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The Business of a Better World

# Measuring Corporate Impact on Ecosystems

A Review of  
Emerging Tools

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Markets Working Group

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- **Context**

- Why do businesses need ecosystem services tools?

- **Process & Status**

- What integrated, multi-ecosystem services tools exist today?

- **Next Steps**

- What are the emerging needs?

# Context

Why do businesses need ecosystem services tools?

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**“One cannot manage change.  
One can only be ahead of it.”**

-Peter Drucker (1999)

*Management Challenges for the 21st Century*

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**“The advantage of being ahead of the game is not that you can dictate the terms of legislation, but you can influence the thinking around issues based on the experience you already have.”**

-Thulani Gcabashe, CEO, Eskom (2006) “The Company that Anticipated History” in *Strategy + Business*

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**“Ecosystem services are a core element of business infrastructure. So fundamental that they are often overlooked.**

These services include protection of coastal areas and key infrastructure, such as harbors, the regulation of reliable and sufficient flows of water, the regeneration of productive soil, and the carbon sequestration in plants and soil.

**Replacing these services is not always technically possible or financially feasible ”**

-BSR (2007) “The New Markets for Environmental Services: A Corporate Manager’s Resource Guide to Trading in Air, Climate, Water, and Biodiversity.” ([www.bsr.org](http://www.bsr.org))

# Evolving Context

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- Recognition of environmental protection policy failures
  - » Declining availability and function of ecosystem services
  - » Increasing demands for, and conflicts over, ecosystem services
  - » Growing license to operate challenges related to ecosystem services
  - » Rising recognition of human health linkages to environmental quality
- Consolidation of experience with market-based incentives to environmental performance
  - » Acid rain-related air pollutants (U.S.)
  - » Fisheries (Australia and New Zealand)
  - » Wildlife hunting (Africa)
  - » Waste quotas (Europe)
- Expansion of interest in market-based incentives to environmental performance framed around biodiversity or specific / single ecosystem services
  - » Capture value through capping the use of and trading in markets focused on environmental services
  - » Discover prices based upon supply and demand
  - » Establish trading platforms



# Corporate Implications

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- **Investors & Investment Markets**
  - Trendsetters are incorporating environmental services into their research and analyses of companies (e.g. Goldman Sachs, UNEP Finance Initiative)
- **Public Agencies & Regulatory Frameworks**
  - Agencies are considering fundamental changes to manage environmental issues as part of complex systems rather than in terms of individual flows of energy, waste and water
- **Stakeholder Expectations**
  - Academia, think tanks and moderate NGOs are embracing ecosystem services and market-based approaches (e.g. WWF, The Nature Conservancy, WRI, Conservation International, Environmental Defense, Stanford University, Duke University, etc.)



# Companies are Beginning to Engage (I)

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- **Chevron** restored a tapped-out field to a wetland worth \$150 million in wetland mitigation credits / revenue
- **American Electric Power Corporation, Chevron and General Motors** have invested \$18.4 million in carbon credits from the Guaraqueçaba Climate Action Project in Brazil
- **Rio Tinto** has a policy of offsetting any unavoidable adverse effects in project areas by conservation actions elsewhere



# Companies are Beginning to Engage (II)

- Offsetting carbon emissions
- Identifying and addressing water quality problems onsite, and possibly reduce water filtration costs, through:
  - entering deals with local communities to manage water more effectively,
  - investing in wetlands or other water-filtration-related services
- Increasing real estate / re-sale value by:
  - investing in environmental services on leased and owned land, and
  - exceeding required reclamation, with a focus on enhancing ecosystem services
- Transferring ecosystem-related potential liabilities to a specialist broker/bank
- Benefiting from “regulatory goodwill” by demonstrating a willingness to beyond compliance
- Integrating work currently ‘silo-ed’ within the company (e.g. water, carbon, biodiversity) through an integrated/’bundled’ environmental services approach



## ...But Strategic Assessment is Less Common (I)

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**Downside:** Few businesses acknowledge potential effects from declining ecosystem services, such as:

- Increased insurance rates
- Reactionary/urgent command-and-control regulations
- Reduced access to capital
- Stakeholder campaigns pitting corporate resource use against community resource use
- Concerned employees

