

Aquaculture Checklist

The following checklist provides questions to help you consider the many varied aspects of beginning an aquaculture business. Under the right conditions, fish farming can be a rewarding and profitable business opportunity. Like other forms of farming, fish production involves substantial capital investment and many risks. Growing fish requires specialized training and daily attention. If you are considering fish farming, this checklist can help you determine whether a fish farming enterprise is feasible for your particular situation. The checklist does not cover all possibilities, so answering "yes" to most of the questions will not guarantee your success. Answering "no" to many of the questions will not mean automatic failure. The checklist does present many of the most important considerations. To have a good probability of success, most of your answers should be "yes."

Risks: Are you equipped to handle the following problems

Yes	No	
_____	_____	1. Poor water quality?
_____	_____	2. Fish disease and parasites?
_____	_____	3. Poachers and vandals?
_____	_____	4. Potential chemical contamination?
_____	_____	5. Business management and taxation?

Needs: These are the elements essential to a successful fish farming enterprise

Yes	No	
_____	_____	1. Are there large volumes of high-quality water?
_____	_____	2. Is the water quality suitable?
_____	_____	4. Are there established markets?
_____	_____	5. Do you have appropriate management skills and time?

Personal Considerations

Yes	No	
_____	_____	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 troubleshooting?
_____	_____	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?

Economic Feasibility

Yes No

- ☐ ☐ 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 livestock or 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 rests (e.g., equipment failure, system modification, crop losses)?

Marketing Considerations

Yes No

- ☐ ☐ 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)?

Market

Yes No

- ☐ ☐ 1. Is there an established market for your fish?
- ☐ ☐ 2. Is there a market for your fish when you plan to sell them?
- ☐ ☐ 3. Will fish be available year-round if so required by the market?
- ☐ ☐ 4. Are other fish products available at prices lower than your profitable selling price that will out-compete you in the market?
- ☐ ☐ 5. Do you have an alternative marketing strategy on which to fall back?

Physical Factors

Yes No

- ☐ ☐ 1. Do you have enough water to raise the fish you would like to grow?

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|-------|-------|--|
| _____ | _____ | 2. Do you have water of the quality necessary to raise the fish you would like to grow? |
| _____ | _____ | 3. Does the land have appropriate topography for the construction of ponds or raceways? |
| _____ | _____ | 4. Will the soil hold water? |
| _____ | _____ | 5. Is the area protected from flooding? |
| _____ | _____ | 6. Can you build a water retention area to remove fish wastes? |
| _____ | _____ | 8. Do you live close enough to the site to allow frequent and timely observations of the fish? |
| _____ | _____ | 9. Is the site easily accessible year round for you and transport trucks? |

Site and Design Considerations

- | Yes | No | |
|------------|-----------|--|
| _____ | _____ | 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

- | Yes | No | |
|------------|-----------|--|
| _____ | _____ | 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 Educator? |
| _____ | _____ | 3. Have you identified the permits required to construct and operate an aquaculture operation? |
| _____ | _____ | 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

Yes	No	
_____	_____	1. Are eggs or fingerlings available from local dealers at competitive prices?
_____	_____	2. Can you raise your fish from eggs to produce your own fingerlings?
_____	_____	3. Are high-quality fish feeds readily available at competitive prices?
_____	_____	4. Do you have a suitable area to store feeds?
_____	_____	5. Do you have a source of the drugs and chemicals needed?
_____	_____	6. Is dependable labor available?
_____	_____	7. Are dependable diagnostic services available locally?
_____	_____	8. Are you aware of universities, government agencies, or professional fish culturists that can provide you with educational and technical services?
_____	_____	9. Have you determined what species you want to culture, and do you know its biology?
_____	_____	10. Have you explored the different production technologies available and identified one that satisfies your interests and resources?
_____	_____	11. Do you have the resources (financial, technical, and spatial) needed to maintain and spawn adults, incubate eggs, and rear juveniles?
_____	_____	12. Are dependable sources of fingerling finfish or shellfish seed locally available?
_____	_____	13. Can feed and other essential supplies (e.g. chemicals, antibiotics, algae) be obtained locally, quickly, and at a reasonable price?
_____	_____	14. Are suitable back-up systems available (e.g. electrical outages, pump failure, oxygen depletions)?
_____	_____	15. Are disease diagnostic services and dependable technical assistance readily available?
_____	_____	16. Do you have access to a dependable workforce for physical labor?
_____	_____	17. Do you have appropriate predator control, including human poaching?
_____	_____	18. Do you have adequate dry space to store essential supplies (e.g. feed, drugs, chemicals) and equipment (e.g. seines, pumps, generator)?