Quality networks open markets for fish

RIU

Validated RNRRS Output.

Networks connecting producers, dealers, technical specialists, NGOs, public officials and consumers along fish market chains help people understand the need for quality products and set quality standards. Without quality standards for products, access to growing national and export markets may be blocked and producers denied higher prices. The network approach was successfully tested in Vietnam and Bangladesh. In Vietnam, companies processing fish for export set up the market quality network. This involved all those along the market chain working together to improve fish for export. Marketing networks to improve product quality have great potential not only for fish but for a large range of other products too. Not least, poor producers stand to benefit from better prices.

Project Ref: **AFGP06:**
Topic: **3. Improving Fishers Livelihoods: Better Fishing Management & Aquaculture**
Lead Organisation: **University of Stirling, UK**
Source: **Aquaculture & Fish Genetics Research Programme**

Document Contents:

Description

AFGP06

Research into Use
NR International
Park House
Bradbourne Lane
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Geographical regions included:

Bangladesh, Vietnam,

Target Audiences for this content:

Fishers,

A. Description of the research output(s)

1. Working title of output or cluster of outputs.
In addition, you are free to suggest a shorter more imaginative working title/acronym of 20 words or less.

Promoting domestic and international networks for market quality in aquaculture to improve and widen livelihood benefits for aquaculture producers and consumers in developing countries, and through improved market chain and consumer reception in international markets, increase sectoral income trade opportunities and local development potential.

"Development opportunities from aquaculture market quality networks"

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

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.

AFGRP - R8286, R8287, A11, T03, T08

UK: University of Stirling (R8286, R8287, A11, T03, T08), Fairtrade Foundation (T03)
Bangladesh: WorldFish center (R8286)
Thailand: Department of Fisheries (R8286), Kasetsart University (T09)
India: CIFRI – West Bengal (R8286)
Vietnam: RIA 1 (R8286), Ministry of Fisheries & Mekong Development Institute (R8286), University of Can Tho (R8286), VASEP (T08)
Egypt: WorldFish Center (R8287)
Nigeria: IOMR (R8287)
South Africa: University of Natal (R8287)
Tanzania: Fisheries Department (R8287)
Bangladesh: DANIDA Greater Noakhali Aquaculture Extension Project (T03)
Philippines: CIRAD (T03)

*4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? **(max. 400 words)**. This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be used to select your output when held in a database.*

AFGRP sponsored and linked research has shown the importance of defining, creating and communicating **quality attributes** in **aquaculture** production to meet domestic and international market requirements. Without

this, important **market** access can be denied, or producers might fail to capture adequate shares of benefit in the growing and economically significant markets for **aquatic product**. **Consumers** can also fail to access nutritional information and other benefits, and **risk food safety** impacts. A coherent approach to quality and its **communication** is essential.

This project commences with recognition of markets as interactive, interdependent **supply chains** wherein transactions take place. Each partner to a transaction will seek to promote or search for the 'quality' of attributes of the product(s) concerned. The role of knowledge associated with quality is uneven along the supply chain, usually delivering advantages downstream from the source of raw material. Thus producers and first hand market intermediaries may not receive sufficient incentives to invest in improving quality, and ultimately both consumers and the whole sector are undermined. In most forms of aquaculture, there are significant changes to be made in terms of production techniques, species and product diversity, aquatic animal and system health, harvest timing and post-harvest management, as well as an increasing range of social and ethical attributes, and growing demands for **certification** and labelling. Each of these requires specific and focused response, and carries strategic rewards for successful resolution. However, without a concerted quality approach, the signals and motivations become lost, at the expense of valuable development outcome.

Our approach is applicable at local, national or regional level, and aims to connect producers, market intermediaries, technical specialists, NGOs, public sector agents and consumers into **networks** in which quality can be defined, criteria agreed, and action taken to build quality and value, with appropriate mechanisms for incentives and action to generate a wider awareness and understanding of quality, and greater value in the sector. It is based on successful pilot work carried out in Vietnam and Bangladesh, and is potentially applicable in a range of contexts. The networked approach proposed could incorporate and generate synergy with many other projects.

