

# The League model -a stewardship system for sustainable economic development in fisheries

By

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# Summary

- A fishing league management model for individual quota (IQ) allocation
  - designed to secure low cost open access for new fishing entities qualified on operational performance instead of quota purchase.
- The model is developed together with a Norwegian fishery organization according to the objectives of the new Norwegian “Ocean Resource Law” to “secure a sustainable and socio-economic management of the wild resources and contribute to secure employment and settlement in the coastal communities” and where “the open access resources belongs to the Norwegian Public administered by the Ministry of Fisheries on behalf of the coastal population, under the institution of Public Trust”
- The league model is like the football league, built on ladders divided in divisions (steps) where teams (fishing entities) can qualify and move upward and downward according to performance where the size of the IQ increases the higher up in the ladder.
- All entities earn quota points from their operational performance.
- The same sum of IQs moves up as move down the ladder after the earned quota points (as in airlines silver and gold bonus cards schemes).
- The total capital effort will be reduced when fishing quota do not have to be purchased and operation can be motivated to more value adding per catch tons.

# Background

- Trading of IQS (ITQs) increases total capital effort and debt in fishing enterprises
  - Increases catch pressure on TAC
- Monopolize TAC on fewer capital hands
  - Increases entry barriers for new comers
  - Reduces innovation progress
- Reduces solidity
  - Increases bankrupt risk when revenue varies
- Exclude fisheries communities from fisheries revenue
  - Increase geographical concentration and depopulation of fishery communities

# Background

- How to manage total effort in an open common fisheries without ITQ?
  - Request from a Norwegian NGO promoting open fishery commons for the coastal communities with historical rights
  - Objectives of the new Norwegian “Ocean Resource Law”
    - “secure a sustainable and socio-economic management of the wild resources
    - and contribute to secure employment and settlement in the coastal communities” and
    - where “the open access resources belongs to the Norwegian Public administered by the Ministry of Fisheries on behalf of the coastal population, under the institution of Public Trust”

