

# A brief introduction to

“Integrating biodiversity considerations into plans, programmes and policies”

*by Susie Brownlie*

## *The CBD*

aims for the conservation of biological diversity,  
sustainable use and fair sharing of benefits from living  
resources...

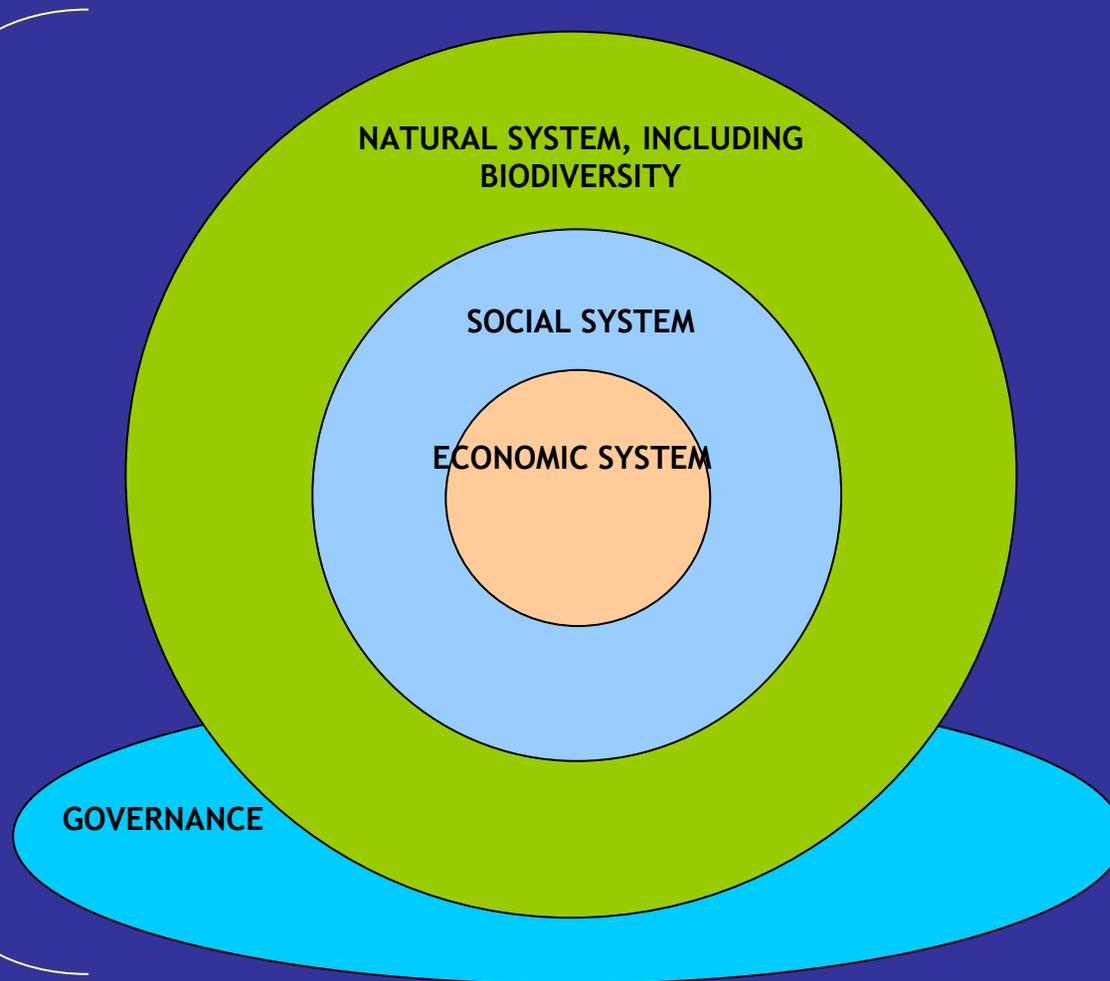


**Sustainable development** - *Improving the quality of  
human life while living within the carrying capacity of supporting  
ecosystems.* SD places value on:

- The integrity of the natural environment
- Future, as well as current generations, and
- The poor as well as the rich.

# The role of biodiversity in sustainable development

Sustainable development



NBSAP sets objectives and priorities for biodiversity conservation...so realizing these should be a priority in decision-making (but often isn't!)

# Sustainable development is tied to the conservation of biodiversity and ecosystem services

- Without the conservation and sustainable use of biodiversity, we will not achieve the Millennium Development Goals.
- A range of ecosystem services underpin human wellbeing.

Over the past 50 years, conversion of natural habitat has led to strong economic growth but also to substantial and largely irreversible loss of biodiversity and degradation in ecosystems and their services [*Millennium Ecosystem Assessment 2005*]



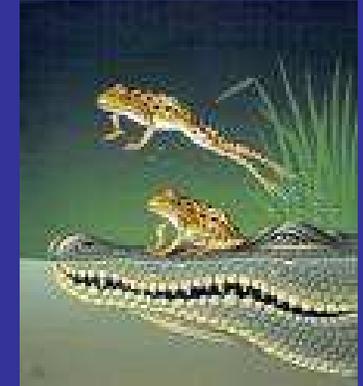
# The challenge:

- To ensure that conservation and sustainable use of biodiversity is taken into account in policy-making, planning and decision-making

HOW?

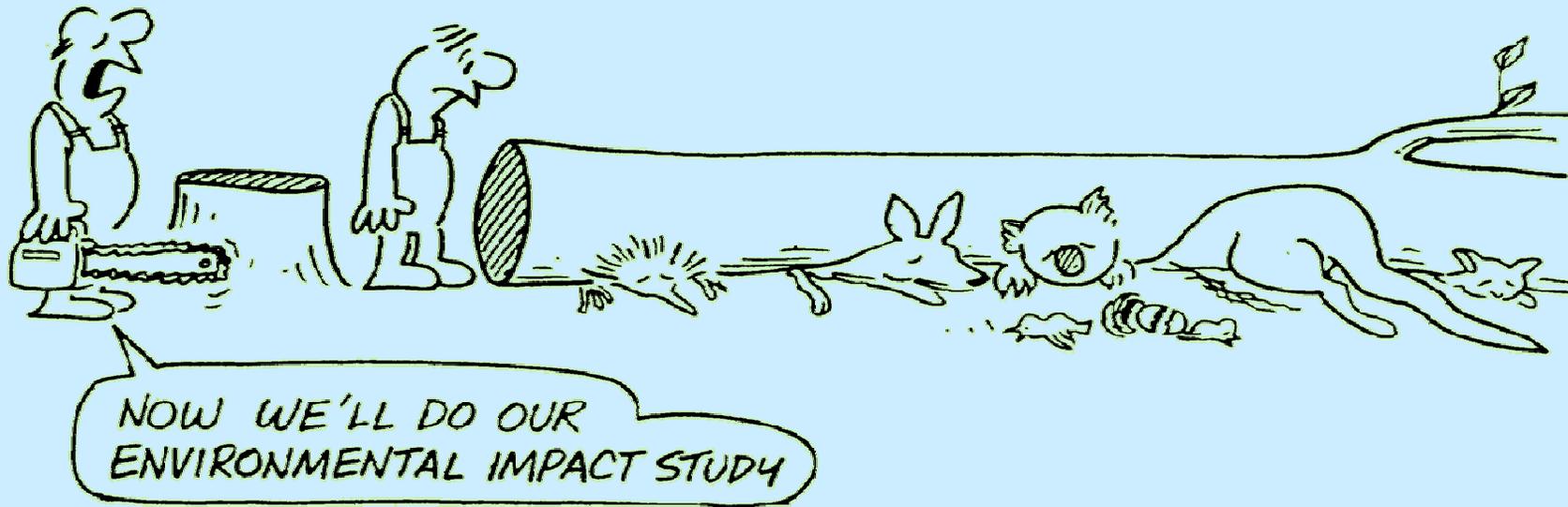


# Impact assessment can play a key role



- Tool for ‘sustainability assurance’
- Planning tool that identifies and evaluates the likely effects of a proposed course of action on the environment
  - *It informs wise decision-making*
  - *It influences the proposal through consideration of alternatives*
- Can be applied at project level or at strategic level
- Is a critical tool to in ‘mainstreaming’ biodiversity into the sustainable development agenda

# EIA and the natural environment



Source: Tandberg, 1990; In: Turn over a new leaf – Green cartoons for CARE (ed. Mark Bryant). Publication of Earthscan, London.

Article 14 of the CBD *[impact assessment and minimizing adverse impacts]*

calls on contracting parties to ensure that projects (14a), programmes and policies (14b) likely to have significant negative impacts on biodiversity are duly considered

