

# Research for Impact The SUFER Experience

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This publication was commissioned by the SUFER project through funding from the Department for International Development (DFID). The reflections, interpretations and conclusions expressed in this report are entirely those of the authors and should not be attributed to DFID, which does not guarantee their accuracy and can accept no responsibility for any consequences of their use.

This booklet was first published in 2004 by the IDL group © the IDL group, July 2004

# **Acknowledgements**

he analysis and thinking contained in this publication is not ours alone. It represents the sum of the wisdom and experience of the large number of people who patiently contributed their time to discuss with us their experiences and perspectives on the key livelihood issues and challenges faced by them. Without the time and openness given to us by the communities we visited in Bangladesh we would not have been able to conduct such a comprehensive study. We would particularly like to thank the staff of the Support for University Fisheries Education and Research Project (SUFER). They provided us with invaluable support in organising our visit and accompanying us to the field, and discussing their experiences and perspectives on the project.

Finally, as the project nears its completion, we appreciate the commitment of SUFER staff and DFID Bangladesh to ensuring key lessons are captured and shared more widely. We hope the findings in this study will usefully inform future poverty oriented research schemes within Bangladesh and more widely.

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### The purpose of this publication

n this publication we seek to reflect on some of the experiences of the SUFER project. We are not seeking to pass judgement on the success of the project, although we are certainly conscious that the commitment and resourcefulness of the people involved has produced positive results. Instead we intend to look at some of the lessons that can be learned from the project and some of the factors that have determined its level of success. We hope the points that are raised will provoke some thought about what lies behind the success of research projects in Bangladesh.

# Development and poverty in Bangladesh

angladesh is the most densely populated country of any size in the world. Nearly 150 million people are packed into a country about the size of Florida or New Zealand's South Island.

By its own standards Bangladesh has been making good progress in reducing poverty. In the ten years to 2000 the percentage of the population living below the national poverty line was reduced from 43% to 34%. However this still leaves nearly 40 million people living on less than a dollar a day and 50% of children malnourished.

Bangladesh is becoming less dependent on aid, and is also achieving steady economic growth of 3% a year. Change is happening fast. The explosive growth of the ready-made garment industry (which now employs about 2 million people, 80% of them women) and other urban opportunities have encouraged migration to urban areas. Rural areas, home to three-quarters of the population, are becoming increasingly urban in character as more roads and bridges appear and the number of shops and small businesses has grown substantially.

But growth and change are also bringing greater inequality. In the mid 1990s the richest five per cent of the population earned 18 times more than the poorest five percent. By the turn of the millennium they earned more than 30 times as much.

'...growth and change are also bringing greater inequality.'

'...[there] has been a failure to turn policy into action, undermining the potential to reach the MDGs.' For many of the rural poor their primary asset remains their labour and they depend on their local land or water to provide food and income.

Bangladesh is on course to meet some of the Millennium Development Goals (MDGs). But others, such as those relating to nutrition and gender, appear to be out of reach. Continued progress towards the MDGs depends substantially on the effectiveness and accountability of a range of institutions. High levels of systematic corruption, a lack of accountability and poor governance all undermine current development initiatives. The result has been a failure to turn policy into action, undermining the potential to reach these goals.

Many development initiatives focus on disadvantaged groups such as women and girls. Improving the livelihoods of the rural poor is also the subject of much development work but applied research in this subject is in short supply. Many poor people in Bangladesh rely on fish and other marine resources for their income or their food. The SUFER project was established in response to their needs.



# The SUFER project

'Teachers were observed to plan and deliver their teaching better...'

'The project also helped researchers establish links with NGOs and poor people...' he Support for University Fisheries Education and Research (SUFER) project started operating early in 1999 with funding from DFID. The aim of the project was to improve the ability of the university sector in Bangladesh to help in building the country's aquatic resources in ways that particularly focused on the needs of poor people.

The project worked to develop the quality of teaching and research in universities and link them to the realities of poor people's lives. The work on teaching quality largely consisted of working with lecturers through a programme of workshops aimed at improving both their teaching skills and curricula development.

The results from this were positive. Teachers were observed to plan and deliver their teaching better as well as improving and updating their curricula. In one University a course on sustainable livelihoods has been included onto the curricula ensuring a continued focus on the livelihoods of the poor. What impact this will have on the quality of graduates and the work they go on to do can only be speculated on at this stage but it is all pointing in the right direction.

