

# Governance of response measures - Perspectives of a small island city state

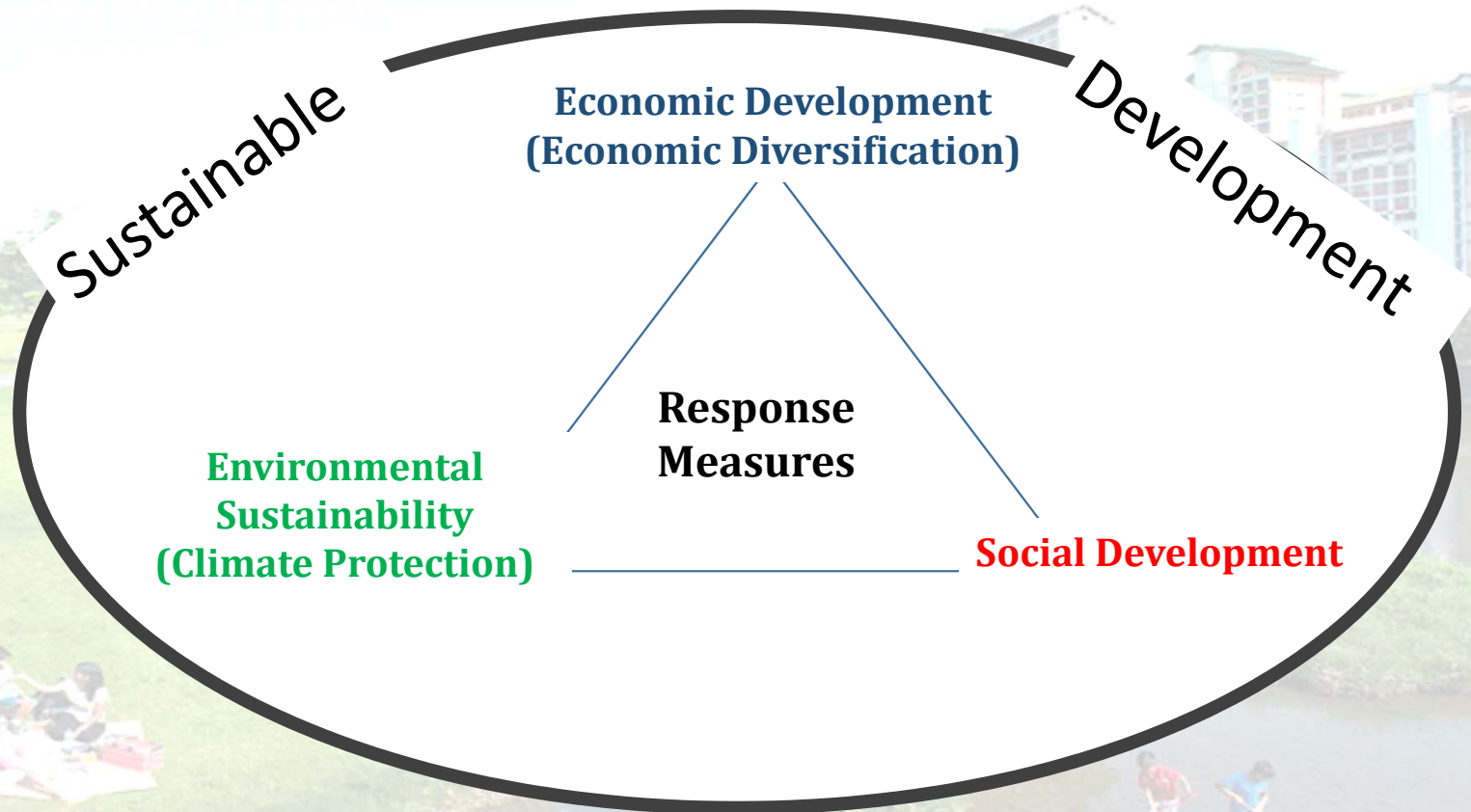


Governance of Response Measures need to  
be informed by sustainable development

*Colouring, texturing* and *shading* of response measures in sustainable development

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# Governance of Response Measures in sustainable development



**Colouring, texturing and shading** of response measures in sustainable development



# Agenda

- 1 **Introduction**
- 2 **National Circumstances and Economic Diversification  
Experience of Singapore**
- 3 **Governance of Response Measures in Sustainable  
Development**
- 4 **Conclusion**



**“Green mountains and clear water are as good as mountains of gold and silver. To protect the environment is to protect productivity and to improve the environment is to boost productivity”.**

**President Xi Jinping, G20 Summit,  
Hangzhou, China, Sep 2016**





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# Economic Diversification: An integral part of our Development experience, arising from national circumstances

Singapore, 1965



*...unemployment of ~14%*

*... population of 2 million, out of which 300,000 people lived in squatter settlements in the suburbs and 250,000 lived in squalid shophouses...*

*...life expectancy of 65...*



**GOVERNOR OPENS AIRPORT**  
*Thousands See Ceremony In Perfect Weather*  
**SINGAPORE AS PORT**  
**SAID OF THE**  
**SKYWAYS**  
**Finest Facilities In**  
**The World**  
**"WE HAVE CREATED FOR**  
**THE FUTURE"**  
*His Excellency*  
**"WHAT Port field is to shipping, so I believe will Singapore be to the air," declared H.E. the Governor, Sir Shenton Thomas, opening the new \$5,000,000 Singapore Airport at Kallang yesterday afternoon.**





