# Sustainability assessments:
# Social, economic and environmental perspectives (Task 5)

Aim: To understand the welfare contribution to the local society by estimating the social, cultural and economic impacts of fish production in monetary units as well as by life cycle assessment (LCA) for environmental aspects.

Varför monetärt värde?

Foto: Göran Assner


Foto: Göran Assner

*marint kulturlandskap,*
*Scanfjords musselodling*


www.fifax.ax

*RUBB – Building systems*

Fotografi: Anette Ungfors och Kristina Snuttan Sundell

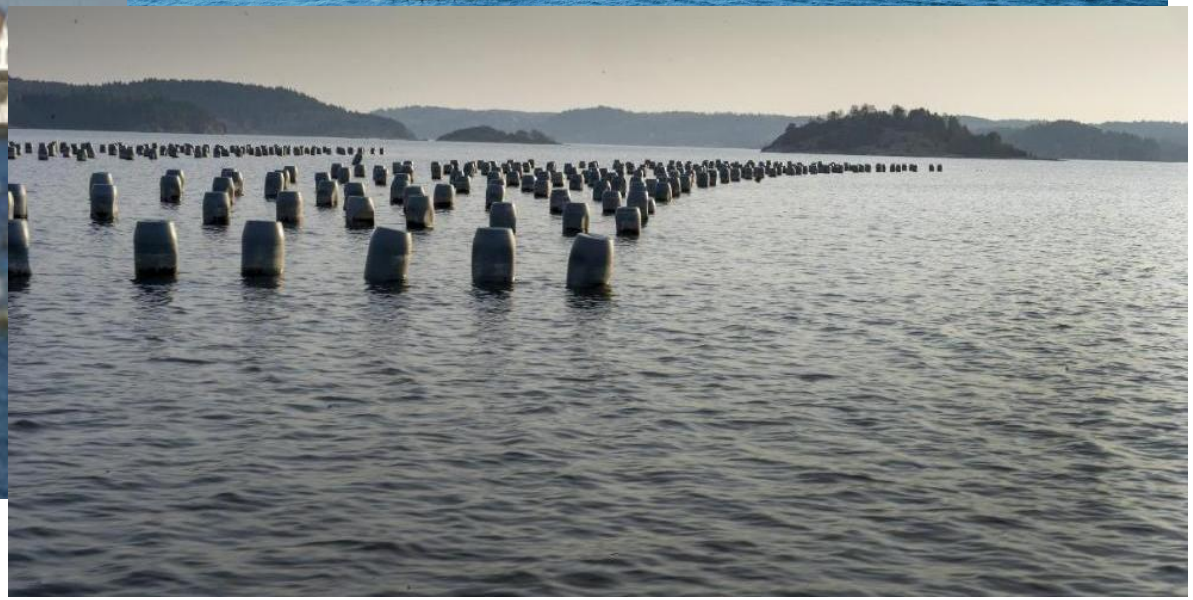



Bild: Lasse Edwartz
[Musselodlingar är i vägen för kajakpaddlare] (arkivbild)

# Välfärdstillväxt - ekonomisk tillväxt

Välfärd – vad är det?

Välfärd kan tolkas på olika sätt

Objektivt (materiell): sjukvård, inkomst, livslängd, etc.

Subjektivt (immateriell): välbefinnande, lycka och livstillfredställelse

## Ekonomiska värden

| POSITIVA | NEGATIVA |
|---|---|
| Arbetsplatser | läckage |
| Underleverantörer | alternativkostn. |
| Skatteunderlag | |

