

# STOCKING AND INTRODUCTION OF FISH IN LAKES AND RESERVOIRS IN THE ASEAN COUNTRIES pdf

## 1: Trout in Lakes | Fishing in BC | Fishing with Rod

*Additional Physical Format: Online version: Balayut, Elvira A. Stocking and introduction of fish in lakes and reservoirs in the ASEAN (Association of South Asian Nations) countries.*

Return to Home Page 1. Should I stock a newly constructed pond? It is not recommended to stock a newly constructed pond the first year, unless you are going to feed the fish. Will I need to worry about an over-population of fish in a few years? Bluegill are the prey specie for largemouth bass, and at times for channel catfish. Bluegill are a major part of the bass diet. Bass will keep bluegill poulations in balance. However, harvest is necessary at times to promote satisfactory growth in the adult of both species. If you do not harvest some bluegill and largemouth bass each year, their populations will become unbalanced with an over abundance of small, stunted fish. Or, if you fish mainly for largemouth bass and channel catfish, remember to fish out a balanced number of the bluegill or they will eventually over-populate your pond. What can I do other than chemicals to control pond weeds? White amur are plant eating members of the minnow family. They are native to Russia and China, but have been introduced through stocking programs to more than fifty countries around the world. Their introduction to the states was for food and weed control study and use. What do white amur eat? Leafy, rooted aquatic vegetation, such as coontail and pondweed are their preferred foods. If these are absent, amur will consume whate4ver aquatic vegetation is available. However, weed control does not happen overnight. Weed control is best displayed after the amur have spent 1 to 2 years in a pond. White amur do not prey on other fish populations, they are plant eaters. What are sterile white amur, and why are they the only form legal in Ohio? The sterile, or triploid, form of white amur have an extra set of chromosomes in each body cell. This extra set of chromosomes prevents them from successfully reproducing, otherwise they are the same as the diploid non-sterile white amur. Because of the potential for habitat destruction, it will remain illegal in Ohio to introduce non-sterile white amur to any waters. It is also illegal for the public to introduce any white amur to public waters rivers, streams, lakes and reservoirs. How many white amur should I stock to control weeds in my pond? When determining the stocking rate of sterile white amur, the percentage of pond covered by vegetation types and quantities should be determined. If the vegetation in your pond is primarily milfoil, marsh grass, pondweed, or naiad, the following stocking rates are advised.

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## 2: Reservoirs of Sri Lanka and their fisheries

*Stocking and Introduction of Fish in Lakes and Reservoirs in the ASEAN (Association of South Asian Nations) Countries, Food and Agriculture Organization of the United Nations Author Elvira A. Balayut.*

