

What's New in Aquaculture

News

Farms may be allowed to raise *Vannamei* shrimps

The Business Standard reports that the Indian Aquaculture industry might move towards producing *L. vannamei* for export markets, in a move similar to that seen in China recently. The species is currently being reviewed by the exotic species committee of the Ministry of Agriculture to determine its suitability. Some concerns have been raised over the possibility of introducing new viral diseases with imported broodstock. The full story is available from:

<http://www.business-standard.com/today/story.asp?Menu=22&story=20168>

Norway Donates \$2.18 Million for Vietnam's University of Fisheries

The Norwegian Government will provide non-refundable aid of 17 million kroner (\$2.18 million) to Vietnam for a project to improve the capacity of the Vietnam University of Fisheries between now and 2006. The project will help the university to improve its aquaculture research and training quality. It also aims to meet the country's urgent demand for human resources in the fisheries sector, and help the environment and aquaculture cultivation. *Source: Vietnam News Briefs, 26 June.*

Malaysia Expands Aquaculture Zones

Two thousand hectare in the Malaysian Merotai constituency will be gazetted as an aquaculture industrial zone to help further develop the sector and improve the livelihoods of rural communities in the area, according to Agriculture and Food Industry Assistant Minister Datuk Dr Patawari Patawe. *Source: New Straits Times-Management Times, June 12, 2003.*

Vietnam to Invest US\$ 11.7 million in Aquaculture Breeding Centres

The Vietnamese Ministry of Fisheries (MOFI) is investing US\$ 11.7 million to build five new aquaculture breeding centres and upgrade existing ones between 2002-05. The five new centres will be built in the provinces of Hai Duong, Dak Lak, Tien Giang, Hai Phong and Vung Tau. The expansion is a result of the increasing domestic demand for aquaculture products, especially in the north. The 107 breeding farms presently in the north only meet 30% of local demand, leaving local raisers to import from the central region.

In other Vietnamese aquaculture news, the southern central region, comprising Da Nang City and the five provinces of Quang Nam, Quang Ngai, Binh Dinh, Phu Yen and Khanh Hoa, plan to continue expanding their aquacultural activities until 2010, seeing aquaculture along with cash crop agriculture as a means of increasing economic development in the region. The region plans to expand its area to 33,000 hectare from its present 19,000. *Source: Vietnam News Briefs, May 30, June 3, 8, 2003.*

Vietnam's Ha Tinh Region Undergoes Shrimp Boom

American Technologies Inc (ATI), a US-based aquaculture and technology company, recently released 300 million baby shrimp into its central province breeding grounds to boost production. The company has so far invested US\$ 50 million in 2,000 hectare of unused land, which it has turned into lakes for breeding shrimp. The 300 million baby prawns (*tom he*) and black-tiger prawns (*tom su*) were released last week into more than 300 artificial ponds covering an area of 500 ha; this will be expanded to 700 ha by the end of 2003 and 2,000 ha by the end of 2004.

It is hoped that 1,000 tonnes of shrimp will be produced worth US\$ 6.7 million. The project has created a huge labour market for people in the harsh-

weather region. Thousands of local workers are now involved in the project with an additional 4-5,000 jobs to be created in the next few years. Many more jobs are also expected to be created in related sectors. Vietnam is now the sixth largest shrimp producer in the world (5%), with the US and Japan being its main markets. *Source: The Vietnam Investment Review, May 26, 2003; Vietnam News Briefs, May 29, 2003.*

Public Library of Science launches open access biology journal

With help from a \$9 million grant from the Gordon and Betty Moore Foundation and in-kind support from the Howard Hughes Medical Institute, has launched a nonprofit scientific publishing venture that will provide scientists with high-quality, high-profile journals in which to publish their most important work, while making the full contents freely available for anyone to read, distribute, or use for their own research.

PLoS Biology will compete head-to-head with the leading existing publications in biology, publishing the best peer-reviewed original research articles, timely essays, and other features. We will begin accepting papers on May 1st.