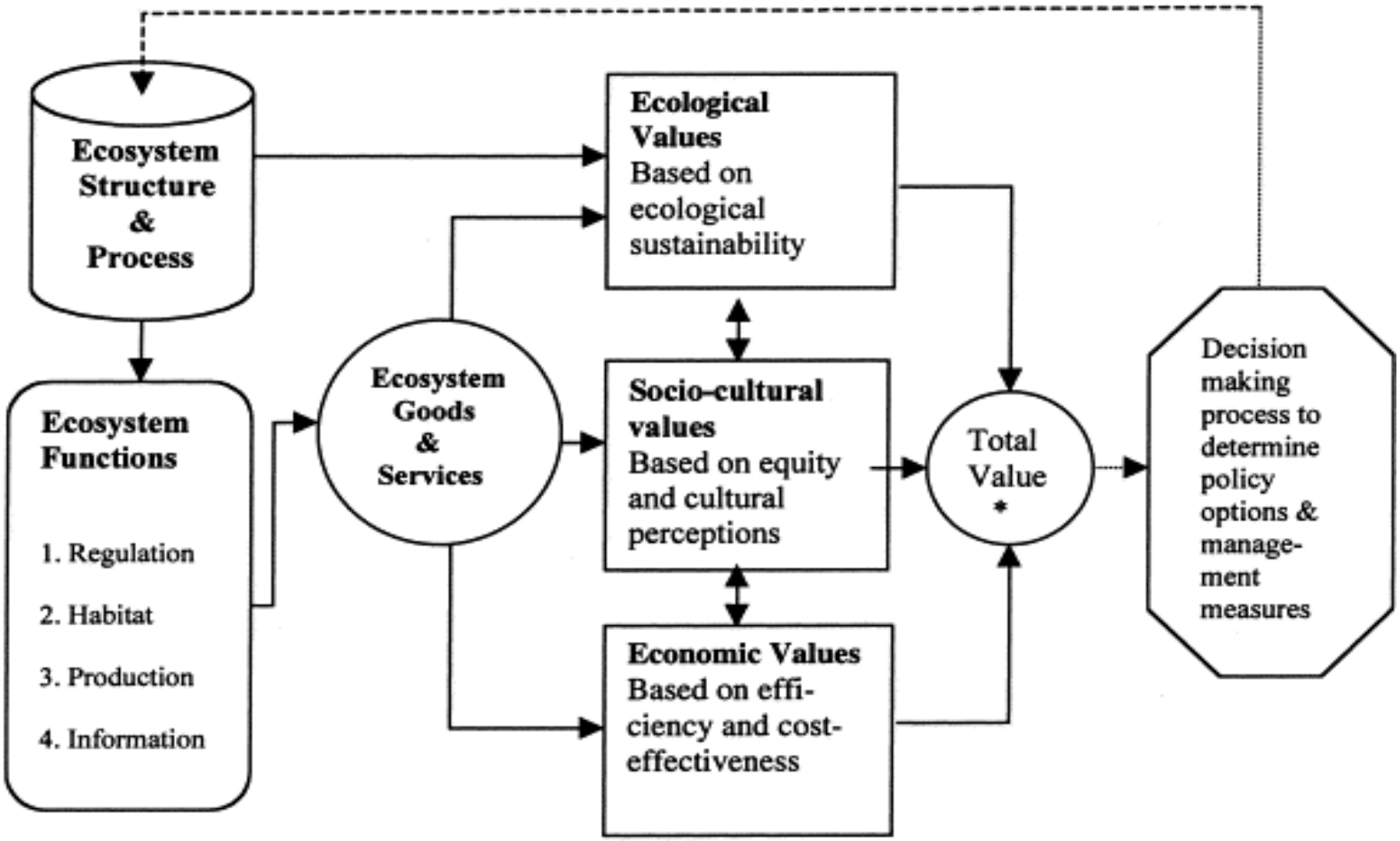
## Sociokulturella värden

| POSITIVA | NEGATIVA |
|---|---|
| Tillgång till närodlat | trängsel |
| Ökad attraktivitet och man bor kvar | ökade ljudn. |
| Ett jobb man identifierar sig med | |
| Ökad stolthet | |
| Kulturellt arv | |

## Miljövärden

| POSITIVA | NEGATIVA |
|---|---|
| Kunskap & Medvetenhet | Nedskräpning |
| | Utsläpp |

Lönenivå
Arbetsuppgifter
Ekonomiska följdeffekter
Infrastrukturkostnader
Infrastrukturvinster
Ökat utbud av marina tjänster
Ökad mat-medvetenhet
Visuella förändringar
Påverkan på övrig mar. Miljö
Ökat utbud av restauranger
turism
…




