

Incorporating Ecosystem Services into FDES

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Novemer 9, 2010



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Ecosystem Services: Background

Goods and services humans receive from ecosystems

•Provisioning

- Food, freshwater, fiber, fuelwood, etc.

•Regulating

- Erosion regulation, soil quality maintenance, pollination, water purification, etc.

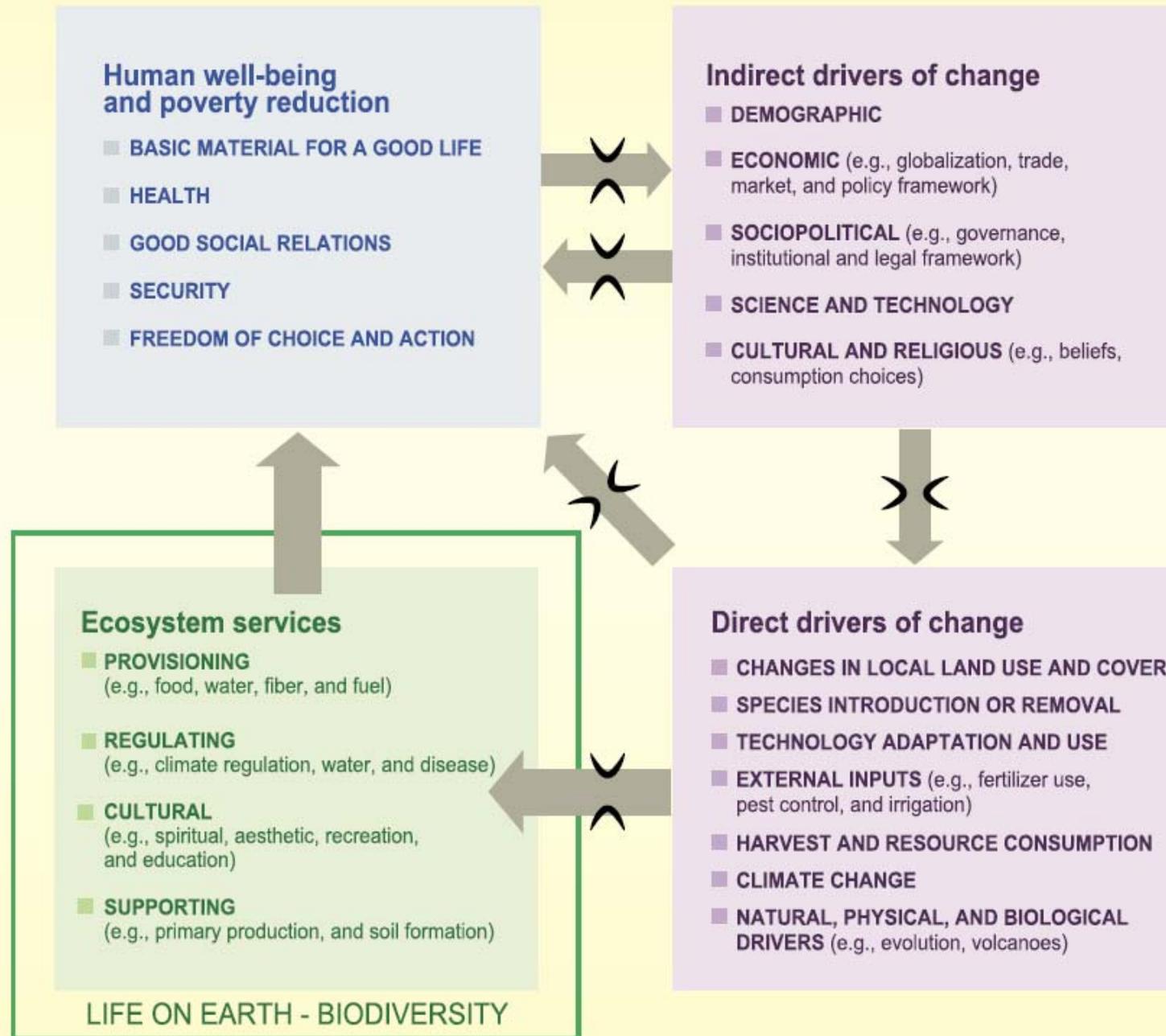
•Cultural

- Spiritual values, recreation and tourism, etc.

•Supporting

- Primary productivity, nutrient cycling, etc.