**Policies**

**Plans**

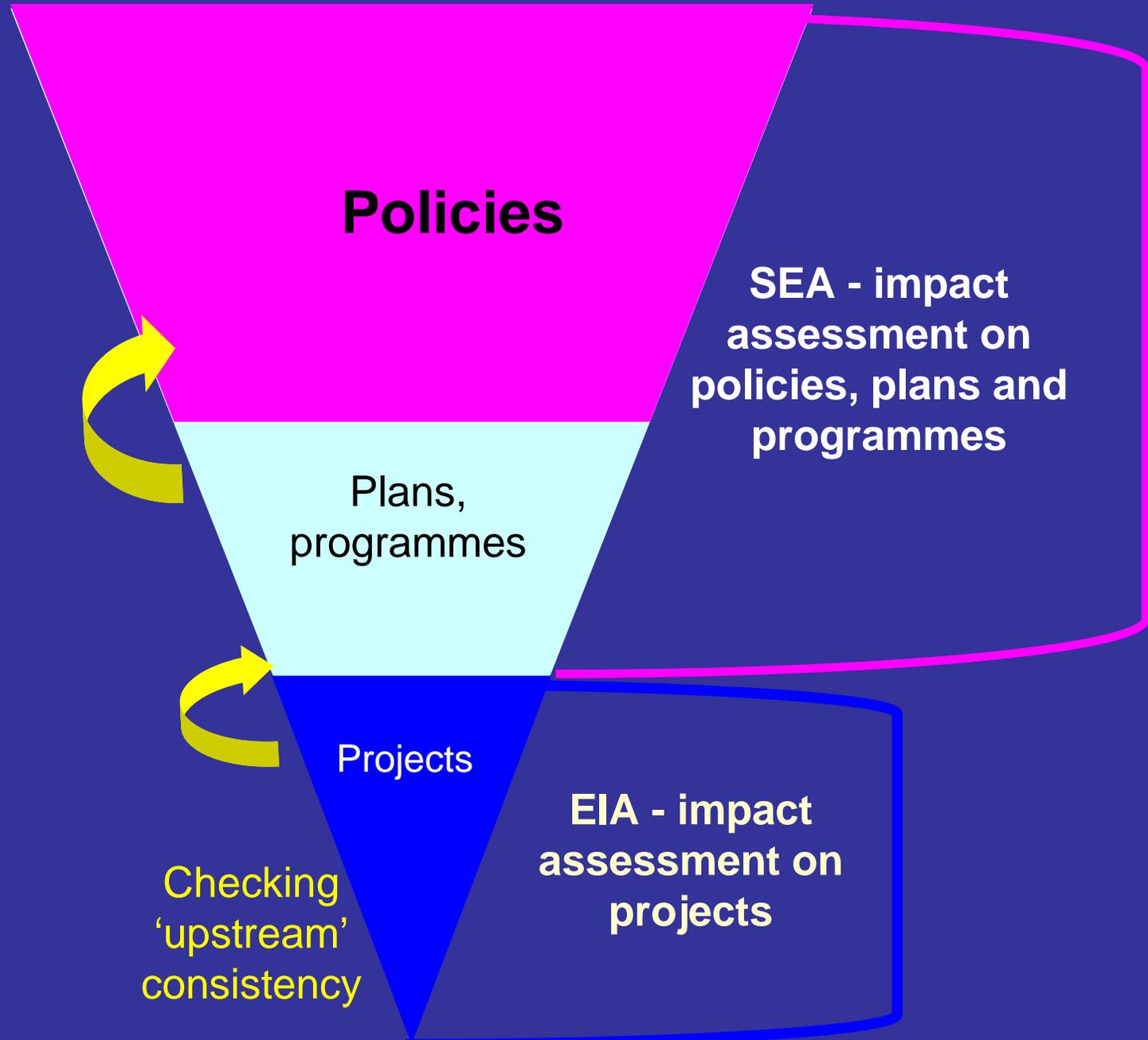
**Programmes**

**Projects**

Most impact  
assessment practice is  
currently here



Consideration of biodiversity, ecosystem services



# The ecosystem approach advocated by the CBD includes:

- Understand and manage ecosystems within an economic context
- Manage ecosystems within the limits of their functioning
- Undertake the ecosystem approach at appropriate spatial and temporal scales
- Set long term objectives for ecosystem management
- Conserve ecosystem structure and function as a priority, to maintain ecosystem services

*It is very difficult to do the above at a site-specific or project level!*



# SEA characteristics

- ‘Sustainability led’ at sectoral, cross-sectoral or geographic level
- Strives to be proactive, not reactive...
- Allows wider range of alternatives to be explored early on
- Is more of a ‘process’ than a ‘product’
- Is flexible and adaptive
- Influences existing processes



# Why SEA?

To look after biodiversity and important ecosystem services effectively, we need to:

1. be more proactive

2. engage at a strategic level

- *Take cumulative impacts into account*
- *Look at the 'bigger picture' not focus at project level*
- *Apply the ecosystem approach more effectively*



# NB INGREDIENTS

**High level recognition of the critical role of biodiversity in sustainable development**

*Input to key policies and strategies that direct national development effort and investment*

**NBSAP**

*Recommendations for national action to conserve biodiversity, use it sustainably and equitably*

**Enabling environment to call for SEAs where proposed action could have a significant negative effect on biodiversity or ecosystem services**



# To cover after lunch

## 1. *Presentation with examples (50 minutes)*

- NBSAPs and Impact Assessment – EIA and SEA
- Why SEA
- When SEA
- Approaches to SEA
- Key ingredients of SEA
- Making mainstreaming of biodiversity into SEA easier
- Conclusion

*10 minute break*



## 2. *Group exercises and discussion (45 minutes)*



Welcome to

“Integrating biodiversity considerations into plans, programmes and policies”

*by Susie Brownlie*

Your expectations of today's

(5 February 2008) **session?**



# To cover in morning presentation (afternoon workshop to follow)

- Introduction
- NBSAPs and Impact Assessment – EIA and SEA
- Why SEA
- Approaches to SEA
- When SEA
- Key ingredients of SEA
- Making SEA easier
- Conclusion



Introduction –  
sustainable development, poverty  
reduction and biodiversity

Sustainable development is linked to – and largely dependent on - the conservation of biodiversity

*The CBD aims for the conservation of biological diversity, sustainable use and fair sharing of benefits from living resources...*



# WARNING BELLS....

Over the past 50 years, humans have converted and modified natural ecosystems more rapidly and over larger areas than in any comparable period of human history. These changes have been driven by the rapidly growing demands for food, freshwater, timber, fibre, fuel. They have contributed to substantial net gains in human wellbeing and economic development. However, they have resulted in substantial and largely irreversible loss of biodiversity and degradation in ecosystems and their services. Millennium Ecosystem Assessment 2005

During the course of this century the resilience of many ecosystems is likely to be exceeded by an unprecedented combination of change in climate and in other global change drivers such as land-use change, pollution and over-exploitation of resources. IPCC 2007

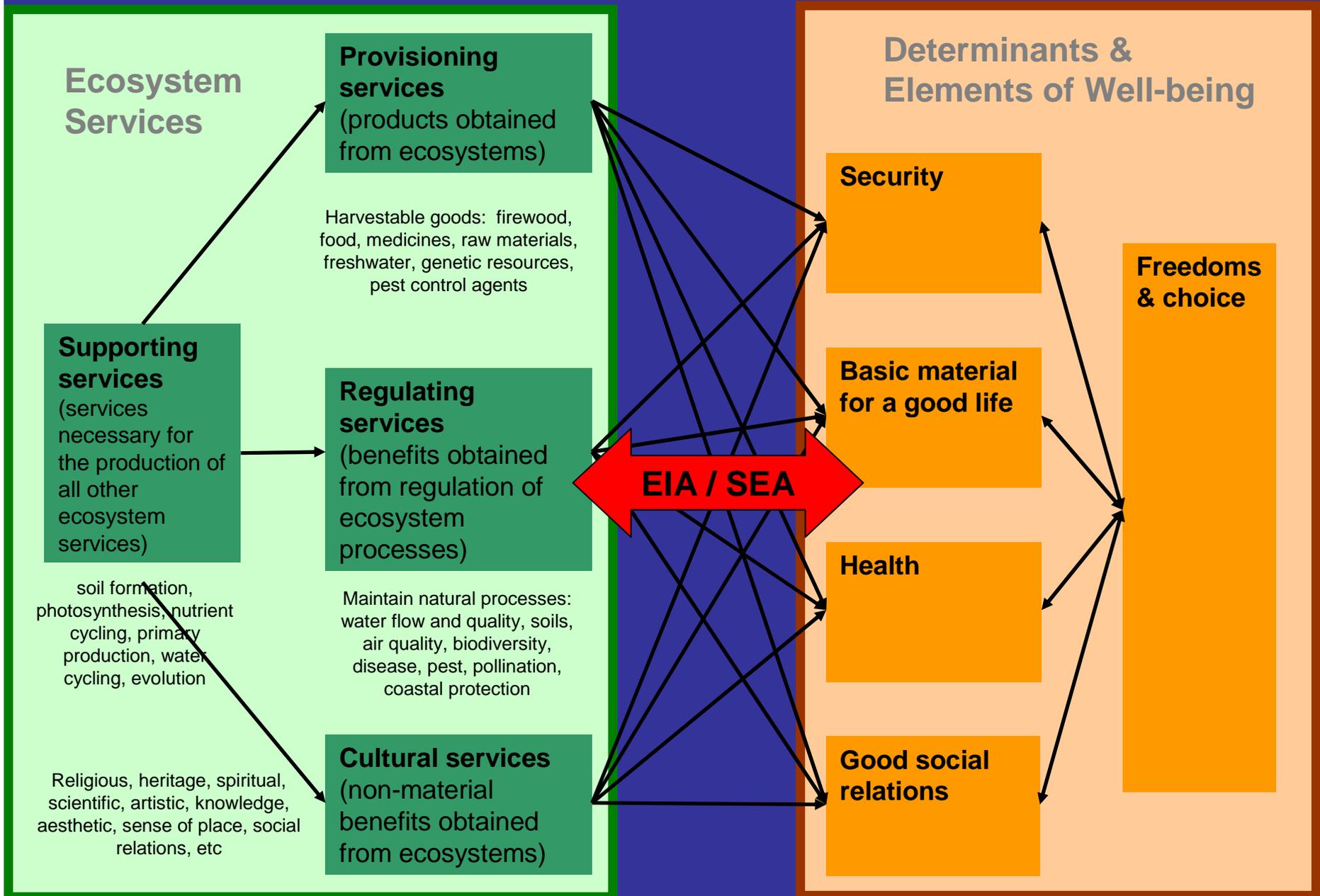
Without the conservation and sustainable use of biodiversity, we will not achieve the Millennium Development Goals. The conservation and sustainable use of biodiversity is an essential element of any strategy to adapt to climate change. Biodiversity plays a critical role in providing livelihood security for people, health and wellbeing.

Biodiversity loss continues because current policies, planning and economic systems do not incorporate the values of biodiversity effectively, and many current policies are not fully implemented.



Land and natural habitat degradation and poverty are mutually reinforcing, but politically invisible and largely ignored. Global Environmental Outlook 4, 2007

# Millennium Assessment – is biodiversity a ‘green’ issue?



Present to future, local to global

# Three main areas of impact

Impact on '*pattern*' or composition and structure

+

Impact on '*process*' or function



Impact on *ecosystem services* and thus on humans



*Ecosystems don't stick to property or municipal or even national boundaries...*

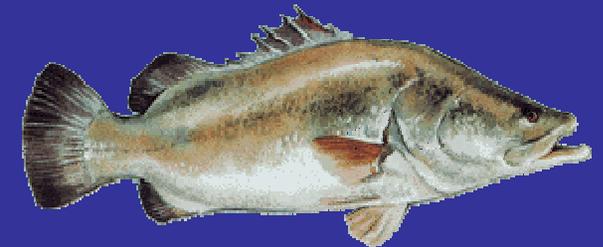
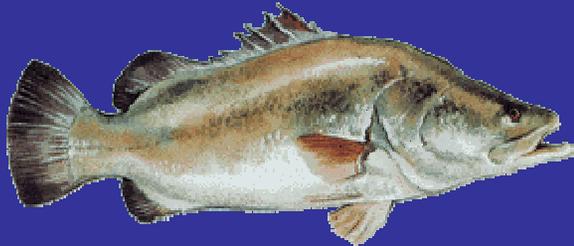
# Biodiversity, ecosystem services and human wellbeing: an example



# Lake Victoria : introduction of Nile perch

*Fishing in the Lake supported the local economy and provided food for local communities. Indigenous fish are small, sun-dried, mainly by local women.*

*In the 1960s it was decided to introduce the Nile perch, a large fish, to boost this fishing industry and improve wellbeing of local communities.*



What were the benefits?