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	*X*	*X*	*X*	*X*	

Product quality embraces many aspects from the attributes of the product to the technology used to produce and process it. Services provided to producers and policies also have a direct impact on how product should/can be produced and thus impact on quality.

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

Fish/aquatic products are the intended focus, with prior research focus on farmed supply – however it is clearly extensible to wild captured products, and further to a range of other commodities where smaller-scale producers increasingly interact with external markets.

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

Please tick one or more of the following options. Leave blank if not applicable

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

The primary link is with land-water, peri-urban and high potential production systems, though the theme is cross-cutting, and to the extent that it reaches producers and consumers in all systems, has a wider connection. In particular the overlaps from systems 2, 5 & 6 along with cross-cutting are important.

8. What farming system(s) does the output(s) focus upon?
Please tick one or more of the following options (see Annex B for definitions).
Leave blank if not applicable

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

Systems 1, 2, 3 and 4 have the greatest potential to supply products for aquatic food markets and thus quality networks will have greatest impact here. However all systems are capable of generating supply and thus should be incorporated within the ambit of consideration.

*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**).*

Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

From the Crop Post Harvest Programme:
Project R8274 set up an innovative institutional arrangement that enabled the farmers to access post-harvest technologies and advice that improved the quality and quantity of maize for enhanced market access. The technologies were easily adapted to farmer conditions because of affordability, simplicity, effectiveness and user friendliness. This tool might be applicable to aquaculture products. Other projects (R8275, R8498) looked at improved networking and co-ordination between NGOs, private sector and government agencies concerned with farmer organisations for better access to markets and promotion processes, strategies and pathways used for uptake of post-harvest outputs by various users.

From the Natural Resources Systems Programme:
Project R8084 investigated how communities could achieve sustainable change to their livelihood strategies in identifying factors which facilitate co-operation between different stakeholders. Although not directly focused on quality, some of the factors identified by this project might guide in the identification of factors in the aquaculture sector.

Validation

B. Validation of the research output(s)

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

*Please provide brief description of method(s) used and consider application, replication, adaptation and/or adoption in the context of any partner organisation and user groups involved. In addressing the "who" component detail which group(s) did the validation e.g. end users, intermediary organisation, government department, aid organisation, private company etc... This section should also be used to detail, if applicable, to which social group, gender, income category the validation was applied and any increases in productivity observed during validation **(max. 500 words)**.*

Several aspects of the market quality issue were defined, assessed and validated. These firstly concerned whether quality was understood and perceived as an issue amongst market actors, then to determine the latent or expressed demand for effective responses, and which approaches could be taken up. In Vietnam, field research by AFGRP and partner groups within the marketing chain for Pangassius catfish highlighted the need for a more co-ordinated approach to quality. Face to face interviews and observations, undertaken by project staff, with actors along the supply chain identified considerable variation in practice which resulted in the uneven acceptance of product and variation in the prices paid. Processing companies buying fish were found to reject product not meeting their specifications, thereby creating negative feedback along the chain. In depth interviews revealed that product specifications were often not met due to a lack of adequate communication and understanding about requirements along the chain. For example fish farmers might be unaware that their feeds were causing less desirable off-white flesh colouration. Improved communications within the chain were facilitated from the late 1990s with the formation of the Vietnamese Association of Seafood Exporters and Producers (VASEP) which provided an opportunity and mechanism for otherwise competitive firms to share market understanding. In 2006 VASEP listed 185 members committed to promoting the contribution of seafood from Vietnam in domestic and export markets.

Similar problems were also found through in-depth interviews in prawn marketing chains by project staff in Bangladesh, in conjunction with the DANIDA GNAEP. Interviews with producers and buyers highlighted variation in the application of required grade standards, which in turn had implications for the prices paid. Most traders behead their prawn to reduce the costs of transport to the processing plant, not realising the risk of bacterial contamination; also reducing the price paid. Stakeholders in the prawn commodity chain see their product refused or paid at a lower price without understanding the reasons behind the poor quality.