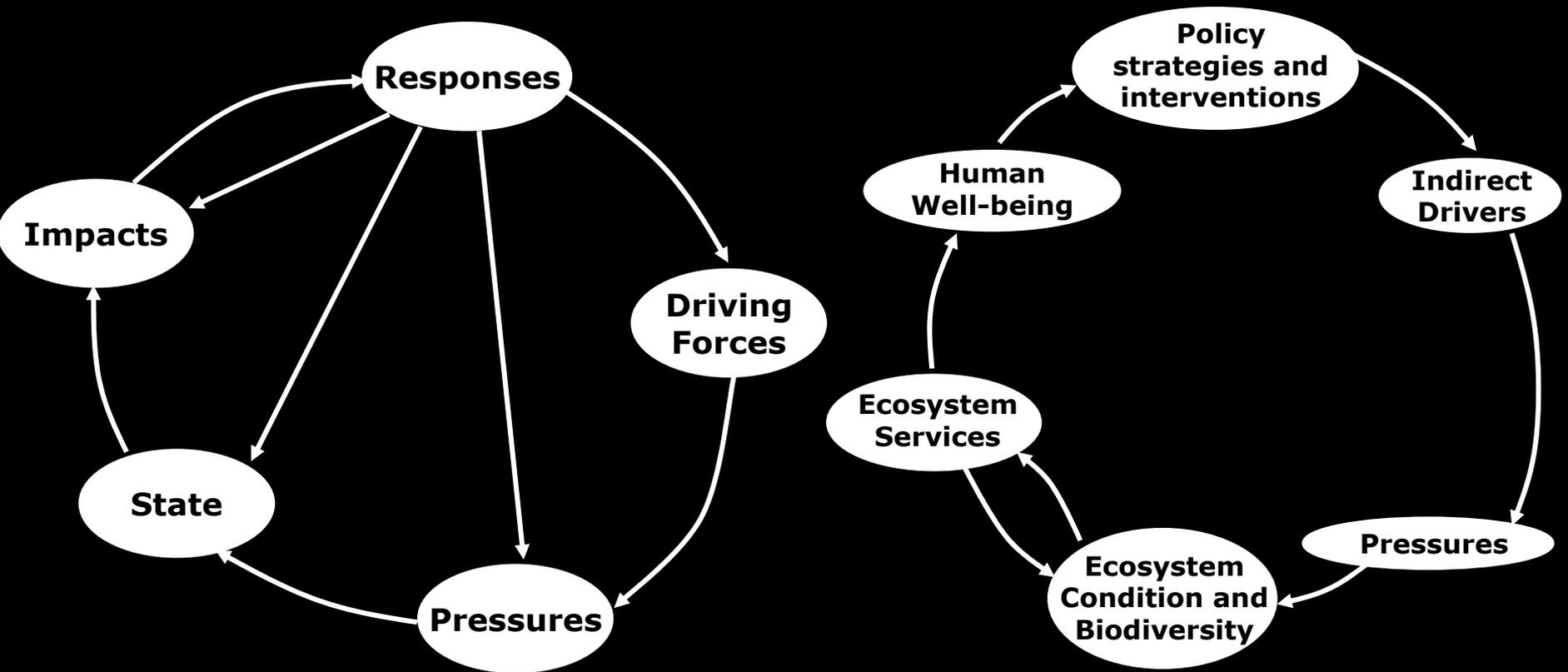


Ecosystem Services: Relevance to FDES

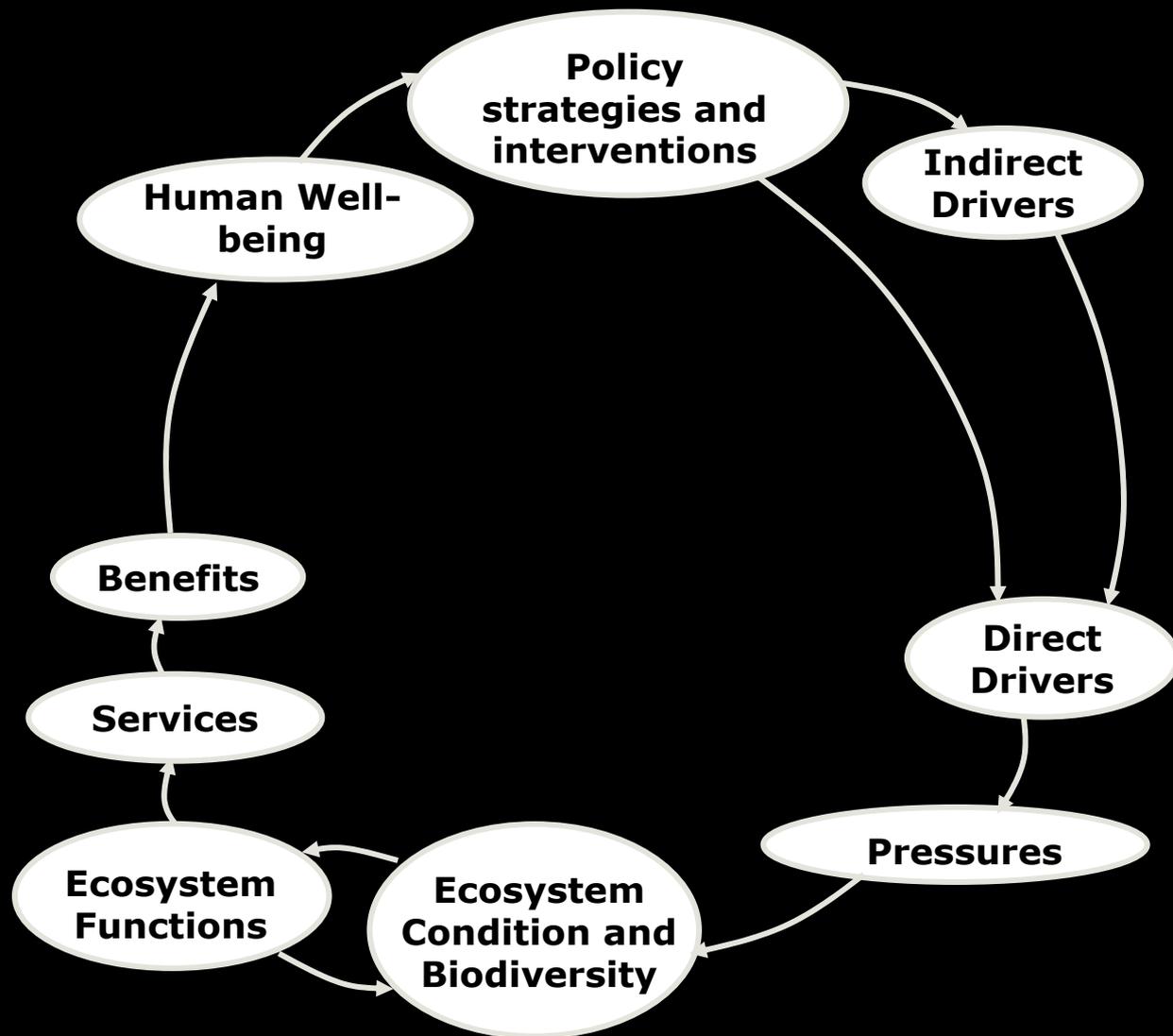
- **Ecosystem services: not synonymous with ecosystem approach**
- **Helps mainstream environmental issues**
 - People at center
- **Doesn't re-invent the wheel**
 - Shares elements with current FDES, DPSIR
- **Supports emerging approaches**
 - Ecosystem assessments, valuation, EIAs, climate change V&A.



