A better method of planning for city fringes

RIU

Validated RNRRS Output.

Developed in Kolkata in West Bengal (India), a new planning approach is available to help decision makers apply participatory planning in difficult peri-urban environments. Conventional planning systems are unsuited to the complexity of peri-urban areas. To overcome this, the 'Peri-Urban Participatory Action Planning and Implementation' (PU-PAPi) method combines established participatory planning methods with new features, and so is better suited to such complex settings. The method has already been validated in India and Bangladesh, and is expected to be applied at various locations worldwide. An adapted form of PU-PAPi is already being used in the EC MANGROVE Project working with poor communities in Indonesia, Thailand and Vietnam.

Project Ref: **NRSP29:**
Topic: **6. Promoting Success: Partnerships, Policy & Empowerment**
Lead Organisation: **University of Essex, UK**
Source: **Natural Resources Systems Programme**

Document Contents:

Description

NRSP29

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

Bangladesh, India, Indonesia, Thailand, Vietnam,

Target Audiences for this content:

Crop farmers, Livestock farmers, Fishers, Forest-dependent poor, Processors, Traders, Consumers,

A. Description of the research output(s)

1. Working title of output

Peri-Urban Participatory Action Planning and implementation (PU-PAPi)

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

RNRRS Programmes

NRSP - Natural Resources Systems Programme
AFGRP - Aquaculture and Fish Genetics Research Programme

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

Output	*R no.*	*Institutional partners*	*Contact persons*
Peri-Urban Participatory Action Planning and implementation (PU-PAPi)	R8365	University of Essex (UOE), Colchester, UK	Dr Stuart Bunting Email: swbunt@essex.ac.uk Tel: +44 (0)1206 872219
		Institute of Environmental Science and Wetland Management (IESWM), Department of Environment (DoE), Government of West Bengal (GoWB)	Dr Nitai Kundu
		Centre for Environmental Management and Participatory Development (CEMPD), Kolkata	Professor S Ghosh
		Independent Consultant	Roger Lewins
		WrenMedia, Suffolk, UK	Michael Pickstock
		University of Stirling, UK	Dr Stuart Bunting
	D10	University of Essex	Dr Stuart Bunting
		University of Stirling, UK	Prof James Muir
	PD117	University of Stirling, UK	Dr Stuart Bunting
		IESWM, DoE, GoWB	Dr Nitai Kundu
	R7872	University of Stirling, UK	Dr Stuart Bunting
		IESWM, DoE, GoWB	Dr Nitai Kundu
		Department of Fisheries (DoF), GoWB	Dr Madhumita Mukherjee

4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? ***(max. 400 words)****.*

Complex physical, social and institutional settings characterise **peri-urban** [1] (PU) areas, making it problematic to plan and implement improved natural resources management (NRM) strategies to enhance **poor livelihoods**. This situation is also found in **coastal zone** areas dominated by **mangroves**, **bays**, **reefs** and **coastal artisanal fishing**, **dualistic** and **irrigated** and **wetland rice-based** farming systems. Conventional, technocratic and comprehensive planning approaches are poorly suited to addressing the needs of powerless and **extreme vulnerable poor** groups in such complex settings. Reliance on outmoded planning approaches is perpetuated by limited knowledge and awareness of alternatives and fear amongst authorities that 'wider involvement is less controllable, less precise and so likely to slow down planning processes' (Pretty, 1995).

The purpose of the research described here was to 'Generate new knowledge of action planning to implement NRM strategies for the PUI of Kolkata, that benefit the poor, formulated through extended interaction with principal stakeholders'. Outputs included a new planning approach ***Peri-Urban Participatory Action Planning and implementation*** (**PU-PAPi**) that applied established participatory planning methodologies but introduced innovative features to better fit the complex PUI setting. A basic monitoring strategy to track the planning process and help facilitation was also developed. Outcomes provided greater understanding of the prospects and requirements for participatory planning in the PUI. Innovative participatory planning elements related to the mechanism of **representation**, need to involve **political stakeholders** (vertical linkage), role of participation and **facilitation** and timing of planning activities. The approach combined distinct, formal, interaction as one-off workshops and meetings with secondary and tertiary stakeholder with more ad hoc discussions.

