Transport and Climate Change

-Recommendations from WCTRS to COP15 and Beyond-

World Conference on Transport Research Society (WCTRS)

http://www.wctrs.org/

http://www.sustrac.env.nagoya-u.ac.jp/tracc/index.html

November 2009

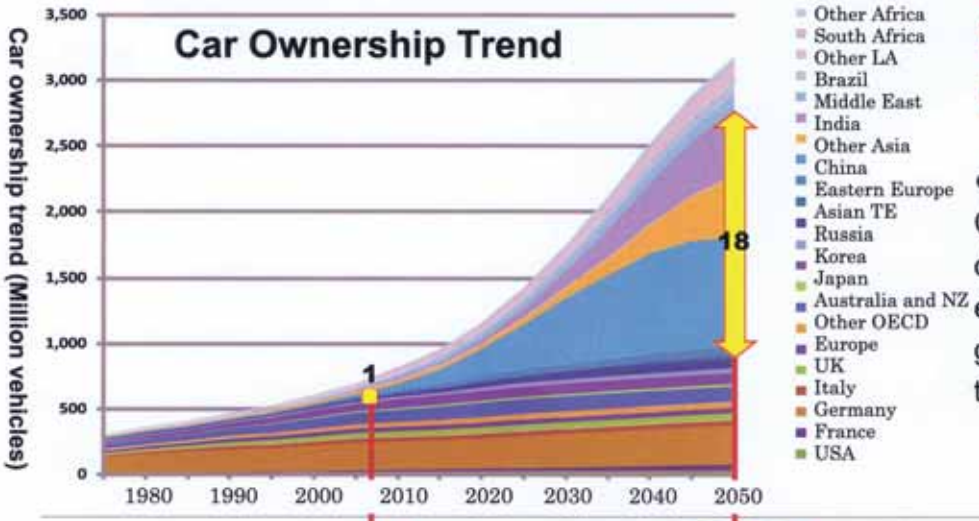
Bringing TRANSPORT into COP15

Putting Transport into Climate Change Agenda

- Transport is currently not recognised in "climate regime language"
- Climate is not recognised in "transport language"

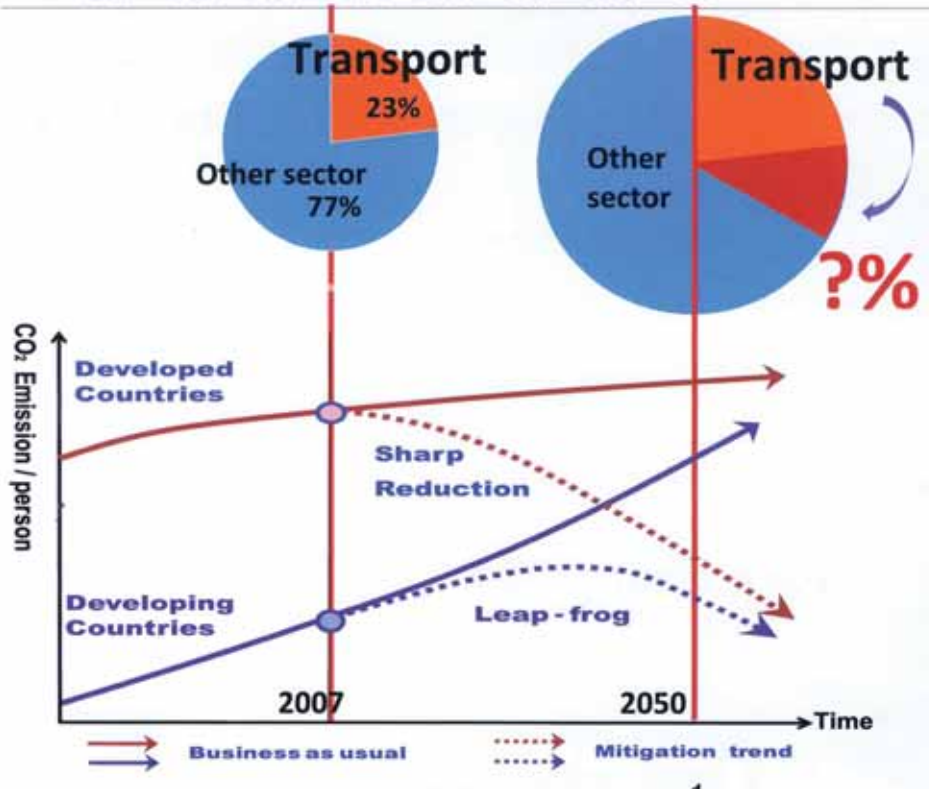
Need to translate between two "languages"!