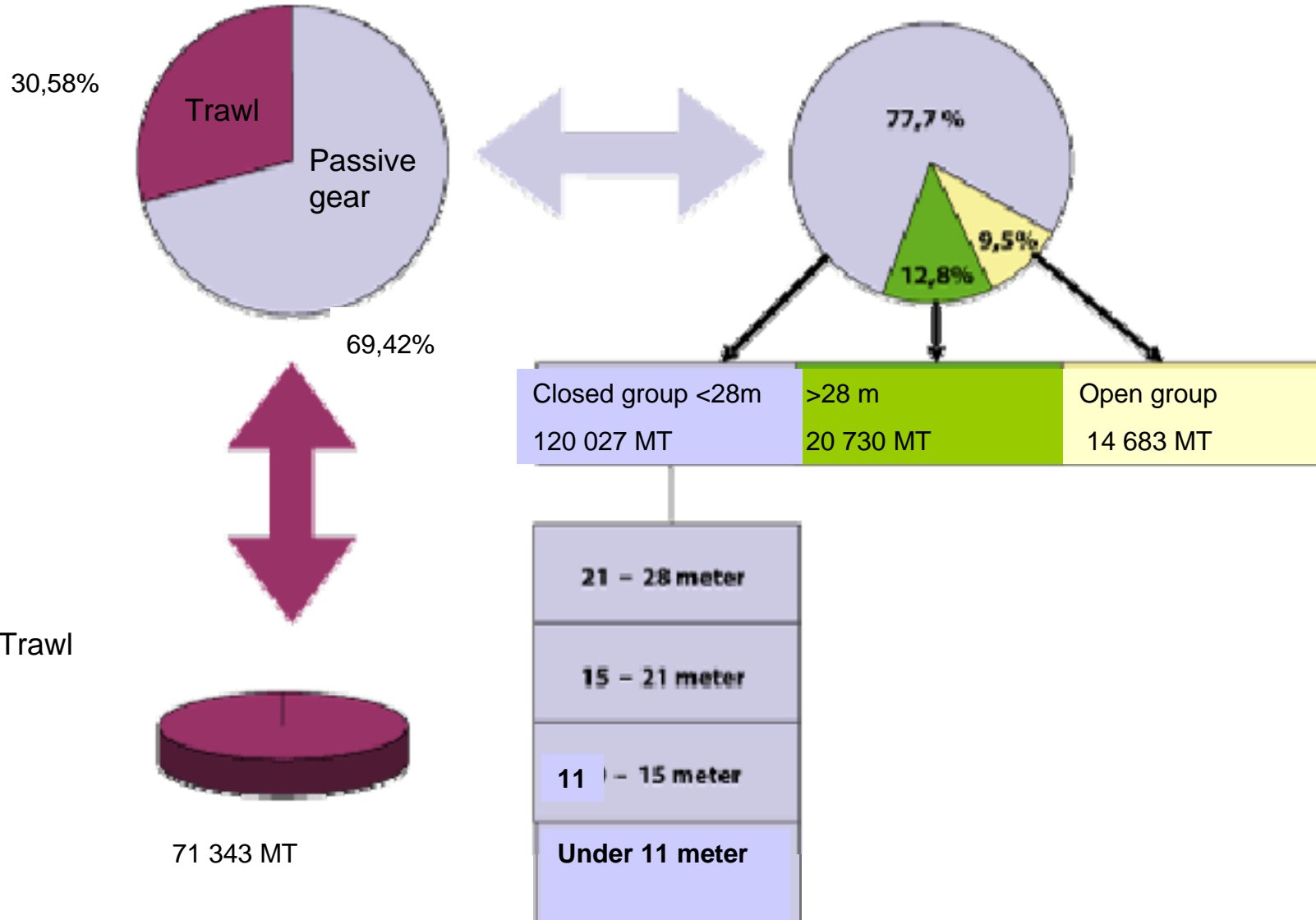
# The Norwegian case

- Closing the fishing commons in 1990.
- Merging up to three vessel IQS (Individual quota share)
  - in 2003: vessels down to 15 meter
  - In 2007: vessel down to 11 meter
- No activity record required to keep IQS
- The IQSs are traded together with vessels
  - Meaning: IQS user rights privatized

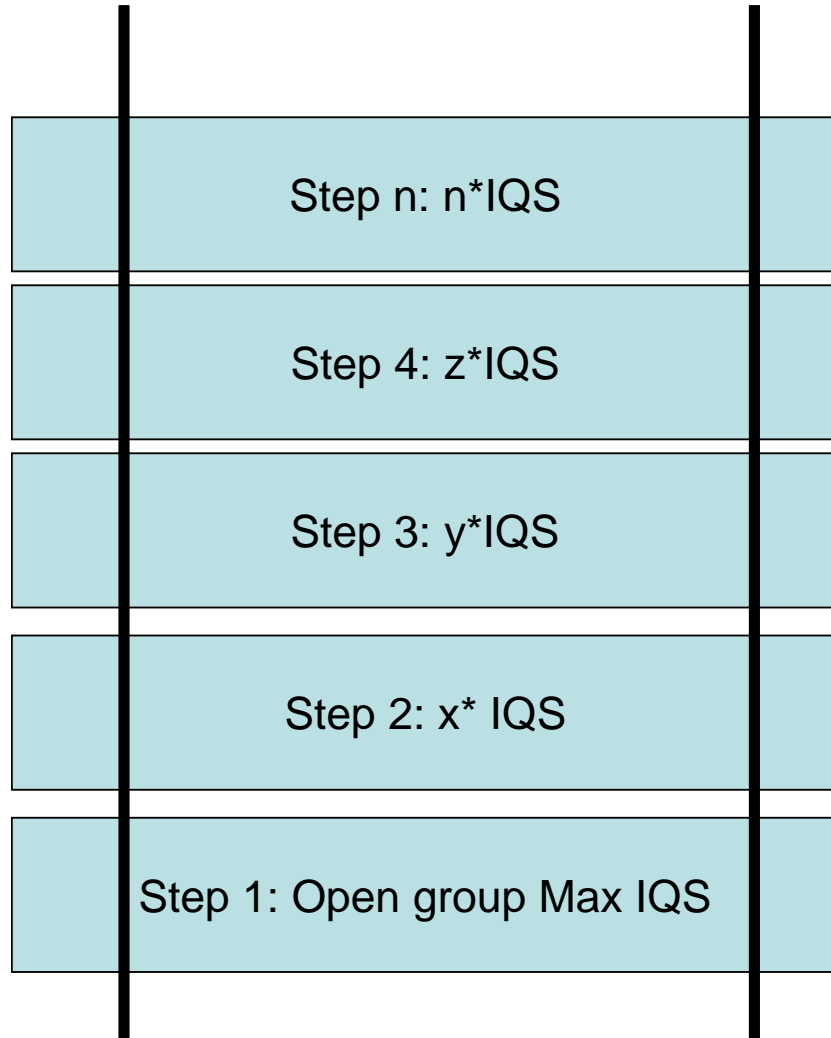
# Allocation in 2009 TAC 525 000 MT of Arctic Cod

Norwegian TAC 233 300 MT after negotiations with Russia and other allocations

161 957 MT



# The League model



- IQS ladders with several steps for all TAC groups/Gear/vessel sizes
- $100\% \text{ TAC} = \text{Sum IQS}$
- Allocation of number of IQS to each step after management objectives
- More IQSs per enterprise the higher step in the ladder.
- Fishing entities moves up and down the ladder according to earned quota points (QP)
- QP earned after management objectives:
  - Past catch/allocated quota
  - Past employment-region
  - Past value adding
  - Auctioning of royalty bid