*) The problem of aggregation and weighing of different values in the decision making process is an important issue, but is not the subject of this paper (see other papers in this issue for further discussion)

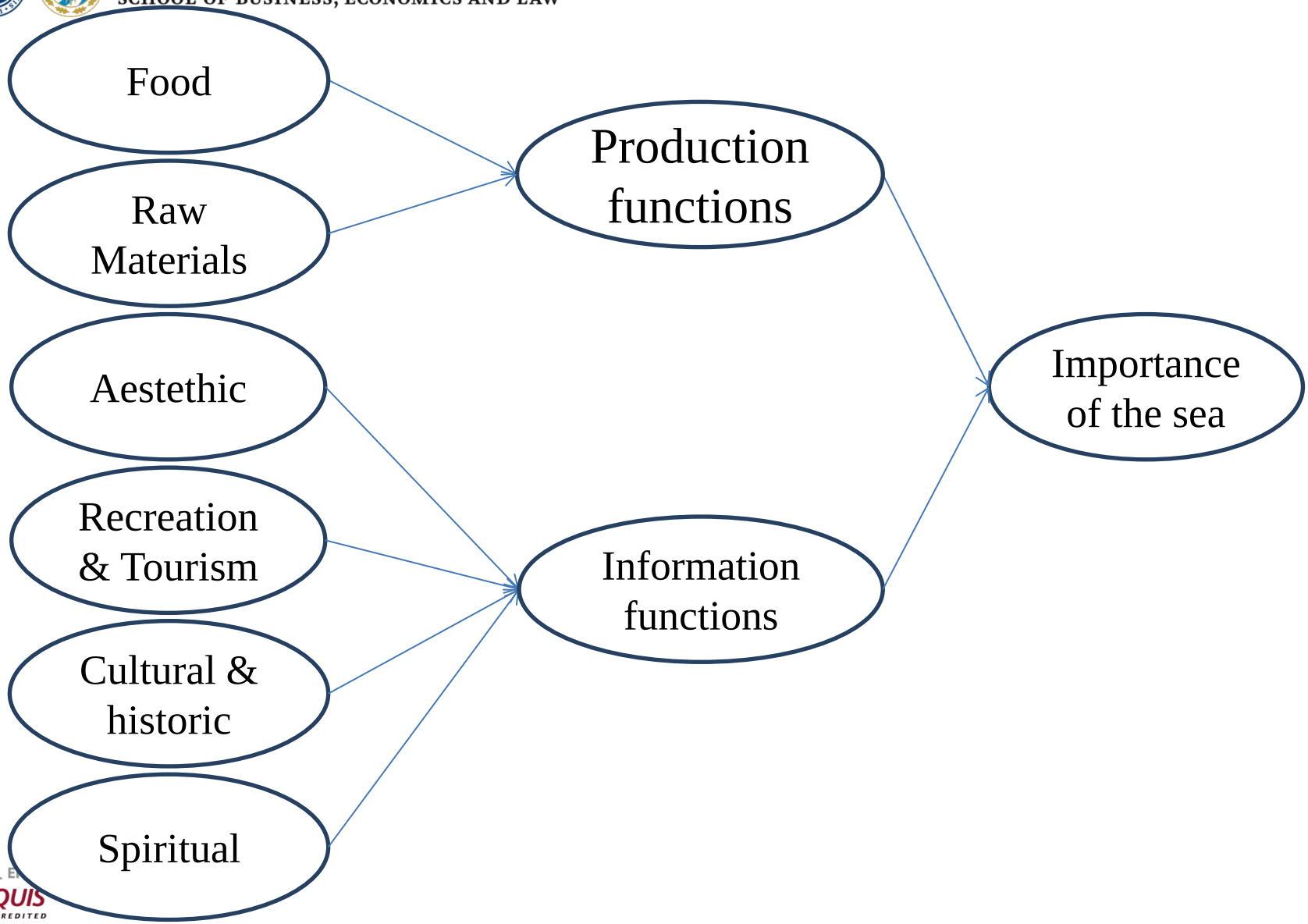
| Ecosystem functions (and associated goods and services (see Table 1) | Range of monetary values in US$/ha year[a] | Direct market pricing[b] | Indirect market pricing | | | | | Contingent valuation | Group valuation |
|---|---|---|---|---|---|---|---|---|---|
| | | | Avoided cost | Replacement cost | Factor income | Travel cost | Hedonic pricing | | |
| *Regulation functions* | | | | | | | | | |
| 1. Gas regulation | 7–265 | | +++ | 0 | 0 | | | 0 | 0 |
| 2. Climate regulation | 88–223 | | +++ | 0 | 0 | | | 0 | 0 |
| 3. Disturbance regulation | 2–7240 | | +++ | ++ | 0 | | 0 | + | 0 |