## ...But Strategic Assessment is Less Common (II)

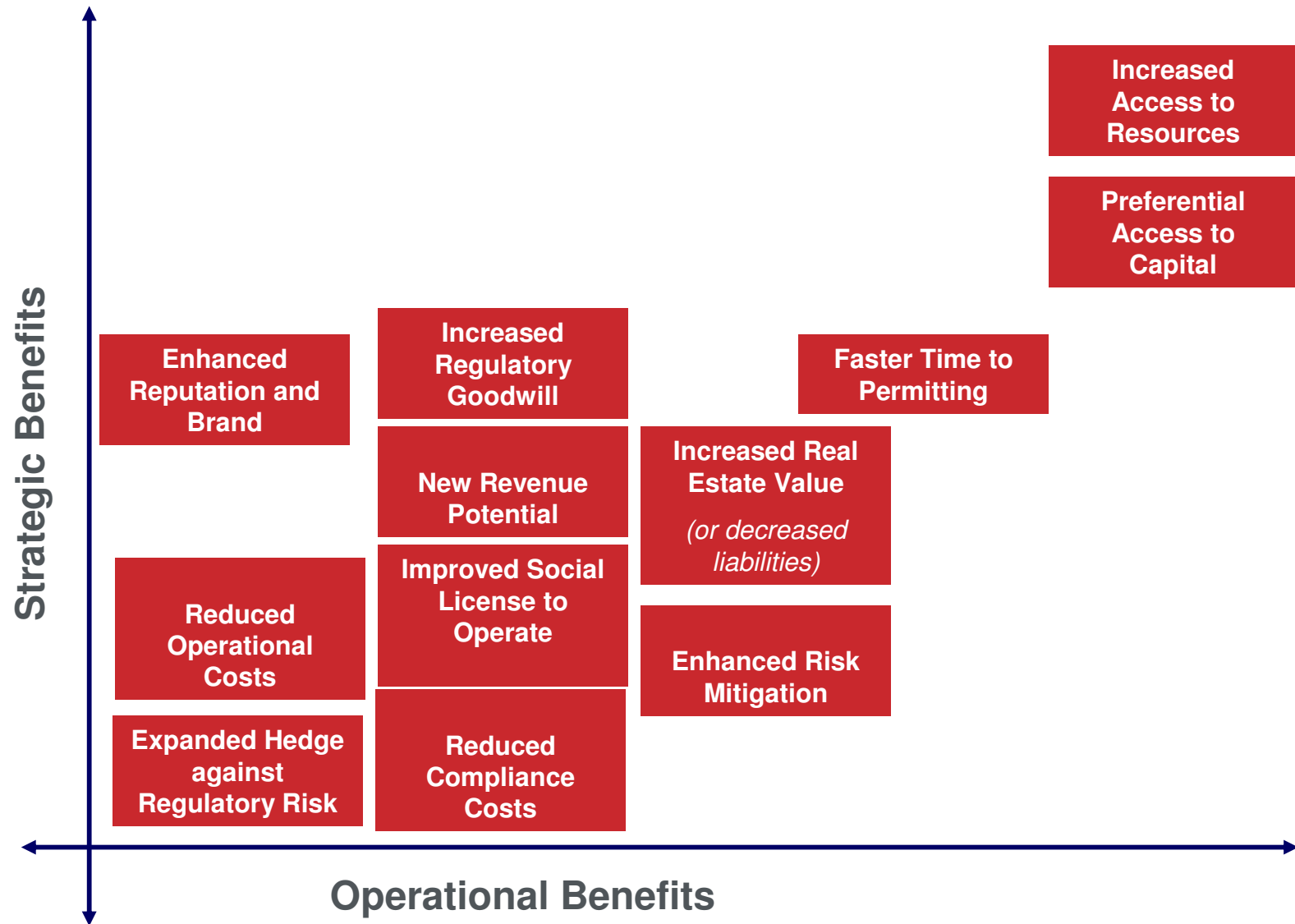
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### Upside