Upgrading Transport to a Key Sector



Emission from transport will drastically grow!

- According to IEA's forecasts, China, India and other Asian developing countries are expected to have significant growth of car ownership, 18 times larger by 2050.



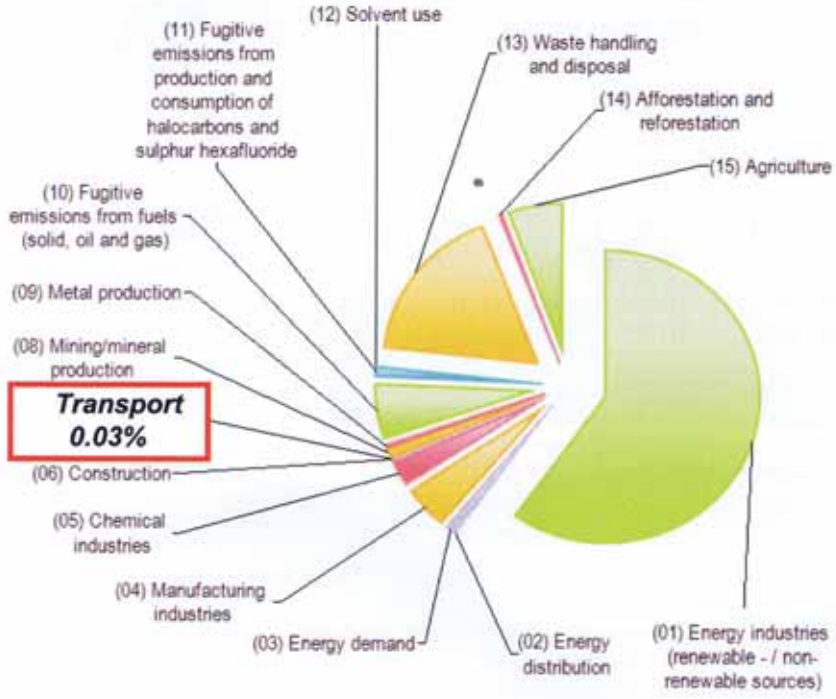
ısport accounts for 23% of CO_2 emissions (2007), amounting to 6.6 Gt-CO_2, and it is the fastest growing sector for carbon emissions. Given the expected drastic growth in car ownership in developing countries, the influence of transport sector on climate change shall not be neglected.

- To avoid the BAU pathway, which may lead to a catastrophe, "Sharp Reduction" should be implemented in developed countries, and "Leap-Frog" processes in developing countries.

Reforming CDM Suitable for Transport

Why CDM does not like "Transport Projects" ?

- Only 2 Transport among 2,167 CDM Projects (until Sep. 2009)