| 4. Water regulation | 2–5445 | + | ++ | 0 | +++ | | 0 | 0 | 0 |
| 5. Water supply | 3–7600 | +++ | 0 | ++ | 0 | 0 | 0 | 0 | 0 |
| 6. Soil retention | 29–245 | | +++ | ++ | 0 | | 0 | 0 | 0 |
| 7. Soil formation | 1–10 | | +++ | 0 | 0 | | | 0 | 0 |
| 8. Nutrient cycling | 87–21 100 | | 0 | +++ | 0 | | | 0 | 0 |
| 9. Waste treatment | 58–6696 | | 0 | +++ | 0 | | 0 | ++ | 0 |
| 10. Pollination | 14–25 | 0 | + | +++ | ++ | | | 0 | 0 |
| 11. Biological control | 2–78 | + | 0 | +++ | ++ | | | 0 | 0 |
| *Habitat functions* | | | | | | | | | |
| 12. Refugium function | 3–1523 | +++ | | 0 | 0 | | 0 | ++ | 0 |
| 13. Nursery function | 142–195 | +++ | 0 | 0 | 0 | | 0 | 0 | 0 |
| *Production functions* | | | | | | | | | |
| 14. Food | 6–2761 | +++ | | 0 | ++ | | | + | 0 |
| 15. Raw materials | 6–1014 | +++ | | 0 | ++ | | | + | 0 |