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

*Please indicate the places(s) and country(ies), any particular social group targeted and also indicate in which production system and farming system, using the options provided in questions 7 and 8 respectively, above **(max 300 words)**.*

Research was undertaken in Bangladesh and Vietnam (R8286) over a three year period from 2002. In the case

of Bangladesh a sample of villages and towns was drawn to include a variety of marketing chains and actors ranging from producers to consumers and the attendant intermediaries. Data on social groups and/or status of households was variable, but secondary indicators suggested a mix of income categories, household types, and levels of sector dependency and vulnerability. This linked with generic features of aquaculture supply and market chains in the region.

Within Vietnam research (T08) from 2002 – 2006 was focussed upon the marketing chain for the export of Pangasius and so extended from fish producers to processors. During this period the role of basa and tra catfish expanded and now features very strongly in international fish trade. Further validation of the discussions was undertaken through interviews with buyers at trade exhibitions overseas.

Work was primarily linked with land/water production systems in lower-lying deltaic and floodplain zones.

Current Situation

C. Current situation

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

Market quality networks are typically operationalised through the collective organisation of producers, processors, buyers and other facilitating organisations. The operation of VASEP provides a useful case study whereby processing firms, in this case sharing a common interest in the export of seafood, pay a membership levy to VASEP which in turn entitles them to access and share market intelligence. The operation of such a network expedites communication of information that might otherwise only appear over a much longer period of time and be uneven in its flow to members. In essence the creation of an association has created a structure within which members can deposit and access market signals.

In Bangladesh, although the outputs have not been implemented yet, the research recognised that farmers and traders could organised themselves to sell fish of higher quality by decentralising market places for example. However, the Shrimp Seal of Quality initiative, developed by USAID in Bangladesh, which is engaging more commercial producers of saltwater shrimp to link with exports markets is a practical example of how market quality network can have a positive impact on the producers and offers potentials to develop similar initiatives more widely.

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).***

As indicated at 12, a good illustration of a market quality network is to be found in Vietnam. The case for improved market quality networks is evidenced within the research in the marketing chains undertaken in Bangladesh. Here research along the marketing chain has identified unequal ownership and access of market information which has helped retain a complex network structure. Products are commonly found to pass through a number of different markets which suggests less than perfect knowledge about end user needs and

preferences and leads to inefficiencies in administration and poorer quality product. Improved understanding of what the end consumer wants and greater transparency in the mechanism to deliver this should lead to net gains.

More broadly, and in terms of the concept's strategic potential, organisations internationally are increasingly aware of the benefits of improved understanding of values along the supply chain. At a horizontal sectoral level, many notional competitors share access to market information so that they individually may make better decisions to respond to changing market preferences. Within aquaculture, there are examples in the salmon industries in Europe; bass and bream within the Mediterranean and, more recently within Vietnam amongst Pangassius producers.

Improved networks are also found vertically within the value chain, particularly when buyers seek to offer differentiated products to the market. Partnerships may be formed to support open discussion and exchange of product requirements. In a recent example for farmed salmon a UK retailer wishing to sell products reared only on 'clean' feeds has agreed to buy fish fed only on feeds low in dioxins and PCBs.

Compliance with the standards set by different organisations is increasingly signalled through the process of certification whereby agreed standards are communicated through labelling and other attached product cues. Fairtrade is an initiative with a set of standards producers have to follow, but it also helps the farmers to implement their requirements and progress every year through a network of quality.

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

In the case of Vietnam the initiative in establishing a market quality network was begun with those processing companies involved in exporting. The vast majority of exporting firms participate since they have witnessed the benefits of such networks from the late 1990s. Despite the more collective sharing of market intelligence through VASEP, research from the AFGRP found that companies still tended to lack a good overview of the sector, in this case especially catfish, and so often made independent decisions which took little, if any, account of wider goals.

