

Beyond GDP – Ecosystem Services as Part of Environmental Economic Accounting?

Walter Radermacher

President of the Federal Statistical Office, Germany

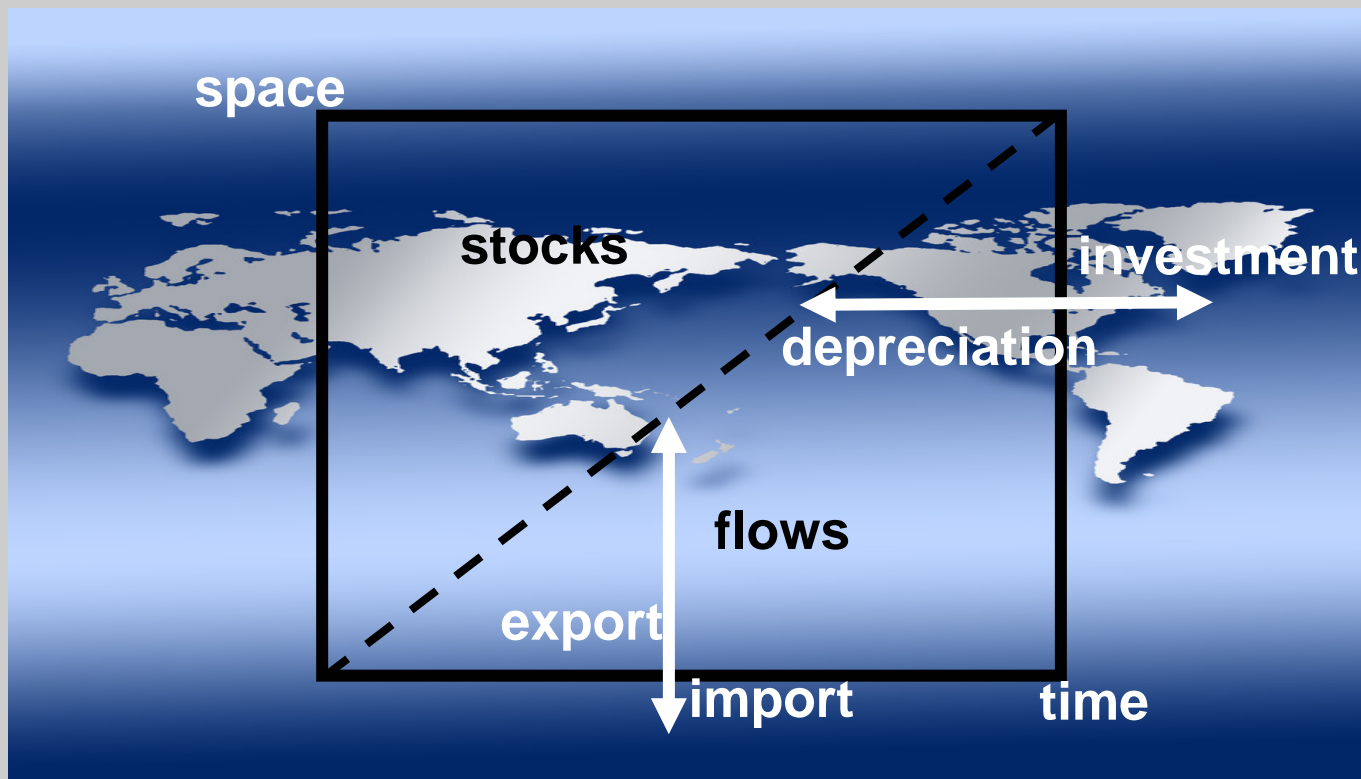
Workshop “Ecosystem Services – Solution for problems or a problem that needs solution?”

13-15 May 2008, Salzau

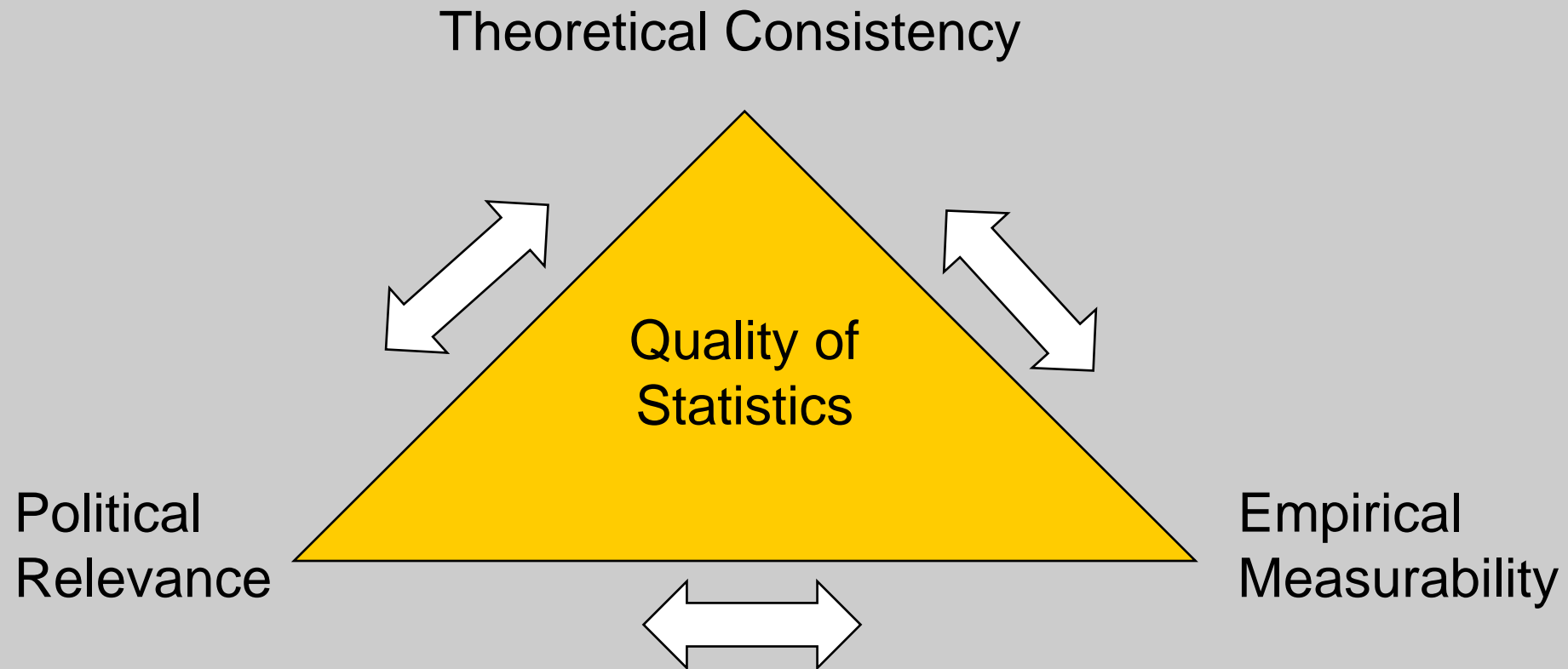
Official statistics and progress measurement