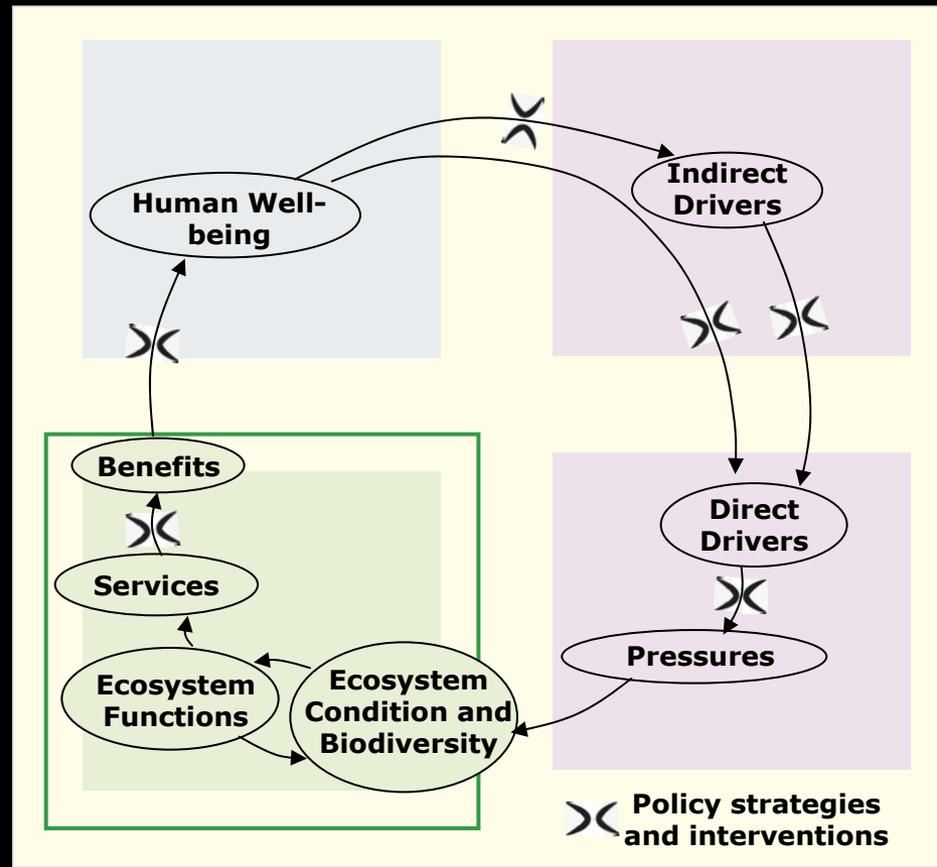
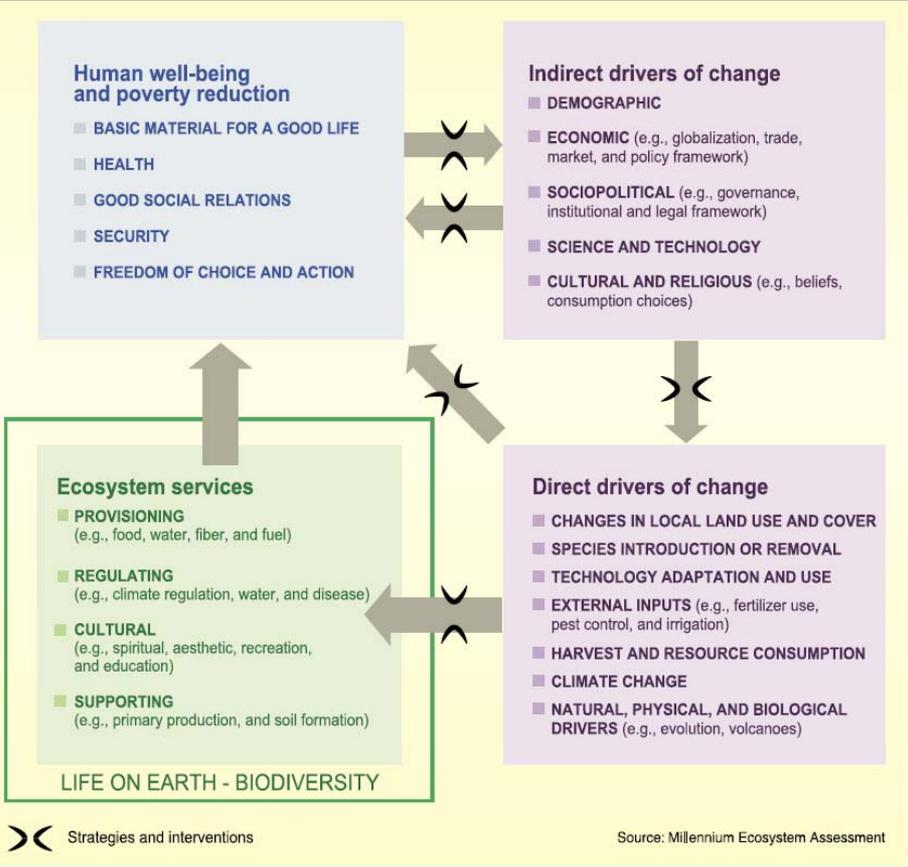
Ecosystem Services Indicators (Statistics) Framework and DPSIR



