, with 1 being most important. Representatives from each of the groups then briefly presented their findings to the workshop.

2.1. Outcomes

To permit the comparison of factors suggested by each group, composite tables were produced for both constraints (Table 2.1) and benefits (Table 2.2). To avoid biasing the results due to differences in the number of factors suggested by the different groups only the top 6 factors in each of the two categories were considered further, although all factors proposed are reported. Furthermore, as the range of factors for ranking was not dictated to participants but open to selection by individual groups the following equation was used to compare the mean ranks assigned to individual factors.

$$R = s/n$$

where, R = mean rank for factor (importance: 0.25 max - 6 min)

s = mean of ranks assigned by groups to factor

n = number of groups assigning a rank to factor

Considering constraints to peri-urban production each group identified between 7-13 factors, in total 23 factors were suggested (Table 2.1). Overall the most important constraint with a mean rank of 0.5 was the silting up of water bodies and canals, a factor ranked most important by both the farmers representatives (Group 1) and researchers (Group 3). The primary constraint mentioned by the government officials (Group 2) was the overall social, economic, environmental and political setting, whilst the NGOs (Group 4) regarded the unclear delineation of the wetland as the major constraint. As neither of these factors occurred in the top 6 constraints mentioned by the other groups they both received a mean rank of 1. The only other factor to receive a mean rank of 1 was the encroachment of water bodies, ranked as the second most important constraint by both the researchers and NGOs and fifth most important by the government officials. The fifth and sixth most important constraints, both with mean ranks of 2, were the lack of infrastructure to support the aquaculture industry and the failure to apply comprehensive assessment techniques such as EIA and socio-economic studies to developments at the peri-urban interface.

Perhaps one of the most interesting outcomes of this activity was the general lack of consensus regarding the primary constraints facing production at the Kolkata peri-urban

interface. Of the six most important constraints identified by the farmers group only one other group mentioned one of these factors, the silting up of water bodies and canals. A similar lack of agreement was observed between the government and the other groups, with only one factor mentioned by the government group being mentioned by another, the encroachment of urban and industrial development. The lack of agreement concerning constraints is apparent when it is noted that of the 23 constraints proposed only 4 were mentioned by more than one group.

Table 2.1. Constraints to production in peri-urban Kolkata

Constraint	Group				R	Overall Rank
	1	2	3	4		
Silting up of water bodies and canals	1		1	*	0.5	1
Encroachment of water bodies leading to reduced employment	*	5	2	2	1	3
Social, economic, environmental and political setting		1			1	3
Delineation of wetland not clear				1	1	3
Lack of infrastructure for aquaculture	2	*			2	5.5
Lack of development project assessment (EIA/socio-economic)		2			2	5.5
Absence of clear policy or legislation for preservation of system	*		5	5	2.5	7.5
Lack of awareness amongst non-users and planners of benefits			6	4	2.5	7.5
Lack of funds for maintenance of fisheries and waste-reuse system	3	*			3	10.5
Poor communities have limited ability to fight encroachment		3		*	3	10.5
Unclear land ownership and absence of fishermen's rights			3	*	3	10.5
Insufficient sewerage supply - seasonal				3	3	10.5
Law and order problems and inaccessibility to general public	4		*	*	4	14
Unscientific farming and harvesting due to union intervention		4			4	14
Weakness of fishermen's co-operative			4		4	14
Lack of work culture	5				5	16
Irregular and insufficient water supply	6				6	18
Lack of integrated aquatic resource utilisation		6			6	18
Coordination amongst government, NGOs and locals lacking		*		6	6	18
Lack of recognition of fisheries as industry	*					
Mixing of domestic and tannery effluent					*	
Lack of health and hygiene practices and education					*	
Lack of groundwater mapping					*	

* mentioned by the group but ranked outside the top six

Agreement concerning the benefits of production in peri-urban Kolkata appears much stronger amongst the stakeholder groups (Table 2.2). In total ten benefits were proposed, each group proposed 6-7 benefits and half the factors suggested were reported by 3 or more groups. The most important benefit, with a mean rank of 0.7, was fish and vegetable production, both the farmer representatives and researchers ranked this factor as the most important. Two factors, the control of water and air pollution from Kolkata and groundwater recharge and flood control, both received mean ranks of 0.8; in the case of pollution control, this was mentioned by all groups, however, groundwater recharge and flood control was not mentioned by the farmer representatives.

