

Curriculum Vitae

ZIA WADUD

Department of Civil Engineering, Bangladesh University of Engineering and Technology

Dhaka 1000, Bangladesh

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Education

Imperial College London, London

PhD in Civil Engineering (Transport and Environmental Policy), Feb 2008

Thesis title: Personal Tradable Carbon Permits for Road Transport: Heterogeneity of Demand Responses and Distributional Analysis

Supervisors: Prof. RB Noland and Dr. DJ Graham

Examiners: Prof. Stephen Glaister, CBE and Prof. Abigail Bristow

The University of Melbourne, Melbourne

Master of Development Technologies, Jun 2003. First class honours (85.6%)

Thesis title: Environmental Sustainability of the Road Transport Sector in Australia

Supervisors: Prof. H Watson, Prof. T Beer and Dr. L Aye

Bangladesh University of Engineering and Technology (BUET), Dhaka

MSc in Civil Engineering, Jul 2002. CGPA 3.83/4.00, first position

BSc in Civil Engineering, Sep 1999. CGPA 3.96/4.00, first position

Experience

Bangladesh University of Engineering and Technology, Dhaka

Assistant Professor, Department of Civil Engineering, Jan 2004 - date

Lecturer, Department of Civil Engineering, Nov 1999 - Jan 2004

Around 20 hours of lectures a week with full responsibility for lecture notes, setting exam papers, grading, curriculum development and administrative duties within the university

Consultant, Bureau of Research, Testing and Consultation, Sep 2000 – date

Massachusetts Institute of Technology, Cambridge (MA, USA)

Post Doctoral Associate, 'Comparing Environmental Externalities of Different Transport Modes', Department of Aeronautics and Astronautics, Apr 2008 – Oct 2008

University of Cambridge, Cambridge (UK)

Research Associate, 'Evaluating environmental externalities of aviation', Department of Architecture, Sep 2007- Mar 2008

Imperial College London, London

Research Assistant, Department of Civil and Environmental Engineering, 'Assessing oil demand restraint policies for road freight transport', for International Energy Agency, Feb - Apr 2006

Graduate Teaching Assistant, 2005-2006

The University of Melbourne, Melbourne

Research Assistant, Department of Civil and Environmental Engineering, 'Quantifying Transport Sustainability in Australia', UniMelb-CSIRO joint project, Dec 2002 - Jun 2003

Graduate Tutor, 2003

Academic and Professional Awards/Scholarships

The Commonwealth Scholarship, Imperial College London, UK, 2004-2007

The Netherlands Fellowship Program, UNESCO-IHE Institute for Water Education, Netherlands, 2004

Norwegian Agency for Development (NORAD) Fellowship, Centre for Environment and Development (SUM), University of Oslo, Norway, 2003

First prize for poster presentation, National Clean Air Conference, Australia, 2003

Asian Development Bank-Japan Scholarship Program, University of Melbourne, Australia, 2002-2003

MA Hossain Gold Medal, BUET, Bangladesh, 2001 (for securing first position among 200 graduating students in the Dept. of Civil Engg, awarded by the university)

CESA Academic Brilliance Award, BUET, Bangladesh, 2000 (for securing first position among the 200 graduating students in the Dept. of Civil Engg., awarded by the Civil Engg. Stud. Assoc.)

Dean's Awards, BUET, Bangladesh, 1995-1999 (for remaining within the top 5% students every year, awarded by the university)

University Merit Scholarships, BUET, Bangladesh, 1995-1999 (awarded by the university)

FR Khan Scholarship, BUET, Bangladesh, 1998 (for securing first position in 3rd year, awarded by the university)

Other Awards/Scholarships

Our Common Futures Fellow, Volkswagen Foundation, Germany, 2010

INSPIRE travel grant for research and academic collaboration, UK, 2010

Better Air Quality Conference, Sponsored speaker, Bangkok, 2008

International Association for Energy Economics Conference Grant, 2007

Royal Academy of Engineering (UK) Conference Travel Grant, 2007 and 2006

Global Emission Inventory Activity- Atmospheric Composition Change, The European Network (GEIA-ACCENT) conference grant, GEIA Open Conference, Paris, 2006

Commonwealth Conference Grant, 2006

Massachusetts Institute of Technology Professional Institute half scholarship, Course on Individual Choice Behaviour, Boston, 2006

Future Urban Transport travel grant, Gothenburg, 2006

Asia Pacific Network for Global Change Research (APN)-CAPABLE Scholarship, International Human Dimensions Programme on Global Environmental Change, University of Bonn, Germany, 2005

SARCS (Southeast Asia Regional Committee for START) Scholarship, National Central University, Taiwan, 2004

CESA Special Achievement Award, BUET, Bangladesh, 2000 (in recognition of services to the Civil Engg. Stud. Assoc.)