Ecosystem Service Indicators Framework



Millennium Ecosystem Assessment and ES Indicators Framework

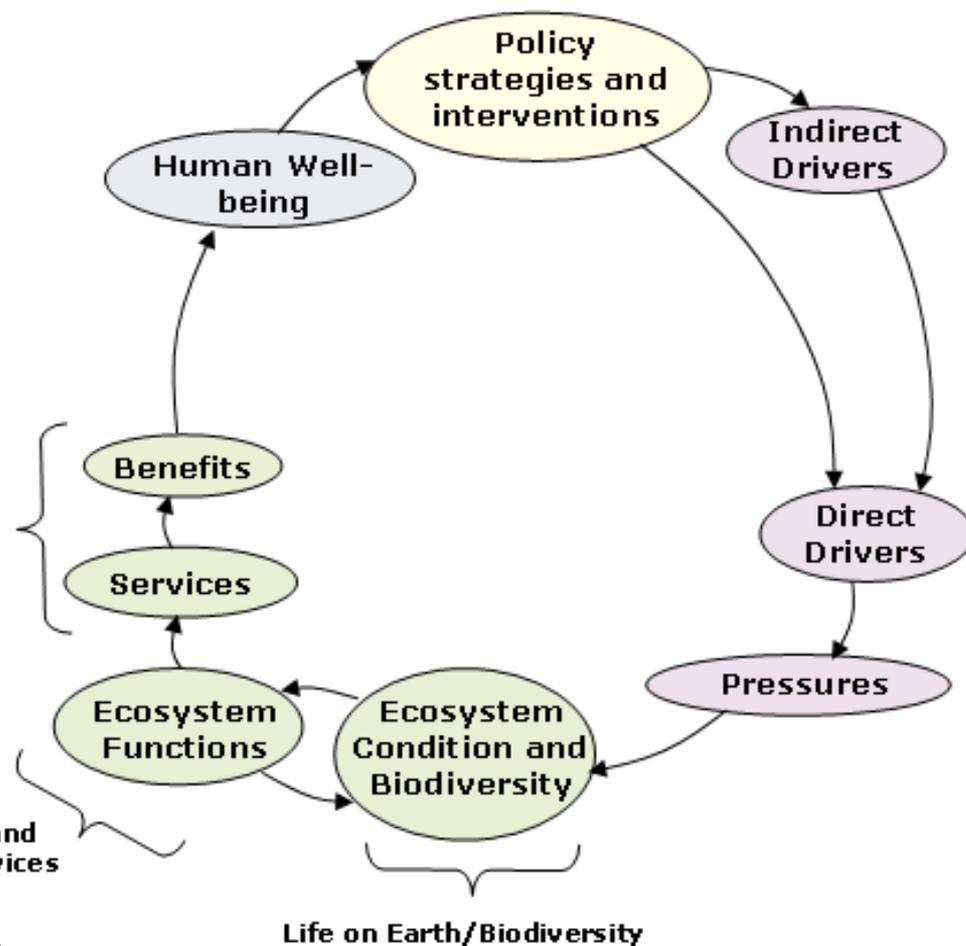


Most Provisioning and Many Cultural Services

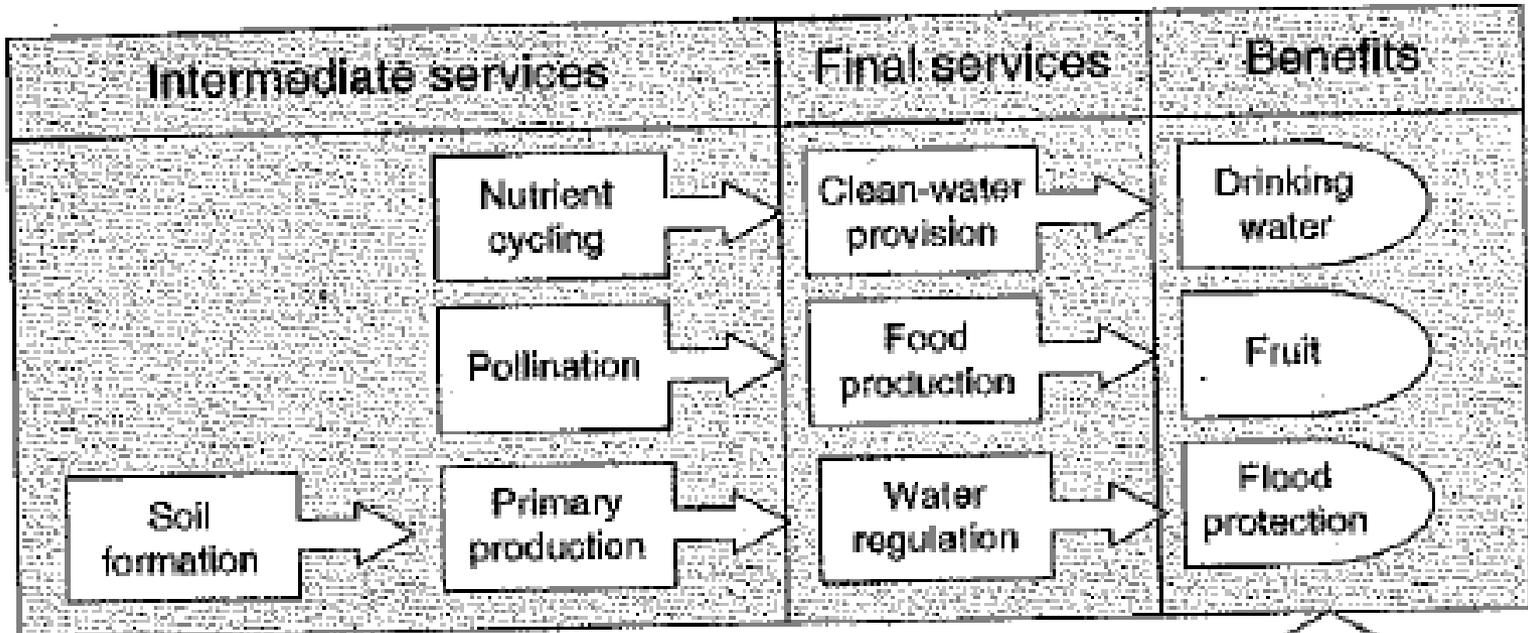
- Food
- Biological raw materials
- Biomass fuels
- Freshwater
- Genetic resources
- Biochemicals, natural medicines, and pharmaceuticals
- Recreation and ecotourism

Most Regulating and Supporting Services

- Water regulation
- Erosion regulation
- Water purification and waste treatment
- Disease regulation
- Soil quality regulation
- Pest regulation
- Pollination
- Natural hazard regulation
- Nutrient cycling
- Primary production
- Water cycling

