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# Communication strategy

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## 1. Overview

During the project planning phase it was realised that further to developing new knowledge concerning the Kolkata PUI, the project team should aim to disseminate outcomes to stakeholders in appropriate formats. It was envisaged that this would be achieved through initiating dialogue with target institutions and adapting key project outcomes to fulfil their requirements. The first phase in this ongoing dialogue was to invite representatives from various stakeholder groups to the first project workshop. A direct outcome of this activity was a summary of preferences given by four key stakeholder groups regarding the presentation of project outputs (Table 1).

Table 1. Preferences expressed by participants regarding the presentation of project outputs

Information source	Producers (1)	NGOs (3)	Researchers (2)	Government (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

Representatives from State Government departments expressed a preference for technical reports, books and field manuals, other communication media and pathways mentioned were requested by less than half the representatives in this group. As with Government representatives, all NGO affiliated stakeholders expressed a preference for technical reports and field manuals, although newspaper articles, journal papers, videos and pamphlets were also considered equally useful. Preferences expressed by researchers agreed largely with those of NGOs, although instead of pamphlets they requested a website and media campaign. The producer group representative identified books, field manuals and films as the most appropriate communication media. Of all the presentation formats identified, the greatest number of participants expressed a preference for technical reports followed by field manuals; the next most requested communication media were books and journal articles.

Outcomes of the first project workshop, which was attended by nearly 30 participants, demonstrate that many consider technical reports as a valuable knowledge resource. However, experience of trying to obtain reports from two former research and development oriented projects dealing with aspects of PU farming highlight the difficulties for stakeholders in

accessing such information. The distribution of reports from the CEMSAP (Calcutta Environmental Management Strategy Action Plan) and CRG (Creative Research Group) projects that dealt with issues of environmental and conservation management at the Kolkata PUI, respectively, is highly restricted; this is despite widespread demand amongst stakeholders and target institutions. The situation is made worse by the fact that most demanding these reports believe that unrestricted access to such knowledge resources could significantly enhance their ability to better focus research and development initiatives and to fight for enhanced poor livelihoods.

Knowledge concerning activities at the Kolkata PUI has become a highly guarded commodity, even amongst groups with apparently similar agendas. Researchers, NGOs and State Government departments exercise a great deal of control over access to the knowledge they possess. Motivations for this appear to include fear that others will lay claim to ownership of knowledge presented and concern that information disclosed will be used to argue a contrary position, or steal the march on future initiatives. In this setting some individuals undoubtedly regard knowledge as power, therefore, a key objective for the project team has been to ensure that knowledge created is freely available to key stakeholders and target institutions. Free access to knowledge concerning PU Kolkata is likely to be a key component in building consensus amongst stakeholders concerning action required to safeguard and enhance poor livelihoods.

A key component of the communication strategy that has been developed since the mid-term review (MTR) is the project website (<http://www.dfid.stir.ac.uk/dfid/nrsp/kolkata.htm>). This communication pathway is designed to permit stakeholders, particularly from target institutions (KMC, KMDA, DFID-India, DFID-NRSP, DoIW, DoF, DoE and NGOs) free and unrestricted access to the range of project outputs, in particular working papers which deal with a variety of issues that affect the livelihoods of poor people in PU Kolkata. Recent publicity for the website from an article in the New Agriculturist online journal resulted in interest for further project outputs from DFID-India, IWMI (Country Director, India) and ADB (Head of Urban Planning). Two of these constitute important target institutions that are currently planning major development projects in Kolkata (CEIP and CUSP), outcomes of which may significantly affect the livelihoods of poor people at the PUI. Therefore, a primary objective of the revised project communication strategy is to further publicise the range and content of project outputs freely available on the Internet, particularly to target institutions in Kolkata.

