Asian Institute of Technology

Report on the
Regional review workshop for the Fish Seed Quality in Asia Project
'Improving freshwater fish seed supply and performance in smallholder aquaculture systems'

AIT Centre, Pathumthani, Thailand
5th - 7th June 2001

Aquaculture & Aquatic Resources Management
School of Environment, Resources & Development

DFID Department For International Development

Aquaculture Research Programme managed by The Institute of Aquaculture

AIT

Schedule

For reasons described in the body of the report this schedule differs from the proposed schedule that was sent to participants along with the guidelines.

5/6/01

0800 - 0830	Welcome and introductions - Dr David Little and participants
0830 - 0845	Setting of objectives - Angus MacNiven
0845 - 1015	SoS presentation - Northern Vietnam
1015 - 1030	Break
1030 - 1200	SoS presentation - Northeast Thailand
1200 - 1330	Lunch
1330 - 1500	Group session 1
1500 - 1515	Break
1515 - 1600	Report back
1600 - 1700	Discussion

6/6/01

0800 - 1015	SoS presentations - Northwest Bangladesh, Southern Vietnam
0830 - 1015	Presentations of research results - Lao PDR 1, 2 & 3,
1015 - 1030	Break
1030 - 1130	Presentations of research results - Northeast Thailand
1130 - 1300	Lunch
1330 - 1500	Presentations of research results - Northern Vietnam 1 & 2, Bangladesh 1 & 2
1500 - 1515	Break
1515 - 1700	Presentations of Institute of Aquaculture student research results - Ram Bhujel, Paul Clayden, Angus MacNiven

7/6/01

0800 - 0945	Group session 2
0945 - 1000	Break
1000 - 1200	Group session continued
1200 - 1330	Lunch
1330 - 1500	Report back
1500 - 1515	Break
1515 - 1600	Discussion of concept note preparation
1600 - 1700	Summary and closing

Objectives

- ?? To review the work carried out over the first two phases
- ?? To extract the lessons learned by the research teams in terms of process and research
- ?? To produce revised research strategies for the improvement of fish seed quality

Participants attending the workshop unfortunately did not include partners from University of Agriculture & Forestry (UAF), Ho Chi Minh City in Vietnam, who were unable to attend due to a clash of schedules, or Northwest Fisheries Extension Project (NFEP), Bangladesh, where the extension officers who were involved had all left the project. Mr Nguyen Van Tu sent his apologies (but no report of the activities) and Dr Benoy Barman, who had been involved in the situation analysis, represented NFEP but was not able to attend until the second day of the workshop. We were pleased to be joined by two staff from the Cambodian Department of Fisheries, Hav Visith and Ngan Heng, who came as 'participant observers'. Danai Turongruang and Dr Amrit Bart attended, respectively, as Outreach and AARM faculty representatives (A list of participants is in Appendix 1.6). Thanks to Arlene Nietes-Satapornvanit, Paul Clayden and Vu Can Luong who gave interesting presentations at extremely short notice. Gary Milwain, an MSC student from University of Stirling is due thanks for his assistance throughout the workshop, especially for keeping the mintues (key points are in Appendix 1.5).

The absence of UAF and NFEP representation on the first day meant that there were only two presentations on State of the System (SoS) reports; from Thailand and Northern Vietnam. Benoy and Mr Loung gave presentations early on the second day and added their input to the work group summary tables from the first day. The participants were given, in advance, detailed guidelines for preparation of presentations for both SoS reports and research activities (See Appendices 1a & 1b). They were specifically requested to critically review the processes involved with regard to relevance, effectiveness, uptake and impact. The following is a report of the workshop split into the two project phases; State of the System analysis phase and the following targeted research phase. There is a short discussion on the review and planning session that took place on the final day. Workshop task outputs are presented in table form and all related documents are included as appendices.

State of the System Reports

The SoS reports were very critically examined by the participants following each presentation, but making sense of the wealth of information was a difficult matter. In the work groups (see Appendix 1.2 for details of tasks) some common and contrasting elements between some of the participating countries were identified and are summarized in Table 1 below. Problems and constraints in carrying out the situation analysis and potential improvements to the process are detailed in Table 2.

Synthesis of the information was possible but analysis of a large amount of such disparate data is extremely difficult; the participants worked their way methodically through the reports but a problem they faced, and raised, was that the reports were not of identical format and content. This was because the methodology was evolving and being developed by the investigators from one project site to the next. It was agreed that the information collected was very interesting but a means of applying this general knowledge from the survey data was difficult to identify. Workshopping the survey findings certainly appeared to provide sufficient focus, which was the intention of the process (not *ex-post* comparison between different project sites to look for generalizable issues).

In the work-group discussions no distinction was made between disadvantages, constraints and problems in carrying out the SoS process. Improvements were suggested to deal with the specific isssues that were raised as constraints or problems. These were good practical suggestions for improvement of the process. Participants recognised the value of involving stakeholders in the enquiry process but felt that the resulting documents, while interesting, were too general and would benefit from being targeted to specific readers i.e. that information would be packaged for each stakeholder group (see Table 2), and that a greater level of participation would be more effective *i.e.* move beyond consultative participation to interactive participation where stakeholders have more input into the

problem definition and research process. Most importantly the participants recognised the value of the methodology and its potential for application in other investigations. As a process it was felt that some good practical lessons had been learned in the SoS reporting phase that could be included in planning for more work of a similar nature.

