



UNIVERSITY OF ICELAND

Common Pool Resources and Private Governance

Professor Hannes H. Gissurarson

Epicenter and IEA, Florence

8 September 2016: 16–17

Iceland, Autumn of 1980

- Young student, invited to a conference on “Iceland in 2000”
- Speakers all agreed that overfishing in Icelandic waters showed that capitalism was unfeasible
- Innocently suggested private use rights
- Greeted with derision
- Began to study fisheries economics, and common pool problems

Inspired by Hayek

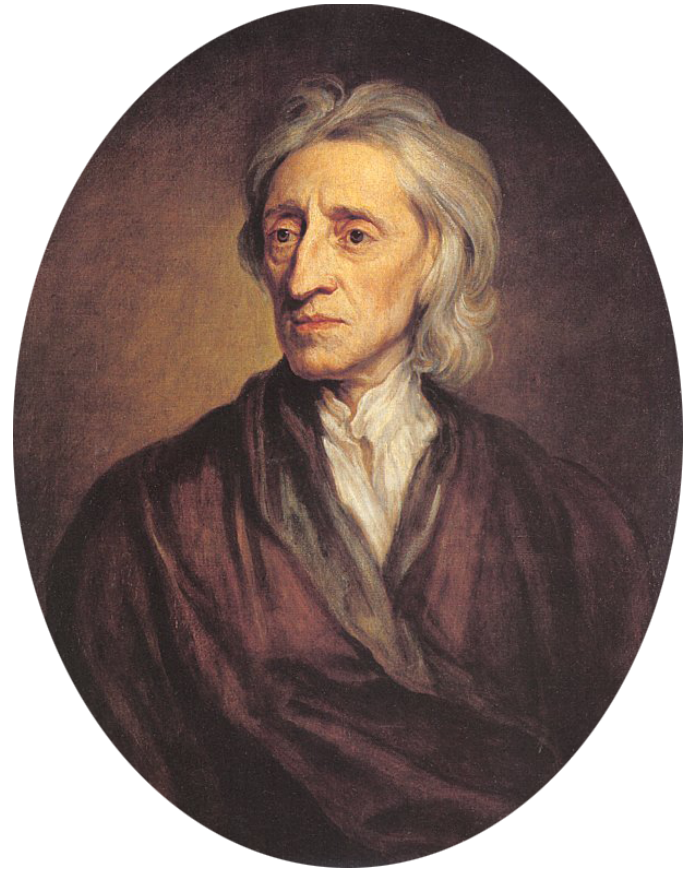


Common Pool Resources

- “Tragedy of the commons” (Hardin): open access leads to over-utilisation of resources
- Solution: Development of exclusive rights, individual, or sometimes of a group
- The economic analysis fairly straightforward
- My main focus: Ethical and political aspects
 1. Why are exclusive rights systems still rare?
 2. The initial allocation problem

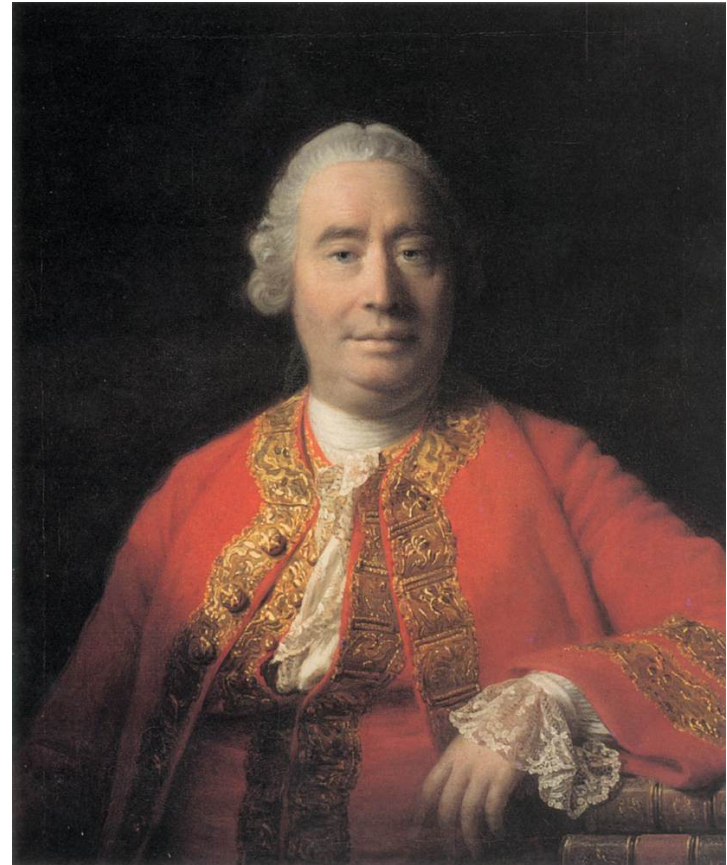
The Right to Exclude: How?