# Singapore's national circumstances



Same size as Lake Geneva



## Physical Geography

- ☐ Small size (750km<sup>2</sup>)
- ☐ Densely populated (7540 persons/km<sup>2</sup>)
- ☐ Flat (Highest point of 165m)
- ☐ No natural resources

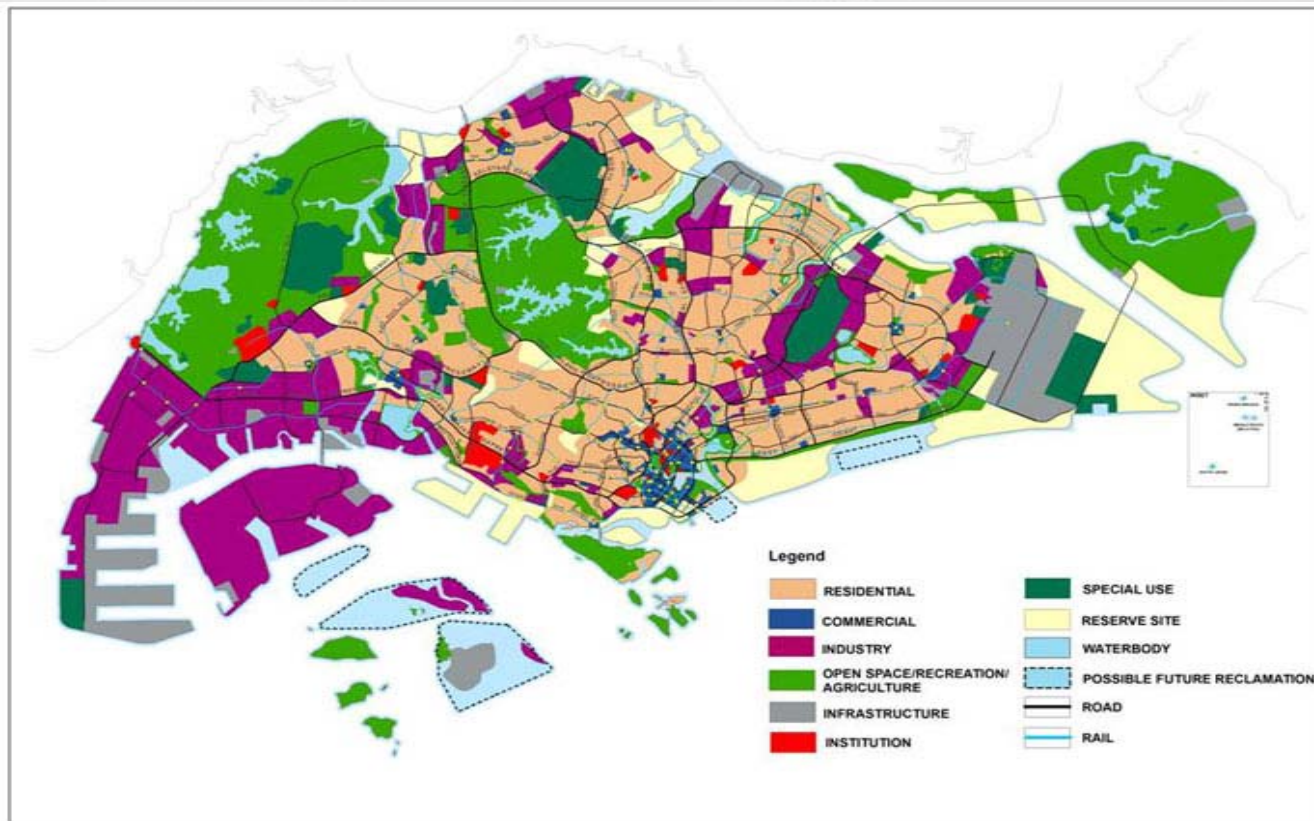
## Constraints

- ☐ Land
- ☐ Manpower
- ☐ Energy
- ☐ Water
- ☐ Food

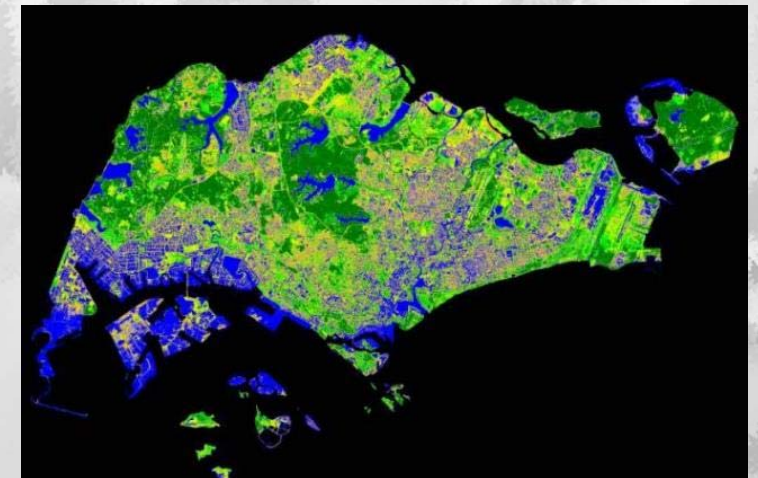


# Singapore's national circumstances

## Land Constraint



- ❑ Limited land (750 km<sup>2</sup>) to meet many competing needs
- ❑ 80% of industrial land space is already allocated
- ❑ We have ensured green spaces (“City in a Garden”)



