

# Knowledge brings opportunities in emerging domestic fish markets

RIU

## Validated RNRRS Output.

Small producers and cooperatives can take advantage of emerging domestic markets when they know how they work and what consumers want. Helping producers learn about consumer preferences and the options for selling, processing, transporting and marketing their fish lowers their costs and helps them get better prices. Producers in Vietnam were able to reorient their products very quickly to the emerging domestic market when the bottom dropped out of the US market for catfish. In Thailand, fish production for the domestic market has nearly doubled over the last decade. Helping producers learn about market chains and domestic demand for fish could have a huge impact wherever there are growing urban centres in Asia and Africa.

Project Ref: **AFGP08:**

Topic: **3. Improving Fishers Livelihoods: Better Fishing Management & Aquaculture**

Lead Organisation: **University of Stirling, UK**

Source: **Aquaculture & Fish Genetics Research Programme**

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## Description

**AFGP08**

## Research into Use

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

## Geographical regions included:

[Bangladesh](#), [Cameroon](#),  
[India](#), [Malawi](#), [Thailand](#),  
[Vietnam](#),

## Target Audiences for this content:

[Fishers](#), [Processors](#),  
[Traders](#),

**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.*

New strategies and approaches for meeting the demand for aquaculture and aquatic products in domestic markets, in major suppliers and emerging producer states.

‘Aquaculture production reaching home markets’

**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.**

R8286, R8287, A02, A11, T02, T04, T05, T09

South Africa: University of Natal (R8287)

Nigeria: IOMR (R8287)

Vietnam: RIA 1 (R8286), Ministry of Fisheries & Mekong Development Institute (R8286), University of Can Tho (R8286), University of Agriculture and Forestry (A02, T05), Mekong Development Institute (A02, T05), University of Can Tho (A02, T05)

Bangladesh: WorldFish Center (R8286), BFRF (T02, T04)

Cambodia: Royal University of Agriculture (T05)

Thailand: Kasetsart University (T09)

India: CIFRI – West Bengal (R8286)

**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.*

The proposal is based on a series of research and assessment exercises carried out within the AFGRP, exploring the extent to which changing conditions in **aquaculture** supply had the potential to impact producer-country **producers** and **consumers**. Two important themes emerged; firstly that emergent producers faced difficulties entering and building opportunities in established domestic arenas, and secondly that key international trading countries with growing domestic economies had unrealised potential for stabilising growth and redirecting benefit to local consumers. In the latter case in particular the aim would be to enable skills and expertise built up for export markets to be redirected to emergent needs within target **domestic markets**, while in the first case,

lessons learned from other contexts could be applied directly to build up capacity. In some cases, for example, with different aquaculture sub-sectors, the two strategies could be combined, with clear objectives of sustained and profitable domestic production, competitive market processes, and equitable consumption benefits of good quality foods.

This initiative would focus on using corporate and other resources in the sector; the set of skills and knowledge developed across the **value chain** including, the various aspects of technical husbandry proficiency, fish processing, logistics and **marketing** management, a valuable asset capable of wider application, towards emerging domestic markets. In various forms these increasingly reflect the Western multiple chain model with increasing dominance of supermarkets and larger foodservice organisations, but are also shown in changing smaller scale supply networks

This represents significant opportunities to target markets increasingly similar in profile and response to those served overseas, but with key advantages of closer proximity, lower transaction costs and greater familiarity with the consumer. This strategy has the further benefit of spreading risks over a wider market and raising opportunities for economies of scale.

The aim would be, via private sector and NGO training partnerships, to provide a comprehensive package of business skills and sector targets which would enable actors at co-operative and small business levels to identify domestic market opportunities and implement service delivery, monitoring and control. This will be critically dependent upon a culture of change management, with periodic assessment of performance and adjustment of strategies, but ultimately defined by sectoral growth, small enterprise performance and access to improved understanding of domestic consumer markets.

5. What is the type of output(s) being described here?

Please tick one or more of the following options.

| <b>Product</b> | <b>Technology</b> | <b>Service</b> | <b>Process or Methodology</b> | <b>Policy</b> | <b>Other Please specify</b> |
|----------------|-------------------|----------------|-------------------------------|---------------|-----------------------------|
| X              | X                 | X              | X                             | X             |                             |

This output covers a suite of approaches that can be adapted according to the needs of each market structure.

