Question 1

Modeling the scenario into a game

A river flows through two countries, A and B. It starts in country A, and then flows through B to the ocean. Both countries can either dam the river (and get electricity) or fish the river. If either country dams the river, it hurts the fish population in the river (either by decreasing the water flow downstream, or preventing fish from swimming upstream). So if one dams and the other fishes, it's bad for the one who fishes. If they both fish, it's good for both, but not as good as if they both dam, since the electric power is worth more than the fish.

Question 2

Modeling the scenario into a game

Minority game: Three agents each have two possible actions. Whichever agent ends up in the minority (choosing a different action from the other two) wins.

Question 1

Two players:
Country A, country B.

Define payoffs.
if A dams, B fishes
A can get 5, B can get 1
A, B all dams:
A get 4, B get 4
A, B all fishes:
A, B get 2

construct payoff table:

A \ B	dam	fish
dam	4,4	5,1
fish	1,5	2,2

Question 2

players: A, B, C

Two strategies: action ①, action ②

if one win: 1
one loses: 0
(not win)

A \ B	B ①	B ②	B ①	B ②
	C ①		C ②	
A ①	(0,0,0)	(0,1,0)	(0,0,1)	(1,0,0)
A ②	(1,0,0)	(0,0,1)	(0,1,0)	(0,0,0)

(A, B, C)