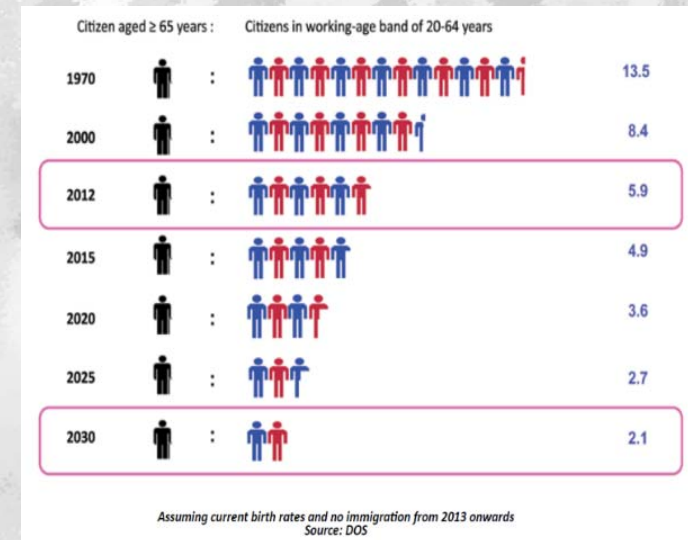
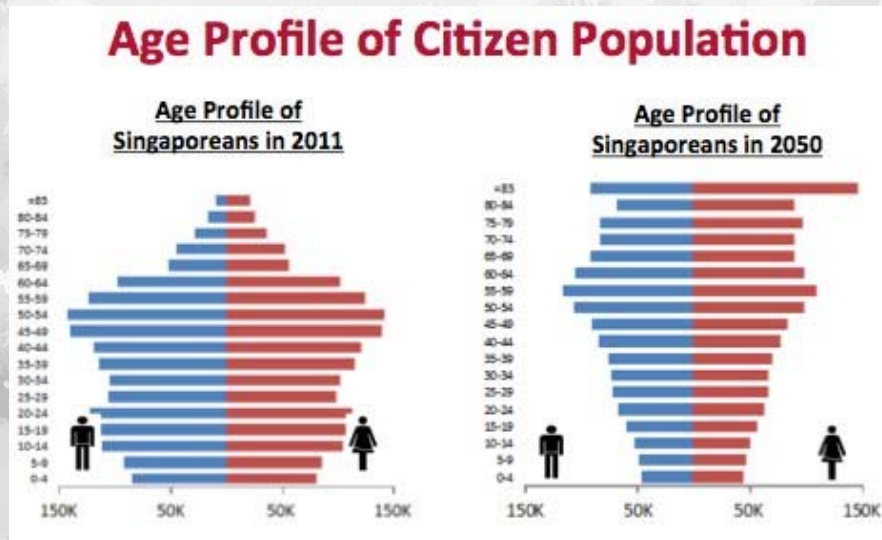
(Singapore's vegetation cover in green)



# Singapore's national circumstances

## Manpower constraint

- ❑ Ageing population
- ❑ Manpower needs cannot be met by the citizen workforce
- ❑ Reliance on foreign manpower has limits



# Singapore's national circumstances

## Energy Constraint








- ❑ No energy resources
- ❑ All fuels, particularly natural gas, imported to meet energy needs
- ❑ Exposed to volatility of global energy markets and supply risks.



Energy Efficiency is our main mitigation strategy

Singapore is Alternative-Energy Disadvantaged:

Small island city state with huge population density - very limited renewable options

Solar		<ul style="list-style-type: none"><li>• Limited land area for deployment.</li></ul>
Micro Wind Turbines		<ul style="list-style-type: none"><li>• Low wind speeds (&lt;3.3m/s) in Singapore with insufficient land.</li></ul>
Offshore Wind Turbines		<ul style="list-style-type: none"><li>• Not possible due to heavy marine traffic.</li></ul>
Tidal Energy		<ul style="list-style-type: none"><li>• Mean tidal range (1.7m) is too low.</li></ul>
Geothermal		<ul style="list-style-type: none"><li>• No geothermal potential for power generation</li></ul>
Nuclear		<ul style="list-style-type: none"><li>• Stringent land requirements. Safety and disposal of nuclear waste are issues.</li></ul>
Electricity Imports		<ul style="list-style-type: none"><li>• Frees up land but there are energy security concerns.</li></ul>



# Singapore's national circumstances

## Food and Water Constraints

- ☐ No natural water supply, imported water from Malaysia
- ☐ Food security - almost all our food are imported





# 51 years of economic transformation

- ❑ People, our only resource – investment in education, skills development
- ❑ Good political governance
- ❑ Business friendly policies
- ❑ Open market
- ❑ social inclusion