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

Aquatic animals and plants

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

| <b>Semi-Arid</b> | <b>High potential</b> | <b>Hillsides</b> | <b>Forest-Agriculture</b> | <b>Peri-urban</b> | <b>Land water</b> | <b>Tropical moist forest</b> | <b>Cross-cutting</b> |
|------------------|-----------------------|------------------|---------------------------|-------------------|-------------------|------------------------------|----------------------|
|                  |                       |                  |                           |                   |                   |                              |                      |

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|---|

This output would be appropriate wherever aquatic stocks currently targeted at export markets appeal to emergent trends within domestic markets.

**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

| <b>Smallholder rainfed humid</b> | <b>Irrigated</b> | <b>Wetland rice based</b> | <b>Smallholder rainfed highland</b> | <b>Smallholder rainfed dry/cold</b> | <b>Dualistic</b> | <b>Coastal artisanal fishing</b> |
|----------------------------------|------------------|---------------------------|-------------------------------------|-------------------------------------|------------------|----------------------------------|
| X                                | X                | X                         | X                                   | X                                   | X                | X                                |

This output has potential in all farming systems where a holistic approach to the market development for aquatic stocks would be beneficial.

**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.

This service will add value to current activities in a number of ways. Firstly it will enable existing resources to focus upon producing products to be targeted at higher unit value markets within the domestic economy. Presently these resources are commonly confined only to export markets and this restriction of their application may be seen as an opportunity largely foregone hitherto.

Extending the application of formerly export oriented corporate resources will necessarily involve development of the capacity to meet higher specifications and generally raise the skills base in turn. This will thus add to the quality and value of all the resources available for other future diversification decisions. Increasing the domestic skills base of the sector should in turn strengthen its competitive advantage internationally and enhance its scope to host additional investment.

From Natural Resources Systems Programme and the Crop Post Harvest Programme several projects (R7151, R7494, R8250 and R8422) have explored aspects of systems currently producing for export markets. Whilst the structures of these chains have been developed to satisfy the needs of their export target markets, the products and processes developed have engendered the potential capacity to deliver within the domestic market. This output would also provide scope for synergy gains with the market information systems proposal.

At the peri-urban interface opportunities are also likely to emerge as producers adjacent to more affluent areas could build the capacity to meet emerging market requirements. By providing a networked resource through which learning can be acquired, individuals and organisations, often at the margins currently, would have an opportunity to target potentially more profitable markets and generate additional value.

## 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**).*

The output has been validated through the research process of the projects associated with this concept. Observation of and in-depth interviews with moderate poor, extreme poor and commercial producers and traders developed understanding of domestic market strategies. The concept of market diversification arose in the course of discussions about current activities and potential responses to changed market circumstances. Marketing strategies developed to ensure the sale of the improved production outputs from these projects have been validated by use in various domestic market environments. There is unmet demand for aquaculture products in many countries, including those where aquaculture is well established. Case studies from throughout Asia have shown that aquaculture production for domestic markets is often more sustainable than that of export commodities (e.g. shrimp) which are subject to competition with international producers and, in some instances, trade barriers and other regulations. Improved market access in these countries has been shown to act as a stimulus for both aquaculture and the consumption of aquaculture products. A widening of focus to include domestic markets allows has allowed farmers experiencing difficulties with export led production to diversify livelihood portfolios and spread risk. In some instances the capacity provided by export led production can be effectively applied to domestic circumstances – through use of cold storage and processing facilities to develop new products for emergent retail sectors for example. This process has occurred in Thailand where the widespread failure of small-scale export led shrimp culture has led to conversion to tilapia production for domestic consumption. Farmers adopting this approach have benefited from reduced vulnerability to unstable prices, and frequent financial losses and employment in ancillary services to aquaculture has been sustained

#### **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**).*

Validation of the proposed output has taken place in several Asian countries as a result of AFGRP research. Detailed studies of the status and development of domestic markets for aquaculture products took place in Bangladesh, West Bengal (India), Central Thailand and Vietnam's Red River Delta. The contrasting market conditions in each of these locations were explored in detail, highlighting approaches taken to production for

domestic markets that could be implemented effectively in other locations, either as interventions or policy.

Within Bangladesh and Vietnam opportunities for improved access to domestic markets were validated for catfish production as international market access changed since 2003. The origins this change lay in a dispute over the concerns of the domestic US catfish farmers who were increasingly worried about the rising share of catfish imported from Vietnam. Importantly, the experience within the export markets triggered some realization of the opportunities which lay within the domestic market. The skills which had been nurtured to place product on the international stage were also available to develop other marketing channels in the fast-changing retail and foodservice sectors. The research provides an interesting case of how the imposition of trade sanctions has provided a stimulus to greater market orientation and, in so doing, has placed the sector in a more stable position through its foundation upon a more diversified market. Given inherent dynamics in international markets such as currency fluctuations, changing preferences and competing substitutes this is clearly a more stable platform from which further expansion can be expected

Around various cities in a several African countries (e.g. Blantyre in Malawi, Yaoundé in Cameroon) aquaculture is developing as a new livelihood option for the urban poor youth and market access issues have been validated in limited areas since 2005.

