



Poverty reduction and aquatic resources

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Introduction

The Millennium Development Goals call for a reduction in the proportion of people living on less than \$1 a day to half the 1990 level by 2015. This means reducing from 28.3 percent of all people in low and middle income economies to 14.2 percent. The Goals also call for halving the proportion of people who suffer from hunger between 1990 and 2015.

If projected growth remains on track, global poverty rates will fall to 13 percent – less than half the 1990 level – and 360 million more people will avert extreme poverty. So while poverty would not be eradicated, that would bring us much closer to the day when we can say that all the world's people have at least the bare minimum to eat and clothe themselves.

At the World Food Summit organized by the United Nations Food and Agriculture Organization (FAO) in Rome in 1996, food security was defined as "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." It was at the same summit that countries originally committed to reduce the number of malnourished people in the world by half by the year 2015.

Progress in eradicating hunger, however, has been slow and the situation has been worsening in some regions, notably South Asia. Malnutrition plays a role in more than half of all child deaths. Malnutrition in children is caused by consuming too little food energy to meet the body's needs. Adding to the problem are diets that lack essential nutrients, illnesses that deplete those nutrients, and undernourished mothers who give birth to underweight children. Raising incomes and reducing poverty is part of the answer. But even poor countries need not suffer high rates of child malnutrition. They can make big improvements.

According to the Director General of FAO, fisheries and aquaculture contribute significantly to food security in the Asia-Pacific region. Fish make up more than 50% of animal protein in most countries of the region. Fish provides a high protein food with additional benefits such as calcium, vitamin A, omega-3 fatty acids and iodine, deficiencies in which are detrimental to the physical and mental development of all people, especially children. Speaking in Bangkok in 2001¹ the FAO Assistant Director-General and Regional Representative for Asia and the Pacific said that greater recognition must be given to the nutritional role of fish for the poor, especially those living on and near water bodies. Fish and other aquatic resources, even when eaten in small quantities, often have a defining role in nutritional security and it is this security that is most threatened as the natural supplies disappear. Fish production should be adequately considered in order to obtain a fuller picture of food availability and nutritional adequacy.

¹ Workshop on Improvement of Fishery Statistics in Asia and Pacific Countries Bangkok, Thailand, 6-10 August 2001
Opening statement By Dr. R. B. Singh

Poverty reduction objectives often fall to the public sector, and to their credit Asian fisheries line agencies (which deal with aquaculture and aquatic resources) have long accepted poverty reduction as part of their role. Whether prominent or somewhat buried, within the mission of each line agency with responsibility for aquaculture in Asia will be a phase relating the objectives of aquaculture development and poverty alleviation. Unfortunately, it is a good deal rarer to find aquaculture objectives within the policy documents of national and international development agencies; although there is increasing evidence that aquatic resources management – both capture fisheries and aquaculture - can play an effective role reducing poverty.

One the one hand, not unreasonably, the *fisheries specialists*, alone or associated within agriculture, livestock or environmental agencies have tended to take a resource focus to their work. “The resources exist and therefore we should encourage aquaculture”. “Research has delivered technologies which are commercially successful and therefore we should extend these to poor people”. These remain worthy objectives and reflect noble sentiments but they perhaps presuppose too much about the access to resources of people who are poor and the capacity of vulnerable people in remote areas with little voice and limited service provision.

Development specialists, on the other hand, tend to seek richer understanding of their ‘poor clients’. They have developed ways to learn about strengths, fears and vulnerabilities and are beginning to think in terms of entitlements and rights. These are big and important issues in the lives of people who are poor. The ideas that comprehensive baskets of livelihood choices should result from such approaches to poverty alleviation perhaps assumes too much about the universal (multi-disciplinary) knowledge that development specialists working together with people who are poor can have.

It is clear that fisheries and development specialist have much to offer and much to learn from each other. It is therefore highly appropriate that the major contemporary trends in Asian aquaculture that relate to poverty reduction are the gradual coming together of these groups, the emergence of a shift in thinking, the appearance of new ways of working and the beginnings of impacts from poverty reduction efforts involving aquatic resources.


Building on the resource-focused approach to Asian aquaculture by putting people at the centre of development thinking

As introduced above, the scope for aquaculture in poverty alleviation has previously been diminished by a resource-focused approach, which sometimes over simplifies how (poor) people and (aquatic) resources interact and thus affects the way in which support is provided. An emerging approach in Asian aquaculture looks in more detail at livelihoods² issues and seeks opportunities to support resource management, access, and helps to understand the properties of resources including their utility for aquaculture, as well as

² For more information about livelihood approaches see www.livelihoods.org

the *functioning*³ they permit and the benefit they generate. This shift in thinking brings to light new issues and helps to build a more complete understanding of the role that aquaculture, and aquaculture service providers, can play in poverty reduction.