The approach SUFER adopted to developing and improving research work was to set up a Competitive Grant Scheme (CGS). The CGS invited university lecturers and researchers to apply for funds to carry out research with a focus on the poor, women and marginal groups.

As the project developed, increasing emphasis was placed on improving researchers' ability to identify research needs. The project also helped researchers establish links with NGOs and poor people, to create research partnerships with which they could develop and carry out the work. Training was provided in sustainable livelihoods approaches and participatory methods to help this process. The nature of the grants awarded was also restructured and these changes, whilst not guaranteeing success, had a marked positive impact.

This was not the first CGS to be developed in Bangladesh and indeed many have been developed around the world. In Bangladesh the REFPI (Research and Extension on Farm Power Issues) project had previously had success with this approach and identified some of the factors that lay behind a successful CGS. The experience of SUFER has reinforced many of these points. According to the REFPI and SUFER experiences a successful CGS needs:

- To start out with a clear research agenda with transparent criteria.
- To have a credible governance structure, including individuals with skills relevant to the research area(s) that will allocate the funds.
- To have clear rules for each step of the process.
- To spend time ensuring that suppliers understand the rules and regulations of the CGS.
- To invest in building the capacity of researchers, especially when the available pool of researchers may not be so strong.
- To monitor and account for the work by focussing on the outcomes of the scheme. This is important to keep projects on track.

'Around the world the CGS model is being used to finance appropriate research...'

Around the world the CGS model is being used to finance appropriate research and stimulate scientific creativity. Many countries are seeking to reform unproductive national agricultural research systems. This type of funding can be used to mobilise available scientists for work on key problems, develop links between institutions, and to link scientists with users of new technologies.

Some enthusiasts for CGS would argue that they can even be a powerful tool in transforming organisations, a 'back door method' of achieving organisational reform. This seems far less clear and this publication will concentrate on the lessons and issues that arose directly from the experiences of SUFER and the research it funded. Some of this research is explored in more detail in the case studies featured in this document.

#### Lessons from the case studies

he case studies that run through this document describe promising pieces of research, funded by SUFER, which have looked into issues that affect the livelihoods of poor rural Bangladeshis. They each contain pertinent points that should be considered when carrying out this type of research in the future. These points are summarised over the next three pages:

#### The process is an important determinant of the research outcome

One of the project's positive outcomes has been getting researchers to focus on real livelihood issues that matter to poor people. The skills, attitudes and relationships that people have developed while working with SUFER are themselves a validoutcome and best practice has been established with a CGS, particularly around the process of funding and designing poverty focused research. This best practice can be used to provide a platform for the development of any future CGS.

#### Meaningful partnerships are necessary for poverty focused research

In bringing university researchers together with NGOs, government organisations and the private sector, SUFER recognised the comparative advantage that different partners could bring. Where the different partners recognised these strengths and the opportunities they provided, and built on them in the research process, engagement of poor people in the design process was greater, as was the scope for dissemination and impact on the livelihoods of the poor.

#### Attitudes to partners are vital

Some university researchers have traditionally viewed poor people as the recipients and the poor people may in their turn have expected hand-outs rather than engagement. These attitudes jeopardise the success, and successful uptake, of the work. Whilst attitudes like this cannot be changed overnight, the SUFER approach recognised the importance of challenging these norms.

By encouraging researchers to move out of the laboratory and into the field, and by demonstrating the benefits of working in a participatory way, attitudes have begun to change for the better.

#### The wider livelihood context must be considered

Whilst researchers did generally target their research at poor people, initially they had little understanding of why the poor lived their lives the way they did. Training in Sustainable Livelihood Approaches went some way to building this understanding. Partnerships with NGOs and even fellow academics specialising in poverty issues also brought additional understanding by the researchers and this was important in achieving success.

#### Changing livelihoods requires more than just research

Some of the research projects uncovered important policy issues that threatened to undermine the impact of the research itself. Others encountered constraints which were either beyond the control of the research or were not sufficiently taken into account during the research design. Both threaten to lower the impact of the research. The researchers had little experience in delivering policy messages or marketing their solutions, so struggled to respond to these challenges. Mechanisms for feeding up policy issues that affect the success of projects were limited.