The Economic System in Statistics: A “flat” projection

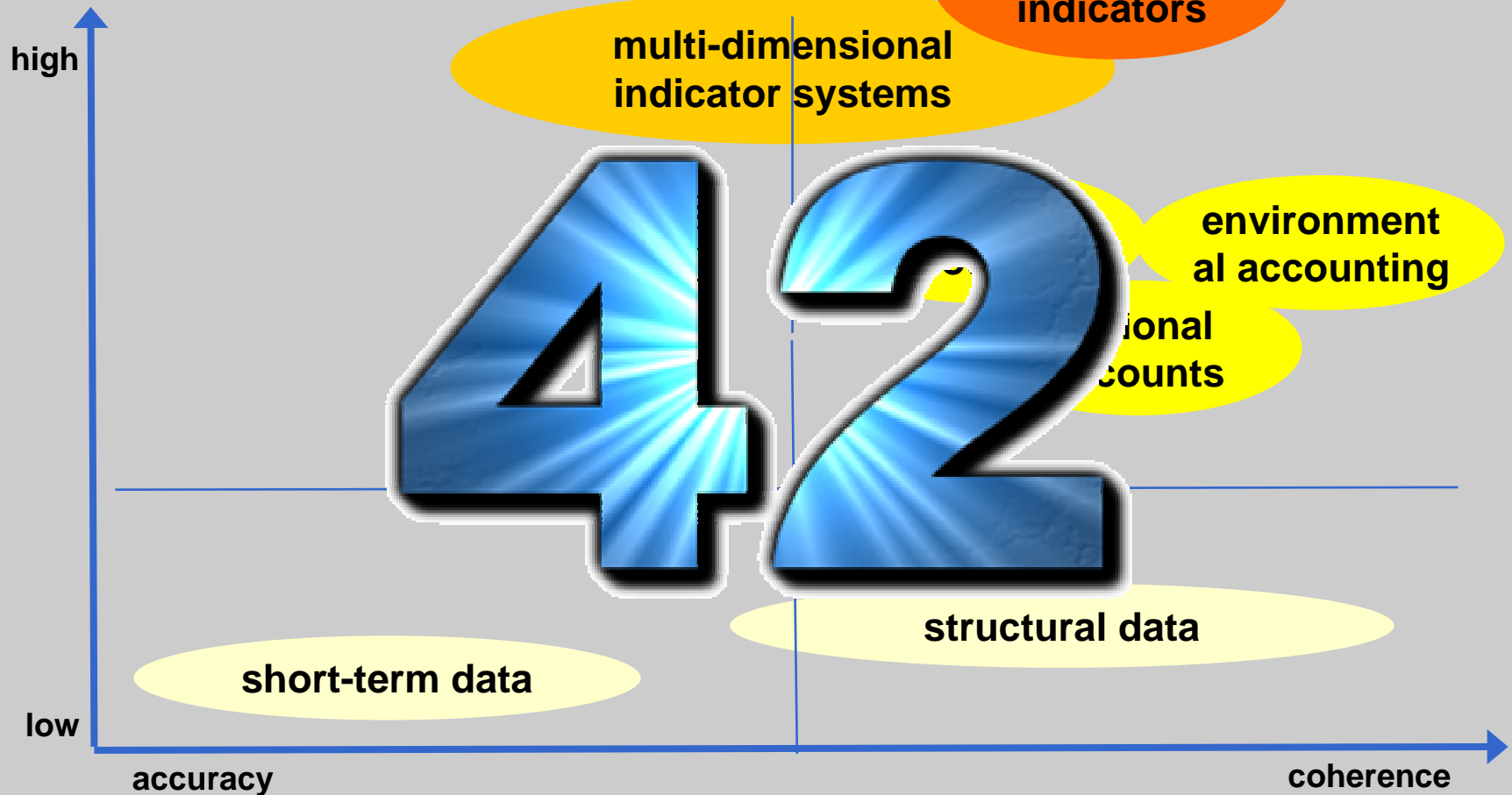


“Good policy needs good statistics” (Tony Blair)

