

# The Conference on the Economy 2014



## **Sustainable Trinidad & Tobago: Really...are we?**

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Brundtland Commission Report 1987: "...meeting the needs of the present without compromising the ability of the future generation to meet their own needs..."

- meeting the basic needs of the poor
- ensuring environmental sustainability
- ensuring intra and inter generational equity

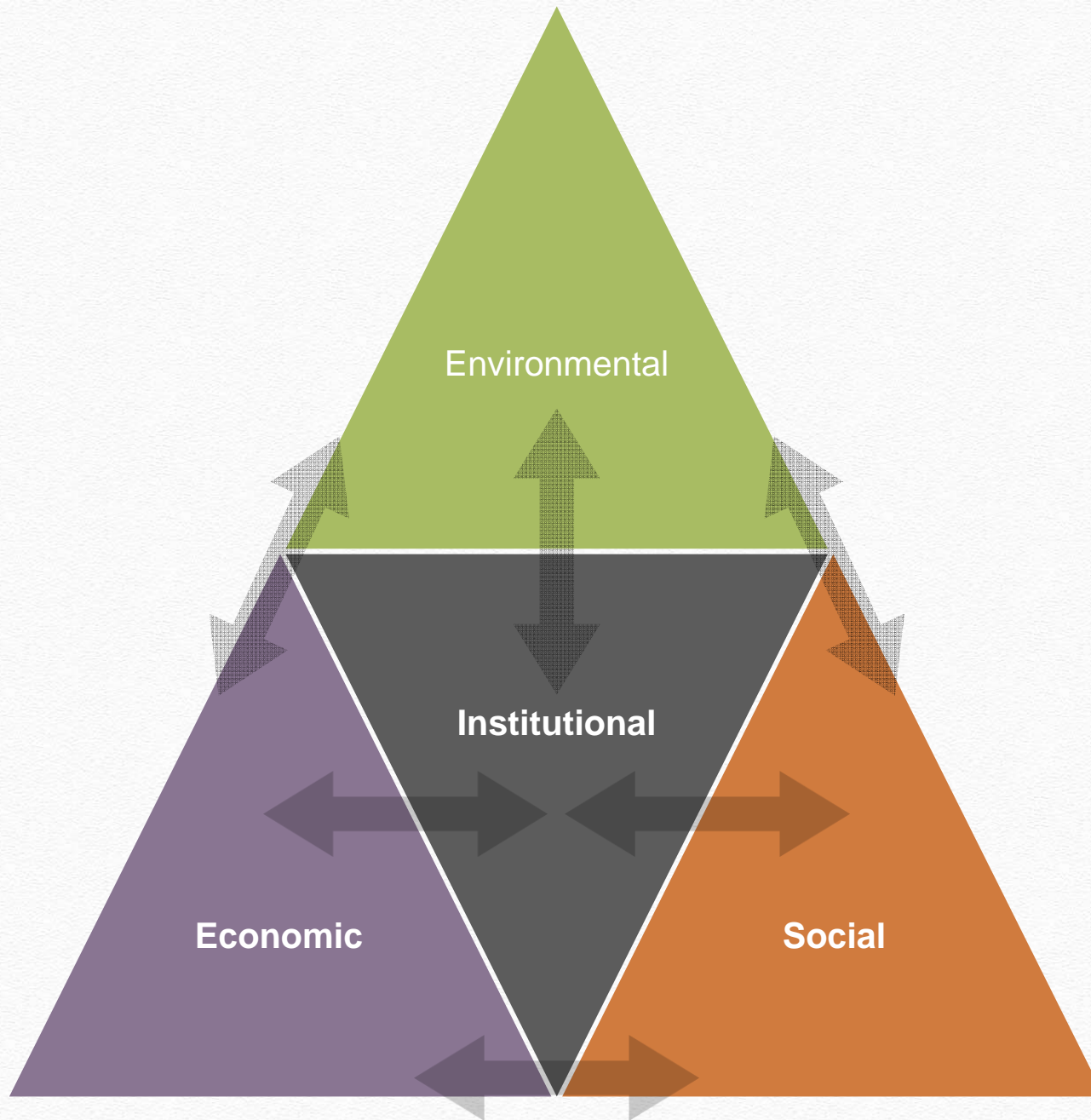
Dr Jeffery Sachs: "Sustainable development is really two ideas. Firstly, it is a way of understanding this complexity of the world.... secondly, it is an idea for sensible goals..."