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## Current Situation

### C. *Current situation*

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

Outputs have begun to emerge within the marketplace but the concept of diversifying products intended for export markets into domestic opportunities is still relatively rare. One of the clearest examples is within Vietnam in response to change in the US market which encouraged reorientation to other export markets and also to the emergent domestic market. Approaches to domestic aquaculture production and the marketing thereof have developed organically wherever aquaculture occurs and are in use daily by millions of people world wide, in order to meet the aims of livelihood strategies and commercial goals. However, there is much scope for improvements which would extend benefits further

In Thailand, growth of mobile markets that travel from town to town, visiting on a regular basis has expanded massively since over the last decade and has stimulated changes in the consumption of fish products which has in turn stimulated increases in fish production, improved consumer access to fish and other products and kept prices affordable to poorer consumers. Over the same time period expansion of supermarkets and convenience stores has created new outlets and new fish products (e.g. prepared meals) and introduced standards and traceability among suppliers. Other commercially led developments such as cages culture of higher value strains of tilapia have encouraged further diversification of production and market segmentation, and fish production from domestic production has approximately doubled over the period.

#### 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).*

Instances of greater focus upon domestic markets are to be found in a number of developing countries, notably within SE Asia. As groups of more affluent consumers have raised their demands for foods the standards and structures of market channels has altered accordingly. Typically this has led to increased concentration within the chain with fewer and larger players supplying products with additional attributes incorporated. Additional benefits traditionally associated with consumers in export markets are increasingly evident within the domestic markets of exporting countries and it seems logical to satisfy this demand internally. At present research findings have yet to be applied practically. However, considerable potential exists for the knowledge obtained of market functioning and the domestic potential of aquaculture to be developed further and lessons learnt to be trans-located between countries and regions. These principles and approaches could apply wherever there are expanding domestic markets for instance in Thailand, China, Vietnam and urban centres in Africa.

*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 official data on the growth in the quality of products in domestic markets are sparse. The very absence of indicative data of the scale of current use highlights the need for improved understanding of markets, noted elsewhere, but also emphasises the problem of encouraging prospective firms to consider such actions.

Despite the absence of more official measures, softer indicators suggest the spread of interest in the domestic markets components of the product ranges evolving within the expanding supermarket sector. Similarly exhibitions and trade shows bear witness to the increased capacity of many plants to cater for these growing markets. Similar evidence is to be found within a number of S & SE Asian markets.

Evidence from Thailand, China and Vietnam indicates that given appropriate conditions and stimuli domestic consumption led aquaculture production and marketing can taken up and adopted very rapidly, expanding to return benefits that extend to consumers of all social groupings

*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).*

Mechanisms are required to alert export-focussed companies that alternative opportunities are often to be found in places other than the traditional target markets. Training need to be provided to encourage ongoing consideration and evaluation of the market. This should also foster the notion of change management wherein it is accepted that practices need to evolve to meet emergent circumstances and recognition that remaining static without considering alternative courses of action is liable to result in failure.

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## 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 the case of Vietnam, members of VASEP, the Vietman Association of Seafod Exporters and Producers have been able to gain experience of sharing intelligence and wider co-operation between firms. To some extent this has helped establish a culture of greater market awareness and the need to consider alternative opportunities. The development of marketing networks and related structures is likely to encourage further promotion of this route.

In urban (U) and peri-urban (PU) African centres, such as Dar es Salaam, Lagos, Kampala or Cape Town, there is evidence of emerging aquaculture activity using various systems and environments. In these and other conurbations, planners, entrepreneurs and workers alike have recognised the potential of aquaculture to serve expanding markets. In Cameroon, to increase the range of collaborative interactions and expand project impacts beyond the target villages, a network of NGOs was created to disseminate information and a Research Committee was established to manage 32 ancillary research projects through a competitive grants facility. In terms of policy, in Cameroon the project worked with local and international agencies to define, describe and institutionalise a Strategic Framework for Aquaculture Development. The model was first applied in Cameroon, but through collaboration with FAO is now being adapted to a number of other countries within the region.

**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).**

Organisations contemplating diversifying output into domestic markets inevitably incur the opportunity costs of alternative export market activities. Information and understanding about emergent opportunities is typically less good and so carries a higher risk than is perceived in existing markets served, even although they may be much further away. Traditional problems attached to the absence of existing infrastructure etc also conspire to deter adoption.