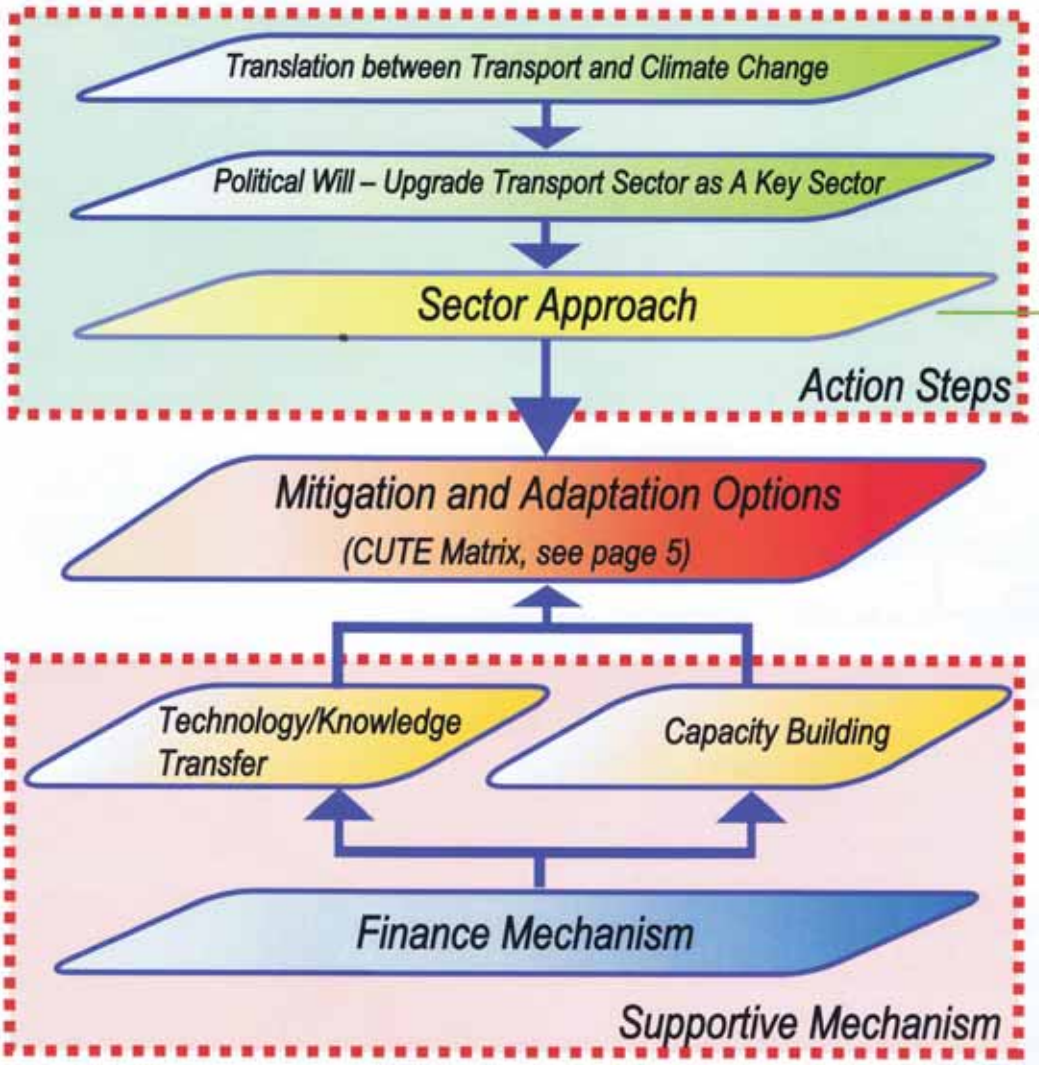
Sectoral Scope	Registered Projects
(01) Energy industries (renewable - / non-renewable sources)	1297
(02) Energy distribution	0
(03) Energy demand	23
(04) Manufacturing industries	101
(05) Chemical industries	59
(06) Construction	0
(07) Transport	2
(08) Mining/mineral production	22
(09) Metal production	6
(10) Fugitive emissions from fuels (solid, oil and gas)	130
(11) Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	22
(12) Solvent use	0
(13) Waste handling and disposal	377
(14) Afforestation and reforestation	6
(15) Agriculture	122
Total	**2167**

Overcoming Obstacles

Can developing countries take leap-frog pathways ?

	Developed Countries	Developing Countries	International Cosmos
Target	**Sharp reduction** ——How to mitigate	**Leap frog** ——How to avoid	**Green future** ——How to cooperate
Obstacles	·High dependence on car use ·High carbon transport mode	·Fund shortage ·Outdated technology ·Imperfect institutional practice ·Lack of motivation ·Uncontrolled land use ·Unsustainable international aid	·Unbalance in consciousness ·Demanding appeal of country's own benefits