- ✓ *An increase in the Lake fishery to four times that in the 1960s and 1970s.*
- ✓ *Development of a commercial industry for the Nile perch that created 2400 jobs*
- ✓ *Export of about 400 tonnes of fresh fish to Europe and Asia earned almost US\$5 billion in taxes in 2000/1.*



*JK Turpie and H van Zyl (2002)*

# Lake Victoria : introduction of Nile perch



What are the costs?



- x Nile perch is a predator, indigenous fish mainly graze algae.
- x The extinction of about 200-300 indigenous species.
- x Increased nutrient enhancement with loss of algal grazers.
- x Overfishing, degradation threatens the Nile perch industry: since 2001 - catch dropped by 75%, a dozen commercial fish processing plants threatened with closure
- x Outbreaks of exotic water plants choking the Lake, preventing movement of ferries and boats, blocking water extraction pipes
- x Women who rely on ferries for transport to sell craft – there and back in 1 day – now take 2 days to get to market by bus at 10 times the fare



*JK Turpie and H van Zyl (2002)*

# NBSAPs and Impact Assessment – EIA and SEA

*“The requirement to integrate consideration of the conservation and sustainable use of biological resources into national decision-making, and mainstream issues across all sectors of the national economy and policy-making framework, are the complex challenges at the heart of the Convention”*

# Article 14 of the CBD – *impact assessment and minimizing adverse impacts*

Introduce appropriate

- procedures requiring EIA of proposed projects that are likely to have significant adverse effects on biological diversity
- arrangements to ensure that the environmental consequences of programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account



# NBSAPs and Impact Assessment

## NBSAP

- *Objectives for biodiversity conservation*
- *Stocktaking*
- *Actions, priorities*
- *Responsibilities, timing*

## Impact assessment

is a key mainstreaming tool to ensure biodiversity is taken into account in policies, plans, programmes, strategies...



Impact assessment is a key tool to 'mainstream'  
environment into policy formulation, planning and  
decision-making

*but*

- It's mainly applied at project level (EIA), not at a strategic level (SEA)
- Often EIA operates in a strategic vacuum...
- And EIA has many shortcomings

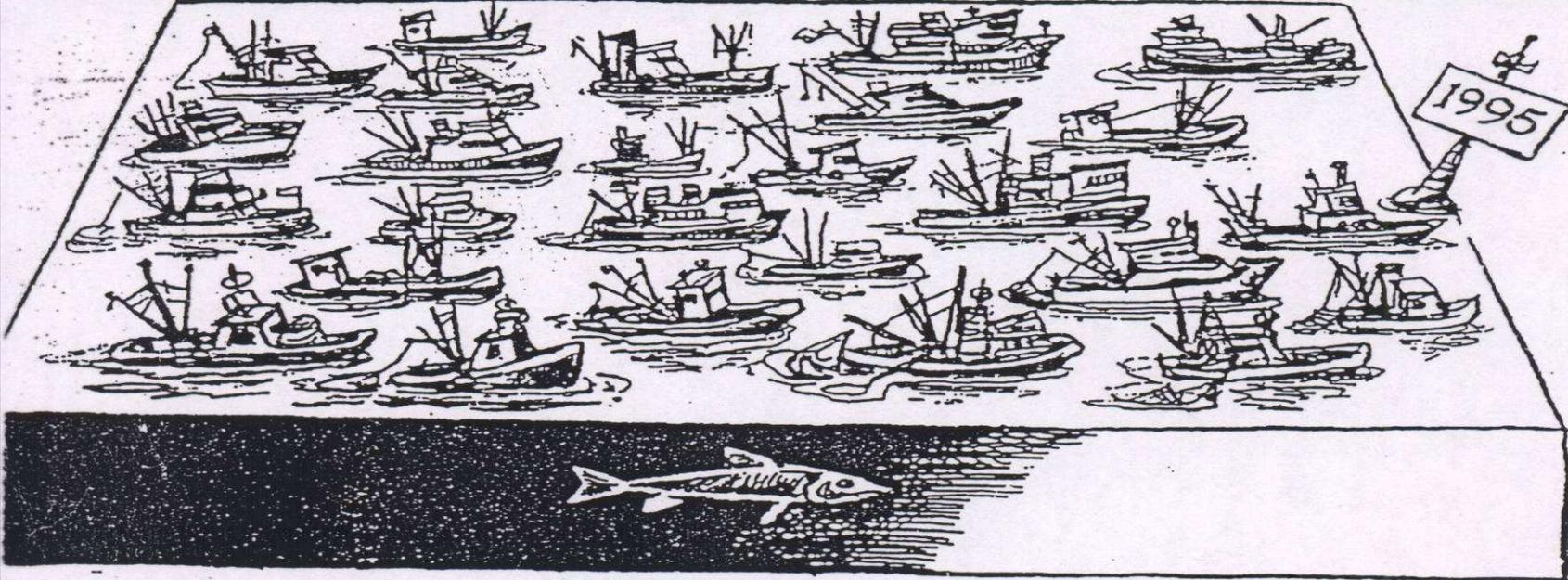
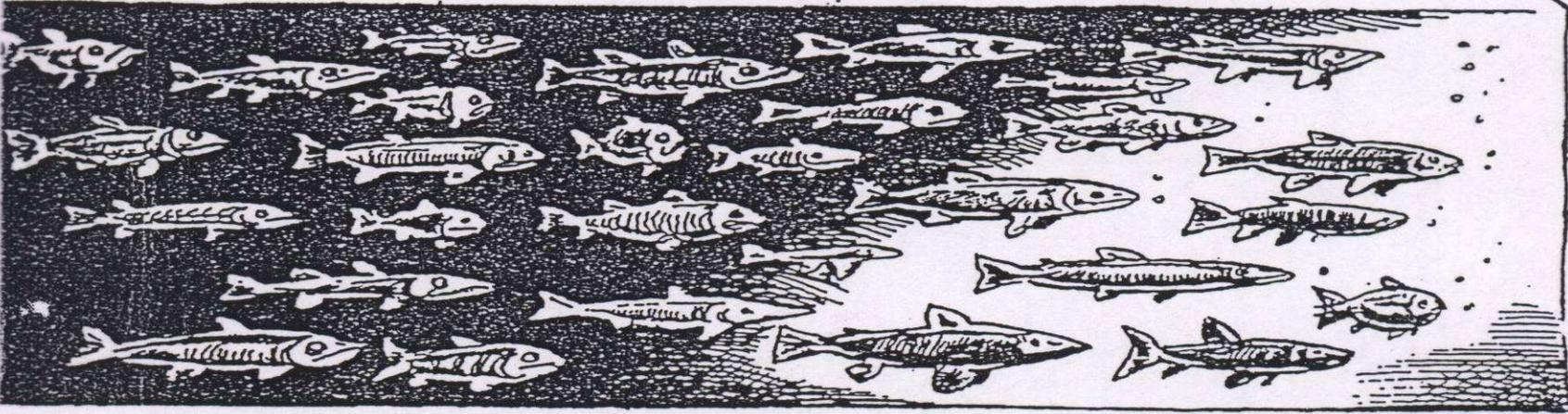
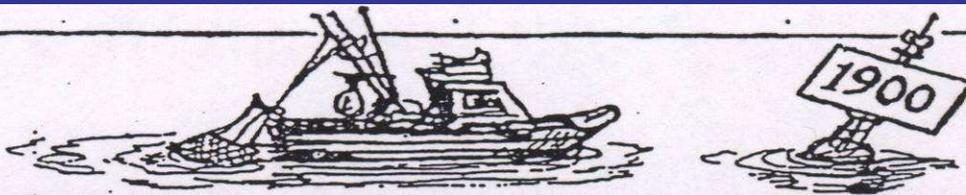


# Project-level EIA: what shortcomings?

- Can't take *cumulative or bigger picture impacts* into account – good at detail and narrow focus but piecemeal, fragmented
- Looks at impacts i.r.t. what's here now, not in relation to *where we want to be in future*
- *Asks limited questions*... 'what effect will this have'...not 'what would be best here, or how best could we solve this problem'
- Is *reactive* – so often doesn't look at all reasonable and feasible alternatives but tends to focus on The Proposal
- Seldom makes *the connections*: people's dependencies on the natural environment and ecosystem services
- *Trade-offs* frequently made without clear 'rules' - economics the winner in the short term, biodiversity the loser forever.



A BRIEF HISTORY OF WORLD COMMERCIAL FISHING



Cartoonists & Writers Syndicate

# The need for SEA rather than EIA: an example

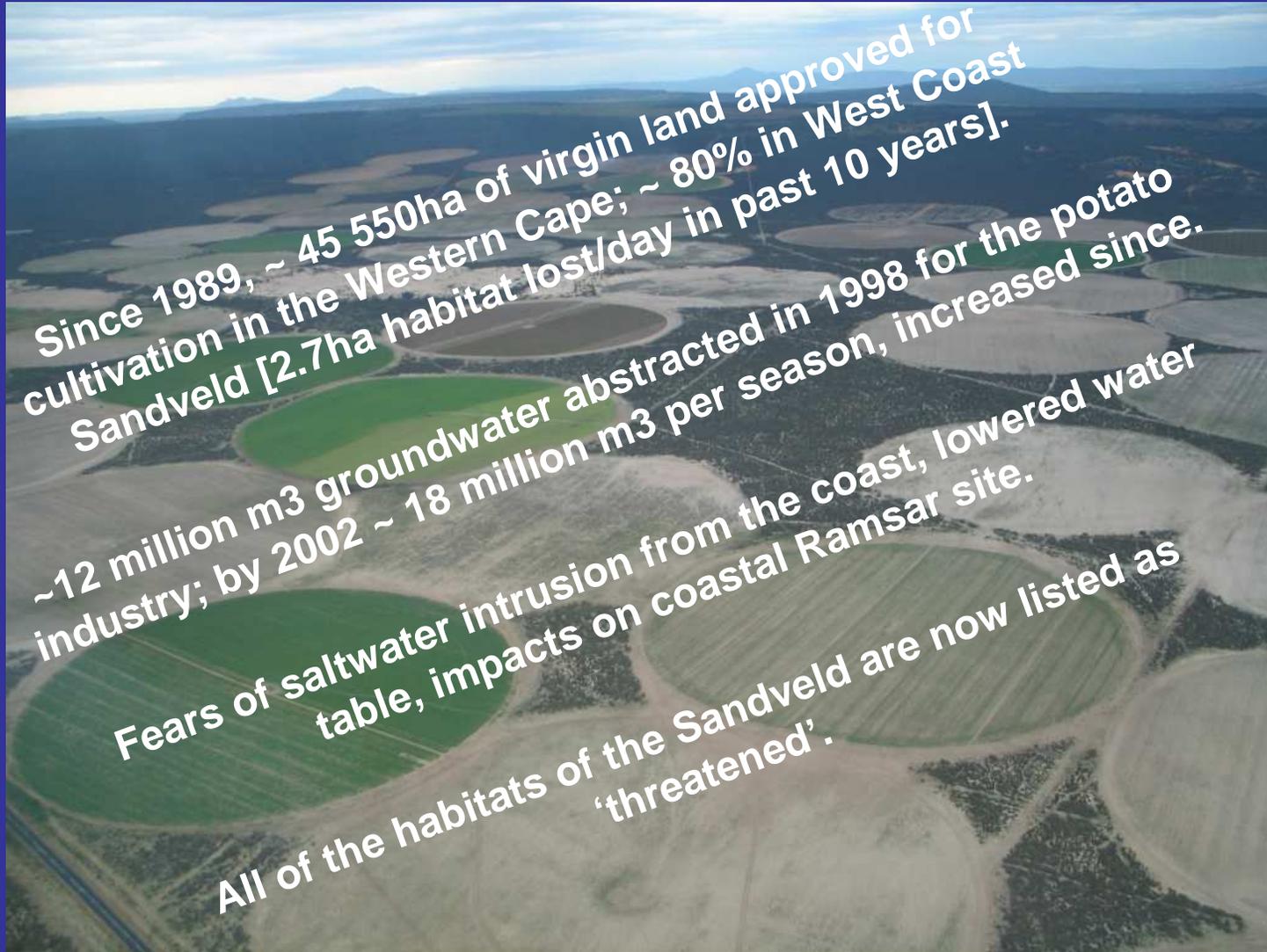


Individual applications for a permit to cultivate 'virgin land' to Department of Agriculture. No trigger for EIA to cultivate relatively small areas of land

Before potato farming, vegetation types in the Sandveld not under threat.