"Ours is a world looming with challenges and increasingly limited resources.... Climate Change is set to destroy our way of life, and thus is dangerous on our path to sustainability... sustainable development offers the best chance to adjust our course.....it is the pathway to the future we want for all.... it offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and strengthen government.... ." ~ Ban Ki-moon, UN Secretary General





# Dimension of Sustainable Development



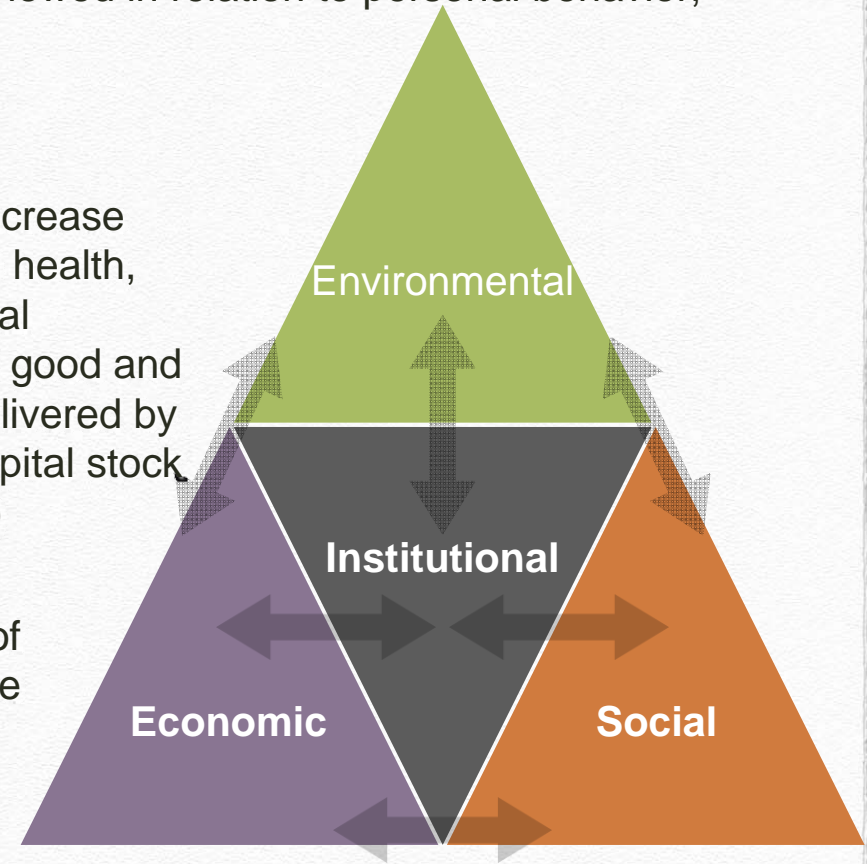
# Dimension of Sustainable Development

**Environmental Sustainability:** focuses on the overall viability and health of living systems, defined in term of a comprehensive, multi-scale, dynamic, hierarchal measure of resilience vigor and organization (Costanza 2000 and Munasinghe 2007) .... Should be viewed in relation to personal behavior, providing... (Priewasser 1999.

**Economic Sustainability:** Meeting human needs and increase quality of life through consumption, satisfying work, good health, rewarding personal relationships an well functioning social institutions, and providing the full range of environmental good and services, may be regarded as resulting from the flows delivered by capital stock. doing so sustainably requires that these capital stock are maintained or increased over time”(Ekins et all 2008)

**Social Sustainability:** maintenance and improvement of well-being of current and future generations (Chan & Lee 2008)

**Institutional Sustainability:** ... is an integrative way of thinking , which reflects a set of norms and values that are participatory and incentive... which enables and allows ... interactions of system and the rules by which they are guided the ability to be adaptive and flexible... in order to respond to unforeseen or unknown challenges of and ever increase integrated world.