Realising Mitigation and Adaptation

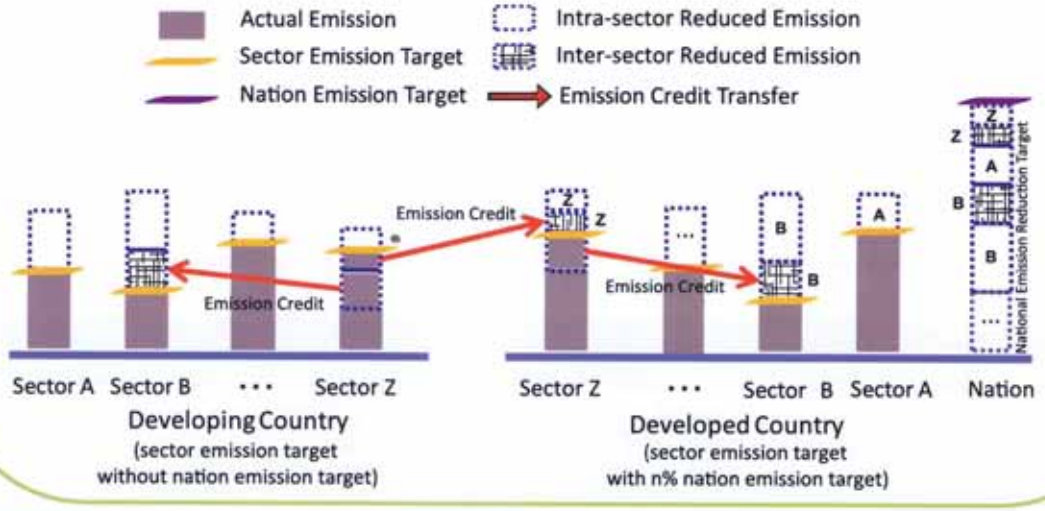


Redesigning Finance Mechanism

- **Programmatic CDM + CDM Risk Hedge Fund**
- **CDM accredited ODA**
- **Climate Fund, Mitigation Fund, Capacity-building Fund**
- **Domestic Public Funding, Private Funding, Value Capture**

Sector Approach

The Sector Approach aims to allocate emission reduction target for each sector inside the country. The approach may encourage developing countries to reduce emissions particularly in transport sector through credit transaction between sectors even if they do not have national emission targets.

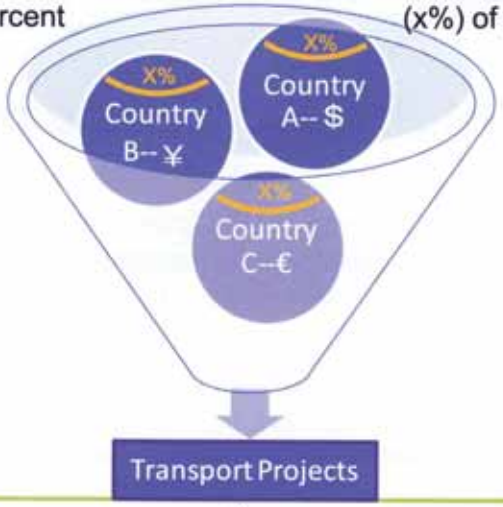


From Project CDM to Programmatic CDM

The Programmatic CDM is not an option but a new scheme to realize a project which consists of a bundle of similar projects. Compared with traditional Project CDM, Programmatic CDM can absorb the risks of each individual CDM project due to uncertainty in reaching the emission targets proposed for the transport

CDM Risk Hedge Fund

The Risk Hedge Fund avoids the risk for investors (firms in developed countries) to miss the emission credit due to uncertainty of achieving the expected CO_2 reductions. To avoid the risk, the Fund should be established to reserve a certain percent (x%) of emission rights from each CDM project.



Mitigation and Adaptation Options

According to the WCTRS project "Comparative study on Urban Transport and the Environment (CUTE) (2001-2004)", a matrix of mitigation and adaptation options was developed (CUTE Matrix).

CUTE Matrix

The strategies for low-carbon transport have 3 stages: Avoid (reduce transport emand), Shift (reduce emissions per unit transported), Improve (reduce emissions per kilometre). Each strategy would have one or more instruments that could be used to enhance low carbon transport - these include technological, regulatory, informational and economic instruments - as seen in the matrix below.