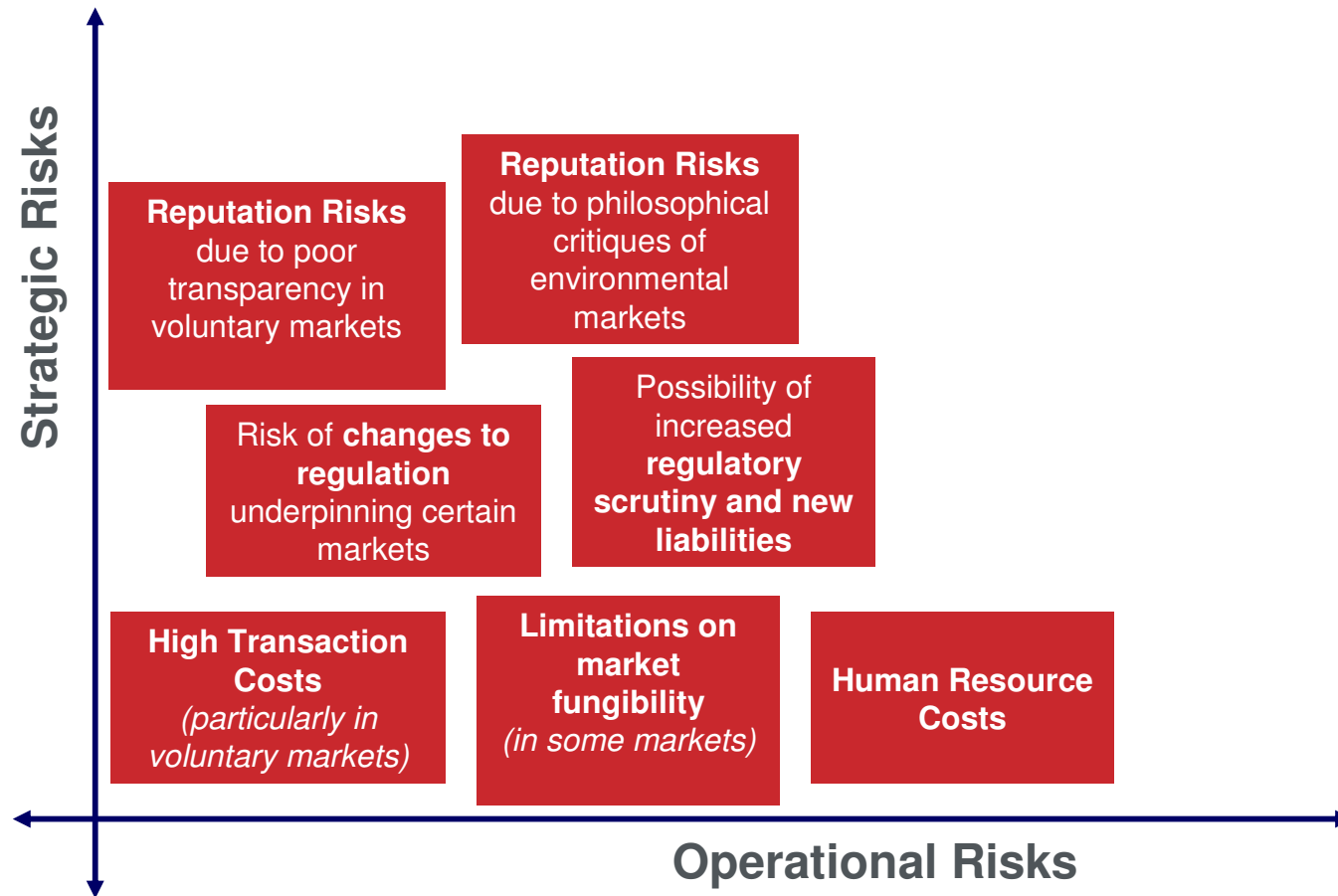
Few companies are strategically considering the business opportunities associated with environmental markets, such as:

- Potential preferential access to natural resources
- Faster time-to-permit
- Enhanced real estate value
- New revenue potential
- Expanded hedge against regulatory risk
- Increased regulatory goodwill
- Differentiation among competitors
- Reduced compliance costs