The high quality of trout fishing in lakes is only possible thanks to the Freshwater Fisheries Society of BC , which is responsible for operating five trout hatcheries and stocking hundreds of lakes in this province. Rainbow trout are native in British Columbia. Although natural populations can be found in some lakes where they are interconnected with larger drainage systems via their tributaries, many lakes in fact do not have fish in them originally. The type of trout stocked at each lake depends on the biology of the lake. Biologists analyze the food availability, water temperature, oxygen level and general health before determining what and how many should be stocked in a lake. Urban Lake Fisheries Urban lakes, or lakes that are close to the city, are stocked with rainbow trout at what is known as "catchable sizes". These trout are raised to around grams before being released so they can be caught and enjoyed immediately by anglers. Urban lakes often experience high fishing pressure, so ongoing stockings throughout spring and fall are done to meet this demand. Most urban lakes have low food availability so stocked trout often do not grow much bigger than their release size. It is a fishery designed for entry-level anglers, families and those who wish to do some fishing without having to travel very far. Fishing at these lakes can be done year round, but the best time is spring and fall when water temperature is ideal and stockings are done. It is a convenient fishery where parents can bring their kids to, cast out a bobber and worm, and expect to catch at least a few trout during each outing. Beside natural populations of aggressive rainbow trout, hundreds of lakes are stocked with trout that can weigh up to 10lb! Due to high insect productivity at these lakes, stocked trout are able to reach 2 to 5lb after spending one year in them and continue to grow if not harvested by anglers. These trout are exceptionally strong because they are well fed and healthy. In the winter time, they can be caught by ice fishing. Ice fishing is a very social activity, which brings families and friends together. While the catching is fun, it is not always about the fishing, but about the food, gathering and good times. Between spring and fall, trout enthusiasts head to their favourite lakes in search of the biggest trout in their lifetime. Fly fishermen match the hatch and can often outfish anyone else. If fish are feeding on the surface, dry flies are used. If chironomids are emerging from the lake bottom, then fishing with an indicator and a suspended wet fly is preferred. Trolling on a boat is also productive for those who do not fly fish. Depending on how far the lake is from your residence, a day trip is usually not possible for this fishery. The best approach is to spend a couple of nights by combining camping by the lake. While some lakes can be quite remote and difficult to get to, many lakes are located in provincial parks where camp sites are available. A boat is often needed when fishing at interior lakes, but designated family fishing lakes have docks set up so you can fish from them. British Columbia does not have a shortage of large lakes. These lakes are deep and their residents are the infamous Gerrard rainbow trout and bull trout. These two predatory species, feed on small fish such as kokanee, so they can grow to a tremendous size. Fish in the 10lb and 20lb classes are not unheard of. Fishing for them usually requires a larger boat, where you troll plugs and spoons as if you are fishing for salmon in the ocean. Target Species Rainbow trout come in many strains. A strain is also known as a variety. Wild rainbow trout found in different rivers are not similar to each other because they have adapted to the environment where they have inhabited in over many generations. Each river produces an unique variety, or strain, which is only successful under certain conditions. In British Columbia, several strains of rainbow trout are cultured at the hatcheries so the appropriate strain is stocked in suitable lakes. Fraser Valley rainbow trout are raised and stocked in urban lakes due to their fast growth rate. They are also stocked in lakes that have experienced winter or summer kills so the fishery can be revived within one year. A Fraser Valley rainbow trout, released at g in a highly productive lake, can reach 5lb within one year since its release. They are usually heavily spotted and rarely jump when being caught. In most fisheries where Fraser Valley rainbow trout are present, they can be caught by almost any fishing method because they seldom

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discriminate when feeding. Blackwater rainbow trout are mainly stocked into lakes where other fish species such as minnow are present due to their survival success under this competition for food and space. Their long, streamlined body has a heavily spotted back and tail. Their fight can be powerful, mixed with the odd jumps. While flies that imitate insects work great for Blackwater rainbow trout, they also will strike a lure at times. Pennask rainbow trout are by far the favourite strain for most lake fly fishermen. Their fight is spectacular due to their multiple jumps and long powerful runs. Their body has very few spots compared to the other strains. Although catching them can be very enjoyable, luring them to bite can be a frustrating process at times. Their diet is primarily made up of insects, so finding the correct fly to match the hatch is extremely important if you wish to be successful. Beside rainbow trout, anglers in British Columbia also have the opportunities to target cutthroat trout, kokanee and brook trout. Natural populations of cutthroat trout are usually found in lakes which drain into coastal streams. They are also stocked in some lakes along the coastal region. Kokanee are landlocked sockeye salmon. Self-sustaining populations of kokanee are found in some lakes in Region Two, Three and Eight. They are also stocked yearly in some larger lakes. Brook trout, or Eastern brook trout, are not native in British Columbia. Stocked populations are mainly found in Region Three and Four.

**Getting Started** If you have never tried lake fishing in British Columbia, then the best thing to do is to give one of the urban lakes a try. To maximize success, you should also check the catchable rainbow trout stocking database so you can time your outings around when fish are being released. Once you have become familiar with catching trout at urban lakes, then it is time to travel a little further and experience some world class trout fishing. Visiting a new lake can be intimidating, so you should do as much research as possible prior to your trip. Ask your local tackle store about the lures and flies that you should have at a particular lake. It also does not hurt to ask how the fishing has been. Try choosing a lake where a resort is available. More often than not, the owner or caretaker of the resort is an avid angler and can help you out if it is your first time. If you plan to fish from a boat, then you should make sure that you have all the required safety equipment and your boating card. Safety should be your number one concern. A depth sounder is very useful for determining where the shoals and drop-offs are, which is quite important for finding feeding fish. If you plan to anchor, then be sure to have a double anchor system. An anchor at the front and one at the back of the boat prevent you from spinning when the lake is windy. Good luck, stay safe and enjoy exploring all the fantastic lake fishing opportunities in British Columbia!