**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).**

The availability of training in how to identify and implement alternative marketing strategies to target domestic markets is important. Training provision may be made in a number of different ways, whether this be as start-up programmes likely to be necessary in the initial years or as ongoing in-house components of career/ personal development plans.

Ultimately individuals within the value chains should be encouraged to develop a broader understanding of their relative position in relation to downstream and upstream actors and to understand how this knowledge can facilitate a more critical appreciation of their current and potential positions.

**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).**



Outputs must be results focussed and clearly demonstrate to individuals and organisations concerned that alternative courses of actions do exist and can generate benefits equivalent, possibly greater, than those associated with traditional export markets. Generation of domestic market diversification has the capacity to create alternative sources of employment and related benefits.

## 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.*

Studies on the impact of domestic market strategies have been conducted in Vietnam's Red River Delta, Bangladesh and Central Thailand and West Bengal in India. The studies have looked at trends in marketing development and the drivers for these but have not looked at poverty impact per se. Rather, they sought evidence of shifts towards domestic markets, that producers were capable of doing so viably, that domestic consumers had access to good quality product at reasonable price, and that as a whole, the supply chain became more resilient and hence potentially more sustainable. Based on what could be inferred elsewhere concerning links between these and various poverty criteria, the broad assumption was used that positive supply chain changes would have a generally positive poverty impact.

*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*

A diversification of market strategies towards a greater domestic focus has increased the availability of aquaculture products in the market. In many instances this has reduced the market price, ensuring that good quality protein is available to poorer consumers. Where market diversification has seen high value species entering domestic markets and being targeted at middle class consumers, the benefits accruing to poorer stakeholders typically arise from involvement in the marketing chain through employment or trading, or in the production and processing facilities through greater employment opportunities.

Reduced vulnerability to fluctuations in international markets, particularly noticeable in the case of catfish from Vietnam, helps ensure survival particularly of small producers who would typically be the first to suffer from market collapse. There has been a recent remarkable reduction in poverty due in part to aquaculture in Vietnam's Red River Delta. There is an effective marketing system with aquaculture an attractive economic activity as fish prices are rising faster than inflation. There is relatively limited potential to export freshwater produce but huge potential for the domestic market in the densely populated delta. Only about one third of local consumption is met by local production and there is increasing per caput fish consumption by the rising and increasingly affluent population the delta.

In Bangladesh the sale of freshwater prawns to the growing middle class urban population is providing direct increases in financial capital to extreme vulnerable poor households in rural coastal areas. The production and marketing networks established to support this demand are increasing social capital and ensuring a coordinated approach to the use of natural capital because feed and seed supply is part of an integrated approach

In West Bengal the number of stakeholders in food fish marketing chains (e.g. fish suppliers, auctioneers, and retailers) has increased over time at most markets. This shows that markets have developed concurrently with increasing supplies of cultured fish. Poor people are involved in the transport of live fish for sale from water bodies around Kolkata to auction markets, and from auction markets to retail markets, using aluminium containers set up in bicycles. The supply of small low priced food fish meets the demands of poor consumers in rural areas. Demand from poor consumers for small sized low priced fish is high. The market study in West Bengal showed low priced smaller sized cultured fish to be largely meeting the needs of poor consumers in both urban and rural areas. A large proportion of retailers in all the district markets surveyed were women. In the markets of West Bengal the supply of large fish from outside state meets the demands of many consumers but there is also demand from poorer consumers for smaller low priced fish. There is also lots of demand for locally produced Indian major carps and, even with small fish, a live product is preferred by consumers

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## 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.*

Development of domestic demand for aquatic products would reduce net food miles, transport requirements and the related production of greenhouse gases. It could also act to reduce exploitative demands e.g. in unsustainable fisheries or other unmanaged livelihood areas and, if practiced in an integrated manner, improve the efficiency of natural and agricultural resource use.

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

An uncontrolled expansion of domestic production may have potential negative impacts, if occurring in an intensive and completely deregulated manner. This is unlikely however, since most aquaculture for domestic consumption occurring in developing countries is integrated with other human activities in some way, and is semi-intensive, thereby using resources in a more efficient and sustainable way than much of the export oriented aquaculture (e.g. intensive marine shrimp culture) practiced in these countries. Furthermore, these impacts should be mitigated by appropriate policy and planning as advocated here is implemented

*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)*

Ensuring people have access to locally produced food reduces reliance upon international transport and potentially reduces vulnerability to climate change where a diversity of options exists. Greater stability and resilience in supply chain as a whole also reduces vulnerability to shocks and trends, be they climatic or otherwise.

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