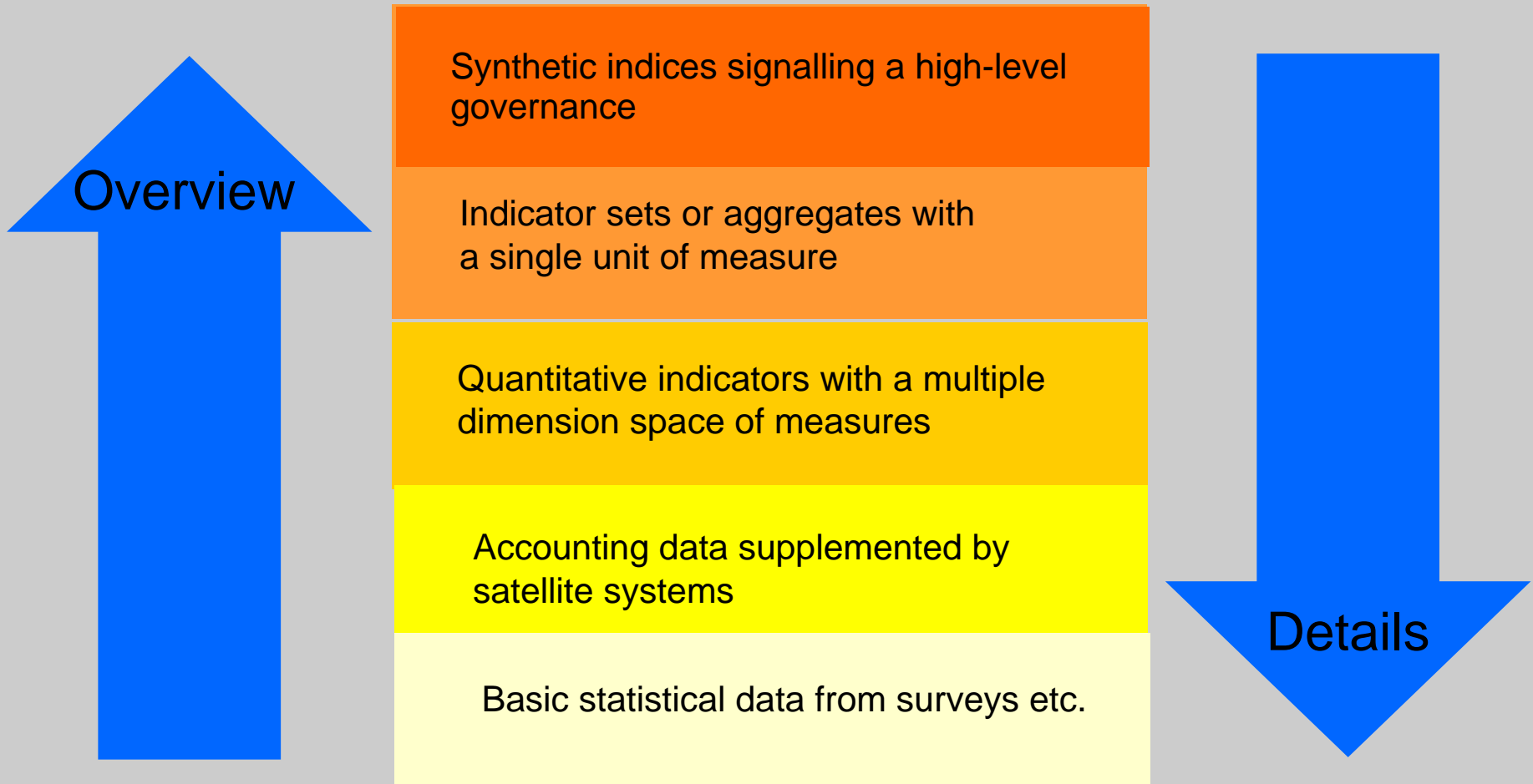


Species of Statistical Information

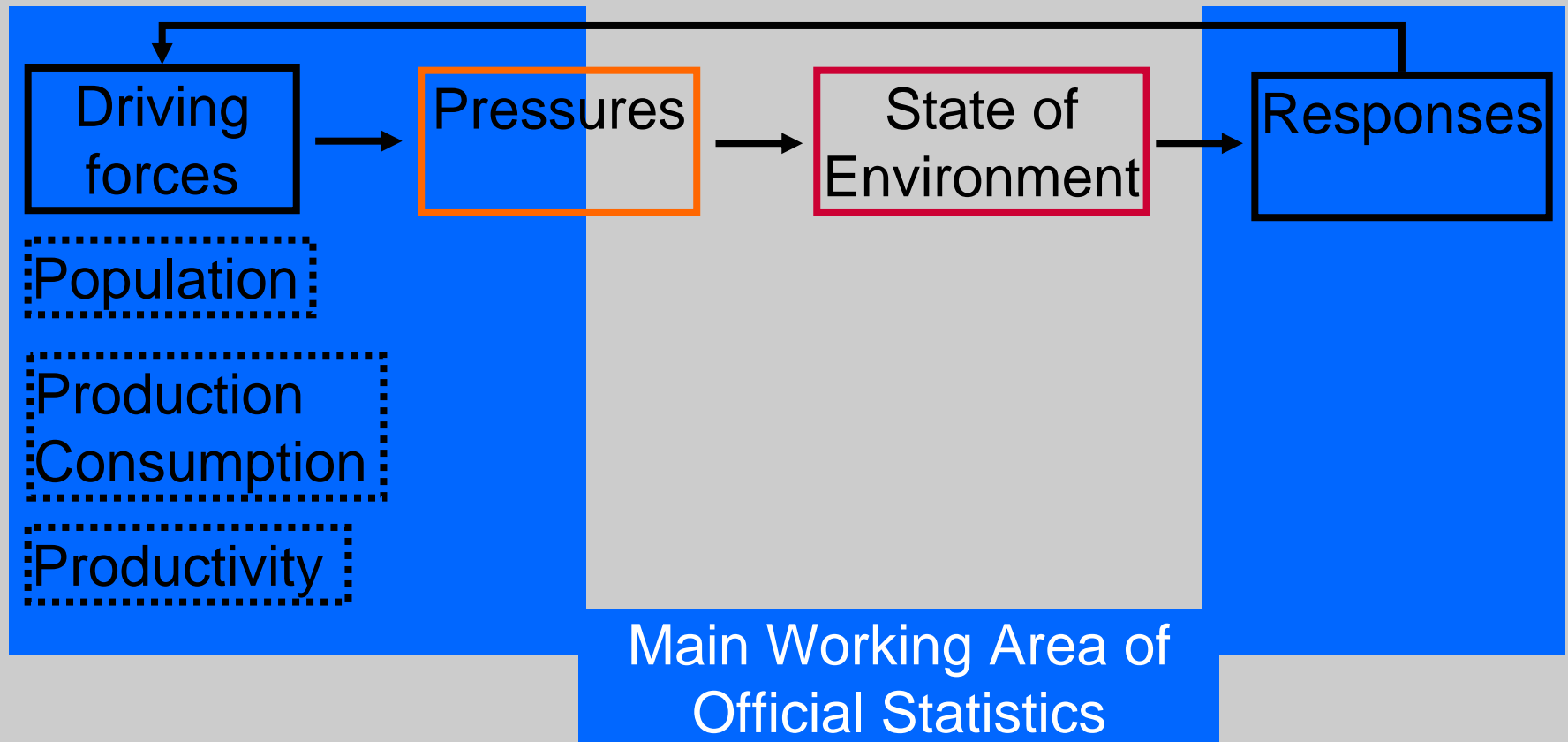
degree of aggregation/
model character



Reductionism + Holism: Complementary Views



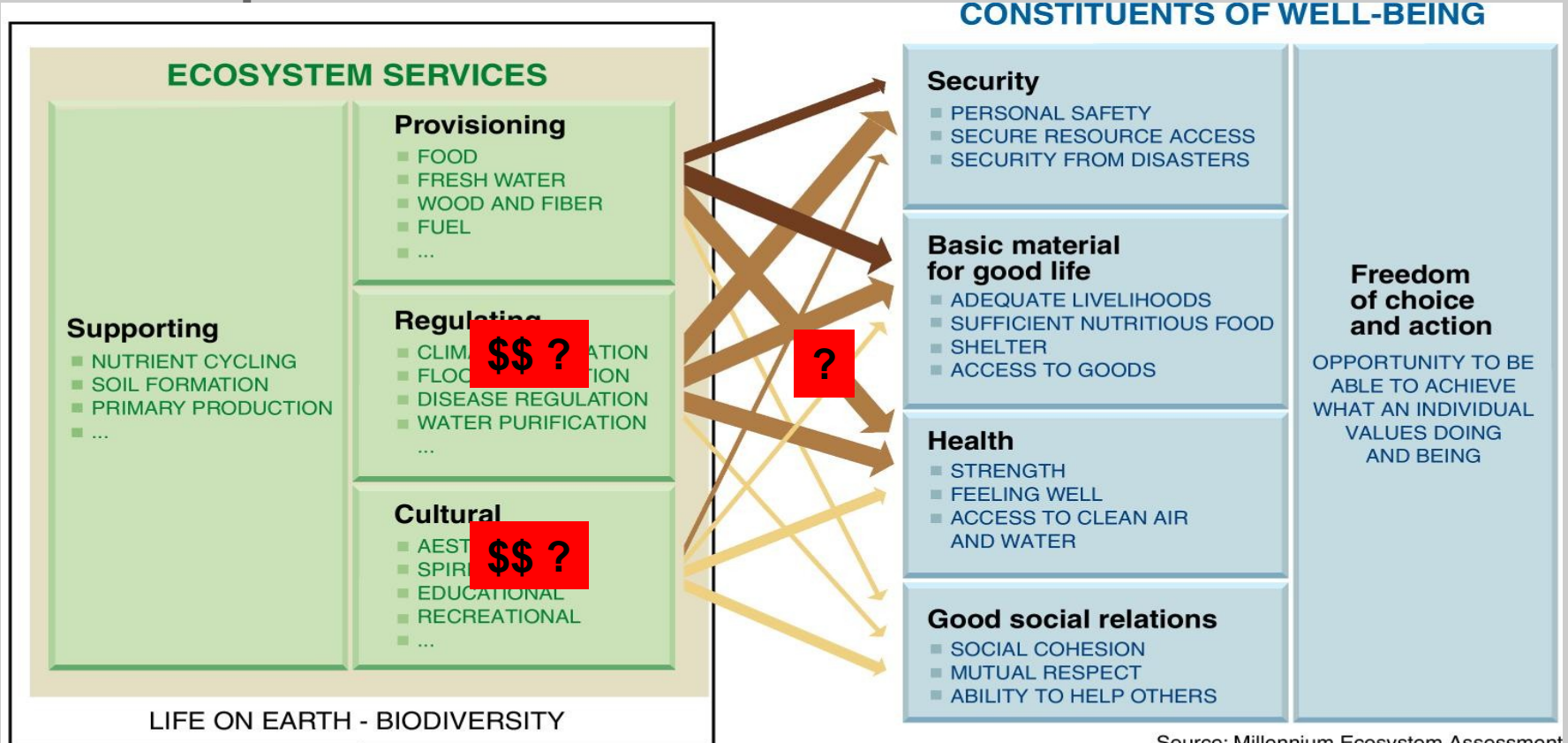
Official Statistics and Environment



Toolbox Environment Statistics

	Basic Statistics	Geographical Information Systems (GIS)	Accounting (SEEA: MFA, Valuation...)	Modelling	Indicators (I-Sets, Composite Indicators)
Collection	X	X			
Systematisation	X	X	X		
Analysis		X	X	X	
Aggregation			X	X	
Communication					X

Millennium Assessment: Ecosystem Services – with open ends



Source: Millennium Ecosystem Assessment

ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Ecosystem Services

Provisioning



Cultural



Provisioning Services

Goods produced or provided by ecosystems

