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Promoting sustainable aquatic production and marketing to reduce poverty and hunger

"Food on every plate"

Aquatic plants, particularly water spinach and water mimosa, are a major daily constituent part of urban peoples' diet in South-East Asian cities. This considerable consumption is almost entirely met by production within peri-urban areas of these cities, whilst peri-urban fish production in Hanoi (Vietnam) for example meets up to 20% of urban consumers' demands.

Marketing value

Transport, processing and marketing of peri-urban aquatic products involves and benefits a vast network of people, many of which are women, and takes place at many locations, including wholesale and retail markets. Increasingly supermarkets, as well as mobile trader are becoming important. As much as 80 -100 tonnes of aquatic plants are sold every day in Talat Thai, one of Bangkok's (Thailand) two main wholesale markets, with a daily value of US$ 44,000 and annual value of US$15.3 million.

Strengthening production and marketing

Aquatic production systems thus play an important role in the livelihoods of many urban dwellers, farmers and vendors. However, restrictions such as limited access to land and (safe) water sources, policy making, and lack of knowledge and training on new and sustainable production systems and markets are hindering the success of aquaculture activities and limiting the contribution they can make to more productive and greener cities.

Challenges

Rising use of agrochemicals, increased contamination of (insufficiently treated) wastewater and lack of sanitary marketing conditions threaten peri-urban fish and aquatic vegetable production, reducing production levels and food quality. Research, technical assistance and training on environmentally friendly production technologies, as well as health risk management strategies in production and marketing (see also Brief 3), should thus be promoted.

Research and experimentation with new products and identification of potential market channels, is also needed to further improve farmers' livelihoods, business potential and market access. Lack of information on market prices, size and demand make planning outputs however difficult. Organisation of peri-urban aquatic producers should be strengthened so that they can gain or improve access to information, markets and services as well as official recognition and direct participation in urban policy making and planning.

Finally, specialist information and training on new production systems and techniques, as well as new or improved market channels, should be produced and disseminated through simple, short and user-friendly methods (leaflets, posters, videos, farmer-to-farmer exchange) and included in technical assistance and extension programmes.

Promoting sustainable production and marketing

1 Promoting environmentally sound production

Large amounts of chemical fertilisers and pesticides are increasingly used in aquatic, particularly aquatic vegetable, production. Producers however, often still lack sufficient knowledge and understanding of the potential health and environmental risks, coupled to ineffective regulations and control systems. Improved information and education on cleaner and more sustainable production techniques could lead to better development of aquatic production systems that rely on organic forms of pest control as opposed to agrochemicals. Governments, research and training institutes should promote ecological farming practices through training and local experimentation, as done in Bangkok (Thailand) with organic water spinach production, and provision of licenses and incentives to micro-enterprises that produce and supply ecological friendly inputs such as biological pesticides.

2 Exploring potential of (new) production and marketing systems

Existing and new production, processing and marketing systems should also be further documented, explored and disseminated, building on initiatives and innovations already developed by urban farmers. Research shows that the production potential of aquatic plants cultivated in Ho Chi Minh City and Hanoi (Vietnam) can be significantly higher than for fish culture in terms of average yields in kg/hectare. Rotation of aquatic plant species in Hanoi showed advantages in terms of higher yield and income per unit area compared to fish farming, while requiring fewer capital inputs. In terms of an income earning opportunity for poorer people, with a higher proportion of women being involved, aquatic plant cultivation could thus be viewed as an attractive and financially viable use of the limited available urban land. However, certain urban fish farming systems can still be sustainable, particularly where they can be integrated with other recreational or leisure activities. In Bangkok and Ho Chi Minh City, fish farmers have begun to produce ornamental fish, being an attractive option when food fish production suffers increasingly from water quality and food safety concerns. Specific production systems could be further developed through (tax)incentives, as provided in Ho Chi Min City to ornamental fish farmers. Adding value to aquatic products by different forms of processing, packaging and sales techniques -as is developing in Bangkok- should also be supported.

3 Supporting producer organisations

Producer organisations or cooperatives enhance the producers' possibilities to gain or improve access to resources, inputs, services and markets. Organisation is also critical for small urban and peri-urban producers to secure recognition, legitimization, representation and direct participation as urban actors in processes of negotiation and formulation of public policies and programmes affecting their well-being. Group/trade associations help to protect interests, and may, as shown by farmers in Bangkok, be instrumental in negotiating fair prices for producers or negotiating contracts directly with wholesalers and retailers, or help to promote general development of the sector.

4 Incorporating aquaculture in training curricula and extension programmes

In most situations peri-urban aquatic producers are lacking formal or non-formal extension, training and technology transfer. Governments and NGOs are thus far mainly interested and involved in more commercially related aquaculture development in provincial areas. Aquaculture, fisheries and agriculture training and extension institutions should pro-actively include and develop the concept of urban aquaculture within their curricula and programmes. As stated above, particular emphasis should be made on developing innovative methods and protocols for environmentally, socially and economically sustainable production systems, as well as on mechanisms and ways to strengthen producer organisations, that can be readily understood, taken up and practiced by peri-urban dwellers and producers.

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