Visit <http://www.plos.org/cgi-bin/advocates.pl?email=a.maru@cgjar.org> to sign up. For more information visit www.plos.org or contact Harold Varmus at plos@plos.org. [*This is a great initiative please support it if you have an interest - Ed.*]

New Limits of Metal Consumption from Fish Set

The United Nations Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO) have announced limits for the amount of metals and chemicals that can be consumed in food, including cadmium and methyl mercury. The Joint Expert Food Committee for Food Additives and Contaminants (JECFA) reevaluated

previous studies and the risk assessments for the two metals. For Cadmium, the Committee decided that there was no case to change the advice of a maximum of seven micrograms per kilogram of body weight as a provisional tolerable weekly intake (PTWI). However, in the case of methyl mercury, the advice has adjusted the PTWI to 1.6 micrograms per kg of bodyweight from a previous figure of 3.3 micrograms/kg. This is to prevent adverse effects on developing fetuses in pregnant women. Some fish species, most notably swordfish and sharks, are known to be the most significant source of this chemical in food. However, in many countries fish plays an extremely large role in meeting nutritional requirements. The committee therefore stressed that public health authorities should take this into account when setting limits. *Source: Food and Agriculture Organisation of the United Nations [www.fao.org], July 2003).*

Aquaculture Groups Counter Claims of Adverse Effects of Shrimp Farming

Aquaculture groups have responded and countered the claims of environmental degradation and adverse social impacts made in a recent Environmental Justice Foundation (EJF) report on the issue of shrimp farming entitled "Smash and Grab" [<http://www.ejfoundation.org/reports.html#smashandgrab>] Whilst the Global Aquaculture Alliance (GAA) [<http://www.gaalliance.org>] recognises that in the past abuses have occurred, solutions in fact lie in working with groups such as the EJF to further improve farming practices and GAA has been doing so for some time. The GAA goes on to state that some of the figures in "Smash and Grab" were misleading or out of context. One key issue regarding the use of fishmeal in shrimp feeds is that, rather than exploiting a protein source that would usually be used in direct human nutrition, fishmeal is composed of small bony fish which are seldom utilised. Further to this, except for El Niño periods, the production of fishmeal has been stable for the last two decades. Shrimp farming also diverts fewer than 8% of what would normally be used for

pig and poultry feeds rather than human needs. Regarding the social injustices attributed to shrimp farming, GAA state that a critical goal of Bangladesh's new Seal of Quality Program is the regulation of child labour, in a country where 600,000 depend on aquaculture as a source of livelihood. Finally, regarding the issue of the waste and by-catch associated with the collection of wild caught young shrimp, this is being eradicated by the use of hatchery-reared stock. (Source: GAA Website, July 2003 [<http://www.gaalliance.org>]; AquaFeed.com, July 2003, Shrimp-Farming Report Strong on Attack, Weak on Facts). The GAA response to the report is available online from <http://www.gaalliance.org/issu4.html>].

90 Fish Extinctions in Bangladesh

According to an article in the Bangladeshi press, the nation's fisheries resources have been dramatically reduced, with as many as 90 of the original 254 freshwater species once found here extinct and others such as the national fish (Hilsa) severely depleted. This is thought to be due to a combination of factors, prime amongst them indiscriminate fishing activities, the siltration of rivers and pollution. There is now a negative gap between demand for fish and its production. The article states that more research, research facilities and personnel are required, and emphasis should be placed not only on increasing fish production but also increasing its quality. 12. *Source: The Independent, July 11, 2003; World Sources Inc, July 18, 2003.*

Bangladesh Shrimp Quality Certificate Planned

Asia's first shrimp certification training course is planned for August in Cox's Bazar, Bangladesh. The four-day event is organised by the Aquaculture Certificate Council (ACC) in cooperation with the Shrimp Seal of Quality (SSOQ) programme. The objective of the course is to produce qualified certifiers who will be able to assess and certify hatcheries, producers, processors and suppliers, ensuring that they are in compliance

with environmental, social and food safety criteria. 14 With the current media attention and increasing global concern over shrimp farming activities, it is thought that those who adhere to the criteria and international codes of conduct will have much more of an advantage on the international market. The Bangladesh Shrimp Seal of Quality Newsletter is available from the NACA website at <http://www.enaca.org/SOQ-Newsletter-Aug-Oct.pdf> A Seal of Quality is an internationally accepted quality assurance certification program for shrimp. It guarantees buyers that Bangladesh shrimp meet the hygiene, human rights, labour and environmental codes. The Seal is awarded to firms that meet the codes. Usually, the SOQ is owned by an industry association that polices its members. *Source: United News of Bangladesh, July 14, 2003.*