The benefit of employment attributable to peri-urban production was again mentioned by all groups except the farmer representatives and received a mean score of 1, making it the fourth most important benefit. Although the fish farmer representatives did mention

employment as the seventh most important benefit of peri-urban production, they mentioned income generation for dependable workers as the second most important benefit. This differentiation between employment and income for “dependable workers” may be attributable to the fact that the unions impose employment quotas on the fisheries operators representing a financial burden. As the farmer representatives were the only group to specify income for workers as a benefit, this factor receives a mean rank of 2 and constitutes the sixth most important benefit overall. The preservation of biodiversity, with a mean rank of 1.6 is the fifth most important benefit, higher than better living standards for local residents and improved irrigation and agricultural production. The importance of biodiversity over the status of local communities and the efficiency of agricultural production is surprising and may reflect the importance the participants associate with the wetland being considered for designation as a Ramsar site by the international community.

Table 2.2. Benefits of production in peri-urban Kolkata

Benefits	Group				R
	1	2	3	4	
Fish and vegetable production	1	4	1	5	0.7
Control of water and air pollution from Kolkata (waste recycling)	6	1	4	2	0.8
Groundwater recharge and flood control		2	2	3	0.8
Employment	*	3	5	1	1
Preservation of biodiversity	5	*	3	6	1.6
Income for dependable workers	2				2
Improved irrigation and agricultural production	4	5			2.3
Oxygen generation and ecological balance in Kolkata			6	4	2.5
Better living standards of local residents	3				3
Opportunities for eco-tourism		6			6

* mentioned by the group but ranked outside the top six

3. Who are the poor?

The session was designed to focus the discussion on the role peri-urban production and the agro-ecosystems in which it functions play in the livelihoods of poor people. The initial activity, undertaken in the same participant groups, was to identify those poor people that benefit from the system. The definition of poverty and nature and extent of benefits was left to the discretion of the participants. The groups of the poor identified by the participants were reported back to the workshop and then the participants were asked to rank the relative poverty of the groups proposed. Having done this, mean ranks for the poor groups were calculated and each of the four participant groups assigned one of the poorest groups for further discussion. The participants were asked to define what factors contribute to the poverty of the group assigned to them, but also to describe how they benefit from peri-urban production and the surrounding environment.

3.1. Outcomes

The workshop participants identified 10 groups of the poor that benefit from peri-urban production in the East Calcutta wetland region (Table 3.1). Several of the groups identified i.e. rag pickers, sex workers and transport workers do not appear to have a direct association with the natural resource base. However, as rag pickers were ranked as the second poorest group and both they and sex workers are engaged in occupations associated with high health risks, development initiatives that address their needs must remain a priority. Two groups associated directly with production activities at the peri-urban interface, agricultural workers and fishery workers, were ranked as the ninth and tenth poorest groups, respectively. However, as with all the groups of the poor identified, their vulnerability and in particular their capacity to cope in adverse conditions demands greater consideration as these groups may be more likely to lose their employment through urban and industrial development.

Table 3.1. Ranks assigned by participants to groups of the poor

Poor groups identified by participants	Group				Mean rank	Overall rank
	1	2	3	4		
Casual workers with no regular income	1	2	3	3.5	2.4	1
Rag pickers	5	1	3	1	2.5	2
Scavengers – cleaners	4	3	3	2	3	3
Fisherman's wives	3	7	3	5.5	4.6	4
Landless labourers	2	4	7.5	5.5	4.8	5
Sex workers	10	9	3	3.5	6.4	6
Transport workers (rickshaw pullers)	7	8	7.5	8	7.6	7.5
Vegetable venders	6	6	9.5	9	7.6	7.5
Agricultural workers	8	10	6	7	7.8	9
Fishery workers	9	5	9.5	10	8.4	10

Casual workers with no regular income were ranked as the poorest group, as noted earlier rag pickers were ranked second poorest and scavengers third, and although fishery workers

were ranked tenth poorest, their wives were ranked fourth. Aggregating rag pickers and scavengers, these four groups were consolidated as three poor livelihoods for further discussion, therefore, the fourth livelihood selected for further discussion was landless labourers who were ranked fifth poorest.

