Economics of Climate Change

A Brief Bibliographical Survey

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Preface

The bibliographical survey on 'Economics of Climate Change' *is divided into five broad sections: (a) Economics of climate change; (b) Impacts and vulnerability of climate sensitive sectors to global climate change; (c) Adaptation to present day climate extremes and future climate change; (d) Mitigation of green house gas emissions and clean development mechanism; and (e) Climate change negotiations and developing country position. In each section peer reviewed journal articles concerning the economic analysis are presented in alphabetical order. The selection of articles is based on the following criteria: (a) relevance for South Asian countries; (b) methodological innovativeness; and (c) policy relevant discussion. The articles not published in peer reviewed journals are included only to a minimal extent. Due to the inter-disciplinary nature of the subject matter, some journals such as,* 'Climatic Change', 'Global Environmental Change'*, have also been included in the source list.*

Besides the journal articles, a comprehensive list of important books on climate change related issues have also been included in this report. Similarly some important web site addresses have been added at the end for ready reference.

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Table of Contents

Abbreviation

CDM → Clean Development Mechanism

CGE → Computerable General Equilibrium

CO_2 → Carbon Dioxide

CH_4 → Methane

CER → Certified Emission Reductions

COP → Conference of Parties

CPR → Common Property Resource

DICE → Dynamic Integrated Model of Climate and the Economy

FUND → Climate Framework for Uncertainty, Negotiation and Distribution

GDP → Gross Domestic Product

GHG → Greenhouse Gas

GNP → Gross National Product

IAMs → Integrated Assessment Models

I-O → Input-Output

IPCC → Intergovernmental Panel on Climate Change

OECD → Organisation for Economic Co-operation and Development

OPEC → Organisation for Petroleum Exporting Countries

R&D → Research and Development

RETs →Renewable Energy Technologies

RICE → Regional Integrated Model of Climate and the Economy

SRES → Special Report on Emission Scenario

UNFCCC → United Nation Framework Convention on Climate Change

VRIP → Vulnerability-Resilience Indicator Prototype

Economics of Climate Change

Azar, Christian; and Sterner, Thomas, "Discounting and Distributional Considerations in the Context of Global Warming" *Ecological Economics*, 1996, 19, pp: 169-184.

Content: This paper reviews the economics of global warming with special emphasis on how the cost depends on the discount rate and how cost in poor and rich regions are aggregated into the estimation of the global cost. In addition, it analyses the sensitivity of the marginal cost with respect to several parameters.

Cameron, Trudy Ann, "Updating Subjective Risks in the Presence of Conflicting Information: An Application to Climate Change" *Journal of Risk and Uncertainty,* January 2005, 30 (1), pp: 63-97.

Content: Willingness to support public programs for risk management often depends on individual subjective risk perceptions in the face of uncertain science. This paper explores individual updated subjective risks as a function of individual priors, the nature of external information, and individual attributes. It examines several rival hypotheses about how subjective risks change in the face of new information (Bayesian updating, alarmist learning, and ambiguity aversion).

Chakravorty, Ujjayant; Roumasset, James; and Tse, Kinping, "Endogenous Substitution among Energy Resources and Global Warming" *The Journal of Political Economy*, December 1997, 105 (6), pp: 1201-1234.

Content: This paper models the consequences on global warming of energy use in a way that it is consistent with Hotelling's theory of exhaustible resources. Current data on extraction costs and the global reserves of the major exhaustible resources are used to develop marginal extraction cost functions for each resource. Costs of converting each resource into end use and corresponding efficiency rates are obtained from engineering data. And the price and extraction paths of the exhaustible resources are endogenously determined. The paper analyses the extraction of fossil fuel and global warming under alternative regimes of technological change and carbon taxes.

Chichilnisky, Graciela; and Heal, Geoffrey, "Global Environmental Risks" *The Journal of Economic Perspectives*, Autumn1993, 7(4), pp: 65-86.

Content: This article discusses the risks in the context of climate change and its remedial measures such as mitigation and insurance. Four key issues are incorporated in the analysis: the difficulty in assessing risks; endogenity of risk; the correlation of risks; and the irreversibility.

Cline, William R., "Scientific Basis for the Greenhouse Effect" *The Economic Journal*, July 1991, 101 (407), pp: 904-919.

Content: This article discusses the scientific basis of the enhanced greenhouse effect and analyses the characteristics of the GHGs. The paper highlights the regional impacts of global warming based on IPCC literature and sketches some policy implications.

Dalton, Michael G., "The Welfare bias from Omitting Climatic Variability in Economic Studies of Global Warming" *Journal of Environmental Economics and Management,* July 1997, 33 (3), pp: 221-239.

Content: This article analyses the welfare effects of the climatic variability caused by global warming in a stochastic economic growth model and shows that they may be significant.

d'Arge, Ralph C.; Schulze, William D.; and Brookshire, David S., "Carbon Dioxide and Inter-generational Choice" *The American Economic Review*, Papers and Proceedings of the Ninety-Fourth Annual Meeting of the American Economic Association, May 1982, 72 (2), pp: 251-256.

Content: This article highlights the inter-generational issues in the climate change literature. It critically analyses the temporal effects of CO_2 from ethical perspective.

Dietz, Simon; Hope, Chris; and Patmore, Nicola, "Some Economics of Dangerous Climate Change: Reflections on the Stern Review" *Global Environmental Change*, 2007, 17, pp: 311-325.

Content: This article reviews the assumptions of Stern Review – especially regarding the risk and uncertainty, integrated assessment modeling, and welfare valuation.

Dowlatabadi, Hadi, "Integrated Assessment Models of Climate Change: An Incomplete Overview" *Energy Policy*, 1995, 23 (4/5), pp: 289-296.

Content: This paper provides an overview of the integrated assessment with special focus on policy motivated integrated assessments of the climate change. The paper also discusses the taxonomy of the policy motivated models.

Fearnside, Philip M., "Time Preference in Global Warming Calculations: A Proposal for a Unified Index" *Ecological Economics*, 2002, 41, pp: 21-31.

Content: The calculation of the impacts of greenhouse gas emission; and the costs and benefits of the possible response options to mitigate are highly sensitive to the time preference used in the computations. This paper proposes an alternative unified index that assigns explicit weights to the interest of different generations.

Goulder, Lawrence H.; and Mathai, Koshy, "Optimal CO_2 Abatement in the Presence of Induced Technological Change" *Journal of Environmental Economics and Management,* January 2000, 39 (1), pp: 1-38.

Content: This paper explores the significance of policy induced technological change for the design of carbon abatement policies and derives analytical expressions characterising optimal CO_2 abatement and carbon tax profiles under different specifications for the channels through which technological progress occurs.

Greiner, Alfred, "Anthropogenic Climate Change and Abatement in a Multi-Region World with Endogenous Growth" *Ecological Economics*, November 2005, 55 (2), pp: 224-234.

