

STREAM



Support to Regional Aquatic Resources Management

STREAM Journal

Learning and communicating about the livelihoods of fishers and farmers

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Note

This number of the *STREAM Journal* is special in several ways. The most obvious is that all of the articles are about One-stop Aqua Shops (OASs) in the eastern Indian states of Jharkhand, Orissa and West Bengal. Second, all of the articles are written by colleagues with whom we have spent a lot of time working in a variety of settings, in their home places, in meetings and workshops in state and national capitals, and in other countries. Finally, being involved with the beginnings and growing emergence of OASs in India and now in countries like Vietnam, is one STREAM endeavor of which we are rather proud.

Whether the various OASs are being run by government, federations of Self-Help Groups, NGOs or the private sector, they all originated through consultations and consensus-building. And in all cases, they are now looking at how to become self-sustaining through such activities as selling fish seed, fry and fingerlings; hiring nets and *hundies* (containers to transport fish) and even setting up their own hatcheries.

Reading through the articles one final time before publication, it also became clear to us that the OASs are a clear example of what it may mean to “bridge the digital divide” in rural development initiatives. As you read through the collection yourself, notice the range of digital, electrical, physical and other accesses about which the authors write.

So whether it's called a One-stop Aqua Shop or a *Matsya Krishak Sewa Kendra* (Fish Farmers Service Center in Hindi), we hope you enjoy learning about the efforts of many people in eastern India to make fish farming a reality for people who see it as a livelihoods opportunity.

Happy reading!

Graham Haylor, STREAM Director
William Savage, *STREAM Journal* Editor

One-stop Aqua Shops – An Emerging Phenomenon in Eastern India

Graham Haylor, Rubu Mukerjee and S D Tripathi

Aquaculture, Voices, Gaps and Recommendations

For Self-Help Groups (SHGs) in the eastern part of India, aquaculture in seasonal ponds – even with few inputs – plays an important role as a source of nutrition and as an income-generating activity. Over recent years, people with few resources who want to take up aquaculture have been finding a voice in the development of policies to support their objectives and address their issues. This has included people working together to develop recommendations for policy change. Farmers and fishers, the Fisheries Commissioner in New Delhi, the Indian Council for Agricultural Research and its Central Institute for Freshwater Aquaculture, the State Fisheries Departments of Jharkhand, Orissa and West Bengal, the NGO Gramin Vikas Trust and the NACA-STREAM Initiative are all playing a role. There have been wide-ranging consultations in villages and a series of workshops at local and state levels. Farmers and fishers have shared case studies and taken part in film documentaries, from which a street-play was written and performed in front of policy-makers, in part to highlight some gaps in available support. Recommendations were shared with administrators and planners for prioritization at central and state levels. Of 42 recommendations, 13 were prioritized for implementation and presented to policy-makers during a workshop in New Delhi in April 2003.

Under-One-Roof in Jharkhand, West Bengal and Orissa

Jharkhand

One of the 13 recommendations was for “single-point under-one-roof service delivery,” popularly named One-stop Aqua Shop or OAS. Thirteen months after presenting farmers’ recommendations for change, the first OAS was established on 7 May 2004 by the Jharkhand Department of Fisheries (DoF) in Ranchi under the Fish Farmers Development Agency (FFDA), staffed by a Fisheries Extension Supervisor. In addition to charts that depict different aquaculture technologies are details of support schemes involving subsidies, grants, loans and application forms for bank loans. There are addresses of DoF farms and hatcheries, availability of different stages of fish seed and their rates, of suppliers of feed, fertilizers and medicines, technical literature in Hindi, and facilities for getting soil and water quality tested.

West Bengal

A second OAS was established in June 2004 by a federation of 70 SHGs in a remote rural village called Kaipara in Purulia District of West Bengal. This is a different model where farmers are developing their own infrastructure to link with service providers. The Kaipara OAS has leased ponds for rearing and supplying quality fish seed to farmers, meeting half the demand of the administrative block in which it is located. Literature is available in Bangla, as are application forms for government schemes and rural banking micro-credit. Technical information is provided by expert farmers and resource persons from line departments and training programs are organized. A small charge is made for services; fish seed has to be purchased and fishing nets and *hundies* (containers) for seed transport can be hired. Inspired by the example of Kaipara, SHGs in Jabarrah (Purulia District) are now planning an OAS.