Casual workers (considered by Group 2)

Casual workers are sometimes employed by the fisheries and therefore derive some benefit from the presence of fishponds in peri-urban Kolkata, although the nature of this employment and the contribution to their livelihoods was not discussed. The availability of low cost fish, which is also high in protein, was also considered a potential benefit for casual workers at the east Kolkata peri-urban interface. Lastly, ecological benefits, in particular clean air and water were regarded as advantageous, as was the areas flora and fauna, although again the nature of its role in the livelihoods of casual workers was not discussed.

The statement that casual workers are unable to secure a regular income and that there are no opportunities for regular employment highlighted their vulnerability. More information is required on the nature of the employment and income that the casual workers are able to access. It is not clear whether it is seasonal in nature, making them more vulnerable at certain times of the year, or piecemeal, increasing uncertainty and limiting their ability to plan ahead and consolidate their position during periods of employment and income. Casual workers were considered mostly land less, preventing them from subsidising their livelihoods with small-scale horticultural or agricultural production. The workshop participants also noted that there was no scope for accessing alternative income sources, although whether the main constraint was a lack of skills, the transaction costs of moving to full-time employment or the limited availability of permanent jobs was not clear. Finally, the perceived decline of the fisheries was seen as exacerbating the problem, further limiting the demand for casual labour.

Rag pickers (considered by Group 4)

Like casual workers, rag pickers are perceived to benefit from the 'pollution free green environment' of the wetlands, however, this must be balanced against their working environment, which is unpleasant and hazardous. Employment afforded to this group of mainly women in the Dhapa area represents a tangible benefit identified by the participants. The availability of cheap protein in the wetland was also considered a benefit, as was the opportunity for this group to engage in animal husbandry, although the nature and extent of this husbandry was not defined.

Despite being employed in rag picking the participants did not consider the wages paid to these individuals as 'equal'; this was attributed to the nominal market price for rags¹. It was also suggested that poor organisation contributes to the poverty of this group. Although the nature of this organisational weakness was not discussed, the high level of efficiency with which rubbish is sorted suggests that the participants were referring to high-level organisation such as collective bargaining power or union affiliation. Participants also

¹ Rag pickers is a generic name applied to those that sort through rubbish in search of items of value for recycling, although rags are not usually collected due to cultural beliefs.

believed that the large size of most rag pickers families contributed to their poverty, perhaps suggesting the need for family planning, and more urgently the provision of crèche and schooling facilities.

Fishermen's wives (considered by Group 3)

Fishermen's wives were perceived to benefit indirectly from production in the peri-urban fisheries due to the income of their husbands. However, direct benefits were accessible to these women through employment in fish retailing and weed clearing and collecting residual fish, other edible plants and animals and firewood from the wetland.

The ranking of this group as one of the poorest during the previous exercise, while their husbands were considered less poor highlights intra-household factors as contributing to their poverty. The participants suggested that the fishermen do not distribute their income equitably, but instead spend it on alcohol. Furthermore, opportunities to earn additional income for the household is usually found in low-paying activities such as clearing weed from ponds. However, the participants recognised that despite not being amongst the poorest groups, a fisherman's income is low and largely defines the overall wealth of the household.

Landless labourers (considered by Group 1)

The participants considered the most tangible benefits of the Kolkata peri-urban interface for landless labourers as being the opportunities offered by the production systems in the wetland, especially the possibility of employment and securing a regular income. However, the mechanisms by which these individuals might access these opportunities requires further investigation, although as farmer representatives the participants suggested that if they were able to secure an adequate supply of wastewater this would lead to increased fish production demanding higher levels of labour be employed.

Factors contributing to the poverty of this group appear broadly similar to those of the casual workers, the absence of a regular income, uncertainty regarding the future and an absence of social security provision. It was suggested that some members of this group of the poor engage in illicit activities such a poaching fish², perhaps reflecting the desperate nature of their situation.