Targeted Research

The presentation of research results was interesting for everyone and led to some animated discussion. A general point was that none of the participants had looked critically at the experimental design and implementation that was used. This was specifically requested in the first announcement and guidelines and reiterated in the setting of objectives at the beginning of the workshop. There were flaws in almost all cases that meant that effectively there was no external validity to the work that was carried out, *i.e.* it would be impossible to generalise about the systems based on the results of the trials. These were probably the most important lessons that could have been taken from this work and had previously been discussed with the individuals at each of the project sites. It is possible that an open forum is not the best venue for critical reflection of this kind, but no feedback on this point was given prior to the workshop and so the guidelines were not altered. It is hoped that the shortcomings will be documented in the final written reports, which are yet to be completed (another unfulfilled request from the guidelines).

Appendix 1.3 shows the group tasks that were dealt with in the session. Group work was carried out in individual national groups. Table 3 presents a summary of the responses to the questions. The key benefits identified in terms of new knowledge were clearly not new and rather tend to support existing knowledge in the cases of Bangladesh and Thailand. In Laos, where the knowledge outputs from some of the work are already in use by stakeholders, the new knowledge is clearly appreciated. The Vietnamese response indicates that they felt that the results were complex and difficult to summarise. A general point from the discussion was that quality of seed sampled across all sites was extremely variable particularly in terms of survival but also, as far as could be determined, in terms of growth.

All participants agreed that their 'institutional capacity' had been developed in terms of experience often in areas outside their usual work activities.

Participants were generally in agreement that further research should involve the other stakeholders to a great extent and should focus on improving the systems rather than generating new technologies. In Bangladesh and Thailand there was a clear identification of the need for more communication and participation between researchers and the seed supply stakeholders.

Formats for distribution that were suggested covered the spectrum of media, which reflected the general nature of the question. On reflection the question should have been more specific and asked for details on targeting; who should receive the information and how could that information be used, what should be the mechanism for uptake? The Laos and Bangladesh responses were the most practical with advice on content and suggestions for different formats for the different stakeholder groups.

Regarding the nature of assistance or support, responses from all the participants were similar in that they recognised the need for involving other in-country and external agencies for consultation and development of human resources. No specific details were identified apart from in the Cambodian response where they identified the need for capacity building and transfer of knowledge to the private sector.

Review & Planning

There was not enough time to develop a project concept note for each participating country. Dr Little briefly explained the mechanism for preparing a concept note based on the DFID Aquaculture Research Programme guidelines (Appendix 1.4). There was some discussion about whether the project

objective was still valid; the lack of response from the participants was taken as agreement that the original purpose should remain for further activities and proposals. The lack of a response also implies that nobody felt that objectives had been met.

There was considerable discussion about the importance of traders in the supply system. Benoy described the situation in Bangladesh and the implications were considered by all of the participants in relation to their own local situations. It was agreed that it was an interesting area for further investigation.

The remaining time was spent on identifying and discussing 'ideas' which could be developed further, and are presented in Box 1, below. These ideas are quite general and it is difficult to see how they lead on from the previous work in terms of logical progression or lessons learned. The suggestions from Lao PDR emphasised analysis/investigation and improvement of the network for seed supply, which at least recognises that work should be carried out within the system. Of course the participants had earlier identified the need for greater involvement of other stakeholders in the research process and it would be hoped that the detailed development of these ideas into research plans or strategies would reflect this.

Summary

The participants recognised the value of the participatory situation analysis. They felt that the output would have benefited from being less general and separate reports should have been packaged for the different stakeholder groups. Among other recommendations was that the level of participation should have been increased with greater interaction at all stages. Broadly the methodology was appreciated as a means to look at complex situations. The research while interesting has limited applicability and participants did not address this issue. Failure to critically review what was done makes learning lessons impossible. Some important issues were identified such as the variability in the seed sampled in all project trials, the need to improve communication and participation between researchers and other stakeholders. It was recommended that involving other institutions and organisations in the research process would be beneficial.

	NW BANGLADESH	SOUTHERN VIETNAM	NORTHERN VIETNAM	NORTHEAST THAILAND	LAO PDR	CAMBODIA
Food fish production						
Source of fish seed	Private sector largest, perception that government sector is better quality, and traders are a potential source of problems of seed quality. Stocking in rainy season (May/June)					
Traders	Fry trader - mobile, wholesaler - stationary, local nurserer/trader - stationary	Traders carry fish from areas of hatchery concentrations				
Stocking season	Water availability limitation (April - Sept),	All year but peak in April - June	Low temperature limits seed availability early in season			
Seed production	Low temp also limits	Seed availability in some rural areas				
Type of seed	Indian and Chinese major carps plus increasing mixed sex tilapia	Indian and Chinese Carps, tilapia, catfish (*Clarias & Pangasius*) plus gouramis	Riverine carps, tilapia popular but poor availability	Silver barb, tilapia	Silver barb, Indian major carps, tilapia and *Clarias* increasing	Silver barb, *Pangasius*
Seed preparation	Hapa conditioning prior to delivery	Conditioning in hapas		Fry conditioned in government hatcheries less likely in private sector unless fish are ordered in advance. Increased numbers of stationary traders		
Reasons for changing source	Price, credit availability and quality	Quality and availability	Availability and quality equally important	Poor quality then availability		
Marketing system trends	Increased numbers of fry traders, transport methods. Reduction in govt. seed supply	Increasing traders both mobile and stationary	Increase in mobile trader numbers	Mobile trader numbers decreasing	Availability is the main problem, not quality	
Seed trade	Aluminium container & oil drum carried by train, bus, car, bicycle and foot	Stationary traders use aeration and water exchanger in tanks	Open bag or drum	Plastic bags with oxygen		
Special transport techniques	Chemicals and soil added, water exchange, hand splashing	Oxygenated bags ice and salt may be added	Plastic bags for local transport in delta	Salt added	Add salt	
Reasons for traders changing seed source	Local availability	Poor quality, high price, poor availability, bad service and reputation	Cost and availability	Inconvenience and poor quality	Cost	
Information & training access	Government & private producers plus local fry traders	Local knowledge				
Seed producers	Production and nursery usually in clusters. Cooperation between hatcheries and/or nurseries to fill demand and not loose customers					
Hatcheries or Nurseries or both	Both	Both				
Production trends	Compensation & transport support. Sell on credit				Stocks	
Broodfish origin & Management					Government: many recent Introductions. Open Exchange with outside	
Evidence of inbreeding	Government taking initiative to discourage cross breeding & inbreeding	Potential risk	Weak (higher for government)	Govt. have exchange Program. Private potential problem		Government use own seed plus wild introductions
Changing to new brooders	Renew broodfish from outside hatchery					
Breeding techniques	PG & HCG	Hormonal induction and hapa spawning of tilapias	LHRH common (may effect quality?)	LHRH common (no quality effect)		Gg Government have exchange program & supply private sector