# The need for SEA rather than EIA



Since 1989, ~ 45 550ha of virgin land approved for cultivation in the Western Cape; ~ 80% in West Coast Sandveld [2.7ha habitat lost/day in past 10 years].

~12 million m<sup>3</sup> groundwater abstracted in 1998 for the potato industry; by 2002 ~ 18 million m<sup>3</sup> per season, increased since.

Fears of saltwater intrusion from the coast, lowered water table, impacts on coastal Ramsar site.

All of the habitats of the Sandveld are now listed as 'threatened'.



# COP 8 Decision VIII/28

## Curitiba, 20 - 31 March 2006

### *Strategic environmental assessment*

9. *Endorses* the draft guidance on biodiversity-inclusive strategic environmental assessment contained in annex II to the note by the Executive Secretary on voluntary guidelines on biodiversity-inclusive impact assessment ([UNEP/CBD/COP/8/27/Add.2](#));

11. *Invites* other multilateral environmental agreements to take note of the draft guidance on biodiversity-inclusive strategic environmental assessment and to consider its application within their respective mandates

*etc.*

Why SEA

# If we want to reach 'sustainability', we need to know which way to go...

'Would you tell me, please, which way I ought to go from here?'

'That depends on where you want to get to,' said the Cat.

'I don't much care where' said Alice.

'Then it doesn't matter which way you go,' said the Cat.

'So long as I get *somewhere*,' Alice added as an explanation.

'Oh, you're sure to do that,' said the Cat...



# 4 simple, strategic questions wrt moving towards sustainability

- Where do we want to get to? *Vision, objectives, sustainability criteria and outcomes... including biodiversity, ecosystem services*
- How best can we get there?  
*Alternatives*
- How – and when - should we check that we're on the right track?  
*Monitoring, evaluation*
- What changes should we make if we've strayed? *Adaptation, corrective action*



# SEA characteristics

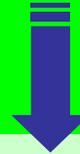
- Focus on sustainability: *'where do we want to get to'* i.t.o. a chosen level of environmental quality (e.g. *biodiversity or ecosystem service*)
- Proactive in a way that gives direction to future development...  
SO, *not 'what would be the impact of this action, but rather:*
  - *'what would be the most appropriate or best use of this area / these resources?'*
  - *'what would be the best way to meet this need or solve this problem?'*
  - *'how best could we develop this sector?'*
- Can create a framework to guide development and provide criteria against which impacts and benefits can be measured...
  - *enables cumulative impacts to be assessed*
  - *creates parameters for 'downstream' evaluation of development proposals*
- Allows wider range of alternatives to be explored early on when flexibility is greatest... *'how best to get there?'*
- Is seen more as a 'process' than a 'product', so there is far less emphasis on producing a detailed written report!



Can 'infiltrate' existing policy / planning tools and processes, no need to create new ones...

A clear course of action and general direction

# Policies



# Plans



# Programmes



# Projects

Purposeful strategy or design to give practical effect to policies

Provide an agenda or schedule of practical action

A single development undertaking

Checking 'upstream' consistency



# EIA and SEA

Aims to integrate sustainability

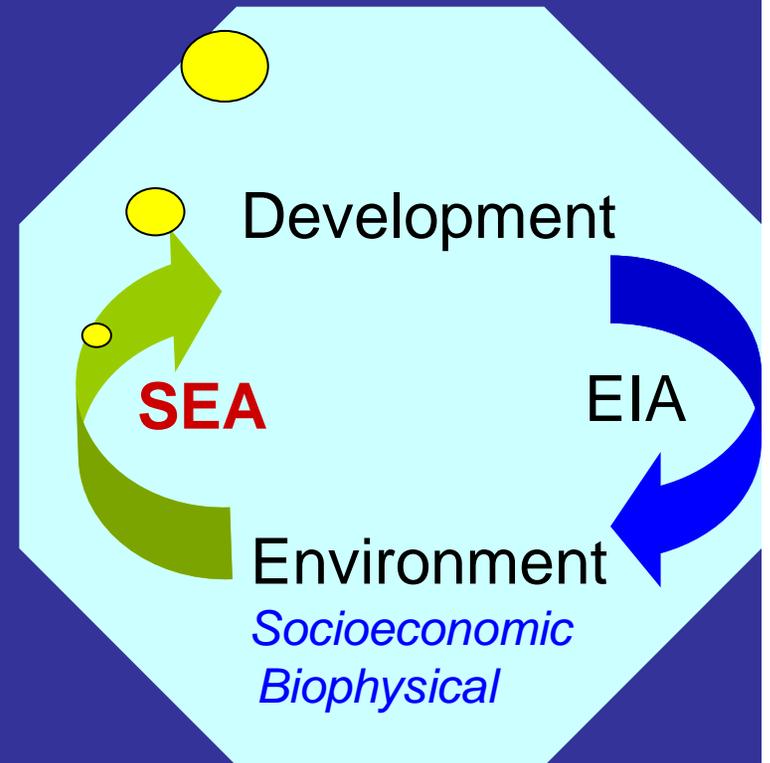
**Policies**

SEA - impact assessment on policies, plans and programmes

Plans, programmes

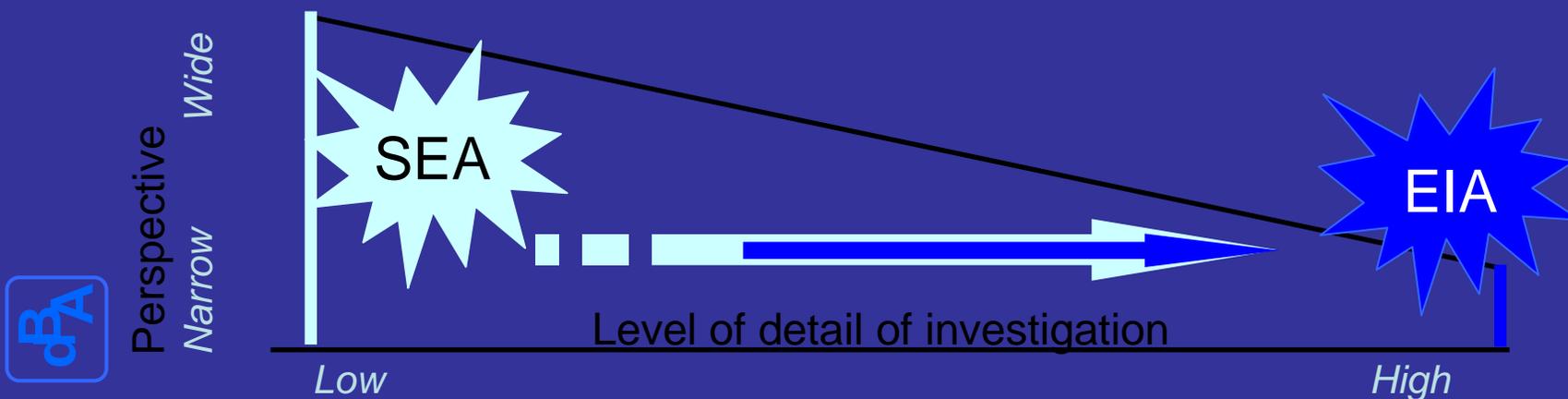
Projects

EIA - impact assessment on projects



# SEA versus EIA

- ✓ *SEA and EIA are both useful*
- ✓ *SEA is **best** for dealing with impacts on landscapes or a geographic area, or of a sector ...it's more efficient in providing a good development framework!*
- ✓ *SEA is proactive; EIA tends to be reactive*



# Why SEA?

To look after biodiversity and important ecosystem services effectively, we need to:

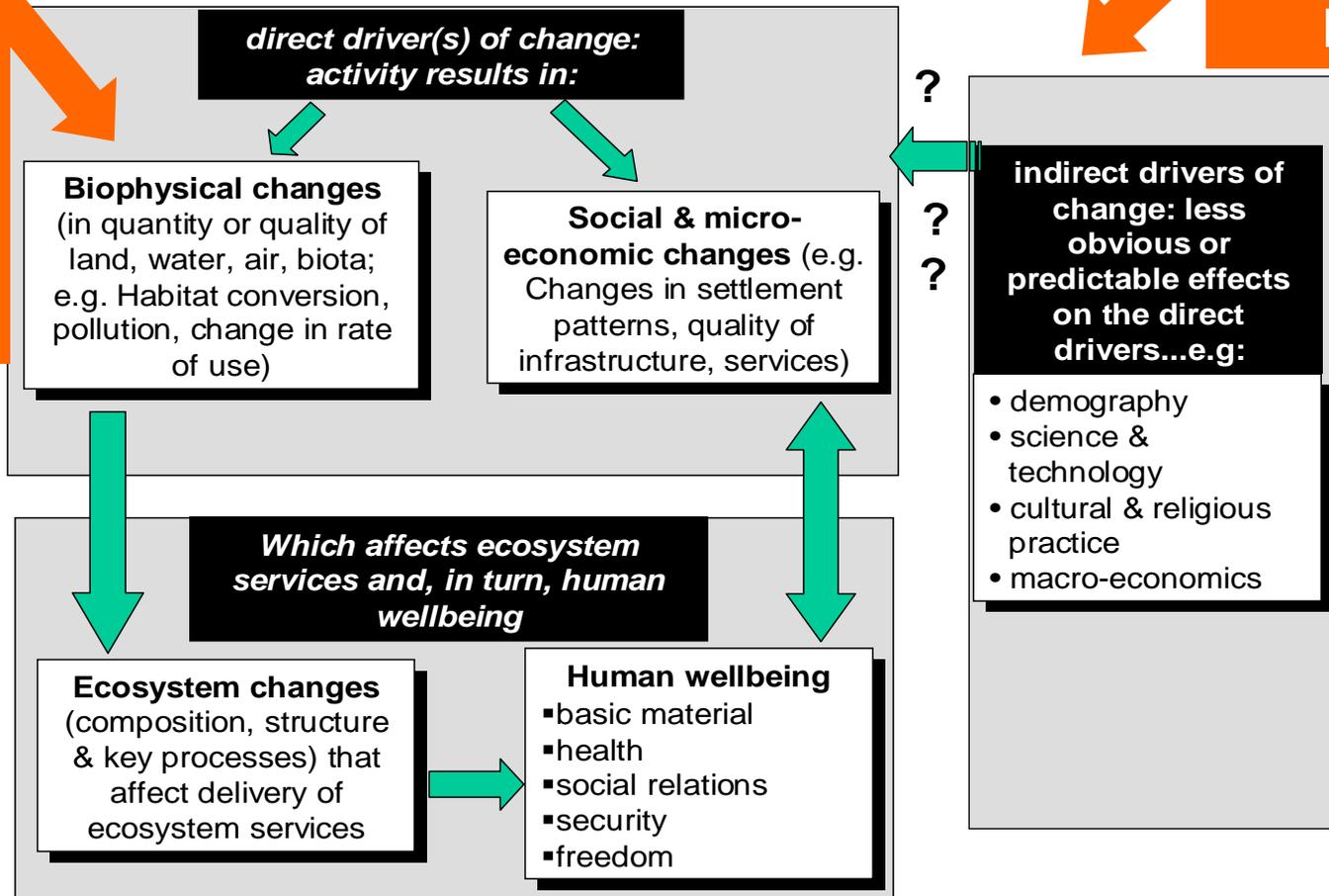
1. **be more proactive** and bring biodiversity considerations and evaluation criteria 'up front' to shape future direction and courses of action
2. **engage at a strategic level** in planning and setting limits to the way we impact on, use, manage, give access to, and distribute benefits from, biodiversity and ecosystem services
3. **use tools that can integrate across areas, regions, sectors** rather than tools that minimize impacts of isolated projects

When SEA?

# Impact assessment - direct and indirect drivers of change

Often 'driven' by land use / development policies and plans, which then inform and 'legitimize' projects

Often influential at strategic level...



# Priorities for mainstreaming biodiversity

1. Regional, national and provincial sustainability or development frameworks or plans
2. Poverty reduction strategy programmes
3. Policies that have major implications for natural resources

# When to call for or insist on SEA

1. International or protected *status, trans-boundary* effects
2. Known *important or priority areas for biodiversity or ecosystem services* – direct or indirect effects could be significant
3. High levels of *dependency on biodiversity or ecosystem services* for livelihoods, health, etc. ...‘poverty hotspots’
4. Impacts of *particular proposal/s* would be significant in a particular landscape/ area (e.g. deforestation, land reclamation, multiple mining ventures, resettlement, etc.)
5. Areas where *trends show accelerated or continuing land / habitat degradation* with deterioration in important ecosystem services (e.g. cultivation, pollution, etc)
6. Where proposed PPP could have *major ‘downstream’ implications* – e.g. *expansion of a sector*, or stimulation of *growth in a particular geographic area, with big changes* in consumption or production, intensity of use, conversion of land, in a sector or geographic area (e.g. international trade agreements, biofuel policy, etc.)
7. Where EIA is *too narrow in scope* to address major issues or strategic concerns!



# e.g. International / trans-boundary

- Okavango River:

- Angola, Namibia, Botswana
- Okavango Swamps is the world's largest Ramsar site
- Competing demands include: bulk water supply to distant cities, ecotourism, irrigation agriculture, hydropower, biodiversity protection, conservation, rural subsistence livelihoods, artisanal fishing, cattle grazing etc



*Several project-level EIAs have been done, but all fail to address the cumulative and incremental effects of each development*

## e.g. EIA missing important strategic considerations SEA for transport options in Mozambique

1. EIA for rail upgrade to port, Maputo, to transport materials to / from inland heavy minerals mine
2. EIA for alternative transport facility – haul road to the coast plus private jetty ...sensitive coastal lakes, dunes, poor communities reliant on local natural resources, fisheries, water resources.
3. Government called for an SEA to look at strategic alternatives rather than isolated EIAs – for a more holistic assessment that might benefit country as a whole.
4. Upgrade of a railway line would transport mining and agric. products, also improve conditions for local population and eco-tourism.
5. On the basis of the SEA, decided that road can be used as temporary measure, longer term alternative infrastructure plan with a North-South connection has to be developed.



To check consistency in policies...(e.g. Ghana)

Policy direction - compatible or conflict? (✓ = compatible, X = conflict)

	Energy		Water		Mining		Agriculture	
Energy			X					
				X				
Water							✓	
	✓	X						
Mining								X
Agriculture								
			X	✓				



# Approaches to SEA

# SEA – different approaches

- ‘EIA-based’ or ‘parallel’...*assessment when policy/ plan/ programme close to completion – little room to move, reactive!*
- ‘Integrated’ with the policy-making or planning process...*not rigid but adapted to fit existing processes, done as an integral part of that process.*
- ‘Sustainability framework’ / ‘SEA leading’... *not done for any one particular policy, plan or programme, but works proactively to set a framework against which to assess any future proposals: objectives/ targets, limits of acceptable change/ management, monitoring and indicators, etc.*
- ‘Sustainability assessment’...*uses specific generic and case/context specific criteria, and trade-off rules*



Different sustainability criteria into which biodiversity can slot. e.g. Ghana poverty-environment linkages: PRSP SEA –

- **Livelihoods**

- Access to water, land, timber, wildlife, non-timber forest products

- **Vulnerability**

- Droughts, bushfires, floods, land degradation

- **Health**

- Water quantity and quality, sanitation, air quality, medicinal plants

- **Institutional support**

- Adherence to democratic principles and human rights, access to information



# Looking at SEA<sup>11</sup>: Ghana's PRSP- SEA approach

The objective of this exercise: To evaluate effects of proposed policies on sustainable development objectives

Dimension of sustainable development (e.g.)	Safeguard livelihoods					Safeguard health			Minimize vulnerability					Maintain ecosystem health		Ensure institutional capability	Protect cultural heritage	Promote economic vitality		
	Access to water	Access to land	Access to living resources	Access to food	Access to fuel	Water quality	Air quality	Sanitation	Access to medicinal plants	Drought	Social/political conflict	Fire	Floods	Land degradation	Epidemics				Conservation of biodiversity	Conservation of catchment & wetlands
<i>Environmental component</i>																				
<i>Policy Strategies</i>																				
	<i>Rights, access to, and benefits from biodiversity</i>					<i>Integrity of ecosystem services</i>														

Scoring: + likely to be positive, - likely to be negative, 0 likely to be neutral, ? don't know

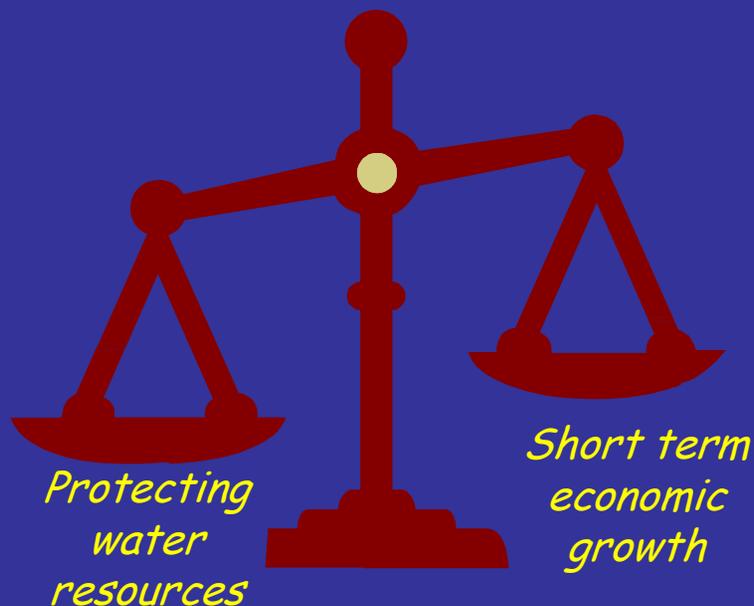
Acknowledgements: Environmental Protection Agency, Accra, Ghana.

# Sustainability assessment uses 8 generic sustainability criteria

- Integrity of **socio-ecological systems**
  - Livelihood **sufficiency and opportunity**
  - **Equity** within the current generation
  - **Equity** between this generation and future generations
  - **Efficiency** – *in use of resources and energy; **doing more with less***
  - Democracy, **good governance** – *building understanding, capacity, commitment*
  - **Precaution** and adaptation
  - Immediate and long term **integration**
- BIODIVERSITY CONSERVATION
- ECOSYSTEM SERVICES
- SUSTAINABLE AND EQUITABLE USE...



# Using explicit, defensible and transparent trade-off rules

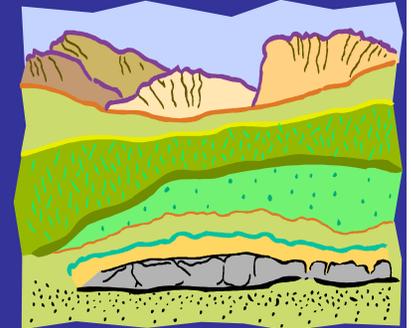


- Look for maximum net gains
- Those who propose to trade-off capital are responsible for 'proving' their case [else shouldn't make trade-offs!]
- Avoid *all* significant -ve effects
- Protect the future (*don't displace negative effects to future generations*)
- Provide explicit justification for trade-offs
- Use an open, transparent process

# e.g. Sustainability Assessment as an integral part of land use / spatial planning

Values, aspirations, priorities of stakeholders?