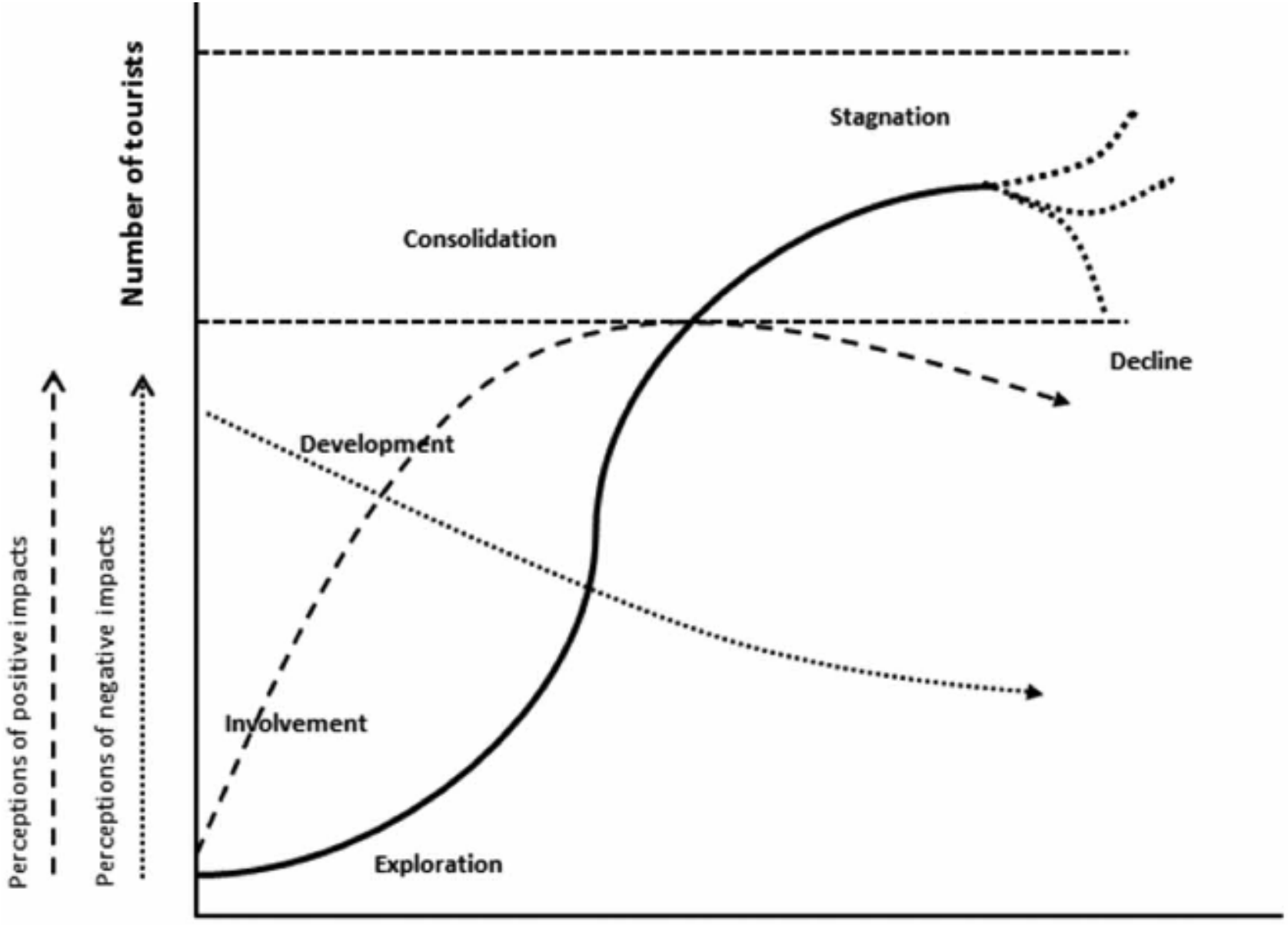
Table 2 (Continued).