Frequency of spawns/year	Multiple	Multiple	Multiple	Private-single, Government-multiple	Single	Single

Table 1. Common and contrasting features in the SoS reports plus comments from the Lao PDR & Cambodian participants.

Advantages	*Disadvantages, problems & constraints*	*Improvements (numbered to address the corresponding issues in the middle column)*
1. Participatory methodology 2. Enables better understanding of the system by describing the networks, some of the practices, and the role of stakeholders within the system. 3. Sharing of ideas and information 4. Report useful to present information to stakeholders, overseas donors. 5. Bilingual format is appreciated by local readership 6. Improved relations between stakeholders with awareness raised all round 7. Identifies improvements to the system, practical recommendations for research and policy decision-makers. Positive, thorough method. 8. A lot of information was collected to update existing knowledge. 9. Methods may be applied to other areas (after modification)	1. Some stakeholders not adequately represented in data collection & checking. 2. Collecting data from poorly educated households was difficult 3. From data collection through to reporting was complex and lengthy process. 4. Report not useful to most farmers, nursers or traders 5. Bilingual format not necessary since most people will only read their own language 6. Format of the report not logical, cover page difficult to read, typesetting not good, some editorial work needed 7. Information too general 8. Too much information, very difficult to interpret the complex system. Is seed quality a problem? 9. No channel or provision for uptake of recommendations.	1. More participation through development of relationships in a network 2. Improved participatory methods, perhaps focus on less 'technical' issues. 3. Full-time, local coordinator/ implementer would speed the process and ensure quality of output 4. Follow-up with targeted reports/ meetings rather than one general document 5. Produce local language versions relevant to specific stakeholders and English version for foreign agencies 6. Should be helped by targeting reports and not using bilingual formatting plus local, dedicated coordination 7. Narrower focus/more depth 8. As 7. Above (reduce generalisation, deal with specific problems). 9. Better identification & targeting of users and appropriate kinds of media for the different stakeholders should be included in the planning stages.

Table 2. Summary of constraints and problems in the SoS process and their potential solutions.

Box 1: Ideas for further work which might be worked up into a concept note.

Thailand:

1. Mobile traders never buy fish from DOF - describe, understand - pilot approach that improve benefits
2. Research to improve technology and to make it cheaper - so more accessible for poor farmers

Vietnam:

1. On improvement of fish seed quality
- On farm research in stock evaluation
- Field identification of seed quality
- Post transportation improvement
- Knowledge dissemination to location aquaculture stakeholders

2 Seed improvement of silver carp quality strain assessment. Silver carp (wild and hatchling stock)
- Wild seed source of silver carp

Laos:

1. Analysis of smallholder hatchery operators network to develop and improve fish seed quality
2. Investigation into fish seed supply system
3. Training and advice for good fish culture and husbandry methods for DLF to give good advice to fish farmer.

Cambodia:

Potential of small scale aquaculture affected to the rural farmers livelihoods

1. Collecting of the outcome from different projects
2. Establish seed supply nature with available seed quality
3. Selecting the pilot areas to do demonstration.

Bangladesh:

1. Comparison of effectiveness of different FSQ assessment methods / techniques (hapas/others)
2. To investigate the availability and feasibility of different alternative resources for FS prod
3. Impacts of FSQ on livelihoods of poor stakeholders in the network