Vietnam Condemns US Catfish Dispute Decision; ITC Rules in Favour of US

Vietnamese businesses and producers have been quick to denounce the actions of the US Department of Commerce (DOC) following its recent decision that Vietnam does in fact dump catfish on US markets in an effort to undermine US catfish producers. The Ministry of Trade, Ministry of Fisheries and VASEP called it an "act of protectionism". It is feared that trade agreements and relationships between the two countries will be adversely affected as Vietnam sees the DOC decision as unreasonable and their calculations flawed, based as they are not on Indian production as was reported in past press releases, but Bangladeshi. It is also feared that this will lead to thousands of Vietnamese farmers facing bankruptcy. However Vietnamese organisations will endeavour to locate new markets to alleviate any adverse economic effects resulting from the ruling. The Ministry of Fisheries has also intervened and told Cuu Long (Mekong) Delta exporters not to try and reduce the purchase price of catfish, asking for businesses to be calm and to seek solutions together. The final decision in this saga was made by the US International Trade Commission, which agreed in a 4-0 vote that imports of

Vietnamese frozen fillets are injuring the domestic catfish industry. This vote clears the way for the imposition of stiff duties by the Commerce Department. It is estimated that 500,000 Vietnamese are involved in the catfish trade and the dispute has dominated the national press. Some US Senators who view the US action as trade protectionism are also now supporting their case. Meanwhile in the US, catfish producers have welcomed the news and the reassurance it gives their industry. The US farm-raised catfish industry employs more than 13,000 workers in Mississippi, Arkansas, Louisiana, Alabama and nine other states, and is the largest aquaculture industry in the United States. Often these workers are poor and marginalized. The Vietnamese Fisheries Minister has since stated that to combat the adverse effects of this situation, fish breeders of the Mekong Delta must begin to look towards other species to counteract the negative impact tariffs may have on aquatic exports, in addition to maintaining a high quality of product free of antibiotic residues. *Source: Asia Pulse, June 25, 2003; BBC Monitoring International Reports, June 28, 2003; Delta Farm Press, June 23, 2003; Herald Tribune, July 23, 2003; The Vietnam Investment Review, June 23, June 30, 2003; The Seattle Times, July 24, 2003; Vietnam News Briefs, June 24, 2003; The Washington Post, July 13, July 24, 2003.*

US Lawsuit over Claims of Shrimp Dumping by Asian Producers

Under Bill No. HR2406 submitted to the United States Lower House Committee for Ocean Seafood and Wildlife Preservati, Vietnam and other Asian shrimp producers could face dumping charges. Vietnam is one of seven countries, including Thailand, India, China, Ecuador, Indonesia and Brazil, accused of this practice. Additionally, the US Southern Shrimp Association (SSA) has met with legal representatives, the Duwey Ballantine Law Firm, to investigate and prepare for a lawsuit. *Source: Vietnam News Briefs, July 11, 2003.*

Search on for fish disease detection test

Australia's government-funded research body, CSIRO, is developing a test designed to detect a disease which could seriously affect Australia's burgeoning marine aquaculture industry. A team of CSIRO Livestock Industries' researchers at the Australian Animal Health Laboratory (AAHL) will establish techniques to detect the disease-causing agent - red sea bream iridovirus - which can wreak havoc on more than 30 species of fish.

Project leader, Dr Mark Crane, explains that while the virus has not been detected in Australia, it has caused serious fish-stock losses in Japan's marine aquaculture industry. "Snapper, tuna, red sea bream, sea bass, mackerel and yellowtail kingfish could all become infected," Dr Crane says. "This virus is therefore a significant threat to Australia's marine aquaculture industry." The tests we currently have available cannot reliably identify this virus."

"With so many fish species potentially adversely affected, and with the disease being listed internationally by the World Organisation for Animal Health (OIE), the Fisheries Research and Development Corporation (FRDC) has determined that developing tests for the virus is a priority."

Dr Crane and the team will develop tests to detect and identify red sea bream iridovirus in Australia. The tests should be ready for use in State Fisheries laboratories by the end of 2006.

Dr Eva-Maria Bernoth, Manager Aquatic Animal Health for the Department of Agriculture, Fisheries and Forestry - Australia (AFFA), says preparedness for an outbreak of an exotic aquatic animal disease is a crucial part of AQUAPLAN - Australia's National Strategic Plan for Aquatic Animal Health.

"Australia is fortunate to have an aquatic animal sector free from many diseases that occur elsewhere in the world," Dr Bernoth says. "To ensure it stays that way we need to continually enhance our diagnostic capability by adding new tests to our repertoire."

The project is supported with funds made available under the Federal Government's Budget Initiative,

'Building a National Approach to Animal and Plant Health'. It is managed through the FRDC's Aquatic Animal Health Sub-program.