Innovative planning elements included demarcation of the 12,500 ha EKW into 11 manageable and representative regions based on land-use, social and political criteria; **consensual planning** requires a democratic process of representation but the scale of consultation had to be sensibly constrained. Political and institutional complexity required potential planning processes to balance or negotiate the interests and positions of multiple stakeholders at many levels. PUI management is controlled by overlapping functions and responsibilities that may complement or counteract one another, superimposed with an informal institutional environment that influences land-use **decision-making** within and outside government. Crucially, the PU-PAPi process engaged with both representative **primary stakeholder** organisations and relevant **non-governmental** and **governmental institutions**.

Other outputs included: **pro-poor water management action plan** for the EKW; testing of **pilot-scale interventions**; **communication planning** that raised awareness of the process locally, nationally and internationally; institutionalisation of **participatory planning approaches and structures**.

[1] Peri-urban areas are often regarded as those physical spaces between urban and rural environments but in practice the transition from urban, to peri-urban, to rural is defined by changing demographic, economic and social-psychological elements. According to Iaquinta and Drescher (2000) the pattern of change is discontinuous, uneven and multidimensional, and ultimately dependent on underlying social processes; peri-urban environments are not always contiguous or proximate to urban areas and they identified village peri-urban areas where rural communities are experiencing significant urbanism due to the mass media and diffusion of consumerist ideologies and, of particular note in developing countries, remittances, ideas, behaviour and non-income resources from out-migrants

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	Technology	Service	Process or Methodology	Policy	Other Please specify
			X		

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

The main commodities were fish, rice and vegetables. With appropriate adaptations PU-PAPi is being used elsewhere to address constraints faced by poor people dependent on other commodities, not necessarily in peri-urban areas, notably forestry and non-timber forest products [EC INCO-DEV MANGROVE Project] and such an approach could be used to address other issues such as service provision (water, health, education) and infrastructure development (roads, drainage, electricity supplies) and governance.

7. What production system(s) does/could the output(s) focus upon?

Semi-Arid	High potential	Hillsides	Forest-Agriculture	Peri-urban	Land water	Tropical moist forest	Cross-cutting
X	X	X	X	X	X	X	X

Peri-Urban participatory action planning and implementation is appropriate to complex physical, social and institutional settings, which characterise many production systems, and where the participation of a hierarchy of stakeholders, often with competing interests, different agendas and unequal power and income must be negotiated. The action plan for water management in the peri-urban EKW was formulated from the issues, constraints and potential solutions highlighted by representatives from eleven wetland regions. From these consultations, three local plans were taken forward and presented as case studies with great potential to relevant tertiary stakeholders (DoE, West Bengal State Pollution Control Board (WBSPCB), Department of Irrigation and Waterways (DoIW), GoWB, Kolkata Municipal Development Authority (KMDA); Kolkata Municipal Corporation (KMC), DFID/ADB sponsored Kolkata Environmental Improvement Project (KEIP), DFID Country Office, ADB Technical Assistance [TA-3423-IND]). The case studies were intended to represent the range of livelihoods interests and associated problems and opportunities across the EKW; these regions were representative of aquaculture, mixed agriculture and mixed fisheries/agriculture areas and associated wetlands users (*bheri* workers, farm labourers, leaseholders, fisheries cooperative members, maintenance & construction workers, rag-pickers).

8. What farming system(s) does the output(s) focus upon?

Smallholder rainfed humid	Irrigated	Wetland rice based	Smallholder rainfed highland	Smallholder rainfed dry/cold	Dualistic	Coastal artisanal fishing
	X	X			X	

The PU-PAPi planning approach was specifically intended to represent the needs and concerns of the full range of stakeholders from primary to government and informal management institutions at other levels. Novel modifications as compared with other participatory approaches included the attempt to bridge the vertical relationships between these interests and to delineate the system by region rather than livelihoods group The resulting action plan for water management in the EKW addressed major issues that cross-cut dualistic aquaculture and irrigated farming interests and extended beyond the resource base to health issues.

*9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (**max. 300 words**).*

Clustering with validated scaling-up outputs from South Asia and Africa e.g. 'Scaling-up through communication; R8363' and 'Scaling-up through uptake promotion; R8381' would improve access to and the appropriateness of information about this output for civil society, government, private sector, development and research stakeholders. Knowledge of planning with hierarchical stakeholder groups, not necessarily dependent on the same resource base, but competing for market share and government services and investment, would contribute to situations where 'Participatory Action Plan Development; R7562' output is likely to be less effective.