Food

- Crops
- Livestock
- Capture Fisheries
- Aquaculture
- Wild Foods



Fiber

- Timber
- Cotton, hemp, silk
- Wood Fuel



Genetic resources

Biochemicals

Freshwater



Regulating Services

Benefits obtained from regulation of ecosystem processes

Air Quality Regulation

Climate Regulation

- Global (CO₂ sequestration)

- Regional and local

Erosion regulation

Water purification

Disease regulation

Pest regulation

Pollination

Natural Hazard regulation



Cultural Services

Non material benefits obtained from ecosystems

Spiritual and Religious Values

Knowledge Systems

Educational values

Inspiration

Aesthetic Values

Social Relations

Sense of Place

Recreation and Ecotourism



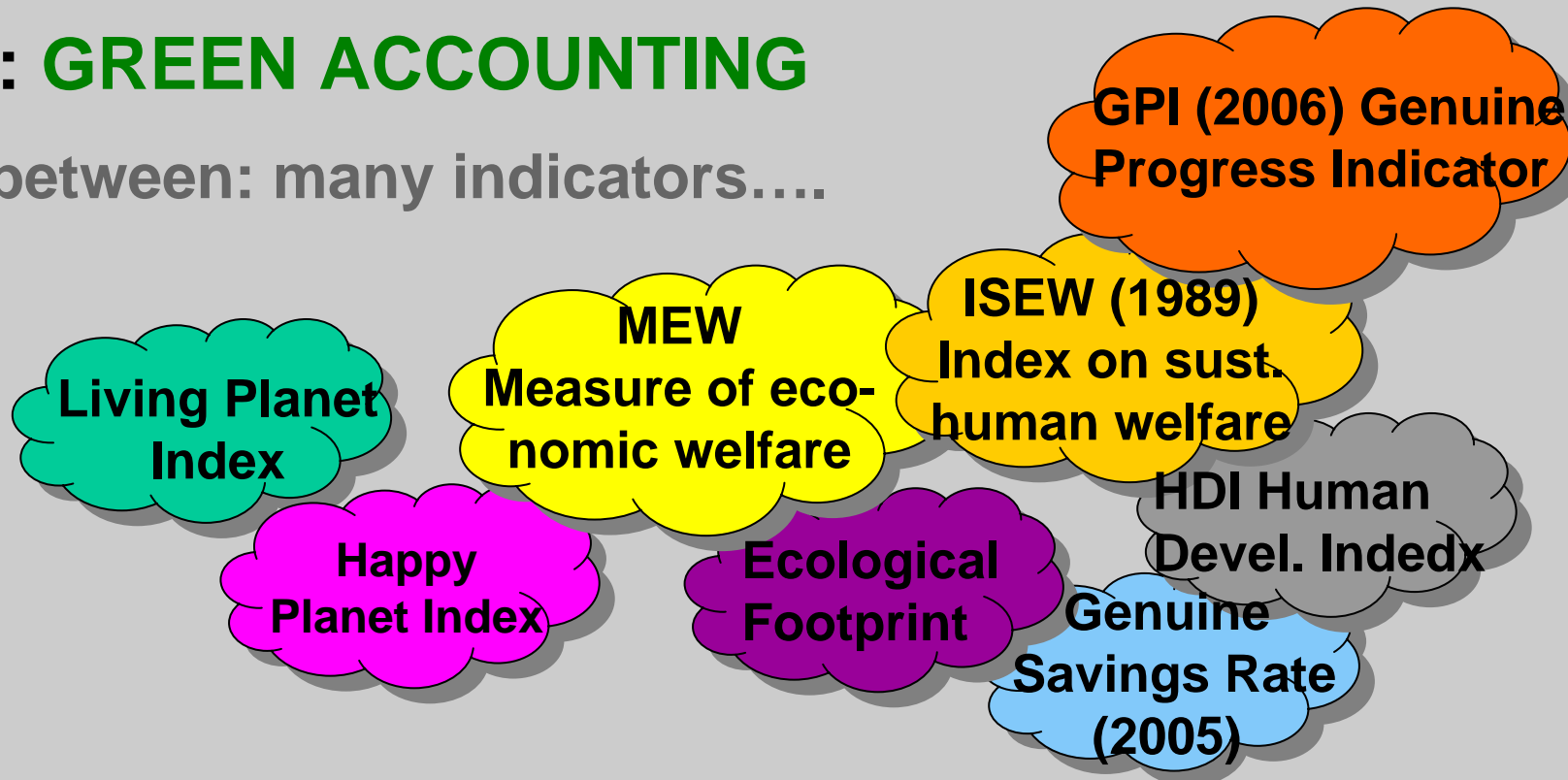
Holistic Measures on Different Levels of Aggregation