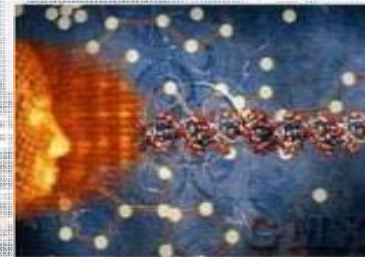
60s: Labour  
Intensive



70s: Skills  
Intensive



80s: Capital  
Intensive



90s: Technology &  
Services Intensive



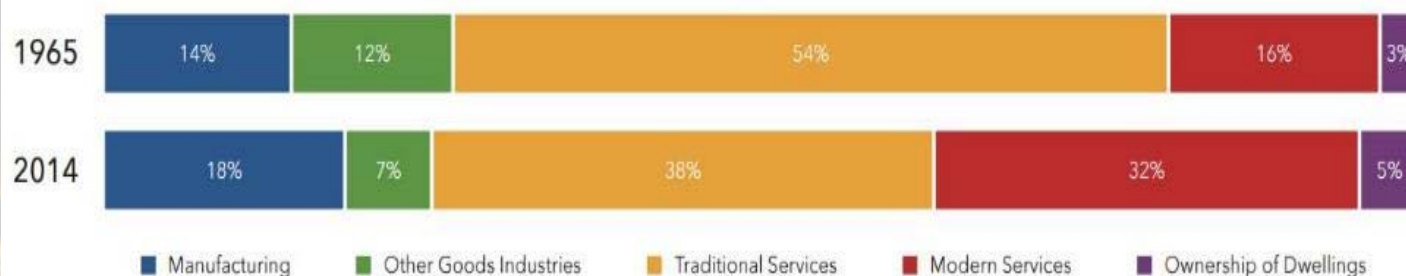
2000s - : Knowledge  
& Innovation  
Intensive



# Sectoral composition of the economy

## Economic Structure (Share of Nominal GDP)

The domestic economy has evolved into a high-end manufacturing and modern services hub.



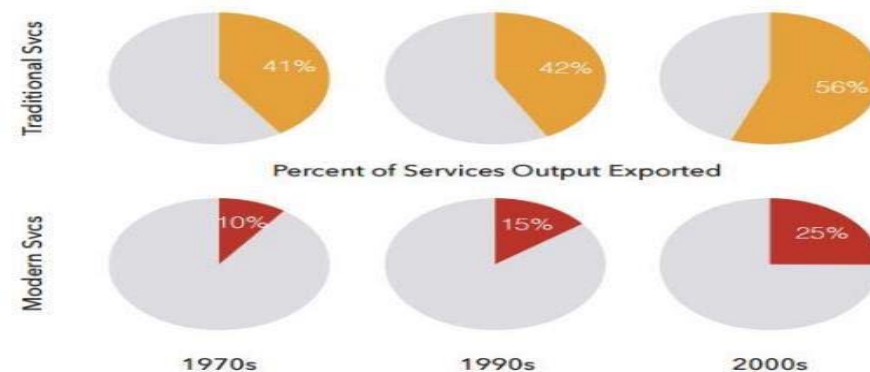
## Economic priorities:

- ☐ Restructure SME sector
- ☐ Focus on growing demand areas (services)
- ☐ Build Singaporeans' skills
- ☐ Ensure optimal land use and diversified industry base
- ☐ Diversified geographical dependencies

The manufacturing sector has constantly moved up the value chain ...

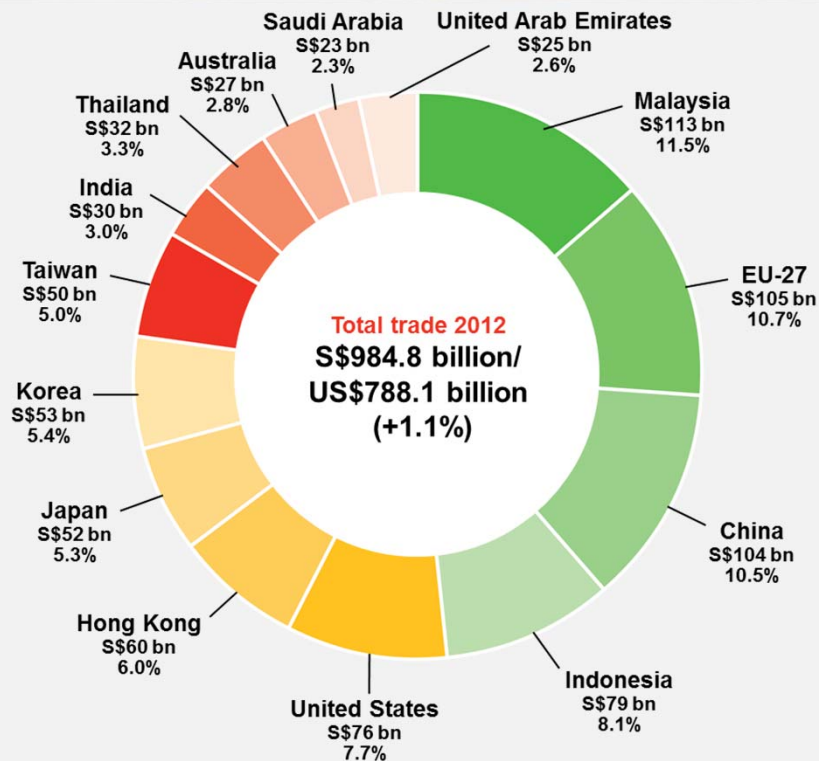


... while services have become more exportable.