Participatory action planning is a widely advocated and increasingly accepted first step for addressing development priorities in complex physical, social and institutional settings, however, implementing the resulting action plans requires efforts to sustain broad-based agreement; knowledge of the stakeholder Delphi approach for participatory-decision making and consensus building (Bunting submitted-a, submitted-b) would be useful in this regard as would 'Building and sustaining consensus for change; R8334).

Demand for technical inputs, group formation, common property management regimes, better market information and information on food safety to support action plan implementation was also noted in developing this output, therefore, clustering with 'Institutional arrangements for CPR use; R8195', 'Developing market information systems within the aquatic food supply chain; AFGRP' and 'Promoting healthy peri-urban aquatic food supply; AFGRP' would potentially add value to the action planning process considered here.

Linking this output with policy processes in other peri-urban settings, using knowledge of 'Planning and development policy and method in the PUI; R8491', would help guide and refine existing national and regional processes and priorities contributing to poverty reduction and growth in other rapidly growing peri-urban areas. The PU-PAPi could be used to address development and service provision issues in other PU and complex physical, social and institutional settings e.g. integrated watershed management, irrigation planning and integrated coastal area management.

Validation

B. Validation of the research output(s)

*10. **How** were the output(s) validated and **who** validated them? **(max. 500 words)***

The effectiveness of PU-PAPi was assessed within R8365 using process monitoring. Planning activities including workshops, meetings and focus groups facilitated interactive participation, providing stakeholders with the opportunity to inform and influence the process. Extended and continued interaction with key and primary stakeholders throughout indicated broad-based support for the process and its objectives and constitutes strong and verifiable validation. Whilst testing the feasibility of pilot-scale implementation possible negative impacts on vulnerable groups were revealed during local planning consultations. Consequently, focus groups with the 'extremely vulnerable poor', notably women headed households, fishermen's wives and children who are frequently overlooked in technocratic and comprehensive planning approaches were undertaken to further validate outputs; appropriate strategies to ensure the voices of poor and vulnerable groups are prominent in future PU-PAPi initiatives are central to promoting adoption and uptake of outputs.

NRSP managers monitored progress with outputs and peer review of the FTR provided further validation; NRSP (2006) concluded that 'An innovative approach used at the Kolkata PUI [Peri-Urban Interface] succeeded in giving poor people a better voice in planning. Stakeholders of various powers and incomes were successfully brought together using planning groups that cut across existing geographic, administrative and interest boundaries. The groups were formed by organising stakeholders around a focus on the use of land or on a particular production process, as opposed to the more usual focus on a particular geographic place or area'.

Target institutions including user groups (Fish Producers Association; Fishermen's Cooperatives; Agricultural Cooperatives), CBOs (Save the Wetlands Committee), Political Parties, Trade Unions, NGOs and government institutions (IESWM; DoE, GoWB; DoF, GoWB; KMC; KMDA; DoIW, GoWB) participated in PU-PAPi process and adopted the resulting management plan (Bunting et al., 2005), furthermore, the Department of Environment, Government of West Bengal, continues to promote planning outputs, notably within the EKW Management Committee (Bunting, 2006a).

Uptake in USAID and ADB TA sponsored development initiatives in West Bengal and India has been documented (Bunting, 2006a). Further uptake is being promoted through dialogue with the Bangladesh Fisheries Research Forum and Bengal Platform for urban and peri-urban aquaculture development in Bangladesh and West Bengal, India; facilitated with a review paper on the subject, containing a summary of the PU-PAPi approach developed in PU Kolkata (Bunting and Lewins, 2006).

With suitable adaptation PU-PAPi developed in Kolkata has been found useful at coastal sites in Indonesia, Thailand and Vietnam, under the auspices of the EC MANGROVE Project. As with PUI areas, planning in coastal areas, particularly those dominated by mangroves, reefs or bays, requires the participation of a hierarchy of stakeholders, often with competing interests, different agendas and unequal power and income. Sharing experiences from Kolkata is promoting PU-PAPi uptake amongst participants and other civil society, private sector, national and local government and researcher stakeholders in South and Southeast Asia and Sub-Saharan Africa; sharing the communication planning approach developed in Kolkata has been one of the first steps in this process (Bunting, 2006b).