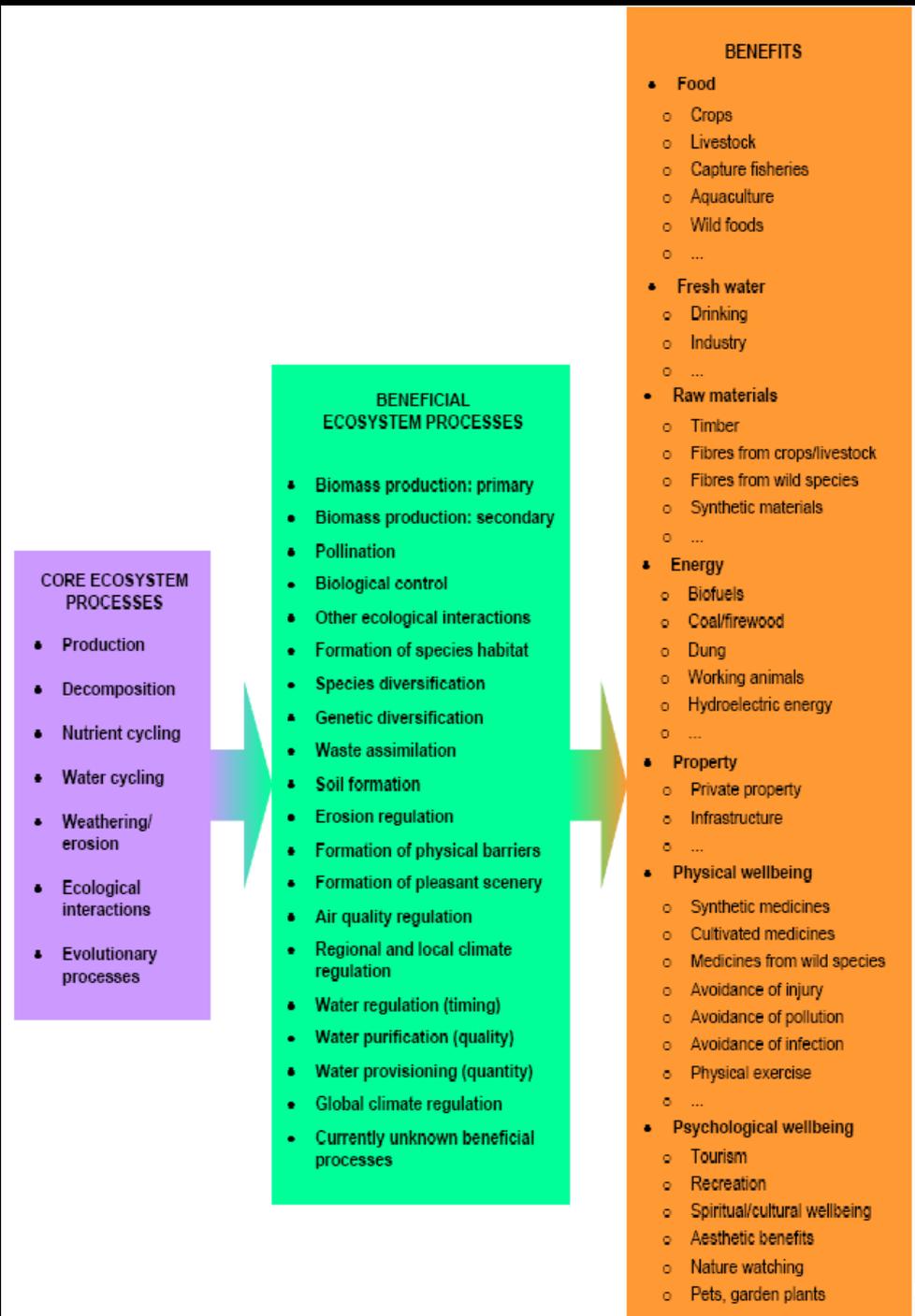


Economic Valuation

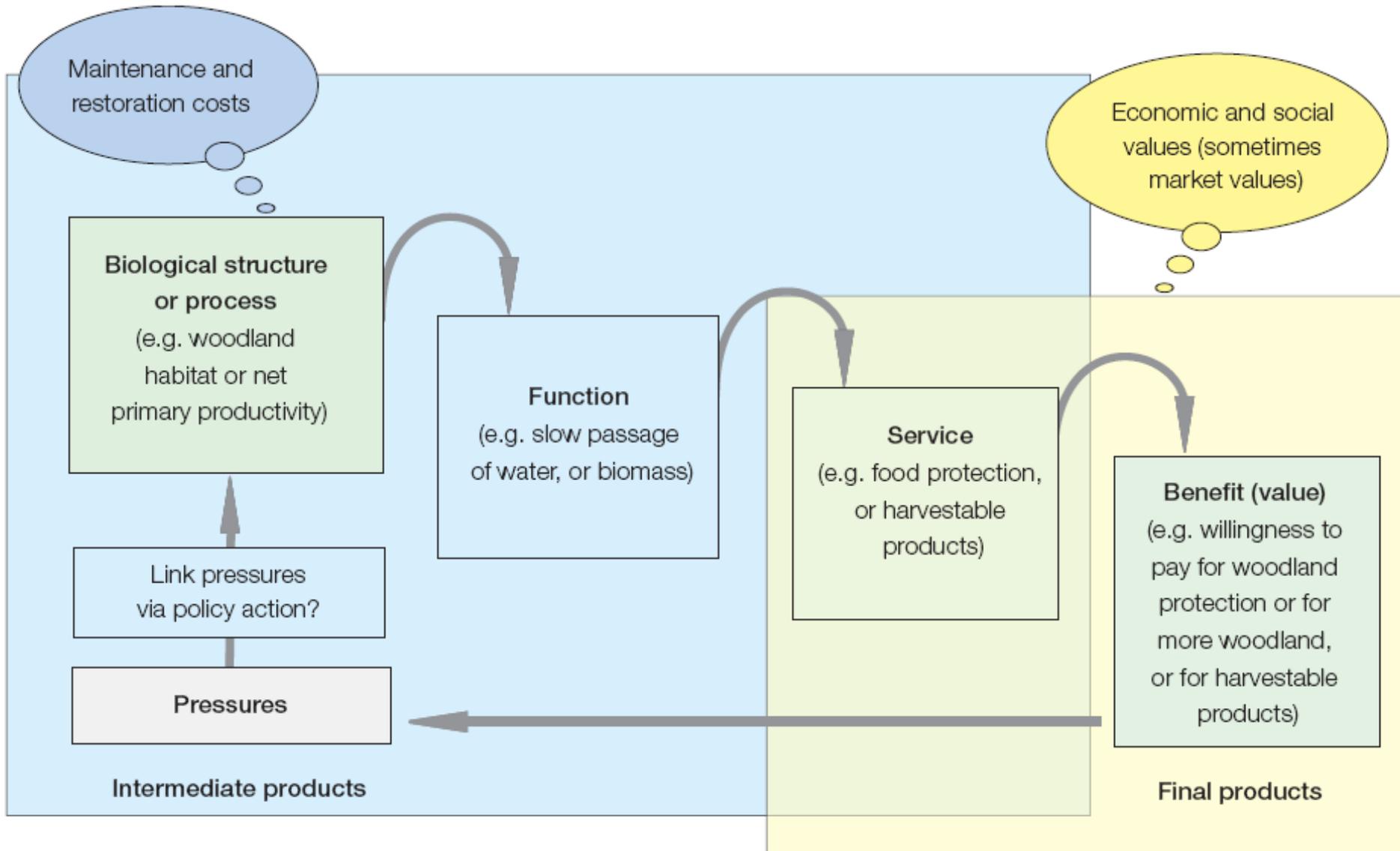


Other capital inputs,
e.g., human capital
(knowledge, culture);
built capital
(infrastructure, concrete)

Economic Valuation, Continued



Economic Valuation, Continued



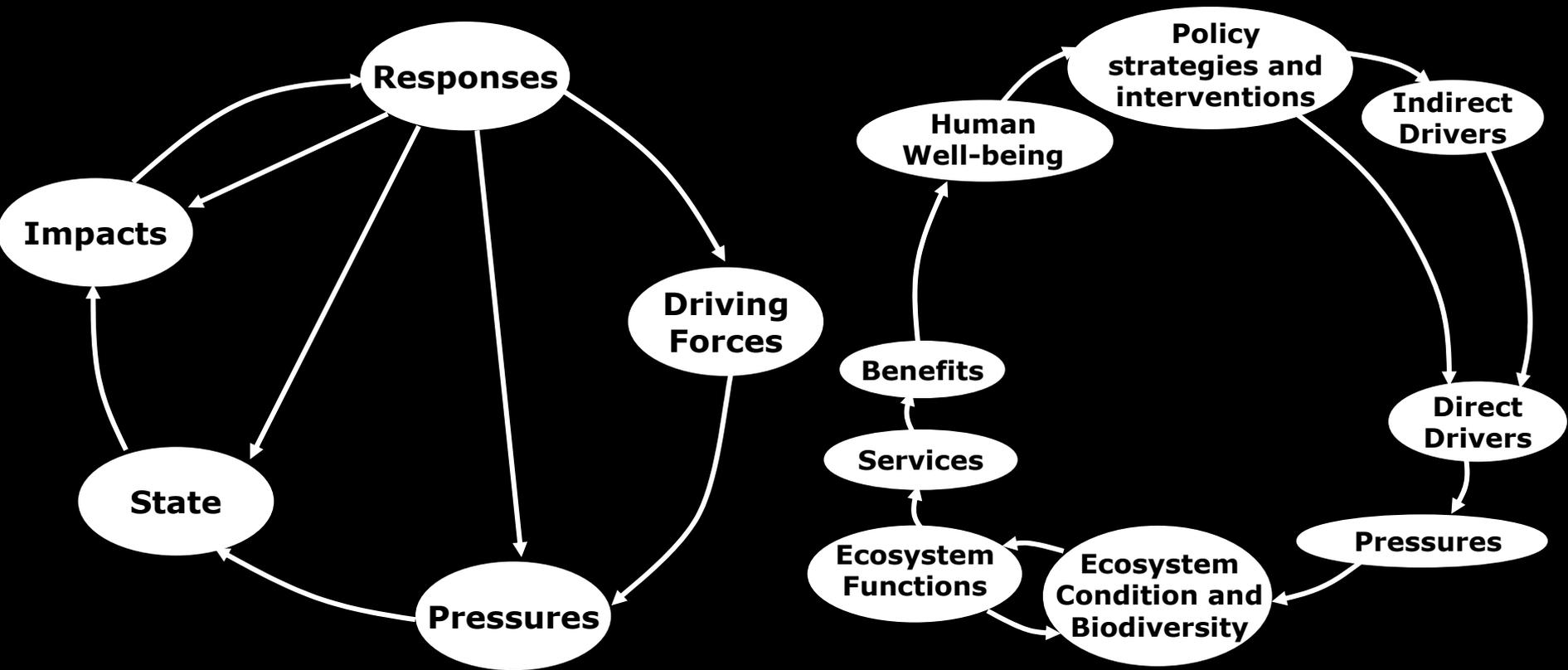
Classification Fields for Ecosystem Services Approach