Orissa

Yet another different model and the first NGO-established OAS emerged at Bilenjore in Nuapada District of Orissa at Sahabhagi Vikash Abhiyan (SVA) on 10 May 2005. SVA has been supporting rural livelihoods, including fish seed production, for some time. The OAS is well equipped with a computer, internet, telephone, TV, CD and video players, dissecting microscope, aquarium, nets,

hapas, equipment and accessories, pamphlets, booklets, forms for bank loans and FFDA assistance. Acting as a meeting point for service providers, it recently organized farmer training programs with the help of fisheries scientists from the Krishi Vigyan Kendra (Agriculture Science Center) Kalahandi and the Fisheries Extension Officer of Komna Block in Nuapara.

In another village, Kankelgaon in Saintala Block of Bolangir District, SVA is supporting women belonging to the weaver community there. They have organized themselves into an SHG and have established an OAS serving ten local villages, which they call the Gram Swaraj Livelihood Service Center.

The Director of the Orissa Department of Fisheries proposed to establish four OASs, two in each of the remote western districts of the state at Nuapada and Khariar (Nuapada District) and at Bolangir and Patnagarh (Bolangir District). His initiative received support from the Orissa Watersheds Mission and the DFID-supported Western Orissa Rural Livelihoods Project (WORLP). A Fisheries Extension Officer is often available at the government-run OASs, which are in locations provided by the government after agreement among the chief local government administrator, or Collector, the Watersheds Mission and the DoF. These Orissa government OASs began functioning in July 2005 and are being further developed and equipped.

From the private sector, a progressive farmer at Patnagarh, who owns a 6-ha fish farm and a hatchery producing about ten million fry annually, has been so impressed with the idea of an OAS that he plans to establish one near his farm next year.

OASIS and Beyond

Through its India Communications Hub in Bhubaneswar, Orissa, the STREAM initiative is piloting a One-stop Aqua Shop Information Service (OASIS) providing a range of information materials in Bangla, English, Hindi and Oriya. These include the *STREAM Journal*, Better-Practice Guidelines, Significant Change Stories and Policy Briefs. OASIS is helping to share knowledge and learning from other parts of India and other Asia-Pacific countries.

The call for One-stop Aqua Shops by farmers is being answered in a range of ways: by Self-Help Groups, NGOs, and public and private sector service providers. At an August 2005 workshop organized by STREAM with DFID-NRSP¹ support, people began highlighting the outcomes and impacts of adopting farmer recommendations. Representatives from the Ministry of Agriculture (Department of Animal Husbandry, Dairying and Fisheries), the governments of Jharkhand, Orissa and West Bengal, NGOs and SHGs articulated their objectives to scale up the various OAS pilot activities.

Dr Tripathi puts it like this: "Wherever aquaculture is a prime source of livelihood, I feel that the OAS will soon become popular like grocery shops or provisional stores. A good OAS, however, would be like a department store where one would find literature, feed and seed for all cultivable varieties and technical guidance, diagnostic, analytical and pathological services, and assistance for planning and evaluation. Such an OAS will be owned or staffed by qualified managers with considerable experience in aquaculture and allied sciences." We look forward to that day!

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¹ Natural Resources System Programme

Ranchi One-stop Aqua Shop

Ashish Kumar

The Beginnings

During meetings in villages and also during workshops organized in Jharkhand, Orissa and West Bengal states of India, fish farmers expressed their recommendation to have a single-point arrangement for the provision of materials and services for aquaculture. This was also supported by district, state and national authorities and confirmed by a semi-anonymous consensus-building process during the DFID-NRSP²-funded project R8100 entitled “Investigating Improved Aquaculture Service Provision to Poor People.” So creation of a single-point location for the benefit of fish farmers emerged as one of the most important issues from that project. The recommendations were further advanced by a follow-on project R8334 entitled “Promoting Pro-poor Policy Lessons of R8100 with Key Policy Actors in India.”

During the first workshop of the second project held in Ranchi in January 2004, STREAM Director Graham Haylor informed the participants about a discussion he had with Dr S Ayyappan, Deputy Director General (Fisheries) of ICAR (Indian Council for Agricultural Research), the highest authority for aquaculture research in India. Dr Ayyappan had suggested the name of One-stop Aqua Shop (OAS) for the proposed single-point delivery location. The name was accepted by all present in the workshop including representatives of different states and the Government of India.