11. ***Where and when*** *have the output(s) been validated?* ***(max. 300 words)***

Outputs were validated during participatory planning activities with primary stakeholders (fish, rice and vegetable farmers) and key stakeholders (target institutions) in the EKW, West Bengal, India, primarily between May 2003

and November 2005. Further validation was undertaken during this period with 'extremely vulnerable poor' groups, notably women headed households, fishermen's wives and children who are often excluded from technocratic and comprehensive planning. Validation by the NRSP management occurred during a MTR visit to Kolkata, November 2004 and UK-based FTR preparation and review (early 2006).

Uptake by target institutions active in West Bengal, India provided further evidence of validation; the ongoing USAID Statement-Of-Work for activities in Kolkata, and six other large metropolitan areas, namely Delhi, Mumbai, Chennai, Bangalore, Hyderabad and Ahmedabad was published in 2005 and specified the utilization of project outputs. A Writ Jurisdiction submitted by the DoE to the High Court in Kolkata cites project outputs and highlights the need to institutionalise NGO and user group participation in future planning initiatives in the EKW. Uptake through an ADB TA addressing wetland management issues throughout West Bengal during 2005 has also been documented (Bunting, 2006a).

Further validation in West Bengal, India and Bangladesh is occurring through dialogue initiated with the Bengal Platform for urban and peri-urban aquaculture development, which held its inaugural meeting in Dhaka, November 2005; dialogue was informed and facilitated with a review paper detailing PU-PAPi outputs (Bunting and Lewins, 2006). In Southeast Asia PU-PAPi outputs are being used with appropriate adaptation in coastal areas of Indonesia, Thailand and Vietnam to formulate action plans with stakeholders to reconcile multiple demands placed on such areas (EC MANGROVE Project; 2005-2009). There has been no uptake promotion of PU-PAPi outputs targeted at Africa, explaining limited evidence of adoption and uptake in Sub-Saharan Africa cited here.

Current Situation

C. Current situation

12. ***How and by whom*** *are the outputs currently being used? Please give a brief description* ***(max. 250 words****).*

Government departments and International Development agencies not involved in project activities valued the PU-PAPi process and its outputs. Uptake and achievement in institutionalising PAP was demonstrated in a Statement Of Work developed by USAID in consultation with the DoE, GoWB that stipulated that future work in the wetlands should adopt project outputs. Furthermore, a Writ Jurisdiction submitted to the High Court by DoE cites project outputs and highlights the need to institutionalise NGO and user group participation in future planning initiatives. Key stakeholders representing natural resources users in the wetlands endorse using PAP and intend to engage in future participatory planning activities. Support was sought by DoE and ADB in integrating project outputs, the planning approach and pilots into the EKW management plan being prepared as part of ADB TA. Development and circulation of the EKW water management action plan and preliminary development activities report (Bunting et al., 2005) with IESWM, DoE and the EKW Management Committee promoted uptake expected to influence future planning and lobbying activity by these bodies. Project outputs are being used by the Bangladesh Fisheries Research Forum (BFRF) and Bengal Platform (BP) for urban and peri-urban aquaculture development in Bangladesh and West Bengal, India (D10; Bunting and Lewins, 2006). Furthermore, EC MANGROVE Project is using PAPi with hierarchical groups to address constraints facing poor people in mangrove dominated coastal

areas in Asia. The UOE-based Coral Reef Research Unit (CRRU) active in South and Southeast Asia, Africa and South America is in the early stages of uptake.

*13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used **(max. 250 words).***

With appropriate adaptation PU-PAPi outputs are being used by stakeholders within the 12,500 ha EKW, West Bengal. A Statement Of Work developed by USAID in conjunction with the DoE stipulated that a proposed 'Management structure & plan for conservation of the East Kolkata Wetland and its economy' should utilize project outputs, and that this work would feed into dialogue with the Mega-Cities Club, involving representatives from state governments, national government, donor agencies, financing institutions, private sector, and NGOs from 7 of India's large and rapidly growing municipalities, namely, Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad and Ahmedabad.