## 2. Communication activities

Delivery of a presentation concerning the project at the WEDC (Water Engineering and Development Centre) conference (18-22<sup>nd</sup> November 2002; Science City, Kolkata), at which a number of representatives from target institutions were present, constituted an important opportunity to disseminate key project findings. The project website and range of project outputs were publicised at the meeting. Project team leaders also initiated a programme of active dissemination of project outputs, initially targeting international bodies such as CARE, DFID-India and IWMI; meetings at the offices of CARE and DFID-India provided an opportunity to discuss directly implications for project findings on planned and ongoing development projects. An invitation to present a paper at the recent IWMI (International Water Management Institute) workshop on wastewater reuse (11-14<sup>th</sup> November 2002; Hyderabad) constituted another important dissemination opportunity, and resulting

discussions contributed to the 'Hyderabad declaration on wastewater use in agriculture (CGIAR, 2002) which was endorsed by project team representatives from the DoE and DoF, GoWB. Local team leaders have also been active in continuing a dialogue with target institutions in Kolkata and feeding project findings into their own institutions and using outcomes to help guide development initiatives. The direct involvement of senior members from two target institutions (DoF and DoE, GoWB) in all project activities, including project planning, has led to the direct assimilation of project outputs into these institutions. As noted in the MTR 'The two Kolkata collaborators of the project team are substantially involved in the project, and there is no doubt that they are taking the new knowledge into their organisations and will use it.' Furthermore, the DoF is now looking to use project outputs to help formulate plans for appropriate PUI LWI PS exploiting waste resources for other municipalities in the state (Mukherjee, personal communication). And in preparing a management plan regarding the EKW for submission to the Ramsar Bureau through the GoI, the DoE, GoWB is using project outputs to assist in the process (Kundu, personal communication).

Considering the range of issues covered and depth of investigation undertaken it was not practical to disseminate hard copies of all project outputs to those stakeholders associated with natural resource management in PU Kolkata. However, where possible relevant working papers were disseminated to selected target institutions and key findings summarised in workshop and conference presentations and individual meetings with representatives from target institutions. Having assessed the context in which target institutions operate, including their current activities, sphere of influence and knowledge demands (Table 2) it was possible to identify which knowledge from the project is likely to support policy change that enhances poor livelihoods, and subsequently refine the project communication strategy, developing an approach which is considered appropriate to the needs of specific institutions. In many cases the knowledge demands of different stakeholder groups are not mutually exclusive.

Further to those stakeholder groups identified at the first project workshop, during the course of the project it emerged that projects being implemented in urban Kolkata (CUSP and CEIP) by institutions such as the ADB and DFID-India could have significant consequences for the PU poor. Therefore, these two organisations have also been included as target institutions in Table 2. To meet the knowledge demands of various stakeholder groups and target institutions a variety of dissemination activities were undertaken; individual activities and resulting outcomes are summarised in Table 2. Based on the assessment presented here it is apparent that dissemination activities had an identifiable impact on certain target institutions.

The second project workshop (23<sup>rd</sup> November 2002; Science City, Kolkata) provided an opportunity to disseminate key project findings and conclusions to senior stakeholders, planners, actors and representatives from target institutions. With feedback being used to identify opportunities to enhance natural resource planning and management in PU Kolkata. However, as with the first project workshop it proved difficult to ensure representatives from all stakeholder groups participated in this forum. Therefore, a further dissemination activity, building on an established programme of institutional dialogue, involved project team members visiting selected target institutions and senior stakeholder representatives to discuss key project findings; accounts of meetings with selected target institutions are given by Edwards (2002). Through these meetings it was also intended that the range of new knowledge generated by the project should be highlighted, in particular those working papers accessible through the project website.

Table 2. Stakeholder groups, the context in which they operate, perceived knowledge demands and dissemination activities undertaken and outcomes