Ashish Kumar (center) with STREAM and DoF colleagues in the Ranchi OAS

Shaping the OAS and Its Linkages

During that January 2004 Planning Workshop, participants discussed the ‘shape’ of an OAS: the different services to be provided to farmers and who would run it. Locations, arrangements and interior decoration, seed nurseries, water tube well, linkages with banks, NGOs, Self-Help Groups and other agencies were suggested by the participants. It was decided that big projects like WORLP (Western Orissa Rural Livelihoods Project) and JTDS (Jharkhand Tribal Development Society) could help mobilize support for OASs and link with farmers. It was also decided that NGOs like Gramin Vikas Trust (GVT) and ODA (Organization for Developmental Activities) could support the OAS in Ranchi.

Through the Fish Farmers Development Agency (FFDA) and the Department of Fisheries (DoF), for research-related support, an OAS could be linked to ICAR, and for policy-related support to the Government of India. For loans and other financial services support, an OAS could be linked with rural banks and for inputs with suppliers. Finally, the OAS would be linked for learning and communications to the STREAM India Communications Hub and through it to other STREAM countries including Cambodia, China (Yunnan Province), Indonesia, Iran, Lao, Myanmar, Nepal,

² UK Department for International Development – Natural Resources System Programme

Pakistan, the Philippines, Sri Lanka and Vietnam. STREAM pledged its support through OASIS (One-stop Aqua Shop Information Service).

A plan was designed to incorporate all the feasible ideas and then included in a flow diagram. For running the OAS, sources of income were discussed, for example, sale of fish seed and lending fishing nets. It was decided that the OAS could charge small amounts for the services it provided to local farmers so that it could be made sustainable. Although no standard policy or procedures were agreed, it was clear that everyone was thinking in similar ways, and it was left to time as to what shape the OAS would take in future. Some confusion came up because several participants thought that partial or full financial support would be provided by the STREAM Initiative, and some of them presented a budget for that.

First OAS in India

On 7 May 2004, the first OAS was opened in the FFDA in Ranchi, the capital of newly formed Jharkhand state. The OASs Hindi name is *Matsya Krishak Sewa Kendra*, or Fish Farmers Service Center. It is managed by one Fisheries Extension Supervisor. The OAS has many makeshift display boards showing the various schemes offered to farmers by the DoF. To assist farmers, the prescribed application forms for each scheme are available. These include Pond Construction Scheme, Fishermen Housing Scheme, Training Scheme, Insurance Scheme, Bank Loan and Subsidy Scheme, and Savings-cum-Credit Scheme. Other information and materials available are:

- List of government ponds to be auctioned and leased
- List of fish seed farms and availability of seed
- Rates of fish seed and fish
- Addresses of private fish seed sellers
- NGOs working in aquaculture
- Market rates of fish feed
- Facility for pond water testing
- Technical guidance for better growth of fish
- Books, journals and pamphlets on fisheries
- *STREAM Journal*
- Medicines for controlling fish diseases

Farmer visits to the OAS are recorded in a register. They are provided with information about schemes and their questions are answered. Farmers consider the OAS to be a new venture made especially for them and they feel free to discuss their problems and situation so that they can benefit from the government schemes. They mostly enquire about housing and pond construction schemes since the state government provides 100% subsidies for members of Scheduled Tribes. During the rainy season, the most enquiries were about quality fish seed.



The number of visitors is growing and people living in distant villages are also becoming aware of the OAS. They try to visit when they come to the district headquarters. Pamphlets developed by DoF are given to all visitors and many buy the Hindi book on pond aquaculture written by the author. Many NGOs working in this field have shown interest in opening OASs. Recently, the STREAM Initiative indicated that it would assist the OAS in its publicity, which will be a boon for its popularity.

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Kaipara One-stop Aqua Shop

Kuddus Ansary

A Federation and an OAS

In Kaipara Cluster of Barabazar Block of Purulia District in West Bengal, there are 70 Self-Help Groups. Of these, two people from each of 20 groups have formed a 40-member general body, from which they have formed an Executive Committee of 14 people and called it the "Barabazar Self-Help Group Development Federation". The Executive Committee facilitates regular meetings of the Federation.