Content: This paper studies the effects of global warming in a descriptive model of endogenous growth with multiple regions and assumes that deviations from the global surface temperature negatively affect aggregate output and the marginal product of capital. It derives optimal abatement ratios in the non-cooperative world and for the cooperative case assuming that the growth rate is an endogenous variable.

Greiner, Alfred, "Anthropogenic Climate Change in a Descriptive Growth Model" *Environment and Development Economics*, October 2004, 9 (5), pp: 645-662.

Content: These papers study the effects of global warming with a descriptive model of endogenous growth assuming that deviations from the global surface temperature have negative implications for the aggregate output.

Guo, Jiehan; Hepburn, Cameron J.; Tol, Richard S.J.; and Anthoff, David, "Discounting and the Social Cost of Carbon: a Closer Look at Uncertainty" *Environmental science & Policy*, 2006, 9, pp: 205 – 216.

Content: This paper examines the impact of the different discount rate frameworks on the estimation of the social cost of carbon, a critical element in the cost-benefit analysis of the climate change. The study uses FUND model for the analysis.

Howarth, Richard B., "Discounting and Uncertainty in Climate Change Policy Analysis" *Land Economics*, August 2003, 79 (3), pp: 369-381.

Content: Economic studies on the climate change commonly discount the future at a rate equal to the long-run return on corporate stocks. Drawing on the theory of investment behavior under uncertainty, this paper argues that the benefits of climate stabilisation policies should be discounted at a rate equal to the annual return on risk-free financial assets, which attains an empirical value between 0 and 2.6%.

Jr., Roger Pielke, "Mistreatment of the Economic Impacts of Extreme Events in the Stern Review Report on the Economics of Climate Change" *Global Environmental Change,* 2007, 17, pp: 302-310.

Content: This paper provides a critique of the Stern's Review with focus on the common errors in the impact assessment, the future costs of extreme weather events, and importance of the adaptation.

Karp, Larry; and Zhang, Jiangfeng, "Regulation with Anticipated Learning about Environmental Damages" *Journal of Environmental Economics and Management*, May 2006, 51 (3), pp: 259-279.

Content: In a model with linear-quadratic abatement costs and environmental damages, and a general learning process, this article analytically shows that anticipated learning decreases the optimal level of abatement under a given set of information.

Keller, Klaus; Bolker, Benjamin M.; and Bradford, David F., "Uncertain Climate Thresholds and Optimal Economic Growth" *Journal of Environmental Economics and Management,* July 2004, 48 (1), pp: 723-741.

Content: This article explores the combined effects of the climate threshold (a potential ocean thermohaline circulation collapse), parameter uncertainty, and learning in an optimal economic growth model.

Kelly, David L.; and Kolstad, Charles D., "Malthus and Climate Change: Betting on a Stable Population" *Journal of Environmental Economics and Management*, March 2001, 41 (2), pp: 135-161.

Content: This article discusses issues related to the growth of population and productivity in the context of greenhouse gas emissions.

Kokoski, Mary F.; and Smith, V. Kerry, "A General Equilibrium Analysis of Partial-Equilibrium Welfare Measures: The Case of Climate Change" *The American Economic Review*, June 1987, 77 (3), pp: 331-341.

Content: This paper uses CGE model to demonstrate that partial-equilibrium welfare measures can offer reasonable approximations of the true welfare changes for the large exogenous changes such as those associated with climate change.

Kolstad, Charles D., "Learning and Stock Effects in Environmental Regulation: The Case of Greenhouse gas Emissions" *Journal of Environmental Economics and Management,* July 1996, 31 (1), pp: 1-18.

Content: This paper discusses the optimal regulation of GHGs with focus on the uncertainty and learning. Using an empirical stochastic model of climate-economy interactions the article highlights the tension between postponing control until more is known *vs.* acting now before irreversible climate change takes place.

Lempert, Robert J.; Sanstad, Alan H.; and Schlesinger, Michael E., "Multiple Equilibria in a Stochastic Implementation if DICE with Abrupt Climate Change" *Energy Economics*, 2006, 28, pp: 677-689.

Content: Incorporating climate dynamics into IAMs can result in model non-convexity and multiple equilibria, and thus complicate policy analysis relative to models with

unique, globally optimal policies. This article generates 'level sets' of solutions, which help identify multiple equilibria resulting from the potential abrupt cessation of the North Atlantic Thermohaline Circulation, and discusses the implications of this model geometry for formulating GHG abatement policy under uncertainty.

Lind, Robert C, "Intergenerational Equity, Discounting, and the Role of Cost-Benefit Analysis in Evaluating Global Climate Policy" *Energy Policy,* 1995, 23 (4/5), pp: 379-389.

Content: This paper sketches the welfare foundation of the cost-benefit analysis, and analyses the role of cost-benefit analysis in the climate policy debate, particularly with reference to inter-generational effects.

Maddison, David, "A Cost-Benefit Analysis of Slowing Climate Change" *Energy Policy*, 1995, 23 (4-5), pp: 337-346.

Content: This paper attempts to condense a mass of information relating to economic growth assumptions, carbon emission forecasts, abatement cost estimates, and global warming damage functions into the cost-benefit analysis of slowing the climate change.

Manne, Alan S., "The Rate of Time Preference: Implications for the Greenhouse Debate" Energy Policy, 1995, 23 (4/5), pp: 391-394.

Content: This paper contributes towards choice of discount rate in the climate change policy debate arguing for a clear distinction between prescriptive and descriptive reasoning.

Manne, Alan S.; and Stephan, Gunter, "Global Climate Change and the Equity-Efficiency Puzzle" *Energy*, 2005, 30, pp: 2525-2536.

Content: There is a notion that the costs of the abatement of the global climate change can be reduced efficiently through the assignment of quota rights and through the international trade in these rights. However, there is no idea on whether the initial assignment of emissions permits can affect the Pareto-optimal global level of abatement. This paper provides some insights into the equity-efficiency puzzle using MERGE model for analysis.

McKibbin, Warwick J.; Shackleton, Robert; and Wilcoxen, Peter J., "What to Expect from an International System of Tradable Permits for Carbon Emissions" *Resource and Energy Economics*, 1999, 21, pp: 319-346.

Content: This paper uses an econometrically estimated multi-region, multi-sector general equilibrium model of the world economy to examine the effects of using a system of internationally tradable emissions permits to control world CO_2 emissions.

Morgenstern, Richard D., "Towards a Comprehensive Approach to Global Climate Change Mitigation" *The American Economic Review*, Papers and Proceedings of the Hundred and Third Annual Meeting of the American Economic Association, May, 1991, 81 (2), pp: 140-145.

Content: This classic article published in the early period of the economic research on the climate change, provides a comprehensive approach considering all components of the climate change causal cycle.

Nordhaus, William D., "A Review of the Stern Review on the Economics of Climate Change" *Journal of Economic Literature*, September 2007, XLV, pp: 686–702.