# Market Diversification

Singapore's key trading partners (2012)



Singapore's Network of Free Trade Agreements –  
 20 FTAs in Force with 31 Trading Partners

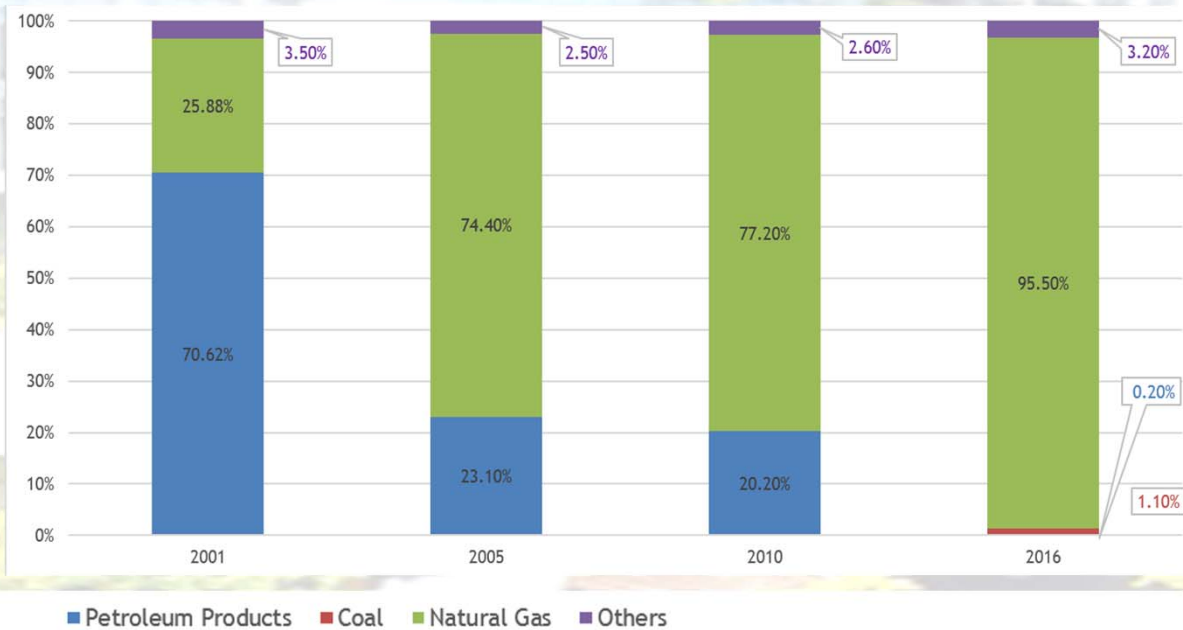


- Singapore's economy is subject to external development
- Trade is more than 3 times of GDP



# Energy Diversification

- ❑ To reduce carbon emissions, increased share of natural gas (the cleanest fossil fuel) in energy mix at higher cost
- ❑ To reduce dependency on piped natural gas, we import LNG
- ❑ Explore solar energy, although limited option due to small size, dense population





# Water and Food Diversification



- ☐ Reduce dependency on water imports.
- ☐ Desalination and reverse osmosis to recycle water ("NEWater")
- ☐ Artificial reservoirs to collect rainfall



- ☐ Import food from a variety of sources for food security



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# Addressing adverse implications of response measures by parties

## **Response measures with most impact on developing countries:**

- ☐ Carbon taxes
- ☐ Cap-and-trade schemes and related offsets
- ☐ Carbon border tax adjustments
- ☐ Carbon standards and labelling
- ☐ Subsidies for low carbon goods

Ref. FCCC/KP/AWG/2009/INF.3 , 16 March 2009



# Addressing implications of response measures by International organisations - ISO's carbon footprint standards

**14067 (Quantification of carbon footprint for products); 14026 (Footprint labelling) would have economic and trade implications.**

- ☐ Do not take account of national circumstances of Parties (Convention Art. 4:8-10)
- ☐ A key shortcoming of 14067 - “does not address any social or economic aspects or impacts.., and that a carbon footprint assessed in accordance with the standard does not provide an indicator of any social or economic impact...”.
- ☐ 14067 is inconsistent with Convention requiring parties to address adverse effects of response measures”.



# Effort to align carbon footprint standards with Convention

To address specific situation of AEDs

**“In countries where economies are highly dependent on consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which such countries have serious difficulties in switching to alternatives, electricity generated in these countries shall be included in the mix at a concessionary rate.”**

Disclaimer text proposal

**“For the purposes of the Marrakesh Agreement Establishing the World Trade Organization and other relevant international agreements, ISO 14067 is not to be interpreted as an ‘International Standard’ or ‘guideline’ or ‘recommendation’ nor is it to provide a basis for any presumption or finding that a measure is consistent with obligations under the relevant agreements. Neither may ISO 14067 be used as a basis for mandatory technical regulations**

