Dr. Shobhakar Dhakal

Present position: Executive Director
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Related web-links:
Global Carbon project: www.globalcarbonproject.org and www.gcp-urcm.org
Institute for Global Environmental Strategies:
http://enviroscope.iges.or.jp/modules/envirolib/staff_view.php?sid=119

Dr. Dhakal's core interests are on the energy use and emissions at urban context and related management strategies and policies- especially local climate policies and air pollution. His current involvements are with the research dealing with urban and regional carbon management, urban-wide integration of energy related policies in Asian mega and medium scale cities, emission mitigation strategies from urban transport, co-benefit of urban environmental management and climate change, energy-environment system modeling and policy analyses, bio-energy in climate context, urban sustainability assessments and urban heat island mitigation strategies.

Dr. Dhakal is one of the two Executive Directors of the Global Carbon Project (GCP) stationed in Tsukuba International Office of GCP (see www.globalcarbonproject.org) and actively developing among others Urban and Regional Carbon Management Initiative (see www.gcp-urcm.org). He is a guest co-editor of a special issue of Journal of Environment and Pollution (Indersciences Publishers) titled “Transport and Environment in Developing Countries” (2007 Volume 30 No 1). He has been active in Global Change Research Community and policy community since last 8-9 years. He was also involved with and had provided technical support to a UN/ESCAP intercity cooperation program titled "Kitakyushu Initiative for a Clean Environment” for three years (2001-2004) which was endorsed by 4th Ministerial Conference on Environment and Development in September 2000 and by World Summit on Sustainable Development (WSSD)-Johannesburg as a “type I” activity in its implementation plan (see http://www.iges.or.jp/kitakyushu).

He worked closely with several international funding and research programs in the past, especially, International Human Dimensions Program on Global (http://www.ihdp.uni-bonn.de/), Global Change System for Analyses, Research and Training (http://www.start.org/), and Asia Pacific Network for Global Change Research (http://www.apn.gr.jp/) and Forum for Science and Technology for Sustainability (http://sustsci.harvard.edu/eds.htm).

Dr Dhakal worked as Project Manager and Senior Policy Researcher at Urban Environmental Management Project of the Institute for Global Environmental Strategies before joining Global

Carbon Project in April 2006, where he served since November 2000 and currently on leave. As a manager he managed a broad portfolio of urban environmental infrastructure covering urban energy, transportation, solid waste, urban water and urban wastewater management issues (see the publications).

Dr. Dhakal holds Ph.D. in Urban Environmental Management from The University of Tokyo Japan, Masters degree in Energy Economics and Planning from Asian Institute of Technology Bangkok, and undergraduate degree from India. He also studied at Massachusetts Institute of Technology and The University of Hong Kong. In the past, he had worked as research associate at Energy Program of Asian Institute of Technology and at national institutions in Nepal.

Summary of research related activities

- Developing "***Urban and regional carbon management initiative***" of Global Carbon Project (see www.gcp-urcm.org for details)

- ***Strategies for reducing GHG emissions from urban transportation in Asian mega and medium scale cities:*** Environmental perspectives of Sustainable Mobility issues, analyses of macro/micro driving factors and related policies, bottom-up modeling and scenario based analyses for future options and their implication analyses, policy analyses

- Urban transportation and emission interactions in Kathmandu Valley, Nepal: Strategies for integrating global carbon concerns into local air pollution (a book/report published in 2006 can be downloaded from http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=745)

- ***Creating better understanding of future scenarios for energy demand and greenhouse gas from Asian cities***: Policy integration of energy related issues in East Asian Mega-cities for mitigating Greenhouse Gas Emissions.
    - Download 2005 book-report "Urban Energy Use and Greenhouse Gas Emissions in Asian Mega-cities: Policies for Sustainable Future". Published by IGES, downloadable from http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=181.
    - Visit proceedings of three international conferences that were organized, January 2004 at IGES Headquarters at IGES Headquarters (http://www.iges.or.jp/kitakyushu/megacity_workshop/index.htm), February 2003 at East West Center Hawaii (http://www.iges.or.jp/en/ue/pdf/megacity03/HTML/index.html), and February 2002 at Kitakyushu Japan (http://www.iges.or.jp/en/ue/pdf/megacity02/index.html).

- ***Urban sustainability***: Sustainability assessment using indicators, methodological aspects for assessing sustainability

- ***Indirect GHG emissions of cities to clarify the role of cities in climate debate***: Input-Output table based material analyses in East Asian cities and their comparison with direct emissions

- ***Urban heat island research:*** Option identification for energy management and land use change strategies for mitigating urban heat island phenomenon in Asian cities

