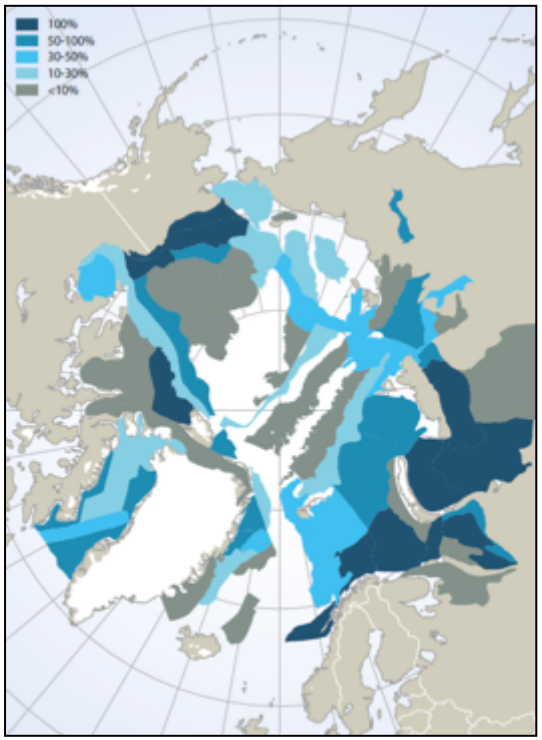
Application of Biodiversity and Ecosystem Services (BES) Management in planning and executing oil and gas activities in arctic environments

Paola Maria Pedroni (eni)
Chair of the IPIECA-IOGP Biodiversity and Ecosystem Services Working Group

Context and challenge

- Meeting growing energy demand (33% more energy in 2035, 75% of which will still be fossil fuel-based – *Int.l Energy Agency*)
- Whilst operating responsibly in a wide range of terrestrial and marine environments
- Arctic region potentially holds 1/5 of the world's yet undiscovered resources (*US Geological Survey, 2011*)
- Need to incorporate BES evaluations along the operational lifecycle considering the specificity of the Arctic environments



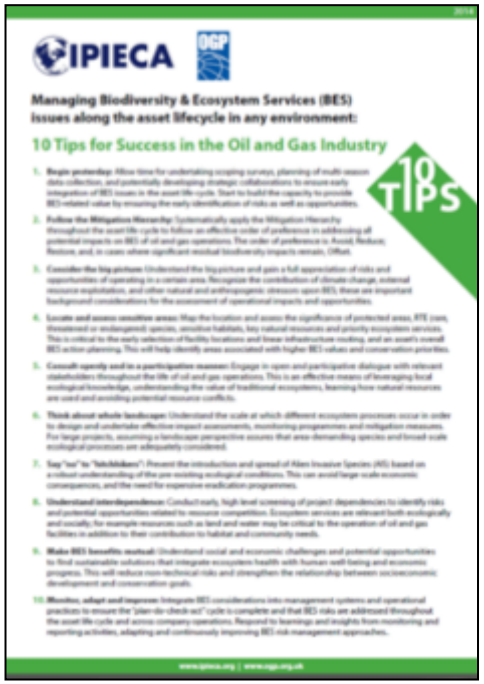
Circumpolar distribution and probability of potential petroleum reserves (USGS, 2011)

IPIECA-IOGP BES Working Group

- **IPIECA** - Global oil and gas association for environmental and social issues
  - Focused on upstream and downstream oil and gas issues
- **IOGP –** International Association of Oil &Gas producers
  - Focused on upstream industry promoting safe, responsible and sustainable operations

Joint Biodiversity and Ecosystem Services Working Group since 2002

provides leadership and guidance on BES issues management based on collective, global, hands-on knowledge of members, and by engaging with relevant stakeholders on conservation opportunities


IPIECA

Managing Biodiversity & Ecosystem Services (BES) issues along the asset lifecycle in any environment:

10 Tips for Success in the Oil and Gas Industry

10 TIPS

Partnering to better manage BES issues

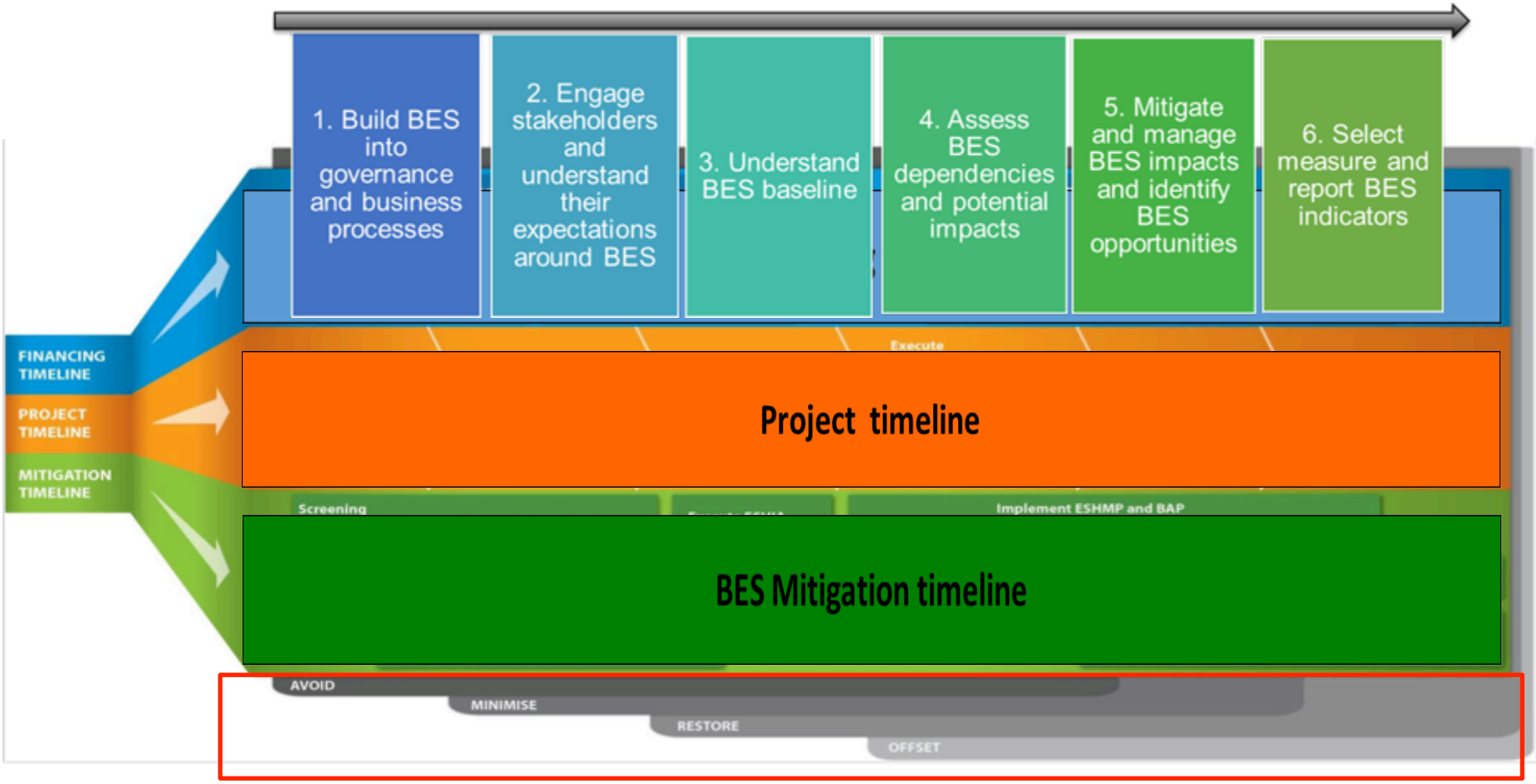
1. **Proteus partnership:** collaboration between extractives and UNEP-WCMC, supporting free, accessible, good quality biodiversity data relevant for business and conservation

– GIS-based, global datasets for mapping protected areas, sensitive habitats, threathened species and priority ecosystem services
– Early screening of BES sensitivities helps makes informed decisions on operational issues

2. **Cross-Sector Biodiversity Initiative:** cooperation among 3 business associations using IFC PS6 to identify BES values and relating mitigation requirements along the Mitigation Hierarchy