The box below attempts to encapsulate the shift in thinking from “resources” to “people” and the issues this approach throws up.

Resource-focused approach	People-centered approach	New issues
Resources exist	Resources exist	
	<i>Some</i> people secure command over resources	<ul style="list-style-type: none"> • Who has: <ul style="list-style-type: none"> • Right of access? • Security of tenure? • Security from theft? • What are the social conventions of ownership⁴?
	<i>Some</i> resources have desirable properties	<ul style="list-style-type: none"> • Is there an appropriate natural environment (regarding: water quality, quantity, productivity, freedom from disease, not vulnerable to shocks such as floods, drought)? • Is there appropriate human and social capital (i.e. knowledge and networks of support)? • Is there connecting infrastructure (access to fish seed, access to inputs, and access to markets)? • Are there effective support services (financial, technical and institutional support)?
	What can a person succeed in doing with resources at his or her command?	(In the context of motivations, interests and circumstances of people) <ul style="list-style-type: none"> • Can resources yield aquaculture produce? • Can aquaculture produce provide improved nutrition?
Poor people grow fish	The state of well-being generated from succeeding	<ul style="list-style-type: none"> • Can poor people improve well-being through aquaculture? • Can assets be built up through aquaculture (better used water resources, more effective infrastructure, savings, knowledge, useful links and relationships) • Can aquaculture reduce vulnerability?

³ *Functioning* is an achievement of a person. It is different from having access to resources (which precedes it) and having utility in the form of well-being, which follows from that functioning. (For more explanation about functioning and utility see Sen, 1981)

⁴ I.e. Why is ownership (e.g. of a fish pond) accepted? – Because she got it through exchange through paying some money which she owned. Why is ownership of that money accepted? – Because she got it through selling goods. Why is ownership of those good accepted? – Because she made them with her own labor, and so on.

Highlighting the role of aquatic resources in the lives of people who are poor and developing new ways of working

Until recently, the special role played by fish and other aquatic resources as an essential component of poor people's diet and the role which fisheries and small-scale aquaculture plays in poor people's livelihoods has been almost ignored. So much so that planning, policy and support to this sub-sector has been very limited.

The problem has been that there is little available documentation of the lessons that have been learned, few opportunities for dialogue and mutual learning, and sometimes poorly coordinated efforts to inform policy makers of the benefits of these approaches. The awareness of successful practice among policy-makers, government agencies, regional

In the current context of many fully exploited and exhausted fisheries and campaigns against some commercial shrimp practices, the United Nations Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries (CCRF) is an important call for action towards responsible aquatic resources management and extremely relevant to environmental as well as social sustainability. Another key vehicle to counter the under representation of the role of aquaculture and aquatic resources management in the lives of poor people has been the NACA-FAO *Aquamillennium* Conference resolutions. NACA, co-ordinating the wishes of 15 Asia Pacific governments continue to highlight how small-scale aquaculture and fisheries form the mainstay of the livelihoods of millions of poor people across Asia Pacific', through its programs and the regional STREAM Initiative

institutions, non-government workers and natural resource users has been low.

However, in recent years a number of prominent Asian and international organization have been responsible for highlighting the role of aquatic resources in poor peoples lives⁵ and developing new ways of working.

Too often it has been assumed that a lack of technical knowledge is the key constraint to poor people's management of natural resources. However

evidence is increasingly showing that poor people already have an enormous store of 'indigenous technical knowledge', but this knowledge is often undervalued or ignored. Similarly, effective policies and ways of working already exist yet are little shared around the region.

⁵ Amongst these are the Asian Institute of Technology, Aquaculture and Aquatic Resources Management (AARM) Outreach Program (notably the value of non-rice rice field harvest), the Network of Aquaculture Centers in Asia Pacific (NACA) and the Food and Agriculture Organization (FAO) of the United Nations (UN) (and the Aquamillennium Conference, 2000), the International Union of Conservation of Nature (IUCN), the Mekong River Commission (MRC) (in their ten year plan for *Freshwater Aquaculture in the Lower Mekong Basin*), the International Institute for Rural Reconstruction (IIRR) (in their write-shop on Utilizing Different Aquatic Resources for Livelihoods in Asia) and the Support to Regional Aquatic Resources Management (STREAM) Initiative (in their regional capacity building and policy development work).