#### Understanding the decision making of the poor is vital

Researchers may have one, complex and scientific, understanding of a problem whilst the poor may see the issue in another way. Because of their circumstances, the poor are often risk averse and therefore less likely to want to engage in riskier activities. By listening to poor people some researchers were able to amend their research design and come up with solutions that were less risky, more practical, and seen as affordable by the poor.

#### Case study - Mud crabs - fat crabs for fat profits

Mud crabs are common along the coast of Bangladesh. At one time they were only eaten by a minority of people and had little value but recent export growth has seen their market price shoot up.

The crabs are generally collected by poor people and then sold on through middlemen until they reach the wholesalers in Dhaka who export them. The crabs are exported live so only those with a hard shell get the high prices, but many soft shell crabs are collected at the same time. The idea behind the research was to develop a technology to fatten these crabs so they would develop a hard shell and could be sold for export prices.



Researchers from the Institute of Marine Sciences at the University of Chittagong involved COAST Trust, PROSHIKA and CARITAS (local NGOs) from the start to help them establish links with poor households as partners.

The work resulted in an easy method for fattening the soft shell crabs that only took around two weeks. The short timescale was a priority for the poor people to get a return on their investment. The crabs are kept in cages in open water and fed eels gathered by crab collectors.

There has been a lot of interest in the work and where cages have been left with participating households and donated to others, households have adopted the methods. Encouragingly both the local aratrader (wholesaler) and a local NGO are developing credit schemes that will allow the poor to buy the cages.



This work has been largely successful because the input of poor people and the NGOs helped to shape the research to be relevant to poor people's needs whilst filling a gap in the local market for export quality crab. But there has still been reluctance amongst many poor crab collectors to invest in the cages. They are accustomed to receiving relief and expect the cages will be given to them.

# Gender impacts require commitment and explicit incorporation

Substantial evidence in Bangladesh demonstrates that if there is serious commitment and explicit incorporation of gender issues in the design of programmes then women can, and will, participate fully and benefit from fisheries interventions. The case studies demonstrated the need for explicitly addressing gender issues within the design, implementation and monitoring of the research if gender impacts were to be achieved.

These lessons show that even the most innovative research work can still fail if poor people are not listened to and external factors are not taken into account. They give useful pointers for what SUFER, or other projects like it, should think about in the future. They do not however tell us how projects like SUFER can maximise their impact in future. So what has SUFER's impact been?



#### Case study - Drying fish - going solar

The prevalent method of drying fish in Bangladesh involves the addition of salt and pesticides to prevent infestation by blowfly. The end result of this process is a low quality product that commands low prices and that even some of the producers refuse to eat. The addition of pesticide is also illegal.

Researchers from the Department of Fisheries Technology, Bangladesh Agricultural University obtained a grant from SUFER to look at the feasibility of designing a solar fish drier to improve the quality of dried fish.



The first model, based on a German fruit-drying machine, was effective but expensive, costing 70,000 taka (1,100 US\$). Following involvement in a participatory workshop, researchers linked up with a local NGO (COAST Trust) to help them work with the poor households practising the traditional methods of drying fish. The result was a cheaper version of the technology made from locally available materials.

The results are excellent. The dried fish now have a shelf life of up to six months whereas previously, it would last a week before deteriorating. The product is now of good enough quality to be exported.

The increase in the quality of the product is down to the more efficient drying process. At the end of the new process the water content of the fish is less than 16% - less than half that left before. However this efficiency does have a drawback. The price does not reflect this higher quality and lower dry weight that is now obtained.

So far no markets have been identified for the new, higher quality, product. It is being sold alongside traditionally dried fish. This means the cost of producing dried fish under the new method is actually higher than the market price.



Whilst some of the households involved in the research have continued with the new methods the future for the new technology does not look good unless new markets can be identified or created.

# Institutional impact

he Institutional Assessment of SUFER carried out in May 2004 concluded that SUFER's main impacts are likely to be:

- The development of new technology, some of it appropriate for the poor.
- The use and dissemination of that technology by both research participants and NGOs involved in the research.
- An improvement in the quality of graduates once the effect of improved research and teaching feeds through to students.

