

**Economic of climate change**

Lesson for MCCD at Vietnam Japan University  
Tong Thi My Thi  
2020

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Class contents	
1	Part 1: Introduction
2	Part 2: The Economics of Climate Change Benefits and costs, supply and demand, economic efficiency and markets, public goods and externalities
3	Part 2: The Economics of Climate Change Environmental policy instruments
4	Part 2: The Economics of Climate Change Intertemporal problems (stock pollutants, discounting)
5	Part 2: The Economics of Climate Change Decisions under risk and uncertainty
6	Part 2: The Economics of Climate Change Economic methodologies for climate change - Input-output analysis
7	Part 2: The Economics of Climate Change Economic methodologies for climate change - Cost benefit analysis
8	Part 3: Selected Topics in Climate Policy Current climate policy in Japan
9	Part 3: Selected Topics in Climate Policy Current climate policy in Vietnam
10	Part 3: Selected Topics in Climate Policy Adaptation and mitigation – two sides of climate policy
11	Part 3: Selected Topics in Climate Policy Climate change, climate policy and the role of agriculture and forestry
12	Part 3: Selected Topics in Climate Policy Biofuels, Carbon Offsets
13	Part 3: Selected Topics in Climate Policy Energy efficiency, energy security, and climate policy in Vietnam
14	Part 3: Selected Topics in Climate Policy Energy efficiency, energy security, and climate policy
15	Wrap-up and discussion

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**Grading**

- Attendance and **active participation** in class 10%
- Problem-based assignment 15%
- Individual presentation 15%
- Exam 60%

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**Contents of class  
(from 11-21 March 2020)**

- Lesson 1: Climate policy and two sides of climate policy: Adaptation and mitigation (Wed, 11/3)
- Lesson 2: International agreements and implications to economics of climate change (Thu, 12/3)
- Lesson 3: Public finance and climate finance (Thu, 12/3)
- Lesson 4: Carbon market and carbon emission trading (Mon, 16/3)
- Lesson 5: Climate policy and climate finance in Vietnam (Wed, 18/3)
- Lesson 6: Students' individual presentations (Sat, 21/3)

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**Lesson 5:  
Climate policy and climate finance  
in Viet Nam**

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**Today's questions**

- What is the implication of international framework to Climate policy and climate finance in VN?
- How Climate policy in Vietnam being developed during the past decade?
- Why VN's later climate policy show the re-direction from adaptation to mitigation?
- Are targets to emission reduction of VN considered as main goals to be achieved? or as a co-benefit under other associated policies ?
- At the end of this lesson, please category climate policy into Climate Adaptation vs Climate mitigation policy base on your understanding

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## Backgrounds

- VN's economy after Doi Moi
- Energy use
- VN's emission
- Impacts of CC
- Politics' issues

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## Changes in economy after Doi Moi

- 1986 Doi Moi (Renovation)
- Agriculture → Industry (↑10%/yr, largest share in VN's GDP)
- ↑Living conditions
- 60% of power generation is based on fossil fuels
- Challenges: ↑GHG emission, ↑energy demand, ↑resources' depletion, ↑pollution, etc.

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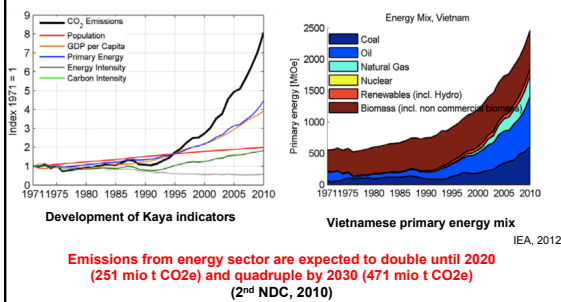
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## Changes in energy use behavior