Ecosystem Services

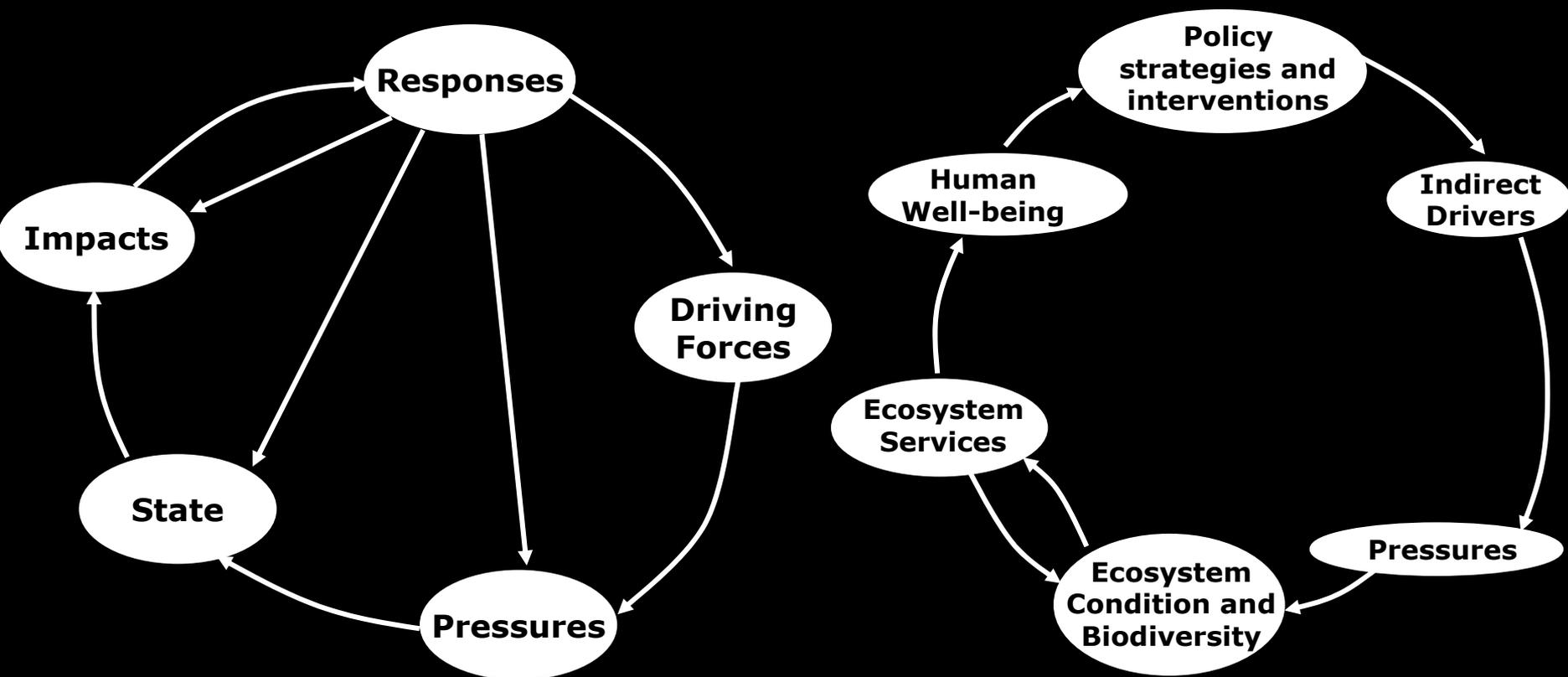
- Ecosystem service category, sub-category (Provisioning, regulating, etc.)
- Ecosystem function, service, benefit
- Ecosystem(s) providing service
- Human well-being sector



ES Indicators Framework and DPSIR



Ecosystem Services Indicators Framework and DPSIR



http://esindicators.org

Indicators Overview | Ecosystem Service Indicators Database - Windows Internet Explorer

http://www.esindicators.org/indicators_overview

ecosystem services approach

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Ecosystem Service Indicators Database

Beta: 1.0 [more information](#)

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Indicators Overview

Search Indicator Names:

- Filter by:

Choose from one or more terms from the drop-downs below and click filter.