BES Issue Management Framework

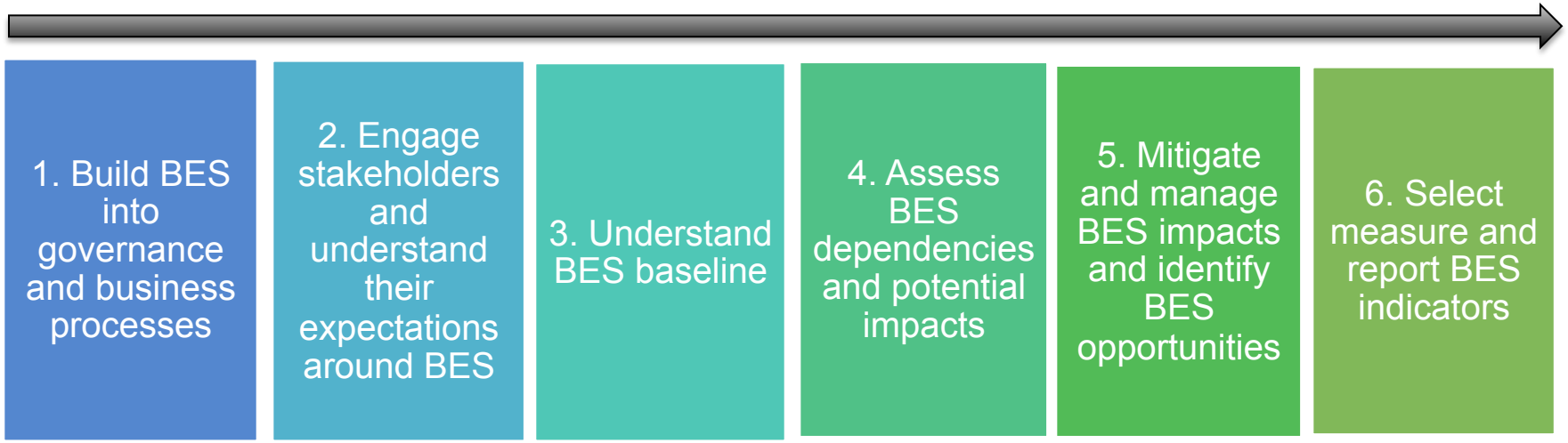
BESWG 6 BES issue management practices



As early as possible in project lifecycle → **Increasing time and resources to implement**

6 BES issue management practices

- Categories of activity representing current good practice for BES issue management within oil and gas industry
- Applicable in any type of operation and in any type of environment
- Practices 1 & 2 – about incorporation of BES issues into company policy, business processes and dialogue with key stakeholders
- Practices 3 to 6 – about incorporation of BES issues into key stages of operational lifecycle (from exploration to decommissioning)