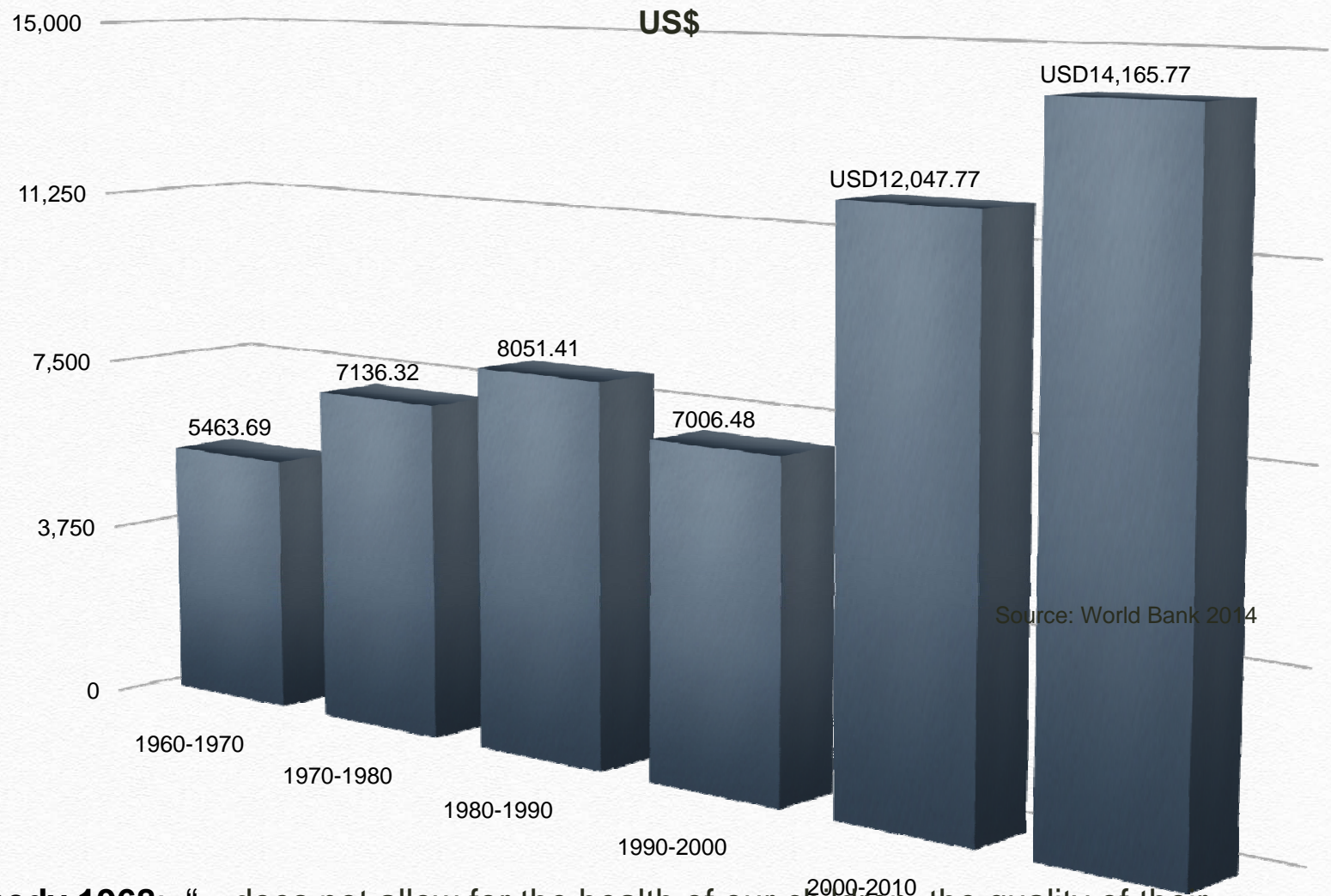
# Overview of Trinidad and Tobago

<b>GDP</b>	US \$24.65 Billion	2013
<b>GDP per capita</b>	US \$14, 370.22	2013
<b>FDI</b>	US \$ 1.1 Billion	2013
<b>Unemployment</b>	3.5% (CSO 2014)	Q4 2013
<b>Inflation</b>	3.48%	Q2 2014
<b>Interest Rates</b>	2.75%	July 2014
<b>Balance of trade</b>	US (\$0.37) Billion	2013
<b>Exports</b>	US \$2.60 Billion	2013
<b>Imports</b>	US \$2.97 Billion	2013
<b>Current Account</b>	US (\$0.65) Billion	2013