Content: How much and how fast should we react to the threat of global warming? The Stern Review argues that the damages from climate change are large, and that nations should undertake sharp and immediate remedial measures to the reduction of the greenhouse gas emissions. In an examination of the Stern Review's radical revision of the policy prescription towards climate change, this article shows that the findings depend decisively on the assumption of a near-zero time discount rate combined with a specific utility function.

Nordhaus, William D., "Critical Assumptions in the Stern Review on Climate Change" *Science*, 2007, 317.

Nordhaus, William D., "Optimal Greenhouse-Gas Reductions and Tax Policy in the "DICE" Model" *The American Economic Review*, Papers and Proceedings of the Hundred and Fifth Annual Meeting of the American Economic Association, May 1993, 83 (2), pp: 313-317.

Content: This paper invents a new model that extends the earlier studies by integrating the economic costs and benefits of greenhouse gas reductions with a simple dynamic representation of the scientific links of emissions, concentrations, and the climate change. It also sketches the DICE model, presents the major results, and inquiries into alternative approaches to recycling carbon-tax revenue.

Nordhaus, William D., "Reflections on the Economics of Climate Change" *The Journal of Economic Perspectives*, autumn 1993, 7 (4), pp: 11-25.

Nordhaus, William D., "Rolling the DICE: An Optimal Transition Path for Controlling Greenhouse Gases" *Resource and Energy Economics,* March 1993, 15 (1), pp: 27-50.

Nordhaus, William D., "A Sketch of the Economics of the Greenhouse Effect" *The American Economic Review,* May 1991, 81(2), Papers and Proceedings of the Hundred and Third Annual Meeting of the American Economic Association, pp: 146-150.

Nordhaus, William D., "To Slow or Not to Slow: The Economics of The Greenhouse Effect" *The Economic Journal*, July 1991, 101(407), pp: 920-937.

Content: In these classic articles Prof. Nordhaus provides basic operating framework for economic analysis of climate change.

Nordhaus, William D., "How Fast Should We Graze the Global Commons?" *The American Economic Review, Papers and Proceedings of the Ninety-Fourth Annual Meeting of the American Economic Association*, May 1982, 72(2), pp: 242-246.

Content: This paper explores the question: how fast the global economy should allow a buildup of atmospheric CO_2. It reviews the scientific knowledge on the notion of the climate change and also sketches the optimal growth framework with some numerical examples.

Nordhaus, William D.; and Yang, Zili, "A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies" *The American Economic Review,* September 1996, 86 (4), pp: 741-765.

Content: Departing from the single region analysis, this model explores the climate policy in a multi-region modeling framework. It analyses different national strategies in climate change policy – pure market solution, efficient cooperative outcomes, and non-cooperative equilibria.

Parry, Ian W. H., "Some Estimates of the Insurance Value against Climate Change from Reducing Greenhouse Gas Emissions" *Resource and Energy Economics,* March 1993, 15 (1), pp: 99-115.

Content: The estimation of the value of reduced risk from marginal reductions in current greenhouse gas emissions are presented in this paper using Nordhaus's results and predictions from the scientific models.

Pizer, William A., "The Optimal Choice of Climate Change Policy in the Presence of Uncertainty" *Resource and Energy Economics*, August 1999, 21 (3-4), pp: 255-287.

Content: This paper presents a framework for determining optimal climate change policy under uncertainty and compares the resulting prescriptions to those derived from a more typical analysis with best-guess parameter values.

Popp, David, "ENTICE: Endogenous Technological Change in the DICE Model of Global Warming" *Journal of Environmental Economics and Management*, July 2004, 48 (1), pp: 742-768.

Content: Most of the economic models of environmental policy treat technology as exogenous despite there is a growing empirical evidence of the link between environmental policy and innovation. This paper modifies the DICE model of climate change (Nordhaus, 1994, 2000) to allow for induced innovation in the energy sector.

Schelling, Thomas C., "Some Economics of Global Warming" *The American Economic Review,* March 1992, 82 (1), pp: 1-14.

Content: This classic article provides insights on inter-regional disparities in the context of climate change.

Schmalensee, Richard, "Symposium on Global Climate Change" *The Journal of Economic Perspectives*, Autumn, 1993, 7(4), pp: 3-10.

Content: This classic article outlines economic issues associated with climate change with focus on impacts, mitigation and adaptation costs, and policy options.

Smith, V. Kerry, "CO_2, Climate, and Statistical Inference: A Note on Asking the Right Questions" *Journal of Environmental Economics and Management,* December 1981, 8 (4), pp: 391-394.

Content: This paper argues that the delay required for resolution of uncertainty in the technical information for policy making depends on how the relevant policy issues are posed. The relationship between CO_2 and global mean temperature is used to illustrate the argument in terms of the testing of the hypotheses.

Spash, Clive L., "The Economics of Climate Change Impacts a la Stern: Novel and Nuanced or Rhetorically Restricted?" *Ecological Economics*, 2007, 63, pp: 706-713.

Content: This article critically comments on the Stern's review in the background of the strong uncertainty, plural values, non-utilitarian ethics, rights, distributional inequity, poverty, and treatment of future generations. It also critically comments on the uses of cost-benefit analysis and zero discount rate.

Tol, Richard S. J., "Equitable Cost-benefit Analysis of Climate Change Policies" *Ecological Economics,* January 2001, 36 (1), pp: 71-85.

Content: This paper argues that welfare maximizing greenhouse gas emission reduction strategies have been paid little attention to equity. The paper introduces three ways to consider efficiency and equity simultaneously, such as Kant and Rawls 'maximizing net present welfare'; Varian's 'no-envy'; and non-linear aggregations of welfare in a cooperative setting.

Van der Zwaan, B. C. C.; Gerlagh, R.; Klassen, G.; and Schrattenholzer, L., "Endogenous Technological Change in Climate Change Modeling" *Energy Economics*, January 2002, 24 (1), pp: 1-19.

Content: This article investigates the effects of endogenous technological change on optimal CO_2 abatement and carbon tax levels using a macroeconomic model of climate change.

Weitzman, Martin L., "A Review of the Stern Review on the Economics of Climate Change" *Journal of Economic Literature*, September 2007, XLV, pp: 703–724.

Content: The Stern Review called for immediate decisive action to stabilize the greenhouse gases arguing that the benefits of strong, early action on climate change outweigh the costs. This review article provides a summary of the economic analysis underlying this influential policy document.

Impacts and Vulnerability of Climate Sensitive Sectors to Global Climate Change

Adams, Richard M., "Global Climate Change and Agriculture: An Economic Perspective" *American Journal of Agricultural Economics*, Proceedings Issue, December 1989, 71 (5), pp: 1272-1279.

Content: This article discusses the impacts of climate change on the agriculture sector, especially in U.S.A. The paper provides an overview of contemporary economic thinking; and an assessment of whether economic adjustments are likely to soften or offset the negative effects.