During one such regular meeting discussions were held on the establishment of a One-stop Aqua Shop (OAS). People were asked to give their opinion about the management of the OAS so that everyone could get all facilities under one roof. A nine-member working committee was formed with a manager, secretary, president, treasurer, trainers and extension workers. With the presence of *Panchayat* (local government) officials and local administrative members, the Kaipara OAS was inaugurated by respected Mr Anukul Sarkar, the Block Development Officer (BDO) of Barabazar, on 1 June 2004.

Visitors, Activities and Livelihoods

Within the last year visitors from different countries such as Bangladesh and Australia have come to the OAS and appreciated its activities. People from other villages are also starting to come to



Kaipara community members in front of their OAS

the OAS and now understand why such a facility is needed. OAS activities include raising fry from spawn, renting a fishing net and *hundie* (a vessel to carry fry), and distributing newsletters and pamphlets on fisheries. If farmers are facing any problems about fish culture, then the OAS is also giving solutions to them. Thus aquaculture is now becoming a part of their livelihoods. Jobless young men and women are getting training on fish culture from the OAS and applying for FFDA (Fish Farmers Development Agency) schemes. Housewives are now contributing to their household income by doing fish culture. Those who have formed groups

are increasing their earnings by doing aquaculture. People are also telling their group members about livelihoods activities after getting advice from local NGOs and clubs. Through the OAS, people are getting benefits from aquaculture under one roof.

Local and Personal Benefits

Our area is getting recognized in different countries because of establishment of our Kaipara OAS. Personally, I am benefiting from OAS also. Articles I have written are getting published in different journals. Interacting with different people helps me to share my views and to learn more things. In meetings in different villages I tell about the concept and objectives of the OAS and

also collect stories about significant changes in the lives of villagers. After formation of the OAS, government officers are in contact with me. All of this will help me in my future and I now have the confidence to establish an OAS in any part of the country.

Evaluating the OAS

Evaluation of the past year's experience of managing the Kaipara OAS reflects that demand for its services is continuously increasing, and to fulfill the demand we need to organize workshops, fairs and exposure visits. Apart from that, many village people are not literate enough to read publications. For those who can read, they may not have the practice of reading publications like journals so one or two persons read them to everyone, which can be difficult.



STREAM colleagues Chris Keating and Rubu Mukurjee discuss the bar-coding system for the Kaipara OAS with Kuddus Ansary (see Chris's article about bar-coding on page 12)

People in villages are fond of watching television. We could show the objectives of the OAS, fish culture in different countries, and various training activities in a video format. We could add traditional folk songs to make it popular and show it at different places. Then the accessibility to and understanding of the OAS and STREAM will be clear to all villagers, including women, students and those who are illiterate. It would also be helpful for STREAM colleagues to visit the Kaipara OAS regularly to guide us on management, organizing events such as fairs and exposure visits and to develop video media for publicity.

Earnings and the Future

Last year we earned Rs 3,200 through the OAS by selling fish fry. From renting the fishing net and *hundie* we earned Rs 1,000. In the current financial year, rearing fingerlings from spawn has been started. The Kaipara OAS is planning to establish a carp hatchery in the near future so that we will benefit from jobs and so that people will get good quality fish seed.

Kuddus Ansary is the Manager of the One-stop Aqua Shop in Kaipara Village of Purulia District in West Bengal, India. He can be reached through the STREAM India Communications Hub at <rubumukherjee@yahoo.co.in>.

Bilenjore One-stop Aqua Shop

Bhawani Sankar Panda

Inaugurated and Equipped

The Sahabhagi Vikash Abhiyan (SVA) One-stop Aqua Shop (OAS) in Bilenjore in western Orissa state was inaugurated on 10 May 2005 by the Assistant District Magistrate of Nuapada, Mr Akshya Kumar Raut. In attendance were STREAM consultants, the director of the Orissa Watershed Mission, the Assistant Director of Fisheries of Nuapada, other government officials and NGO representatives. As the person in charge of the OAS, I briefly presented information about it and its functions. The OAS was well equipped with information systems about modern techniques of fish culture, including computers, CDs, *STREAM Journals*, Better-Practice Guidelines from STREAM, leaflets, SVA study materials on fish culture, SVA fisheries newsletter, compilation of news about SVA fisheries activities, manual on carp culture, photographs of SVA fisheries activities, loan forms, fish feed, fertilizers, medicines, OVAPRIM, pH paper, packing materials, an oxygen cylinder, drag net, hapa, plankton net, cast net, hand net and breeding hapas.