Stakeholder	Context	Knowledge demand	Dissemination activity and outcome
Poor people	Poor people in PU Kolkata are largely employed in farming and related activities; vulnerable to rapid and unforeseen change; knowledge of threats and livelihood opportunities may therefore help them safeguard or improve their situation	Knowledge of emerging threats to help plan and evolve coping strategies; a summary of legislation and advocacy groups for empowerment; feedback to the community to meet expectations	Knowledge of the research objectives was communicated directly during participatory activities, and feedback provided to questions and concerns; based on outcomes from the first workshop, situation analysis and focus group and household interviews it was apparent that poor groups have limited capacity to cope with unforeseen and unexpected change, therefore, emphasis was given to providing information on constraints and opportunities to livelihoods enhancement to target institutions with the objective of helping promote development initiatives and policy change that enable poor people to improve their livelihoods. Participation of poor groups in the second workshop provided an opportunity to disseminate findings to local communities and seek their contribution to developing appropriate plans for action.
Advocates for the poor; CBOs, NGOs (CARE-India, WWF)	Involved in various aspects of trying to enhance poor livelihoods; mostly with limited resources for research and have demonstrated demand for knowledge outputs from the project	Knowledge of benefits to poor people of PU farming to help in advocacy and summary of constraints to help target future development initiatives	Knowledge of the research objectives and activities was communicated initially to CBOs and NGOs (PUBLIC & CIT) during the first project workshop, their feedback was used to guide the selection of groups of the poor and appropriate communication media. Constructive dialogue with various NGO and CBO groups was also fostered through meetings during the institutional analysis. Further, meetings with NGO and CBO groups were undertaken by various project team members, and meetings at the offices of CARE, WWF-India and CIT, and the provision of working papers, helped facilitate their participation in the second project workshop; their participation contributed to the identification of actions with potential to enhance poor livelihoods and lead to offers of training and micro-credit provision.
Fish, vegetable, rice and livestock producers	Farmers aware of practical constraints yet lack assets and resources to cope with rapid change; training and advice restricted; some family members engaging in urban activities	Knowledge of wider benefits to society from PU farming for empowerment, summary of constraints and emerging threats to help build consensus and inform decision making	Knowledge of the research objectives was communicated directly during the first project workshop and situation analysis. A user-friendly leaflet was also produced for distribution to participants to reinforce this communication. Key findings were presented to producer representatives at the second workshop and their participation assisted in identifying promising actions to enhance poor livelihoods.
KMC; KMDA; DoLLR; DoIW	Generally aware of PU activities but perhaps give priority to urban issues; better awareness of benefits from PU farming may help evolution of more equitable development policy, including resources for PU socio-economic development	Knowledge of conflict and possible synergy between stakeholder positions to help build consensus and develop equitable policy initiatives; outputs of first project workshop and institutional analysis highly relevant	Participation of this target group at the first workshop was limited, and highlighted by a stakeholder analysis activity with participants. The institutional analysis provided an opportunity to engage directly with various target institutions (KMC, KMDA & DoIW) and to provide knowledge of the project and its objectives. Dissemination of project findings to these institutions was achieved through presentations at the second workshop and international WEDC conference held in Kolkata, by distributing project reports and publishing them on the website and through targeted meetings as part of an active dissemination process. Attendance of the MIC, DoLLR at the second workshop demonstrated impact on this department.
DoF	Research on selected technical issues ongoing, however, training and advice needs of producers more oriented toward practical issues	Knowledge of constraints to fish production to help focus resources and develop appropriate policy response; knowledge of markets and seed supply networks critical to supporting quality enhancement	Collaboration on all project activities, including planning, helped ensure new knowledge on poor livelihoods and appropriate research approaches was taken into the institution. New knowledge on specific problems facing fish producers and of seed trading networks and fish marketing channels also highlighted opportunities to sustainably increase production and productivity, enhancing poor livelihoods. Following a specific request during a meeting all project working papers were lodged with the MIC, DoF, ensuring dissemination to the most senior level in the institution, and in turn lead to the MIC participating in the second workshop. Outcomes from the workshop also indicated that DoF were keen to use the new knowledge provided to help coordinate appropriate actions in PU Kolkata and to guide the development of PU PS for other municipalities. As a consequence of collaborating on the project a DoF representative also signed the 'Hyderabad declaration' (CGIAR, 2002).