Adger, W. N., "Social Vulnerability to Climate Change and Extreme in Coastal Vietnam" *World Development*, February 1999, 27 (2), pp: 249-269.

Content: This article outlines a framework of the social vulnerability on the basis of the impacts of climate change and climate extremes in the coastal Vietnam.

Adger, W. Neil, "Vulnerability" *Global Environmental Change*, 2006, 16, pp: 268–281.

Content: This article reviews the existing literature on the analytical approaches to vulnerability to the global environmental change in order to propose synergies between research on vulnerability and on resilience of social-ecological systems.

Adger, W. Neil; and Kelly, P. Mick, "Social Vulnerability to Climate Change and the Architecture of Entitlements" *Mitigation and Adaptation Strategies for Global Change*, 1999, 4, pp: 253–266.

Content: The objective of this paper is to outline a conceptual model of vulnerability to climate change. It defines vulnerability in the dimension of the ability to cope and put social and economic well-being of society at the centre of the analysis.

Adve, N., "Implications of Climate Panel Report" *Economic and Political Weekly*, 2007, XLII (12), pp: 1001-1003.

Content: This article provides an overview of IPCC Fourth Assessment Report and highlights the implications of climate change for Indian economy. The article further highlights the indifferent approach adopted by the Indian government in climate change negotiations.

Alam, Mozaharal; and Rabbani, MD Golam, "Vulnerability and Responses to Climate Change for Dhaka" *Environment and Urbanization,* April 2007, 19 (1), pp: 81-98.

Content: This article discusses the vulnerability of Dhaka, Bangladesh to climate change by focusing on coastal flooding (due to sea level rise) and other (non-climatic) stresses such as population pressure, enhanced consumption etc. The article also analyses the

measures taken by the government of Bangladesh to improve the resilience capacity as well as to reduce the emissions of GHGs in the capital region.

Ali, A.; and Chowdhury, J.U., "Tropical Cyclone Risk Assessment with Special Reference to Bangladesh" *Mausam*, 1997, 48, pp: 305-22.

Content: This article analyses the trends in cyclonic storms hitting the Bangladesh coast and attempts to link the same with climate change.

Ali, Anwar, "Climate Change Impacts and Adaptation Assessment in Bangladesh" *Climate Research,* 1999, 12, pp: 109-116.

Content: This article provides an overview of the likely impacts of climate change in Bangladesh.

Antle, John M., "Climate Change and Agriculture in Developing Countries" *American Journal of Agricultural Economics*, August 1995, 77 (3), pp: 741-746.

Content: This paper focuses on the impacts of climate change on agriculture in the developing countries, especially focusing on tropical agriculture. The paper attempts to predict evolution of agricultural technologies in the 21st Century.

Bhattacharya, Sumana; Sharma, C.; Dhiman, R. C.; and Mitra, A. P., "Climate Change and Malaria in India" *Current Science*, February 2006, 90 (3), pp: 369-375.

Content: This paper focuses on the likely influence of the climate change on vector production and malaria transmission in India. The paper argues that the extent of vulnerability due to malaria depends on the prevailing socio-economic conditions and the development path followed.

Biermann, Frank, "Big Science, Small Impacts in the South? The Influence of Global Environmental Assessments on Expert Communities in India" *Global Environmental Change,* 2001, 11, pp: 297–309.

Content: This paper discusses the responses of the India's expert community to the global environmental assessments and how could more effective assessments be designed.

Bosello, Francesco; Roson, Roberto; and Tol, Richard S.J., "Economy-wide Estimates of the Implications of Climate Change: Human Health" *Ecological Economics*, 2006, 58, pp: 579-591.

Content: This paper studies the economic impacts of climate-change-induced change in human health. The health impacts are translated into changes in labour productivity and demand for health care, and used to shock the GTAP-E CGE model, calibrated for the year 2050.

Brenkert, A. L. and Malone, E. L., "Modeling Vulnerability and Resilience to Climate Change: A Case Study of India and Indian states" *Climatic Change*, 2005, 72 (1), pp: 57-102.

Content: This article discusses the vulnerability to climate change in India as well as Indian states using the VRIP method.

Brooks, Nick; Adger, W. Neil; and Kelly, P. Mick, "The Determinants of Vulnerability and Adaptive Capacity at the National Level and the Implications for Adaptation" *Global Environmental Change*, 2005, 15, pp: 151–163.

Content: This paper presents a set of indicators of vulnerability and the capacity to adapt to climate variability and climate change. The analysis is based on a conceptual framework in which risk is viewed in terms of the outcome and is a function of the climate hazards and the socially constructed vulnerability.

Brouwer, Roy; Aftab, Sonia; and Brander, Luke, "Socio-Economic Vulnerability and Adaptation to Environmental Risk: A Case Study of Climate Change and Flooding in Bangladesh" *PREM Working Paper No. 01*, 2006, PREM, Amsterdam, Netherlands.

Content: This paper investigates the complex relationship between environmental risk, poverty, and vulnerability in a case study carried out in one of the poorest and highly flood prone nation in the world, Bangladesh, focusing on household and community vulnerability and adaptive coping mechanisms.

Burton, Ian; Haq, Saleemul; Lim, Bo; Pilifosova, Olga; and Schipper, Emma Lisa, "From Impacts Assessment to Adaptation Priorities: The Shaping of Adaptation Policy" *Climate Policy*, September 2002, 2 (2-3), pp: 145-159.

Content: The main objective of this paper is to demonstrate how the national adaptation studies carried under the UNFCCC are broadening the paradigm, from the impacts/mitigation to vulnerability/adaptation.

Calzadilla, Alvaro; Pauli, Francesco; and Roson, Roberto, "Climate Change and Extreme Events: An Assessment of Economic Implications" *International Journal of Ecological Economics and Statistics,* Winter 2007, 7, pp: 5-28.

Content: This article uses a general equilibrium model of the world economy, and a regional economic growth model to assess the economic implications of vulnerability from extreme meteorological events- induced by the climate change

Cutter, S. L., "Vulnerability to Environmental Hazards" *Progress in Human Geography*, 1996, 20, pp: 529-539.
Content: This article critically reviews the existing literature on the vulnerability to the environmental hazards. And it proposes new insights into the vulnerability framework based on pre-existing condition; tempered response; and hazard of place.

Dasgupta, Susmita; Laplante, Benoit; Meisner, Craig; Wheeler, David; and Yan, Jinping, "The Impacts of Sea Level Rise on Developing Countries: A Comparative Analysis" *Policy Research Working Paper 4136*, 2007, World Bank, Washington, D.C.

Content: This article assesses the consequences of sea level rise caused by climate change for 84 developing countries.

Deschenes, O.; and Greenstone, M., "The Economic Impacts of Climate Change: Evidence from Agricultural Output and Random Fluctuations in Weather" *American Economic Review*, March 2007, 97 (1), pp: 354-385.