- **Extended national accounts (e.g. SEEA / System of integrated Environmental Economic Accounting)**
- **Indicators, indicator sets (e.g. EU structural indicators, EU sustainable indicators, UNSD, OECD)**
- **Composite indicators on environment, well-being, quality of life**

Political Demands – once and now

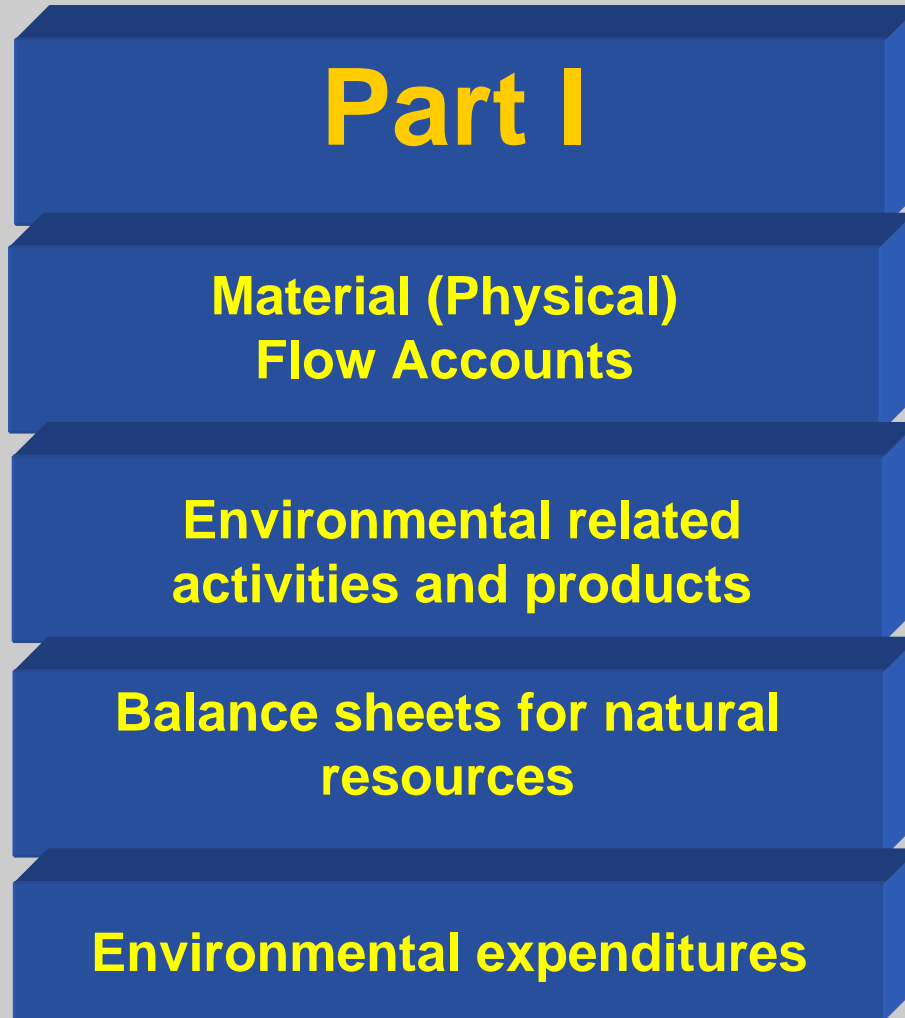
1990: **GREEN ACCOUNTING**

And in between: many indicators....



2008: **Beyond GDP, Measuring Progress**

SEEA 2003 – UN Handbook, Part I



Standard

2011

SEEA UN – Handbook, Parts II + III

Part II: Valuation

Valuation techniques for
environmental degradation

Accounting adjustments for
environmental degradations

Part III: Applications & policy uses

e.g. climate change

e.g. sustainability

**Non standard
in 2011**

What is already done in Germany?

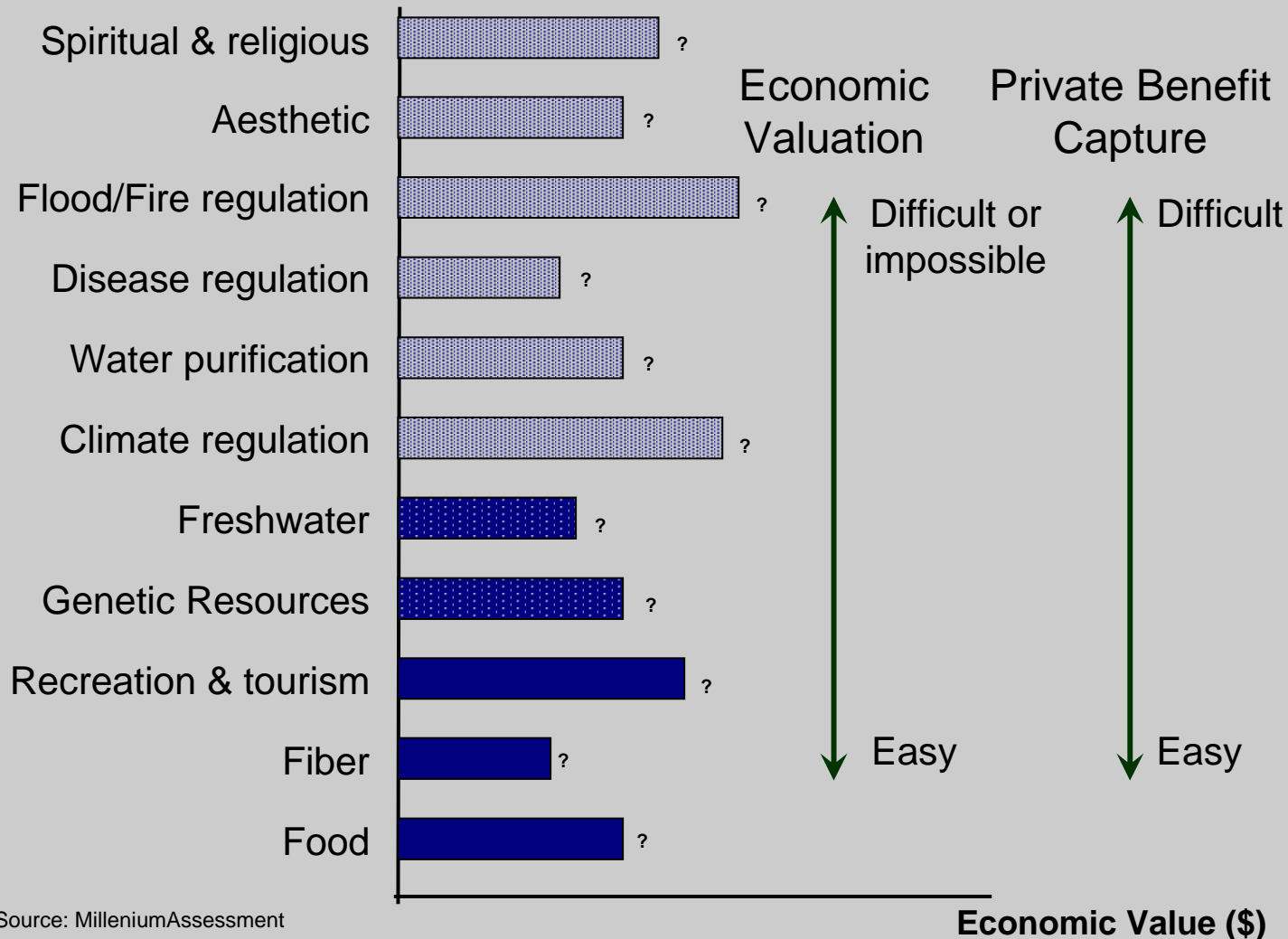
- **German Environmental - Economic Accounting (similar to part I of SEEA)**
 - **Material Flow Accounts**
 - **Resources, Energy, Water, Air Emissions**
 - **Land Use**
 - **Environmental Expenditure Accounts**
 - **Special thematic reporting modules to**
 - **Traffic**
 - **Agriculture**

