



Office of the Science Advisor  
Prime Minister's Office

## Climate Change Adaptation for Sustainable Development – A Way Forward

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- Sustainable Development & Climate Change
- National Policy on Climate Change
- State of Knowledge
- Level of Discourse / Capacity
- Recommendations

## Sustainable Development - Today's Reality

- There is a sense in which 'Our Common Future' is now more starkly revealed than it was in 1987 (the year of the report of the Brundtland Commission) or in UNCED in 1992, bringing new urgency to the need to focus and elevate the Sustainable Development agenda in all societies
- The economic rise of BRICS has led to disappearance of some former distinguishing features of 'North' and 'South', 'developed and developing' countries
- All share in common but differentiated responsibilities towards global sustainable development



## The Crux of the Problem

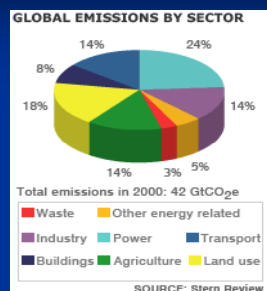
- The world's approach to dealing with the 'three pillars of Sustainable Development' – economic, environmental, social has led us to juxtapose these rather than to integrate them
- Environmental and social imperatives are usually traded off in favour of simple economic growth, regarded as optional add-ons, and invariably factored out because they incur incremental costs



- Twenty years later the world is still largely on the same course as it was then, and the fundamental issues remain the same, while the evidence of continuing deterioration in environmental and human well-being concerns accumulates.....

## Humans have become Agents of Change

- The science of geology have always taught us that earth processes were so large and powerful that nothing humans could do would change them
- With forests being cleared at an unprecedented pace and cars, factories and other modern amenities burning so many billions of tons of fossil fuels, we have indeed become geological agents ourselves
- We have changed the chemistry of our atmosphere, causing sea level to rise, ice to melt, and climate to change



## IPCC 4<sup>th</sup> Assessment Report (2007)

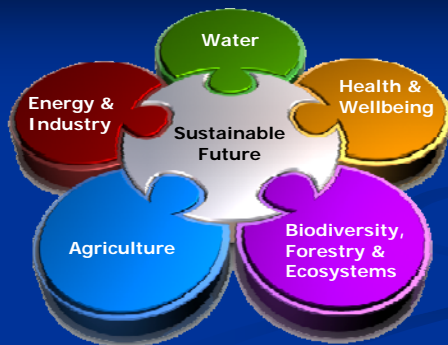
....climate change is unequivocal



Climate change adaptation  
must start NOW!



## Adaptation is Critical for All Sectors



## National Policy on Climate Change

### Contents:

- Preamble
- Policy Statement
- Rationale
- Objectives (3)
- Principles (5)
- Strategic Thrusts (10)
- Key Actions (44)
- Glossary



## National Policy on Climate Change

### Policy Statement

- Ensure climate-resilient development that fulfils national aspirations for sustainability.

### Objectives

- Mainstreaming of measures to address climate change challenges through strengthened economic competitiveness, wise management of resources, environmental conservation and enhanced quality of life for sustainable development.
- Integration of responses into national policies, plans and programmes to strengthen the resilience of development from arising and potential impacts of climate change.
- Strengthening of institutional and implementation capacity to better harness opportunities in reducing negative impacts of climate change.

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## National Policy on Climate Change

### P1: Development on a Sustainable Path

- Integrate climate change responses in national development plans to fulfil the country's aspiration for sustainable development.

### P2: Sustainability of Environment and Natural Resources

- Initiate actions on climate change issues that contribute to environmental conservation and sustainable use of natural resources.

### P3: Integrated Planning and Implementation

- Integrate climate change considerations into development planning and implementation.

### P4: Effective Participation

- Improve participation of stakeholders and major groups for effective implementation of climate change responses.

### P5: Common but Differentiated Responsibility

- International involvement on climate change will be based on the principle of common but differentiated responsibilities and respective capabilities.

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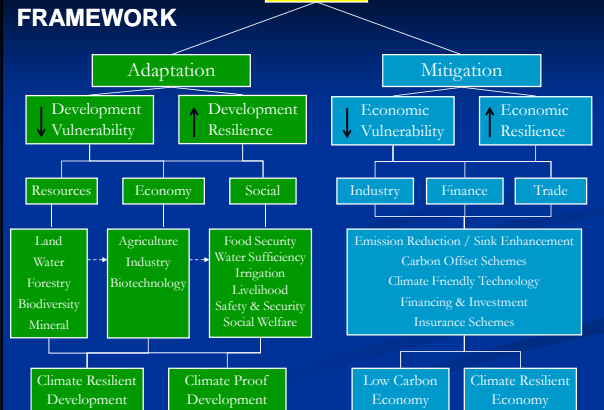
## NPCC & Other Climate Change Policies

Issues	UNFCCC Elements	Singapore	Thailand	South Africa	Sweden	Finland	Proposed Climate Policy
<b>FEDERAL LEVEL</b>							
Vulnerability, Impacts & Adaptation	✓	✓	✓	✓	✓	✓	✓
Mitigation / Kyoto Protocol	✓	✓	✓	✓	✓	✓	✓
Research & Systematic Observation	✓	✓	✓	✓	✓	✓	✓
Technology	✓	✓	✓	✓	✓	✓	✓
Awareness, Education & Public Participation	✓	✓	✓	✓	✓	✓	✓
Future Global Climate Regime	✓	✓	✓	✓	✓	✓	✓
Reporting	✓	✓	✓	✓	✓	✓	✓
Institutional Arrangement & Other Procedural/Administrative Issues	✓	✓	✓	✓	✓	✓	✓
Financial Mechanism	✓	✓	✓	✓	✓	✓	✓
<b>STATE LEVEL</b>							
<b>LOCAL LEVEL</b>							