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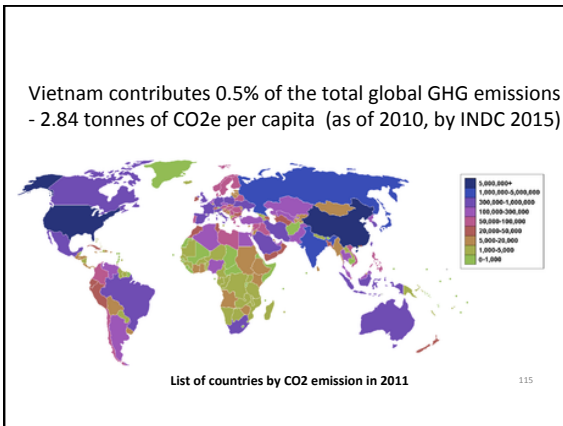
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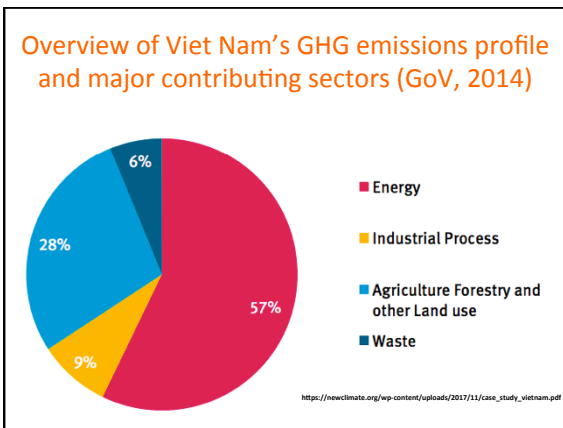
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**Project of VN's GHG emission to 2030**

BAU (business as usual) emissions are forecast to increase **from 246.8 MtCO<sub>2</sub> e in 2010 to 787.4 MtCO<sub>2</sub> e in 2030** under the assumption of continued economic growth and the absence of climate change policies  
(as in Vietnam INDC, 2015)

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### Impacts of climate change in VN

- 1995 to 2017: disaster losses was 14 trillion VND/year & increased damage rate was 12.7%/year (1-1.5%GDP/year)
- 2017: 16 storms, cost 38.7 trillion VND (US\$1.7)
- Economic losses: 2 - 4% of GDP each year

### Future threats

- SLR MONRE 2016: with SLR 100cm in 2100 → 94.79% of central coastal provinces, 47% of Ho Chi Minh City, 38.9% of the MKD, etc.
- To 2030: estimated 5.2% of GDP by disaster damages
- To 2050: damage can reach over 6.5% of GDP annually

Data source from draft NAP 2021-2030

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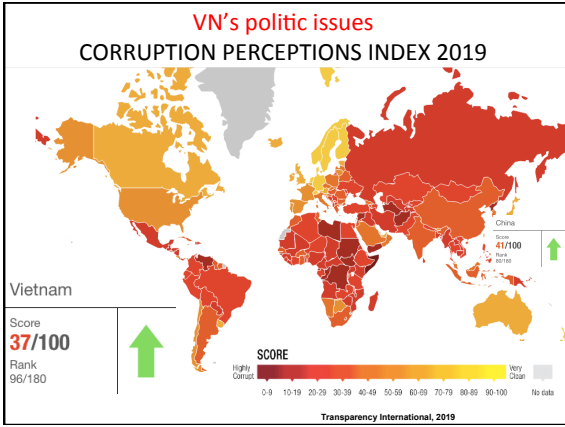
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### VN's politic issues

#### CORRUPTION RISKS IN VIETNAM

**Corruption in Vietnam is endemic, systemic, and deeply political** (Gregory 2016, 239). In 2016, Vietnam scored 33/100 on the corruption perception index (CPI), ranking 113/176 in the global index. While this score constitutes an improvement from the 31/100 score Vietnam held from 2012 to 2015, corruption remains at a high level.

**Energy sector**  
Overall, the energy sector in Vietnam is affected by **weak governance due to a lack of transparency, few checks and balances, bureaucracy and close ties between government and businesses**. With the Vietnamese government planning to attract more investment and donor money to guarantee energy security, it has made increasing efforts to tackle corruption, which have failed to cause significant improvements.

**Health sector**  
In Vietnam, corruption in the health sector is considered a serious problem by both the government and citizens at large. The country's health system is particularly susceptible to corruption due to uncertainty, asymmetry of information between health officials and patients, and conflicts of interest between health officials and private companies.

**Education**  
The education sector is also perceived as one of the most corrupt sectors in Vietnam by 89% of the 2010 GCB respondents. Consistently, it was also found to be the sector with the second highest percentage of actual experience with corruption as 36% of those who have been in contact with the sector reported paying bribes.