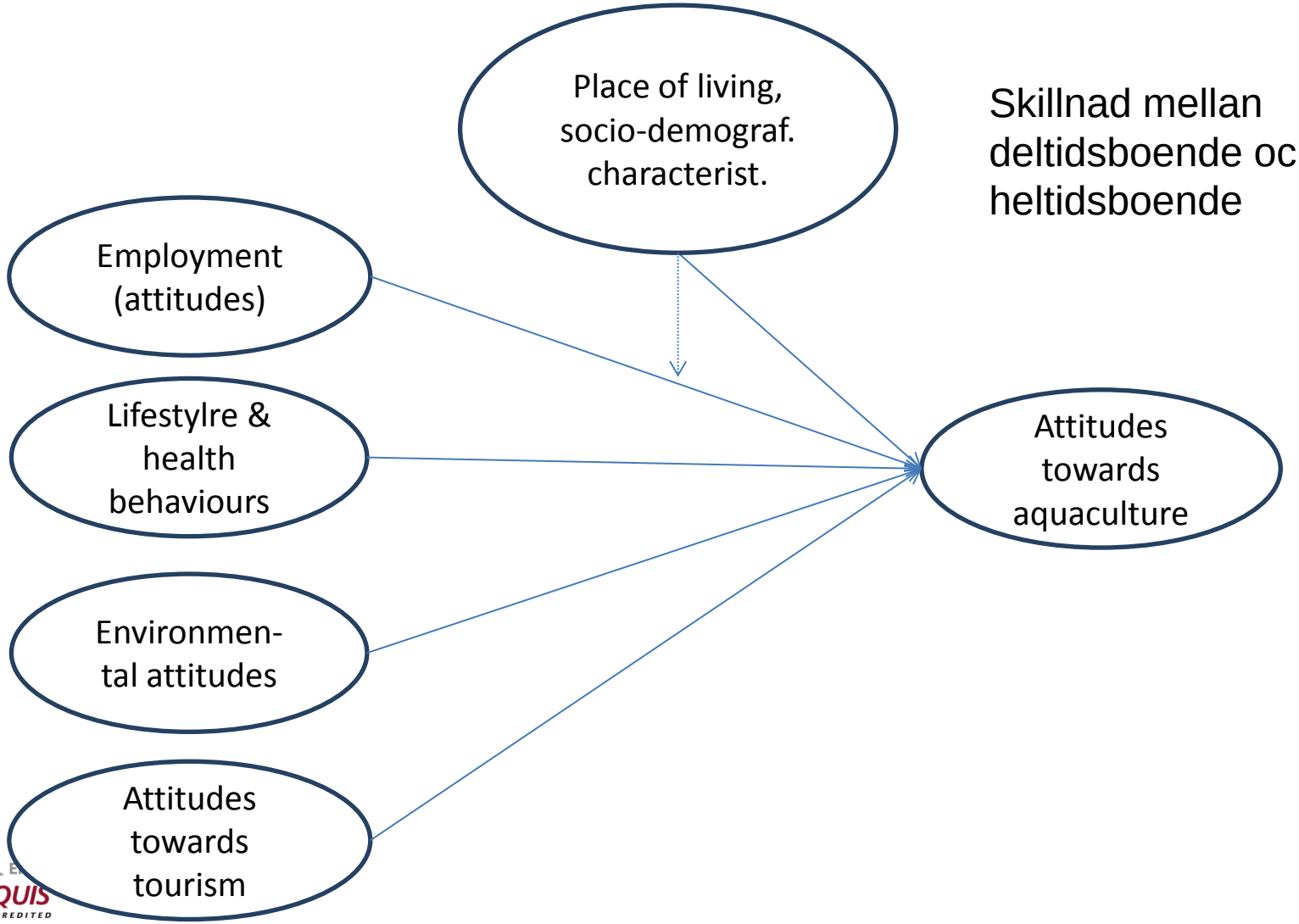
| Ecosystem functions (and associated goods and services (see Table 1) | Range of monetary values in US$/ha year[a] | Direct market pricing[b] | Indirect market pricing | | | | | Contingent valuation | Group valuation |
|---|---|---|---|---|---|---|---|---|---|
| | | | Avoided cost | Replacement cost | Factor income | Travel cost | Hedonic pricing | | |
| 16. Genetic resources | 6–112 | +++ | | 0 | ++ | | | 0 | 0 |
| 17. Medicinal resources | | +++ | 0 | 0 | ++ | | | 0 | 0 |
| 18. Ornamental resources | 3–145 | +++ | | 0 | ++ | | 0 | 0 | 0 |
| *Information functions* | | | | | | | | | |
| 19 Aesthetic information | 7–1760 | | | 0 | | 0 | +++ | 0 | 0 |
| 20 Recreation and tourism | 2–6000 | +++ | | 0 | ++ | ++ | + | +++ | |
| 21 Cultural and artistic insp. | | 0 | | | 0 | 0 | 0 | +++ | 0 |
| 22 Spiritual and historic inf. | 1–25 | | | | | 0 | 0 | +++ | 0 |
| 23 Science and education | | +++ | | | 0 | 0 | | 0 | 0 |

