



## LOCAL SELF-RELIANCE

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For the past several years, the good folks at the Institute for Local Self-Reliance in Washington, D.C. have worked to help urban residents gain greater control over their lives through the use of low-technology, decentralist tools and concepts. We strongly believe that more people (city dwellers and country folk alike) should be exposed to the Institute's admirable efforts... which is why we've made this "what's happening where" report by ILSR staffers one of MOTHER'S regular features.

Raising fish in the basement—as a means of producing a home supply of inexpensive protein—is an enticing idea to urban and rural dwellers alike... especially now that overfishing (coupled with the pollution of many spawning and feeding areas) has led to higher seafood prices.

Fish *can*, of course, be grown in basements (as Dr. Fernwood Mitchell proved when he raised rainbow trout in his Washington, D.C. cellar). Such closed systems, however, require perpetual filtering and aeration of the water, constant temperature control, and regular supplemental feedings... and they'll only be worthwhile when transportation expenses become so high that basement growing, with all of *its* costs, becomes economically competitive with our present commercial fisheries.

On the other hand, not *all* aquaculture is as intensive and financially prohibitive as are basement systems. *Ocean ranching* is a good example of the other "fin farming" extreme. Salmon hatcheries on our northeastern and northwestern coasts release millions of juveniles each year... fish that are subsequently harvested by both commercial boats *and* sports anglers. (The Lummi Indians of Bellingham, Washington—who use their trout and salmon hatcheries as a spur to encourage community economic development—produce nearly five *million* fingerlings a year.)

In addition, there's an extension of ocean ranching—a system that's appropriate for a wider variety of species—in which the juveniles are released into a partially *enclosed* environment... one that can receive *some* management. Known as *parc culture*, this system was initially developed to grow oysters in Brittany's tidal flats, but is now being used in many American shellfish beds. And—for more *mobile* forms of marine life—gates can be used to retain the finned groups in the "cropped" bay, tidal flat, or whatever.

*Raft culture* provides still another fish farming alternative. By growing mussel colonies on rafts anchored in the middle of an unpolluted estuary, Ed Meyers of Damariscotta, Maine is able to raise the shellfish for less

than 20¢ a pound!

*Cage culture* is an even more intensive method: The cultured organisms are enclosed in either plastic mesh or bamboo cages which are, in turn, secured in a large natural body of water.

However, it's *pond systems* that have been—and still are—the basic aquacultural unit throughout the world... ranging from Africa's tilapia/carp polyculture to the rather intensive catfish farming of North America. This type of aquaculture—which is midway between extensive and intensive farming—is likely to remain the most widely used system, because it incorporates some of the advantages of each extreme.

On the one hand, the pond provides a controlled growing environment from which fish can easily be harvested, while—on the other hand—such "open air aquariums" are *also* able to benefit from inlets and outlets that flush fish wastes... from sunlight which aids in the growing of food... and from the natural aeration and circulation of water by wind.

It's premature, of course, to evaluate aquaculture's potential as a community food or income source in either rural or urban areas, since many of the possibly useful systems are still in the developmental stages. However, fish farmers in the U.S. are beginning to realize that they can increase their yields dramatically by adopting the *Asian* polycultural practice of growing combinations of ecologically compatible species in the same water... rather than limiting production to one variety of fish per pond, as has been the American tradition.

As for seafood farming in the city... neither closed, intensive systems (such as basement aquaculture) nor extensive techniques are appropriate for urban fish production. Intensive systems have very high start-up costs, require a great deal of energy for operation, and produce expensive products. On the other hand, although *extensive* aquaculture systems make sense from an energy usage perspective, most cities use their natural tidal and river resources to dilute a heavy output of sewage, industrial waste, and runoff pollution... so such bodies of water would require massive purification facilities before they could be successfully (and safely!) farmed.

Ponds are, therefore, the best hope for city fish farming. Such small "lakes" can take advantage of the energy available from solar radiation... the higher temperatures of the urban environment... and, perhaps, even wind power to provide water circulation.

While fallout from air pollution or runoff from streets and pesticide-treated areas may present problems to the city aquacul-turist, his or her *largest* challenge will be to develop this medium-intensity system to the point where it can have a significant impact on neighborhood protein production. Advertising will likely be needed to build consumer acceptance of products like mussels and catfish... and energy-efficient filtration and aeration systems must be developed so that stocking densities can be increased.

Once such "barriers" are crossed, however, the dream of the backyard urban fishpond—next to the vegetable garden and supplied by a neighborhood hatchery—can become far more than just a fantasy.

*You can have a free catalog of ILSR's selection of books and pamphlets by sending the Institute a self-addressed, stamped envelope. To get on the mailing list for the organization's bi-monthly magazine, Self-Reliance, send \$8.00 (\$15.00 for institutions) to ILSR, 1717 18th Street N.W., Washington, D.C. 20009. Or, send \$25 (\$17 of which is tax-deductible) to become an associate member of the Institute... and—in addition to receiving the magazine—you'll obtain a 20% discount on all other Local Self-Reliance publications.—MOTHER.*