	Key benefits		Research needed to meet project objectives & how to plan for it.	Format for dissemination of results	Assistance or support required
	New knowledge	Institutional capacity			
Bangladesh	Overwintering - results not fully analysed but may be suitable technique for poor people New/old strain- results not available Hatchery monitoring- no apparent changes in seed quality over the whole spawning season	Experience and understanding of research process by involvement of extension officers in planning and implementation. Hatchery monitoring provides basis for record keeping in Parbatipur hatchery	More scope for interactive participation at all stages Kind of research should focus on priorities of stakeholders and producers	Format: Radio script - farmer level Leaflet - DOF + who's Technical report - researcher / policy makers Review paper Mechanism: meetings and workshops	Full time, in-country coordination or dedicated partners and consultation with institutions, organizations and stakeholder groups.
Northern Vietnam	Current picture of seed quality	Good experience of methods for participation, questionnaire preparation, field survey plus experimental design and data analysis	Replication of on station work. Comprehensive on farm research Concentrating research on a few important species Compare wild vs. farmed stock	Local workshop Publication Media	- Training, -MoF (publication, staff, facility) -DANIDA (facilities, expertise) -DFID
Thailand	Government and private hatchery seed are very similar in quality. Importance of careful packing in both sectors Highlighted the convenience and good quality of seed from private hatcheries	Institutional capacity has been strengthened and it is hoped will be further improved following policy implementation	Better contact/ cooperation needed between DoF and private hatcheries to facilitate info and technical knowledge exchange. This applies to contact with traders Research into hatchery techniques /hatchery technology materials, broodstock management, packing and transport- many subjects - everybody involved in the seed quality and distribution so they know how to assess quality at their stage in the process for holistic success. Socio-economic research to help the DoFs' capacity to make policy, help stakeholders, make economics policy. i.e. price ceilings, lower price limit and seed marketing.	Various media should be tried eg. Newspaper columns, magazines, television, www, leaflets	Extension workers, fish biologists, fish related scientists, collaborators from DoF (inc. DoF scientists) AIT cooperation. Linkages between stakeholders also through training and organising.
Lao PDR	Farmer can choose seed of good quality for better production District staff have more knowledge to assess seed quality Can assess seed quality from different areas Hatcheries can use methods to produce better seed.	RDC and provincial sector find suitable methods to improve seed quality Have some methods to compare government and small scale hatchery methods	Research necessary to achieve project objectives and inclusion in planning- ?? Improve hatchery methods ?? Improve transportation ?? Improve nursing networks In water quality and feeding Improved farmers capacity Increasing new nursing network members in rural community	Format for disseminating research results- Results should be easy to understand, related to practice, be used in culture and transportation, in training and workshop.	Assistant or advisor locally to oversee research and deal with problems (1-3months
Cambodia [1.]	Public sector must find out what is new in technology, e.g. new processes and species for culture.	Public sector is the main focus of aquaculture supported from public sector. Before we would advise the private sector we would improve DoF capacity first. A committee has been established in charge of fish culture programme responsible for research	On farm research- main topic - broodfish quality, breeding, nursing, culturing, transportation techniques Off farms research- how traders maintain seed quality (transport, seed source). Improvement of marketing systems (quality, price, preferable sp.) Study on the constraints of seed quality and supply	Improve network systems (gov. insts. ngos, university, external units, traders, communities) Workshops, booklet, newsletter for easy exchange of information, TV.	Private get support from government Need to improve capacity - building, facilities. Requires budget and technology (gov. institutions need own revenues) Private sector needs transfer of - New technology -New species (local sp.) Traders - Experience from Bangladesh- provide them with techniques as they are middlemen and this is an important issue- improvement of network, training Farmers- training and monitoring, getting feedback to make improvements.

Table 3 Summarising the ouputs from group task 2, which dealt with the research trials.

1. The Cambodian contribution is a commentary informed by the presentations and their knowledge of existing, in-country research strategy and needs of stakeholders

Appendix 1.1a:

Memo sent to all partners in January 2001

MEMORANDUM
18/01/01
TO: Partners in AIT, Fish seed quality, collaborative research project
FROM: Dr David Little
SUBJECT: DFID Aquaculture Research Programme Project R7052, Freshwater fish seed quality in Asia - Notice of final workshop for second phase.

As you are aware the second phase of the 'Seed quality' project is scheduled to finish on 31st March 2001. A considerable amount of time and effort has gone into this project which has consequently resulted in considerable new knowledge. We would like to conclude this phase with a regional workshop, bringing together all the research teams at AIT. Provisionally scheduled for the week begining 4th June, for three days.

It should be clear that this will be a workshop, not a mini-conference; participants are expected to present summaries of the work that has been carried out in their institution, including the initial situation appraisal phase in a critical manner. We want to know what were the strengths and weaknesses in the whole process, from the planning through situation appraisal, the trials, the collaboration/partnership to the final reporting. What are the lessons that have been learned ? Has there been any other benefit from the work apart from the knowledge about fish seed quality (e.g in terms of capacity or experience) ?

About the new knowledge; what is it's value? How will it be used, and by who? Were any mistakes made in planning or implementation? Did you feel that you had ownership of the project? The main point is that we have not got any real answers but we are, hopefully, in a position to ask better questions. The intended output from this workshop in addition to raised awareness and increased understanding, should be revised research and development agendas which are better focussed on seed quality issues.

As well as inviting the research teams we would like you to prepare a list of people who you think should be invited stating their position and reasons for inviting them. In addition, we would like you to invite an individual from your organisation or related department or institution who has experience of participatory research and/or organisational change/learning and or socio-economic research; their opinion and experience will inform your discussions. Please supply the list as soon as possible.

An outline timetable is as follows;
Day 1: SoS presentation, bringing out similarities and differences between the project areas.
Day 2:Trial summaries and lessons from another project. Discussion and identification of strengths and weaknesses
Day 3: Policy implications. Group work on revised research and development agendas.

This will be your workshop so we need as much feedback as possible about the content of this memo, as soon as possible. Are the dates suitable for everyone? What about the format of the workshop? The format for presentations, which will be sent with an official invitation, will be based on your feedback to this message so it is in your own interest to let us know what you think. Please include a list of potential invitees with their details.

Appendix 1.1b:
Sent to all partners in May 2001
Seed Quality Regional Workshop ***5 - 7 June 2001***

Objectives

- To review the work carried out over the first two phases
- To extract the lessons learned by the research teams in terms of process and research
- To produce revised research strategies for the improvement of fish seed quality

Anticipated outputs

1. Reports from research teams in local language and/or English based on all project activities.
2. Concept notes based on revised research strategies produced by each partner institution
3. Feedback report on the process of the research collaboration for all participants and DFID Aquaculture Research Programme.

Guidelines for participants

We request that you bring to the workshop the following;

1. A presentation of the main findings from the SoS report including analysis of the results from the follow-up questionnaires which were distributed with the reports. This can be presented using slide or transparency/overhead projector, or powerpoint, but an electronic or paper copy of the full report on which the presentation is based should be submitted also.