² the most sever form of this activity has been largely attributed to gangs of armed criminals

4. Who are the other stakeholders?

Preliminary investigations and an initial literature review undertaken for the project indicated that institutional factors such as weak planning policy and poor management of activities at the Kolkata peri-urban interface have contributed significantly to a decline in traditional production systems. Furthermore, despite the widespread recognition of this fact, the failure of key institutions to address this problem threatens the continued existence of those that remain. Therefore, to better understand this situation it was first necessary to explore which stakeholders are associated with the system and how successful the workshop has been in engaging with the various groups identified. The workshop participants were asked to name stakeholder groups that they felt were connected with the Kolkata peri-urban interface and a list was produced, this generated some focused discussion that frequently resulted in the identification of other stakeholder groups. The stakeholder groups identified are listed in Table 4.1.

4.1. Outcomes

Following from the previous activities all participants agreed that the poor were key stakeholders in the system, furthermore, advocates for the poor and NGOs active in the area were considered related stakeholders. The landowners and managers of production systems were then identified, as was the main government department responsible for supplying wastewater to the system. A discussion of the problems with the distribution and quality of wastewater led to the government departments responsible for land use planning (CMC) and pollution monitoring (WBPCB) being proposed, together with the main polluters, the tanneries. The role of other key government departments namely the DoF and DoE in monitoring the situation at the peri-urban interface was then discussed. The participants noted that it was not only in the interests of the producers to preserve the unique peri-urban agroecosystem to the east of the city, but that the general population of Kolkata benefit from waste management and food production, making them stakeholders.

Banking interests are influential and in some instances willing to finance developments that would encroach into the wetlands. Even developments initiated by government agencies such as WBIDC apparently threatened the existence of the wetlands. Such developments also threaten the livelihoods of those supported indirectly by production activities in this area such as retailers, wholesalers, vendors, seed traders and processors, making them stakeholders. Encroachment also reduces the capacity of the wetland area to act as a discharge area for drainage water, helping to avoid flooding in Kolkata, again benefiting society, especially those communities in flood prone areas. The value of flood dissipation in the wetlands was considered a benefit to taxpayers and to CMWSA who would be required to install additional infrastructure to cope with the risk of flooding were the wetlands to disappear. Furthermore, it was mentioned that a study had been conducted to assess the value ascribed to flood protection afforded to Kolkata by the wetlands, in which the willingness-to-pay to preserve the wetlands was significant, although no detailed information on the study were presented. The potential role of such studies in assessing benefits and costs of preserving peri-urban production systems confirms that scientists, both local and international, have a role or stake in such systems. Consumers that benefit from greater access to fresh fish and vegetables were also identified as stakeholders, although it is interesting to note they were not identified when discussing the pollution from the tanneries and other industries.

Table 4.1. Stakeholder groups identified by participants and indication of workshop attendance

Stakeholder group		Workshop attendance	
		Y	N
1	Poor people		*
2	Advocates for the poor	*	
3	NGO's	*	
4	Land owners		*
5	Fish, vegetable, rice and livestock producers	*	
6	Department of Irrigation and Waterways (DoIW)		*
7	CMC - monitor whole land resource		*
8	West Bengal Pollution Control Board (WBPCB)		*
9	Tannery operators and polluting activities		*
10	Department of Fisheries (DoF)	*	
11	Department of Environment (DoE)	*	
12	Kolkata city - society		*
13	Bankers and money lenders		*
14	Wholesale markets, market owners, retail vendors		*
15	Processors		*
16	Seed traders		*
17	Developers - WBIDC		*
18	Scientists - local, national and international	*	
19	Tax payers		*
20	People in flood prone areas		*
21	Calcutta Metropolitan Water and Sanitation Authority (CMWSA)		*
22	Consumers		*
23	Poachers		*
24	Police		*
25	Country liquor producers		*
26	Wildlife stakeholders - Ramsar convention		*
27	Politicians		*
28*	Planners - HIDCO		*
29*	Downstream producers		*
Participation		6	23

* identified during subsequent discussions

Poachers that exploit a perceived lack of vigilance on behalf of the police were also regarded as a section of society benefiting from production in peri-urban areas. Other law and order problems were also mentioned and the addiction of many labourers to alcohol distilled by country liquor producers was considered a serious problem. On a more positive note the application for designation of the wetland as a Ramsar site was seen as confirming its international importance. However, following this wide-ranging discussion there was a general consensus that to achieve a lasting change in governance would require the support of politicians. Furthermore, it was suggested that the nature of the *stake* is likely to vary between groups and that some groups may have multiple stakes. The existence of conflicting stakes was also highlighted and it was suggested that further consideration is required regarding the temporal and spatial nature of the stakes held. Finally, during subsequent activities two further stakeholder groups were identified, planners and downstream producers.