PU-PAPi outputs are being used in Bangladesh and West Bengal, India by the BFRF and BP. These innovation platforms have been identified as emerging networks that could shape a new institutional setting, inducing change in bureaucratic and regulatory structures and formal rule sets, leading to an enabling environment for the safe and equitable development of urban and peri-urban aquaculture throughout the region (Bunting and Lewins, 2006).

PU-PAPi, with adaptation, is being used in the EC MANGROVE Project to develop PAPi approaches with poor communities dependent on mangrove dominated coastal areas in Indonesia, Thailand and Vietnam. The CRRU, UOE will use outputs throughout South and Southeast Asia, Africa and South America. Participatory Action Plans are being developed within the WASPA Asia EC Asia Pro Eco II project working in Rajshahi, Bangladesh and Kurunegala, Sri Lanka. Plans are underway for collaborative research exploring the application of PAPi with upland communities in China, India, Nepal and Vietnam.

*14. What is the scale of current use? Indicating how quickly use was established and whether usage is still spreading **(max 250 words).***

The population of PU Kolkata was estimated at 7.55 million (Taylor et al., 2003), the EKW is a prominent feature here, providing employment in fish culture (8,500) and vegetable and rice farming (9,000) and with a population over 60,000. Uptake of PU-PAPi outputs in planning activities in this area by the EKW Management Committee, and DoE in USAID and ADB funded initiatives occurred towards the end of the 18 month R8365 project; DoE and ADB activities include an inventory and management strategy for urban and peri-urban wetlands throughout West Bengal, in this way PU-PAPi approaches could potentially enhance the management of several hundred wetlands and livelihoods of several million households. The BFRF and BP focused on urban and peri-urban aquaculture in Bangladesh and West Bengal, India have a modest membership, but the potential to influence the development of natural resources management affecting several million poor households.

The EC MANGROVE Project is working in Indonesia, Thailand and Vietnam and with three coastal communities in each country, this project started in August 2005, just prior to the end of R8365; the MANGROVE Project is working towards the adoption of PAPi approaches by regional and national government and non-government institutions for planning in coastal areas throughout the target countries by 2009; thousands of poor households

stand to benefit. Uptake within the CRRU has only recently begun, however, with researchers active throughout South and Southeast Asia, Africa and South America, use is expected to expand significantly over the next 3-5 years.

15. In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success? ***(max 350 words).***

Promotion and adoption of outputs in the EKW was achieved primarily through collaboration with State and local government institutions (IESWM; EKW Management Committee; DoE, GoWB; Panchayat) and other key stakeholders (user groups, private sector, political parties, unions, CBOs, NGOs). Involvement of these institutions helped facilitate the process and create an enabling environment, although, it is acknowledged that in other situations such facilitating institutions may not exist. In this situation it might be suggested that a new platform or institutional structure is constituted; as Pahl-Wostl (2005) noted regarding the management of urban watersheds, 'establishment of an actors' platform may serve the establishment of a permanent stakeholder network and thus of a new institutional setting that might be essential ... to induce changes in formal rules and regulatory, bureaucratic structures impeding change'.

In South Asia the Bengal Platform for urban and peri-urban aquaculture development in Bangladesh and West Bengal, India assisted in promotion and adoption of PU-PAPi outputs. Management planning activities under the USAID FIRE-D Project focused on the East Kolkata Wetlands, are using PU-PAPi outputs; moreover, this initiative includes the Mega-Cities Club which has the potential to promote uptake.

Awareness and recognition amongst local and regional government institutions, civil society, development practitioners and the private sector of the difficulties of planning and implementing change in PU and other complex land-water, coastal or upland interface systems is critical to institutionalising an enabling environment where participatory planning approaches are supported and championed. Uptake promotion, including training practitioners and those responsible for development planning, also constitutes an important element of capacity building. Within the PU-PAPi approach there are 5 distinct phases: awareness raising; problems census; iterative planning and negotiation; feasibility studies and implementation of bankable projects. Knowledge of these and how to tackle the associated practicalities would strengthen the capacity of target institutions to adapt PU-PAPi to their particular circumstances; appropriate innovation products or platforms would help target institutions use knowledge of PU-PAPi in new ways to formulate goods and services to benefit the poor throughout South Asia and Sub-Saharan Africa.