Content: This paper measures the economic impacts of the climate change in US agricultural land by estimating the effects of random year-to-year variation in temperature and precipitation on agricultural profits. The results are shown to be reliable compared to the estimates based on production function and hedonic approaches.

Dessai, Suraje; Adger, W. Neil; Hulme, Mike; Turnpenny, John; Kohler, Jonathan; and Warren, Rachel, "Defining and Experiencing Dangerous Climate Change" *Climatic Change*, 2004, 64, pp: 11-25.

Content: This article discusses the understanding of the research communities about the notion of dangerous climate change.

Eriksen, S. H.; and Kelly, P. M., "Developing Credible Vulnerability Indicators for Climate Adaptation Policy Assessment" *Mitigation and Adaptation Strategies for Global Change,* 2007, 12, pp: 495-524.

Content: This paper addresses the issue of how to develop credible indicators of vulnerability to the climate change that can be used to guide the development of the adaptation policies.

Fankhauser, Samuel, "The Economic Costs of Global Warming Damage: A Survey" *Global Environmental Change*, 1994, 4 (4), pp: 301-309.

Content: This paper provides an overview on the existing literature on the economic assessment of expected global warming damage. The paper argues that while a relatively large body of literature exists on the costs of carbon abatement, the question of greenhouse damage valuation has received little attention so far.

Fankhauser, Samuel; and Tol, Richard S J, "Climate Change Costs: Recent Advancements in the Economic Assessment" *Energy Policy*, 1996, 24 (7), pp: 665-673.

Content: This article provides an overview of the advances in the economic assessment of the impacts of the climate change. The paper argues that while previous studies focuses

on aggregated monetised damages of the climate change, the recent trend is to emphasize adaptation, variability, extremes events, and other non-climate change stress factors.

Fankhauser, Samuel; Tol, Richard S. J.; and Pearce, David W., "Extensions and Alternatives to Climate Change Impact Valuation: On the Critique of IPCC Working Group III's Impact Estimates" *Environment and Development Economics*, February 1998, 3 (1), pp: 59-81.

Content: This paper discusses the valuation issues in the context of the climate change impact estimation. Issues addressed include aggregation of damage costs over diverse regions (particularly equity-weighting), differentiation of per-unit values, and willingness to pay versus willingness to accept compensation as a basis for valuation

Few, Roger, "Flooding, Vulnerability and Coping Strategies: Local Responses to a Global Threat" *Progress in Development Studies*, 2003, 3, pp: 43-58.

Content: This paper reviews recent theoretical and applied research on vulnerability and adaptive capacity of households and communities in flood prone areas.

Fischer, G.; Frohberg, K.; Parry, M.L.; and Rosenzweig, C., "Climate Change and World Food Supply, Demand and Trade: Who Benefits, Who Loses?" *Global Environmental Change*, 1994, 4 (1), pp: 7-23.

Content: This paper summarises the findings of the major interdisciplinary research effort by scientists in 25 countries. Combining crop-model results with a dynamic recursive national-level model of the world food system, the study assesses the socio-economic impacts for the period 1990-2060.

Fussel, Hans-Martin, "Vulnerability: A Generally Applicable Conceptual Framework for Climate Change Research" *Global Environmental Change*, 2007, 17, pp. 155–167.
Content: This paper presents a generally applicable conceptual framework of vulnerability that combines a nomenclature of vulnerable situations and a terminology of vulnerability concepts from four groups of vulnerability research: risk-hazard, socio-economic, pressure and release model, and resilience approach.

Fussel, Hans-Martin; and Klein, Richard J. T., "Climate Change Vulnerability Assessments: An Evolution of Conceptual Thinking" *Climatic Change,* 2006, 75, pp: 301–329.

Content: This paper reviews the historical development of the conceptual ideas underpinning assessment of vulnerability to climate change and distinguishes it in four parts such as impact assessment, first and second generation vulnerability assessment, and adaptation policy assessment.

Fussel, Hans-Martin, "Adaptation Planning for Climate Change: Concepts, Assessment Approaches, and Key Lessons" *Sustainable Science*, 2007, 2, pp: 265-275.

Content: This paper summarises current thinking about planned adaptation and provides detailed discussion on key adaptation concepts; diversity of adaptation contexts; and key prerequisites for effective adaptation.

Gallup, John Luke; and Sachs, Jeffrey D., "Agriculture, Climate, and Technology: Why Are the Tropics Falling behind?" *American Journal of Agricultural Economics,* August 2000, 82 (3), pp: 731-737.

Content: Arguing that tropical regions are presently plagued by poverty, this article highlights the additional stress that climate change is likely to impose on the tropical agricultural systems.

Hallegatte, Stephane; Hourcade, Jean-Carles; and Dumas, Patrice, "Why Economic Dynamics matter in Assessing Climate Change Damage: Illustration on Extreme Events" *Ecological Economics*, 2007, 62, pp: 330-340.

Content: This article discusses the issues concerning to economic dynamics in assessing the damages of the climate change, especially while considering the influence of extreme events.

Halsnaes, Kirsten; and Verhagen, Jan, "Development Based Climate Change Adaptation and Mitigation: Conceptual Issues and Lessons Learned in Studies in Developing Countries" *Mitigation and Adaptation Strategies for Global Change*, 2007, 12, pp: 665-684.

Content: This paper discusses the conceptual basis for linking development policies and climate change adaptation and mitigation; and suggests an analytical approach that can be applied to study in developing countries perspective. And this study includes work from India, China, South Africa, Brazil, Bangladesh, and Senegal.

Hamilton, Jacqueline M.; Maddison, David J.; and Tol, Richard S.J., "Climate Change and International Tourism: A Simulation Study" *Global Environmental Change*, 2005, 15, pp: 253–266.

Content: This article uses a simulation model of international tourism to assess influence of changes in population, per capita income and climate change on tourist arrivals and departures in over 207 countries.

Hitz, Samuel; and Smith, Joel, "Estimating Global Impacts from Climate Change" *Global Environmental Change,* 2004, 14, pp: 201–218.

Content: This article attempts to estimate the general shape of the damage curve – as a function of global mean temperature – for several climate sensitive sectors.

Ionescu, C.; Klein, R. J. T.; Hinkel, J.; Kavi Kumar, K. S.; and Klein, R., "Towards a Formal Framework of Vulnerability to Climate Change" *NeWater Working Paper 1,* 2005, Potsdam Institute for Climate Impact Research, Potsdam, Germany.

Content: This paper attempts to provide a conceptual framework of the vulnerability to climate change. The paper argues for avoiding misinterpretation and misunderstanding the vulnerability analysis should specify three primitives: the entity that is vulnerable, the exogenous stress to which the entity is vulnerable, and the preference criteria on the outcome of concern.