'However many of these changes have not been institutionalised and are likely to diminish...' To date, SUFER has been directly responsible for, or has contributed to, a number of very positive changes to fisheries research through university systems including impacts on: development of appropriate skills, adoption of new attitudes and behaviour towards research and teaching, operationalisation of new research funding mechanisms, initiation of new relationships for field-based research, establishment of a new fisheries sector research forum, enhancing the quality of teaching, and as we have seen, advancing the cause of pro-poor research.

However many of these changes have not been institutionalised and are likely to diminish when the specific project stimulus which has promoted them is removed, thus threatening the sustainability and potential scale of these very impacts. So how can projects like SUFER ensure greater institutional sustainability?

To answer this we have to look outside of the project itself and consider the wider environment in which the project is operating

#### Case study - Shrimp fry - options for the future

The rapid growth of shrimp farms in the southern coastal areas of Bangladesh has brought with it a rise in the demand for the post-larvae of tiger shrimps. Traditionally poor households have collected this from the wild. However the practice of netting the post-larvae in shallow coastal water affects around 100 other species and has raised concerns.



The government's reaction was to ban the collection of the post larvae from the wild and to initiate the breeding of shrimps in hatcheries. The private sector is also involved and demand for post larvae from hatcheries has been increasing. However the mortality rate of the hatchery post larvae is very high so collecting wild larvae remained an attractive option.

Researchers from the Institute of Marine Sciences at the University of Chittagong focussed on improving the survival of farmed larvae. Collectors of wild shrimp larvae were targeted through this work as it was hoped that it would both increase their incomes and reduce the pressure on wild shrimp larvae.

The solution the research team identified was relatively simple. Shrimp post larvae, bought from local hatcheries, is reared for 3-5 days in cages before being sold on to be grown in ponds for sale. The results are excellent, this nursery reared stock has more than twice the survival rate of traditional post larvae and can be grown to a sellable grade in two months rather than three.



As a result demand for the nursery-reared post-larvae is increasing. But more people in the research areas still prefer to collect wild post-larvae rather than become involved in rearing post-larvae for sale. Ultimately the reason for this is that they have no reason to change. Collection of wild post-larvae is free (if illegal) and becoming involved in rearing requires set-up costs. Until collection of wild post-larvae becomes less attractive the take-up of the new technology will remain limited.

# Beyond the project: critical external factors

Itimately the point of conducting research is to have an impact on some higher level goal, in this case poverty reduction. But for projects like SUFER to have impacts at that level, a number of major assumptions need to hold true. There is a potentially long chain of events between conducting research and poverty being reduced.

The likely scale and sustainability of SUFER's impacts, and the connection, in practice, between them and poverty reduction, is unclear. One way to assess how likely research is to have a widespread and sustainable impact, is to look at what conditions need to be in place to allow this impact to happen. Key ingredients include:

#### Verifying that technology is the problem

For research to be successful it must represent a solution to an existing constraint or opportunity. If, for example, technology exists but is not being implemented or lack of understanding is the problem, then research may well not be the answer.

#### Appropriate, effective dissemination

The findings of the research must be turned into appropriate information that can be disseminated to the people that will be able use it. And the dissemination mechanisms need to work.

#### Adoption must happen

Unless potential users adopt the product that comes out of the research the whole exercise becomes largely meaningless.

#### Good policy must exist and be implemented

To be really effective research needs to be happening within a framework of evidence based policy that supports the directions of change promoted by the research and which not only exists, but is also effectively implemented.

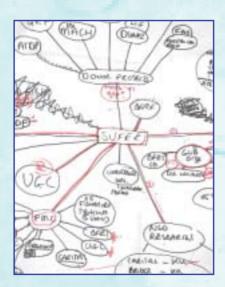
#### Case study - Mussels and oysters - export for income

Green mussels, clams, scallops and oysters all occur naturally in the coastal waters of Bangladesh. But they are not a major source of food for people. It is more likely their shells will be used in fertilisers and chicken feed. But recent studies have shown that there does appear to be a demand for these molluscs from other countries, opening up the possibility of an export market for Bangladesh to exploit.

