

Tapping into economic benefits from environmental services generated by SFM



Three useful tools



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Past paradigm

Society wanted economic growth

BUT

Economics + Environment

≠

Desired social outcomes



This came at the expense of the environment - An acceptable trade-off at the time.... But not today.

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This presentation will cover

- Changing economic paradigms
- Nimmo-Bell's experiences with:
 1. Choice modelling
 2. Trust funds
 3. Venture capital
- Capitalising on a growing market desire for 'green' products

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New paradigm

Economics + Environment

=

Desired social outcomes

But only
...if we view economics differently



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Economics



Scarce resources, choices and incentives

Not just money

Defined by society

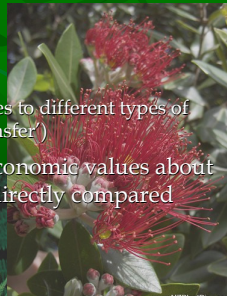
Total systems shift needed

- Environment fully integrated with economics – not just 'tacked-on'
- Focus on one aspect over others (e.g. carbon) risks creating further system distortions
- Create real market demand for **positive** environmental services (not just punish the negative)
- Aligning public net benefit with private net benefit
- Wholesale policy shift from top-down unlikely in short or even medium term.
- Develop innovative initiatives on the ground, demonstrate success and they will catch-on!



Valuing NZ's indigenous biodiversity

- Nimmo-Bell's choice modelling research seeks to facilitate better decisions about pest management in New Zealand
- Aim
 - Database of biodiversity values
 - Process for transferring those values to different types of biosecurity decisions ('benefits transfer')
- So that quantitative social and economic values about indigenous biodiversity can be directly compared



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Choice modelling

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Valuing NZ's indigenous biodiversity

- Involves three New Zealand universities
- Four case studies of representative ecosystem types
- Underpinned by science



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What is choice modelling?

- Economic valuation of things that aren't valued by markets e.g. the environment
- Analyses peoples' choices about trade offs between a 'basket' of environment attributes and monetary values
- Using highly structured surveys and complex statistical and econometric techniques
- Used in OECD countries (e.g. USA national parks), and is being considered in international initiatives to value marginal changes to ecosystem services and biodiversity

The choice modelling process

- Simulate a change to the environment that reflects the policy question
- Working with scientists, breakdown the scenario into the full range of ecological impacts
- Develop and test the choice survey using a series of focus groups
- Carry out the survey. Face-to-face meetings beginning with a presentation covering all key facts without bias. Demographic information is also collected
- Analyse the results using complex statistical and econometric techniques

Sample choice question




To value freshwater biodiversity by simulating the impacts of an invasive weed called hydrilla

Option A is the status quo (hydrilla invades) and therefore costs nothing.

Options B and C provide different 'baskets' of environmental attributes for different dollar values

QUESTION 1

Options A, B and C
Please choose the option you prefer
By ticking ONE box

	Option A	Option B	Option C
Extent of hydrilla	 100% coverage	 30% coverage	No hydrilla
Water quality and clarity	Significant deterioration	OK Same as now	OK Same as now
Coverage of native submerged plants	Eliminated from lake	Eliminated from lake	 Same as now at 21% cover
Number of native bird species	All 4 shag species do not visit the lake anymore	3 shag species do not visit the lake anymore	3 shag species do not visit the lake anymore
Fish and mussels	2 fish species and mussels disappear from the lake	Mussels disappear from the lake	1 species of fish and mussels disappear from the lake
Cost to your household each year for 5 years	\$0	\$160	\$20
I would choose	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C



- ### What we've learned
- Monetary values useful, but...
 - The other insights gained and the wealth of data generated about people's choices is MORE useful and could be very powerful for policy making
 - Relative values – willingness to substitute one attribute for another
 - Groups that hold similar values – do they have similar characteristics?
 - Does distance from the ecosystem affect values held? Not necessarily
 - Public education and participation tool