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## 3: Silver Carp (*Hypophthalmichthys molitrix*, Val. ) Stocking in Lake Kinneret (Israel)

*Stocking & Introduction of Fish in Lakes & Reservoirs in the ASEAN Countries by E A Baluyut, Elvira A Balayut starting at \$ Stocking & Introduction of Fish in Lakes & Reservoirs in the ASEAN Countries has 1 available editions to buy at Alibris.*

The major commodities produced are seaweeds, milkfish, tilapia, shrimp, oysters and mussels in extensive, semi-intensive and intensive culture systems in ponds, pens, cages and open coastal waters. Eco-friendly fish farm management is applied in brackishwater ponds for the culture of milkfish and shrimp. The negative impacts of intensive shrimp farming brought about by diseases due to "self-pollution" have been successfully addressed with technological innovations. Good management practices are needed to reduce the losses in freshwater and marine cages and pens attributed to heavy organic loading of open waters that result in massive fish kills. Ecological enhancement of production systems has been achieved with genetic improvement of species, disease prevention, and use of substitutes for "trash fish. Eco-friendly, Fish Farm Management, Aquaculture Foods, Food Safety, Philippines Introduction Aquaculture or fish farming is an age-long industry in the Philippines that dates back to the pre-colonial period in the s Rabanal, In , the aquaculture sector of the country contributed The major aquaculture commodities produced are seaweeds, milkfish, tilapia, shrimp, oysters, mussels and carp Table 2 While the Philippines is a net importer of foods i. Fish and other aquatic products comprised 56 percent of the total animal protein consumed by Filipinos on a daily per capita basis in The aquaculture sector is estimated to provide livelihoods to over one million Filipinos and contributed 1. Fish farming in the country is done in extensive, semi-intensive and intensive culture systems in ponds, pens, cages and coastal waters. In , brackishwater ponds produced the bulk of total fish production followed by freshwater ponds, freshwater cages, freshwater pens, marine cages and marine pens Table 3 With the increasing demand for fish for human consumption and other aquafarmed products for supplying export markets e. For sustainability, aquaculture or fish farming should be "technically appropriate, economically viable, socially acceptable and environmentally sound" FAO, This paper shall review the eco-friendly fish farm management and production of safe aquaculture foods in the Philippines. For purposes of this paper, only eco-friendly traditional and innovative management practices will be discussed with insights on technological, environmental and socioeconomic concerns. Brackishwater Ponds The extensive culture of milkfish *Chanos chanos* with other brackishwater species as shrimps *Penaeus monodon* and *Metapenaeus ensis* and mudcrab *Scylla* spp. Yields of such ponds are 0. An innovation that has enhanced the productivity of milkfish in brackishwater ponds is the modular system introduced in the s. The system consists of a series of ponds with progressively increasing areas e. Control of snail pests e. *Cerithidea cingulata* and fish predators such as the tarpon *Elops hawaiiensis* and tarpon *Megalops cyprinoids* in brackishwater ponds in the past was with non-environmentally friendly organo-phosphate and tin-based chemicals which are now banned. The eco-friendly pesticides now recommended are the imported metaldehyde for snails and tea seed cake powder for fish. The former is a highly selective molluscicide that is readily degraded and non-toxic to fish. With the intensification of tiger shrimp *Penaeus monodon* culture in the s, viral and bacterial diseases came about in the s due to "self-pollution" and decimated the shrimp farming industry. From a high production of 90, metric tons in , the production dropped to 25, mt in In Negros Occidental, the leading province in the Philippines for intensive shrimp culture, only 20 percent of the 2, hectares of ponds was operational due to vibriosis caused by *Vibrio harveyi*. The use of antibiotics e. With the indiscriminate use of such chemicals, the potential hazard to human health and possibility of bacterial resistance development have been of major concern. The use of antibiotics for shrimp culture in the country is now discouraged, if not prohibited. Through eco-friendly methods such as the use of reservoirs with "green water," probiotics, sedimentation ponds with biofilters, and recirculating water systems, the prevention of virulent bacterial outbreaks has been possible. Disease prevention is much dependent on good environmental management Corre et al. Water in the reservoir is