Bangladesh Shrimp Foundation Formed

A newly formed shrimp foundation in Bangladesh intends to form a comprehensive database of information about the shrimp industry over the past 15 years, including training materials. This material will be available on an as-needed basis to any stakeholder in the industry, including service-providers, rights activists non-government organisations, or any other grassroots operators.

This autumn the foundation also intends to co-host a conference on "Application of Standards and International Codes of Conduct in Aquacultural Extension of Developing Countries" with the Network of Aquaculture Centres in Asia-Pacific (NACA). It is hoped that this will lead towards the building, operating and transmitting of a certificate system of quality control in the prevailing conditions of limited infrastructure and thousands of small-scale farmers. UN organizations like the FAO and international certifying bodies will take part in the conference.

In Bangladesh, shrimp is a major export item. However, despite the speed of growth of shrimp culture, it has remained controversial due to socio-economic and environmental problems and is under mounting international scrutiny and criticism, particularly in the UK press. To compound this issue, the lack of knowledge on technical issues such as fry catching or breeding also presents problems.

The foundation will therefore focus on socio-economic problems and quality control issues, which can cause concern to importing countries and international buyers and, as a consequence, the conference intends to involve such bodies or their representatives in the proceedings. *Source: The Independent, May 27, 2003.*

Cambodia's Fisheries Value Recognised

Fisheries in Cambodia are now more valuable than the country's rice crop, according to recent data compiled and released from the Ministry of Agriculture's Department of Fisheries. Fisheries accounted for 12% of gross domestic product (GDP) in 2001, represented by some 400,000 tonnes, whilst rice accounted for only 10%. This compares with fishery production estimates of 60,000 tonnes in 1984.

The increase is thought to be due in part to improved methods of accounting for fisheries catch and consumption, as prior to the survey the catch estimates were a result of guesswork. The new approach is based on consumption; an average Cambodian consumes 30-40 kg per year. The findings are discussed in a report presented to the Mekong River Commission (MRC). It is hoped that these new figures will go some way to improving fisheries resources within Cambodia as they clearly demonstrate its importance. The previous low estimates have led to pollution and the destruction of fish populations as their importance was often overlooked. It is also thought that the importance of fisheries is underreported in Thailand and Vietnam. *Source: STREAM Cambodia Communications Hub, June 2003; The Cambodian Daily, June 2003.*

New products

New Smart Material Beats Aquaculture Fouling

A new smart material promises considerable aid in the search for the consistent meaty, well-formed oyster. It comes in the form of a traditional shaped oyster tray which is manufactured with new smart materials - specially designed polymers (plastics), that contain slow release, harmless biodegradable antifouling chemicals.

This new material can be used in the fabrication of grow-out trays used in the oyster industry. The technology can be readily applied to the highly productive method of off-the-bottom culture of single oysters, using trays suspended from rafts and long lines.



The smart oyster tray has anti-fouling properties

It is well known that adequate water flow through the tray is critical to obtain maximum growth rates for the oysters. Poor flow means less nutrients and lower grade, less meaty oysters. The build up of algal blooms on culture substrates can restrict good water flow and the supply of nutrients to the growing oysters.

With algal bloom comes colonisation by other "fouling organisms" eg: mussels, barnacles, tunicates, tube worms (polychaete annelids), bryozoa (either branching or flat and encrusting), hydroids (a small branching organism related to jellyfish and sea anemonies) and encrusting sponge. An abundant growth of these organisms soon means stiff competition for available food supplies and the solution, until now, has been much labour intensive activity to keep fouling at bay.

Fouling can be removed at harvest either by hand or by low or high-pressure hose washing, however it is highly labour intensive work.

The CSIRO/CRC Aquaculture Smart Oyster Tray

The CSIRO/CRC Aquaculture Smart Oyster Tray offers a solution to these problems and promises higher-grade oyster and shellfish production. The Smart Oyster Tray is a high-density polyethylene, which contains an environmentally benign antifouling

chemical agent within the polymeric matrix which is slowly released over time.

The development of this material required the identification and selection of a new antifouling polymer suitable for injection moulding and compatible with the antifouling agent. This was then manufactured for extensive field-testing. It was designed by a team of research scientists from both CSIRO and Australia's Co-Operative Research Centre for Aquaculture. The scientists involved in the development work of this new smart material have several years experience in the development and design of materials with increased functionality and have a high degree of success in the food and beverage packaging material market.

