Feature: Taking care of the small fry

David Little/Benoy Barman
DFID Aquaculture Programme

Suggested introduction:
Aquaculture is one of the fastest growing sectors of food production, particularly as marine fishing, in many regions, is in decline as fish stocks in formerly productive fishing grounds become severely depleted. Aquaculture is increasingly filling the gap and, if well managed, can offer a number of advantages over wild capture fishing and other livestock production. However, more intensive commercial aquaculture enterprises using expensive resources can be environmentally unsound and rarely meet the needs of poor people. For rural people, it is less intensive aquaculture systems, particularly those that can be integrated with other farming enterprises, which have the greatest potential. But the supply of fish seed, or young fish, is a vital element for successful production and yet, too often, losses are high and many fish fail to grow well or succumb to disease.

Dr David Little has been involved with a DFID-funded research project, which has been working with a range of local partners to investigate the problems associated with seed supply in South and East Asia. Susanna Thorp met with Dr Little to find out more about the approach taken to determine the factors affecting the quality of fish seed in the five different regions.

TAPE IN “We basically asked people involved in the business . . .
TAPE OUT . . . of inbreeding when that sort of thing happens.”
DURATION 2’07’’

In Bangladesh, fish are raised either in small ponds, often close to the house in borrow pits from which soil has been excavated, or in the rice fields. As part of the regional DFID-funded programme in north-west Bangladesh, Benoy Barman has been looking into the potential for farmers to use tilapia. Benoy starts by explaining the advantages for farmers to produce their own tilapia seed.

TAPE IN “The point is that if they produce seed . . .
TAPE OUT . . . good result also in terms of production.”
DURATION 2’11’’

Closing announcement: Benoy Barman from Bangladesh talking to Susanna Thorp.

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Interview: David Little

DFID Aquaculture Programme

Transcript

Little

We basically asked people involved in the business, that is trading or producing or using fish seed about various aspects of how they perceive the seed they are using in terms of quality and other factors. And we try to build up a picture: it's really a mosaic of what the likely causal factors of the problems are in these different locations by putting this material together with them.

Thorpe

So that sounds really good. It's not you as researchers going in with sort of assumptions on what the problems were, you were actually involving all the people that are affected by poor seed quality and asking their opinions?

Little

Yes that was the idea. Of course it's not always the easiest thing to do because we all have our preconceptions and part of it was sort of saying, 'Well let's just go and try and look at it as a problem through their eyes.' And interesting results, I mean you might find that people who are responsible for trading fish seed in one area might have quite a different idea about why the quality was poor than the person he's bought it from. And maybe by bringing that information together you can get, perhaps, a more holistic idea of where the problems are likely to be.

Thorpe

So what were some of the problems that came up?

Little

Well one of the interesting things that come up is that there is a widely held belief that the genetics of many of these fish are in a poor state: the reason that they are not growing well is because of factors like inbreeding and bottlenecks in the stocks. But you can't actually get very good data by asking hatcheries on how many fish are breeding with how many others, you just don't collect that sort of information. But, by using inferential questions, and by finding out how many times they are buying fresh stocks in and how much they are reusing their own stocks, we build up a fairly informative understanding of what was happening to the point where we can quite definitely say that inbreeding is very unlikely to be the reason of poor fish quality in, for instance, northern Vietnam or in Bangladesh. With the indigenous fish, which are derived from many, many sources and farmers don't keep large stocks on farm because it's too expensive but rather what they do they use a sort of just in time type of process that they buy brood fish in from various sources, spawn them and then sell them out. Very little prospect of inbreeding when that sort of thing happens. TAPE ENDS
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Interview: Benoy Kumar Barman

DFID Aquaculture Programme

Transcript

Barman The point is that if they produce seed in their system they can easily get access to that system. And the seed, which they produce locally, that can be used also by the farmers within their locality. And another point is that it also becomes a source of their income. So that’s another aspect that especially for the poor farmers, that’s an additional income for them and that’s maybe useful for the livelihood development.

Thorpe And why in particular is tilapia such a good species to grow?

Barman That’s a good point. There are a lot of seasonal ponds in the north-west Bangladesh area, because it’s a dry area. So in the small ponds or even seasonal ponds with seven or eight months water holding capacity, tilapia shows good performance in terms of growth within a short time, so that they can be used for household consumption as well as to sell.

Thorpe So with these seasonal ponds then presumably they are having to restock every year. So that must be a particular reason why seed supply must be of a good quality because the farmers are dependant then on that fish for that season?

Barman That’s right, you are right and for perennial ponds they even stock two times. So if they get good quality fingerlings or good quality seed and if they stock at the beginning, those who have perennial ponds they can get within a short time, a crop. And then they can sell that in the middle of the season and can restock again in that case. But the seasonal ponds, if they can get good quality fingerlings or larger fingerlings then also the fish like tilapia which can grow faster within the small seasonal ponds they can get a good crop.

Thorpe Now you were telling me that getting the better quality fingerlings and the bigger fingerlings was really having a big impact on their income?