- ▲ **Indicator set for Sustainable Development**

Valuation is all – All can be valued?

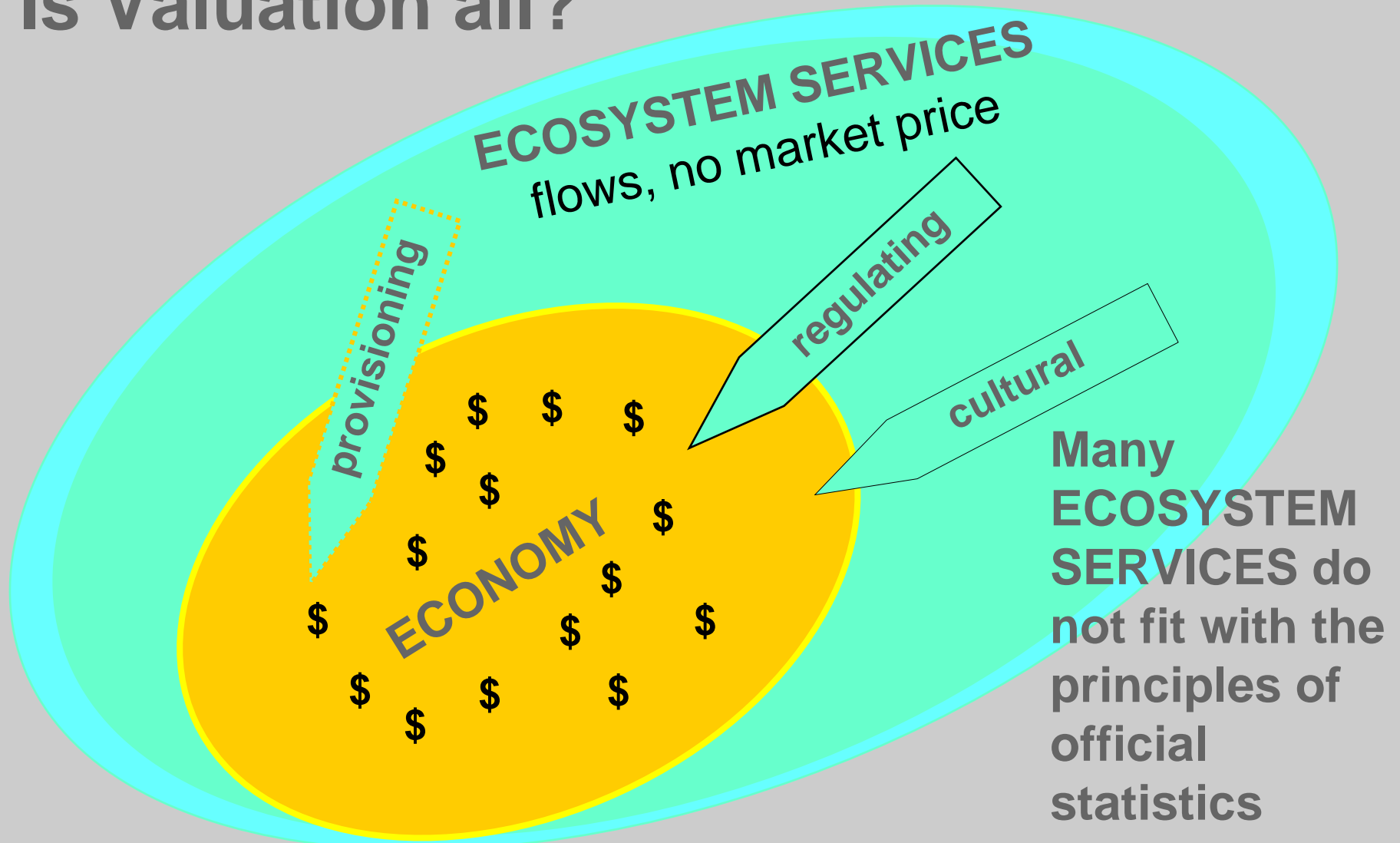
- **Why not a green / adjusted GDP?**
- **Availability of physical data?**
- **Market prices / Shadow prices?**
 - **Simple: Cost of a car in market prices (private goods)**
 - **Difficult: Valuation of ecosystem services (or its loss), like climate change (public goods)**
- **Axiom for valuation: At least there should be something similar to a market price.**