Whilst many Bangladeshis living on the coast do not eat molluscs the Rakahani people of Moheshkali collect and eat them as often as they can. So they were a logical choice to work with



when investigating the possibility of cultivating mussels and oysters. They had even seen the possibility themselves a few years ago when a group of Japanese tourists visiting their island bought some molluscs from the community and told them about the high demand that exists abroad.



The research, which is split into several themes, is still ongoing. At one site the loss of equipment hampered the research and it is unclear how viable the culturing of mussels and oysters will be. However some other issues have emerged. The viability of the market is one concern and the community are clear they would need the involvement of a partner institution such as NGO to help them gain access to markets.

The involvement of women is another major concern. Traditionally women in the Rakahani community do not enter seawater and so cannot become involved in the collection of molluscs. So whilst this project set out to target poor females it is unclear how they will benefit at this stage.

# '...it is unclear how the progress achieved under SUFER will be maintained without continued

external support.'

# Support services and inputs must be available and affordable

Adoption of any new product is only likely to be sustained if the person using it is able to get the inputs required at a reasonable price and access support services when they are needed.

#### Markets must exist, or be able to be stimulated, and be stable and profitable

As a number of the case studies show, unless the market supports the adoption of a new product or technology there is no incentive for people to adopt it. This is especially the case for the poor, with their shorter time horizons and limited ability to bear risk.

The findings of SUFER's Institutional Analysis and other reviews suggest that many of these conditions are not currently in place in Bangladesh. Coordination of the fisheries sector in Bangladesh is weak and it is unclear how the progress achieved under SUFER will be maintained without continued external support. It is furthermore unclear how such progress, even if support persists, can be scaled up.

#### What does this mean for research projects?

In such environments the real constraints to a project's impact are not readily influenced by the project itself. It does not necessarily matter how successful the project has been at influencing the things that are under its control. Impact will remain limited by the unsupportive nature of the operating context in which it has taken place.

SUFER has found some of its own solutions. For example the research partnerships with NGOs also link researchers to the NGOs' own dissemination mechanisms. This is one way to partly overcome the weaknesses in institutional dissemination and research-extension systems. But trying to bypass the system will only bring limited rewards.

#### Case study - Thai Pangas - the wonder fish?

The Thai Pangas became popular amongst farmers in Bangladesh in the mid -1990's. This popularity was based on its rapid growth and good market price. However, less than four years after its introduction farmers concentrating on the Pangas found their ponds suffering from excessive levels of toxic phytoplankton. This affected both the growth and the taste of the fish and consequently market demand fell





This problem was identified and researchers set about investigating ways that farmers could avoid this problem. Researchers from Bangladesh Agricultural University in Mymenshing worked with farmers to establish that stocking Silver Carp and aquatic spinach alongside the Pangas would lead to high growth and good water quality.

Unfortunately the market price of the Pangas had fallen in the meantime and when the farmers who had been involved in the research came to sell their fish they found their profits to be very small. During the research they had also stopped cultivating the local fish they used as supplementary household food.

As a result of the poor return none of the households involved in the study continued with the cultivation of the Pangas, and none of the neighbours who expressed interest during the study has taken it up.

Aside from price, other problems identified include the fact that the Pangas has to be grown for at least three months before it can obtain a good price at market, unlike Carp, the traditional alternative. Farmers are not prepared to risk waiting this long for an uncertain return on their investment.



'...to have a sustained impact on poverty [research] cannot sit outside the wider operating context...'

'...institutional reform is something that must be tackled alongside projects...'

If research is to have a sustained impact on poverty, beyond the small-scale achievements illustrated by the case studies here, it cannot sit outside the wider operating context. It needs to be a part of a wider process. What is needed is a systemic change in the environment in which research and teaching improvements take place.

Achieving large-scale impact is not unfeasible, as research into rice has shown. Rice is a central part of the national diet. Production has a high political profile and it could be argued that rice is central to the nation's psyche. Working within this context, research into rice farming has resulted in the cost of rice production falling. The market price has also fallen. This means the people of Bangladesh are obtaining cheaper food whilst farmers are still able to make a profit. The effect on the poor has been huge, as nutritional surveys show.

Government commitment is not out of the question. Another positive example has been the government's reaction to the decline in the production of pulses and oilseeds. It invested US\$1 million a year to fund research on disease resistance and short season crops. The programme has been well focused and managed and seems to be producing results.