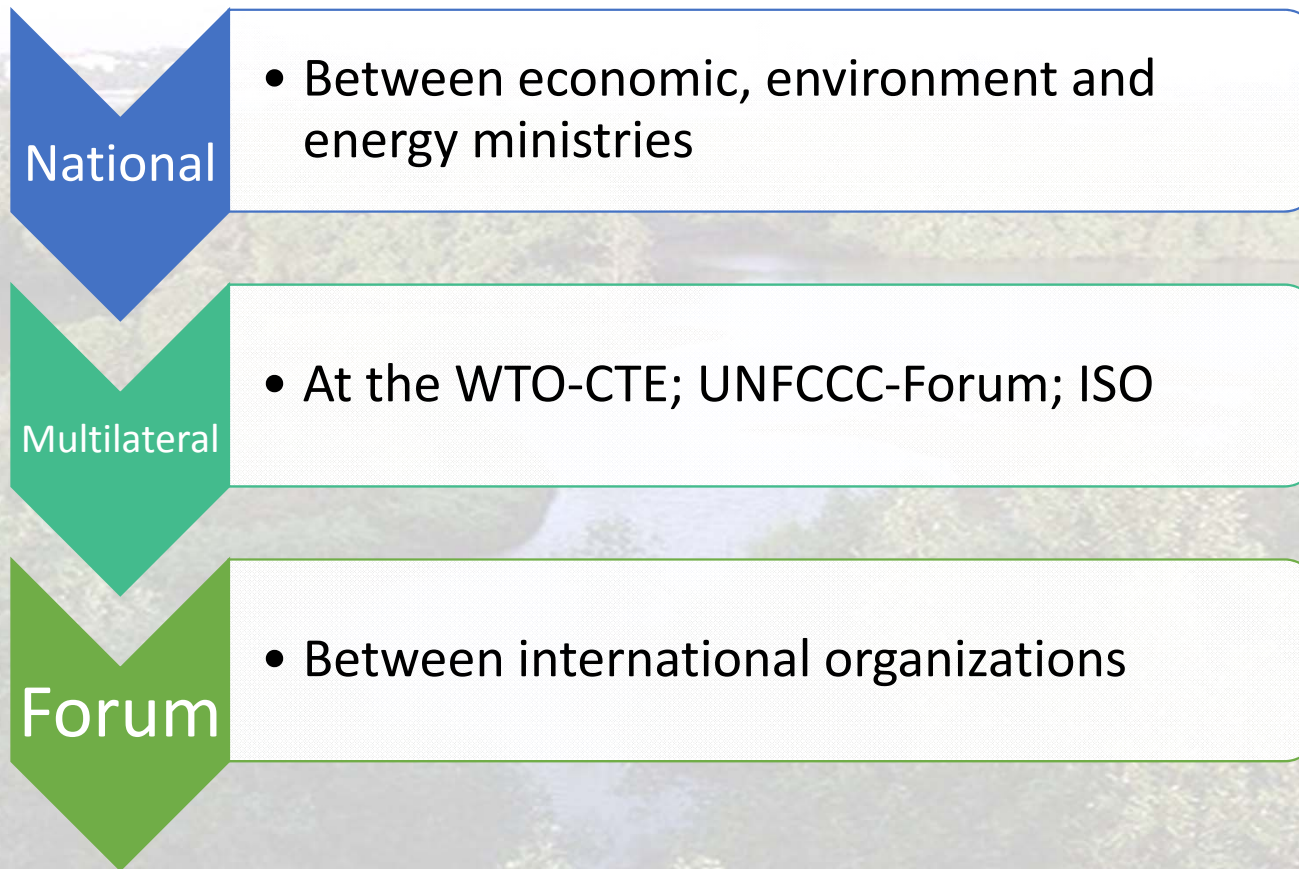


IPCC AR5 requires ***pre-emptive cooperation*** for coherence of response measures with trade and economic objectives

“There are numerous and diverse explored opportunities for greater international cooperation in trade-climate interactions. While mutually destructive conflicts between the two systems have thus far been largely avoided, pre-emptive cooperation could protect against such developments in the future.”

INTERGOVERNMENTAL PANEL ON  
climate change

## ***Pre-emptive cooperation*** at three levels:





# ***Pre-emptive cooperation*** – some parameters

## 1. Respecting multilateralism, response measures adopted within the multilateral framework

- Risks of unilateral actions high without a robust multilateral system.

## 2. No protectionist restrictions

- Undermines Convention requirement to maintain open and supportive international economic system; counter-productive to economic development and climate objectives.

## 3. Right to determine national policies in accordance with national circumstances.

- Convention obligation to meet the national circumstances of developing countries identified in Articles 4-10, eg., least developed, alternative energy disadvantaged, small island developing countries

## ***Pre-emptive cooperation*** – some parameters

### **4. Cooperation is not to impose new commitments**

- The forum is an avenue for discussions; not to serve as a basis for the interpretation or enforcement of Convention provisions or to impose new commitments on parties

### **5. Respect competencies of IOs**

- Response measures involving sectors with distinct multilateral rules should respect the mandate and longstanding competence of relevant international organisations dealing with such sectors, and be consistent with relevant and applicable international law.