5. *Anyer chokhe dekha*

The objective of this role-playing activity was to invite participants to view with the eyes of another, in Bengali *anyer chokhe dekha*, typical scenarios that have arisen in the past regarding the management of peri-urban Calcutta and which represent a persistent constraint to production. The participants were divided into two groups and presented with the following scenarios:

- *the metropolitan authorities have yielded to develop part of the wetlands, despite the fact that large numbers of poor people will be displaced and lose their livelihoods*
- *heavy rains in the city are causing flooding and the municipal authorities must maintain low levels in the drainage canals, although this restricts the access of producers to adequate wastewater inputs*

For the first, group members were invited to assume either the role of a developer, vegetable or fish trader or agricultural labourer and discuss the scenarios in their assigned roles and produce a sketch based on the likely dialogue were the various actors to meet. For the second, the roles included an engineer, researcher and farm manager.

5.1. Outcomes

Development scenario

The **developer** suggested that the production of sophisticated goods in the proposed factories would create employment for many and increase GDP, whilst the income generated per unit area would be much more than under the present circumstances. The development would also be serviced by a proper sewage system and water treatment plant and incorporate hospitals and schools and provide housing for poor street children. Furthermore, the loss of agricultural production would be compensated for by the construction of terraced gardens for vegetable production and fish would be raised in rooftop tanks using genetically engineered, high yielding varieties.

The **vegetable trader** expects a loss of income that will affect the whole family, furthermore, the trader may be forced to look to other unknown fields of work, although opportunities are likely to be limited due to a lack of experience. To cope with this situation the remaining land will have to be sold as it will be unproductive to retain a smallholding. One option would be to join a local political outfit and become an extortionist - a good job! Therefore, the policy appears that if you can't beat them, just join them.

The **fish trader** anticipates a rise in the number of jobless farmers. Transportation and overhead costs will increase when purchasing fish from other regions, preserving fish during transport over greater distances may necessitate the use of ice. Ultimately the trader may be compelled to leave the business and sell any property to a developer.

The present occupation of the **labourer** will change to working for criminals and consequently criminal activity will increase. Child labour will increase and the trend will be to find a job outside of the wetland and fight for existence, sex working may also be

expected to increase, including adolescent girls. The poor will be engaged as daily labourers for the developers, exploited by political parties and compelled to join mass rallies. Displaced families will move to roadside dwellings in Kolkata, opportunities for access to education will be further reduced and diseases such as tuberculosis will spread in the city. Finally, poor labourers face these problems, as they won't have time to react against the developers.

Flooding scenario

The **engineer** is primarily concerned with ensuring that wastewater and storm water is drained from the city, and the key goal is to develop more effective techniques to protect the city from flooding. However, to safeguard the future of the wetlands the development of proper infrastructure to diffuse the population pressure in the city is recommended.

The **researcher** strives for environmental protection whilst examining the existing system to highlight problems and suggest solutions.

Without improved access to wastewater **farm managers** are in danger of losing their jobs and income opportunities, whilst the issue of flooding in the city is seen as a separate issue for the municipal authorities.

6. Future project activities

During this session participants were provided with a brief overview of project activities planned for the future, namely:

- case-studies on targeted groups of the poor
- institutional assessment to further understand the role of senior stakeholders
- market studies
- presenting project outputs

With reference to this last activity, the remaining workshop participants were invited to suggest which media or communication pathways should be employed to disseminate key project findings based on their experience and requirements.