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allowed to settle for at least seven days. The fish can also be stocked in a cage inside the shrimp pond. Probiotics are beneficial bacteria capable of repressing the growth of pathogenic organisms either through the production of inhibitory substances or by competition Moriarty, Regular application of probiotics is done to maintain the desired population of good bacteria and improve water quality. Sedimentation of water treatment ponds and canals, which are percent of the shrimp culture pond area allow the settlement of bacteria-laden organic matter in the effluent before it is released to the outside or recirculated back to the reservoir. The use of biofilters like seaweeds and oysters as "clean-up agents" in the discharge water is also applied. The cost and return analysis for the use of a reservoir and probiotics for a one-hectare intensive culture pond showed that the return-on-investment was The screening of shrimp postlarvae for detection of viral pathogens using the polymerase chain reaction PCR technique in laboratories of the Philippine Bureau of Fisheries and Aquatic Resources BFAR and other institutions has helped in mitigating the spread of viral diseases in the country. Freshwater Ponds The Nile tilapia *Oreochromis niloticus* is the main species produced in freshwater ponds with an area of 14, hectares, production of 71, mt and productivity of 4. The fish is largely grown in earthen ponds 0. No serious disease outbreaks of Nile tilapia ponds have occurred in the country. Fish mortalities, however, have been reported in areas where poor management practices e. In , the bighead carp became the dominant species cultured in the fishpens of Laguna de Bay because of its ability to extract the natural food in the lake more efficiently than milkfish. The Nile tilapia is also the dominant species cultured in freshwater cages, structures made of net enclosure with bottoms that are either suspended or floating in shallow or deep lakes. Productivity of the cages 10 by 10 by 5 to 12 by 12 by 8 m was estimated to be The overstocking and overfeeding of the fish in cages in Lake Taal have resulted in fish kills due to heavy organic loading that has caused dissolved oxygen depletion with water quality deterioration and lake overturns. De la Vega recorded 2. The need for regulating the number of cages and the culture management practices of cage farmers has been strongly advocated by authorities. Guidelines for the establishment of fish cages in lakes and coastal waters have been formulated to provide local government units and operators with information for making cage farming "sustainable, socially acceptable and environmentally sound" Querijero et al. The technology for marine cage culture of milkfish was first demonstrated by the private sector using m diameter circular cages with depths of m from Norway. With stocking of , fingerlings 5g mean wt. With the initial success, there followed a boom in the cage and pen culture of milkfish in the coastal waters of Pangasinan in Luzon, Philippines. Mariculture zones throughout the country have been identified by the BFAR. However, there are constraints on the availability of fry for stocking and trash fish for feeding as well as diseases, particularly for the growing of groupers. Cultured red macroalgae or carrageenophytes i. *Kappaphycus* and *Eucheuma* represent more than 70 percent of the total aquaculture production of the country and are among its top exports. Oysters and mussels, on the other hand, contribute only 1. Seaweed farming is relatively simple with the growing of seedstocks or cuttings attached to plastic monolines suspended in the open sea. The plants are grown without the benefit of artificial fertilization and are harvested after only days depending on the locality, season and plant variety. A more eco-friendly method of seaweed culture is the use of floating rafts in deep waters. This method is non-destructive to the bottom ecosystem and produces percent more yield compared to the bottom method because of the better water quality, lesser predation of rabbitfish and reduced fouling by other plants that compete with the seaweeds for nutrients and sunlight. Varietal selection of red seaweeds has been done for improving growth rate, disease resistance and carrageenan yield of cultured plants. In field tests, *Kappaphycus* Sacol variety had the best growth and resistance to "ice-ice" a disease related to adverse environmental conditions such as high temperature and poor water circulation in Batangas and Bohol. In Tawi-Tawi, the *Eucheuma* cultivars had faster growth compared to the *Kappaphycus* cultivars. In terms of carrageenan yield, the *Kappaphycus* Sacol-Bohol variety gave the highest yield in Batangas followed by the local K. Oyster farming has been practiced in the Philippines since the early s. In the traditional culture method, bamboo poles are staked to the bottom for attachment of the oyster young spats that grow to marketable size in six to eight months. A production of 2. The use of rafts for the hanging culture method for