Janssen, Marco A; Schoon, Michael L.; Ke, Weimao; and Borner, Katy, "Scholarly Networks on Resilience, Vulnerability and Adaptation within the Human Dimensions of Global Environmental Change" *Global Environmental Change*, 2006, 16, pp: 240-252.

Content: This paper provides an overview of vulnerability notion as emerged from various knowledge domains of the research activities on human dimensions of the global environmental change.

Kaufmann, Robert K., "The Impact of Climate Change on US Agriculture: A Response to Mendelssohn et al. (1994)" *Ecological Economics*, 1998, 26, pp: 113-119.

Content: This article provides a critique of the Mendelssohn et al. (1994) classic article on the impacts of climate change on US agriculture.

Kavi Kumar, K. S., "Climate Change Studies in Indian Agriculture" *Economic and Political Weekly,* November, 2007, 42 (45), pp: 13-18.

Content: This article provides an overview of the available evidence on climate change and Indian agriculture, covering impact, vulnerability and adaptation assessments.

Kavi Kumar, K.S.; and Tholkappian, S., "Relative Vulnerability of Indian Coastal Districts to Sea Level Rise and Climate Extremes", *International Review for Environmental Strategies*, 2006, 6 (1).

Content: Using the IPCC definition of vulnerability, this article provides a quantitative estimate of the relative vulnerability of Indian coastal districts to sea level rise and cyclonic storms.

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Kavi Kumar, K.S.; and Parikh, Jyoti, "Socio-economic Impacts of Climate Change on Indian Agriculture" *International Review for Environmental Strategies*, 2001, 2 (2), pp: 277-293.

Content: This study uses an integrated modeling framework to assess the socio-economic impacts of climate change on Indian agriculture. The crop yield changes under various climate change scenarios are incorporated into an applied general equilibrium model of Indian economy to assess the welfare effects.

Kavi Kumar, K.S.; and Parikh, Jyoti; "Indian Agriculture and Climate Sensitivity" *Global Environmental Change*, 2001, 11, pp: 147–154.

Content: This study estimates the relationship between farm level net-revenue and climate variables in India using district level data. The study also explores the influence of annual weather and crop prices on the climate response function

Kelly, David L.; Kolstad, Charles D.; and Mitchell, Glenn T., "Adjustment Costs from Environmental Change" *Journal of Environmental Economics and Management,* November 2005, 50 (3), pp: 468-495.

Content: This paper estimates a restricted profit function for agricultural land in a five-state region of the Midwest US as a function of prices, land characteristics, actual weather realizations and expected weather.

Kelly, P. M.; and Adger, W. N., "Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation" *Climatic Change*, 2000, 47, pp: 325–352.

Content: This paper discusses approaches for assessing vulnerability to climate variability and change; and attempts to clarify the relationship between the concepts of vulnerability and adaptation.

Kokoski, Mary F.; and Smith, V. Kerry, "A General Equilibrium Analysis of Partial-Equilibrium Welfare Measures: The Case of Climate Change" The *American Economic Review*, June 1987, 77 (3), pp: 331-341.

Content: This paper uses computable general equilibrium models to demonstrate that partial-equilibrium welfare measures can offer reasonable approximations of the true welfare changes for large exogenous changes.

Leach, Andrew J., "The Climate Change Learning Curve" *Journal of Economic Dynamic and Control,* 2007, 31, pp: 1728-1752.

Content: The objective of this paper is to confront economic models of the climate change with the reality wherein limited information exists to form expectations about the evolution of the climate.

Luers, Amy L.; Lobell, David B.; Sklar, Leonard S.; Addams, C. Lee; and Matson, Pamela A., "A Methods for Quantifying Vulnerability, Applied to the Agricultural System of the Yaqui Valley, Mexico" *Global Environmental Change,* 2003, 13, pp: 255-267.

Luers, A. L., "The surface of Vulnerability: An Analytical Framework for Examining Environmental Change" *Global Environmental Change*, 2005, 15, pp: 214-223.

Content: These papers introduce a framework for evaluating the vulnerability of people and places to environment and social forces. Borrowing inputs from vulnerability to poverty literature, this paper presents a case study of agriculture in the Yaqui Valley, Mexico.

Maddison, David, "The Amenity Value of the Climate: The Household Production Function Approach" *Resource and Energy Economics*, May 2003, 25 (2), pp: 155-175.

Content: This paper questions the applicability of hedonic approach for impact assessment in the climate change context, and proposes use of alternative methods. Adopting the household production function approach this paper undertakes a systematic examination of the role played by climate in determining consumption patters in over 88 countries.

Maddison, David; and Bigano, Andrea, "The Amenity value of the Italian climate" *Journal of Environmental Economics and Management*, March 2003, 45 (2), pp: 319-332.

Content: The hedonics literature suggests that locations with more favourable characteristics should display compensating wage and house price differentials. Specifying climate in terms of January and July averages, estimates of the marginal willingness to pay for small changes in climate variables are derived with the help of Italian data.

Mall, R. K.; Singh, Ranjeet; Gupta, Akhilesh; Srinivasan, G.; and Rathore, L. S., "Impact of Climate Change on Indian Agriculture: A review" *Climatic Change*, 2006, 78, pp: 445-478.

Content: This paper provides a comprehensive review of available evidence on climate change impacts on Indian agriculture. Both physical and economic impact assessment studies are discussed.

Mendelsohn, R.; and Dinar, Ariel, "Climate Change, Agriculture, and Developing Countries: Does Adaptation Matter?" *The World Bank Research Observer*, August 1999, 14 (2), pp: 277-293.

Content: This article focuses on the impacts of climate change on the agriculture sector giving emphasis to the developing nations such as India and Brazil. The paper contrasts results from three broad approaches: agronomic models, agro-economic models, and Ricardian models.

Mendelsohn, R.; Dinar, Ariel; and Williams, L., "The Distributional Impacts of Climate Change on Rich and Poor Countries" *Environment and Development Economics*, 2006, 11, pp: 159-178.

Content: This paper examines the impacts of climate change on rich and poor countries across the world. Dividing the world nations into four groups the paper presents impacts of climate change in terms of two macro indices: impact per capita and impact per GDP.

Mendelsohn, Robert; Dinar, Ariel; and Sanghi, Apurva, "The Effect of Development on the Climate Sensitivity of Agriculture" *Environment and Development Economics*, February 2001, 6 (1), pp: 85-101.

Content: This paper examines the hypothesis, 'whether a country's stage of development affects its climate sensitivity'. The article uses the climate sensitivities of agriculture in the United States, Brazil, and India for the analysis.

Mendelsohn, Robert; Morrison, Wendy; Schlesinger, Michael E.; and Andronova, Natalia G., "Country-Specific Market Impacts of Climate Change" *Climatic change*, 2000, 45, pp: 553-569.

Content: This paper uses Global Impact Model to project country specific market impacts, especially on OECD and Non-OECD countries by the year 2060, giving the characteristics of the affected economic sectors and a response function for each sector.