Source: World Bank and Trinidad and Tobago Central Statistical Office



# GDP Per Capita 1960-2013



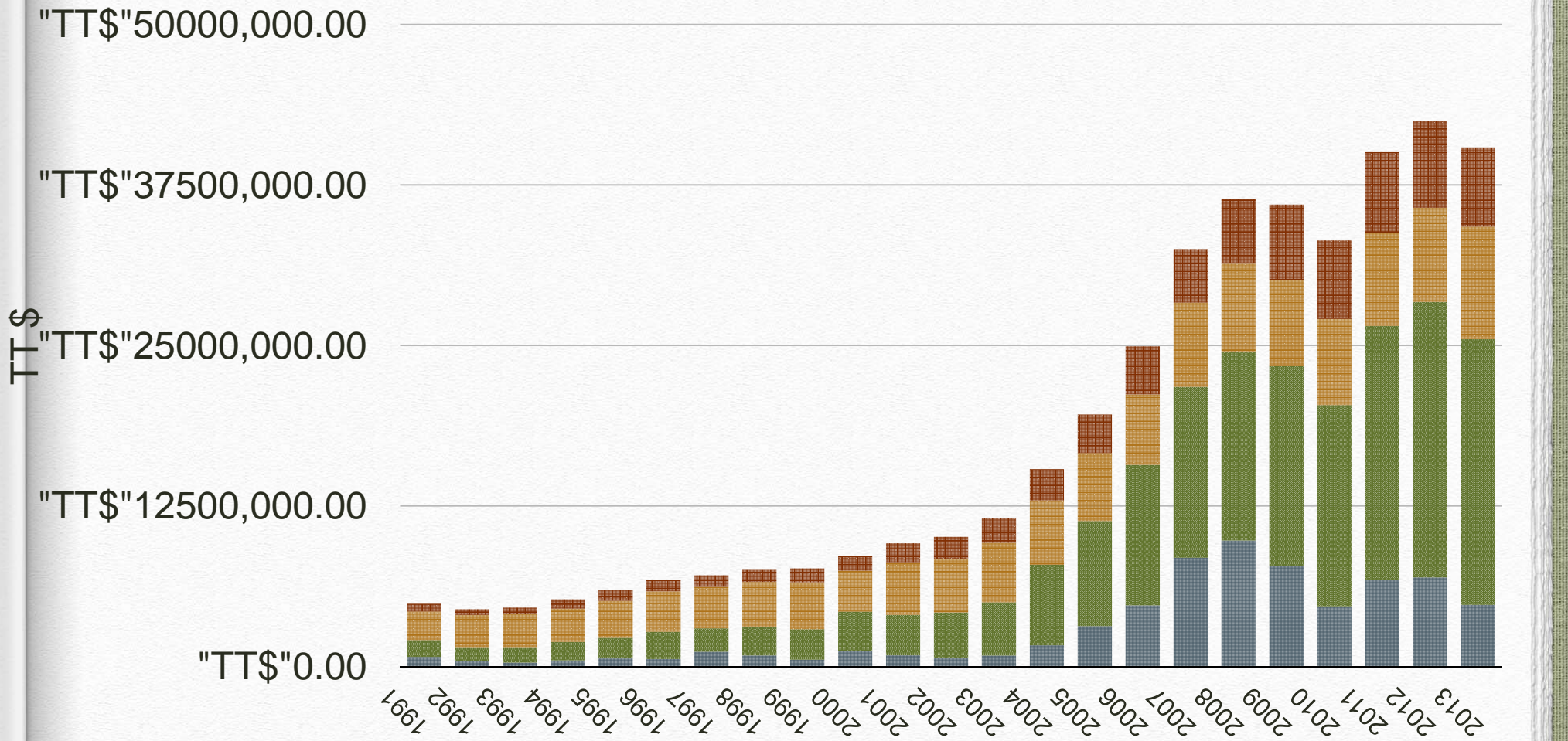
**Robert F. Kennedy 1968:** "...does not allow for the health of our children, the quality of their education or the joy of their play... the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials... neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile..."

# Human Development Index

- Developed by the UNDP and first publish in 1990 .... measures a country's averages achievements in three basic aspects ... longevity, knowledge, and a decent standard of living
- Trinidad and Tobago is ranked 64th, HDI value of 0.766
- IHDI value of 0.644
- MPI 1.7% using the last survey in 2006



# Government Expenditure 1991-2013



Source: CBTT 2014

■ Capital Expenditure (TT\$000s)  
 ■ Wages & Salaries (TT\$000s)

■ Transfers & Subsidies (TT\$000s)  
 ■ Goods & Services (TT\$000s)



# Trinidad and Tobago performance in Selected Composite Indices

Index	Rank	Value/Score	Comment
Corruption Perception Index	83/177	38/100	High level of perceived corruption
Ecological Footprint	--	7.6 (GHa)	Very High Ecological Footprint
Environmental Performance Index	79/178	52.28/100	Average environmental performance
Environmental Vulnerability Index	--	381	Extremely Vulnerable
Global Competitiveness Index	92/148	3.91/7	Low level of competitiveness
Happy Planet Index	136/151	30.3/100	Low level of sustainable well-being
Human Development Index	64	0.766	High Human Development