- ### Trust funds for development
- Seeding capital for an investment portfolio to generate revenue for development
 - Fund capital maintained in real terms
 - Growth redistributed to recipient country through a holding account allowing smooth flows of revenue even when the market fluctuates
 - Revenue can be reinvested to grow the capital asset base over time
 - Balance between local participation and independent governance
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- ### Potential for tropical forests? Yes
- For tropical forests, we could design a choice survey that looks at:
 - Different groups in society, in developed and developing countries
 - A range of environmental attributes (water, carbon, biodiversity)
 - Different development scenarios (protection, sustainable forestry, degradation and forest conversion).
 - The aim would be to find out what trade-offs need to be made, and by who, to deliver the greatest net benefit to society.
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Fosters economic self-reliance

Bilateral aid	Trust funds
Ongoing need for investment	Asset built up over time eventually enabling self-reliance, or even return of initial capital to donors
Funds under control of Donor	Revenue from fund under control of recipient country, but governed by Independent Board
Results in...	
Dependence	Economic self-reliance

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Pacific Island experience

- Tuvalu Trust Fund
- Sovi Basin Trust Fund (Fiji)



Governance & fund management

- International agreement
- Accountability – Board of Directors
- Professional fund managers invest the \$\$\$
 - Diversified portfolio of assets with asset allocation guidelines
- Fund monitor and auditor
- Advisory Committee – looks at economic development issues and makes recommendations



Tuvalu

- One of the world's smallest and most isolated independent nations
- Independence in 1978 – faced bleak financial prospects
- The Tuvalu Trust Fund is a successful innovative model that has helped create self-sustaining economic development.



Impacts (1)

- Capacity building
 - Provided access to highly experienced people e.g. in financial management, economic development
- Resulting in
 - Chronic budget deficits transformed into surpluses
 - Change in thinking about opportunities for revenue generation; for example:
 - (e.g. sold internet domain name for US\$50 million over 3 years)



Tuvalu Trust Fund

- 1987: Initial funding \$27.1 million (AUD)
- Purpose: To overcome chronic budget deficits
- Additional contributions of \$38.6 million
- First 20 years fund grew to \$106.6 million
- Real rate of return averaged 6.2% per annum, providing \$65.7 million in revenue to Tuvalu
- Tuvalu's reinvestment means its now the largest contributor



Impacts (2)

- Tuvalu can now fund its own development projects:
 - Special Development Fund
 - with AUD\$26 million spent over three years on items such as community fishing centres, schools, etc
 - Falakaupule Trust Fund
 - New trust fund for outer island development, under the control of local communities



Sovi Basin (Fiji)

- Lowland rainforest in a biodiversity hotspot
- Local people willing to forego logging for a comparable income stream
- We developed an outline for Trust Fund governance and undertook initial community consultation
- Conservation International and FIJI water now providing the endowment funding

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Venture Capital

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Sovi Basin (Fiji)

- Revenues will be used to
 - Cover management costs of the Sovi Basin
 - Compensate communities for foregone logging revenue
 - Cover annual lease payments to Sovi Basin landowners
 - Support community development

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Private development banking

- Venture capital for innovative ideas
- We follow a strict process:
 - Project identification
 - Initial assessment
 - Full feasibility study
 - Capital raising
- Clear policies and principles on risk management
- Many ideas assessed, not all make it through but we've had some great successes

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A vehicle to facilitate SFM?

- An alternative way of accessing value from natural resources with good governance
- Promote sustainable forest management for multiple income streams, not just protection
- Governance structure could help provide confidence to the private sector to invest in SFM
- A way of delivering aid funding and encouraging self-reliance

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Two successful examples

- Blackcurrants



- Mussel farming



Adding value by developing
neutraceuticals

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Conclusion

- Declining public budgets
- Financial crisis
- Future of aid \$\$? Still a great need
- Engage the private sector
- 'Green' is the new product, leading to whole new industries
- Why not combine these three tools (and others) to capitalise on this for the benefit of tropical forests and the development of communities that live in and around them?

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- We are looking for good ideas to develop
- We want to make contact with and learn from others working in these areas

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Forestry, agribusiness and fisheries

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