Green Road to Montreal

Planning Environmentally Sustainable Infrastructure

WORKSHOPS SERIES 2022 **28 April / 19 May / 23 June / 26 October**

Key Messages from Greening Transport, Energy and Coastal Development

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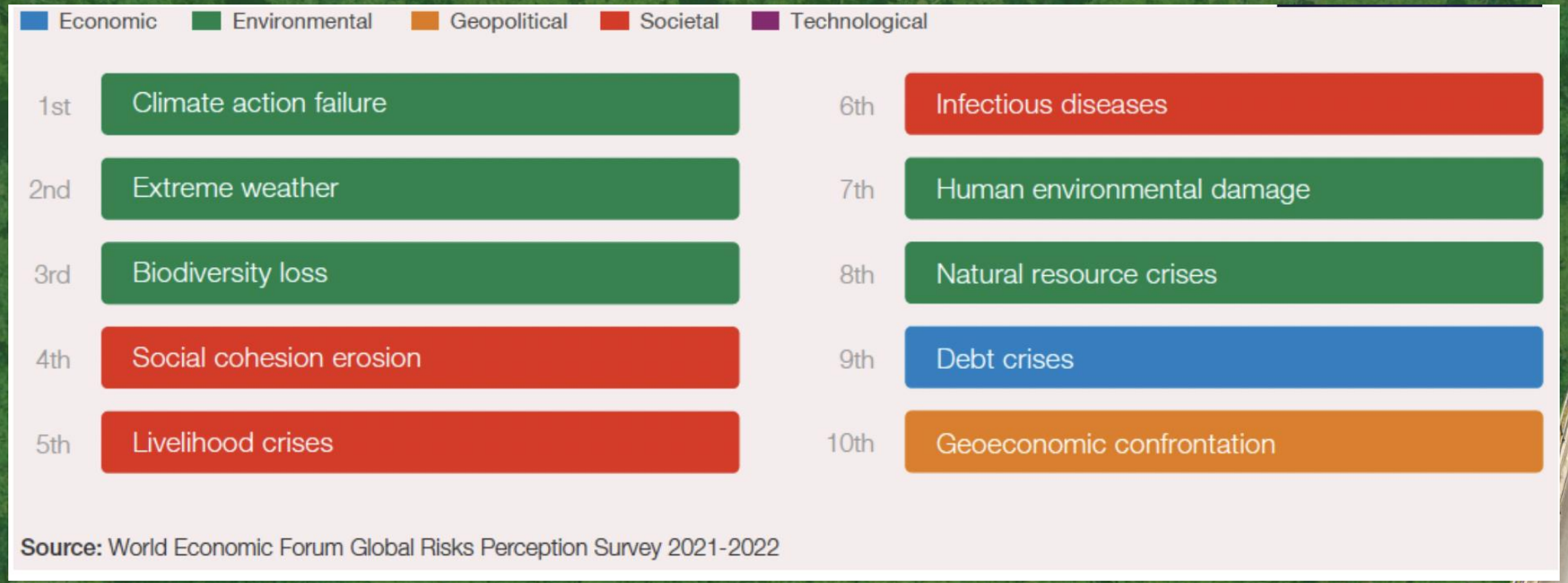
SESSION 4 **Roundtable of Champions**

26 October 2022 (Wednesday) / 1:00 p.m., Philippines (GMT+8)

Summary of Key Take Aways

1. Biodiversity loss is amongst the top 5 biggest threats to the planet
2. Huge infrastructure growth and investments are expected until 2030 and 2050
3. Renewable Energy is not automatically green
4. Upstream planning is critical. A suite of tools exist to conduct upstream planning
5. We know how to embed NBS in infrastructure projects
6. Protecting biodiversity brings economic benefits
7. We have several opportunities to have infrastructure growth with biodiversity gain

1. Biodiversity loss is one of the biggest risks to the planet



2. Huge infrastructure growth expected

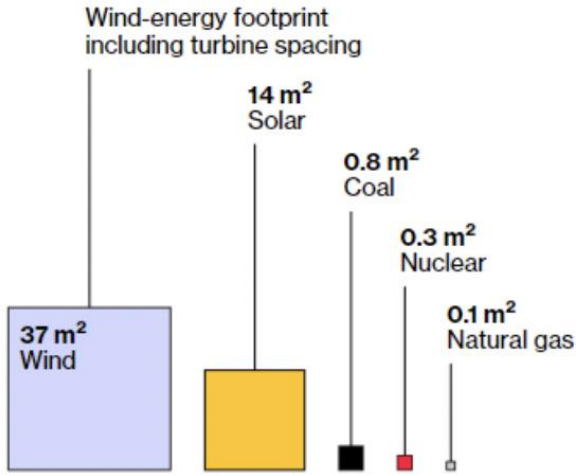
Investments in infrastructure in Asia and the Pacific - $ 1.7 trillion/year or total of about $13.6 trillion (2022 – 2030)