Current Promotion

D. Current promotion/uptake pathways

16. ***Where*** *is promotion currently taking place? Please indicate for each country specified detail what promotion is taking place, by whom and indicate the scale of current promotion* ***(max 200 words).***

In West Bengal promotion is centred on the East Kolkata Wetlands Management Committee, responsible for the 12,500 ha EKW Ramsar site; the population of peri-urban Kolkata, of which the EKW is a major feature, was estimated at 7.55 million (Taylor et al., 2003). The IESWM, DoE, GoWB is using outputs in ADB TA activities focused on managing urban and peri-urban wetlands throughout West Bengal. The USAID FIRE-D Project, encompassing the Mega-Cities Club with representatives from Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad and Ahmedabad, is utilising PU-PAPi outputs in formulating enhanced institutional arrangements for urban wetland management.

Regionally, IESWM is a founding member of the Bengal Platform for urban and peri-urban aquaculture development in West Bengal and Bangladesh where a review paper discussing PU-PAPi outputs has facilitated uptake promotion; the paper by Bunting and Lewins (2006) is accessible on the web (www.essex.ac.uk/ces/) and prompted further uptake promotion within the World Bank project on water management in Dhaka, Bangladesh. Further uptake promotion globally via onefish, id21 and other web-based portals and communication and information markets is planned. Furthermore, outputs are being promoted in Indonesia, Thailand and Vietnam within the EC MANGROVE Project.

17. What are the current barriers preventing or slowing the adoption of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc. ***(max 200 words)****.*

Adoption of the PU-PAPi process is currently associated with specific initiatives in South and Southeast Asia, notably the Bengal Platform for urban and peri-urban aquaculture development in Bangladesh and West Bengal India and the EC MANGROVE Project in Indonesia, Thailand and Vietnam.

Broader adoption of PU-PAPi outputs is being constrained by continued reliance of government departments and policy-makers throughout most of South Asia and Sub-Saharan Africa on technocratic and comprehensive planning approaches, which are poorly suited to addressing the needs of poor and vulnerable groups in complex physical, social and institutional settings such as peri-urban, coastal, upland and semi-arid areas. Reliance on outmoded planning approaches is perpetuated by a lack of knowledge and awareness of successful examples, and fear amongst authorities that ‘wider involvement is less controllable, less precise and so likely to slow down planning processes’ (Pretty, 1995).

Barriers to implementation of technical action points identified during R8365 included the need to conclude agreements with third parties; poorly defined jurisdiction, ownership and property rights; limited access to credit; concern over possible impacts on vulnerable groups and the need to formulate acceptable relocation strategies for people living on canal and pond embankments.

18. What changes are needed to remove/reduce these barriers to adoption? This section could be used to identify perceived capacity related issues ***(max 200 words).***

Discussing participatory learning for sustainable agriculture, Pretty (1995) noted that ‘Institutions can ... improve learning by encouraging systems that develop a better awareness of information’ and that ‘The best way to do this is to be in close touch with external environments, and to have a genuine commitment to participative decision making, combined with participatory analysis of performance. Learning organizations will, therefore, have to be more decentralized, with an open multidisciplinarity, and heterogeneous outputs responding to the

demands and needs of farmers'. Furthermore, that 'multiple realities and complexities will have to be understood through multiple linkages and alliances, with regular participation between professionals and public actors' and that only 'when some of these new professional norms and practices are in place that widespread changes in the livelihoods of farmers and their natural environments are likely to be achieved.' Investment for development that supports the institutionalisation of such a new professionalism is needed. Links to innovation platforms, communication and information markets and policy and partnership initiatives would promote uptake and adoption of PU-PAPi outputs, however, equally important for urban, rural and agricultural institutions, whether governmental or nongovernmental, is to institutionalise approaches and structures that encourage participatory learning and action planning approaches.

