Hatchery Economics

The requirements to setup a hatchery unit of 10 million fry capacity:

Infrastructure	Requirement
Brood Stock Raising Pond (5000 nos./ha)	2 ponds of (50x30x1.5m) each [land area 0.5 ha]
Brood Stock Tank (2000kg/ha)	2 ponds of 0.4 ha each (100x40x2m) [land area 1 ha]
Nursery Tank for 40 million Spawn	20 ponds of 0.05 ha with 1.2 m depth [land area 1.2 ha]
Hatchery Unit: Breeding pool (5.2 m dia) Hatching pools of 5 million capacity each	1 breeding pool of 5.2 m dia 4 hatching pools of 3.2 m dia, 1.2 m depth with 1m inner ring [land area 0.1 ha]
Overhead Tank	1 tank of 40000 L capacity
Sump with Pumping Facility (underground)	1 unit
Power Backup	1 unit
Packing/ Storage Shade	1 unit
Total Land Area Required	**3.0 ha**

Note:

- Land cost not included assuming land is available.
- The cost includes raising of brood stock for two years.
- Standard assumptions are taken in to consideration to calculate requirements.
- The costs are indicative calculated based on the prevailing rates and vary from place to place and location of the hatchery.

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Capital Cost

A. Earthen Pond Construction

Details	Cost (in lakh Rs)
Land (3 ha)	Not included
Brood stock raising pond (0.3 ha)	02.25
Brood fish pond (0.8 ha)	06.00
Nursing pond (1.0 ha)	07.50
Total Pond Construction Cost	**15.75**

B. Hatchery Construction

Details	Cost (in lakh Rs)
RCC breeding pool of 5.3 m dia	01.50
RCC hatching pool of 3.2 m dia (4 units)	01.00
Spawn receiving tank	00.50
Draining facility	00.20
Plumbing, water supply, power supply	00.50
Overhead tank (40,000 L) with 5 HP pump	03.00
Borewell with pump	01.00
Packing & storage facility	01.50
Total Pond Construction Cost	**09.20**

Capital Cost

C. Machines & Equipment

Details	Cost (in lakh Rs)
Water pump (5 HP)	00.30
Power backup generator (5 HP)	00.30
Oxygen cylinder with fittings	00.15
Inducing equipment, needles, beakers, measuring cylinders, etc.	00.05
Nets: brood & fry collection nets, hand nets, packing material, etc.	00.60
Total Equipment Cost	**01.40**
Total Capital Cost (A+B+C)	**26.35**

Operational Cost

Brood Fish Cost
(Own brood raising for 2 years)

Details	Cost (in lakh Rs)
Advanced fish fingerlings (100g each) 1340 at 20/piece	00.27
Brood stock raising cost (for 2 years)	04.56
Inducing agents	00.10
Labour wages for 4 months	02.00
Nets, packing & other material	01.00
Power, fuel & other miscellaneous charges	00.30
Brood stock replenishment	00.60
Spawn nursing cost (for 4 crore spawn)	**00.60**
Total operational cost	**9.43**

Estimated Income

Estimated income for 2 years

Estimated output:
Spawn: 600 lakh
Fry: 100 lakh
Culled/ spent fish: 500 kg

Production	Price	Income (in lakh Rs)
Spawn 150 lakh	1000/lakh	01.50
Fry 100 lakh	25000/lakh	25.00
Culled/spent fish 500 kg	150/kg	00.75
Gross income		27.25
Net income = (gross income - operational cost)		27.25-9.43= 17.82 lakh