- How can people come to have rights to exclude others from use of goods?
- Locke: Because those others are not made worse off (indeed much better)



The Right to Exclude: Why?

- Why should people have rights to exclude others from use of goods?
- Hume: Because scarce resources have to be allocated so that they can be transferred into their most efficient use



The Feasibility of Excluding

- Land can be fenced off
- Cattle can be branded
- But what about common pool resources?
 1. Radio frequencies?
 2. Mountain pastures?
 3. Salmon rivers?
 4. Offshore fishing grounds?

The Case of Broadcasting



Radio Frequencies in U.S.

- In 1920s, radio stations emerged, broadcasting in different locations on different frequencies
- If locations and frequencies became too close, the stations interfered with one another
- Courts were beginning to recognise individual rights of exclusion, on principle of first occupancy (“grandfathering”)

Radio Spectrum Nationalised

- In 1927, Congress decided that radio spectrum should be held by the public
- After that, broadcasting rights have been allocated by government in a “beauty contest”
- Money wasted in rent-seeking, i.e. costs of acquiring broadcasting rights
- Freedom of speech reduced

874–930: Settlement of Iceland



Society of Farmers

- Settlers: Men from Western Norway and Women from Celtic countries (DNA research)
- Iceland more inviting then because of warmer climate: Discovery of America
- About 4-5 thousand farmers in many valleys, mostly rearing sheep
- Winter: sheep fed in barns
- Summer: sheep grazed in mountains
- Farms private property, each valley formed an association

Grazing Rights in Pastures

- Mountain pastures: held in common (by the geographical association, hreppur in each valley) because fencing and monitoring costs too high outside traditional farmland
- Temptation for each farmer to keep too many sheep: benefit captured by him and cost imposed on all
- Solution: Grazing rights or “quotas” (itala: counting in) defined to each farm
- The old Icelandic Law Book (Gragas): Filling the pasture, with the sheep returning as fat as possible

Salmon Fishing



Salmon Rivers in Iceland

- Salmon feed in sea and travel up their natal rivers to spawn
- 20-30 riparian farmers share access
- Temptation for farmers close to sea to harvest salmon
- Solution: Each riparian farmer owns a right to the use of a preset number of rods
- Together, they form fishing associations which rent the “rod rights” out to recreational fishermen, over the fishing season

Salmon Fishing Rights

- Amounts to private property rights to a part of the salmon fish stock of the river
- Non-transferable and limited to certain gear, i.e. rods
- In effect, quotas on effort, not on catch
- Why? Because the point of recreational fishing is not minimising cost (as in professional offshore fisheries), but maximising pleasure (leisure activities)