What's the **best use** of an area? What's the **best way** to meet a need? How **best** to solve a problem



- a) opportunities and constraints, b) alternatives
- c) **generic** and d) **context-specific** sustainability criteria and desired outcomes



**The best possible proposal –**

or close alternatives with mutually reinforcing benefits

Implementation, checking, adaptive management



Land use satisfies sustainability criteria?	Alt. A	Alt. B	Alt. C
<b>[++] Fully +; [+/-] Net benefits, some losses; [? -] Net benefits not assured, may be significant damages/risks; [--] Net losses, significant risks and damages</b>			
<b>Integrity, resilience of socio-ecol. systems?</b> <i>e.g. avoid pollution to ensure supply of fresh water to users</i>			
Conditional on, or only if?			
<b>Social &amp; livelihood sustainability?</b> <i>e.g. access to harvestable goods, prioritize cultivation of locally adapted crops</i>			
Conditional on, or only if?			
<b>Equity within &amp; between generations?</b> <i>e.g. benefits to vulnerable communities; conserve ecosystem diversity</i>			
Conditional on, or only if?			
<b>Efficiency of resource &amp; energy use?</b> <i>e.g. promote use of local resources, use energy and water-efficient installations</i>			
Conditional on, or only if?			
<b>Democracy &amp; good governance?</b> <i>e.g. capacity to implement and manage effectively, participation by key stakeholders</i>			
Conditional on, or only if?			
<b>Precaution &amp; adaptation?</b> <i>e.g. consensus about, and confidence in, viability of proposals, predicted impacts</i>			



# Key ingredients in SEA

# Essential ingredients in the SEA process

## 1. Involving all the right people and getting formal commitment to the process and its outcomes

- *establish a forum at the start of the SEA, with key authorities and stakeholders, to steer SEA*
- *regional and relevant country representatives – including biodiversity*
- *competent national authorities - including biodiversity*
- *potentially affected parties: local communities, poor, vulnerable parties*

## 2. Deciding on a 'vision', with explicit goals, objectives, desired outcomes and/or targets including those related to conserving biodiversity, important ecosystem services, natural capital

## 3. Choosing explicit sustainability criteria against which to evaluate options including those related to conserving

- *biodiversity*
- *important ecosystem services on which communities depend*
- *equity within and between generations*



# Essential ingredients in the SEA process

## 4. Determining the best, appropriate time and space boundaries

## 5. Identifying **The Big Issues, opportunities & resource constraints, dependencies and vulnerabilities, priorities...**

*Who relies on which ecosystem services for lives, livelihoods, as a poverty buffer? What must be safeguarded to conserve biodiversity pattern and process? NB to recognize the inter-dependencies of social and ecological systems. e.g. key 'drivers' of the local economy might be dependent on biodiversity or ecosystem services (e.g. fisheries reliant on healthy water bodies)*

## 6. Ensuring that the proposed activity is consistent with higher level instruments (e.g. protocols, policies, plans, programmes, strategies)

- E.g. NBSAP, other biodiversity and natural resource conservation plans, etc.

## 7. Thinking about trends and likely future scenarios...climate change, energy pressures, changes in natural hazards, etc



# Essential ingredients in the SEA process

8. **Involving the right specialists** and ensuring links across disciplines (e.g. biodiversity / ecosystem services, social and economic factors)
9. **Identifying and evaluating alternatives** that seek to
  1. satisfy sustainability criteria, particularly w.r.t. conserving biodiversity and important ecosystem services that support lives, livelihoods, AND
  2. provide opportunities for mutually reinforcing sustainability gains
  3. work towards resilience of communities and associated ecosystems.
10. **Considering the full spectrum of environmental costs and benefits**
11. **Weighing up trade-offs explicitly...being transparent wrt choices**
12. **Taking uncertainties, gaps in knowledge or information into account...precaution (penalty for guessing wrong, irreplaceable loss, substitutes? etc...)**
13. **Providing a robust framework for 'downstream' development...what can and can't happen where, to what extent, to what 'limits of acceptable change'**
14. **Doing, checking using appropriate indicators, learning, adapting.**



# Who's responsible for doing and paying for the SEA?

1. Generally, government authorities commission an SEA for a particular geographical area and/or sector.
2. In some instances large private sector companies (eg mining) might commission an SEA.
3. SEA is often carried out by private consultants, with input from key stakeholders... it is essential that the government authority buys into the SEA and accepts its outcome
4. SEA doesn't need to be HUGE and EXPENSIVE!  
Effective scoping (id of The Big Issues) NB



Making mainstreaming of  
biodiversity into SEA easier, to  
support NBSAP...

*IF:*

- The right legal, policy and decision-making framework:
  - *Law or policy recognizes value of biodiversity in SD*
  - *Law or policy provides for, or enables, SEA practice*
  - *Triggers for SEA w.r.t. biodiversity clear and accepted*
- Having a respected environmental ministry, agency or authority, with capacity to ensure effective engagement in policy-making, planning
- Good co-operative governance across sectors, interests
- Explicit sustainability objectives, decision-making criteria and trade-off criteria
- Good information to feed into SEAs on:
  - *Spatial distribution of threatened ecosystems and species*
  - *Areas that deliver important ecosystem services*
  - *Species with medicinal, agricultural or other economic significance*
  - *Full economic value of important ecosystem services*
  - *Social, heritage and cultural values of species or ecosystems*
- Good idea of trends – recent and future (e.g. climate change)
- All stakeholders aware of, and value, ecosystem services



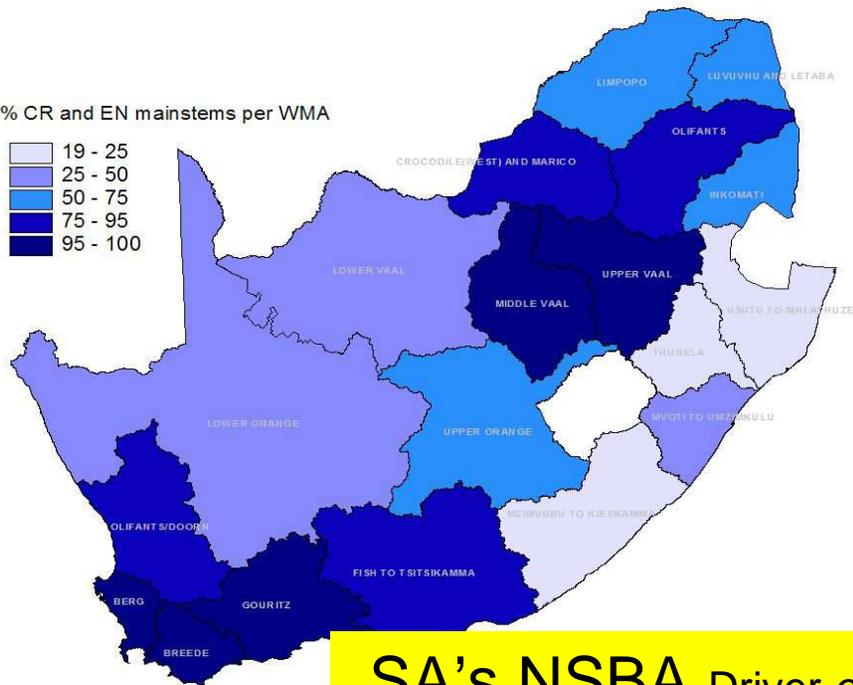
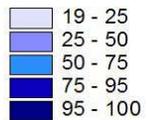
# Having the right information: Systematic Conservation Planning at landscape or ecosystem scale, ideal for informing SEA

- To:
  - Ensure that biodiversity pattern and processes are protected.
  - Focus conservation effort, locate development
- It:
  - synthesises spatial data
  - looks at options to meet conservation targets
  - determines the best options, allowing areas to be prioritised
  - enables priorities to be incorporated and respected in spatial development plans / frameworks.

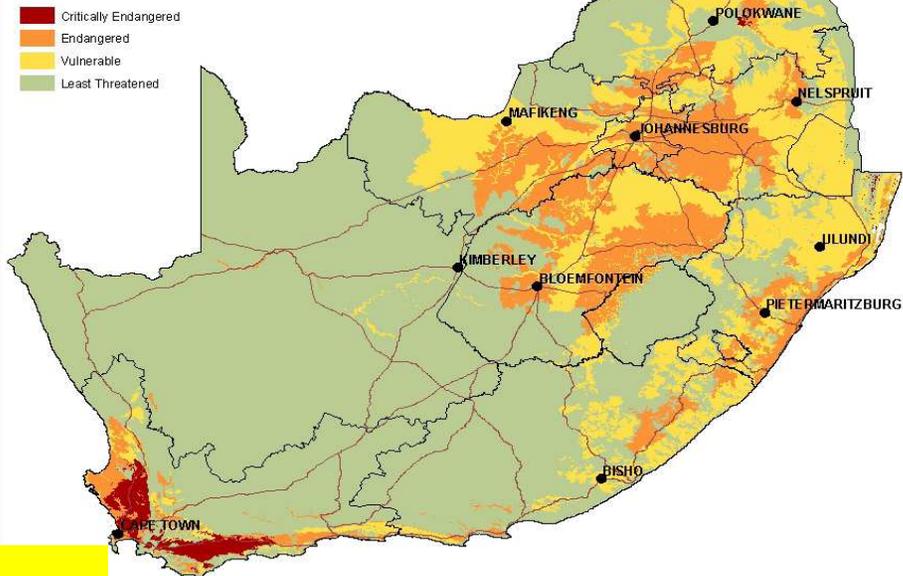
*Can be done at different spatial scales and levels of detail.*