6.1. Outcomes

From Table 5.1 it is apparent that a wide variety of media are regarded as potentially useful, although the limited representation of producers in the study suggests that their demands require further attention. The NGO representatives considered a wide range of media as appropriate and suggested some communication pathways such as theatre and puppet shows that other groups failed to note. There was some agreement between all groups that a film/video and field manual may be valuable resources, however, before drawing definite conclusions, greater numbers of representatives from the various stakeholder groups should be invited to rank the potential value of the media types cited.

Table 5.1. Preferences expressed by participants regarding the presentation of project outputs

Information source	Prod (1)	NGO (3)	Res (2)	Gov (7)	Total
Newspaper articles		3	1	2	6
Book	1	1		5	7
Technical report		3	1	6	10
Journal article		3	1	3	7
Audio-tape		1			1
Radio broadcast					
Film/video	1	3	1	1	7
Pamphlet		3			3
CD Rom/DVD				1	1
Website			1	3	4
Field manual	1	3	1	4	9
Policy briefings		2		1	3
Other					
Workshops				1	1
Discourse		1		3	4
Puppet-show		2			2
Theatre		2			2
Media campaign			1		1
Total	3	27	7	31	68

7. Summary and recommendations for future project activities

Workshop outputs will contribute greatly to sharpening the poverty focus of future project activities meaning knowledge generated will be more likely to reflect the situation in which the poor find themselves and that researchable constraints and development opportunities identified will assist the poor more effectively. Of the ten poor groups identified all require consideration, however, prospects for addressing the poverty of some of these groups i.e. rag pickers, scavengers, sex workers and transport workers realistically fall outside the scope and capacity of the current project. Therefore, it is recognised that these proceedings may be useful in guiding other initiatives such as the DFID CUSP programme that could potentially be extended to engage with these groups potentially lessening their vulnerability and enhancing their livelihoods. The other groups of the poor appear more dependent on the peri-urban natural resource base and therefore there is a greater potential to engage effectively through this project in better understanding their livelihoods and where opportunities for enhancement lie. However, it is recognised that some groups such as rag pickers may benefit from the peri-urban natural resource base in an informal manner e.g. collecting fodder, fuel or medicinal plants, in which case ensuring continued access must be considered.

Although well attended by representatives from several stakeholder groups, the absence of key senior stakeholders from target institutions was highlighted during the stakeholder analysis exercise. This confirms that the project must engage with representatives from a much broader range of target institutions if appropriate and meaningful opportunities for improved policy and natural resource management strategies are to be identified. This knowledge will help guide the planned institutional assessment in which the project will interact directly with senior stakeholders from key target institutions. During the workshop it was evident that there were several limitations that must be acknowledged. In addition to the absence of key senior stakeholders it was considered difficult to make some participants feel equally included. Although conducted in both Bengali and English, language sometimes represented a problem, especially during periods of discussion; furthermore, the largely participatory nature of the workshop also failed to meet the expectations of some participants who were expecting a series of more formal presentations. The practicalities of running a workshop, especially with regard to timing and location, when trying to involve a range of stakeholders also require greater consideration. There was also an apparent bias in the workshop toward fish production as compared with irrigated agriculture and livestock production. Together, these observations provide an added impetus to engage with those key stakeholders not able to attend the workshop and modify arrangements for future project workshops to achieve a more representative and equitable forum for debate.

The workshop provided an opportunity for stakeholders to voice their opinion on critical aspects governing the success and failure of production systems at the Kolkata peri-urban interface and the level of participation demonstrated the high degree of interest and feeling that surrounds this emotive issue. The workshop also provided an opportunity to inform target institutions and stakeholders of the project aims. The most important outcome was knowledge to guide future project activities: identification of selected groups to sharpen the poverty focus of the household level study; stakeholder assessment leading to a more informed institutional assessment; identification of a range of media that may be appropriate for disseminating outputs. Furthermore, the workshop provided a valuable opportunity for project team members to interact and foster better working relationships.