The presentation should take no more than 30 minutes

Relevant questions to be covered in the presentation

- What were the main findings of the report?
- What recommendations have been investigated or taken up? With what result?
- What has been the reaction of the people who have received the report? This will come from the follow-up survey which should be analysed carefully before coming to AIT.
- What were the main benefits of the process? What were the main weaknesses, problems or constraints?
- What could have been done to improve (a) relevance, (b) uptake and (c) impact?

2. Summary report of the research trials which were carried out. Please also bring reduced data sets in electronic format. This should be a concise summary of the; objectives, hypotheses tested, materials and methods, results plus discussion of implications and/or applications of the knowledge and the need for further research.

Relevant questions are;

- What were the practical constraints they faced and problems in experimental design or implementation?
- How can the knowledge generated be used?
- What should be the next step, and how is it a related to the work that has been done?
- How do you intend to disseminate the results in your own country; who to and in what format?
- Did you learn anything through your involvement in the research process?

Presentation for each, individual trial should not exceed 10 minutes.

3. Copies of all reports or other project-related documents which have been produced over the two-phases. These can be reports (internal or external), memos, manuals, meeting minutes, *etc*. It isn't important if they are in local language or English and copies can be either in paper or electronic format. This material will then be archived by the DFID programme as a resource for other researchers.

Checklist of things to bring to the workshop;

1. **Presentation on SoS report, maximum time 30 minutes.**
2. **Presentation of research trial results, 10 minutes for each trial.**
3. **All outputs related to the project, in any language and any format.**
4. **Receipts for travel costs.**

Angus MacNiven
Project Coordinator 11/05/01

Provisional Agenda

5/6/01

0800 - 0830	Welcome and introductions
0830 - 0845	Setting of objectives and confirming agenda
0845 - 1015	SoS presentations
1015 - 1030	Break
1030 - 1200	SoS presentations
1200 - 1330	Lunch
1330 - 1500	Group session 1
1500 - 1515	Break
1515 - 1600	Report back
1600 - 1700	Discussion

6/6/01

0800 - 0830	Summary and review of previous day, any further discussion
0830 - 1015	Presentations of research trials (10 minutes each trial)
1015 - 1030	Break
1030 - 1200	Presentations of research trials (10 minutes each trial)
1200 - 1330	Lunch
1330 - 1500	Group session 2
1500 - 1515	Break
1515 - 1600	Report back
1600 - 1700	Discussion

7/6/01

0800 - 0945	Summary and review of both days, any further discussion
0945 - 1000	Break
1000 - 1015	Concept note preparation guidelines
1015 - 1200	Concept note preparation
1200 - 1330	Lunch
1330 - 1500	Concept note preparation
1500 - 1515	Break
1515 - 1600	Executive summary and closing

Appendix 1.2
Seed quality review workshop - Group task 1

Background
The SoS reports attempted to use a participatory methodology to identify researchable constraints and make recommendations to inform policy. The report was produced in an informal and bilingual format to promote a wider readership outside the aquaculture technical research field. Key issues are timeliness, responsiveness, relevance.

Objective
The group should be able to identify improvements to this reporting system

Activities

1. Select chairperson and rapporteur

2. Based on what you have heard are there any points/issues that could be generalised from all 4 of the SoS reports?

3. List some advantages and disadvantages of the SoS methodology, then rank these issues

4. In practice what were the real constraints and problems of carrying out this work? (From your own experience)

5. How could the process be improved in terms of impact, uptake and relevance to the stakeholders (including the partner institutions)? And at what stage in the process would these changes be made ?(it may be useful to divide the process into; planning, implementation, analysis, review and action)

6. Report back on at most 2 flip chart or transparencies.

Appendix 1.3
Seed quality review workshop - Group task 2

Background
The research trials were identified by the partner institutions as important researchable issues. A key point is whether investigation of these issues brought us closer to achieving the objectives of the project and how the results will inform future work on fish seed quality.

Objective
To critically review the research carried out and identify ways that the results and lessons learned can improve future research work

Activities
1. Select chairperson and rapporteur

2. With hindsight what were the main benefits to come from the trials in terms of (a)new knowledge, (b)institutional capacity?

3. What kind of research is necessary to achieve the project objectives and how should this be included in the planning of further research?

4. What do individuals think should be the format for disseminating the results of their research carried out under this project?

5. What kind of assistance or support might be required to plan for future research on fish seed quality? Who might this come from?

6. Report back on no more than 3 transparencies or flip chart pages

Appendix 1.4

CONCEPT NOTE FOR FUNDING UNDER DFID'S RENEWABLE NATURAL RESOURCE STRATEGY

GUIDELINES FOR PREPARATION OF A CONCEPT NOTE

1. Definition

A *Concept Note* is an outline research proposal that is submitted by a research worker or research group as a basis for seeking funding.

Concept Notes should be short with an overall length of 2-3 pages. Concept Notes which do not meet specifications should be returned to the sender for shortening. This may delay their being considered.

2. Purpose

The purpose of a concept note is twofold:

a) to allow a research worker/group to submit a research proposal in summary form for preliminary assessment and evaluation without the need to prepare a fully-detailed proposal.

b) to allow assessors to make a fairly quick judgement on whether concepts are suitable for further consideration or unacceptable

3. Submission of a concept note

Within the RNRRS, concept notes may be prepared according to the attached format and should include at least an outline logical framework (Annex B). The attached questionnaire may serve as an aide memoire to preparing a proposal that accords with the guidelines of the RNRRS.

Concept Notes should be sent to the relevant Programme Manager for the research discipline concerned. The Programme Manager will arrange for all Concept Notes to be considered by the Programme Advisory Committee (PAC) and will notify Proposers of the outcome.