# Illustrative Potential Benefits



# Illustrative Potential Risks



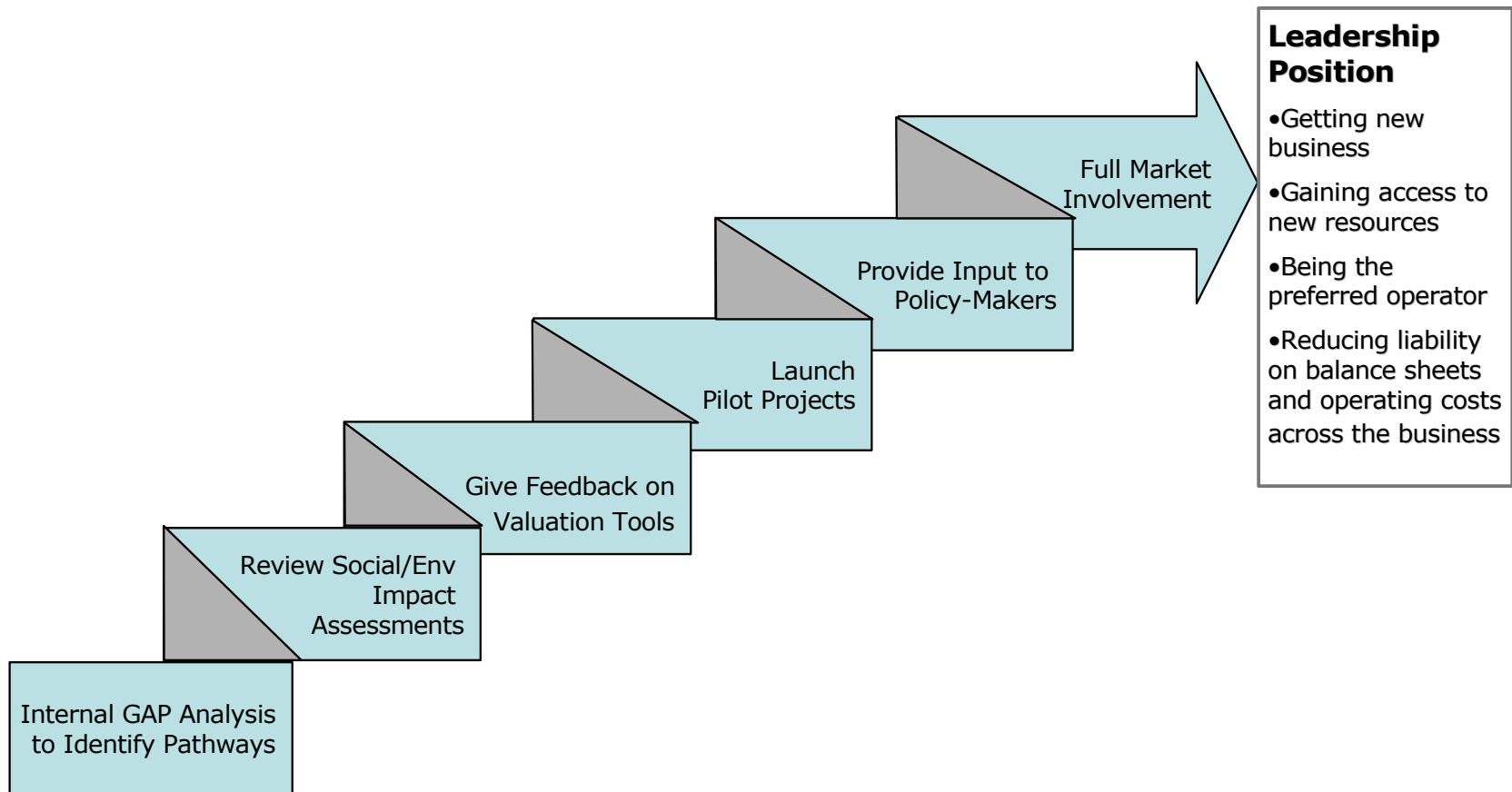
# Questions for Your Company

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- Have we assessed our reliance on ecosystem services, whether these demands are sustainable, and potential alternatives?
- Do we have adequate information on the current and projected state of these ecosystem services over the time frames relevant to our business?
- Have we evaluated the potential for non-linear changes in services on which our business or suppliers depend?
- Do we have any programs or plans to minimize impacts on ecosystems or contribute to maintenance and enhancement of ecosystem services?
- Do we have the diversity of expertise that we need to manage these issues?