Source: PI, 2017  
<https://knowledgehub.transparency.org/helpdesk/corruption-risks-in-vietnam-energy-sector>

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**Discussion points:**

- What are key drivers for development of climate policy in Vietnam?
- What determine policy formation?

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**Vietnam ratified international framework and agreement**

- UNFCCC
  - signed on 11/6/1992
  - approved to implement on 16/11/1994
- KP
  - Signed on 03/12/1998
  - approved to implement on 25/9/2002.
- UNCCD
  - approved to implement on 1998
- Hyogo framework for action 2005-2015
  - approved to implement 2011
- Communication to UNFCCC and KP
  - Vietnam Agenda 21, 2001
  - Initial National Communication (2003),
  - Second National Communication (2010)
  - Initial Biennial Update Report (2014)
- National Steering Committee to implement the UNFCCC and KP



122

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**Key Drivers of Climate Policy in Vietnam**

**Internal drivers:**

- Negative impacts & high vulnerability to CC
- Limited awareness of CC
- Effort in maintaining economic growth
- Energy security
- Local air pollution
- Direction towards low-carbon, green growth
- Request of long-term solutions for institutional issues, resource management

**External drivers:**

- Global threatens of CC
- International negotiations on CC
- Funding and technology transfer
- Other countries' efforts in response to CC
- Others (i.e. VN's international reputation)

**Main challenges:**

- lack of capacity
- resources and technology
- institutional and political obstacles



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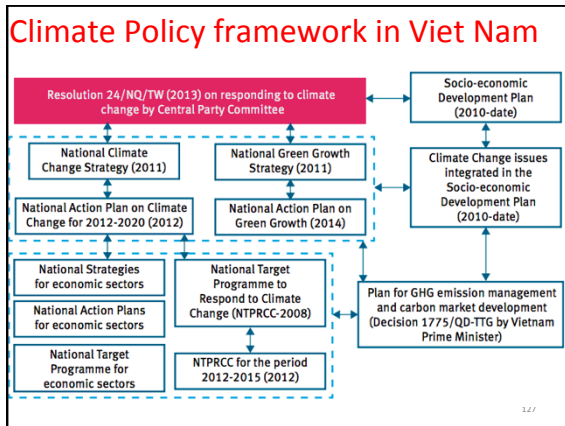
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### Note before going forward

- What is a policy? and a public policy?
- Why public policy is important?
- What is public policy analysis? (problem vs solution)
  - Define problems (theory and practice)
  - Propose solutions (← projecting outcome, select MOST appropriate solutions, etc.)

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### National action plan for KP, 2007

- **4 targets:**
  - SEDP implementation & international commitments (fast, sustainable, environmental protection)
  - rights and benefits ← UNFCCC & KP
  - climate finance, technology
  - → EP, NRM, CCA, CCM
- **5 main tasks:** policy framework, awareness raising, research, international cooperation, action plans
- **Budget?**

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### NTP-RCC, 2008

- **Aims:** to assess CC impacts and develop CCA and CCM measures (detailed in 8 specific objectives)
- First document that concreted RCC at national level
- **8 main tasks:** CC impact assessment, RCC measures, S&T programs for RCC, Policy and institutions for RCC, Awareness raising, HR, International cooperation, Integration of CC, NAPs.
- **Budget:** VND 2.374 billion
  - 50% from domestic (15% State, 10% local, 15% credits/loans, 10% socialized)
  - 50% from foreign (ODA, donors, ..← UNDP, ADB, WB mainly)
- **3 periods:** 2008-2010, 2011-2015, & after 2015

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### NCCS, 2011

- **Key messages:**
  - CCA and CCM should be carried out in parallel
  - CCA must be linked to sustainable development
  - GHG emission reduction with renewable energy and energy efficiency improvements
  - VN first time signals its willingness to take responsibility for CC on own pathway
- Defining **10 strategic tasks**
- **Priorities:** food security, energy security, water security, poverty reduction, gender equality, social security, public health, livelihood improvements and the protection of natural resources
- **National Climate Change Committee** has been established.
- MRV for emission inventory
- **MARD:** decided on a reduction target of 20% of total GHG emissions from the agriculture and rural development sector by 2020