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oysters is more eco-friendly than the stake method because it causes less siltation and pollution on the ecosystem. Contamination of oysters with domestic sewage and pesticides in the effluent of fishponds is a food safety concern in certain areas. Traditional green mussel *Perna viridis* farming in Manila Bay is similar to that for oyster culture using bamboo poles that are staked to the bottom at a spacing of 2 meters. An innovation in mussel culture developed by a Filipino farmer is the use of the net method which is more productive and efficient than using bamboo poles alone. The method uses only 2, bamboo poles for hanging the polyethylene net 4-inch mesh in the sea compared to 5, poles in the old method. The yield with the new method is 30 tons of mussels more per hectare compared to that of the old one. Moreover, the nets last much longer than the bamboo poles Guerrero, The occurrence of "red tides" caused by harmful algal blooms e. *Pyrodinium bahamense* in some areas of the country has adversely affected mussel farming. With the progress achieved in the hatchery production of juveniles of the sea urchin *Tripneustes gratilla* and abalone *Haliotis asinina* in the country, culture of the same in grow-out cages with feeding of the macroalgae, *Sargassum* and *Gracilaria*, is now being piloted for commercialization in the coastal waters of Pangasinan for sea urchins Juinio-Menez et al. Integrated Farming Systems Integrated farming systems that utilize the resources and enhance the benefits of two or more culture methods are efficient and cost-effective. The integration of aquaculture with other production systems as agriculture and forestry has been widely applied in the Philippines. A 1, sow level hog farm in Negros Occidental does not pollute the environment by utilizing its wastes for biogas generation and tilapia production. With natural food produced in the ponds through controlled organic loading, the sex-reversed fish grow to an average market-size of g each with a survival of percent in four months. The integration of mangrove forests with aquaculture has been promoted by the Aquaculture Department of the Southeast Asian Fisheries Development Center to reduce the impacts of aquafarms on the environment. Primavera reported that the culture of seaweeds, mollusks and fish in cages in sub-tidal waterways is compatible with mangroves and amenable to small-scale farming operations. The ecological role of mangroves is manifold. Aside from the many forest products that they provide and the vast biodiversity that thrives in them, mangroves serve as a vital nursery ground for a host of crustaceans, mollusks, fishes and other organisms, and as a "carbon sink. The use of mangrove filters for absorbing effluents of intensive shrimp culture ponds is now highly recommended in the region Primavera, ; Baliao and Tookwinas, It has been estimated that 2. Mangrove to pond ratios of 7. Among the mangrove-friendly aquaculture systems tested, the pen culture of mudcrab *Scylla* sp. The use of fisheries by-catch or trash fish for aquaculture particularly for the feeding of carnivorous species such as catfish, grouper and mudcrab is considered non-sustainable. Conversion of trash fish into processed foods for human consumption is believed to be a more efficient way to utilize such a resource Anon. A substitute for trash fish commonly used by fish farmers in the Philippines for the feeding of shrimp, prawn, mudcrab and carnivorous fishes is the P. The snail is gathered by-hand from infested areas and sold fresh to fish farmers who process it for feeding to cultured species. The regular supply of the snail, however, is not ascertained and its contamination with rice pesticides is a possibility. Another potential substitute for trash fish that is of high quality and economical to produce at the level of small-scale farms are composting earthworms e.

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## 4: Fisheries | ASEAN Investment