Fertile Fishing Grounds



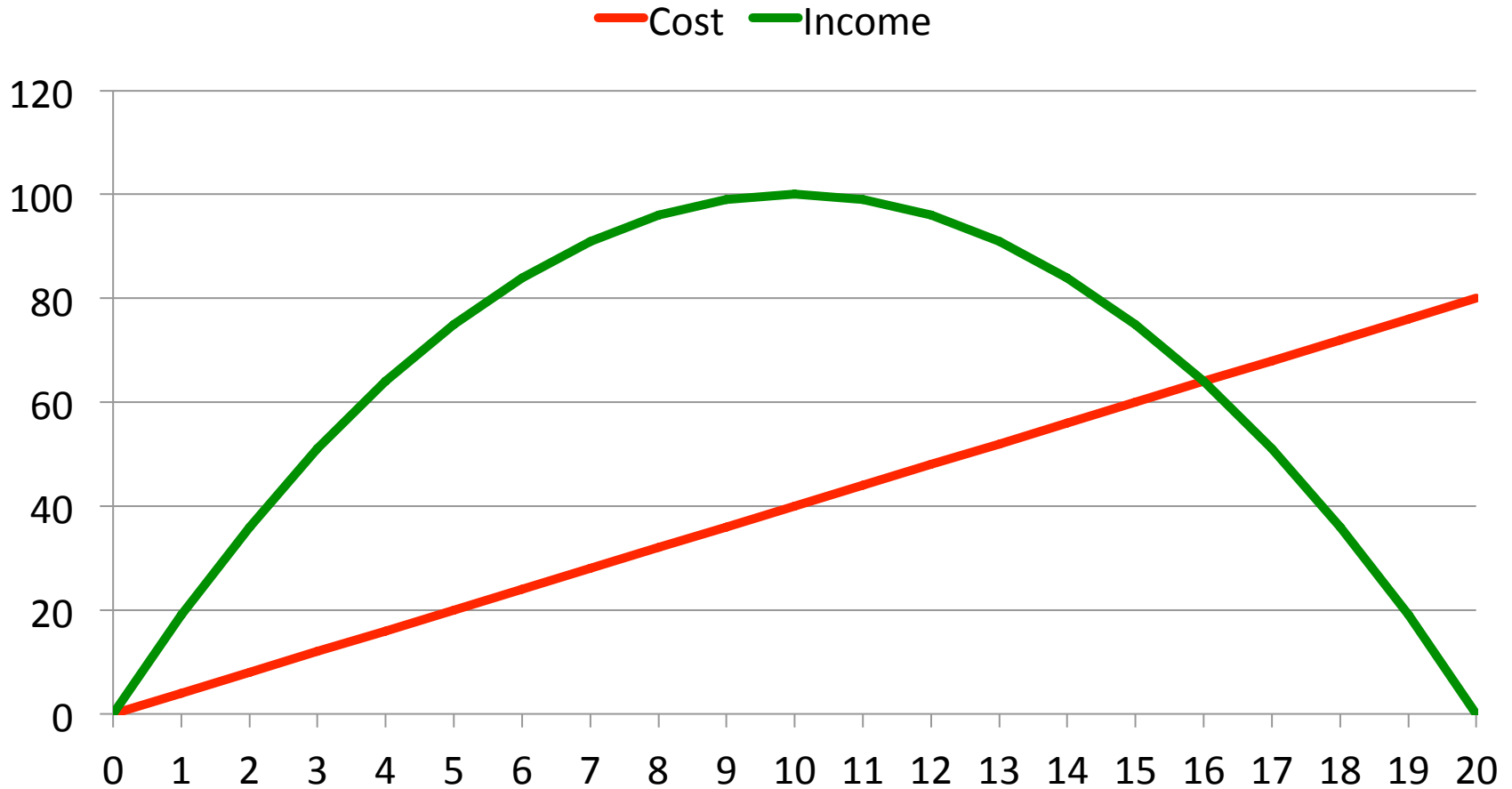
Offshore Fisheries in Iceland

- Fishing grounds difficult to fence off
- Resource occurs on an immense scale
- Some fish stocks (e.g. herring) fugitive
- Biological overfishing: Herring stock collapsed in 1960s, and cod stock almost collapsed in 1970s
- Economic overfishing: Too many boats chasing the fish
- After capturing Icelandic waters in Cod Wars with UK, Iceland in sole control: Reduced transaction costs