# Example of quota ladder in Norwegian cod fisheries

IQS steps	Quota rights		Quota ladders				
			Cod North	Haddock North	Seithe North	Cod south	Seithe south
7	Bottom trawl						
6	Passive gears	>28m					
5	Passive gears	21-27,9m					
4	Passive gears	15-20,9m					
3	Passive gears	11-14,9m					
2	Passive gears	<11m					
1	Passive gears	Open group					



# New standardized IQS in each ladder.

## Example Norwegian cod 2006

IQS steps			Old IQ	No new	Sum new	Allocation of TAC 300 000 MT	
			MT/ vessel	IQS/ vessel	IQS each step	Tot	Vessel
7	Bottom trawl		858	62,2	4 633	90 218	1211
6	Passive gears	>28m	210	15,2	1 380	26 869	295
5	Passive gears	21-27,9m	12,2	0,9	1 507	29 341	18
4	Passive gears	15-20,9m	13,1	0,9	2 327	45 307	18
3	Passive gears	11-14,9m	11,1	0,8	3 273	63 725	18
2	Passive gears	<11m	13,8	1,0	1 264	24 610	19
1	Passive gears	Open group	5,1	0,4	1 023	19 917	8
	SUM				15 406		

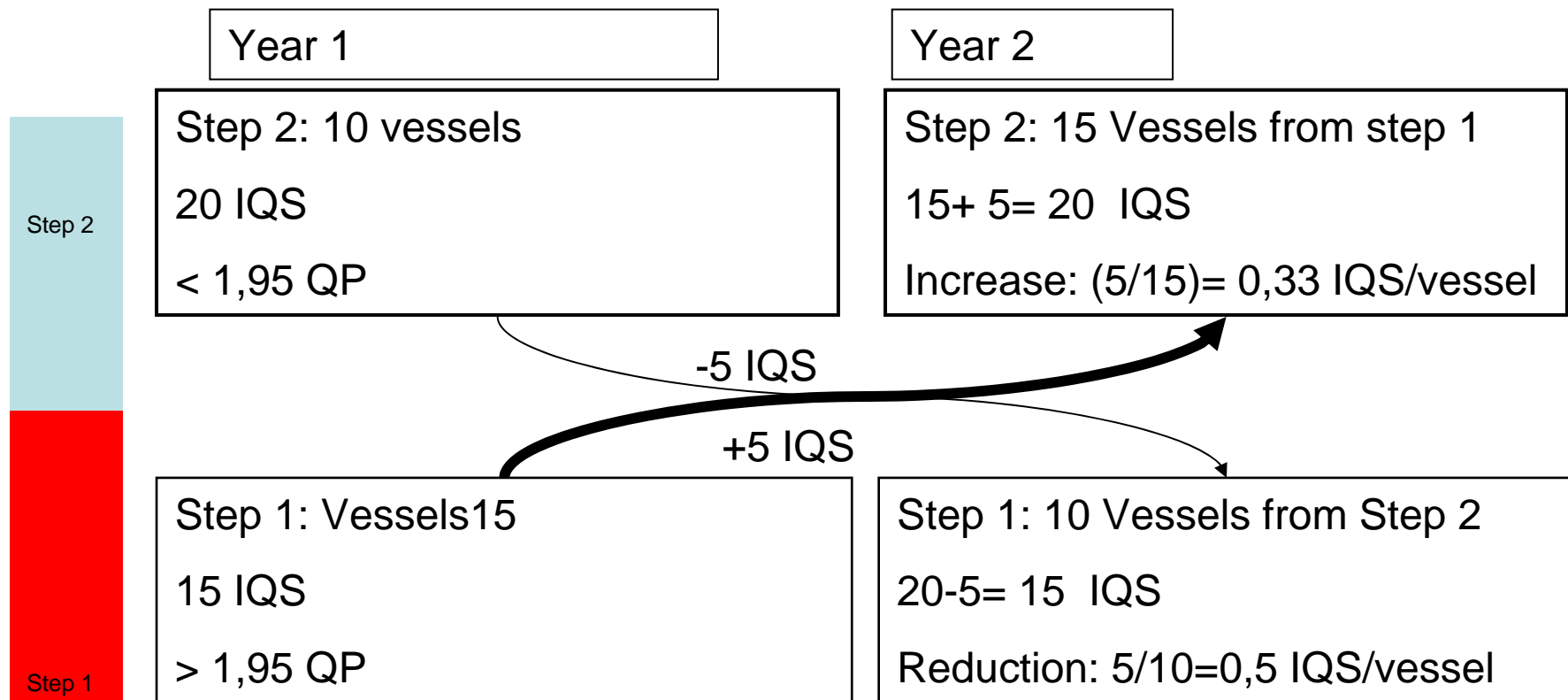
Allocation of Norwegian Cod after 2006 data