Activities of the SVA OAS

Training and Field Visits

Two training sessions were conducted on "Scientific Nursery Pond Management" in Nuapada, Bargarh, Bolangir and Kalahandi districts. In June 2005, a two-day training was organized in SVA Kalahandi for 20 nursery owners of Kalahandi and Bolangir districts. One day was a lecture and the second was a field visit to the Habaspur carp hatchery of the state Department of Fisheries. There the in-charge of the hatchery discussed and demonstrated the practices of nursery pond preparation and hatchery operation.



Inside the Bilenjore OAS

Also in June 2005, the same training was organized for 31 participants from Nuapada and Bargarh districts. This time the field visit was to the SVA carp hatchery, where I am the in-charge. As in the previous training, participants were introduced to nursery pond preparation practices and hatchery operation. I also oriented some SVA staff on fish culture for better implementation in the field.

Preparation of Training Aids and Literature

The SVA OAS has prepared booklets, leaflets and literature about fish culture, nursery pond preparation and management. These materials are available with the OAS and interested fish farmers can collect them from there.

Newsletter

A newsletter is published by the OAS, compiling various news clippings of the different dailies. In future the newsletter will include such content as successful case studies, problems of fish

farmers and their solutions, technical tips about fish culture, rate charts of fish seed, addresses of seed suppliers and hatcheries and market price of fish at different places.

Compilation of SVA Fisheries Activities

A small booklet was published by OAS containing various fisheries activities and some case studies of SVA during 2003-05.

Fish Culture Awareness Meetings

OAS is playing a role in generating awareness about fish culture by holding meetings with Self-Help Groups (SHG) at village level and providing technical knowledge about the potential profits from fish culture.

Supply of Quality Seed

As SVA has its own carp hatchery, SVA is supplying fish seed to fish farmers. With the technical guidance of the OAS, there are 53 nurseries in an SVA network.

Fish Seed Marketing

Because the OAS provides good quality seed to farmers, people prefer to purchase seed from the OAS. This will disturb the monopoly of local seed suppliers.

Fish Feed Marketing

At the SVA OAS in Bilenjore farmers can get fish feed. We are also planning to establish a number of fish feed and accessory shops in different clusters where there is potential for aquaculture.

Providing Netting Skills to SHGs

The OAS is planning to train men members of SHGs on netting skills to provide a source of income.

Creation of Gram Panchayat Fisheries Expert

The OAS is planning to train at least one person in each *Gram Panchayat* (local government) to provide consultancy services to SHGs and fish farmers.

Links among Credit Institutions, Farmers and the Fisheries Department

The OAS will act as a link among banks, farmers and the Fisheries Department. The OAS will always be equipped with information about Fisheries Department schemes and advice, information and application forms for bank loans and subsidies.

Doubts and Interest Lead to Services

Since the establishment of the SVA OAS, about 200 fish farmers have visited it. They are clearing up their doubts about nursery pond preparation and management, fish feeding, fish culture, insect control measures, seed purchasing, availability of seed, breeding operations and other stages of fish culture. There is a growing interest among farmers in scientific fish culture and a lot of new people are also coming forward since they now have a place to get aquaculture services.

Bhawani Sankar Panda is a Project Officer (Technical) with SVA in Bilenjore, Nuapada, Orissa. He can be reached at <bhawani05@rediffmail.com>.

Patnagarh One-stop Aqua Shop

Dipti Behera and Lingraj Otta

Inaugurated and Equipped

The One-stop Aqua Shop (OAS) at Patnagarh Block was inaugurated by Sri Kanak Bardhan Singhdeo, Honorable Minister for Urban Development and Public Enterprises, Government of Orissa. The function was also attended by Smt Sangeeta Singhdeo, Honorable MP, Bolangir District, the District Collector of Bolangir, the *Panchayat Samiti* Chairperson, the Watersheds Project Director of Bolangir, the Additional Director of Fisheries of Bolangir and the Patnagarh Block Development Officer. Hundreds of members from Self-Help Groups (SHG) and User Groups of Patnagarh and Khaprakhhol blocks also attended.