19. What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? ***(max 300 words).***

Collaboration with target governmental and non-governmental institutions was critical to the uptake of PU-PAPi outputs. Wherever PAPi is proposed, the first stage is to initiate constructive dialogue, engendering ownership and building trust, with target institutions and key stakeholders, however, the strategy must be sensitive to prevailing social, institutional and political landscapes. PAPi initiatives should aim to inform and influence ongoing policy making processes. Ensuring the participation of all primary and key stakeholders raised awareness of the process, generated broad-based support and improved the outputs and chances of implementation. This process required careful consideration of the communication needs of each group and appropriate planning activities, ranging from formal workshops and planning meetings, to focus groups with extreme vulnerable poor groups frequently overlooked in technocratic and comprehensive planning. Maintaining a constructive dialogue with intermediary non-government stakeholders from unions and producer associations was important as they proved highly influential in garnering community and political support. Dealing with such realities and understanding the roles of leadership, patronage, unions, political parities and frequently coercion and extortion, presents opportunities to achieve more effective implementation and sustainable livelihoods enhancements for poor people.

Ensuring the communication plan addressed the communication needs of key stakeholders and institutions outside the project's geographical focus enhanced awareness and uptake of PU-PAPi outputs regionally and internationally; the communication plan is being shared with the EC MANGROVE Project to enhance adoption and uptake of PAPi outputs specific to coastal areas in Asia dominated by mangroves (Bunting, 2006b).

Impacts On Poverty

E. Impacts on poverty to date

20. Where have impact studies on poverty in relation to this output or cluster of outputs taken place?

Gregory (2005) presented a synthesis of NRSP action planning research in peri-urban settings in Kumasi, Ghana, Hubli-Dharwad, Karnataka, India and Kolkata, West Bengal, India.

Mukherjee et al. (2002) discussed the potential impact of livelihoods diversification on female livelihoods in peri-

urban Kolkata.

Punch and Bunting (submitted) reviewed the situation of household livelihoods dependent on the peri-urban East Kolkata Wetlands, including opportunities, constraints and coping strategies, and what impacts enhanced management would have.

As project R8365, which developed the PU-PAPi approach was commissioned late in the NRSP programme cycle and only drew to a conclusion in November 2005 there has been little opportunity to assess the impact of project outputs and implementation outcomes. However, a recent paper entitled 'Confronting the realities of wastewater aquaculture in the peri-urban Kolkata with bioeconomic modelling' (Bunting, in press) provides an insight into the potential social and economic benefits of implementing the water management action plan developed during the project to enhance fish production in the East Kolkata Wetlands.

21. Based on the evidence in the studies listed above, for each country detail how the poor have benefited from the application and/or adoption of the output(s) ***(max. 500 words):***

Synthesising NRSP research in peri-urban Kumasi, Ghana, Hubli-Dharwad, Karnataka, India and Kolkata, Gregory (2005) noted that the peri-urban poor benefit from actions that: reverse declining natural capital by rehabilitating natural resources; build financial capital by promoting savings and improving access to credit for investment; develop human capital by increasing information access and training; enhance social and political capital by building links with institutions; promote participatory action planning resulting in more effective social networks. Gregory (2005) concluded that 'NGOs, community based facilitators, self-help groups, participatory planning, demonstrations of alternatives, provision of information and training and access to credit all showed potential to reduce constraints to a move by peri-urban poor people to new livelihood activities.' Furthermore, she noted that 'The interventions implemented by researchers increased financial, natural, social and most significantly human capitals, this latter in the form of increased self-respect among poor people and greater self-confidence in their ability to manage peri-urban change'.

The EKW water management action plan addressed constraints faced by poor communities dependent on farming rice, fish or vegetables, or a combination of these. The regional basis of the action planning process, in which the EKW was divided into 11 geographically defined regions was invoked to ensure groups with different livelihoods (fish farmers and labourers, rice and vegetable growers) and assets, notably social and political, were properly represented. The scale and complexity of the EKW production system provided special problems regarding proper representation and the identification of potential actions that would benefit the range of primary stakeholders simultaneously without significant negative impacts on other users or livelihood functions of the system; Taylor et al. (2003) estimated the population of PU Kolkata at 7.55 million, and the EKW is a prominent feature of this interface. Despite this the pilot-scale development activities tested represented win-win scenarios associated with enhanced water management that would benefit poor groups with different livelihood strategies; potential negative impacts associated with implementation on vulnerable groups such as the landless poor and women were highlighted by the process and uncovered during local planning consultations. Additional actions discussed to ensure fair outcomes included employment for the landless poor on proposed rehabilitation and development projects or resettling vulnerable groups and providing alternative livelihood options.