Mendelsohn, Robert; Nordhaus, William D.; and Shaw, Daigee, "The Impact of Global Warming on Agriculture: A Ricardian Analysis" *The American Economic Review,* September 1994, 84 (4), pp: 753-771.

Mendelsohn, Robert; and Nordhaus, William D., "The Impact of Global Warming on Agriculture: Reply" *The American Economic Review*, December 1996, 86 (5), pp: 1312-1315.

Content: The 1994 paper proposed a new approach to assess climate change impacts. Using a variant of hedonic model, the study analysed the climate change impacts on US agriculture based on cross-sectional data.

Mills, Evan, "Synergisms between Climate Change Mitigation and Adaptation: An Insurance Perspective" *Mitigation and Adaptation Strategies for Global Change*, 2007, 12, pp: 809-842.

Content: This article reviews the implications of climate change for insurers and provides specific examples of insurance-relevant synergisms between adaptation and mitigation.

Mirza, M. Monirul Qader, "Global Warming and Changes in the Probability of Occurrence of Floods in Bangladesh and Implications" *Global Environmental Change*, 2002, 12, pp: 127–138.

Content: Arguing that the Ganges, Brahmaputra and Meghna (GBM) basin might experience more frequent and severe floods under climate change conditions, this paper

explores the implications of the same for agriculture, flood control and infrastructure in Bangladesh.

Mjelde, James W.; Thompson, Troy N.; and Nixon, Clair J., "Government Institutional effects on the Value of Seasonal Climate Forecasts" *American Journal of Agricultural Economics,* February 1996, 78 (1), pp: 175-188.

Content: This paper explores the implications of government intervention in the form of the federal tax law, crop insurance, disaster assistance, and the federal farm program on the value of seasonal climate forecasts for a dry land corn/sorghum producer.

Nelson, Deborah Imel, "Health Impact Assessment of Climate Change in Bangladesh" *Environmental Impact Assessment Review*, 2003, 23, pp: 323-341.

Content: This paper uses disability-adjusted life years to assess climate change induced health risks in Bangladesh.

Nelson, Donald R.; Adger, W Neil; and Brown, Katrina, "Adaptation to Environmental Change: Contribution of a Resilience Framework" *Annual Review of Environment and Resources*, 2007, 32, pp: 395-419.

Content: This paper provides a comprehensive review of adaptation notion developed in ecological sciences and explores its applicability in the climate change context.

Ng, Wei-Shiuen; and Mendelsohn, Robert, "The Impact of Sea Level Rise on Singapore" *Environment and Development Economics*, April 2005, 10 (2), pp: 201-215.

Content: Examining three sea level rise scenarios for the next century, this paper explores whether Singapore should defend their coast or allow it to be inundated.

Niggol Seo, Sung-No; Mendelsohn, Robert; and Munasinghe, Mohan, "Climate Change and Agriculture in Sri Lanka: A Ricardian Valuation" *Environment and Development Economics,* October 2005, 10 (5), pp: 581-596.

Content: This paper measures the climate change impacts on Sri Lankan agriculture sector using the Ricardian method. It examines the net revenue per hectare of the four most important crops in the country. The limited range of temperature variation allows only a simple test of temperature impacts, but the greater range of precipitation across the country distinguishes more complex precipitation effects.

O'Brien, Karen; Leichenko, Robin; Kelkar, Ulka; Venema, Henry; Aandahl, Guro; Tompkins, Heather; Javed, Akram; Bhadwal, Suruchi; Barg, Stephan; Nygaard, Lynn; and West, Jennifer, "Mapping Vulnerability to Multiple Stressors: Climate Change and Globalisation in India" *Global Environmental Change*, 2004, 14, pp: 303–313.

Content: This article uses indicator based approach to identify relative vulnerability of districts of India to global climate change and globalization. The study also reports case studies carried out in three villages to get a micro-level perspective.

Parry, M L; Carter, T R; and Hulme, M., "What is a Dangerous Climate Change?" *Global Environmental Change,* 1996, 6 (1), pp: 1-6.

Content: This paper defines what is implied by a 'dangerous' climate change in terms of (a) thresholds of weather or climate events and (b) critical levels of climate change. The paper also describes a method of identifying these thresholds and critical levels, and illustrates how these can assist the UNFCCC process.

Parry, Martin, "Scenarios for Climate Impacts and Adaptation Assessment" *Global Environmental Change,* 2002, 12, pp: 149-153.

Content: This paper provides information about the available climate change scenarios that researchers can use in impacts and adaptation studies.

Parry, Martin; Arnell, Nigel; McMichael, Tony; Nicholls, Robert; Martens, Pim; Kovats, Sari; Livermore, Matthew; Rosenzweig, Cynthia; Iglesias, Ana; and Fischer, Gunther, "Millions at Risk: Defining Critical Climate Change Threats and Targets" *Global Environmental Change*, 2001, 11, pp: 181–183.

Content: This article shows the figures people (world over) at risk due to the impacts of climate change and its potential threat in the future period of 2050 and 2080. The study also considered non-climate attributes such as population growth, development of technology, and income, while assessing the future climate change impacts.

Parry, Martin; Rosenzweig, Cynthia; Iglesias, Ana; Fischer, Gunther; and Livermore, Matthew, "Climate Change and World Food Security: A New Assessment" *Global Environmental Change*, 1999, 9, pp: S51-S67.

Content: This paper uses agronomic-economic approach to assess the impacts of climate change on food security in the world, with particular focus on Africa.

Perrings, Charles, "The Economics of Abrupt Climate Change" *Philosophical Transactions: Mathematical, Physical and Engineering Sciences*, September 2003, 361 (1810), pp: 2043-2059.

Content: This article describes abrupt climate change as a change of state that is sufficiently rapid and sufficiently widespread in its effects that economies are unprepared or incapable of adapting. Given that the implications of the change are fundamentally uncertain and potentially high, the paper argues in favor of mitigation over adaptation as appropriate response option.

Polsky, Colin; Neff, Rob; and Yarnal, Brent, "Building Comparable Global Change Vulnerability Assessments: The Vulnerability Scoping Diagram" *Global Environmental Change*, 2007, 17, pp: 472–485.

Content: This article attempts to develop a common conceptual framework that enables easy comparison between independent vulnerability assessments. The paper proposes vulnerability scoping diagram to facilitate the comparison of the assessments with dissimilar measures.

Quiggin, John; and Horowitz, John K., "The Impact of Global Warming on Agriculture: A Ricardian Analysis: Comment" *The American Economic Review*, September 1999, 89 (4), pp: 1044-1045.

Content: This article provides a critique of the Mendelssohn et al. (1994) classic article on the impacts of climate change on US agriculture.

Rehdanz, Katrin; and Maddison, David, "Climate and Happiness" *Ecological Economics*, 2005, 52, pp: 111-125.