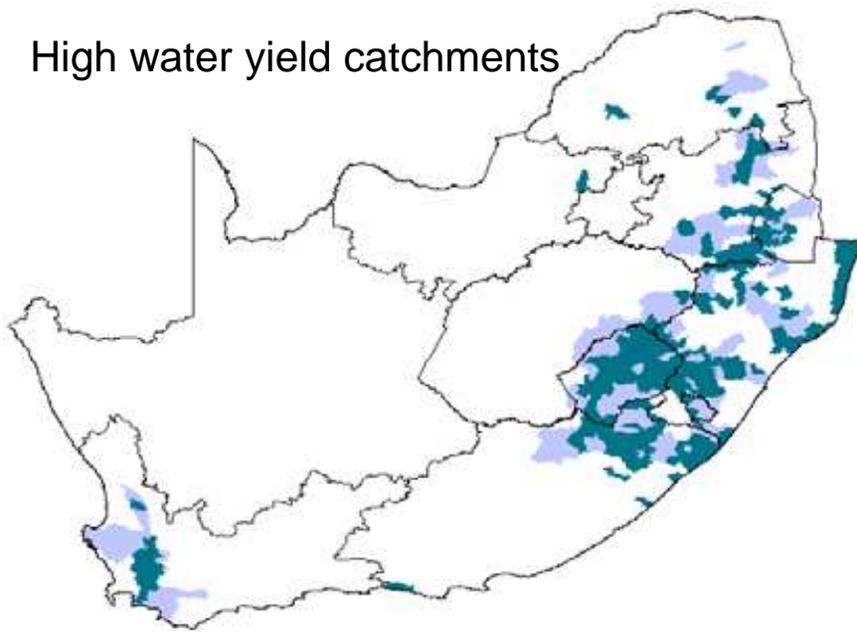
% CR and EN mainstems per WMA



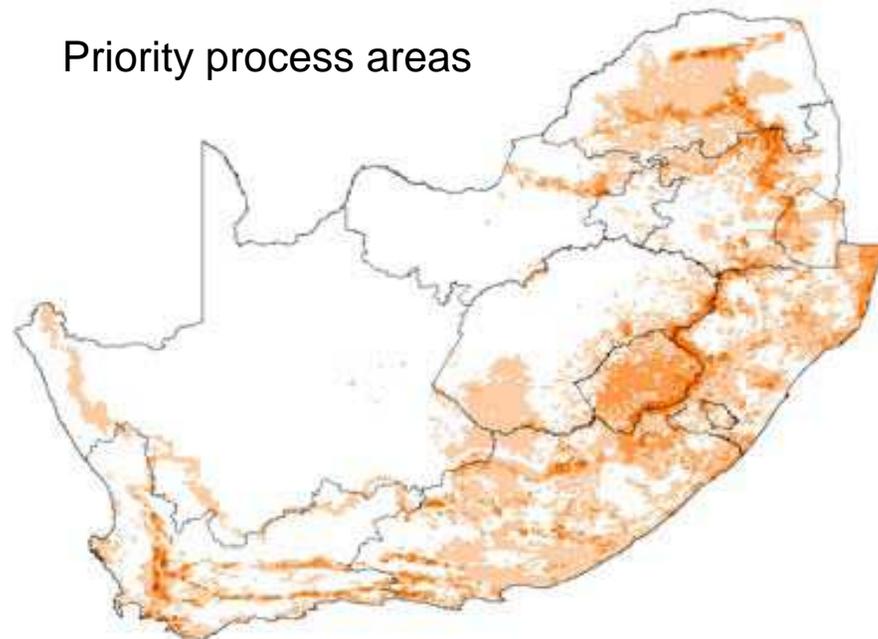
SA's NSBA Driver *et al* 2004



High water yield catchments

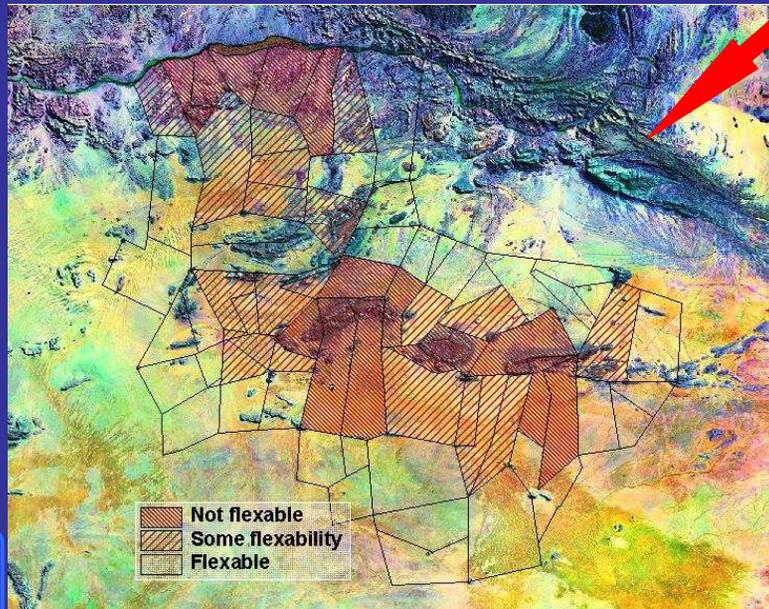
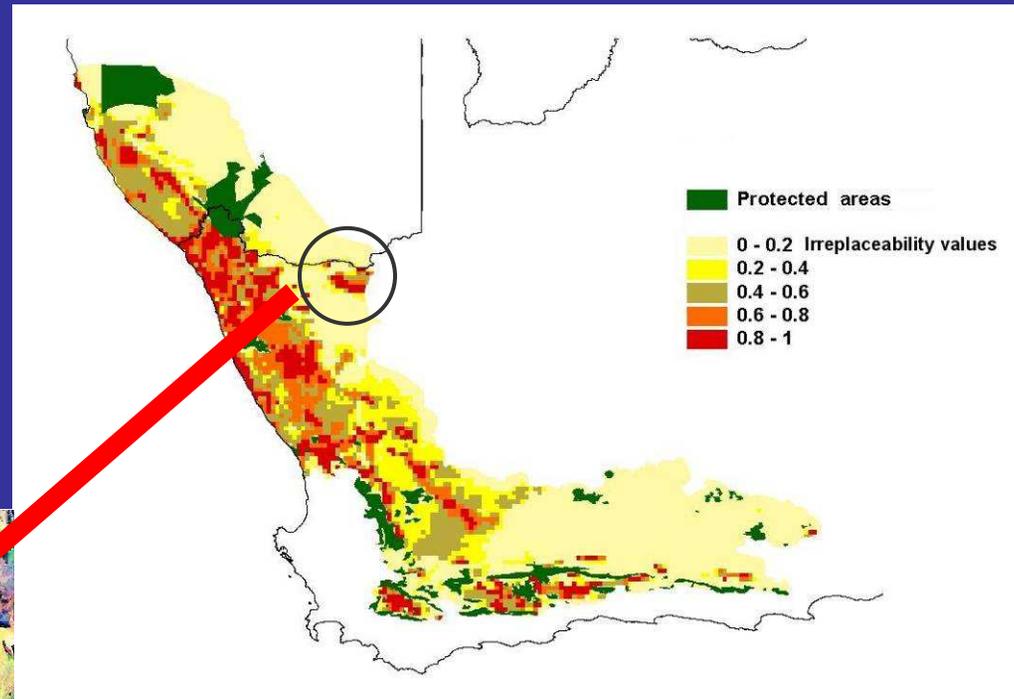


Priority process areas





e.g. Bushmanland mining proposal, Succulent Karoo

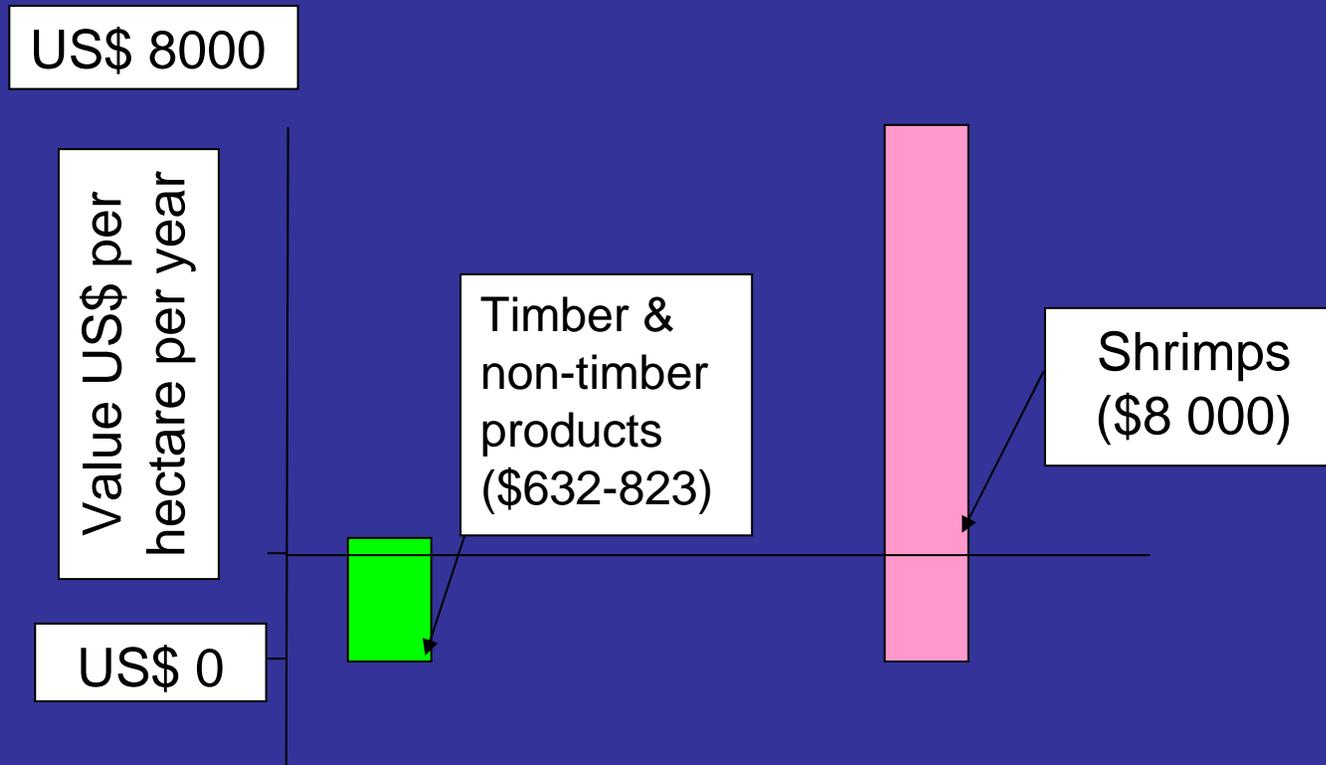


*Emphasizes the importance of having relevant landscape-scale information on biodiversity priorities at national to local scales...*