List of Publications

Journals

Transport, Energy and Environment

J1. Z Wadud and IA Waitz, 'Relative contribution of transportation modes to air quality related impacts in USA', *Transport Reviews* (under review)

J2. Z Wadud, 'CNG conversion of motor vehicles in Dhaka: Valuation of the air quality improvement benefits', *Air Quality, Atmosphere and Health* (under review)

J3. Z Wadud, 'Personal tradable carbon permits for road transport: Why, why not and who wins?' *Transportation Research Part A: Policy and Practice* (accepted)

- J4. Z Wadud, RB Noland and DJ Graham 2010, 'A Semiparametric Model of Household Gasoline Demand', *Energy Economics*, Vol. 32, No. 1, pp. 93-101
- J5. Z Wadud, DJ Graham and RB Noland 2010, 'Gasoline demand with heterogeneity in household responses', *The Energy Journal*, Vol. 31, No. 1, pp. 47-73
- J6. Z Wadud, DJ Graham and RB Noland 2009, 'Modeling fuel demand for different socio-economic groups', *Applied Energy*, Vol. 86, No. 12, pp. 2740-2749
- J7. DJ Graham, S Glaister, MA Quddus, and Z Wadud 2009, 'Testing for the distributional effects of national road user charging', *International Journal of Sustainable Transportation*, Vol. 3, No. 1, pp. 18-38
- J8. RB Noland and Z Wadud 2009, 'Review of oil demand restraint policies for heavy goods vehicles', *Energy Sources, Part B: Economics, Planning, and Policy*, Vol. 4, No. 9, pp. 84-99
- J9. Z Wadud, DJ Graham and RB Noland 2009, 'A cointegration analysis of gasoline demand in the USA', *Applied Economics*, Vol. 41, No. 26, pp. 3327-3336
- J10. Z Wadud, RB Noland and DJ Graham 2008, 'Equity analysis of tradable carbon permit in personal road transport sector', *Environmental Science and Policy*, Vol. 11, No. 6, pp. 533-544
- J11. Z Wadud, L Aye, T Beer and HC Watson 2006, 'Modeling Australian road transport emissions till 2025', *Journal of Civil Engineering (IEB)*, Vol. 34, No. 2, pp. 115-127

Structural Engineering

- J12. Z Wadud and S Ahmad 2006, 'Design charts for helicoidal stair slabs with landing at mid span', *Journal of Structural Engineering, American Society of Civil Engineers (ASCE)*, Vol. 132, No. 2 (February), pp 312-320
- J13. Z Wadud and S Ahmad 2005, 'Simple design charts for helicoidal stair slabs with intermediate landings', *Journal of the Institution of Engineers (India)*, Vol. 85, No. CV 4, February, pp 269-275
- J14. S Ahmad, M Alauddin and Z Wadud 2003, 'A design rationale for circular silos based on finite element analysis', *Journal of Civil Engineering (IEB)*, Vol. CE 31, No. 1, pp. 83-103

Book/ Book Chapter

- B1. MH Rahman, ABM Badruzzaman, MJB Alam, MM Rahman, MA Ali, MA Noor and Z Wadud (eds), *Climate Change Impacts and Adaptation Strategies for Bangladesh*, International Training Network-BUET, Dhaka, 2009
- B2. Z Wadud, N Kunderivych, SH Arnoy and TTT Tran, 'Mitigating Carbon: Is Carbon Rationing an Option?' in *Contemporary Environmental Challenges*, M M Rahman, JB Alam, MA Ali, M Ali and K Vairavamoorthy (eds.), Centre for Environment and Resource Management, Dhaka, 2004

Reports

- R1. Z Wadud and A Greszler, *Road Transportation in 'Modal primer on greenhouse gases and energy issues for the transportation industry'*, prepared for the Transportation Research Board's Special Task Force on Climate Change and Energy, 2009
- R2. Z Wadud, 'A systematic review of literature on the valuation of local environmental externalities of aviation', OMEGA report, University of Cambridge, October 2008
- R3. Z Wadud, 'A comparison of environmental performance of different transport modes', PARTNER report, MIT, October 2008

Working papers

- W1. Meta-Regression of NDIs around Airports: Effect of Income/Wealth
- W2. Life cycle carbon emissions from a building in Dhaka: The role of burning bricks
- W3. CNG Conversion of Motor Vehicles in Dhaka: Climate Change and Health Benefits
- W4. Modeling energy demand in developing countries: Are we measuring demand at all?