Note: Proposers should be informed that acceptance of a Concept Note and an invitation to prepare a detailed proposal are not guarantees that the proposal will necessarily be accepted for funding.

CONCEPT NOTE - Questionnaire

This questionnaire should be used as an aide memoire in preparing the project proposal in a form which accords with DFID's RNRRS; and should be submitted with the Concept Note.

Does the proposal address a significant constraint to productivity in a Developing Country?

Yes/No

Has a community of beneficiaries or end-users of the research been identified?

Yes/No

Have target institutions or intermediate-users of the intended research products been identified?

Yes/No

Have the objectives of the research been agreed by these target institutions or intermediate-users?

Yes/No

Does the research involve collaboration with NARSs scientists?

Yes/No

Will any of the research be conducted in a Developing Country?

Yes/No

Will the project objectives fall within the regional or country priorities of DFID?

Yes/No

Will there be any training component of the researchers or beneficiaries involved in the project?

Yes/No

Will a successful outcome to the research result in a technology or product, which can be utilised in Developing Countries?

Yes/No

Are appropriate extension/delivery services in place so that the technology/product will reach target groups?

Yes/No

Will the technology/product be usable in a suitable way by local people?

Yes/No

Will the technology/product be economically and socially acceptable to local people?

Yes/No

Will the technology/product benefit poorer people?

Yes/No

Will the technology/product benefit women?

Yes/No

Will there be positive environmental benefits?

Yes/No

Can the research be completed within 3 years?

Yes/No

Is it expected that the research be wholly funded under DFID's RNRRS? If not, identify other collaborators?

Yes/No

CONCEPT NOTE FOR FUNDING UNDER DFID'S RENEWABLE NATURAL RESOURCE STRATEGY

The Institute of Aquaculture
University of Stirling
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Concept Note Research Proposal for Funding under the Aquaculture Management Science Programme. (There follows a list of the sections of the form which must be completed - for a copy of the entire form please contact Melanie R. Cruickshank at mrb1@stir.ac.uk)

- **PROJECT TITLE:**
- **AQUACULTURE MANAGEMENT SCIENCE PROGRAMME PURPOSE:**
- **PRINCIPAL INVESTIGATOR:**
- **ADDRESS:**
- **COLLABORATOR(S):**
- **TOTAL COST OF PROJECT: (£) This should be the same as the total given in the financial summary box below.**
- **DURATION OF PROJECT:** From: To:
- **DATE OF SUBMISSION**
- **LOCATION OF PROJECT:**
- **UK Location (s) (if different from address above):**
- **Overseas Location (s)**
- **BACKGROUND: (To be no more than 500 words)** Information should include a description of the importance of the researchable constraint(s) that the project is seeking to address and a very brief summary of any significant research already carried out. The proposal should show an awareness of the problems in the context of research already conducted.

?? **PROJECT PURPOSE: (To be no more than 200 words)** The purpose of the project should be to address an identified development opportunity or an identified constraint to development. The research project objectives should be demand-led and fall within the regional or country priorities of DFID, or be clearly identified within National Development Plan priorities acceptable to DFID.

?? **OUTPUTS: (To be no more than 300 words)** Are those expected research results or products appropriate to the project purpose; and include identified promotion pathways to target institutions and beneficiaries. Target institutions are those formal or informal institutions that will take up the products of research and engage in the process of transferring knowledge/technology/methodology to the beneficiaries.

?? **CONTRIBUTION OF OUTPUTS: (To be no more than 200 words)** Includes how the outputs will contribute towards achieving the Programme Purpose (i.e. project goal).

?? **RESEARCH ACTIVITIES: (To be no more than 300 words)** Research studies, surveys, experiments etc, designed and implemented to achieve outputs of project. There should be an activity or group of activities associated with each output of the project, the activities defining the action strategy for accomplishing each output. This section should also include any facilities or expertise already available to the investigator and/or collaborator that will be utilized in the implementation of the project. In addition, the location of specific components of the research to be carried out, and any special resources required to implement the project should be included.

?? **BENEFICIARIES: (To be no more than 150 words)** An indication of the main beneficiaries of the research. The beneficiaries are those who gain social, economic or environmental advantage from the technology, methodology or knowledge transfer activities of the target institution. They may be identified in, for example, the household, the village community or the global community.

?? **RISKS AND ASSUMPTIONS: (To be no more than 200 words)** Includes those factors that might contribute to the project failing to achieve its objectives. Important assumptions are external conditions or factors over which the project chooses not to exert control or does not have control, but on which the accomplishment of objectives depends.

?? **FINANCIAL SUMMARY:**

ITEMS	Year 1	Year 2	Year 3	Year 4
Staff				
Travel and Subsistence				
Overseas Costs				
Consumables				
Capital Equipment				
Training/Publications				
Overheads				
Contingency				
VAT				
TOTALS				

?? Outline Logical Framework for FMSP Concept Note:

Hierachy of Objectives	Objectively verifiable indicators	Means of Verification	Important Assumptions
Goal			
Purposes			
Outputs			
Activities			

Appendix 1.5
Key points from Minutes of Seed Quality Workshop

Comments from discussions from SoS reports

1. *Northern Vietnam*

'Quality may be different situation in different countries and between hatcheries within the country.'
'In N. vietnam history of culture started with capture if wild hatchlings, nursing and sale, only about 20 years old. Have to draw a boundary around research.'
'What can we learn, how valuable, what more information do people want - we perhaps asked different questions.'
'Questions were open-ended and not directly related to specific aspects of seed quality.'
'Difficult to aks farmer about seed quality. Asked them if there was a problem with quality.'
'Responses to seed quality questions were categorised according to answer. Can't ask specific questions, in order that get all relevant information. People return to a good source, however if frequent changes then suggest problems. All about perceptions.'