Ecosystem Service Type: Any	Ecosystem Service Category: Any	Sub-category: Any	Indicator Source: Any
Indicator Data Unit: Any	Ecosystem: Any	Indicator Framework: Any	Scale in Source: Any

Click name to view indicator detail page. Choose display headers + Total rows to be displayed: 25

Indicator Name	Type	Category	Sub-category	Source	Data Unit	Scale in Source	Framework	Ecosystem
Dredging to control water hyacinth	Multiple ES types	Multiple ES categories	Multiple ES sub-categories	Lake Kyoga Pilot Assessment	None noted	Local	Policy strategies and interventions	Wetland
Dredging to control water hyacinth	Multiple ES types	Multiple ES categories	Multiple ES sub-categories	Lake Kyoga Pilot Assessment	None noted	Local	Policy strategies and interventions	Inland water
Effectiveness of resource management	Multiple ES	Multiple ES	Multiple ES sub-	Lake Kyoga Pilot	None noted	Local	Policy strategies and	Multiple/unclear

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Google A X W ES Indicators frame... P FDES framework pre... P Diagrams [Compati... Indicators Overview... Gmail - Inbox (12) - ... ppt

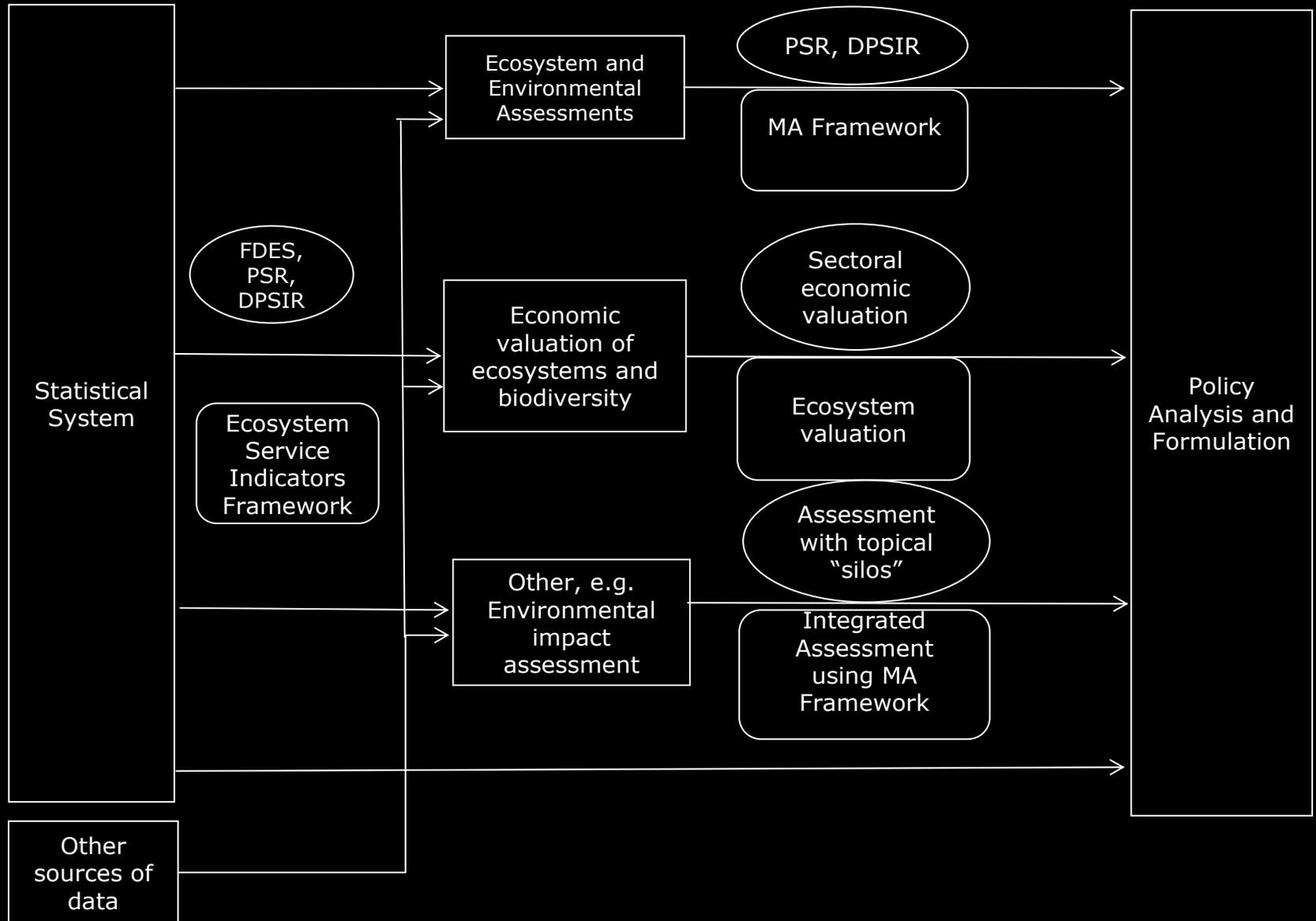
Thank You

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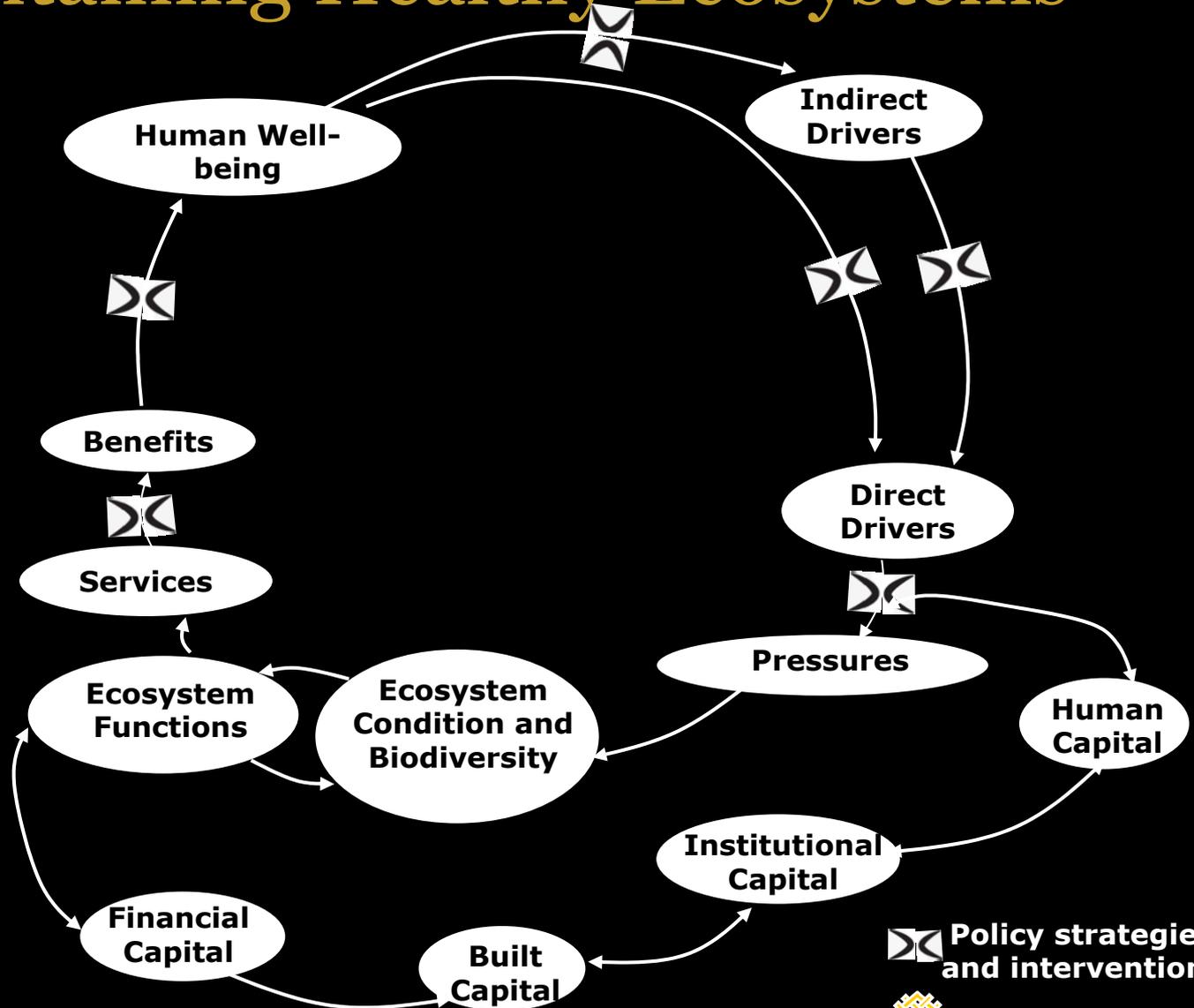
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Audiences and Beneficiaries