The Mekong River Commission in its aquaculture planning process (Phillips, 2002) lends weight to the emerging trend towards poverty reduction objectives within Asian aquaculture around the lower Mekong. The report recommends that:

- The main thrust of future aquaculture development should be directed towards small-scale aquaculture.
- Building effective support services for small-scale aquaculture are emphasized.
- Planning processes and policy reflect the needs of rural households and support improved access to extension services.
- Research agendas of national institutions, and indeed the MRC's own agenda of support, should evolve, and based on the needs and livelihoods of rural households.

MRC highlights that there are some experiences already (e.g. they cite the MRC READ project areas, in southern Lao PDR, the NACA regional STREAM Initiative), and that the greatest potential for small-scale aquaculture to contribute to development probably lies in the food insecure and remoter areas of the basin, such as highlands and areas away from major fisheries of the Mekong and the Great Lake in Cambodia. They conclude that there is a need to further share and extend these approaches to other areas and that strategic analysis of aquaculture potential should be undertaken to support key areas.

Just such analysis and actions have been underway since 2001 through the 'Support to Regional Aquatic Resources Management' or 'STREAM' Initiative which has been established by a coalition of development partners including the Network of Aquaculture Centers for Asia Pacific (NACA), the UN Food and Agriculture Organization (FAO), the international NGO Volunteer Services Overseas (VSO) and the UK government Department for International Development (DFID), to address the need for learning and communications. The STREAM Initiative encourages national governments and NGOs to engage with the new thinking and take on new ways of working to address poverty issues through aquaculture and fisheries. It aims to support poor people's livelihoods through improved communications, and by influencing institutions and policy development to better support the needs of poor people who are involved with fishing and small-scale fish farming. An FAO Expert Consultation in support of the STREAM Initiative (Friend & Funge-Smith, 2002) summarizes many of the recent lessons learnt:

- Understanding the context - of poor people's livelihoods, as well as institutional and policy making processes is essential
- Targeting - in an inclusive manner - is essential to ensure that benefits reach poor people, and that strategies are appropriate to poor people's circumstances
- Effective participation of poor people and project partners is essential, both as a means to an end and as an end in itself
- Aquaculture and aquatic resource management strategies may not in themselves be sufficient to address all the needs of poor people, but can be important components of wider, cross-sectoral interventions. This requires more effective co-ordination, with innovative partnerships
- Supporting poor people to organize effectively to exert influence on development planning and policy making processes, to secure rights of access to and control over aquatic resources, and to share and learn from each other's experience
- Supporting institutions to be more responsive to the needs of poor people is essential in order to ensure that the deep-rooted causes of poverty are addressed, and that strategies adopted are sustainable

The regional organizations represented in the consultation shared their ideas on what works and what does not work when aquatic resources is used as an entry point for poverty reduction.

What works?	Why does it work?
<ul style="list-style-type: none"> • Demand-led, farmer first, people centered approaches • Extension of appropriate technologies (for example, hapa spawning hapa nursing) • Low food chain species, in low cost systems and marketed at small size • Breaking up the production cycle, deliberately identify opportunities for poor landless people to become involved in parts of this. • Transparency and involvement in decision making • Target all the household members • Technologies have to be developed according to the local context • Farmer field schools • Networking /partnerships exposure trips • Farmer to farmer visits • Projects endorsed by respected persons (royal projects), but follows other preceding principles • Monitoring and evaluation should involve participatory process that can identify qualitative aspects - including local people's indicators of success • Good staff facilitators • Targeted, limited subsidies • Supporting local fry traders as extension workers 	<ul style="list-style-type: none"> • This develops strategies that are appropriate to local context and poor people's needs • Low cost, low risk - very appropriate for poorer groups such as women • Consumed within the household (whereas high value species are more likely to be sold) • Creates opportunities for groups that would otherwise not be able to derive direct benefits from aquaculture • Generates sense of ownership • All have something to offer, and benefits to gain • Women and girl children may otherwise be denied access to benefits • Integration of aquaculture and aquatic resource interventions for the poor where they are integrated with agriculture is better. i.e. must be part of the larger livelihood system • Adoption is often quicker than if aquaculture is used as an individual intervention • Farmers given opportunity to discover and learn processes rather than be told facts • This enables them to make decisions from a position of knowledge • May be costly and difficult to establish, however there can be considerable benefits • Relate well to each other • Use farmers to train other farmers • Motivates people and ensures full effort from local people • Ensures that projects meet the needs of intended beneficiaries • Allows poor people to critically assess strategies and outcomes • Maximizes communication, experience sharing group strengthening • Some form of subsidy may be appropriate, particularly for the poorer farmers, but there must • be some form of contribution from the target beneficiary • Fry traders and seed producers have the greatest incentives to transmit information and skills to their clients.