So it is possible for research to achieve large-scale impact. But the key factor determining the impact and wider success of a project is the effectiveness of the institutional system within which it operates. Unless good research can be conducted, supportive policy messages can be implemented, and research effectively disseminated and adopted, the success of projects such as SUFER will rely on a number of potentially 'killer assumptions' that will undermine their impact.

What the lessons and impacts from SUFER clearly demonstrate, is that institutional reform is something that must be tackled alongside projects, if the projects themselves are to have impact on any scale. It is not a process that any particular research project can undertake itself. Projects can only reasonably be expected to reinforce and capitalise on work going on in this area.

#### Case study - Carp spawn - hatching a sustainable future?



For two or three months a year spawn collectors, who may be anything from rickshaw drivers to electricians the rest of the year, come to the Halda river in the Chittagong hills to collect and hatch Carp spawn. But they are finding less and less spawn in the river. Forty years ago it may have been possible to get three batches of spawn a season, now they are lucky to get one.

However the demand for this spawn is increasing. Many fish farmers are concerned about inbreeding in their captive fisheries so they want to obtain young fry hatched from wild spawn. As the Halda river is perceived to be the best site for spawn, they are prepared to pay a premium if this is the source of their fry.

The reasons behind the decline in the amount of spawn are varied and difficult to reverse. They include the straightening of the river, the introduction of sluice gates and dykes and the increase in illegal fishing for brood Carps. So increasing the effectives of egg incubation and the rearing of hatchlings was identified as the subject of the research.

A team from the Department of Zoology at the University of Chittagong worked closely with the local Upazila Fisheries Officer and with the spawn collectors. One particular technology was identified as the most cost effective but only one of the participants has continued to use it. The main reason is the cost of the technology. Spawn collection is seen as a risky business so the spawn collectors are not prepared to make an investment.

The spawn collectors did take an active part in the research and saw their ideas included in the work. As a result some of them are trying to develop their traditional methods to become more efficient. Technology alone did not provide the solution, but the work had some positive effects.



The government has not taken up any of the policy messages that have emerged from this work. The pressure on the fragile spawn fisheries of the Halda river is increasing.

# Looking to the future

'...evidence is pointing to a clear need for a better enabling environment for research to have an impact.'

'Can donors play a more effective role to facilitate this process?' rojects like SUFER continue to demonstrate that a business as usual approach will not deliver impact on a sufficient scale. In terms of fisheries research in Bangladesh, the evidence is pointing to a clear need for a better enabling environment for research to have an impact. For this to happen, the following needs to take place:

First the research system itself needs to function effectively. The CGS is a good and positive first step away from supply-driven research, which has been felt to be unresponsive to client needs. However current research thinking goes further than this towards putting more power in the hands of the clients to influence what research is done, and also drawing in the energies of actors beyond government. New thinking along these lines could make an additional contribution in Bangladesh.

Second is the wider issue of the external context in which research is conducted. Governments have responsibility for enabling development in their countries, but effective coordination within the Fisheries sector and the establishment of effective links beyond the sector have yet to materialise.

Can donors play a more effective role to facilitate this process? This examination of fisheries research suggests the need for a fresh look at three key areas:

#### Move beyond projects.

The prevailing mode of donor financing in the fisheries sector has led to a proliferation of projects which has undermined the ability of government to play the role it needs to. As we have seen, the project approach as pursued to date is not an effective vehicle for addressing the wider cross-sectoral issues which constrain the impact of project-led gains.

#### Coordinate donor action.

The project approach pursued by donors has not facilitated donor coordination and has not supported the government of Bangladesh effectively, in the fisheries sector at least.

'...sustainable development requires effective government and the coordinated action of all actors'

#### Stop bypassing government.

Partly in response to the difficulties of working with government but also as an effect of the project approach, donors have tended to bypass government and support parallel structures. But sustainable development requires effective government and the coordinated action of all actors - a challenge for both government itself and donors.

These conclusions emerge from an analysis and reflection of one project supporting research and teaching in the fisheries sector, but they require actions beyond the sectoral level. Although the agenda they set may appear daunting there is little doubt such change is needed: without a more supportive environment the impact of research will continue to be fundamentally limited.





# SUFER©

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