DoE; WBSPCB; tannery operators and polluting activities	Threat of environmental degradation from industry recognised by all parties but non-co-operation of polluters and limited monitoring are constraining improvement	Knowledge of waste resource contamination to raise awareness amongst tanneries and assist DoE - WBSPCB develop enhanced environmental protection policy	As a collaborator on the project all project outputs have been lodged with this target institution and new knowledge on poor livelihoods and appropriate research approaches was taken into the institution. Targeted meetings with senior members on the DoE and WBSPCB helped reinforce the communication of project findings. As a consequence of these activities the institution is using project findings to help develop a management plan for EKW for submission by GoI to the Ramsar Bureau. A DoE representative also acted as a signatory to the 'Hyderabad declaration of wastewater use in agriculture' (CGIAR, 2002).
Kolkata city (general society); tax payers	Awareness of PU farming and benefits to society limited, especially of subsidy afforded to society by managed waste reuse	Knowledge of benefits to society from PU farming and possible impact on environment and economy resulting from loss	Knowledge of new benefits to society of PU PS was communicated through mass media coverage of the second workshop, however, further work would be required to raise awareness of the full range of new knowledge generated and to assess the impact and change in awareness engendered.
Bankers and credit institutions	Formal credit providers are reluctant to lend to PU farmers as they lack security, however, micro-finance, exposing lenders to low risks, could significantly enhance poor livelihoods	Knowledge of credit problems faced by farmers, particularly situation analysis report, to assist credit providers deliver more appropriate and flexible arrangements	During the situation analysis and focus group and household interviews, savings and credit arrangements were described. New knowledge on the limited access to credit and problem this caused for producers and poor people was presented at the second workshop. Two organisations involved specifically in providing loans (NABARD) and helping establish micro-credit schemes (CARE) who attended the meeting helped identify possible opportunities to provide credit in PU Kolkata, to sustainably enhance production and productivity, initially through desiltation, and to help poor families invest in livelihoods diversification.
Wholesale markets, market owners, retail vendors; seed traders; processors	Large numbers of traders depend on servicing PU farms for their livelihood; individual traders must consider quality control to safeguard public health and increase competitiveness of PU farms	Knowledge of constraints and opportunities in market networks, to enhance functioning, competitiveness and quality	Knowledge of the project objectives was communicated directly to seed and wholesale and retail market traders during survey work. Findings from this work have been posted on the project website, but due to delays in reporting, new knowledge was not communicated effectively to traders and market associations. Further dissemination of key findings to traders could assist them in identifying opportunities to enhance product quality, food safety and their own competitiveness.
Developers & planners (WBIDC, HIDCO)	These institutions are primarily concerned with urban issues, however, failure to consider impact on PU activities threatens many poor livelihoods and continued supply of environmental goods and services currently supporting societal system	Knowledge of benefits to society from PU farming and possible impact on environment and economic development resulting from loss	During the first round of meetings conducted as part of the institutional analysis senior representatives from WBIDC and HIDCO were presented with information on the project and its objectives. Feedback from these institutions highlighted the tension between urbanisation and preserving PU PS. It is anticipated that project reports published on the project website could constitute an important knowledge resource for these institutions although information on actual uptake and adoption is not available, further work would be required to assess this.
Scientists - local, national and international	Activities must now focus on the transition from research to development, plans of action are required to translate findings into action	Knowledge of constraints that demand further research to help safeguard and enhance poor livelihoods	The participation of local researchers in the first project workshop helped disseminate information of intended project activities and objectives. Presentations at the second workshop, regional workshop organised by IWMI and international WEDC conference contributed to disseminating findings to this group. Project reports posted on the website also constitute a valuable resource to help target future research work on PU PS in the region on critical knowledge gaps. However, outputs from the second workshop suggest researchers should concentrate resources more on addressing identified constraints through appropriate actions implemented in collaboration with local stakeholders.
Consumers	Consumers in Kolkata are buying large quantities of produce from PU farms; providing advice on the safe storage and processing of products may be critical to ensuring health risks are minimised	Knowledge of benefits to society from PU farming (information on food safety has not been collected therefore not possible to comment on this aspect)	Information of project objectives was communicated to selected consumers during the retail market survey; dissemination of knowledge to this group has been limited and future initiatives to raise awareness of possible food safety issues etc. should be given careful consideration so as not to panic or confuse consumers. However, it must be noted that there are potential health risks associated with PU PS and these demand further assessment to safeguard producer, public and environmental health.