[a] Dollar values are based on Costanza et al. (1997) and apply to different ecosystems (e.g. waste treatment is mainly provided by wetlands and recreational benefit are, on a per hectare basis, highest in coral reefs). In the columns, the most used method on which the calculation was based is indicated with +++, the second mos with ++, etc.; open circles indicate that that method was not used in the Costanza study but could potentially also be applied to that function.

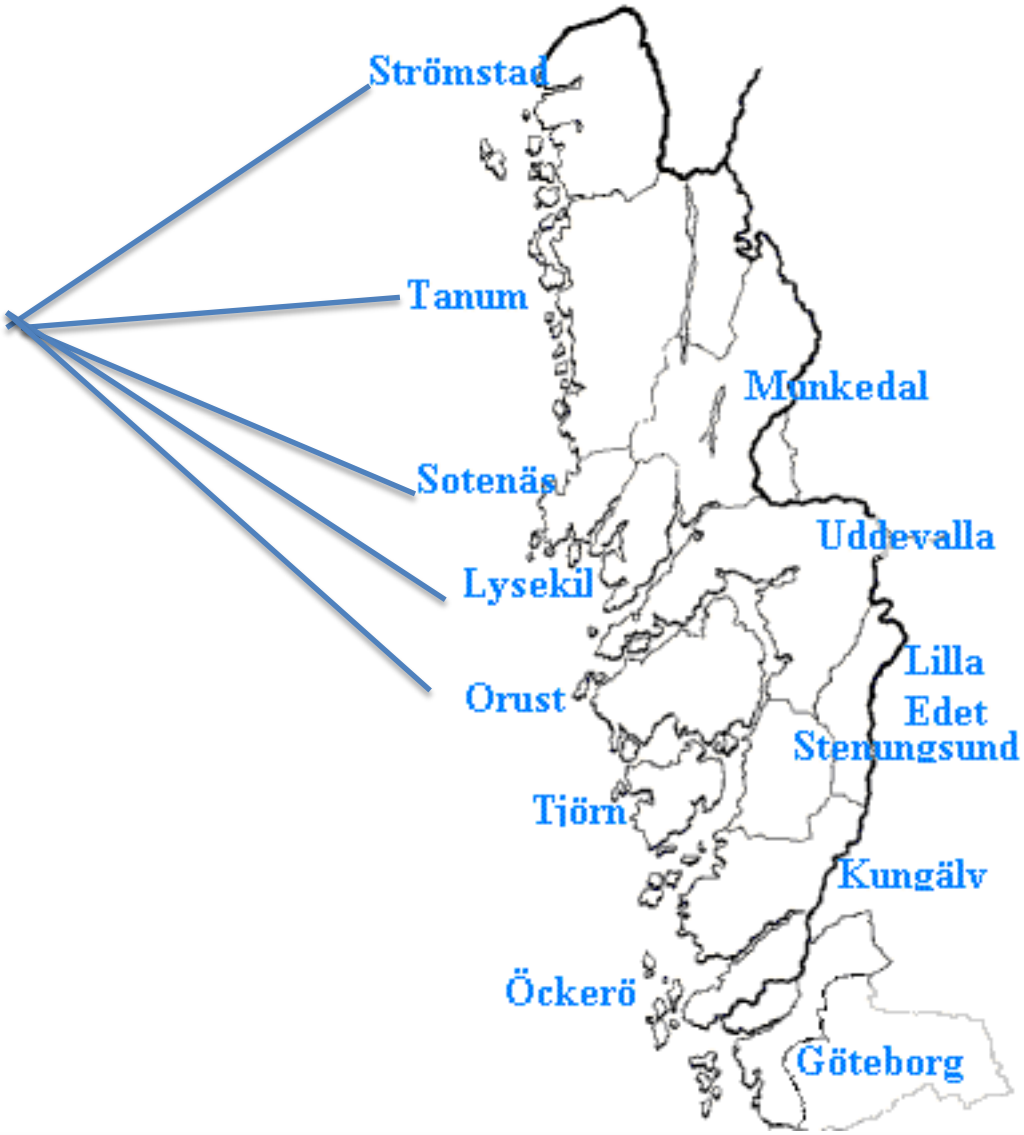
[b] Based on added value only (i.e. market price minus capital and labor costs (typically about 80%).


Food
Raw Materials
Aesthetic
Recreation & Tourism
Cultural & historic
Spiritual
Production functions
Information functions
Importance of the sea


Number of tourists
Stagnation
Consolidation
Decline
Development
Involvement
Exploration
Perceptions of positive impacts
Perceptions of negative impacts




Skillnad mellan deltidsboende och heltidsboende


Strömstad
Tanum
Munkedal
Sotenäs
Uddevalla
Lysekil
Lilla
Edet
Stenungsund
Orust
Tjörn
Kungälv
Öckerö
Göteborg

# Möjliga slutsatser

- Vilka direkta effekter skapar etableringen av akvakultur?
- Upplevs akvakultur som en konkurrent till turismen?
- Vilka sociala effekter upplever befolkningen?
- Hur kopplar etableringen av fiskodling till den lokala kulturen?
- ”Vad tycker olika befolkningsgrupper om akvakultur?”
- Hur påverkar det livskvalitén och välfärd?
- Hur ser fritidsboende och året-runt boende på akvakultur?