Icelandic EEZ Since 1975



Economic Overfishing: 16 Boats



Overfishing: From 8 to 16

- When access to fishing grounds free, effort (number of boats) increases until revenue goes down to nothing (total revenue equals total cost)
- Best to maximise profit (difference between revenue and cost), i.e. by 8 boats, not catch, i.e. by 10 boats
- In effect, 16 boats harvest what 8 boats could harvest: Rent dissipated, zero profit
- Task is to reduce the fishing fleet (and fishing effort) from 16 to 8 boats

Two Options Discussed

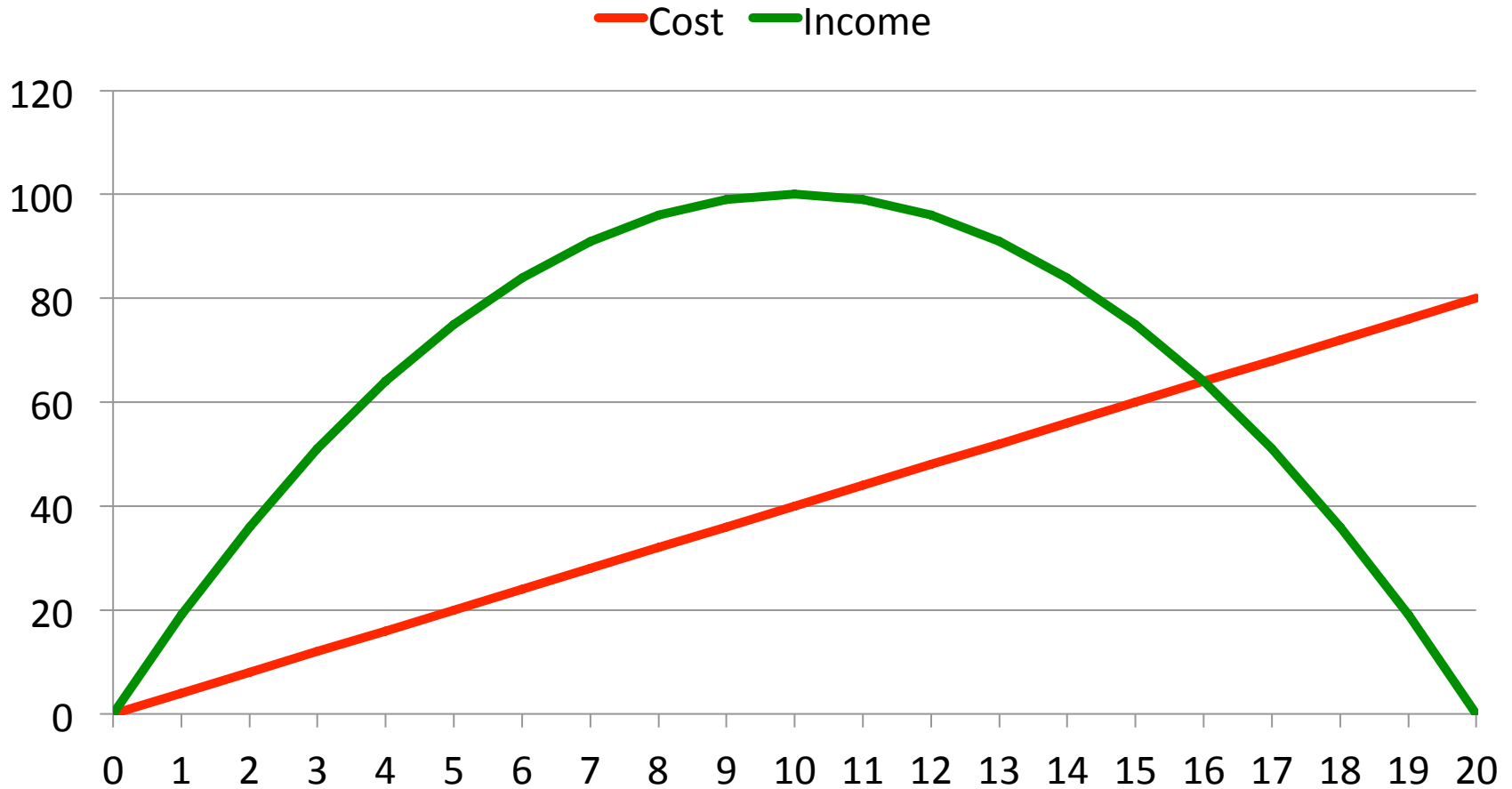
Public renting out of quotas

- Government profits enormously
- Some fishing vessel owners neither profit or lose
- Other fishing vessel owners lose (their investment suddenly becomes worthless)
- Public? Does it profit from a stronger state?