*Financial versus full economic valuation – providing the best information!*

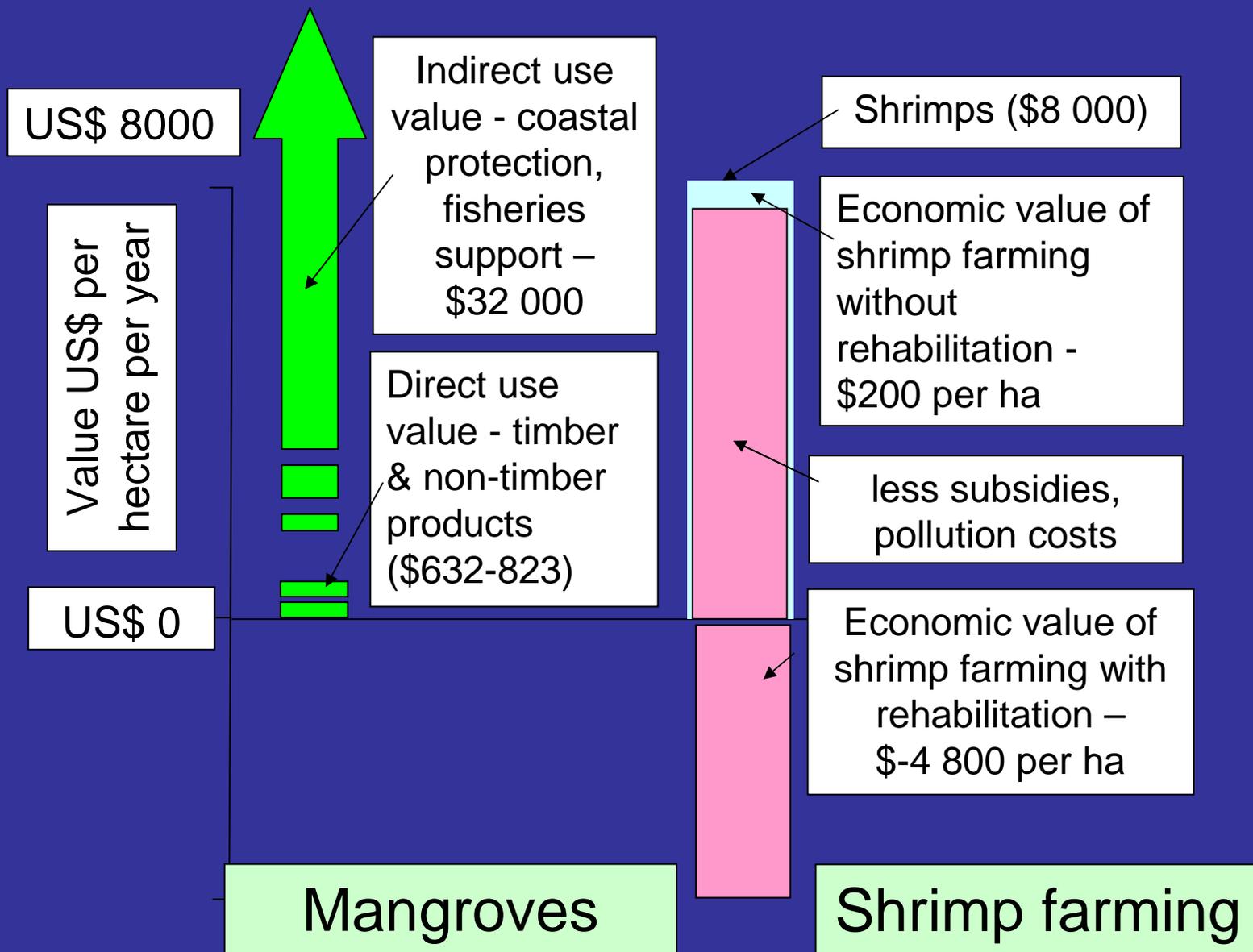
## Financial analysis...



Keep the mangroves?

Or...convert to shrimp farming?





**Conclusion**

- Create an enabling legal and policy context for SEA
- Call for / insist on SEA when appropriate
- Integrate SEA into existing planning and decision-making...use it proactively to direct future development / resource use
- Connect people and biodiversity at strategic levels – use the language of sustainable development
- Buy-in to, and commitment to outcome of, SEA from all key stakeholders is essential
- Clear decision and tradeoff criteria are necessary



Thank you!

# Discussion and groupwork

Group exercises of 15 minutes each, plus 5 minutes presentation time per group...

Group 1. Proposed biodiesel policy

Group 2. Deciding on the 'best use' of the Wotames area





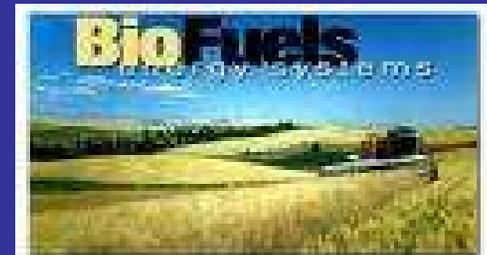
# Group 1: Effect of proposed policy on NBSAP

Divide into groups

1. The energy ministry is close to finalizing a policy to stimulate the biofuels industry, encouraging landowners to switch to growing biofuels and expand areas under agriculture to this end. The ministry is offering tax relief and other incentives.
2. As the environment ministry and responsible for ensuring implementation of your NBSAP, consider the potential direct, indirect and cumulative effects of this policy on its objectives. Refer to the MA framework, or you can draw simple 'impact pathways' to illustrate your concerns.
3. Formulate clear recommendations to the energy ministry.
4. Each group to present findings...and to consider 'what if' there was no engagement at this policy-formulation level?



*[15 minutes]*



## Group 2: SEA on geographical area / small catchment

Divide into groups

1. Wotamesse District is thought to contain valuable minerals. Mining companies are eyeing the area. Study the 'map' to determine the 'best use' for that area, taking the NBSAP into account.
  - *Come up with context-specific sustainability criteria that you feel could reflect local priorities / vision for the Wotamesse area. You can draw on the Ghana PRSP matrix provided, and generic sustainability criteria, if useful*
  - *Take into account opportunities, constraints*
  - *Provide a framework to guide future development, with sustainability parameters.*
2. Each group to present findings, considering what development – and what problems - might have arisen in the absence of a plan for the area.

*[15 minutes]*

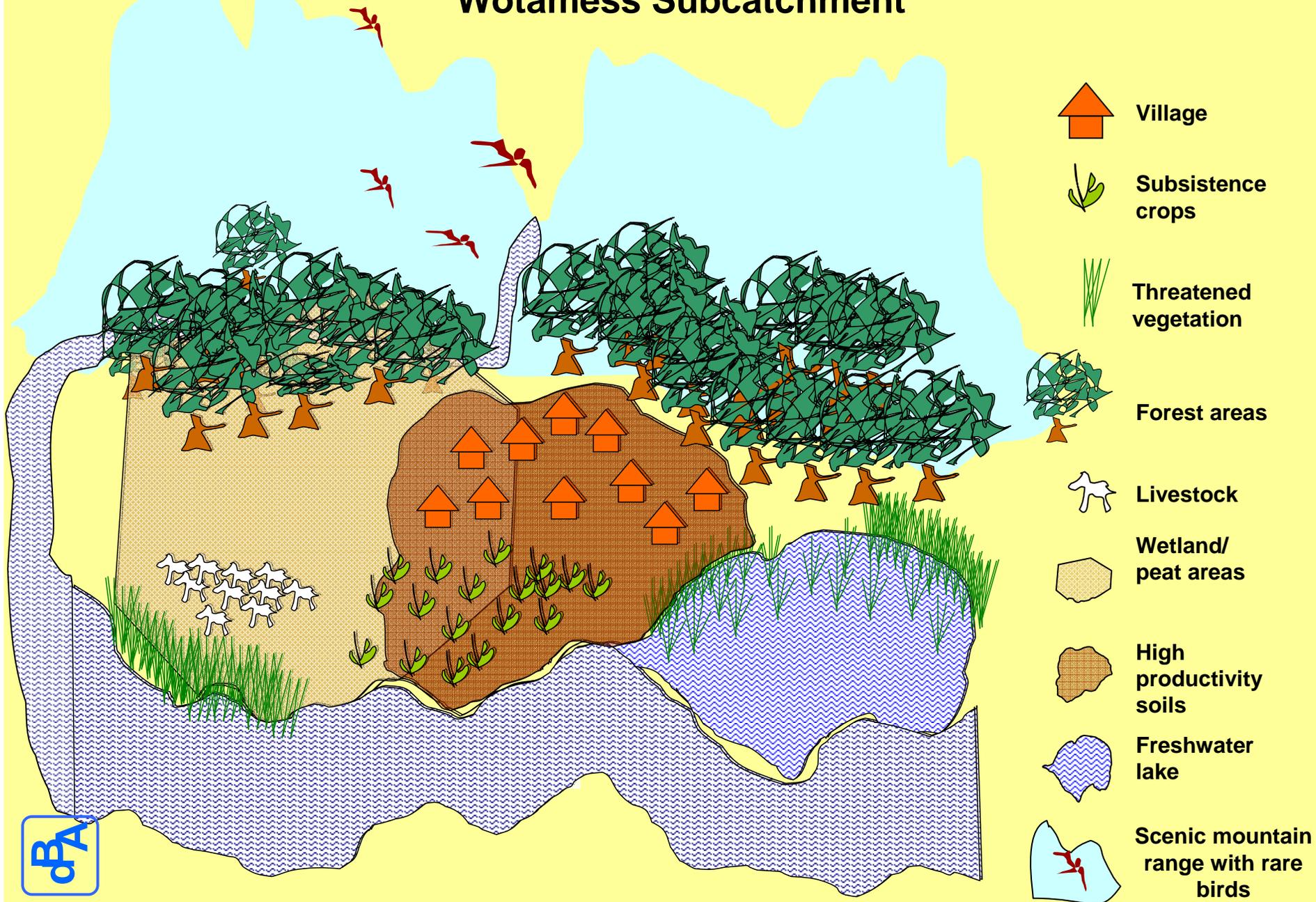


# Wotames's NBSAP

- Conserve and manage biodiversity to ensure sustainable and equitable benefits to the people of Wotames now and in future
- Wellbeing, health and livelihoods of Wotames people are enhanced through sound conservation and management of biodiversity
- Partnerships between govt, local communities, private sector promote effective conservation of biodiversity
- A network of protected areas conserves representative biodiversity of national or global importance
- Capacity is built to manage biodiversity effectively



# Wotames Subcatchment



## Looking at SEA<sup>[1]</sup>: Ghana's PRSP- SEA approach

The objective of this exercise: To evaluate effects of proposed policies on sustainable development objectives

Dimension of sustainable development (e.g.)	Safeguard livelihoods					Safeguard health				Minimize vulnerability					Maintain ecosystem health		Ensure institutional capability	Protect cultural heritage	Promote economic vitality	
	Access to water	Access to land	Access to living resources	Access to food	Access to fuel	Water quality	Air quality	Sanitation	Access to medicinal plants	Drought	Social/political conflict	Fire	Floods	Land degradation	Epidemics	Conservation of biodiversity				Conservation of catchment & wetlands
<i>Environmental component</i>																				
<i>Policy Strategies</i>																				
	<i>Rights, access to, and benefits from biodiversity</i>					<i>Integrity of ecosystem services</i>														

Scoring: + likely to be positive, - likely to be negative, 0 likely to be neutral, ? don't know

Acknowledgements: Environmental Protection Agency, Accra, Ghana.

# Sustainability assessment uses 8 generic sustainability criteria

- Integrity of **socio-ecological systems**
  - Livelihood **sufficiency and opportunity**
  - **Equity** within the current generation
  - **Equity** between this generation and future generations
  - **Efficiency** – *in use of resources and energy; **doing more with less***
  - Democracy, **good governance** – *building understanding, capacity, commitment*
  - **Precaution** and adaptation
  - Immediate and long term **integration**
- ↔ BIODIVERSITY CONSERVATION
- ↔ ECOSYSTEM SERVICES
- ↔ SUSTAINABLE AND EQUITABLE USE...

# Discussion and way forward

- General discussion
  - Your experience of SEA
  - What works best, and why?
  - What doesn't work, and why? The main obstacles?
  - How to make SEA more effective in mainstreaming biodiversity?
- The way forward w.r.t SEAs and NBSAPs?