Many services are public goods

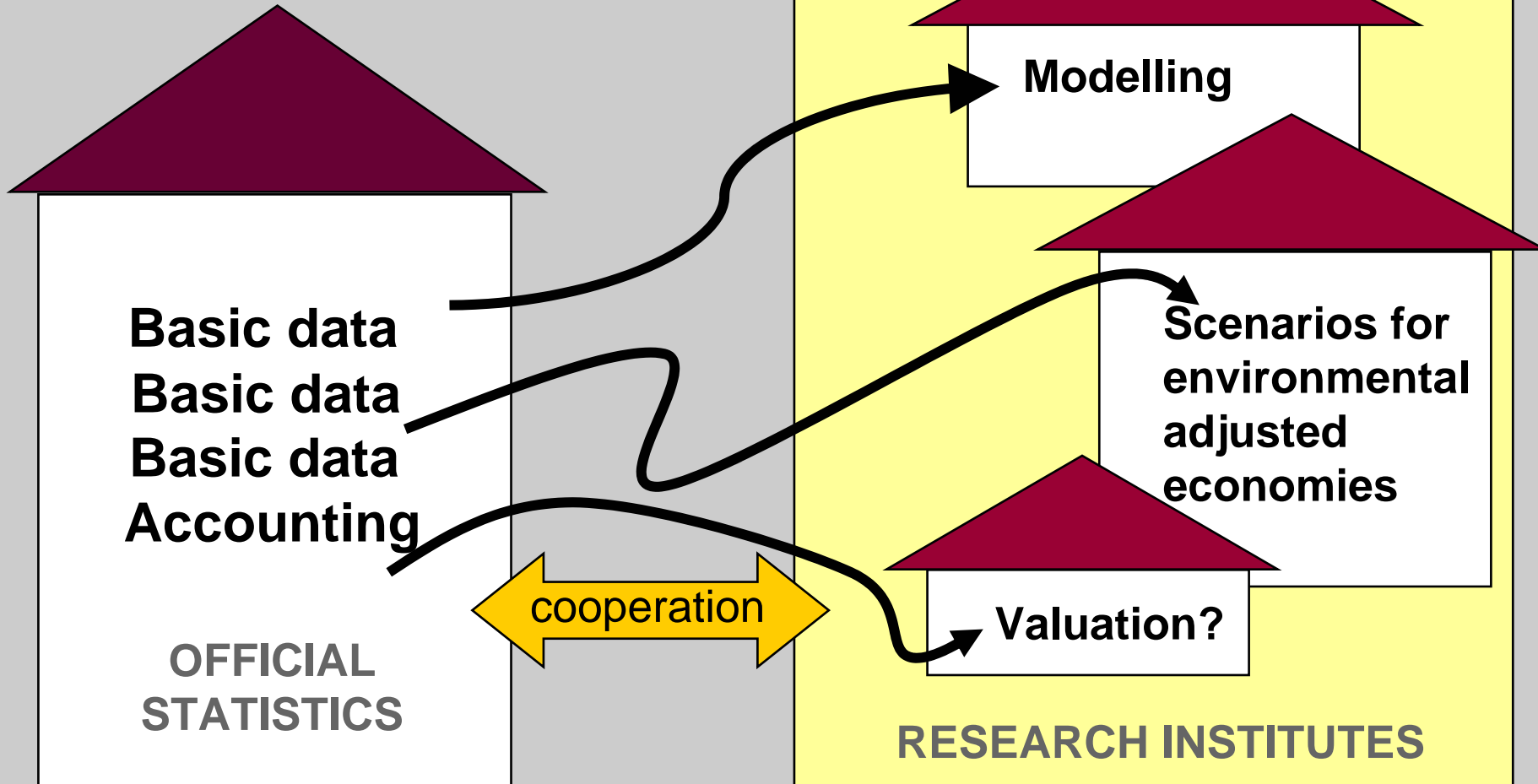


Source: MilleniumAssessment

Is Valuation all?



How to get beyond GDP?



Aims of global environmental policy (H.Daly)

**Scale:
Global limits**

**Distribution:
to nations**



**Efficiency:
Allocation of emission
rights**

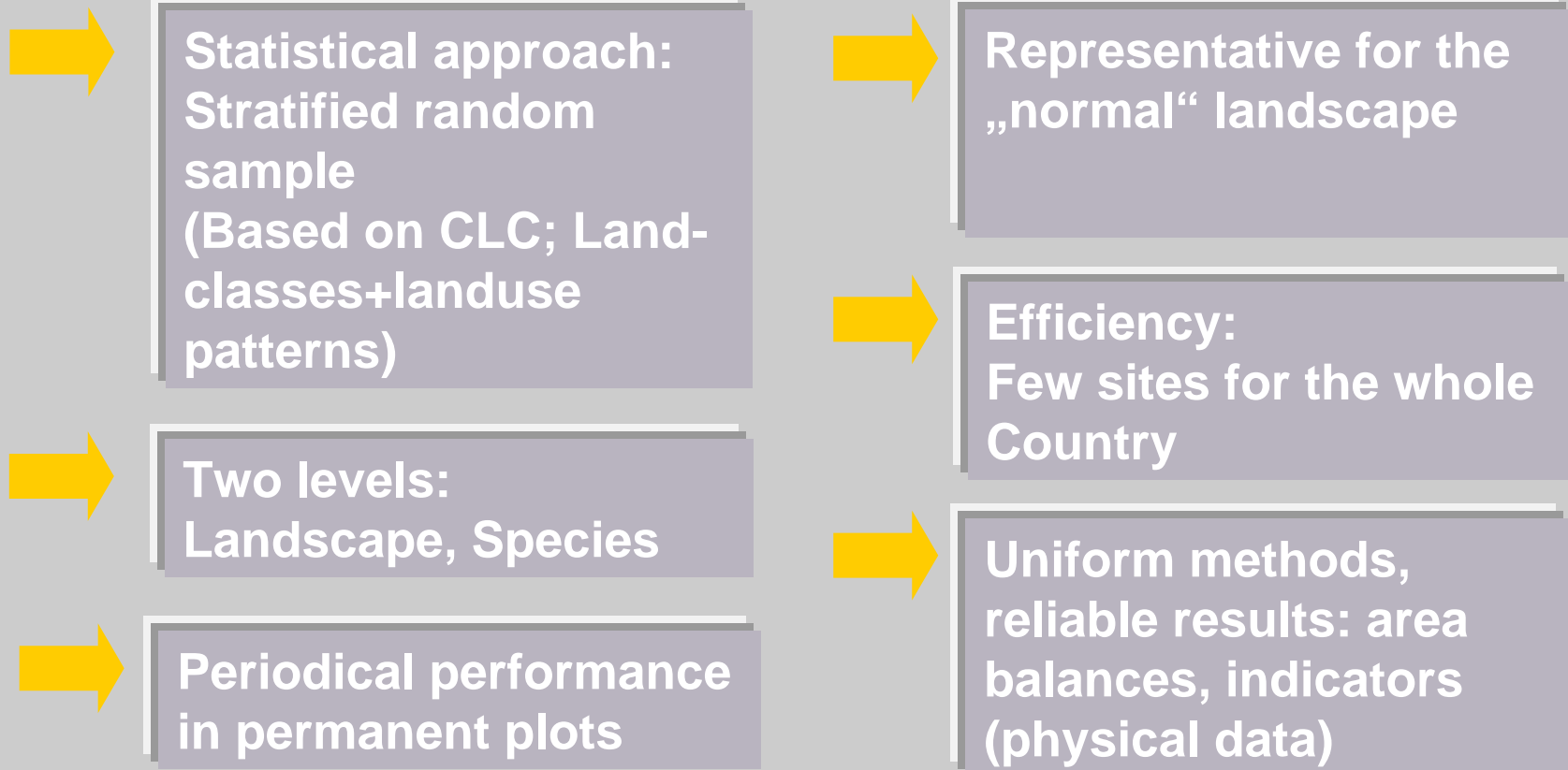
**In the end there could
be a market price**

Source image:mithradam.org

What else should / could official Statistics do?