Major expansions in Renewable Energy (RE) is expected to meet the 1.5°C target:

- **RE to comprise 90% of decarbonization by 2050**
- **$25.9 trillion worth of investmenst required for RE globally**
- **$10.9 trillion (42%) worth of investments for RE in Asia and Pacific region**
- **Asia Pacific region 2021 – 2026; 70% growth in RE (68% solar, 18% wind, 11% hydro)**

Limited number of studies (6.1% globally) conducted on impacts of power lines on migratory birds in Asia and Pacific

- Requiring many millions of square kilometres of land and sea globally
- A more than doubling of power lines.

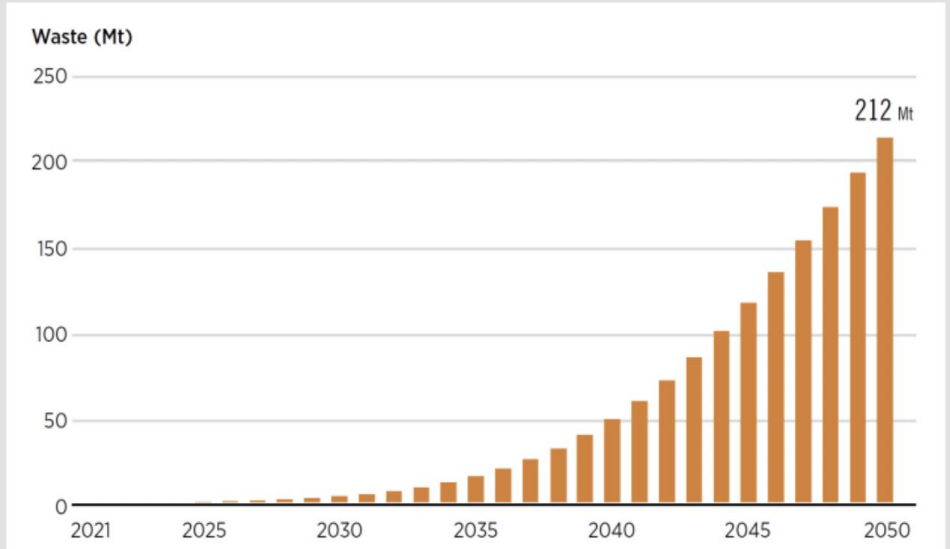


Land area needed to power a flat-screen TV, by energy source

3. Renewable Energy is not automatically Green

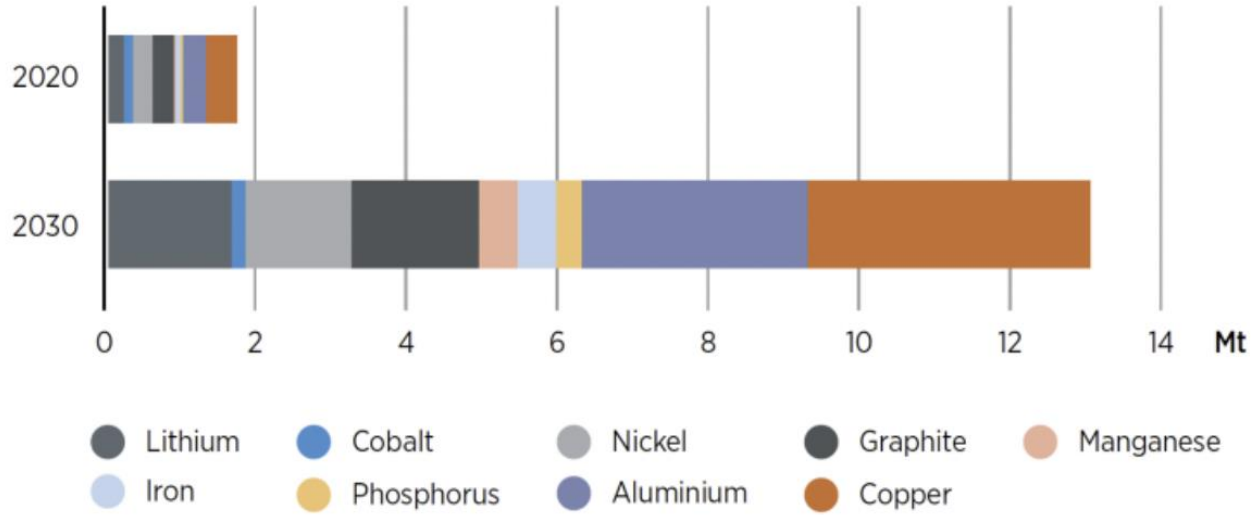
If we get it wrong, we can potentially have worse impacts than the current energy system!

