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Policies for ecosystem services in the Baltic Sea

Ing-Marie Gren, Department of Economics, Swedish University of Agricultural Sciences, Uppsala

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Main questions

- If and how to promote development of technologies that provide both market and non- market ecosystem services in the Baltic Sea?

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When to promote?

Social net value of market and non market goods > private net value of market goods

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Example of mussel farm

Market: food or feed

Non-market: nutrient cleaning

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Social and firm net value of a mussel farm of 0.5 ha in South Baltic Proper, average Euro/kg mussel at BSAP nitrogen (N) and phosphorus (P) targets

Values: Market Feed	Non-market N and P cleaning	Cost	Net value: Society	Firm
0.08	P 0.30 N 0.04	0.20	0.22	-0.12

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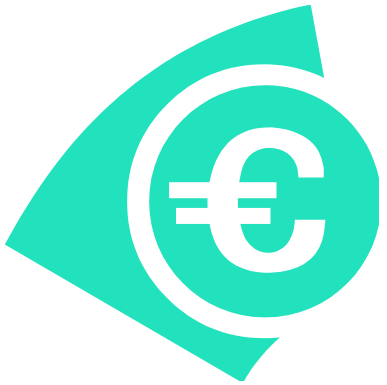
How to promote technologies?

- Cost based systems

- Output based system



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Example; annual profit in Euro of a mussel farm in South Baltic Proper

(average annual production of 30 ton mussel, 0.03 ton P removal and 0.3 ton N removal)

	Cost based system	Output based system Euro 300/kg P removal Euro 4/kg N removal
Production cost	7900	7900
Feed sales	2650	2650
Profit without compensation	-5250	-5250
Compensation	7900	10200
Firm profit	2650	4950

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Relative performance of cost and output based compensation schemes

	Advantage	**Disadvantage**
Cost based system	Relatively simple to measure	Incentives to misreport costs No incentive to promote cleaning of nutrients
Output based system	Gives incentives to promote cleaning Coordination of environmental targets	Difficult to measure ckeaning at farm level Coordination of environmental targets

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Concluding remarks

- Can be large differences between social and private net benefits of technologies with market and non-market services
- In general, multifunctional technologies need support for implementation
- Cost based system relatively simple, but output based systems promote technological development for ecosystem service provision
- Efficient output based systems require coordination of policies for different targets