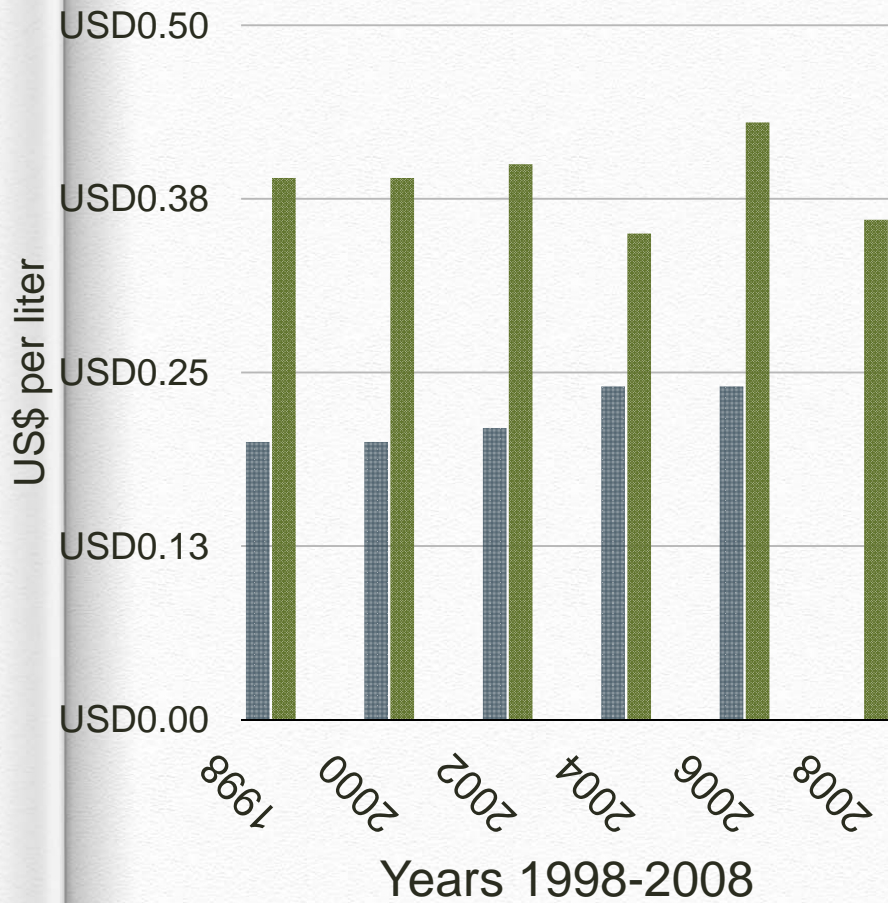


# Potential Sea Level Rise



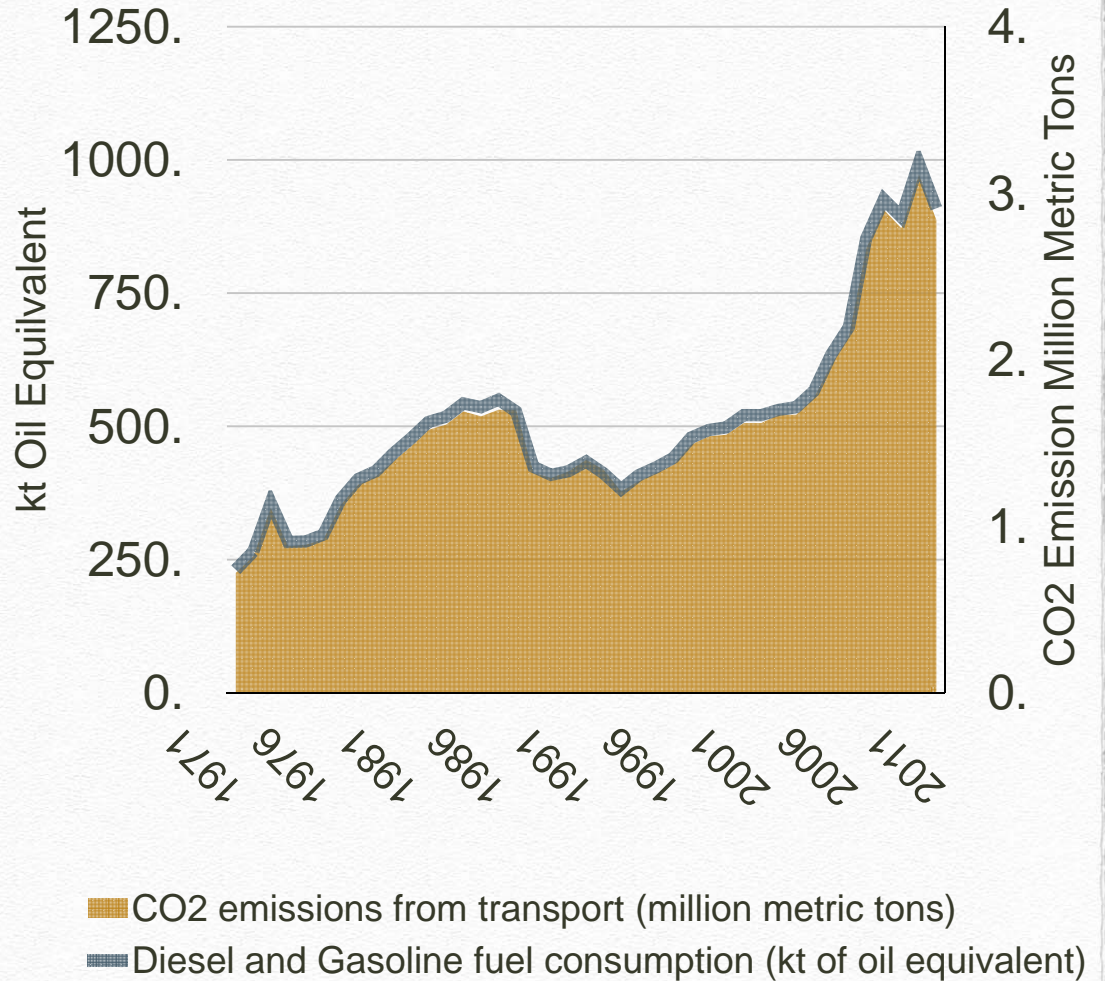


## Gasoline vs Diesel Pump Price



■ Pump price for diesel fuel  
■ Pump Price for Gasoline

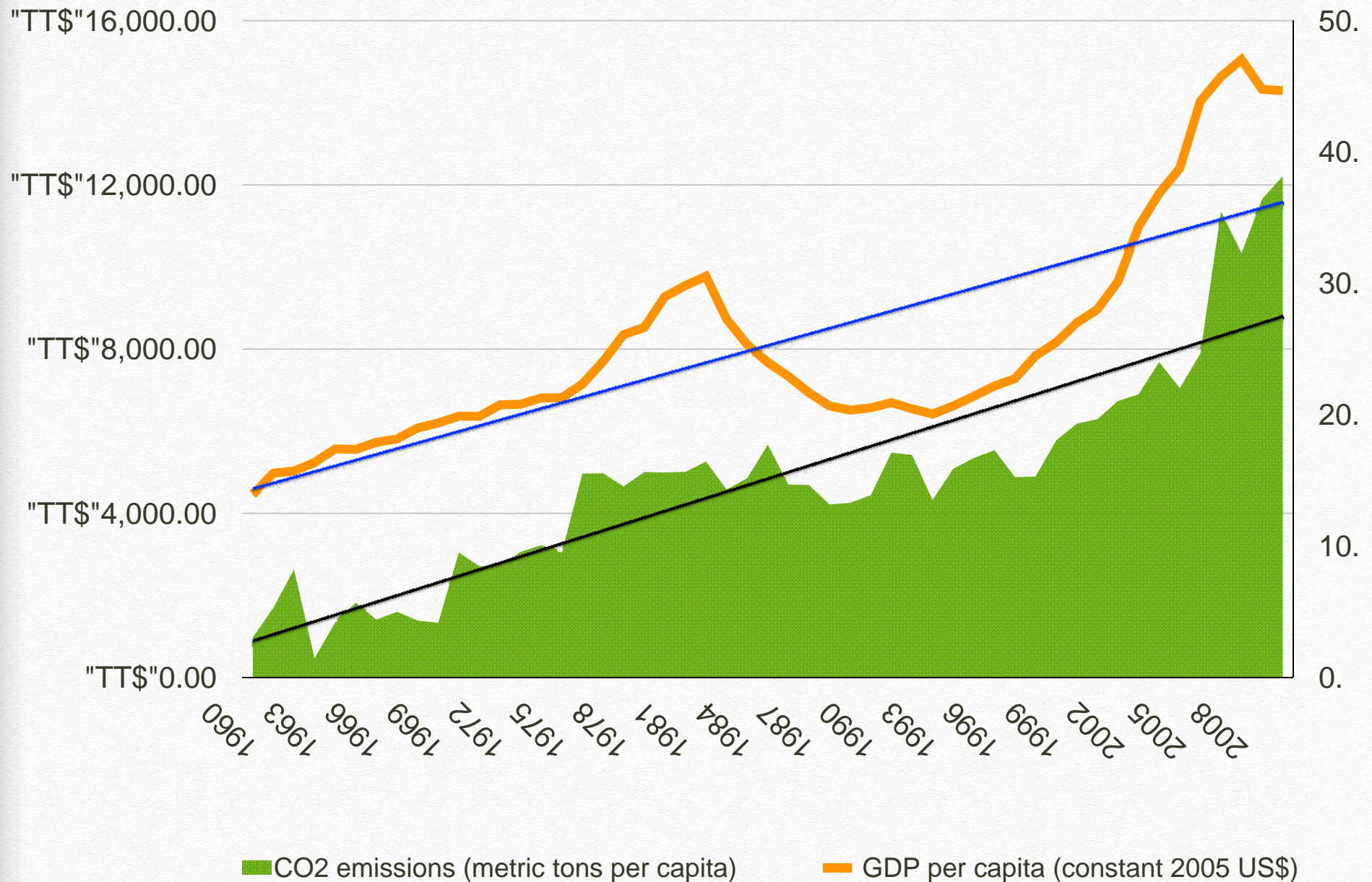
## CO2 Emission and Fuel (Gasoline & Diesel) Consumption