The antifouling chemical agent is an environmentally safe organic compound, which degrades in seawater in a matter of hours and does not bio-accumulate in marine species. This simple system prevents the attachment of algal blooms and other fouling organisms to the surface of the polymer. This product has applicability to the culture of edible oysters, pearl oysters, abalone and prawns.

Successful Testing & Trials

Toxicity testing with shellfish was conducted at the Tasmanian Aquaculture and Fisheries Institute



Field trials of the smart oyster tray

(TAFI) in Taroona, Tasmania. No adverse effects were found in shellfish exposed to the antifoulant, even at levels greater than the expected environmental concentrations.

The photographs show CSIRO's/CRCAquaculture antifouling polymers free of fouling after immersion for 125-days. In all trials the polymers are immersed as cylindrical structures because these foul faster and more uniformly than flat test panels.

This material has been successfully fabricated into oyster trays on a commercial scale. The antifouling agent and high density polyethylene was pre-compounded and processed into trays using standard industrial injection moulders.

CSIRO is currently interested in discussing the development of its technology for commercial use with parties with an interest in the manufacture and marketing of aquacultural products.

Applications for the CSIRO Smart Oyster Tray are likely to extend to other shellfish farming, nets used in aquaculture and underwater farming infrastructure.

For more information contact Dr Veronica Cross, CSIRO Novel Materials & Processes, Tel: 61 3 9545 2978, Email veronica.cross@csiro.au.

New publications

CD-ROM: Investigating Improved Policy on Aquaculture Service Provision to Poor People

The STREAM Initiative (Support to Regional Aquatic Resources Management) has released a multimedia CD containing the outputs of a DFID funded project on improving aquaculture service provision to the poor.

Four video documentary case studies are included (in Hindi with English subtitles) with interviews and perspectives from both aquaculture service providers and recipients in rural communities. These include a case study on support for poor and scheduled caste groups in Jharkand; a successful tribal village conducting aquaculture; recipients experiences of services provided by NGOs in support of poor and tribal groups; and service providers perspectives on the implementation of government schemes in support of aquaculture. The documentaries are accompanied by reports and powerpoint presentations.

A full video (50 minutes) of a street play "Majajal – the Big Fishing Net" is included, which was performed at the policy review workshop in Noida, Delhi. The play is in Hindi. Both English and Hindi scripts are provided.

A full set of the project publications are included in PDF format including outcomes of the stakeholders

workshops, lessons learnt and review of progress towards policy change.

System requirements: Windows media player and Acrobat Reader.

Available from the NACA Secretariat, email publications@enaca.org or see our contact details on page 1.

CD-ROM: STREAM Publications November 2001-June 2003

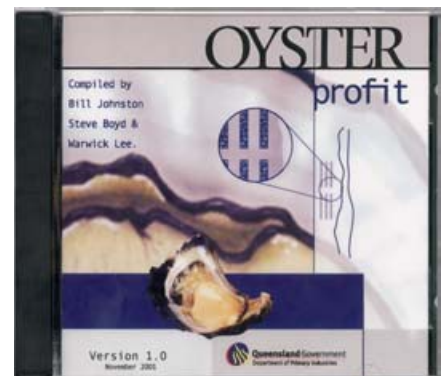
This CD contains a complete set of publications produced by the STREAM Initiative (Support to Regional Aquatic Resource Management). There are more than 100 documents including workshop reports, case studies and a monthly Media Monitoring service in PDF format. Most of the publications are in English but some (such as the media monitoring reports) are also translated in local languages including Vietnamese and Khmer. System requirements: Acrobat Reader.

Available from the NACA Secretariat, email publications@enaca.org.

CD-ROM: Oyster Profit

Oyster Profit is an economic and information package for oyster farmers. The main feature is a piece of software - 'Oyster Profit' – designed to help farmers accurately forecast production costs, cash flow and (hopefully) profits. You enter very detailed information about your costs (including spat, nursery, labour, shellfish safety, freight) production and markets (prices, sales) into a series of detailed spreadsheets and the program calculates a detailed break down (tables and graphs) of your

Continued on page 52



should be educated on the importance of chlorination of contaminated water before it is released into the creek and on developing favorable attitudes towards fellow farmers. Establishment of disease diagnostic centers at coastal villages, technical assistance by the scientists, SDF personnel, speedy settlement of legal hurdles, institutional credit and insurance and provision of electricity on nominal charges were the other suggestions.