# Window of Opportunity for Leadership

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# Process & Status

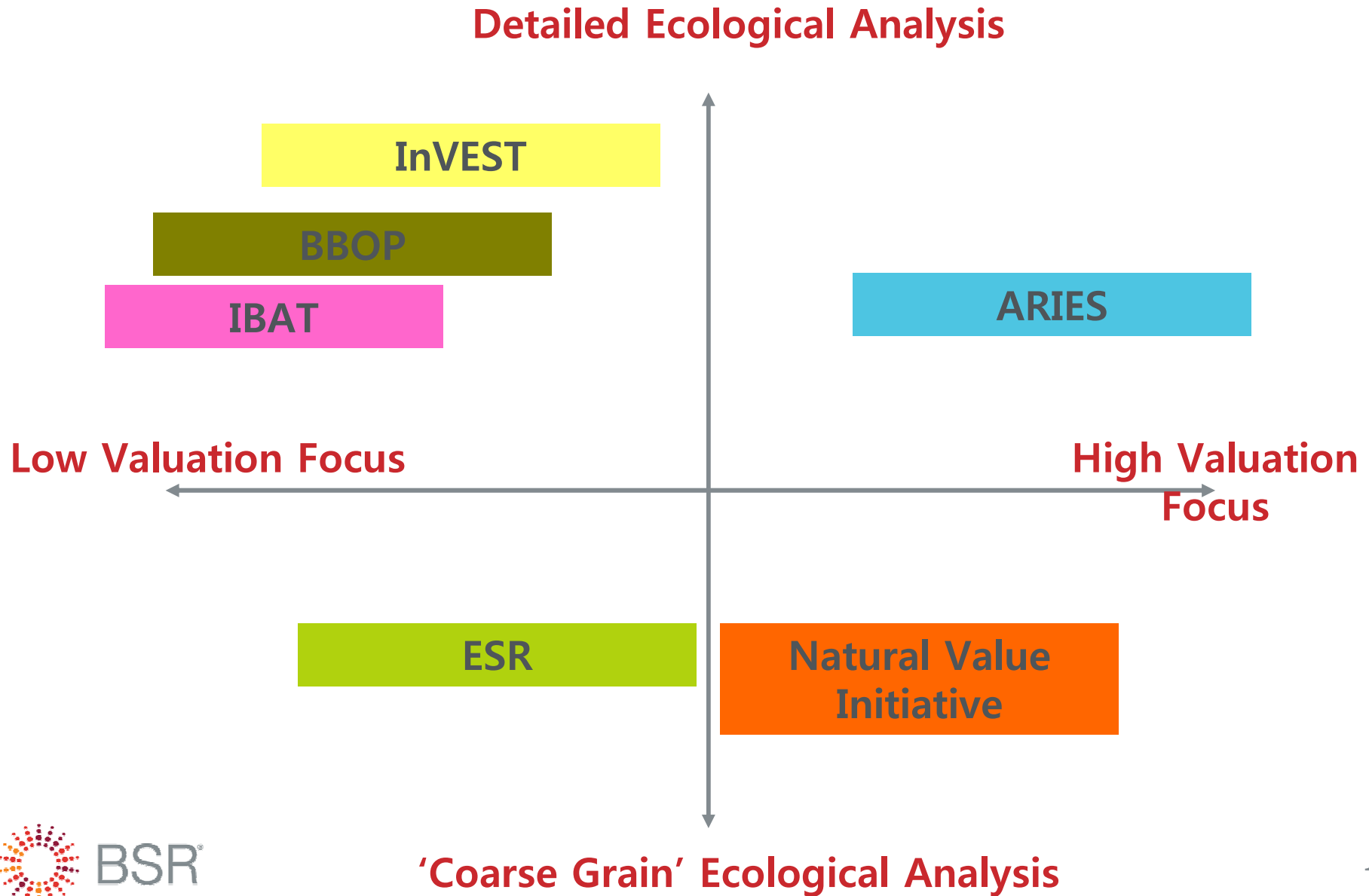
What integrated, multi-ecosystem services tools exist today?