■ CO2 emissions from transport (million metric tons)  
■ Diesel and Gasoline fuel consumption (kt of oil equivalent)



# Per Capita GDP & CO2 emission 1690-2010





# Strategies for Sustainable Development





# National Sustainable Development Strategy

Country	Name of Project of Indicator Sets	Major Structure/ Frame work Used	Number of Indicators	Participating insituatitions
Korea	Korean Sustainable Development Indicators	Theme and Sub-theme Framework (see also UNCSD)	53 (+12 sub-indicators)	Korean Ministry of Environment, Korean Environment Institute, Eco Frontier Co.
New Zealand	Statistics New Zealand 's Framework for Measuring Sustainable Development	Thematic and Procedural Approach within the Economic -Environmental - Social. 16 topics for indicators, 18 principles and 38 target dimensions (based on MONET)		Statistics New Zealand
Portugal	Proposal for a system of sustainable development indicators.	Economic- Social- Environmental- Institutional. P-S-R	132	General Directorate of Environment
Sweden	Sustainable Development Indicators for Sweden-	Efficiency, Contribution and equity, Adaptability, Values and resources for coming generations	30	Ministry o the Environment, Statistics Sweden, Swedish Environmental Protection Agency
Switzerland	MONET (Monitoring of Sustainable Development)	Topic and process-oriented approach (indicator grid). 26 topics where the indicators are arranged according to 5 types of indicators (processes): Level, Capital, Input-Output, Shape and Response. Stock-flow model.	150	The Swiss Federal Statistical Office (SFSO), the Swiss Agency for Spatial Development (ARE) and the Swiss Federal Agency for the Environment, Forests and Landscape (SAEFL).
Trinidad & Tobago *	Medium Term Development Framework- Nation Spatial Development Strategy	12 objectives within the Economic, Social and Environmental. 24 policies area	n/a	Ministry of Planning and Sustainable Development
United Kingdom	Indicators of Sustainable Development for the United Kingdom	Modified P-S-R: Economy-Environment-Actors	118	Department of the Environment and an Interdepartmental Working Group.
	Headline indicators in the UK sustainable Development strategy	Economic, Social and Environmental issues. Themes	15	Department of the Environment, Transport and the Regions (DETR).
	Core set of indicators of Sustainable development		150	Department of the Environment, Transport and the Regions (DETR).