Conferences

Peer Reviewed Conference Proceedings

Transport, Energy and Environment

- C1. CF Choudhury and Z Wadud, 'An Ex-Post Study of the Bus Franchise System in Dhaka' (accepted), World Conference on Transportation Research, 2010, Lisbon
- C2. Z Wadud, 'Depreciation of Property Prices around Airports: A Meta-Regression of Hedonic Price Studies', 88th Annual Meeting of the TRB, Jan 2009, Washington DC
- C3. Z Wadud, 'Personal tradable carbon permits for road transport: Why, why not and who wins?' 88th Annual Meeting of the TRB, Jan 2009, Washington DC
- C4. Z Wadud, DJ Graham and RB Noland, 'Gasoline demand with heterogeneity in household responses', 87th Annual Meeting of the Transportation Research Board (TRB), Washington DC, Jan 2008
- C5. JB Alam, Z Wadud, JB Alam and J Polak, 'Implication of transport policy on energy demand and economy in Bangladesh', 87th Annual Meeting of the TRB, Washington DC, Jan 2008
- C6. TG Reynolds, S Barrett, LM Dray, AD Evans, MO Köhler, MV Morales, A Schäfer, Z Wadud, R Britter, H Hallam and R Hunsley, 'Modelling environmental & economic impact of aviation: Introducing the Aviation Integrated Modelling project', 7th Aviation Technology, Integration and Operations Conference of American Institute of Aeronautics and Astronautics (AIAA), Belfast, Sep 2007
- C7. Z Wadud, DJ Graham and RB Noland, 'Heterogeneity in demand responses in modelling the distributional consequences of tradable carbon permits in the road transport sector', European Council for Energy Efficient Economy (ECEEE) Summer Study, Cote d'Azur, Jun 2007
- C8. Z Wadud, 'The distributional consequences of tradable carbon permits in the road transport sector: heterogeneity of demand responses', 39th Annual Universities' Transport Studies Group Conference, Leeds, Jan 2007
- C9. Z Wadud, DJ Graham and RB Noland, 'Modelling gasoline demand for different socio-economic groups', 86th Annual Meeting of the Transportation Research Board (TRB), Washington DC, Jan 2007
- C10. Z Wadud, DJ Graham and RB Noland, 'Equity implications of tradable carbon permits for the personal transport sector', 86th Annual Meeting of the TRB, Washington DC, Jan 2007
- C11. RB Noland and Z Wadud, 'Review of oil demand restraint policies for heavy goods vehicles', 86th Annual Meeting of the TRB, Washington DC, Jan 2007
- C12. Z Wadud, L Aye, T Beer, P Graham, D Olaru, M van der Schoot and HC Watson, 'Modelling Exhaust Emissions from the Australian Road Transport Sector up to 2025', National Clean Air Conference: Linking Air Pollution Science, Policy and Management, 23-27 Nov 2003, Newcastle, Australia (*won first prize for best poster presentation*)

Structural Engineering

- C13. Z Wadud and S Ahmad, 'Deflection Behaviour of Helicoidal Stair Slab and Its Effect on Design', 8th East Asia-Pacific Conference on Structural Engineering & Construction, 5-7 Dec 2001, Singapore
- C14. Z Wadud and S Ahmad, 'ACI Method of Concrete Mix Design: A Parametric Study', 8th East Asia-Pacific Conference on Structural Engineering & Construction, 5-7 Dec 2001, Singapore
- C15. F Atique and Z Wadud, 'A Comparison of BNBC-93 with other Building Codes with respect to Earthquake and Wind Analysis', 8th East Asia-Pacific Conference on Structural Engineering & Construction, 5-7 Dec 2001, Singapore