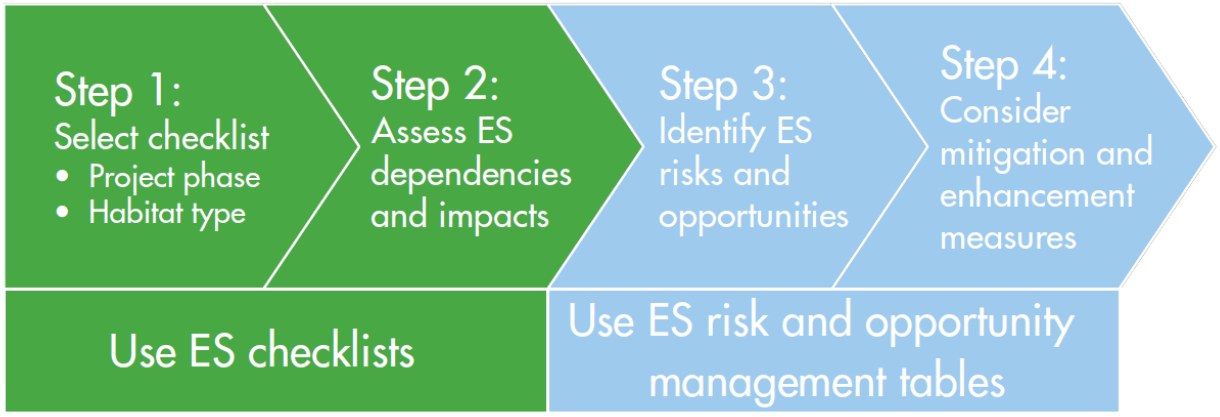


Ecosystem Services Guidance & Checklist

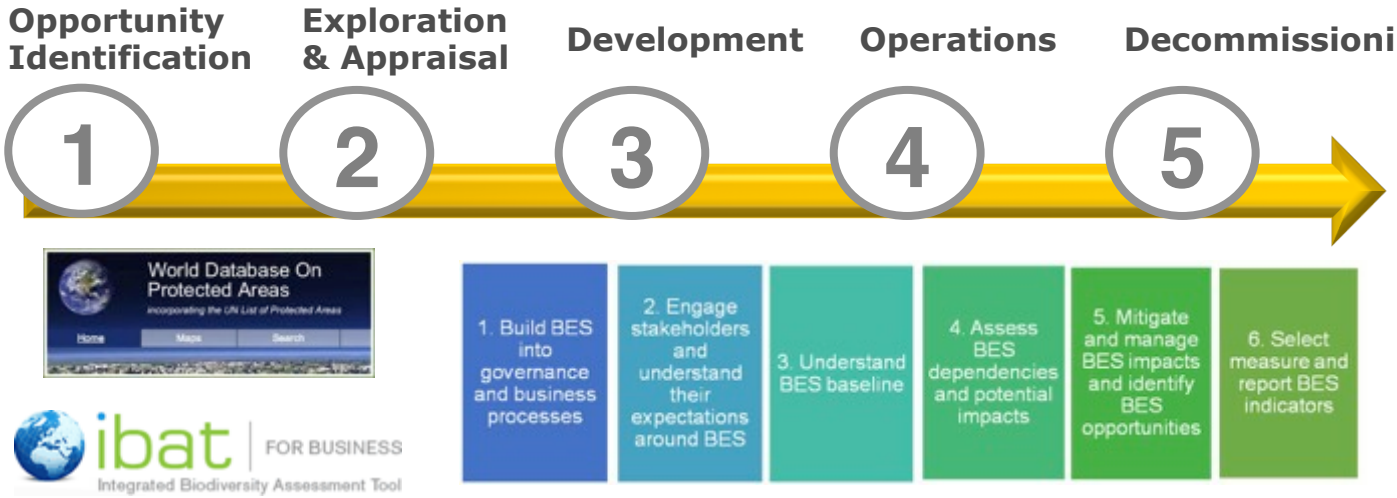
- Guidance on how to practically apply ES concepts along the operational lifecycle in key habitat types (including Polar)
- Explains links among biodiversity, ES and oil and gas activities
- Provides a set of checklists for identifying and managing main ES dependencies and potential impacts
- There is one checklist for each combination of project phase and habitat type

Habitat type	Habitats included	Onshore terrestrial	Offshore marine/freshwater
Forests	Temperate and tropical forests, woodlands, etc.	✓	
Wetlands, rivers and lakes	Wetlands, bogs, lakes, and rivers		✓
Polar	Ice caps, tundra	✓	✓
Desert	Desert and semi-arid	✓	
Deep water			✓
Near shore/ transition zone	Coral reefs, seagrass, mangroves, beaches and rocky shores	✓	✓
Other (not in checklist)	Grassland, mountains and cultivated land	✓	

Process for applying the ecosystem service checklist



BES practices and tools with Arctic-specific lens



Incorporation of Arctic-specific BES evaluations into stages of the operational lifecycle

- Collate knowledge and baseline data on Arctic ecology and BES
- Include into GIS-based datasets at regional/national scale to inform early screening of BES sensitivities
- Include into BES baseline at site scale to inform:
  - BES impact assessments on Arctic-specific operational aspects
  - selection of appropriate mitigation/conservation options
  - selection of suitable marine and terrestrial indicators for Arctic monitoring

Source: adapted from Rio Tinto, 2009

Systematic application of the Mitigation Hierarchy based on outcomes of Arctic-specific BES evaluations

Many thanks

www.ipieca.org

www.iogp.org