# Transparency:

A key aspect of *pre-emptive cooperation*

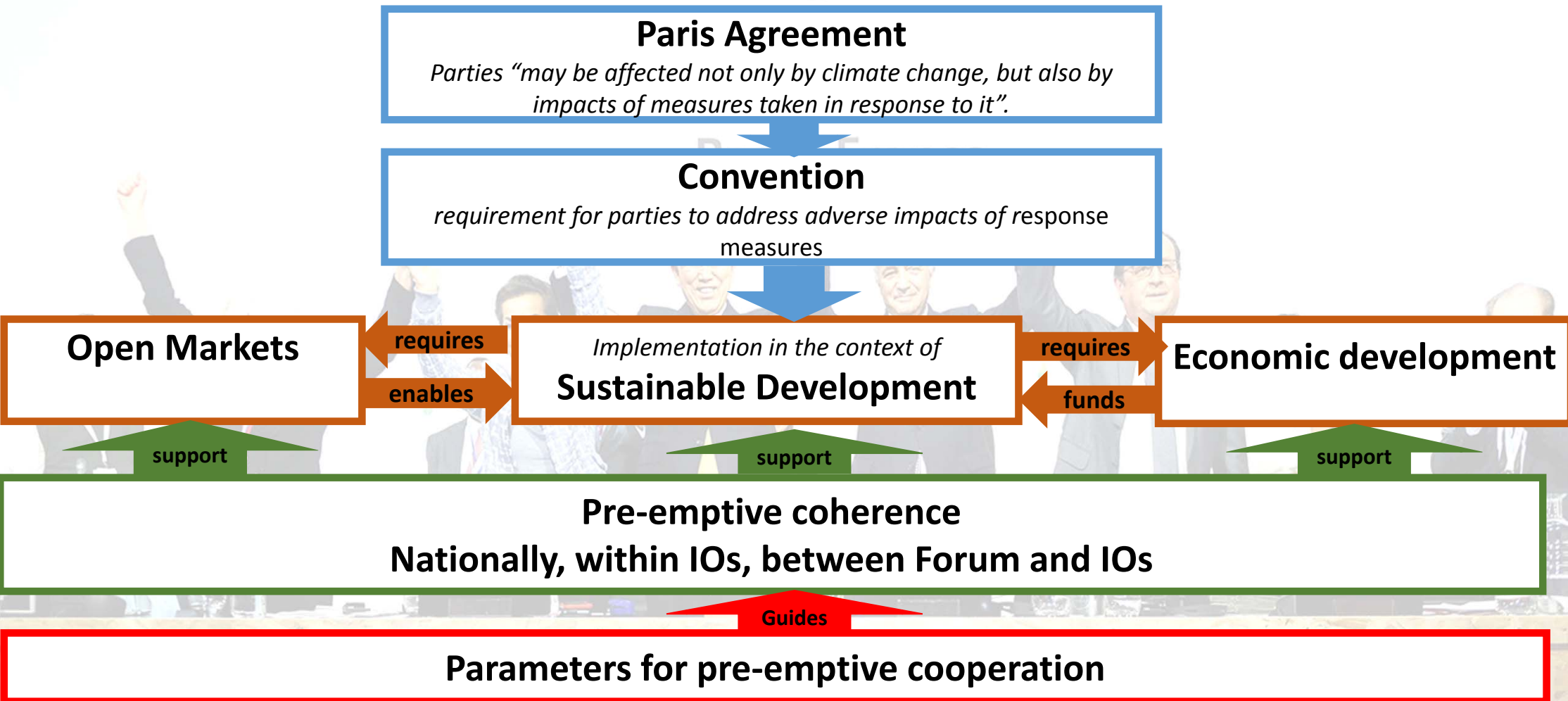
## **Ex-ante notification:**

Providing opportunities for parties to comment on response measures before they are implemented

## **Ex-post assessment:**

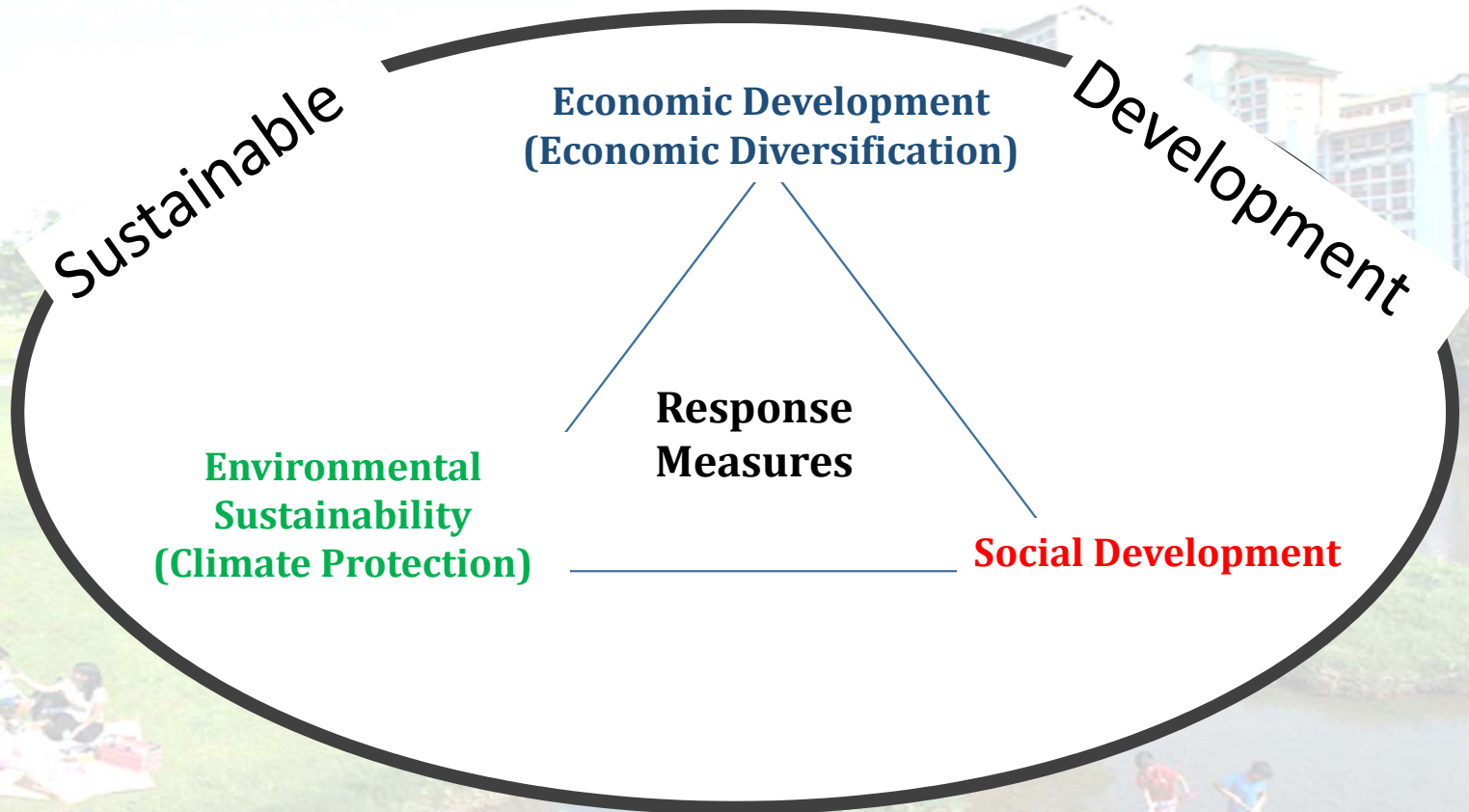
Checking and evaluating the actual impact of responses measures

