

Future trends for environmental decision-making: The rise of ecosystem services.

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Agenda

- Introduction
- Ecosystem Services: Basic Ideas
- Ecosystem services Approaches
- Possible Local Government Tools and Approaches
- What does it mean for Whangarei District and long term planning



Introduction

- Sustainable Futures 30/50
- Futures Team preparing multiple background reports – constraints mapping
- Brochure
- Northland Biodiversity Forum
- WDC developing suite of new policy tools



What are Ecosystem Services?

- Ecosystem services refer to the many goods and services emanating from a local environment
- Many of these services are simply by-products of processes and functions happening within ecosystems
- As environmental pressures are mounting globally, more notice of the impact of these services on people is being taken
- Ecosystem services providers – Species & Habitat

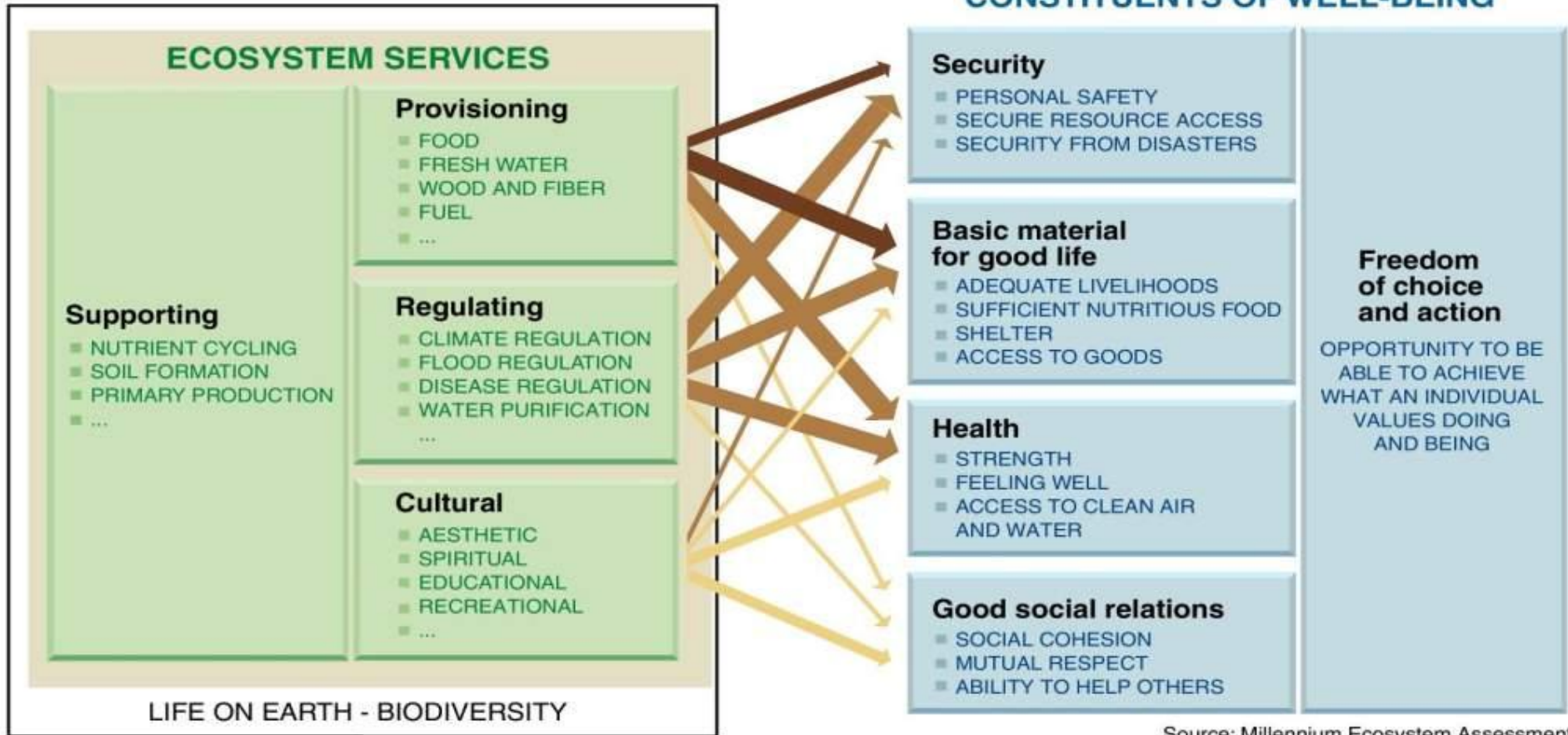


Most obvious services

- **Supporting services:** Services underpinning all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling.
- **Provisioning services:** Products obtained from ecosystems, including food, fibre, natural medicines, pharmaceuticals, fresh water;
- **Regulating services:** Benefits obtained from regulation of ecosystem processes: air quality regulation, climate regulation, water regulation, erosion regulation, water purification, disease regulation, pest regulation, pollination, natural hazard regulation;
- **Cultural services:** The non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences – thereby taking account of landscape values;