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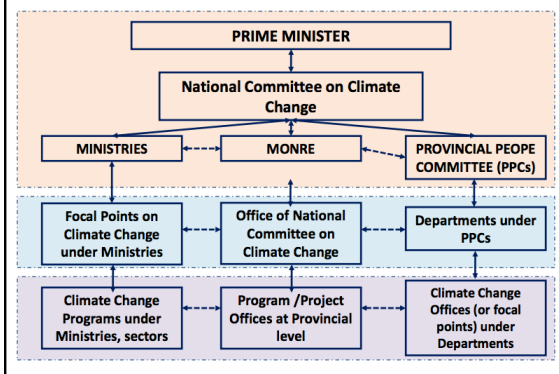
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### State Management on Climate Change




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**Strategy of CC adaptation by sectors**

- **AGRICULTURE:**
  - Building a crop structure suitable changing climate
  - Diversify intercropping activities
  - Improve irrigation efficiency
  - Organization warns of floods and droughts
- **FORESTRY:**
  - Strengthen afforestation, greening bare land and bare hills
  - Protection of natural forests and watershed forests
  - Forest fire prevention organization is effective
  - Improve the efficiency of wood use and limit the use of wood materials
  - Protection of rare and precious plant varieties
- **INDUSTRY, ENERGY, TRANSPORTATION:**
  - Adjusting the plan of developing energy, industry, and appropriate transport and climate change
  - Upgrade and renovate energy, industrial and transportation projects
- **AQUACULTURE:**
  - Climate change adaptation in the coastal zone
  - Climate change adaptation in the fisheries sector
  - Climate change adaptation in freshwater and sea water
- **WATER RESOURCE MANAGEMENT**
  - Restructuring, renovating and upgrading irrigation systems
  - Additional construction of multi-purpose reservoirs
  - Developing and developing the basin management mechanism
  - Use water economically
  - Increase revenue and reduce water loss
  - Step by step against saline intrusion
- **MEDICAL, HEALTH**
  - Upgrading public health infrastructure and activities
  - Develop health promotion programs to improve the environment for disease control

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**VGGS**

- achieve a low carbon economy ← restructuring the economy & reducing GHG emissions
- ↓8-10% of GHGs intensity (2012-2020)
- defines explicit emission reduction targets for the energy sector
  - till 2020: 10% below BAU and +10% below BAU with international support
  - till 2030: 20% below BAU and +10% below BAU with international support
- trading of certified greenhouse gas emissions, carbon tax and fees and levies
- Focus areas: energy, agriculture, LULUCF and waste
- 17 strategies was proposed

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**Principles as regulated in climate policy about RCC in Vietnam**

- Responding to climate change **associated with sustainable development**
- **Adaptation and mitigation are equally important** and need to be carried out simultaneously, in which the investment period is the focus
- CC adaptation needs to be carried out with focus: **Adaptation with immediate impacts and potential impacts**
- CC adaptation is the **task of the whole system of social-economic development**
- **CC must be integrated into strategy, planning, socio-economic planning**

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### Potential of Vietnam's carbon market?

1. CDM project as driver of carbon market in Vietnam
2. Viet Nam's NDC outlines a GHG reduction pathway for the 2021-2030 period, which comprises of a domestic contribution of 8% by 2030 (relative to BAU) → open to the carbon markets after 2020
3. VGGs → "trading of certified GHG emissions, carbon tax and fees and levies"
4. Project on management of GHG emissions, management of carbon credit business activities to the world market (2012) → Vietnam's interest in market-based instruments → launch of a national ETS and join international ETS by 2020
5. MRV (in development and piloting, supported by JICA)
6. Viet Nam has several Nationally Appropriate Mitigation Actions (NAMAs) ongoing in different sectors (cement, energy efficiency in building, waste and renewable energy, etc. → yet limited in finance for implementation → NAMAs and MRV requirements remain limited
7. The Partnership for Market Readiness (PMR) by the World Bank → piloting of market-based instruments → establishment of domestic carbon market instruments
8. The Joint Crediting Mechanism (JCM) in Viet Nam was established in July 2013 → improved capacity to manage GHG emissions reduction
9. Viet Nam is a member of the International Civil Aviation Organisation (ICAO) → yet not voluntarily participate in the Carbon Offsetting and Reduction Scheme for international Aviation (CORSIA)
10. REDD+
11. Verified Carbon Standard (VCS) and the Gold Standard (GS).
12. Environmental Protection Tax (EPT)
  - environmentally harmful substances such as plastic bags and pesticides
  - disregard carbon content of taxable objects
  - tax rates are currently set very low

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### CDM in VN

- 255 CDM projects in Viet Nam have been registered (as of 2017) → generated 16.5 million CERs
- Viet Nam is ranked fourth internationally in terms of the number of registered CDM projects, following China, India and Brazil.
- Viet Nam is ranked seventh internationally in terms of the total issuances of CERs, following China, India, Brazil, Mexico, South Africa and Indonesia.