# UN-SDG's

Proposed Goal Number	Goal	Number of Targets
1	End poverty in all its forms everywhere	7
2	End hunger, achieve food security and adequate nutrition, and promote sustainable agriculture.	8
3	Ensure healthy lives and promote well-being for all at all ages	13
4	Provide inclusive and equitable quality education and life-long learning opportunities for all.	11
5	Achieve gender equality and empower all women and girls everywhere.	9
6	Ensure availability and sustainable management of water and sanitation for all.	8
7	Ensure access to affordable, reliable, sustainable, and modern energy for all.	5
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	12
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	8
10	Reduce inequality within and among countries	10
11	Make cities and human settlements inclusive, safe, resilient and sustainable. In target	10
12	Ensure sustainable consumption and production patterns.	11
13	Take urgent action to combat climate change and its impacts. *	5
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development.	10
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	12
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	12
17	Strengthen the means of implementation and revitalized the global partnership for sustainable development.	19
17 Goals		170 Targets



# SDI- Methodological Framework

UN- Proposed SDGs	Social	Ecological	Economic	Institutional
Goal 1: End Poverty in all its forms everywhere.	X			
Goal 2: End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture.	X	X		
Goal 3: Ensure healthy lives and promote well-being for all at all ages.	X			
Goal 4: Provide inclusive and equitable education and life-learning opportunities for all	X			
Goal 5: Attain gender equality, empower all women and girls everywhere.	X			
Goal 6: Ensure availability and sustainable management of water and sanitation for all.	X	X		
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy services for all.			X	
Goal 8: Promote strong, inclusive and sustainable economic growth and descent work for all.	X		X	
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, promoting, and foster innovation	X	X	X	X
Goal 10: Reduce inequality with and among countries.	X		X	X
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	X	X		
Goal 12: Promote sustainable consumption and production patterns.		X	X	X
Goal 13: Take Urgent action to combat climate change and its impact.		X		X
Goal 14: Conserve and sustainably use the oceans marine resources for sustainable development		X		X
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reserve land degradation and halt biodiversity loss.		X		X
Goal 16: Promote Peaceful and inclusive societies for sustainable development provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	X	X	X	X
Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.	X			X



		Indicators	Level	Capital	Input/Output	Structural Criteria	Response
Social	Equity-	Work	Unemployment Rate	Employment to population ratio	Employment to population ratio	Proportion of people of working age in workless households	
		Income Inequality	Gini Coefficient (Gini Index of income inequality)	Income/wage persistence (intergenerational socioeconomic mobility)	Income level differences / Inequality income distribution	Average wage earned by ethnicity	
	Health	Healthcare Delivery	Post-natal care coverage (one visit)	Supply of Doctors	Expenditure on Health	Percent of population with access to basic primary health services, including EmOC	Out of pocket expenditure on health as a percentage of total expenditure on health
Environmental	Atmosphere	Climate Change	Mean temperature	Exceeding the critical sulphur load	Greenhouse Gas emissions	CO2 intensity of individual motorised transport	Identification and management of superfund sites
	Biodiversity	Ecosystem	Population of wild birds	Phosphor levels in lake water	Investment and spending to protect the environment		Biodiversity Action Plan



	I	Indicators	Level	Capital	Input/Output	Structural Criteria	Response
Economic	Consumption and Production Patterns	Energy Use	Energy Consumption per capita	Electricity Generation renewable sources of energy	Fossil Fuel Subsidies (\$ or % of GDP)	Percent of population using renewable energy sources	Sustainable Energy Strategy
		Transportation	Number of Registered Motor-Vehicles	Structure of the Road Network	Average time spent in traffic	Percent of Motor-Vehicles that uses alternative/hybrid/renewable fuel	Modern, low emission and sustainable transportation system
Institutional	Institutional Framework	International Cooperation	Donation to help fight poverty in other countries.		Official financing from developed countries	International emission of CO2 per capita	Reform and strengthening of global governance for sustainable development
	Institutional Capacity	Communication Infrastructure	Mobile broadband subscription per 1000 person	Speed of internet data transmission	ICT Infrastructure Performance	Percent of population with access to online or mobile banking services	Integrated Information and communication technologies and sustainable development
		Science & Technology	Researcher and Technicians in R&D	Patent Applications	R&D Expenditure as a percent of GDP	Percent of population with qualification in science and information combination technologies.	



# SDI-Normalisation

Normalized Value	Sustainable Development Level
0	Extremely Unsustainable Development
0.25	Low and Unsustainable Development
0.50	Unsustainable Development
0.75	satisfactory Sustainable Development
1	Sustainable Development

## SDI-Weighting and Aggregation

Sustainable Development Index:

$$SDI = \alpha ENV + \beta ECN + \gamma SOC + \delta INT$$

where  $\alpha \neq \beta \neq \gamma \neq \delta$



# The Way Forward

- Interviews
- Indicators and variables selection
- Weighting
- Testing
- Recommendation and Conclusion





**The End**