<p>International development agencies (DFID-India, ADB)</p>	<ul style="list-style-type: none"> <li>- Development agencies are investing in services and infrastructure to enhance the livelihoods of the urban poor, however, possibly negative impacts on the PU poor do not appear to have been considered in full.</li> <li>- Considering the lack of wastewater treatment in West Bengal and India, knowledge from this study may be useful in guiding the development of wastewater reuse practices in other regions.</li> <li>- Development agencies may be well positioned to implement projects at the PUI that deal with the issue of how to enable poor people that depend on PU production to escape poverty, possibly by incorporating non-NR based activities in their livelihoods.</li> </ul>	<ul style="list-style-type: none"> <li>- Knowledge of the vulnerability of the PU poor to changing circumstances, particularly access to land and waste resources may assist in developing more equitable development initiatives that enhance the livelihoods of both the urban and PU poor.</li> <li>- Although not directly transferable due to the complex social and institutional setting in which the system has evolved, knowledge of such issues may help establish appropriate approaches elsewhere.</li> <li>- Knowledge of significant and varied threats to PU farming may suggest assistance is required for poor people to facilitate their transition from NR-based livelihoods to alternative, less vulnerable &amp; more rewarding activities.</li> </ul>	<p>During the institutional assessment it emerged that international development agencies, including ADB and DFID-India were planning and implementing urban-based projects (CUSP &amp; CEIP) with considerable scope to impact on poor livelihoods dependent on PU PS. Through email communication the Head of Urban Planning, ADB expressed a demand for project outputs and these were communicated in the form of working papers. Meetings with the DFID representative in Kolkata further highlighted the potential role of outputs in informing the CUSP project and during a meeting with engineering and rural livelihoods advisors at the offices of DFID-India in Delhi a request was received for project outputs, specifically relating to the institutional analysis. It was also agreed that the dialogue would be continued at the WEDC conference in Kolkata, however, due to communication difficulties this was not possible. It is anticipated that the full range of project outputs, and in particular working papers, constitutes an important knowledge resource for use by institutions such as ADB and DFID-India, although an evaluation of the impact of project outputs on planning and policy would require further assessment.</p>
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Note: stakeholder groups considered as having marginal influence on the livelihoods of poor people in PU Kolkata were excluded from this analysis; they were: land owners; people in flood prone areas, poachers, police, country liquor producers, wildlife stakeholders (Ramsar Convention)

Due to time and resource constraints it proved difficult to go beyond the project logframe commitment to ensure ‘target institutions, planners and actors made aware of project findings through dissemination of appropriate communication materials, project reports and the second project workshop’. However, consultation with target institutions has resulted in feedback and knowledge on how best to proceed with translating research outcomes to actions that enhance poor livelihoods. Preliminary feedback from stakeholders concerning issues raised by the project has been documented in the proceedings from the second project workshop and in the minutes of meetings with target institutions (Edwards, 2002).

The project produced a range of valuable knowledge resources for stakeholders and target institutions and has attempted to promote dissemination and assimilation of key findings into policy initiatives that benefit the livelihoods of poor people. However, there is no guarantee that such pro-poor policies will be acted upon or implemented; institutional weakness in implementing existing policy such as conducting environmental impact assessments for proposed developments and enforcing pollution control standards constitutes a significant threat to the PU environment supporting poor livelihoods. Therefore, an important future activity that the project team are interested to pursue and promote is the support of local target institutions in translating policy objectives into action. Support is likely to be required in developing structures and processes to achieve appropriate mechanisms by which to implement policies that enhance poor livelihoods. During the project it also proved necessary to ensure that dissemination activities were focused on selected target institutions to maximise the likelihood of project outcomes being assimilated into pro-poor policy initiatives. For example, the process of active dissemination, through meetings with senior representatives was only undertaken with selected target institutions from those groups outlined in Table 2; those selected included the KMC, DoIW, DoF and DoE.

To better describe the range of communication activities undertaken during the project, Table 3 shows a timeline detailing individual activities, the target institutions involved and comments on the success of the approach. Proposed future activities that could have a significant influence on the impact and contribution of project outputs to enhancing poor livelihoods in PU Kolkata are also presented.

### 3. Future project communications

The project team intend to maintain the project website for an indefinite period. It is envisaged that this resource could provide a common point of reference for stakeholders and if practical it would be desirable to continue to promote and disseminate project outcomes beyond the end of the current project, this might also involve establishing a virtual forum for interested parties. It is also anticipated that copies of project outputs will continue to be available from the NRSP office and via the online WiSard reference centre; where possible interested parties will be directed to this resource. Through an audit of project documentation the principle investigator will ensure that both local partners have access to working papers produced during the project, including electronic copies; it is anticipated that these sets of reports will constitute important reference centres for local stakeholders, target institutions and interested parties.