Vulnerability and Adaptation

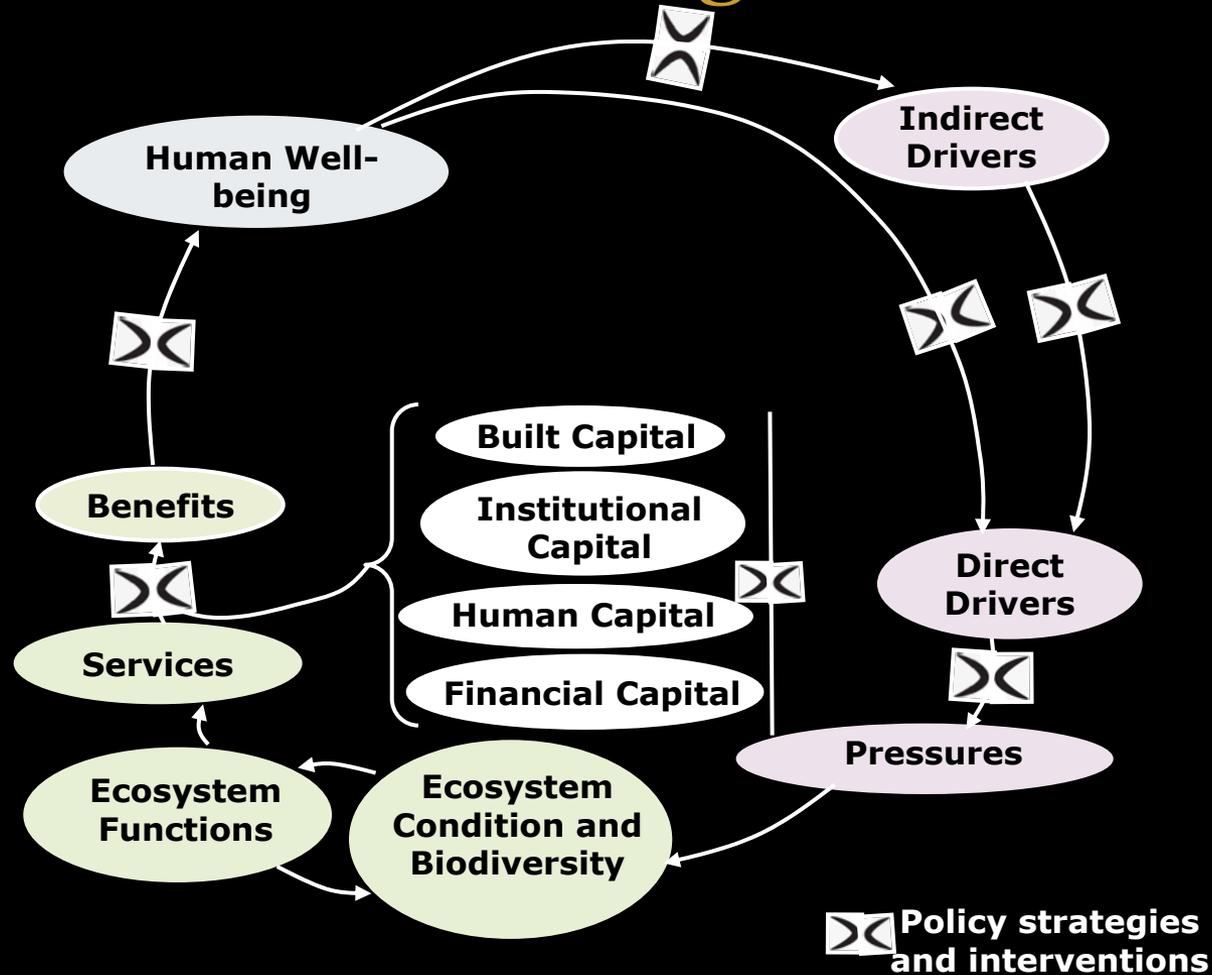
Maintaining Healthy Ecosystems



 Policy strategies and interventions

Vulnerability and Adaptation

Maximizing Benefits



Ecosystem Service Frameworks- A Continuum from Simple to Complex

Tier I and II Services	Benefits
Water	<ul style="list-style-type: none"> -Water for homes, industry, agriculture -Water for ecological functions -Water for hydropower generation -Water-borne navigation and commerce
Water regulation	<ul style="list-style-type: none"> -Storm water management -Timing and availability of water supplies -Flood and drought mitigation -Natural storage (snowpack and glaciers)
Water purification and waste treatment	<ul style="list-style-type: none"> -Natural filtration -Capacity to assimilate pollution
Recreation and ecotourism	<ul style="list-style-type: none"> -Provide residents with numerous recreational opportunities -Plezier destinations of uncommon quality -Dynamic destination that provides both urban and natural attractions -Large source of revenue and jobs for local economy -Recruit and retain employees
Ethical and existence values	<ul style="list-style-type: none"> -Attract creative and innovative people -Provide residents with quality places to live -Support traditional Tribal ways of life -Provide a healthy, thriving watershed -Support agricultural lifestyles
Capture fisheries	<ul style="list-style-type: none"> -Sustainable livelihoods for Tribes -Large source of revenue and jobs for the local economy -Recreational value
Aquaculture	<ul style="list-style-type: none"> -Sustainable livelihoods for Tribes -Large source of revenue and jobs for the local economy