Portfolio of CDM projects in Viet Nam

Project type	Registered projects	Total Issuance (tCERs)
Biomass energy	16	85
EE Households	1	
EE own generation	2	
Fugitive	1	8857
Hydro	200	6450
Landfill gas	7	248
Methane avoidance	22	638
Reforestation	1	
Wind	5	247
<b>Total</b>	<b>255</b>	<b>16526</b>

Source: UNEP EIU Partnership (2017)

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### Needs of Climate finance in Viet Nam

- 2010-2017: US\$7.468 billion (15% of ODA and concessional loans)
- The cost of adaptation is estimated to exceed 3- 5% of GDP by 2030
- VN need US\$ 30 billion (2016-2030) to RCC, of which 70% is expected to come from the non-State sector
- Energy sector: need increasing of 3 to 9 times to fund green energy by 2030

**BUT**

- Limited State budget capital for implementing RCC and GG
- Investment from banking and private sector for RCC and GG has been neither promoted nor institutionalized.
- Net ODA received in 2010 million US\$: 254 (1990), 2212 (2000), 3500(2011) (focus on manufacturing investment)

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### VN's spending on RCC (2010-2013)

- 0.1% of GDP annually → RCC
- 98% → CCA (for MARD irrigation projects, MOT road transport projects)
- 2% → CCM
- RCC spending is not fully aligned with NCCS and VGGs policy objectives
- food and water security (NCCS): 63%
- sustainable infrastructure (VGGs): 74%
- 31% of total RCC ← ODA & donors (largely come to SOE)

<http://documents.worldbank.org/curated/en/20091480301480301224/p018600-VIETNAMESE-WP-P140247PUBLIC-Box391458B-Vietnam-CPER-Report-ENG.pdf>  
<http://documents.worldbank.org/curated/en/2013/01/44800021224/p018600-VIETNAMESE-WP-P140247PUBLIC-Box391458B-CPER-Report.pdf>  
 updated CPER in MCO. [http://www.unep.org/centers/vietnam/en/home/library/environment\\_climate/climate-and-green-growth-public-expenditure-and-investment.html](http://www.unep.org/centers/vietnam/en/home/library/environment_climate/climate-and-green-growth-public-expenditure-and-investment.html)

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### Efforts toward climate finance

- Promote policy and mechanism to open door for attracting climate finance (both from public and private) (i.e. SP-RCC, NAP 2021-2030, integrating of CC into SEDP)
- Public-private partnership (PPP) mechanism
- Building financial mechanism: financial funds, carbon trading, green bonds, tax and other tools (commercial banking system, the stock market)
- Attract ODA ← *orientations for ODA and concessional loan attraction of donors* in the public sector
- *Climate Finance Options Forum*

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### Financial sources for RCC and GG

- Financial funds
  - Sustainable Energy Promotion Fund (SEPF)
  - Vietnam Environment Protection Fund (VEPF)
  - Green Growth Strategy Support Fund (GGSF)
  - Green Investment Fund (GIF)
  - Global Climate Partnership Fund
  - Norway's International Climate and Forest Initiative (NICFI)
  - Agricultural Mitigation Program (MICCA)
  - Multilateral Fund to Support the Implementation of the Montreal Protocol (MLF)
  - NDC Implementation Assistance Fund (NDC LC)
  - Green Climate Fund (GCF)
- Green bonds
  - *Roadmap for developing the bond market in the period of 2017-2020, vision to 2030*
  - *The scheme of pilot issuance of green bonds* was approved in Oct,2016
    - HCMC issued VND 3,000 billion of green local government bonds for 34 projects
    - BR-VT issued VND 500 billion of green bonds, with a term of 5 years for 8 project
- Taxes
- Others (stock market, commercial banking system, etc.)

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Challenges of climate finance in VN

- ↓ODA
- Inadequate policy and institutions for CF regulation
- weak and fragmented cooperation between governmental agencies
- not yet finalized MRV
- Limited HR

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