Source: LESTARI, 2008

## OVERALL FRAMEWORK

SOURCE: LESTARI 2008



## Goals & Aspirations

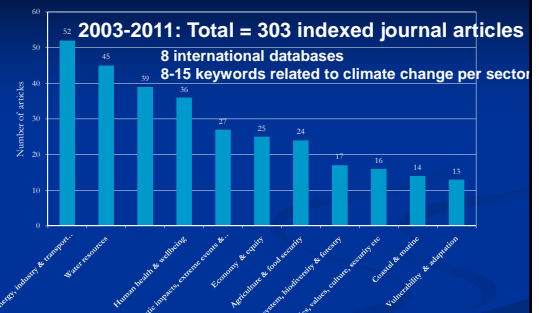
**Mitigation:-** Reduction of GHG emission intensity of GDP by up to 40% of 2005 levels by 2020 – to be met by undertaking nationally appropriate mitigation actions and with the support of international resources (Prime Minister, Dec 2009, Copenhagen)

**Adaptation:-** Not well articulated

- Goals can be in the form of an array of aspirations involving standards and guidelines that are sector specific. Eg. meeting the requirements of national standards for flood management or specifying the heights of protective barriers.
- Needs **local level knowledge** as it may not apply across the board to all areas.
- Need community involvement and negotiations between local stakeholders
- Involves strengthening of capacity to make changes in the future.

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## Local-level Knowledge - Minimal



Malaysia: about 35 journals/year

Asia: about 80 journals/year

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## State of Knowledge on Climate Change

Elements & Thematic Sectors	Ecosystems & Biodiversity	Forestry	Water	Agriculture	Health	Disaster Risk Reduction	Energy/ Industry
Observed impacts	-	-	-	-	-	-	-
Projected impacts	o	o	o	o	√√	o	o
Major vulnerabilities	-	-	-	-	o	o	-
Adaptation options	o	o	o	o	o	o	-
Mitigation options	o	o	-	√√	-	-	√√
Co-benefits	o	o	-	o	-	-	-
Economic valuation	o	-	-	-	-	-	-
Knowledge gaps	√√	√√	√√	√√	√√	√√	√√

Amount of Information:-

(√√) Moderate: Information available from local level studies / reviews  
(o) Insufficient: Information limited; draws on conceptual linkages / reported practices  
(-) Scarce: Information unavailable in published literature

SOURCE: Pereira et al. 2011

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## Level of Discourse / Capacity

Elements & Thematic Sectors	Ecosystems & Biodiversity		Forestry		Water		Agriculture		Health		Disaster Risk Reduction		Energy/ Industry	
	M	A	M	A	M	A	M	A	M	A	M	A	M	A
Institutional arrangements	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√
Goals and aspirations	√√	o	√√	o	√√	o	√√	o	√√	o	√√	o	√√	o
Local level policies and plans	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Community based action	o	o	o	o	o	o	o	o	√√	-	√√	-	-	-
Adaptive management	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Technology	o	o	√√	o	o	o	o	o	o	o	o	o	√√	o
Knowledge base	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Education and awareness	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Financial resources	o	o	o	o	o	o	o	o	o	o	-	√√	o	o
Economic instruments	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Voluntary mechanisms	-	-	-	-	-	-	-	-	-	-	-	-	o	-
Behavioral change	-	-	-	-	-	-	-	-	-	-	-	-	√√	-
Equity	-	-	-	-	-	-	-	-	-	-	-	-	√√	-

(√√) High: Instituted in policies, plans, strategies etc. (o) Medium: Recommendations made in various platforms  
(-) Low: Rarely mentioned in the local context

SOURCE: Pereira et al. 2011

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## Costs of Adaptation

Additional annual investment needed by 2030 (billion dollars per year in present day values, UNFCCC, 2007)

Adaptation cost (billion US\$)			Remarks/Sectors
Developed countries	Developing countries	Global	
7	7	14	Agriculture
2	9	11	Water
Not estimated	5	5	Human health
7	4	11	Coastal zones
6-88	2-41	8-130	Infrastructure
22-105	27-66	49-171	Total

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## Recommendations

- Malaysia's commitment to voluntarily reduce GHG emission intensity of Gross Domestic Product by up to 40% of 2005 levels by 2020 demonstrates the highest level of political will to climate change mitigation.
- A similar national goal is required to provide an impetus to mobilize action on climate change adaptation.

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## Recommendations

- ❑ The capacity for adaptation and mitigation is still very low, threatening transformation to a low-carbon society and undermining efforts for sustainable development.
- ❑ There is urgent need to strengthen capacity for information, particularly with respect to the local level knowledge in sectors such as ecosystems & biodiversity; forestry; water; agriculture; health & disaster risk reduction

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## Recommendations

- ❑ Aspects related to finance and existing societal values also need to be enhanced.
- ❑ Spatially contextualized and sector-based initiatives have to commence to identify appropriate “low hanging fruits” and “no regret options” for adaptation
- ❑ It is also necessary to keep abreast of global developments to facilitate informed decision-making at all levels.

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## The Way Forward

- There is need for harmonising, rather than juxtaposing, the three dimensions of Sustainable Development
- The 3 dimensions are mutually dependent and mutually supportive and exist in a dynamic relationship
- They should therefore be indivisible in concept and practice to promote climate-resilient development for sustainability
- Climate change should not undermine national aspirations i.e. ETP



## National Key Economic Areas (NKEA)

The 12 National Key Economic Areas (NKEAs) are at the core of the Economic Transformation Programme (ETP).

A NKEA is defined as a driver of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy.

The NKEAs were selected because they are significant engines of future growth and their expected contribution to GNI in 2020 will help Malaysia achieve high-income status



*Terima Kasih*



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