Representative publications

- Dhakal, Shobhakar and Michele Betsill (2007). Challenges of Urban and Regional Carbon Management and the scientific response, *Local Environment*, forthcoming.
- Dhakal, Shobhakar (2007). Understanding Climate Change and Cities and Making of a Climate Friendly Future, In Urban Energy Transition by Elsevier.
- Yedla, Sudhakar and Shobhakar Dhakal (2007). Editorial Introduction, Special Issue of *Journal of Environment and Pollution* titled Transport and Environment in Developing Countries, Volume 30, No. 1, Indersciences Publishers.
- Dhakal, shobhakar (2006). Urban Transportation and the Environment in Kathmandu Valley, Nepal: Integrating Global Carbon Concerns into Local Air Pollution Management. 2006, Hayama, Japan (Published by Institute for Global Environmental Strategies). Available for free download at http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=745).
- Dhakal, Shobhakar (2005). Strengthening urban environmental management in Asia, In "Sustainable Asia 2005 and Beyond – In pursuit of innovative policies", pp 97-107, Institute for Global Environmental Strategies, Hayama, Japan, 2005, ISBN 4-88788-017-0 (see http://www.iges.or.jp/en/news/topic/0601whitepaper.html)
- Dhakal, Shobhakar (2005). De-coupling of Urban Mobility Need from Environmental Degradation in Singapore. In "Urban Infrastructure - An Introduction", Edited by Y Chandra Sekhar, pp 198-226, The ICFAI University Press, Hyderabad, India. 2005, ISBN 81-7881-552-4 (see http://www.icfaipress.org/Books/urbannfrastructure_contents.asp).
- Dhakal, Shobhakar and Lee Schipper (2005). Transport and environment in Asian cities: Reshaping the issues and opportunities into a holistic framework, *International Review for Environmental Strategies*, Volume 5, Number 2, pp. 399-424.
- Dhakal, Shobhakar (2005). Comment inflechir les emissions de CO2 dans quatre megalopolis d'Asie, *LaRevueDurable*, Dossier Vivre Ensemble En Megalopole, Numero 14, Fevrier-Mars 2005, Bimestriel, France (In French)
- Dhakal, Shobhakar (2005). Energy consumption and GHG emission in Asian mega-cities. In "Urban Environmental Management Challenges in Asia", Institute for Global Environmental Strategies, Hayama, Japan. 2005 (Book is downloadable from http://www.iges.or.jp/en/ue/report3.html).
- Dhakal, S.; K. Hanaki and A. Hiramatsu (2004). Heat discharges by an office building in Tokyo using DOE-2. *Energy Conversion and Management.* Volume 45, Number 7-8, pp 1107-1118. Elsevier Science B.V.
- Dhakal, Shobhakar (2004). Urban Energy Use and Greenhouse Gas Emissions in Asian Mega-cities: Policies for a Sustainable Future, Published by Institute for Global Environmental strategies, Japan, 2004 December (Available for free download at http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=18).
- Dhakal, S. (2003). Implications of transportation policies on energy and environment in Kathmandu Valley, Nepal. *Energy Policy, Volume 31, Number 14, pp. 1493-1507.* Elsevier Sciences.
- Dhakal, S. and Imura, H. (2003). Policy based indicator Systems: emerging debates and lessons, *Local Environment, Volume 8, Number 1, pp 113-119.* Carfax Publising/Francis and Taylor
- Dhakal, S.; S. Kaneko and H. Imura (2003). CO2 emissions from energy use in east-Asian mega-cities: driving factors and their contributions, *Environmental Systems Research, Volume 31*, pp. 209-216. Japan Society of Civil Engineers.
- Dhakal S., S. Kaneko and H. Imura (2003). CO2 emissions from energy use in East Asian mega-cities: Driving factors, challenges and strategies. Proceedings of IGES/APN

International Workshop on Policy Integration towards Sustainable Energy Use for Cities in Asia, 4-5 February 2003, pp. 55- 73, East West Center, Honolulu, Hawaii

- Contributions to "Scoping Report on Urbanisation and Global Environmental Change", International Human Dimensions Program (IHDP), Bonn, February 2003, Germany. (Edited by Roberto Sanchez).
- Dhakal,S.; K. Hanaki and A. Hiramatsu (2003). Estimation of Heat Discharges by Residential Buildings in Tokyo. *Energy Conversion and Management, Volume 44, Number 9, pp.* 1487 – 1499. Elsevier Science B. V.
- Dhakal, S. and K. Hanaki (2002). Improvement of Urban Warming by Managing Heat Discharges and Surface Modifications in Tokyo*, Energy and Buildings, Volume 34, Number 1, pp 13-23.* Elsevier Science B.V.
- Dhakal, S.; S. Kaneko and H. Imura (2002). An analysis on driving factors for CO_2 emissions from energy use in Tokyo and Seoul by Factor Decomposition Method. *Environmental Systems Research, Volume 30, pp 295-303.* Japan Society of Civil Engineers (JSCE).
- Dhakal, S. and S. Kaneko (2002). Urban Energy Use in Asian Mega-Cities: Is Tokyo a desirable model? Proceedings of IGES/APN Mega-City Workshop on Policy Integration of Energy Related Issues in Asian Cities, 23-23 January, 2002, Riga Royal Hotel, Kitakyushu, Japan, pp 173-181
- Dhakal, S. and K. Hanaki (2002). Improvement of Urban Warming by Managing Heat Discharges and Surface Modifications in Tokyo*, Energy and Buildings, Volume 34, Number 1, pp 13-23.* Elsevier Science B.V.
- The Urban Heat Environment and Urban Sustainability. In "Future Cities: Dynamics and Sustainability", Edited by Fred Moavenzadeh, Keisuke Hanaki and Peter Baccini, pp 149-172, Kluwer Academic Publishers, 2002 (see http://www.amazon.com/Future-Cities-Sustainability-SUSTAINABILITY-Bookseries/dp/1402005415).
- Reviews of Existing Indicator Systems and their relevance to Kitakyushu Initiative (2001/2002). Report prepared for Ministry of Environment (MOE) Japan on behalf of Kitakyushu Initiative for a Clean Environment, June 2002 (as Principal Investigator).