OAS inauguration in Patnagarh on 6 September 2005

BDO, OASIS and BPGs

The Block Development Office (BDO) is a central location where people from an administrative block come to find development support. In Patnagarh, in the north of Bolangir District in western Orissa, the Block Development Officer is especially active and the BDO is a busy place. It is little wonder then that this should be the location chosen to host the first OAS to open in the district. For SHGs in the eastern part of India, aquaculture in seasonal ponds – even with few inputs – plays an important role as a source of nutrition and as an income-generating activity. The BDO has been supporting local tribal groups in their aquaculture efforts for some time; it is an extension of this effort which has given rise to the OAS.

The Bhubaneswar-based STREAM India Communications Hub, through its One-stop Aqua Shop Information Service (OASIS) has already supplied the Patnagarh OAS with a range of media designed to support farmers and fishers and especially those who are working closely with them. Among the exciting new media available are nineteen Better-Practice Guidelines (BPGs) in Oriya and English, which build into a comprehensive manual for farmers, and come in a folder which highlights the annual aquaculture cycle in the western part of the state.

Digital Support

The Patnagarh OAS is well supplied with computer facilities and can make use of web-based media and services that are on offer around the region to support fish farmers' needs. These include an on-line discussion forum where a community of experts can answer questions about aquaculture and fisheries. In addition, there is a wealth of material that can be downloaded in Oriya, Bangla, Hindi and English. Orissa Watersheds Development Mission, who have commissioned the Better-Practice Guidelines, have catalyzed the preparation of these wide-ranging guidance materials in plain language which are being made available through One-stop Aqua Shops.

People who use the OASs will receive a simple membership card, recording some key personal information. Membership cards and all publications will be bar-coded (as described in the next article) to enable tracking of the materials to better understand who uses them and what impacts they have in local fishing and farming communities.

Visions of Aquaculture Development

The Agriculture Secretary of the Government of Orissa hopes that fish production can be doubled in the state over the coming years to provide for the large demand for fish. The efforts of the Department of Fisheries and the Orissa Watersheds Development Mission to support potentially large numbers of Self-Help Groups in their aquaculture ambitions through One-stop Aqua Shops could bring about a large increase in availability of fresh fish locally. Perhaps more importantly, as is already beginning to be shown, hatching, nursing fish to fingerling size, and growing fingerlings on to large-sized fish, are each proving to be significant income-generating activities for NGOs, SHGs and other private sector entrepreneurs in rural areas of eastern India.

Links among Credit Institutions, Farmers and the Fisheries Department

The OAS will act as a local contact point for rural banks, aquaculture suppliers and the Fisheries Department. The OAS will make available information about supplies and prices, Fisheries Department schemes and advice, information and application forms for micro-credit from rural banks.

It is now nearly two years since large numbers of farmers shared their need for such "single-point under-one-roof service delivery." The Government of Orissa have listened and they have responded, and they are now beginning to deliver the very service that farmers wanted. The OAS in Patnagarh is the first of four being established by government. The others are planned for Bolangir town, as well as in Khariar and Nuapara in the neighboring district of Nuapara.



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Using Bar-coding in a One-stop Aqua Shop

Christopher Keating

Backgrounds, Relationships, Systems and Access

Three of us are sitting in the STREAM India Communications Hub in Bhubaneswar, Orissa. There is Rubu, the Hub Manager, Reshmee, his colleague and spouse, and me, a volunteer from Australia. We are waiting for a fourth person to arrive, Bhawani S Panda, the manager of the One-stop Aqua Shop (OAS) in Bilenjore.

Rubu has been involved with STREAM for quite a few years and has seen it grow enormously in scope and volume. Reshmee has joined more recently to assist with the increasing workload and provide further expertise. Both are aquaculture specialists with fantastic communications skills, fluent in more languages than I can say 'hello' in. Both have a strong commitment to improving the livelihoods of people in their communities. They have strong relationships with local government and non-governmental organizations and, crucially, have developed strong friendships with many communities throughout eastern India.

I am from a rather different background. I am a volunteer who has until recently worked in the environs of Australian government. I have experience in monitoring and evaluation and software development and, to be totally honest, knew nothing about aquaculture and livelihoods approaches before joining STREAM a few months before. Assuming that I would be spending the majority of my time in Bangkok, I was pleased to discover that I would also be working in eastern India, helping to develop a system for tracking the dissemination of publications.