# Mapping the Tools

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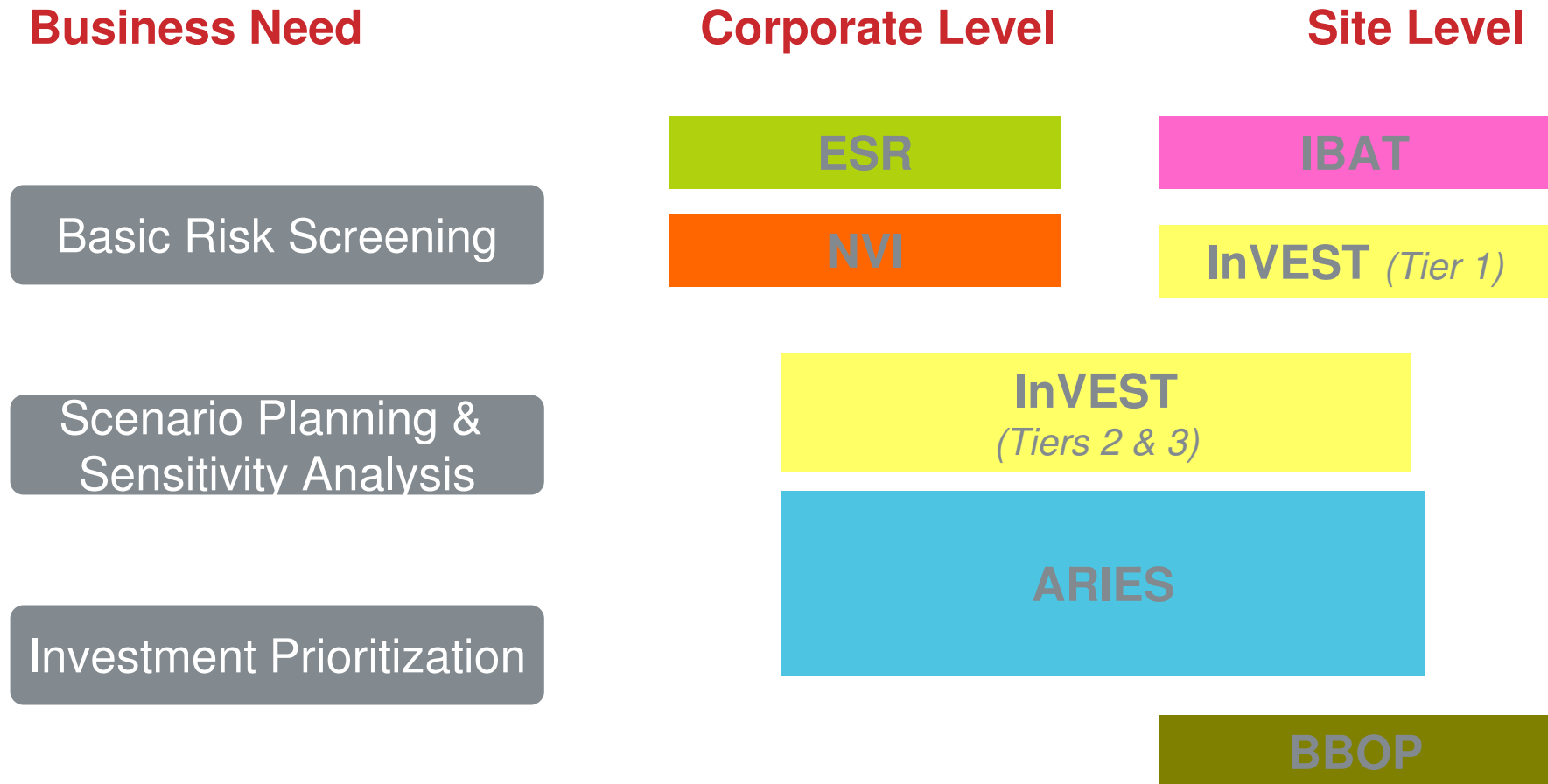
User Interface	Types of Results	Tools (in order of data demands)
Computer Model	Spatially explicit maps	ARIES
		InVEST
Set of Structured Questions and/or Workbook	Risks and/or opportunities analysis	NVI
		ESR
		BBOP