Table 3. Project communication activities, involvement of target institutions and comments regarding approach

Project month	Activity and target institution involvement	Comments
0-6	<ul style="list-style-type: none"> <li>- First project workshop: stakeholders from several organisations participated and a stakeholder analysis exercise was used to identify key target institutions for inclusion in the institutional analysis exercise; appropriate communication pathways for stakeholders were identified</li> <li>- Institutional analysis: stakeholder and target institution representatives were interviewed, project aims explained and their perceptions of PU farming assessed; this activity also constituted the first step in an ongoing dialog between the project and key target institutions</li> </ul>	<p>Due largely to practical considerations it proved difficult to ensure that all stakeholder groups were represented</p> <p>Guided by outcomes from the workshop it was possible to focus on meeting with representatives from key target institutions</p>
6-22	<ul style="list-style-type: none"> <li>- Participatory research activities: household and focus group interviews with poorer groups provided an opportunity to directly communicate the project aims and highlight the expected project outcomes to which people would have access</li> <li>- Commissioning project website: this resource ensures working papers are accessible to target institutions; it is envisaged that more equitable and open access to project outcomes will help overcome the prevailing injustice where ‘knowledge is power’ and that consequently greater consensus and equitable development initiatives will be possible</li> </ul>	<p>Participation gave selected poor groups the opportunity to express their perceptions, particularly of the constraints they face</p> <p>Although target institutions have internet connections, usage may be strictly controlled or limited by resource concerns; however, web-based resources are generally considered accessible in Kolkata</p>
22-26	<ul style="list-style-type: none"> <li>- Second project workshop: this forum provided an opportunity to present outcomes to a wide range of stakeholders, including senior representatives from target institutions, opportunities to develop action plans to address notable constraints to poor livelihoods were also identified</li> <li>- Formal dissemination: presentations at conferences (DPU, WEDC) and workshops (IWMI), together with articles in New Agriculturist magazine, contributions to the RUAF bibliography and a chapter in the forthcoming CABI book on Urban Aquaculture constitute important dissemination activities to reach both local and international stakeholders</li> <li>- Active dissemination: this activity focused on meetings and correspondence with senior representatives of target institutions to disseminate and discuss the likely impact of project outcomes; feedback has contributed to a better understanding of how future development initiatives to enhance poor livelihoods might be implemented</li> </ul>	<p>Stakeholder representation was better than in the first workshop, although the presence of ministers meant some groups were less vocal than was hoped</p> <p>Although useful such conventional dissemination approaches fail to target key local institutions that should have a stake in addressing development issues in PU Kolkata</p> <p>Meetings with KMC, DoIW, DoF and DoE were undertaken, and although most reiterated their positions, knowledge was gained that could help facilitate future development actions</p>
27+	<ul style="list-style-type: none"> <li>- Maintenance of communication pathways for access to electronic master files, especially project reports, now to be facilitated through NRSP link with WiSard; local project partner institutions are well placed to maintain reports for reference by stakeholders and other target institutions</li> <li>- Project outcomes constitute an important knowledge resource that should be utilised to facilitate the transition from research to development oriented activities in PU Kolkata</li> </ul>	<p>Access to reports in Kolkata is often highly restricted; free and open access through the internet constitutes an important step in avoiding knowledge being translated into power; better access to knowledge should help build consensus regarding equitable development initiatives</p>

Project findings also suggest that further research and development initiatives may be required, to address the constraints and emerging threats identified, and safeguard poor livelihoods at the Kolkata PUI. Outcomes from the current project also suggest there may be opportunities for interventions to enhance these poor livelihoods, reducing vulnerability and

freeing PU people and communities from poverty. Therefore, where appropriate opportunities are identified, it is anticipated that project outcomes will be useful in formulating proposals to agencies such as DFID-India, ADB, EC and World Bank with the objective of planning and initiating programmes to facilitate the substantive enhancement of poor livelihoods in PU Kolkata. A preliminary activity in this strategy might be a project working directly with stakeholders and target institutions to develop plans of action based on research findings from the current project, to identify equitable and appropriate development interventions. Areas of particular emphasis might include engineering to enhance both waste treatment and food production; worker, public and consumer health protection; enhancing the functioning, efficiency and interaction of individual farm units; general socio-economic development, including basic service provision, finance, health care, education and local governance.

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