# Quota points for moving up and down the quota ladder

- Initial allocation after present established system
- Later after earned quota point
  - In Norway fishing rights follow fishing boat master + approved vessel for the each target fishery
- Flexible technical criteria (improving value adding per kg)
  - Vessels with same sizes and gears can over time be allocated in different steps in the ladder according to earned points
  - Catch limited according to IQS
- Movement between steps in the ladder
  - As in football leagues
    - Those fishboat masters with lowest quota points moves down one step in the ladder
    - Those fishboat masters with highest quota point moves up one step in the ladder
    - When the fishboat masters retire, the IQSs can be reallocated to newcomers
    - Fishboat master individual & family members or management members in incorporated companies might be treated equal

# League model

Illustration of moving up and down



# Quota points (QPs)

- Calculated from last years operational results
  - Operational results correlated for disruption of operation like marine casualty, sickness etc.
- After objectives, examples
  - QP Past utilization
    - Percentage of harvested quota
  - QP Past total harvest value per IQS after fish size
    - Average value of catch/ value average all participants in the same step in the ladder, according to official landing statistics
    - Fish size value maximizing prohibit high grading
  - Value adding QP
    - Average value adding of catch/ value adding average all participants in the same step in the ladder, according to official enterprise accounts .
    - Extra value adding points for delivery in specific harbors/regions
- Auctions of QP as royalty bid (Bromley 2009, Trondsen 2001 & 2004 Macinco & Bromley 2002, Trondsen & Johnston 1998)
  - Payment in percentage of landed value= resource rent
  - => building funds
    - for harvest stabilization in periods with low quota available
    - R&D etc.

# Limitation of IQS permits

- IQS permits of 5-10 years (Brownly 2009) for each step of the quota ladder (quota/vessel group)
- Improve the fish boat owner's planning horizon
  - In Norway 23-25 years
  - Long term IQS might improve long term management interest

# Conduct constraints

- Vessels may participate in many ladders (like cod, haddock, saithe, herring)
- Fish boat masters must choose ladders where most QP can be earned in order to keep position in the ladder
  - More focus on utilization of competitive advantage
  - Less overbooking of IQSs
  - => less time for quality handling= lower market value
  - => More steaming and gears=increasing costs
- Bigger vessels with low catch may move down to open step in the ladder
  - Need for maximum IQS on in the ladders' open steps
- Fisheries managers decides QP of intersection between those who moves down and those who moves up the ladder
  - Objective criteria for moving up and moving down
  - Adjustment over many years

# League model motivation of fishermen's behavior

- IQS motivate for individual long term trust in the stewardship system
  - The fishermen's IQS secure a fixed and fair share of both when TAC is cut down to increase the fish stock and the later improved TAC benefits
- QP for moving up and down quota ladders motivate operational behavior according to fisheries objectives
  - Utilization QP motivates matching TAC and actual catch
  - Value QP points may motivate less resource waste (e.g. dispatching by-catch) and supply of better market-matched product quality
  - Value adding QP motivates
    - Less investment in quota rights
    - Less over investment in economic overcapacity
    - Specialization and optimal seasonal (ladder) combinations

# League model motivation of fishermen's behavior

- Lower IQS prices (if tradable)
  - because all qualified owner of fishing vessels can move up in the ladder without purchasing quotas.
    - Depending of capability to keep a high value adding margin in each fishery
- Lower entry barrier
  - Easier for young fishers to enter as fishing vessel owner
- Each fishboat master and vessel owner must chose step in the ladder to be competitive (without loosing IQSs)
  - Depending of individual ambition and capability
  - Those who drop out of the fishery can always come back starting in the open step of the ladder and move upward until their satisfaction level



# Administrative consequences

- In the Norwegian case:
  - The League model can be adapted to established management system.
  - Need for new computer based procedures for calculated QP for up and down movements
    - Development work over a short period of time
    - New procedures over time can be automated

# League model advantages

- Matches catches to TAC
  - Precondition ; TAC & Group share quota system & Quota control system must be in place
  - Royalty auctions funds may stabilize income when TAC & prices varies
- Less capital effort in purchasing licenses and quotas
  - Decrease catch pressure on TAC
- Opens up the fisheries common
  - Decreases entry barriers for new comers=> more innovation
- Increases solidity
  - Decreases bankrupt risk when revenue varies
- Improve fisheries communities access to fisheries revenue
  - Decrease geographical concentration and depopulation of fisheries dependent communities

# References

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