# Governance of Response Measures





# Governance of Response Measures in sustainable development

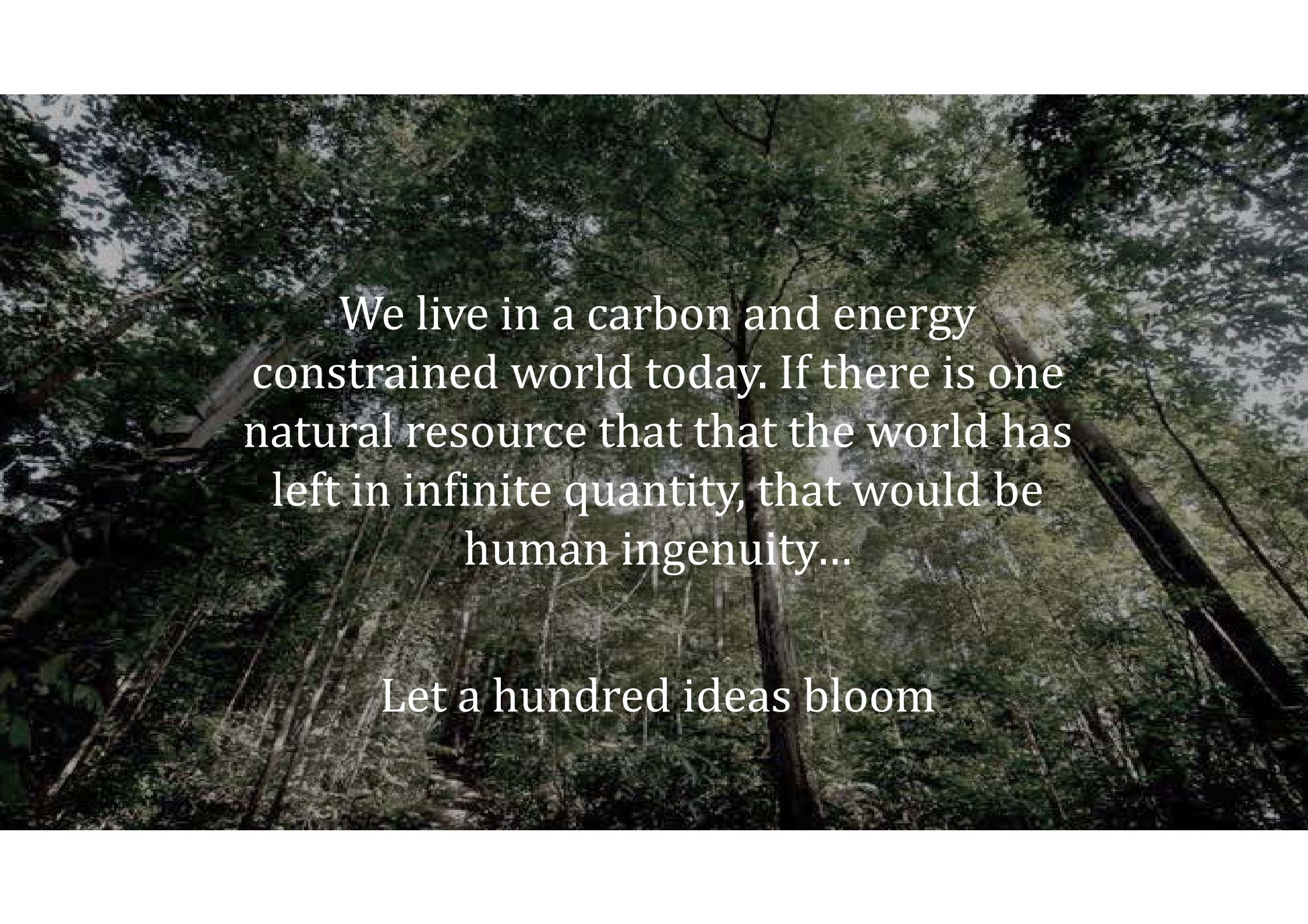


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A low-angle photograph looking up into a dense forest. Sunlight filters through the thick canopy of green leaves, creating a dappled light effect. Several tree trunks are visible, rising from the bottom towards the top of the frame. The overall tone is natural and serene.

We live in a carbon and energy  
constrained world today. If there is one  
natural resource that that the world has  
left in infinite quantity, that would be  
human ingenuity...

Let a hundred ideas bloom