More rapid adoption of quality networks would undoubtedly be achieved through the formalisation of structures to exchange information and mechanisms to promote training, administration and implementation. This is seen to be especially important given the structural imbalance within the chain where producers are typically very much smaller in size, and hence market power, than the processors. As one moves further along the value chain the more fragmented traditional small scale retailers and foodservice actors sit increasingly disadvantaged against the emergent multiple chain ownership structures of the supermarkets.

The scale of networks promoting market quality is international with a rapidly increasing number of schemes being incorporated into the trading channels for fish. Initially formed through alliances based in Western countries from the mid-late 1990s there has since been rapid growth this century and it seems difficult to conceive how aquaculture can become anything other than an increasingly important part of this global process.

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).***

The formation of sectoral or nationally-based groupings, trade associations and such have typically been good mechanisms to highlight the scope for individuals to gain from networking. Access to shared understanding and knowledge, which could not be contemplated on an individual basis, provides a strong incentive for support.

Organisations however must be capable of demonstrating the need for active participation through contributions rather than simply providing an opportunity for a free-loading position, a problem encountered in many cartels. BFRF (Bangladesh Fisheries Research Forum) and VASEP have been good examples of the potential role of this type of initiatives in supporting market quality networks, especially with BFRF and linking in with the public, NGOs and the private and academic sector.

Interdisciplinary research and management organisations, bringing together university, government, NGO, private sector commercial and small-scale producers have facilitated the research and uptake process. This has been particularly noticeable where the partnerships have been forged early and research has been conducted in an open and participatory manner, covering both technical and social considerations. It also helps ensure that market issues can be brought into the realistic scope of poorer and more vulnerable households, allowing them to share the actions and the benefits.

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 Vietnam, policy intervention, extension work and technological research are the factors that supported and promoted freshwater aquaculture development. VASEP has created a mechanism to promote the generic standing of Vietnamese products on the international market. This promotional activity has engaged a much wider collective audience than might otherwise not be possible by individual firms. The collective adherence to common standards in information expectations also tends to drive upwards the future expectations of members.

In Bangladesh, the government is getting more and more involved in issues related to good quality of products, especially for the export market. Outcomes from research will be disseminated in a workshop with policy makers in January 2007.

*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)**.*

In the absence of established structures, individuals will tend to horde their own private intelligence and knowledge of quality standards for private gain. Commonly this belief of exclusivity of information is misguided since in any market where there is exposure of product offerings, there is inevitably transmission of product cues. Nonetheless, in an environment where resources are often extremely limited, high risks are commonly perceived

with ventures of this sort, more so where one organisation is embarking upon this route in isolation. However convincing individual organisations that there might be some shared collective gain requires the creation of confidence in the established network and trust in its operations and the worth of the information which may be accessed.

In Bangladesh, the prawn industry offers significant benefits to stakeholders at all stages from production to export. However, lack of timely availability of quality prawn seed, and problems with poor flood control, water drainage and over use of pesticides inhibit production. In addition, quality control, consistent grading and pricing of prawns, and availability of information on international marketing at all stages in marketing chain need to be addressed.

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).***

Though much can be done by applying the practical implementation steps outlined above, broader capacity building in promoting changes in business culture will be valuable to recognise and accept the shared need for a greater market orientation within the sector. By developing an infrastructure in which organisations can participate and gain from the collective experience the perceived risk of individual participation is lessened. Providing the mechanisms to lay a foundation network is thus considered very important.

The development of wider capacity associated with public sector services related to quality and related support services needs to be facilitated. Provision of training through liaison with more established networks and case studies from other areas would all assist. In terms of organisational structures, support for the formation of producer co-operatives and nurturing their evolution and ongoing wider roles is important. These must however be linked to delivering genuine differentiated gains from existing practice and contribute positively to capacity building.