Since then I have been developing a software system to help record information about the people who use the services of the OAS and what resources they use. The aim of the OAS is to provide a single location for farmers and fishers to access information and resources about fishing and aquaculture. There are currently nine OASs spread throughout Orissa, Jharkhand and West Bengal, each of them different. Some are based in government offices and are relatively well equipped with access to computers and consistent power; others are in remote villages with access to little.

Trying Out the Barcoding System

Today is the first day that we will be giving a full demonstration of the software and I am a little nervous. We are training Mr Panda to both install the software, which is a little tricky, and to be able to use the software when he returns home. For the past two days, we have been developing training material, writing user manuals and testing that everything works. We cannot be certain that there will not be problems with the software or that it will be simple enough to use. If at the end of the session Mr Panda is confident enough to manage the software when he returns to his OAS – some ten hours' drive away with limited support – then we will be extremely happy. The objective behind this whole project is to make the information collection process easier for people like Mr Panda. If local communities and the OAS managers are comfortable using the system that we have created then we will consider it a success.

The system we have developed is similar to what one would find in a school library, although a school with a large, multi-lingual, geographically dispersed population. We will be registering every person who uses the OASs, recording some key personal information and providing them with a membership card. When an OAS member takes a publication or other resources from the OAS, the manager only has to scan the barcodes printed on the publication and membership cards to capture all necessary data. Collected over time, this data will provide the OASs and STREAM with a fantastic resource to better understand who uses our publications and what

impacts they have. Most significantly, the various OASs will be able to use this information to continue improving the services they provide to local fishing and farming communities.

Training on the Barcoding System

We had agreed that Rubu and Reshmee would conduct most of the training today and I would provide support where necessary. This was a great opportunity for them to get some hands-on experience in teaching people how to install and use the software. This is particularly important as they would soon be installing the software at the remaining eight OASs across eastern India and training each of the respective OAS managers. If they are unable to do this successfully now, then they were certain to have problems in the more remote environments.

Mr Panda is a friendly, softly-spoken person. We considered him to be an ideal first candidate for trying out the system. He is computer literate and speaks good English. His OAS has a computer with some internet access and, most importantly, he has shown interest in being involved in the project. When he arrives the three of us quickly greet him, sit down with him and begin our training. Over the next four hours we progress well through the training. As expected, there are a few problems and surprises but overall the session goes well. Everyone contributes and more importantly, everyone learns something that will ensure that the next steps in this project are that much easier.

Suggestions, Modifications and Reflections

We are all quite confident that Mr Panda will be able to easily manage when he returns to his OAS. Throughout the session he made numerous interesting suggestions. The OAS offers many services to his community in addition to publications. He currently loans fishing equipment (nets and pitchers) and sells other items such as fish seed. He suggested that it would be useful to capture this information. We were able to make modifications on the spot to enable him to record this information, thus resulting in a system that better meets his and possibly other OASs' needs.

Mr Panda made another useful observation about our categorization of stakeholders. STREAM had spent some time developing a communications strategy for all of our stakeholders, attempting to categorize them into meaningful groups. During discussions with Mr Panda, it became clear that these distinctions between groups could be quite unclear. We had tended to look at occupational groups when defining our stakeholders. Mr Panda suggested that it would be more relevant to look at why an individual is interested in aquaculture in the first place. He cited an example of someone wanting to begin cultivating fish for their personal use. This individual may be a farmer, a teacher or a government employee, but they are all interested for the same reason that has nothing to do with their profession: to improve their livelihoods. He suggested that a better method for categorizing stakeholders might be to group them by their intended usage of resources and not their occupational groups.

After the session was completed, I realized how valuable this time was and regretted not having had more one-on-one sessions with the end-users of the system. Given that the users are in remote locations in India and I am in Bangkok, it was always going to be difficult to have a lot of direct contact. However, with Rubu and Reshmee becoming more confident in using the bar-coding system, they will be able to provide enormous support to the managers of an ever-expanding OAS network. It will be an interesting time over the next few months as this system becomes a reality. I am sure that there will be further bumps along the way but it appears that we are at least heading in the right direction.