Appendix 1 Workshop programme

Workshop on farming systems at the Kolkata peri-urban interface

Programme

Date: Wednesday 11th April

Location: Training Room, West Bengal Pollution Control Board
Salt Lake, Kolkata

10:30-11:00 Registration

11:00-11:10 Welcome address
Director, IW MED

11:10-11:20 Introduction to the project
Nitai Kundu and Madhumita Mukherjee

11:20-11:30 Introduction to the workshop
Stuart Bunting

11:30-12:00 Your personal view of peri-urban Kolkata
David Little

12:00-12:45 Constraints and benefits for peri-urban production
David Little

12:45-13:00 Who are the poor?
Samantha Punch

13:00-13:30 What makes them poor?
Samantha Punch and David Little

13:30-14:00 Lunch

14:00-14:30 Who are the other stakeholders?
Stuart Bunting

14:30-15:30 *Anyer Chokhe Dekha*
Nitai Kundu

15:30-15:45 Future project activities
Stuart Bunting

15:45-16:00 Workshop synthesis
Stuart Bunting

16:00-16:15 Workshop close
Madhumita Mukherjee and Nitai Kundu

Appendix 2 List of invited participants and register of contributions

	Name	Institution	Org	Group	Reg	Map	Media	Eval
1^	Mr Sen	Calcutta Metropolitan District Authority	Gov					
2^	Mr Roy	Department of Irrigation and Waterways	Gov					
3^	Professor Mohit Bhattacharya	Indian Institute of Public Administration, New Delhi	Gov					
4	Professor Pabitra Kumar Giri	Centre for Urban Economic Studies, Calcutta University	Res	3	*	*	*	
5	Soumya Banerjee	National University of Juridical Sciences, Calcutta	Res	3	*	*	*	*
6	Mrs Bonani Kakkar	PUBLIC (People United for Better Living in Calcutta), Kolkata	NGO	4	*	*		
7	Mrs Basundhara Chatterjee	CIT Prayash, Goodwill Welfare Society, Kolkata	NGO	4	*	*	*	*
8	Mrs Aditi Bhanja	CIT Prayash, Goodwill Welfare Society, Kolkata	NGO	4	*	*	*	*
9	Shyamal Ghosh	Journalist & Coordinator, Peoples Green Court Trust, Kolkata	NGO	4	*	*	*	*
10	Tushar Ghosh	Secretary, Jala bhusi Bachoo Committee	Prod	1	*	*		
11^	Mr Premtosh Ghosh	Secretary, Fish Producers Association	Prod					
12	Nitish Sapui	Bantala Fishery No.2	Prod	1	*	*		
13	Parimal Nayak	Garumara Fishery	Prod	1	*	*		
14	Tamal Kantide	North Garumara Fishery	Prod	1	*	*		
15	Sailen Kr. Pal	Bidhar Nagar Agro & Fisheries Ltd.	Prod	1	*	*		

Name	Institution	Org	Group	Reg	Map	Media	Eval	
16	Prafulla Kumar Adhikary	Madhumita Construction Pvt. Limited	Prod	1	*			
17	Sk. Abul Kashem	CEO, Captain Bhery Fishermen's Co-operative Society Ltd.	Gov	2	*	*	*	
18	Dr Madhumita Mukherjee	Department of Fisheries (DoF), Government of West Bengal	Gov	2	*	*		
19	Saptarshi Biswas	DoF, Government of West Bengal	Gov	2	*	*	*	
20	Mukul Roy Choudhury	AFO, DoF, Government of West Bengal	Gov	2	*	*	*	
21	Sib Sankar Bose	Briji Patuli M.S.S. Ltd.	Prod	1	*	*	*	
22	Dr Nitai Kundu	IWMED, Department of Environment (DoE), Government of West Bengal, Salt Lake, Kolkata			*			
23	Mrinal Bhattacharya	IWMED, DoE, Government of West Bengal	Gov	2	*	*	*	
24	Mausumi Pal	IWMED, DoE, Government of West Bengal	Gov	4	*	*	*	
25	Amit Chakraborty	IWMED, DoE, Government of West Bengal	Gov	3	*	*	*	
26	Sangeeta Das	IWMED, DoE, Government of West Bengal	Gov	3	*	*	*	
27	Dr Samantha Punch	Department of Applied Social Science, University of Stirling	Res		*			
28	Dr David Little	Institute of Aquaculture, University of Stirling	Res		*			
29	Stuart Bunting	Institute of Aquaculture, University of Stirling	Res		*			
Total					25	20	13	10

^unable to attend