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The structure of the salmonid production and development in Nordic countries. Criteria for the selection of suitable sites for coastal fish farms. Engineering aspects and problems in the design and construction of fish pens and fish cages in Laguna Lake, Philippines. Seaweed Farming for Rural Development: Planning for aquaculture development. Management of coastal lagoon fisheries and aquaculture in Italy. Manual on pond culture of penaeid shrimp. Ministry of Foreign Affairs. The fish pen industry of the Philippines: Tigbauan, Iloilo, Philippines, February National reviews for aquaculture development in Africa. A regional survey of the aquaculture sector in East Asia. An Overview of the Philippine Fisheries Sector. Cage and pen fish farming. Carrying capacity models and environmental impact. Reservoir fishery management and development in Asia. Nursery and grow-out operations and management of milkfish. The Philippine Aquaculture Industry. Are sugarmills polluting prawn farms in Negros? Aquaculture Development in Singapore. Site selection, structural design, construction, management, and production of floating cage culture systems in Malaysia. Nursery and grow-out operation and management of *Penaeus monodon* Fabricus. The reservoir fishery of Asia. Net cage culture of *Lates calcarifer* Block and other marine animals in Thailand. Havana, Cuba, January Fish pen design and construction. State and future development of marine extensive fish culture in European and Mediterranean countries. Ocean ranching and restocking. Species selection for pen culture and sources of stock. Some notes on site selection for coastal fish farms in Southeast Asia. Textbook of fish culture. Breeding and cultivation of fish. London, Fishing News Books Ltd. Engineering aspects of brackishwater aquaculture in the South China Sea Region. Some considerations for the management of coastal lagoons and estuarine fisheries. Some potential environmental effects of coastal aquaculture with implications for site selection and aquaculture engineering. An improved traditional shrimp culture technique for increasing pond yield. An Eastern perspective of aquaculture. The biology and artificial propagation of farm fishes. Aquaculture development in Malaysia. A review of reservoir fisheries in China. Management and maintenance of fish pens in Laguna de Bay. Report of the training course on small-scale pen and cage culture for finfish, Laguna, Philippines and Aberdeen, Hong Kong, 26 October November Perspectives on ocean ranching of Pacific salmon. Salmon ranching in Alaska. Academic Press Mito, S. Aquaculture Development in Japan. The European and Hungarian results of cage culture of fish. Experiments on raising quality fish seed in floating nurseries and its role in aquaculture in India. A regional survey of the aquaculture sector in the Pacific. Engineering problems in sea farming in the Philippines. Third world aquaculture and the environment. January Rabanal, H. Development of the aquaculture industry in Southeast Asia. Fish cage culture in the town of Jambi, Indonesia. The use of aquatic plants as feed for *Tilapia nilotica* in floating cages. Aquaculture in Latin America. Ocean ranching of abalone and scallops in northern Japan. Management systems for riverine fisheries. Status, potentials, and constraints to development of coastal aquaculture in Asia. Cage fish culture in Nepal. Mussel and Oyster Farming. Raft culture of mussels. Report of the training course on small-scale pen and cage culture for finfish, Laguna, Philippines, October and Aberdeen, Hong Kong, November The feasibility of oyster and mussel farming by municipal fishermen in the Philippines. Cage culture in Thailand. Seaweed farming for rural development: Seaweed culture in the Asia-Pacific region. Review of the status of aquaculture in the Philippines. Thematic Evaluation of Aquaculture. Eucheuma farming in the Philippines. A review of the present state of fish cage culture in the Baran District of Sarawak. An evaluation of the acadja method of fishing as practiced in the coastal lagoons of Dahomey West Africa. Fishery management in large rivers. Manual on mussel farming.

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## 5: Eco-Friendly Fish Farm Management and Production of Safe Aquaculture Foods in the Philippines