# Mapping the Tools



# Mapping the Tools

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# Draft / Illustrative Taxonomy of Tools

Target User	Policy makers	Corporate	Academic/NGO
User Motivation	<input type="checkbox"/> New policy design or elimination of subsidies <input type="checkbox"/> Regulatory enforcement <input type="checkbox"/> Mapping of new protected areas <input type="checkbox"/> Education <input type="checkbox"/> Seeding of new environmental markets	<input type="checkbox"/> Risk mapping for ecosystem decline <input type="checkbox"/> Strategy and policy design <input type="checkbox"/> Location screening <input type="checkbox"/> Footprint measurement <input type="checkbox"/> Liability transfer <input type="checkbox"/> New revenue-generating transactions <input type="checkbox"/> Social license-to-operate	<input type="checkbox"/> Advancement of conservation science techniques <input type="checkbox"/> Recommendations for protected areas delineation <input type="checkbox"/> Integration of datasets with other organizations
Desired Outputs	<input type="checkbox"/> Spatially-explicit maps <input type="checkbox"/> Valuation analysis <input type="checkbox"/> Return on investment prediction <input type="checkbox"/> Sensitivity analysis results for scenario planning	<input type="checkbox"/> Spatially-explicit maps <input type="checkbox"/> Valuation analysis <input type="checkbox"/> Return on investment prediction <input type="checkbox"/> Sensitivity analysis results for scenario planning	<input type="checkbox"/> Spatially-explicit maps <input type="checkbox"/> Valuation analysis <input type="checkbox"/> Return on investment prediction <input type="checkbox"/> Sensitivity analysis results for scenario planning
Primary Ecosystem Services of Interest	<input type="checkbox"/> Supporting services (select from Millennium Ecosystem Assessment) <input type="checkbox"/> Provisioning services <input type="checkbox"/> Regulating services <input type="checkbox"/> Cultural services	<input type="checkbox"/> Regulating services <input type="checkbox"/> Cultural services	<input type="checkbox"/> Supporting services (select from Millennium Ecosystem Assessment) <input type="checkbox"/> Provisioning services <input type="checkbox"/> Regulating services <input type="checkbox"/> Cultural services
Quality of Input Data	<input type="checkbox"/> High quality <input type="checkbox"/> Medium quality <input type="checkbox"/> Low quality	<input type="checkbox"/> High quality <input type="checkbox"/> Medium quality <input type="checkbox"/> Low quality	<input type="checkbox"/> High quality <input type="checkbox"/> Medium quality <input type="checkbox"/> Low quality

**Recommended Suite of Tools: X, Y, Z**

- Recommended point of application
- Recommended roles and responsibilities

# Next Steps

What are the emerging needs?

# Needs

Corporate Users' Needs	Tool Developers' Needs	Public Sector Needs
<ul style="list-style-type: none"> <li>a. A detailed navigational device to help users find the most suitable tool, or complementary set of tools, for a given decision-making context, including product design and manufacturing</li> <li>b. Clarifications on the geographical gaps or data-related biases within the tools</li> <li>c. Research on the best way to factor ecosystem service issues into capital decision-making</li> <li>d. Pilot testing of tools in a public-private partnership within a data-rich region to “kick the tires” for senior management</li> </ul>	<ul style="list-style-type: none"> <li>a. A detailed list of corporate decision-making junctures where an ecosystem service assessment tool could be applied</li> <li>b. A comprehensive list of corporate reporting requirements (internal and external) which could be meshed with ecosystem service assessment tools</li> <li>c. Input on how to structure and deliver a navigational device to tools</li> <li>d. An honest assessment of how seriously, and in what way, industry wants to help advance ecosystem services-based management</li> </ul>	<ul style="list-style-type: none"> <li>a. An R&amp;D agenda within regulatory agencies that advance ecosystem services-based management</li> <li>b. A prospectus to share with legislators for funding of trans-disciplinary, public-private centers of excellence in regions of high ecosystem service importance</li> <li>c. An indication from industry and tool developer groups as to how government can constructively engage with their efforts</li> </ul>

Thank You!

Questions & Discussion