- C16. S Ahmad, M Alauddin and Z Wadud, 'Finite Element Analysis of Circular Silos under Wind Load', 1st International Conference and Annual Paper Meet on Civil Engineering, 2-3 Nov 2001, Chittagong, Bangladesh
- C17. Z Wadud, AFMS Amin and S Ahmad, 'Void in Coarse Aggregates: An Aspect Overlooked in the ACI Method of Concrete Mix Design', 1st International Structural Engineering and Construction Conference, 24-26 Jan 2001, Honolulu
- C18. AFMS Amin, S Ahmad and Z Wadud, 'Effect of ACI Concrete Mix Design Parameters on Mix Proportion and Strength Attainment', Civil and Environmental Engineering Conference: New Frontiers & Challenges, 8-12 Nov 1999, AIT, Bangkok, Vol III, pp 97-106

Conference Posters (peer reviewed)

- P1. Z Wadud, 'Distributional Impact of a Carbon Rationing Policy in Road Transport', Future Urban Transport, Apr 2006, Gothenburg
- P2. Z Wadud, L Aye, T Beer, P Graham, D Olaru, M van der Schoot and HC Watson, 'Modelling Australian Road Transport Emissions till 2025', GEIA Open Conference, Nov-Dec, 2006, Paris

Other Conference Presentations (peer reviewed)

- O1. Z Wadud, 'Air Pollution Co-benefits from Petroleum to CNG Conversion in Motor Vehicles in Dhaka', Better Air Quality 2008, Nov 2008, Bangkok
- O2. SRH Barrett, TG Reynolds, M Vera-Morales, Z Wadud, RE Britter, R Tam and IA Waitz, 'Interdependencies in Local Air Quality and Noise Impacts for Landing and Takeoff Operations', 8th Aviation Technology, Integration and Operations Conference of American Institute of Aeronautics and Astronautics (AIAA), Sep 2008, Anchorage
- O3. Z Wadud and RB Noland, 'Equity Implications of Carbon Rationing in the Personal Road Transport Sector', 6th Open Meeting of the Human Dimensions of Global Environmental Change Research Community, Oct 2005, Bonn

Conference Session Organization

- SC1. Co-organised a session on 'Carbon Cycle, Greenhouse Gases' at the 6th Open Meeting of the Human Dimensions of Global Change Research Community, 2005, Bonn

Invited Talks

- T1. Symposium on Aviation Environmental Trade-offs and Interdependencies in the framework of 'Aviation in the XXI century', National Aviation University (Kiev), Oct 2008
- T2. Department of Civil Engineering, University of Queensland, Sept 2008
- T3. John Muir Institute of the Environment, University of California at Davis, Sept 2008
- T4. OMEGA Workshop on Aviation Sustainability, Cranfield University, Jun 2008
- T5. X3 Noise- UK National Focal Point Meeting, Manchester Metropolitan University, Apr 2008
- T6. Oxford University Centre for the Environment, University of Oxford, Feb 2008
- T7. Department of Civil Engineering, Trinity College Dublin, Apr 2007
- T8. Future Directions of Dhaka's Urban Transport, joint workshop by BUET and JICA, 2009

Current Research Projects

- CR1. Developing a policy analysis tool for air quality management in Dhaka city (2 masters students)
- CR2. Forecasting Sector-wise Energy demand in Bangladesh (3 undergraduate students)
- CR3. Structural change in gasoline demand in the USA: A revisit
- CR4. Economic benefits due to regional transport networks through Bangladesh (1 PhD student)

- CR5. Local air pollution and climate benefits resulting from the CNG conversion of vehicles in Dhaka (CASR funded project, funding for one RA)
- CR6. Modeling air pollution benefits resulting from recycling concrete (1 undergraduate student)
- CR7. Fire safety in buildings in Bangladesh (2 undergraduate students)

Consulting Projects

1. Feasibility study of Khan Jahan Ali airport
2. Socio-technical evaluation and potential for submersible roads in the wetlands
3. Top supervision of construction of telecommunication towers
4. Traffic count surveys in Dhaka
5. Cox's bazaar Teknaf Marine drive project reconnaissance survey

Reviewing Responsibilities

1. Transportation Research Part A: Policy and Practice
2. The Energy Journal
3. Transport Policy
4. Annual Meetings of the TRB, Washington DC
5. European Council for Energy Efficient Economy (ECEEE) Summer Study
6. World Conference on Transportation Research
7. East-Asia Society for Transportation Studies