FIGURE 7.14 Projected cumulative waste from solar photovoltaic projects under IRENA's 1.5°C Scenario through 2050



Source: IRENA (forthcoming-e).

FIGURE 7.8 Actual (2020) and projected (2030) demand for battery materials



3. Renewable Energy is not automatically Green

Poor siting of RE projects could destory **11 mill ha** of natural land globally including **3 mill ha** of Key Biodiversity Areas (KBAs) and habitat range of over **1,500** threatened species. This could release in over **400 mill tons** of stored carbon.

The Great Indian Bustard is expected to go extinct due to poorly planned RE projects and:

- Collision with power lines associated with wind and solar energy projects
- Their heavy weight and restricted vision makes them uniquely susceptible to collision
- It is estimated that there are an average of 18 collisions per year with a population of less than 100

4. Upstream planning is critical

The most important step is: LOCATION LOCATION LOCATION!

- Strategic Environmental Assessment
- Alternative analysis (multi-criteria economic analysis)
- Investing in “Avoidance” of impacts is much cheaper than investing in “mitigation”
- We should opt for ”Mitigation” only after we have thoroughly studied the avoidance option

4. A suite of upstream planning Tools are available

- AVISTEP (includes sensitivity map for India, Nepal, Thailand, Vietnam)
- IBAT
- BILBI modelling
- DRIFT method for basin wide assessment for hydropower projects

5. We know how to embed Nature Based Solutions in Infrastructure Projects

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6. Protecting biodiversity brings economic benefits

Coral reef ecosystems:
- Reduce wave energy and height
- Reduces the annual expected damages from storms by more than **$4 billion** per year globally

By 2050 **800 million people** will be at risk from impacts of extreme weather events. Expected annual cost is **>$1 trillion** to coastal urban areas.

Benefits from mitigation measures to reduce vehicle - wildlife collision can exceed project costs in **5 - 10 years**

Mangroves:
- Reduce wave energy and height
- Provides benefits worth **$65 billion** in avoided flooding and saves **15 million people** from floods annually

Proactive conservation approaches in transport generates ecosystem services values worth **$217,356 km²/year. Reactive** conservation approaches in transport generates ecosystem service values worth **$76,057 km²/year** (Turner et al. 2007)

6. Protecting biodiversity brings economic benefits

Amazon basin:

- 85 roads studied
- Roads that were most economically efficient and least environmentally destructive, government could avoid 90% of environmental damage or economic losses of >$7.6 billion and deforestation of more than 1 mill hectares

Myanmar: Not having a price does not mean no value

- Official statistics show Forestry Sector to contribute only <0.5% or $160mill to the economy. Includes only commercial timber.
- But the real total value is $7.3 billion after value of including all ecosystem services provided by the forests

Improvement of Ikumba – Ruhija road, Bwindi Impenetrable National Park, Uganda:

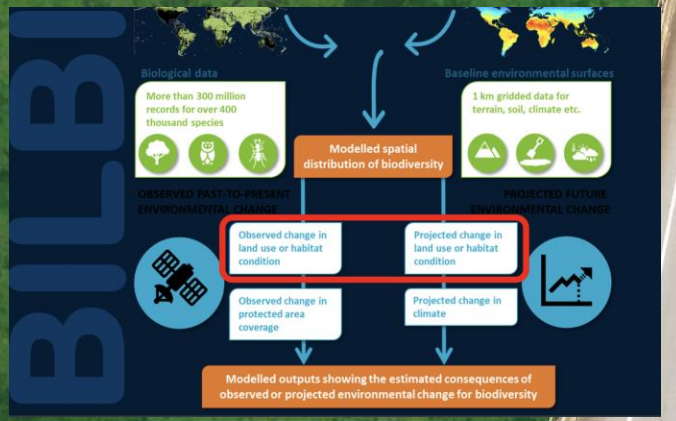
- Costs > benefits for all road options. Cost of road going through park very high.
- Alternatives outside the park that costs $3 - $5 million could avoid losses in 10's of millions of $ lost in tourism income

7. Opportunities

Wind and solar farms can be readily integrated into landscapes with low ecological value. For example in India 12 times the land needed for targeted solar and wind farms are available as degraded land.

AVISTEP
The Avian Sensitivity Tool for Energy Planning

IBAT



Coral Reef Finance and Insurance in Asia-Pacific under Acliff (Asia Pacific Climate Finance Funds)

Increase in Blue Bonds, Trust Funds and Blue carbon market

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All stakeholders – government, research institutes, NGOs, financiers, private sector, local communities and others – need to sit at the same table and speak the same language


THANK YOU!