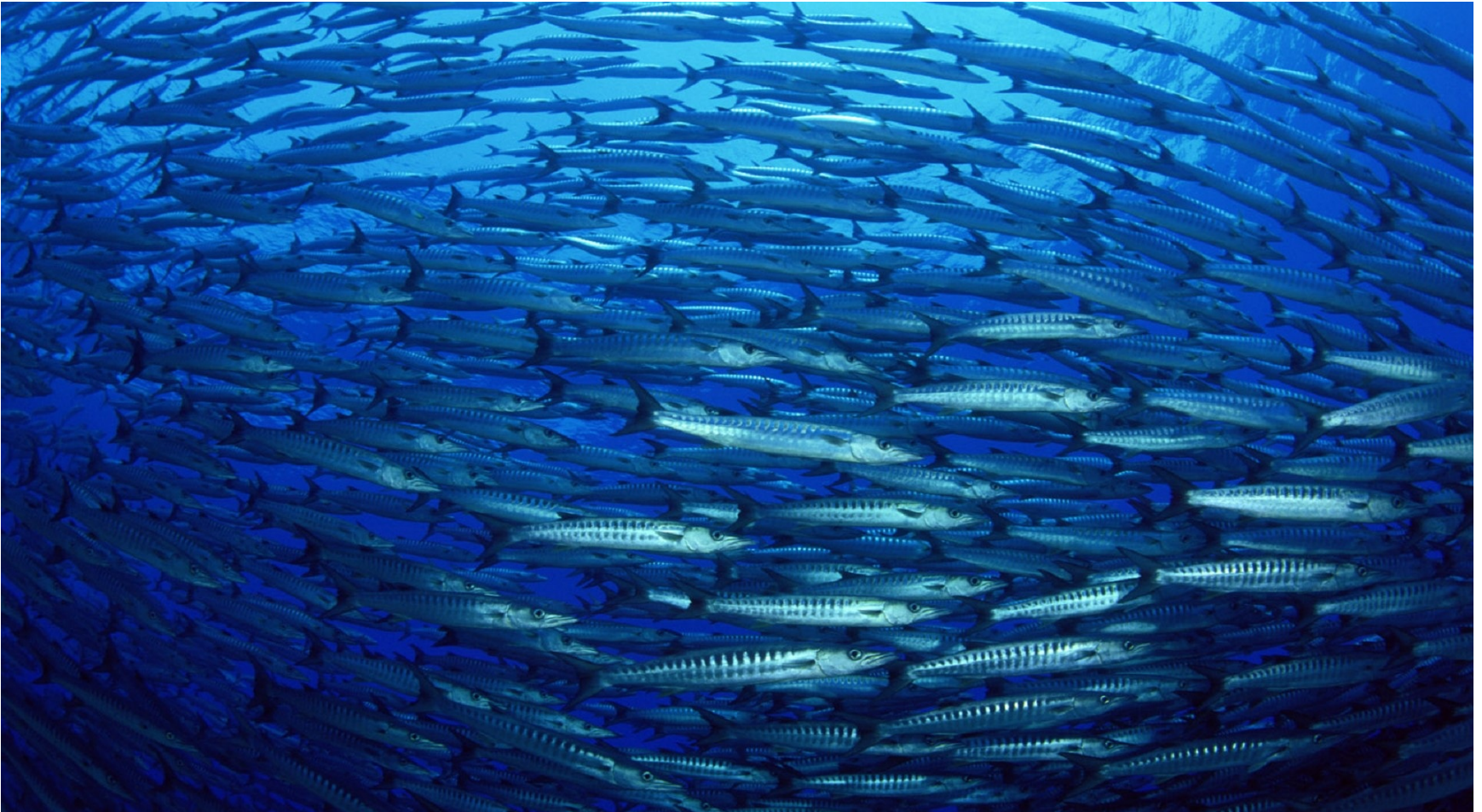
Allocation of free quotas

- Government profits somewhat
- Fishing vessel owners who sell quotas and leave fishery profit
- Fishing vessel owners who stay, profit
- The public benefits
- Nobody loses

Same End Result: 8 Boats instead of 16



Pelagic fishery: Fugitive species



Demersal Fishery: More Local



Development of ITQ System

- Catch quotas in pelagic fisheries (herring) introduced already in 1975, boats of similar size, low transaction costs
- Effort quotas (allowable fishing days) in demersal fisheries introduced in 1977, high transaction costs
- “Derby”: Costly race to capture as much as possible in allowable days
- Catch quotas imposed in 1983, allocated on basis of catch history
- Gradually became transferable, and system made comprehensive in 1990

How ITQ System Works

- Ministry of Fisheries sets TAC, total allowable catch per season, in each fish stock
- Owners of fishing vessels hold ITQs, individual transferable quotas, i.e. rights to harvest a given % of the TAC in a fish stock
- Catches monitored at landing
- Ideal change: More autonomy to Association of Fishing Vessel Owners, e.g. setting TACs
- In reality: Political pressure to allow small boats to fish outside the system, and to impose special taxes on fishery, reducing its competitiveness

Efficient System

- Individual: Each bears responsibility for his own operations
- Permanent: Fishermen have long-term interest in profitability of resource
- Transferable: The 8 more efficient buy out the 8 less efficient
- Rent, previously dissipated in excessive harvesting costs, now captured
- Icelandic fisheries very profitable

Locke v. George

- Georgism: Government should capture all resource rent, because unearned