Furthermore, bioeconomic modelling outcomes demonstrated that enhanced water management in the EKW

would more than double fish production from 18,000 to 45,500 t y^{-1} (Bunting, in press) equivalent to the demand from 2.28 million people in typical households in Southeast Asia (Edwards et al., 1997). Although such an extrapolation ignores inter and intra-household differences, better water management would enhance fish production significantly, arguably resulting in more affordable fish reaching urban and peri-urban markets helping improve food security in poorer households, and amongst 'Extreme vulnerable poor' groups. The study also indicated that enhanced water management would safeguard the health of workers, local communities and consumers and generate greater numbers of potentially higher paid employment opportunities for female and male labourers; potential benefits of enhanced water management for vegetable and rice growers remain to be assessed.

Environmental Impact

H. Environmental impact

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome(s)? ***(max 300 words)***

Project R8365 worked with primary and key stakeholders living in a wetland area designated a Ramsar site of international importance in 2002. Consequently, assessment of environmental impacts was an important project requirement; research outputs did not result in any direct impacts on the environment or biodiversity. The water management action plan, including wastewater management, formulated through extended interaction with primary and key stakeholders during the project aimed to enhance both the production systems and livelihoods of those dependent on access to peri-urban natural resources-based activities. Managed reuse of waste resources in this way makes a significant contribution to environmental protection, therefore, continuation and enhancement of these practices will contribute to ensuring negative impacts associated with unregulated waste disposal are limited.

Outcomes of STEPS (Social, Technical, Environmental, Political, Sustainability) analysis of proposed pilot-scale implementation activities were included in the EKW Management Committee report (Bunting et al., 2005). Participatory mapping at this stage facilitated the identification of biodiversity rich areas that must be considered or monitored during implementation and highlighted other potential positive and negative environmental impacts as a direct or indirect result of implementation. The extent of threats to continued usefulness and how to overcome these was also discussed. New knowledge contained in the report of the possible environmental concerns associated with the pilot development activities provides a valuable resource for those undertaking implementation in the future. Support was provided by the project to IESWM, DoE in integrating project findings, the planning approach and pilots into the EKW management plan being prepared as part of ADB TA.

Elsewhere, the PU-PAPi approach, notably application of STEPS, has the potential to highlight environmental concerns in other complex physical, social and institutional planning contexts, and facilitate negotiation amongst hierarchical stakeholder groups of how to mitigate and monitor potential adverse environmental impacts of development activities.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? ***(max 100 words)***

The feasibility of implementing pilot-scale action points was assessed using STEPS analysis in which environmental and sustainability considerations are made explicit. For each of the three pilot activities a number of environmental concerns associated with the planned activity were identified as requiring further assessment. Important factors included the possibility of disruption during rehabilitation work to sites exhibiting high biodiversity and the need to ensure localised environmental impacts were assessed prior to work commencing and appropriate mitigation measures taken. Adoption of STEPS analysis to avoid possible adverse environmental impacts of other PU-PAPi initiatives is recommended.

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? ***(max 200 words)***

Reviewing the vulnerability of poor people engaged in PU aquaculture, Bunting (2004) concluded that constraints, including urbanisation, health concerns and ineffective policies and institutions, combined with rising expectations and changing perceptions meant traditional farming practices and coping strategies were threatened. Furthermore, Punch and Bunting (submitted) noted in the EKW that 'A key coping strategy which most households have developed is to engage in diverse livelihood activities' reducing vulnerability to seasonal fluctuations in production or the precariousness of temporary employment, however, their main means of survival depended on continued access to wetland resources. Consequently, they need local government and developers to hear their concerns and recognise the importance of wetland-based farming activities for the livelihoods of many households in PU Kolkata. The PU-PAPi process initiated dialogue amongst hierarchical stakeholders, raised awareness, empowered people to engage in planning activities and contributed to enhanced social and political capital, increasing their resilience to shocks and ability to cope with and plan for change. The resilience of poor and marginal groups in other settings prone to shocks or vulnerable to climate change, notably coastal areas, small-island states, upland areas, or dependent on rain-fed or irrigated agriculture would be increased by adopting PU-PAPi-based planning approaches.

Annex

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