CUTE Matrix		Strategies		
		Avoid	Shift	Improve
		Reduce Transport Demand	Reduce Emission per Unit Transported	Reduce Emission per Kilometer
Instruments	Technological	•Transit Oriented Development •Pedestrian Oriented Development •Bicycle Oriented Development	•Integrated Public Transport System •Highly Competitive Railway	•Low Emission Vehicle •Alternative Energy •Advanced Infrastructure Technology •Logistic Efficiency
	Regulatory	•Compact City •Mixed Land Use •Parking Regulation •Traffic Restriction/Bans	•Bus/Tram Priorities •Non-Motorized Transport	•Emission Standard •Top Runner Program
	Informational	•Information and Communication Technologies (ICT) •Telework •Smart Choices for Workplaces and Schools	•Awareness Campaign	•Eco-Drive •Intelligent Transport Systems •Labeling of Vehicle Performance
	Economic	•Car Purchasing Tax •Fuel Tax •Road Pricing •Relocation Subsidy	•Car Registration Tax •Fuel Tax •Road Pricing	•LEV Preferential Tax •Fuel Tax

Reference - WCTRS and Institute for Transport Policy Studies (2004) Urban Transport and the Environment: An International Perspective. Elsevier Ltd.

WCTRS Special Interest Group 11 - Transport and the Environment (SIG11)

The SIG11 aims at seeking ways to establish effective mechanisms for mitigating environmental degradation due to transport in the international domain. The following topics are researched: a) Comparing the emission of greenhouse gas and air pollution between countries and cities b) Diagnosing urban transport and its resulting global and local environmental degradation and prescribing countermeasure policies, and developing an evaluation system of their performance. c) Providing scientific instruments for evaluation of international mechanism such as a fund for environmentally sustainable transport and the methods to collect the necessary financial resources.

Proposers

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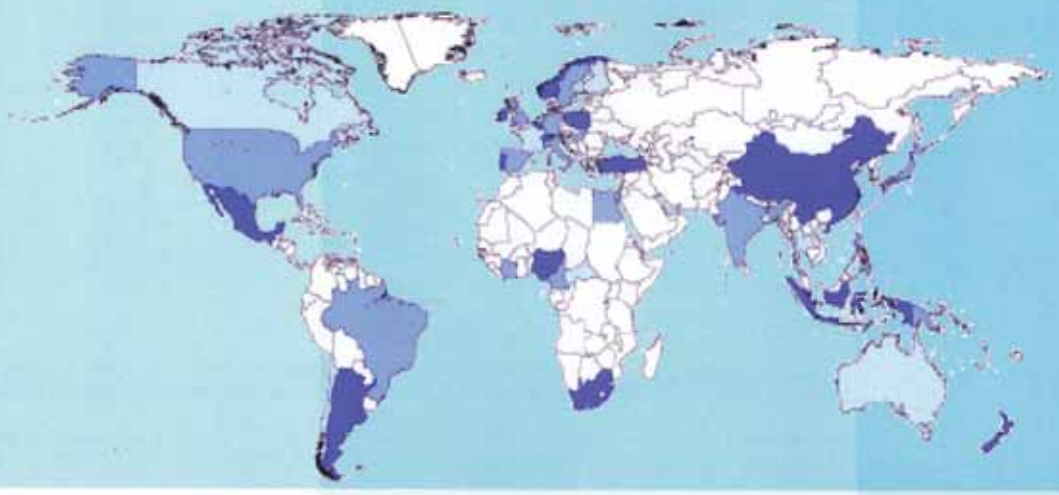
Yes, we can help !

There is an urgent need to involve transport as a major sector in the climate change negotiation. WCTRS could help UNFCCC, and the IPCC to promote this process.

World Conference on Transport Research Society (WCTRS)

The WCTRS covers multi-modal, multi-disciplinary, and multi-sectoral fields. The members span almost all aspects of transportation research, planning, policy and management. The World Conferences held every 3 years mirror this breadth of interests. 64 countries are represented in the WCTRS, with more than 1,500 members.

President: **Anthony May (University of Leeds, UK)**
Chair of Scientific Committee: **Yoshitsugu Hayashi (Nagoya University, Japan)**



These recommendations come from **International Symposium on Transport and Climate Change 2009, Nagoya**

Organized by

- **World Conference on Transport Research Society, Special Interest Group 11 (WCTRS-SIG11)**
- **International Research Center for Sustainable Transport and Cities (SUSTRAC), Graduate School of Environmental Studies, Nagoya University, Japan**

Sponsored by

- **Global Environment Research Fund (S-6-5), Ministry of Environment, Japan**

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