- Locke: Some (e.g. vessel owners) can come to hold rights to exclude others from the use of goods (e.g. fish stocks), if those others are not made worse off
- Lockean Proviso met in Icelandic fisheries
- Others only deprived of the right to harvest at zero profit! A worthless right

Pareto-Optimality

- Social change Pareto-Optimal, if no-one worse off, and some or all better off
- Initial allocation by government auction not Pareto-optimal
- Initial allocation on basis of catch history (“grandfathering”) Pareto-optimal: Fishermen bought out, not driven out
- Therefore the only feasible political solution, as well as the only economically efficient one

Pigou v. Coase

- Auction idea Pigovian: Pigou proposed access fees (e.g. road tolls) to eliminate harmful effects (e.g. road congestion)
- Coase: Why replace one cost (congestion or overfishing) with another one (government tax, fee or toll)?
- Better to define property rights, such as ITQs

Some Similarities

- ITQs are rights to a certain use of a resource in a commons
- Similar to grazing rights in Icelandic mountain pastures
- Would have been similar to emergent broadcasting rights in U.S. (whose development was hindered by law)

Some Differences

- Broadcasting interference audible: harmful effects clear to all
- Economic overfishing invisible, only brought out by economic analysis
- Effort quotas in salmon rivers, because it is about leisure
- Catch quotas in offshore fisheries, because commercial, i.e. about minimising costs

Different Perspectives



Main Lessons

- Even if common pool rights, e.g. fishing grounds, are indivisible, some exclusive use rights in them can be developed
- U.S. took wrong turn by not developing broadcasting rights
- Iceland took right turn by developing fishing rights, the ITQs
- Good fences make good neighbours, and excellent economic sense

