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**An adaptive learning approach for fisheries enhancement in small waterbodies.**

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Experiences of stocking ventures in small waterbodies have shown that whilst stocking is potentially beneficial, the actual outcomes (in terms of production, distribution of benefits, institutional sustainability etc.) are often different from those initially expected (Garaway 1999; Lorenzen and Garaway 1998; Cowan et al. 1997; Garaway 1995; Hartmann 1995).

The underlying reason for unexpected and sometimes undesirable outcomes of stocking is that there is still a great deal of uncertainty surrounding both the direct and indirect effects of stocking. This uncertainty may be due to (a) limited prior knowledge of the physical, biological, technical and institutional characteristics of individual sites which can show great variability; and (b) the complex dynamic interactions that occur between the biological characteristics of the resource, the technical intervention of enhancement **and** the people who utilise or manage it.

Participatory adaptive learning, an approach currently being investigated in a DfID funded project in the southern provinces of Lao PDR (1999 - 2002), seeks to reduce some of the uncertainties surrounding small waterbody enhancements, thereby resulting in more predictable and desirable outcomes. Adaptive learning has been described as a structured process of 'learning by doing' that involves learning processes in management rather than single solutions, or control, through management. The approach aims to increase knowledge about the resource systems and, in turn, enable management policy to be refined. To produce this knowledge, and thereby reduce uncertainty, management is treated as an experimental process, aimed at yielding key information for the improvement of management regimes **as well** as more immediate benefits for the participating stakeholders. It is believed that such an approach could help reduce uncertainty in small waterbody management and lead to improved management fairly rapidly and at relatively low cost. It has long been recognised that a lack of participation of end users leads to potentially irrelevant and therefore unsustainable outcomes. **Participatory** adaptive learning therefore attempts to address these issues requiring that communities affected by (in this case stocking) initiatives take an **active and equal** role in the experimental process.

Despite having rarely been tried in the field of enhancement, this approach appears to have potential for community led small waterbody enhancement, due to both the characteristics of the resources in question and the people who use them, as discussed below.

Firstly, within the region there exists great variability in terms of the biology and the institutions set up to govern use of small waterbodies. This means that much can be learnt from the careful selection and comparative study of **existing** resource systems. Secondly, as elsewhere, local communities have extensive time and place knowledge of their resource systems and people who use them. This includes a far better understanding of local needs, desires and patterns of behaviour. Were there to be good communication between them and other stakeholders involved in enhancement management, through a process of participatory research, their knowledge and skills could be combined with the wider reach and technical knowledge of external agencies to increase the knowledge base and enhance the learning capacity of all concerned. Such communication should be facilitated, **between** communities as well as between them and external agencies. Cross-community communication has been shown to be both appreciated and to benefit greatly the communities concerned (Garaway 1999). Finally, previous work has also shown that communities already do experiment with

enhancement management through time, but given their relative seclusion this learning process is relatively slow. Were their efforts to be incorporated in to a more structured process involving a larger number of villages with similar objectives, their learning would be greatly enhanced.

The project currently being run in Lao PDR, a collaboration between MRAG Ltd, London and RDC, Savannakhet, attempts to embrace these ideas. It is doing so, in particular, by introducing more structured experimentation with the full participation of all stakeholders and by facilitating and enhancing communication at all levels to increase the learning of all involved. Emphasis in the project has been placed on the **process** of learning as opposed to any single management solution.

### **Implementing a participatory adaptive learning approach**

The following are the steps currently being taken in the project:

- Initial information was collected on key attributes of the resource systems under consideration (biological, social, and institutional) and current outcomes, with participation of local communities. This included identifying the objectives of enhancement management on the part of the user community.
- The initial information was interpreted with the aid of scientific analysis and uncertainties, both technical and institutional, were identified.
- A workshop was held in which local district extension staff, who had collaborated in the initial data collection, were helped to analyse, interpret and present some of its findings. These findings were discussed together with their own experiences and this whole process increased their understanding and provided a sense of ownership of the information. Following from this, uncertainties that could be reduced through experimentation were identified.
- Having established what was possible and desirable, experimental stocking strategies that were likely to reduce some uncertainties at an appropriate level of risk, whilst still achieving beneficial outcomes were identified.
- The next step was to discuss ideas at the community level. A series of workshops were held with the local communities at which the results of the initial information collection were discussed and the sharing of past experiences was both encouraged and facilitated. The experimental strategies were then discussed with both participating communities and extension staff. Communities were invited to comment and indicate their desire to be involved in the process, including the monitoring of their own management process, its successes and problems. It is believed that local monitoring will both promote learning within the communities and improve future communication with all stakeholders. How such monitoring could be achieved was discussed at the workshop.
- In order to support the last point, a further workshop was held with extension staff to further develop methods for the monitoring of the process and for data collection. A monitoring system has been designed that involves both the local communities and the extension staff. Stocking and monitoring is now underway.
- During the project, learning within communities, between communities, and between communities and other stakeholders will be undertaken. This will be achieved through scientific analysis, 'study tours' and workshops. It is anticipated that this will have several benefits in the form of refinements in community waterbody management, improved communication, and hence learning, and an enhanced capacity to identify issues relevant to communities.

The process is to be a continual one of adaptation, experimentation and learning within a community setting. By repeating this process, locally relevant issues can be identified, uncertainty can be further reduced and management strategies further refined to produce greater benefits that meet the needs of the user communities.

## References

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