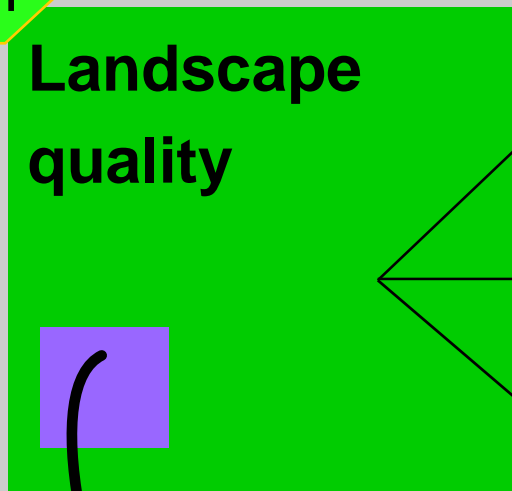
- **Sound data on the state of ecosystems (stocks)**
- **Background for ecosystem services**
- **Inventory in physical terms**

Example for inventory stocks from Germany: Ecological Area Sampling



INDICATORS AGRICULTURAL LANDSCAPE

Level 1



Intensity of use



- Naturalness
- Fragmentation
- Risk of erosion

Structural diversity



- Biotope diversity
- Length of linear features
- Species diversity (birds)

Endangerment



- Occurrence of endangered biotopes

Level 2

Species in biotope types



- Mean number of species
- Share of indicator values
- Share of endangered species

Current situation of Ecological Area Sampling

- **Approval, but little funding**
- **Representative set of 1000 sample sites for Germany defined (national level)**
- **Representative set of additional sites for German „Länder“ defined (regional level)**
- **1rst step of monitoring (birds) is implemented (research project, supported by volunteers)**
- **Basis for national sustainability strategy (Indicator no. 5: Species diversity and landscape quality)**
- **Funding as main problem! Implementation step by step...?**

Requirements for next steps of the official statistics

Provide resources for adequate quality of official statistics

Make sure that necessary basic data is available

Broaden the accounting systems (concepts, standards): environment, sustainability, R&D, human capital; core system and satellite systems

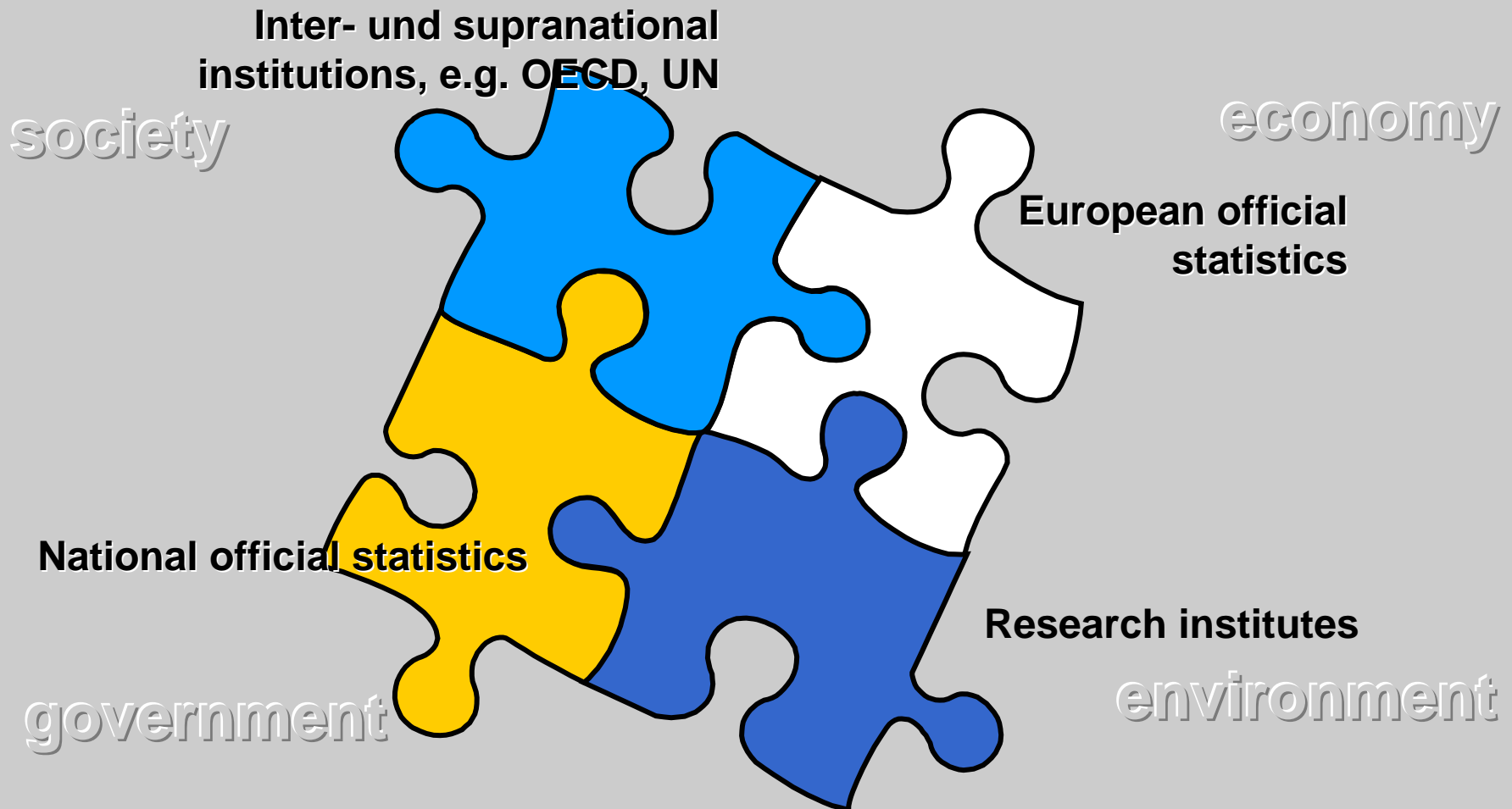
Agree on indicator sets, based on available information

Develop standards (handbooks) on international level

Build up databases to analyse transboundary flows (esp. for climate change)

Improve communication tools

Working together



Thank you for your attention!

Walter Radermacher

Telefon: +49 (0)611 / 75 21 00

walter.radermacher@destatis.de

www.destatis.de