Workshops and Advanced Trainings

- PRECIS-Regional Climate Model (Hadley Centre) training workshop, 2010, Dhaka
- BAQ Pre-events workshop, Sim-AIR Air Quality Modelling, Nov 2008, Bangkok, Thailand
- OMEGA Workshop on Economic Costs and Benefits of Aviation, 10 Oct 2008, University of Cambridge
- 'University of Cambridge/MIT/PARTNER: 2nd Workshop on Aviation and the Environment', 28-30 Jul 2008, University of Cambridge. Presented final findings on Environmental Costs of Aviation
- 'Transforming Transportation', 13-18 Jan 2008, World Bank, World Resources Institute, EMBARQ, Washington DC, USA
- 'University of Cambridge/MIT/PARTNER Aviation and the Environment Research Workshop', 8-10 Jan 2008, Massachusetts Institute of Technology. Presented paper on 'Environmental Costs of Aviation: A Systematic Analysis of the Literature'
- 'Human Dimensions of Global Environmental Change Postgraduate Workshop', 29-30 Mar 2007, University of Leeds. Presented paper on 'Equity implications of tradable carbon permits for the personal transport sector'
- 'Consumer Expenditure Survey microdata users' workshop', 17-18 Jul 2006, Bureau of Labour Statistics, Washington DC
- 'Individual Choice Behaviour: Theory and Application of Discrete Choice Analysis', 19-23 Jun, 2006, Massachusetts Institute of Technology
- 'The Economics of Global Environmental Change', 6-8 Oct, 2005, IHDP, Bonn
- 'Climate Change: Science, Impacts & Responses', Imperial College London, Tyndall Centre for Climate Change, Environment Change Institute, Oxford University, The Carbon Trust, 11-15 Apr, 2005, Imperial College London
- 'Advanced Training Workshop on Regional GHG Measurement and Modelling', 20 Nov-2 Dec, 2004, Southeast Asia Regional Committee of START (SARCS), National Central University (Taiwan)

'Environmental Planning', 9-26 Mar, 2004, UNESCO-IHE, Delft
International Summer School on 'Energy Planning and Sustainable Development', 28 Jun- 8 Aug, 2003,
University of Oslo
'Planning, Management and Control of Construction Projects: Techniques and Tools' conducted in joint
collaboration of BUET, Bangladesh and Florida International University, USA, 27-28 Mar, 2001,
BUET, Dhaka

Computing skills

Programming: Fortran, C, AMPL, GAMS, Matlab
Econometrics/Statistics: STATA, SAS, SPSS, LIMDEP, WinGIVE, MiniTAB, BIOGEME, R
Engineering: VISSIM, ArcGIS, AutoCAD, STAAD, MSProject

Professional Affiliations

Member, Asiatic Society, Bangladesh
Member, Institution of Engineers, Bangladesh
Member, European Association of Environmental and Resource Economists
Student Member, International Association for Energy Economics
Student Affiliate Member, Transportation Research Board, USA

Professional Activities of National Importance

Member, Seminar Committee, Institution of Engineers, Bangladesh-Dhaka Centre; responsible for
organising seminars on nationally important issues, often graced by the Ministers of the
Government of Bangladesh as the Chief Guest
Sat on various Government level meetings on air pollution and transportation
Member, Liaison Committee, Climate Change Study Cell (CCSC), BUET; actively involved in setting up
CCSC, which aims to be national focal point on climate change related research and education

Extra Academic Activities

Subwarden, Piccadilly Court Hall, Imperial College London (responsible for maintaining discipline,
organizing events, providing pastoral care to 200 students in a residential hall)
PhD representative, Centre for Transport Studies, Imperial College London
Co-author of 'An unofficial guide to being a successful PhD student at the Centre for Transport
Studies', Imperial College London
Graduate representative to the Department Library Committee, Imperial College London
President, IDTC Students Association, The University of Melbourne
Executive Member, Civil Engg. Students Association, BUET
Director, BUET Debating Club, BUET
Screening Secretary, BUET Film Society, BUET
Co-editor, Graduation Magazine, BUET

Travel

Australia, Austria, Belgium, Czech Republic, Denmark, Germany, Hong Kong, Hungary, India, Ireland,
Luxembourg, Malaysia, Nepal, Norway, Portugal, Singapore, Slovakia, Spain, Sweden, Switzerland,
Taiwan, Thailand, The Netherlands, The United Kingdom, The United States, Ukraine