Conclusions

Shrimp farming is successfully practiced in East Godavari District although with some constraints. The farming system in the district has unique features such as buy-back arrangements between the farmers and feed traders, mixing of borewell and creek waters with fresh irrigation water for culture, use of extensive and intensive feeds and integrated shrimp cum coconut - paddy farming. Private input dealers continued to be the prime information sources and disease outbreaks appeared to be the major threat to shrimp farming. In this connection it was suggested that a mechanism for seed certification by the State fisheries department has to be developed to ensure healthy shrimp seed. Shrimp aquaculture has contributed significantly in employment generation and infrastructure development of the coastal community and over all development of coastal areas. Since all strata of the coastal community are involved in one or other aspects of shrimp farming directly or indirectly there is no conflict or complaint against shrimp farming. But the conversion of agricultural fields to shrimp ponds has to be checked and shrimp farming should be regulated.

Acknowledgement

The authors are grateful to Dr.G.R.M.Rao, Director, of the institute for his encouragement and guidance. They are also thankful to Dr.N.Kalaimani, Head, Extension Division for his suggestions.

Continued from page 47

expected production output, cost structure, cash flow and economic indicators including the rate of return and your required break even point. You can also use the software to model the financial impact of a change in your business environment. If, say, the cost of labour goes up or the market price of oysters changes you can quickly see how it will affect profitability.

The CD includes a quite detailed reference section which contains licensing kits; contact information for farmers associations and government authorities; several species profiles and research notes including farming of triploid Sydney rock oyster and the native *Ostrea angasi* oyster; and several reports including a strategic plan produced to guide the development of the industry and the an operational review of the NSW Shellfish Quality Assurance Program.

The software was developed as a joint project by NSW Fisheries, the NSW Oyster Research and Advisory Committee, NSW Department of State and Rural Development and the Queensland Department of Primary Industries, Australia.

Available from the QDPI Online Shop, <http://dpishop.dpi.qld.gov.au/bookweb/details.cgi?ITEMNO=9780734501639>

Conclusion: We like it, a very useful decision making tool for oyster farmers. Cost AUD\$ 220, Recommended.

CD: FAO Field Project Reports on Aquaculture: 1966-1995

We love this CD, it is a goldmine of information covering 1,712 reports produced by 257 FAO aquaculture field projects between 1966 and 1995. Many are included as full text documents including a complete set of 92 publications produced by NACA from inception to 1995 plus another 48 from the Asia Sea-Farming Development and Demonstration project. The CD has a lot of early information and training manuals on culture of shrimp, freshwater prawns and Asian seabass, and many publications on integrated aquaculture including a training manual from the Asian-Pacific Regional Research and Training Centre for

Integrated Fish Farming, Wuxi, China.

Other Asian projects covered include the Bay of Bengal Programme, the South Pacific Aquaculture Development Project and many others. The CD also covers FAO projects in other regions of the world. Conclusion: Highly recommended - you can't get this information anywhere else.

Available from FAO, contact Sales and Marketing Group, Publishing and Management Service, FAO Information Division, Viale delle Terme di Caracalla, 00100 Rome, Italy. Fax +39, 06 5705 3360, email Publications-Sales@fao.org, or view their online catalogue at www.fao.org/icalog/inter-e.htm.

CD: Simple Methods for Aquaculture

This CD contains five training manuals on Simple methods for aquaculture and the Handbook on small-scale freshwater fish farming. The manuals are written in an easy-to-read style focusing on the practical aspects of semi-intensive fish culture in freshwaters from site selection and fish farm construction to the raising, final harvesting and marketing of the fish. They present methods and equipment useful not only to those responsible for field projects and aquaculture extension but also for use in aquaculture training centers. The manuals included are: i) Water for freshwater fish culture; ii) Soil and freshwater fish culture; iii) Topography for freshwater fish culture iv) Pond construction for freshwater fish culture; v) Management for freshwater fish culture and vi) Handbook on small-scale freshwater fish farming. The manuals are in HTML format with many illustrations.

The CD slipcase includes a brief summary of how to set up the CD and how to browse the manuals and the entire contents is also available in both French and English. Conclusion: Recommended – a well presented training package. System requirements: Pentium I with 16MB RAM, 14" monitor, CD drive and Windows 95+.

Available from FAO, FAO Information Division, Viale delle Terme di Caracalla, 00100 Rome, Italy. Fax +39, 06 5705 3360, email Publications-Sales@fao.org.