

## Aquaculture biomass. Fishing

**Extra activity.** What is the 'tragedy of the commons'?



Imagine that you live in a small village and depend on a fish pond for food. You share the pond with three other villagers.

The fish live and reproduce in the pond. For every two fish there will be one baby added each night.



Assume that baby fish grow to full size immediately and that the pond starts off with 12 fish.

Ignore the sex of the fish.



In order to have a maximum supply of food, how many fish should each of you catch each day?

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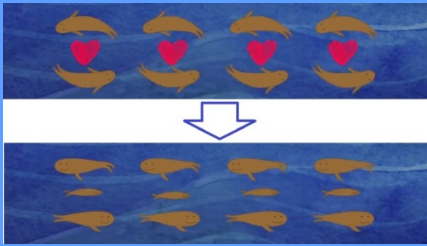
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**Answer:** Each villager should catch just one fish each day.

**Explanation:**



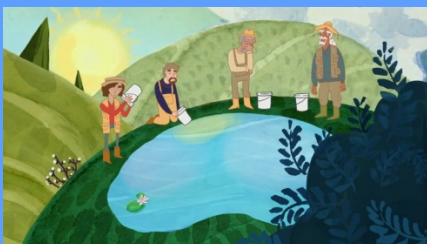
If each villager takes one fish, there will be eight fish left. This makes four pairs of fish. Each of these four pairs will produce one baby overnight.



And the next day the pond will be fully restocked with 12 fish.



Because the pond is a shared (common) resource, there will be competition. Each individual fisherman will think, "If I don't take more fish, somebody else will." So he will believe it is in his best interest to catch an extra fish or two. But, the other villagers will think the same way, too.



Eventually, the number of reproductive pairs of fish will drop so the population will become smaller and smaller. There will be less and less food for the villagers. In the end, there will be no more fish in the pond so all four villagers will starve. The negative effect will be shared by the whole village.

That's the 'tragedy': optimising for your own self in the short term is not optimal for anyone in the long term.

'The tragedy of the commons' applies to all shared (common) resources. Open access to a shared resource gives an opportunity for an individual to benefit himself/herself while spreading any negative effects to the entire population. What other shared resources can you think of?