Links to Well-Being (MEA 2005)



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

From World Resources Institute (2007)

- An Ecosystem Services Approach provides a framework by which ecosystem services are integrated into public and private decision making.
- Its implementation typically incorporates a variety of methods, including ecosystem service dependency and impact assessment, valuation, scenarios, and policies and other interventions targeted at sustaining ecosystem services.
- These methods are often applied at a watershed or landscape level and frequently involve projecting a decade or more into the future.



Critical Components

- Ecosystem-based Approach
- Connections between biological diversity and the flow of services (Functional Diversity & Species Richness)
- Stronger connections between economy and environment.
- Framework for assessing trade-offs between different ecosystem services
- Valuation



Strategic Rationale

-”*This broader framework allows a shift in emphasis from a focus mainly on valuing environmental damage to highlighting the value of changes in the services provided by the natural environment. (DEFRA 2007)*
- Creates common language for stakeholders



Valuation Component

- Assessing trade-offs requires some form of valuation.
- Valuation types: Community Aspiration, Conservation, Contribution to provision of further ecosystem services, Monetary Valuation
- Last is both controversial and useful
- Techniques developed in environmental and resource economics
- Many articles use monetary valuation.



Problems around valuation

- Context relevant (e.g. proximity of potential users)
- Costly to produce
- Benefit Transfer valuation methods
- Boundaries between ecosystem services components
- Prioritisation
- Tendency to Focus on what is measurable
- Placing monetary values on something that has not been valued before



Payment for Ecosystem Services

- Use of incentives for explicit protection and maintenance of preferred ES
- Used in OECD and rest of world
- Agriculture in OECD
- Pollination & Forest retention in Latin America
- Australia's Auction System & Gum Woodlands.
- Issues around allocation methods



Where are the possibilities for local government?

- Different management vision for Council/Crown owned land, especially parklands – (Wellington)
- Incorporation into major AEE & S.32 Analyses for RMA
- Determination of significance
- Development of enabling ‘policies and objectives’ in District plan.
- Retrofitting current funding to make ecosystem services outcomes more explicit
- GIS programme - INVEST



Extended Policy Approach

- Connections to New Start for Freshwater
- Treaty settlements and Iwi Management Plans
- May be more appropriate valuation system for maintenance of significant biodiversity on private land, whereas conservation land should be managed for Conservation values.
- Use of Policy Areas to encourage restoration of Ecosystem Services
- Concept of Ecosystem Service District



Sustainable Futures 30/50

- Widespread agreement that the scattered development in past poses difficulties for management in WDC
- Identifying key nodes and their constraints (soils, natural hazards, indigenous habitat, water, climate change impacts)
- Identify which catchments have potential for significant environmental enhancement that would increase capacity for increased settlement
- Needs to assess trade-offs required



Conclusions

- Valid approach for environmental management
- May fit into evolving NZ resource policies
- Identify tradeoffs for decision-making
- International in scope
- Not a magic bullet
- Complementary rather than sole-use



Some New Zealand Research

- New Zealand Centre for Ecological Economics & Massey University
- Examples - Iwi Ecosystem Services with Ngāti Raukawa; Valuing the Ecosystem Services Provided by the Natural Capital of Soils
- Lincoln University
- Greening Waipara - Vineyards
- Conservation Biological Control
- Dairy Farming – Common/Organic



Further Resources

- World Resources Institute (2008) Ecosystem Services: A Guide for Decision Makers http://pdf.wri.org/ecosystem_services_guide_for_decisionmakers.pdf
- Millennium Ecosystem Assessment Reports (2005) www.millenniumassessment.org
- Department of Environment, Food and Rural Affairs (2007) An introductory guide to valuing ecosystem services. <http://www.defra.gov.uk/environment/policy/natural-environ/documents/eco-valuing.pdf>
- Calls for a National Australian Strategy (2008). http://www.australia21.org.au/eco_background.htm
- Department of Conservation Report. (2009) Conservation and the delivery of ecosystem services; A literature review <http://www.doc.govt.nz/upload/documents/science-and-technical/sfc295entire.pdf>