'Definition of quality is an important issue. We have to get idea from all those involved'
'Criteria should be specified- all about benefiting people in relation to food, is it economically viable and productive.'

2. *Northeast Thailand*

'The SOS is not particularly new knowledge for fareners - a non-fish persons eg district fishery officer- people in their jurisdiction - hence not made too technical. '
'In vietnam state hatcheries are privatised unlike thailand, and also have problem of covering costs.'
'All the people involved in policy to be informed in future of findings with proposed recommendations - these people would be government, provincial people etc. Long process before implementation. eg issue on species.'
'..as private sector increased so has gov sector - most seed come from areas where gov hatcheries were strong in NE Thailand. There is no evidence in the SOS report on need for new strains.'
'Recommendations from Vietnam and NE Thailand are very similar and not necessarily related to specific seed quality issues.'
'The people at the base level can't get involved in policy decisions. SOS reports don't finalise anything, just an initial understanding. The outcomes may require increased budgetary increases which may not be possible which goes back to original seed quality question - quality may be improved survival or faster growth - what is quality.'
'Perhaps government should make provisions for holding seed.'
'This is one of reasons for 2 parts of the process. don't have to be specialist, seed quality assessed by baseline people in terms of visual appearance, activity of fish etc. Do we need more research because this may be all that is required for the level and outcomes of the project - has to be practical in order for implementation and future success.'
SOS reports do not give clear recommendations - this has to be pursued further.
'What strategies are there for implementation of these recommendations?' - No answer
'The gov seed production has stimulated this private sector increase, now as seed prod and distribution change governement needs to know how to manage that with the baseline objectives at heart. DOF may need policy change and pro's and cons should be addressed.

Comments on presentation of research trials

1. *Lao PDR*

we should bring in manual. good to standardise the 3 hatcheries, was done by them for them. this manual should improve with practice. was done 2 years ago-has it improved

Training was conducted by RDC trainers.
'The lesson to be learned is that they write their own manual which is theirs and there is no best practice. a pre-prepared manual is not necesssarily the best method. It's a piece of information which needs updating through communication, constant learning process. government keeps in tune/step with the way things develop and needs.
'Is closeness to thailand beneficial for technology?' - 'resource base is different, no electricity in every hatchery in Laos.'
'An important part of the manual is record keeping for monitoring, allows cross-referencing and getting ideas where problems occur in the system.'
'We train the farmer to produce seed, some use hormone and some don't. '

3. Northern Vietnam

(a) Hormone experiment;
'PG not always available, dose may have effect on quality.'
'Time until spawning different from one to the other'
'Where did fish come from and what standardisations were used, difficult to make recommendations from it.
'It ismportant to recognise value of the research and relevance, this type of research is good to answer immediate answers and concerns quickly.'
(b) Comparison of grass carp and mrigal seed
'If repeated experiment what changes would be made?'
'..different population may have different quality, would use silver barb and do under similar conditins, maybe there were differences, - broodstock spawn same time same conditions and cross populations.'
'Done to address the seed quality issue of sos report, little difference found and difficult identify genetic or environmental issues.'
'Many complaints that seed from private is different quality from government. want to compare the two. In determining which hatcheries to use we surveyed hatcheries in terms of management etc.'
'Fairly distinct differences for example in brood size, difficult to get fish of same size and stage of development. Even given the small sample sizes, it's interesting that results for both were so similar. Difficult for methodology due to rersources, cost and isolating ideal conditions.'
(3) Transport and silver carp trials
'There were no significant differences between 2, 4 and 6hr transportations.'
'There were two trials, not enough time to analyse both.'
'correlation between density in container and mortality'

Student theses

Tilapia grow-out

'Provided they are treated the same way at growout irrespective of how they are treated at nursery and hatchery stage the smaller fish will catch up in terms of growth - important for efficient economic tilapia fry production.'
'Genetically similar, geneticallly able to catch up in growth at later stage, species has adaptable and quick response'
'Easy to detect significant differences at early stages, however we are interested in effects later on, experimnt says seed quality is less significant factor in respect of end table fish production output. managemnt in this case appeared not be significant in early stages. wnated to look at a range of different size ranges and conditions to see growout effects.'

Stress test

'difficult to apply in a meaningful way and therefore difficult to use.'
'pointing out the need for this type of science because of the difficulties of mortality during transport and the aspect of blame.'
'From experience found difficult to compare reasons for cause of mortality in transported stock as numbers which die vary. condition of water and time involved in transport important, or shock from

transport through vibration in vehicle. Conditions in transport very important just as much as time is an important factor.'

Comments on workshop task 2

'If a full-time person is used in each country then this would affect the project in other areas and project may suffer in other areas. eg project could cover less countries.

'A lot of support is available in N.Vietnam with other projects, some fall under the development issues of these projects. On farm research and developemnt go hand in hand, on hand research with farmers could be done first.'

'Caobang, a norther province, seed supply problem due to remoteness, demand for getting better quality fry to farmers. DFID may say that the results have showed no real difference, impact has to be significant for further support. Where are the primary issues- is it strain or is it availability, some issues are same and some different between countries. Concerned about researchable constraints- are they common to many countries, in order for a multiplier effect and wider benefits- the donor wants to see some further developemnt on what's already been achieved.

'Information is not usful until it is disseminated.'

'Perhaps too technical. since project started dof is interested in fish seed quality project and would think they would pass forward information and try and implement. They may have some difficulty in relating to marketing problems.'

'If government officers already have knowledge why do we have to do ground work?'

'The first step has identified the issues, but has to be put into practical positive implementation strategy - DoF have to accept the method not just the people who present it - they have to work for themselves for sustainability, noit sustainable for someone from uk to be present all the time.'