[Editor's Note: See a photo of Chris and Rubu meeting with the manager of the Kaipara OAS, Kuddus Ansary, about the bar-coding system, on page 6.]

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About the STREAM Journal

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Purpose

The *STREAM Journal* is published quarterly to promote participation, communication and policies that support the livelihoods of poor aquatic resources users in Asia-Pacific, and to build links within the aquatic resources management and other sectors across the region. The *STREAM Journal* covers issues related to people whose livelihoods involve aquatic resources management, especially people with limited resources, and government, non-governmental and international practitioners who work with them in communities. Such issues include learning, conflict management, information and communications technologies, aquatic resources management, legislation, livelihoods, gender, participation, stakeholders, policy and communications.

Another equally important purpose of the *STREAM Journal* is to provide an opportunity for seldom-raised voices to be heard and represented in a professional publication that is practical yet somewhat academic. The contents of the *STREAM Journal* should not be taken as reflecting the views of any particular organization or agency, but as statements by individuals based on their own experience. While authors are responsible for the contents of their articles, STREAM recognizes and takes responsibility for any editorial bias and oversights.

Distribution

The *STREAM Journal* is available in three formats:

- An electronic PDF version which is printed and distributed by the STREAM Communications Hubs in each country
- A version which can be accessed and downloaded in PDF format from the Virtual Library on the STREAM Website at www.streaminitiative.org, and
- A printed version which is distributed by the NACA Secretariat.

Contribution

The *STREAM Journal* encourages the contribution of articles of interest to aquatic resources users and people who work with them. The *STREAM Journal* also supports community-level colleagues to document their own experiences in these pages.

Articles should be written in plain English and no more than 1,000 words long (about two A4 pages of single-spaced text).

Contributions can be made to William Savage, *STREAM Journal* Editor, at <savage@loxinfo.co.th>. For more information, contact Graham Haylor, STREAM Director, at <ghaylor@loxinfo.co.th>.

About STREAM

Support to Regional Aquatic Resources Management (STREAM) is an Initiative designed within the five-year Work Program cycle of the Network of Aquaculture Centres in Asia-Pacific (NACA). It aims to support agencies and institutions to:

- Utilize existing and emerging information more effectively
- Better understand poor people's livelihoods, and
- Enable poor people to exert greater influence over policies and processes that impact on their lives.

STREAM will do this by supporting the development of policies and processes of mediating institutions, and building capacity to:

- Identify aquatic resources management issues impacting on the livelihoods of poor people
- Monitor and evaluate different management approaches
- Extend information, and
- Network within and between sectors and countries.

The STREAM Initiative is based around partnerships, involving at the outset a coalition of founding partners (AusAID, DFID, FAO and VSO) supporting NACA. It has adopted an inclusive approach, reaching out to link stakeholders engaged in aquatic resources management and supporting them to influence the Initiative's design, implementation and management.

The partnerships' work is coordinated in each Country Office through a National Coordinator (a senior national colleague agreed with the government) and a Communications Hub Manager (a full-time national colleague supported in the first two years by STREAM), and linking a range of national stakeholders. The Communications Hub is provided with hardware, software, training, information-technology support, and networking and human resources support, and links national stakeholders through an internet-based virtual regional network.

National coordination is guided by an annually-reviewed Country Strategy Paper (CSP) drawn up by the Coordinator and Hub Manager in consultation with stakeholders with whom they regularly network. A CSP identifies key issues, highlights regional linkages, proposes and prioritizes key actions, and seeks funding for these from STREAM and elsewhere (with STREAM support).

The STREAM Regional Office (at the NACA Secretariat in Bangkok) directs the Initiative, provides a regional coordination function, and funds and manages cross-cutting activities dealing with livelihoods, institutions, policy development and communications, the four outcomes-based STREAM themes.

STREAM implementation is an iterative process, initially operating in Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Vietnam and Yunnan, China, and expanding within Asia-Pacific where opportunities exist to tackle poverty and promote good governance, as experience is gained, lessons are learned, impact is demonstrated and additional funding is secured. STREAM's communications strategy aims to increase impact by ensuring that existing knowledge and expertise inform ongoing change processes around the region, and that the lessons learned are disseminated throughout Asia-Pacific. The *STREAM Journal* and the STREAM website are components of this strategy.

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