

Northeastern Regional

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Is Aquatic Farming For You?

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AQUACULTURE is the cultivation of aquatic plants and animals for recreational or commercial purposes. Products include edible fish and shellfish (e.g., clams, oysters, shrimp), ornamental fish, recreational fish, live-bait and aquatic plants. A variety of inland and coastal systems are used: static water ponds, open water bottom culture, continuous water flow raceways/tanks, and recirculated water tanks. Net pens, cages, and partial water reuse systems are also used. Design, investment and operational requirements differ for each culture system and species grown.

Under the right conditions, and with Careful preparation, aquaculture can be profitable, both financially and emotionally. However, for one poorly prepared and informed, aquaculture can be a disaster. Beginners should consider starting with small, simple systems. Much practical and relatively inexpensive experience can be gained by initially growing fish in a few floating cages in an existing pond or with a small shellfish plot. As experience in production and marketing is gained, you may expand into larger and more complex operations.

The following checklist identifies many issues that prospective culturists should consider. Read each question carefully and answer honestly "yes" or "no". If you cannot answer a question satisfactorily, then seek assistance to obtain the needed information. Potential sources of assistance and information are listed at the end of this checklist. As you answer questions you will gain a better understanding of the complexity and requirements of aquaculture, and determine whether aquaculture is appropriate for you. Answering "yes" to most questions does not guarantee success. It does improve the likelihood of a successful aquaculture experience. The next step is to meet personally with a knowledgeable aquaculture specialist to assess your specific situation and explore potential options. If you answer "no" to many questions, then seriously reconsider your aquaculture plans.

Economic Considerations

Y N

- 1. Have you developed a realistic written business plan with monthly objectives and projected cash flows for the first year and annually for each of the next three to five years?
- 2. Do you own or have access to property needed for the proposed aquaculture operation?
- 3. Have you determined expenses for construction or improvement of the aquaculture site?
- 4. Do you own or have access to most of the necessary

equipment (e.g., pumps, nets, tanks, aerators, boats, predator control devices)?

- 5. Can you secure the capital for start-up and operation at a reasonable cost?
- 6. Will your lender accommodate your production/marketing cycle (which differs from traditional row crops)?
- 7. Is the profit potential for aquaculture higher than that of other possible investments?
- 8. Will the expected profit be adequate compensation for your labor and resources?
- 9. Can you afford to wait 6 to 18 or more months for income until your first crop attains marketable size and can be sold?
- 10. Do you have an adequate cash reserve for unanticipated risks (e.g., equipment failure, system modification, crop losses)?

Personal Considerations

Y N

- 1. Are you willing to work long, hard, and irregular hours (e.g., 16 hours/day, 7 days/week)?
- 2. Do you get along well and communicate effectively with people? (Small producers not only grow fish or shellfish, they must also promote and market themselves and their product).
- 3. Are you comfortable with mathematical problem-solving and mechanical trouble-shooting?
- 4. Will you seek help when needed?
- 5. Do you personally have the technical expertise with fish or shellfish to manage the operation?
- 6. Can you afford to hire an experienced technician?
- 7. Do you know others in the business that will provide help or information?
- 8. Does your state have an aquaculture association that you can join?
- 9. Do you receive aquaculture periodicals?
- 10. Are you willing to take a course in aquaculture or attend "how to" workshops to become informed of current practices and new developments?

Marketing Considerations

Y N

- 1. Have you assessed the existing situation (e.g., market size and demands, potential competitors) and determined an area where you can compete effectively?

- 2. Have you identified primary and alternate markets?
- 3. Do you know in what form you will market your product (e.g., alive, dressed, fillets)?
- 4. Can you continuously harvest and market your product throughout much or all of the year?
- 5. Do you have the means to harvest handle, hold, and transport your product?
- 6. If desirable, can you join or form an aquaculture cooperative?
- 7. Are you familiar with legal issues of marketing your product?
- 8. Do you have the resources to construct and operate a Health Department approved facility if fish will be processed (e.g., dressed, filleted)?

Site and Design Considerations

Y N

- 1. Is the proposed culture site an unrestricted area (e.g., not a right-of-way or wetland)?
- 2. Is the prospective culture site located near the market and processing facilities?
- 3. Is the proposed site suitable for aquaculture (e.g., there is no history of pesticide use in the area, the topography and soil type are appropriate for economic construction, gas and power lines will not interfere with construction or operation, you have all-weather access to your culture operation)?
- 4. Can the site be made suitable for aquaculture production with an acceptable amount of investment?
- 5. Is the site sufficiently large for expansion if desired in the future?
- 6. Have you explored the advantages and disadvantages of leasing vs. ownership?
- 7. Do you live close enough to the culture site to visit and monitor as needed, and to ensure security?
- 8. Is the system designed and constructed specifically for aquaculture (vs. recreation, aesthetics, irrigation, etc.)?
- 9. Is an adequate supply of high quality water available and suitable for aquaculture production?
- 10. Will water quality and quantity remain suitable for continuous production (e.g., the possibility is low that your shellfish lease will be closed due to water degradation, flooding is not a problem)?
- 11. Can you control water to, from, and within your system (e.g., can you drain and fill ponds when needed, bypass a raceway, or adjust water flow when treatments are needed)?
- 12. Can you effectively manage wastes produced by your operation?
- 13. Can you prevent wild fish, birds and other predators, diseases and parasites from entering or impacting your system?
- 14. Can you treat diseases and parasites that may infect your fish?
- 15. Is an economical and dependable electricity source available?

Socio-legal Considerations

Y N

- 1. Will your neighbors and other user groups (e.g., recreational, commercial fisheries) accept the aquaculture operation (the operation will not interfere or be perceived to interfere with their interests)?

- 2. Have you discussed your planned operation with the appropriate state agency(-ies) and your local Cooperative or Sea Grant Extension agent?
- 3. Have you identified the permits required to construct and operate an aquaculture operation?
- Cl 4. Can the required permits be obtained without excessive investment of money, time, and effort?
- 5. Can you obtain permits for an extended time and not have to renew them frequently (i.e., could you improve a site and then lose access to it)?

Production Considerations

Y N

- 1. Have you determined what species you want to culture, and do you know its biology?
- 2. Have you explored the different production technologies available and identified one that satisfies your interests and resources?
- 3. Do you have the resources (financial, technical, and spatial) needed to maintain and spawn adults, incubate eggs, and rear juveniles?
- 4. Are dependable sources of fingerling finfish or shellfish seed locally available?
- 5. Can feed and other essential supplies be obtained locally, quickly, and at a reasonable price (e.g., chemicals, antibiotics, algae)?
- 6. Are suitable back-up systems available (e.g., for electrical outages, pump failure, oxygen depletions)?
- 7. Are disease diagnostic services and dependable technical assistance readily available?
- 8. Do you have access to a dependable workforce for physical labor?
- 9. Do you have appropriate predator control, including human poaching?
- 10. Do you have adequate dry space to store essential supplies (e.g., feed, drugs, chemicals) and equipment (e.g., seines, pumps, generators)?

Where to get Information and Assistance

After examining the questions in this checklist you may want assistance or more information. Additional "how to" information can be obtained from the following sources:

County Cooperative Extension or Sea Grant Agents
 State Aquaculture Associations
 Soil and Water Conservation Service
 State Department of Agriculture or its equivalent
 State Department of Natural Resources or its equivalent
 Local Colleges and Universities
 Commercial producers, processors and retailers
 Northeast Regional Aquaculture Center
 National Agriculture Library, Aquaculture Information Center
 U.S. Fish and Wildlife Service

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