'We haven't looked at the dof as a resource, are any efforts being made to work with traders. We have a model. Traders in bangladesh are quite different from thosein thailand. is anything in bangladesh experience we can use in n.vietnam? Is it possible we can work with traders to improve seed quality- providing training, certification, as they are important suppliers oif seed.'

'If you come in with subsidies, it increase cost and may not be sustainable, however if from increased knowldge of quality by customers may educate traders.

'Traders are a potentialsource of knowledge for farmers, traders have learned through experience how to sustainably manage theoir income from trading, by getting sustainable business from buyers; instead of pushing sales on farmers.'

'In thailand they are seasonal traders, and perhaps new guy coming in'

'One approach could be to focus on training of traders who do it often- it's specialist knowldge not everyone can do it.'

'certification wouldn't work in practical terms'

'Don't think we control traders, biut in banglkadesh they did a piloting study wuth traders to see what is feasible and practical and work best.'

'fry traders were initially afraid of fishery biologists, but this leveled out after a long learning process, however the traders are the ones supplying fish to the farmers. we monitored results and found that traders have knowledge of fish culture and disseminating this. at beginning however it was a challenge.

'Challenge is to increase availability and maintain quality- can we do that.? That in itself may have pushed system to more variable quality.'

'In Laos the style of research work is from short term input which seems to work, interesting that part-time support locally is of use.'

' Seed production - RDC support private sectors and support private sectors plus farmer to farmer training. This is a simple but radical approach to producing good quality seed, perhaps aspects or characteristics useful for incorporation within other countries.'

Concept note:

A concept note is outline of an abreviated project proposal. Hopefully you can use this in your own system. Concept note reflect DFID's objectives. for current project target institutions are dept. of fisheries and ultimate beneficiaries, farmers. target institutions are partners in the process, we have an opportunity here for individual input. Our current project has been partnership rather than collaboration, this is better than a superficial collaboration.

International indicators are used for poverty levels, Thailand is considered better off than some other countries here. institutional cpacity building is evident. research result is more about process rather than a particular method. The product is usable and required. The link between higher quality seed and links of benefits to poorer people perhaps have to be explored and indicated more. DFID particularly interested in benefiting women. Environmental impacts should be neutral or beneficial however overall the project would be beneficial. Many organisations have input money and much effort-should make a strong statement on this as it shows partnership.

Discussion of concept note proposals:
'Researchable issue is the working models of seed supply- how do the poorest benefit?-how can the system be improved? '
'If we did this agin we would attempt to describe these people who are poor and how this links - DFID would want to know what benefits are there to the poor.
We need -technical innovations
-management
-institutional support and capacity building

'All these networks have different characteristics'
'Thailand- government doesn't interact with traders-can the government improve what they do?'
Vietnam- 'these things are at the activity level but can be put in a wider context. The issue of the poor provinces in northern vietnam is relevant as this would specifically benefit poor people-direct impact.'
Laos- 'When going back to the models and comparing gov and private hatcheries generally little difference- issue is do we need to do more research into that? or can we make a decision and implement things. The problem is management here and not research. '

'many of the issues put forword in concept notes are too technical, however there doesn't appear to be a genetics issue - the issue is wider. it must be a wider issue with wider benefits.'

We have to develop results which meet our pupose.
'Have we met the objectives?' - No answers
'It's a very ambitious thing to do.'
'The purpose of the project remains a valid prupose, however to DFID funding may not be forwarded on results of the project. If some things from project could meet the purpose then may be possible to grasp further funding.'

'This project on paper will not be looked at in the next year , as technical report is still to be developed.'

'Difficult to develop a concept note as the project is not finished, but if later this year a concept note is organised then that will be satisfactory. Information can be taken away for this purpose and discussion of it will help.'

'In laos much information is useful to RDC and higher up and it will be interesting to see the impact.'

Appendix 1.6

List of Participants

Dr Pham Anh Tuan Le Quang Hung Dinh Van Thanh	Research Institute for Aquaculture No. 1 Tien Son, Bac Ninh Hanoi, Vietnam
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Appendix 2.

Narrative description	Objectively verifiable indicators	Means of verification	Risks & assumptions
Outputs 1. Improved understanding of the existing knowledge systems of the private hatchery operators cooperatives, especially the locally-based institutional support structures. 2. Development of a participatory methodology which will allow stakeholders to effect a continuous improvement in the quality of fish seed available in the seed supply system of Northeast Thailand	By April 2002 knowledge network diagrammes are displayed in the hatchery operators cooperatives in 4 provinces of NE Thailand. By April 2002 action plans stating at least five points which will effect the improvement of fish seed produced by the hatchery cooperatives are completed in stakeholder workshops in 4 provinces of NE Thailand. By November 2005 there will be a reduction in the production costs of hatchery operators by 5% of the 2001 figure.	Visit to cooperative buildings Workshop reports Hatchery operators records (?)	
Activities 1. Formation and training of local research teams 2. Participatory appraisal of knowledge system of hatchery operators 3. Semi structured interviews with key steakholders identified in appraisal 4. Development of an action plan 5. Implementation of action	By November 2001, Lists of team members, logframes and research plans will have been prepared and implemented in partnership with members of local service providing institutions in four provinces of NE Thailand. By November 2001, resource maps, problem ranking and institutional assessment tables completed in participatory appraisal in 3 out of 4 target provinces in the NE Thailand. By April 2002, fish seed quality activities planned and/or completed with at least two service providing institutions and the hatchery cooperatives in 4 provinces of NE Thailand.	Project activity reports Partner progress reports (if agreed in MoU) Appraisal outputs held at hatchery cooperative building Institution activity reports	