What does not work?	Why does it not work?
<ul style="list-style-type: none"> • Inappropriate subsidies and training allowances • Large centralized hatcheries • Technology led interventions • Overseas training for extension staff • Top down management planning, extension etc. • Targeting only the poorest • Projects themselves should not provide credit • Short term projects 	<ul style="list-style-type: none"> • Subsidies can suppress farmer innovation, creating artificial environment for production that may not be viable once subsidies are no longer available • If farmers are providing their own inputs they make more careful decisions • Do not reach remote areas too expensive and often fail after withdrawal of support • Opportunities for poor people to become involved in hatchery production and trade are denied • Mostly technologies already developed were not targeted at the poor and adoption is low • Poor design & inappropriate curricula • Not cost effective • Trained staff may leave the sector (although capacity developed may be useful in other aspects of work) • Out of touch with local circumstances and local needs • Leads to jealousy and problems with patron client relationships • Maybe we want to do this? Social capital and networking is damaged • NGO in a series of villages and targeted only the poorest - when they left the poor who had been targeted had lost access to the patrons that they had previously relied upon • Causes problems and is inefficient. The project should seek to work through existing finance structures. Project should facilitate access • Might be possible provided there are distinct separations between the roles - i.e. a specific person for the credit - but there may still be some confusion • Insufficient time for learning • Slow reaction time means results often only occur after project closure

The beginnings of impacts from poverty reduction efforts involving aquatic resources

DFID research and development support, channeled through STREAM is already giving people a role in policy making and beginning to shape new policies and the beginnings of impacts from poverty reduction efforts involving aquatic resources. For example in India where the process for bringing through the voices of poor people, or ‘making it easier for people to speak for themselves’ has involved many stakeholder meetings at village, state, regional and national level. There has been engagement with state and national level policy actors through an iterative consensus-building mechanism. A range of communication materials have been used to bridge discourse gaps including the use of live drama, video films, and short statements by representative fishers and farmers, implementers and state and national level policy actors (STREAM, 2003), these various media products successfully supporting communication with apical policy makers in Delhi (DFID, 2004).

FAO and VSO support includes the provision of technical assistance and livelihoods capacity building support to NACA members. It is hoped that this will contribute to enhancing the livelihoods of the rural people through improved management of aquatic resources and sustained support that can make a positive difference.

The future

The future direction for poverty reduction through aquatic resources management holds many new challenges. How to build associations and groups to work together? How to bring service provision to vulnerable groups? How to influence institutions to hear? How to co-manage fisheries with local communities? How to encourage sustainable management of inland and coastal resources and how to combat destructive practices? How to ensure trade in fisheries products brings benefits to poor people? How to breakdown the so-called digital divide and bring the positive elements of globalization to work for poverty reduction?

Yet new thinking, such as people-focused approaches and understanding of entitlements, are giving rise to new ways of working, of engagement and empowerment and new ways of communicating are already breaking down discourse gaps. The use of innovative communications processes is breaking hierarchies and building bridges. Internet tools and electronic communication combined with new skills in facilitation and management are now bringing cost-effective solutions to problems that only 3 years ago seemed implausible. Advances in monitoring and evaluation continue to open up new vistas and new insights to understand and to combat poverty.

There has perhaps never been a more exciting time to be building institutions and policies with people, through a livelihoods lens, and sharing these more widely than has ever been possible.

References

Friend, R. F. & Funge-Smith, S. J., 2002. Focusing Small-scale Aquaculture and Aquatic Resource Management on Poverty Alleviation. FAO Regional Office Asia and the Pacific, Bangkok Thailand. 24 p.

<http://www.developmentgoals.org/Poverty.htm>

DFID (2004) Responding to the voices of the poor – pro-poor policy change for aquaculture in eastern India. Natural Resources Systems Program Annual Report DFID.

Phillips, MJ (2002). Fresh water aquaculture in the Lower Mekong Basin. MRC Technical Paper No. 7, Mekong River Commission, Phnom Penh.

Sen, A (1981) Poverty and Famine: An Essay on Entitlement and Deprivation. Oxford University Press.

STREAM (2003) Research learning and new thinking. Insights arising from NRSP Project R8100.