Barman Yes certainly it is, especially for tilapia. Tilapia seed previously, the source of tilapia seed was the neighbours, they have tilapia in their ponds and they produce seed and from that they can get some kind of seeds as a by product of this system. So that’s why their seed quality was not good. But when they get a good quality seed in terms of age even younger age but larger size and that’s when they stock, it shows a better performance in the growth system. And it shows a good result also in terms of production. TAPE ENDS
AGFAX

Interview: David Little

DFID Aquaculture Programme

Suggested introduction:
Small-scale farmers in Asia and in Africa are often encouraged by national fisheries programmes or NGOs to take up simple pond fish culture. Such projects are intended to provide an additional source of food or income to the farm household. However, despite good intentions, such projects can often fail because, even on a very small scale, there is a great deal more involved than simply digging a hole and filling it with water and fish. Water is, perhaps, the first consideration and the siting and shape of the pond is important. However, the quality of the fish being stocked in the pond – the fish seed – is also a critical factor to the success or failure of an aquaculture enterprise, whether in small ponds, simple cages or in rice-fish culture.

From a DFID-funded project on fish seed conducted in five regions in Asia, a wealth of information has been collected and initial results have been very revealing, suggesting that much can be done to improve the supply, survival and quality of fish seed to small farmers. Although some issues require further research or action, initial results have been very positive and demonstrate good opportunities for techniques to be improved and good practice to be disseminated. Many findings also relate to broader policy issues concerning the interaction between the public and private sector. Dr David Little, who has been involved with the project, explains to Susanna Thorp what is being done with the findings in each of the regions and who is being targeted with the information. But first, Dr Little begins by re-emphasizing the need for good quality fish seed for all involved in aquaculture systems.

TAPE IN
“If you’ve got a seed that’s poor quality . . .
TAPE OUT
. . . it’s fresh, it’s hot and people want it!”
DURATION
4’26”

Closing announcement: David Little talking to Susanna Thorp, on behalf of the DFID Aquaculture Research Programme in the UK, about the reports being produced in each of the five regions of the project: Thailand, Bangladesh, North and South Vietnam, and Laos.

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If you’ve got a seed that’s poor quality that gets to the farmers pondside and he stocks it and he’s trying it perhaps for the first time, that may mean he gets very poor success and, that’s the end of it as far as he’s concerned. Poor seed quality can also impact on more professional farmers or commercially orientated farmers because if they don’t grow very well, his production is poor and that may impact in terms of price on poorer consumers. So it can really impact in a variety of ways.

Thorp

Aquaculture in Africa is still very much in its infant stage but presumably there is still a problem with seed as well. Are there lessons that could be transferred to other regions both in Asia and in Africa?

Little

I think so because practically many of the things that you need to do to ensure that your fingerling or your fry get to the pond side in good condition are quite simple. And the problems come when you get a factor, or a complex of factors, it may be as simple as the fish being left in a plastic bag in the sun for an hour or two or it might be too rough handling of the seed with the net materials not very soft when the animals are being caught and put into a transporting tank or a bucket or whatever. And yes, basically, there’s things that we can right now say that, ‘If you do this, the likelihood is your fish seed will be better quality.’ And that’s universal.

Thorp

Now obviously you’ve collected an enormous amount of information and you have found a range of different answers. What are you doing now in order to get that information out to other people?

Little

Once we’d discussed it over a two day period we sat down and we wrote a report of the process in 2 languages (in English and the local language). So, for instance in the Vietnamese context we did these workshopping exercises in both the north and the south where the context is really different. We went through the process, we produced a report in these two languages and now we are looking at whether or not, now it’s been disseminated through the various structures in the country both from the Ministry right down to the local commune level, who’s actually finding it useful and who’s acting on it? Is it having any impact? That’s one issue. The other issue is that during the process we managed to identify issues that we knew about and could be acted on almost immediately and issues that required further knowledge that needed further research. And those were then placed in the report as a form of information exchange there as well.

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Thorpe: *One picture on the front here, tell me a bit about this lady, what she's doing and why it's so good?*

Little: This was a case in Thailand, where developmental aquaculture we feel has the biggest role to play in improving poor people's livelihoods. It's a picture of a lady, sitting in what is the fore front of a government institution responsible for aquaculture, selling fish seed and the fish seed are in nice clean water in inflated, oxygenated bags hanging up in a tree in the cool area in the fishery station. What's happened is, the chief of the fishery station has opened his doors to anyone who's selling fingerlings to come in and use the resources, as a sort of market and he's provided clean water and oxygen and he's encouraged a whole group of seed traders, entrepreneurs to come in and sell their fish. Very enlightened in that first of all he's giving consumers a bigger choice. Secondly, by providing the facilities these people can keep their fish seed in very good condition. And people can wander around and find yes they are good quality fish and so they are informing and educating themselves about the whole process as well. Now this is a great example that doesn't really need more research. This is something that can be done now at every fishery station in Thailand and perhaps in other parts of Asia and other parts of the world. It can be acted on, we don't need more information and it will have an immediate impact on better quality of fish seed for farmers who want to go in and buy them.

Thorpe: *Now this obviously has an effect on policy, or future policy, and this has actually being incorporated into the report hasn't it?*

Little: That's right because this sort of information is only as valuable as the right people get to hear about it and act on it. Often the case is that great things may be happening at the provincial, the district level such as this example, this very enlightened fishery station chief. But unless it's heard about further up then it's unlikely that that will be taken on as a policy issue and used throughout the country and have much broader impacts. So we see this as a vehicle, if you like this report, to informing such people, throughout his own department and in educational institutes where people are being taught and all the rest of it. Just improving the information that's available and quickly. This report's out in a year or so after the information has been collected so it's not old, it's fresh, it's hot and people want it! *TAPE ENDS*