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First, suitable reservoirs should be selected using physical and biological criteria. Amarasinghe says that CBFs are suitable for small reservoirs of less than 30 hectares, which would otherwise not be able to support a commercially profitable fishery. The number of fingerlings to be stocked – the stocking density – are considered, as well as which species of fish are most suitable. Water bodies that are abundant in water plants may not be suitable because plants use up nutrients in the water and inhibit algae growth. Algae are a major food source for fish and their reduction affect fish stocks. Water plants can also be a problem when harvesting fish, because they can get tangled in nets. As small reservoirs dry out in hot seasons, it is also important to consider which months water is retained so that the selected fish have time to mature ready for harvesting. For example, carp need at least six months to mature, so the selected reservoir should retain water for at least this time. This study showed that small water bodies could be used for CBF. Several trials looked at a few reservoirs stocked with *Thilapia Oreochromis mossambicus* fingerlings and eight small reservoirs in the north central province stocked with milk fish *Chanos chanos* in But the lack of guaranteed fingerling supplies, proper marketing, institutional clashes and inappropriate choices of water bodies meant these projects were unsuccessful. Projects also lacked proper institutional coordination. Small village reservoirs came under the jurisdiction of the Department of Agrarian Services, while aquaculture was handled by the Ministry of Fisheries. Changing governments led to changing policies and there was no coherent long-term strategy. In the Sri Lankan government decided to stop state support for the inland fisheries sector. This continued till and it was not until , when a revised Agrarian Development Act was made, that adequate legal arrangements for the development of CBF in small reservoirs were made. Is Sri Lanka on the right track to using this vast resource? Jayantha Chandrasoma, director of an active CBF project, says, "we hope to utilise seasonal tanks and small perennial reservoirs to stock fish and enhance fish production. In Anuradhapura district, we are happy to say that this is successful. As part of the current project, some villagers rear fry up to the fingerling stage to sell to reservoirs with CBF operations. However, rearing fingerlings is an uncertain business. As Amarasinghe explains, "CBF in seasonal reservoirs is dependent on the natural event of reservoir-filling during the inter-monsoonal rains in November to December. There is no assurance that farmers who rear fingerlings will be able to sell them in the drought years when reservoirs do not fill. Another problem can be that fingerlings stocked in CBF systems are too small, often less than seven centimetres. Stocking small fingerlings will result in a high mortality rate, lowering the CBF yield. Sustaining the future Credit: Community participation is essential. In Sri Lanka, the fishing profession has a social stigma. Fishermen are considered to be a lower class of people than farmers, stopping younger generations from taking up aquaculture practices such as CBF. It is important to spread the message that CBFs are rewarding and can be combined with modern marketing practices. Where CBF is currently successful, there is always an active community organisation of fishermen in the region. These arise from informal gatherings of fishermen and are useful in regulating day-to-day fishing practices. This community-based management practice will be the best method to sustain CBF, as the real decision-makers are the fishermen who use the reservoir. Spreading to Asia Amarasinghe hopes to spread the message of the potential for food production using CBF not only in Sri Lanka, but in other Asian countries. Amarasinghe and colleagues also held a series of workshops in Laos, Cambodia and Indonesia in to disseminate their research findings. These were well attended, primarily by policymakers, planners and researchers. All three countries, which currently do not have major CBF practices, have expressed an interest and desire to develop CBF as a strategy to augment inland fish production in rural areas. This article was originally published on SciDev. Read the original article. Anuradha Alahakoon reports on the challenges and progress so far. A fishing boat arrives at the shore of Angamuwa reservoir, a small water body hidden in a

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distant village in the North Central Province of Sri Lanka. A fisherman gets out. He is one of the fishermen who make their living out of the reservoir. Using ancient reservoirs There are over 12, small man-made reservoirs in Sri Lanka, some dating back over 2, years. They live and grow in the water until harvesting. The science of CBF.

## 6: Fish and fisheries of lakes and reservoirs in southeast Asia and Africa.

Baluyut, E.A., *Stocking and introduction of fish in lakes and reservoirs in the ASEAN (Association of South East Asian Nations) countries*. FAO [www.enganchecubano.com](http://www.enganchecubano.com), () p. Baluyut, E.A., *Planning for inland fisheries under constraints from other uses of land and water resources: general considerations and the Philippines*.

## 7: Science secures the fish supply in Sri Lanka - [www.enganchecubano.com](http://www.enganchecubano.com)

OCLC Number: Notes: Cover title. "FIRI/C" "This is the second contribution to stocking reservoirs in the Indo-Pacific Region, and it follows that of E.A. Baluyut on stocking reservoirs and lakes in the countries of the Association of South-East Asia (ASEAN)(Fisheries Technical Paper no. )."--Page [ii].

## 8: Ikan Kap Perak - Wikipedia Bahasa Melayu, ensiklopedia bebas

LITERATURE CITED. Ackefors, H., *Stocking and introduction of fish in lakes and reservoirs in the ASEAN countries*. FAO Fish. Tech. Pap. () p.

## 9: LITERATURE CITED

Two international training courses ( and ) and 2 workshops ( and ) were conducted under an Asian-European aquaculture development and co-ordination programme, in Malaysia, and the Netherlands.

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