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).***

Demonstration, through unambiguous delivery, of the potential for personal gain without disproportionate additional cost. Networks must be seen to consist of an appropriate mixture of interested stakeholders and that all groups will have the opportunity for fair representation and share in decision making and management of the organisation. Structures which are not open and transparent typically tend to encourage scepticism, not least because there is often an historical record of reason for such distrust in the groups concerned. Involve an appropriate mix of stakeholders in open and participative dialogue and research as early as possible is critical and ensuring that poor people and their representative bodies are central to the process.

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? This should include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.

In three districts of Bangladesh (Jessore, Mymensingh and Dinajpur), a baseline survey was carried out using semi-structured and structured questionnaires. The project looked at farmers marketing practice, fish auction process and markets, rural retail markets, marketing margins and benefits and livelihood profile of fish marketing stakeholders. The results showed the importance of quality in the chain, how the stakeholders were communicating and organising each other for fresher fish. These outcomes could be disseminated to other regions.

Field activities for the survey research were carried on aquaculture producers, fish traders and markets in Lagos (Nigeria), Cape Town (South Africa), Blantyre (Malawi), Kampala (Uganda) and Yaoundé (Cameroon) areas.

In Vietnam, the project carried out value chain assessments of main sub-sectors in the Mekong Delta, focusing on Can Tho, An Giang, Dong Thap, Tra Vinh , Soc Trang Province and Ho Chi Minh City.

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):***

- *What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed? These impacts should be recorded against the capital assets (human, social, natural, physical and, financial) of the livelihoods framework;*
- *For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact;*
- *Indicate the number of people who have realised a positive impact on their livelihood;*
- *Using whatever appropriate indicator was used detail what was the average percentage increase recorded*

In Bangladesh, selling fresher or live fish to closer market places – decentralisation of markets took place following pursue of higher quality fish - increased perceptibly the income in turn contributing significantly to improve livelihood outputs (mainly food, cloth, housing etc) of all level of stakeholders and social capital and mobility were increased due to production activities and increase of income.

Economic growth in central Thailand has increased the wealth of many people and their purchasing power, consequently consumers are moving from the staple food (rice) to high value goods such as fruits, meet, vegetables and fish. Monosex tilapia allows the farmers to produce bigger fish for better off consumers and intensive culture of red tilapia can provide even higher profits if the fish are sold live. Quality is therefore the centre of the production, bringing a higher income therefore increasing the financial capital. Many people, not always with an agricultural background or activity, have started aquaculture as a diversification activity, providing higher income than other traditional activities. There are 281,561 aquaculture farms in the region of all sizes, 18% of total from Thailand.

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)***

This could include direct benefits from the application of the technology or policy action with local governments or multinational agencies to create environmentally sound policies or programmes. Any supporting and appropriate evidence can be provided in the form of an annex.

Emphasis on quality through the supply chain will at the first level maximise economic value per unit of resource applied. Experience has already shown (e.g. Vietnam catfish production, shrimp production) that environmental attributes quickly become taken up in the quality criteria, and subject to transaction rules. In these circumstances – and these elements would be actively incorporated into any proposed response to the pro-forma it is expected that uptake and application of this concept will result in positive environmental impacts.

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

In some circumstances increased aquaculture output could increase resource demands and intensify production in key habitats, with potentially adverse environmental consequences. There also broader concerns for biodiversity impacts in aquatic systems, associated with species introductions and escaped stocks. However, as outlined above, these elements would be incorporated strongly into the quality context, and therefore have better potential to be managed.

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)***

Yes, they will be an essential element in the necessary coping strategies. Firstly in ensuring that in key producing areas an important part of generated value and decision-making is retained locally, thereby increasing livelihood capital, reducing vulnerability, and increasing potential to plan for and respond to adverse changes. Secondly, improved food supply and quality will have generic positive impact on health and social welfare. A positive impact is also potentially generated in that more responsive policy would arise from greater awareness of value issues and impacts, and that networked partners would be better able to work together in shared goals to address such issues. Further, criteria such as climate change vulnerability and provision for risk mitigation could be included in future product attributes, and subject to market-driven support.