Content: Climate is an important input to many human activities and it is to be expected that individuals will have a preference for the particular types of climate. Using cross-sectional data from over 67 countries, this paper attempts to establish relationship between self-reported levels of happiness and climate variables.

Reilly, J.; Paltsev, S.; Felzer, B.; Wang, X.; Kicklighter, D.; Melillo, J.; Prinn, R.; Sarofim, M.; Sokolov, A.; and Wang, C., "Global Economic Effects of Changes in Crops, Pasture, and Forests due to Changing Climate, Carbon Dioxide, and Ozone" *Energy Policy*, 2007, 35, pp: 5370-5383.

Content: This paper examines the combined effects of changes in climate, increase in carbon dioxide, and changes in tropospheric ozone on crop, pasture, and forest lands and the consequences for the global and regional economies.

Reilly, John, "What Does Climate Change Mean for Agriculture in Developing Countries? A Comment on Mendelsohn and Dinar" *The World Bank Research Observer,* August 1999, 14 (2), pp: 295-305.

Content: This article provides a critique of Mendelsohn and Dinar (1999) and argues that the reported impacts are too optimistic.

Reilly, John; and Hohmann, Neil, "Climate Change and Agriculture: The Role of International Trade" *The American Economic Review*, Papers and Proceedings of the Hundred and Fifth Annual Meeting of the American Economic Association, May 1993, 83 (2), pp: 306-312.

Content: This article specifically explores the influence of trade on climate change induced impacts, with focus on agriculture.

Reilly, John; Hohmann, Neil; and Kane, Sally, "Climate Change and Agricultural Trade: Who Benefits, Who Loses?" *Global Environmental Change*, 1994, 4 (1), pp: 24-36.

Content: This article balances the role of the agricultural trade and impacts of the changed climate on crop yields to calculate the net economic effects of the climate change.

Sathaye, Jayant; Shukla, P. R.; and Ravindranath, N. H., "Climate Change, Sustainable Development and India: Global and National Concerns" *Current Science*, February 2006, 90 (3), pp: 314-325.

Content: This paper argues that from the perspective of developing country like India, sustainable development agenda will be the prudent way to address the climate change concerns.

Sherbinin, Alex De; Schiller, Andrew; and Pulsipher, Alex, "The Vulnerability of Global Cities to Climate Hazards" *Environment and Urbanisation*, 2007, 19, pp: 39-64.

Content: This paper examines the vulnerability of three global coastal cities (Mumbai, Rio de Janeiro, and Shanghai) to the climate hazards. It highlights system characteristics that, in unique combinations, create place based vulnerabilities to climate hazards.

Sohngen, Brent; Mendelsohn, Robert; and Sedjo, Roger, "A Global Model of Climate Change Impacts on Timber Markets" *Journal of Agriculture and Resource Economics,* December 2001, 26 (2), pp: 326-343.

Content: This paper develops a dynamic model of ecological change and economic change to capture the impact of climate change on world timber markets.

Srivastava, Leena, "Climate Protection for Sustainable Development or Sustainable Development for Climate Protection? A Case Study from India" *Global Environmental Change*, 2006, 16, pp: 120–122.

Content: This article discusses the importance of sustainable development in the climate change debate and how the IPCC literature and COP are dealing with this

Tol, Richard S. J., "The Damage Costs of Climate Change Towards a Dynamic Representation" *Ecological Economics*, 1996, 19, pp: 67-90.

Content: This paper attempts to express impact as a function of both climate change and the socio-economic fluxes.

Tol, Richard S. J.; Ebi, Kristie L.; and Yohe, Gary, "Infectious Disease, development, and Climate Change: A Scenario Analysis" *Environment and Development Economics*, October 2007, 12 (5), pp: 687-706.

Content: It studies the effects of development and climate change on infectious diseases (Incidence of malaria) in Sub-Saharan Africa by using scenarios of three determinants, namely as per capita income, literacy, and absolute poverty.

Tol, Richard S.J., "Estimates of the Damage Costs of Climate Change Part I: Benchmark Estimates" *Environmental and Resource Economics,* 2002, 21, pp: 47–73.

Tol, Richard S.J., "Estimates of the Damage Costs of Climate Change: Part II Dynamic Estimates" *Environmental and Resource Economics*, 2002, 21, pp: 135–160.

Content: These articles analyse the damage costs associated with climate change on the agriculture, forestry, water resources, energy consumption, sea level rise, eco-systems, and fatal vector borne diseases, and fatal cardiovascular and respiratory disorders with respect to the nine world regions for the period 2000-2200.

Tol, Richard S.J.; Downing, Thomas E.; Kuik, Onno J.; and Smith, Joel B., "Distributional Aspects of Climate Change Impacts" *Global Environmental Change*, 2004, 14, pp: 259–272.

Content: This paper discusses the distribution of climate change impacts on different regions. The article also discusses the relative difference in vulnerability – due to differences in exposure and adaptive capacity – of different world regions.

Yohe, Gary; and Strzepek, Kenneth, "Adaptation and Mitigation as Complementary tools for Reducing the Risk of Climate Impacts" *Mitigation and Adaptation Strategies for Global Change*, 2007, 12, pp: 727-739.

Content: This paper uses the likelihood of flooding along Brahmaputra and Ganges Rivers in India to explore the hypothesis that adaptation and mitigation can be viewed as complements rather than substitutes.

Yohe, Gary; and Tol, Richard S.J., "Indicators for Social and Economic Coping Capacity-Moving Toward a Working Definition of Adaptive Capacity" *Global Environmental Change*, 2002, 12, pp: 25–40.

Content: This paper proposes a set of indicators that characterize systems coping capacity. The proposed method has the capacity to assess the potential contributions of various adaptation options to improving system's coping capacities.

Adaptation to Present Day Climate Extremes and Future Climate Change

Adger, W. Neil, "Institutional Adaptation to Environmental Risk under the Transition in Vietnam" *Annals of the Association of American Geographers*, December 2000, 90 (4), pp: 738-758.

Content: This paper develops a theoretical perspective on institutional adaptation to social vulnerability to environmental risks. It is evaluated in Nam Dinh Province in northern Vietnam, which is presently undergoing rapid economic and political transitions or fluxes.

Adger, W. Neil, "Social and Ecological Resilience: Are they Related?" *Progress in Human Geography,* 2000, 24 (3), pp: 347-364.

Content: This article defines the term 'social resilience' and shows a link between the social and the ecological resilience, particularly for the social groups or communities-dependent on ecological and environmental resources for their livelihoods. Further the study explores potential link between social and ecological resilience in the context of coastal community in Vietnam.

Adger, W. Neil, "Social Capital, Collective Action, and Adaptation to climate Change" *Economic Geography*, 2003, 79, pp: 387-404.

Content: This article reviews the emerging perspectives on collective action and social capital and argues that insights from these areas inform the nature of adaptive capacity and normative prescriptions of policies of adaptation. The study draws inference from communities coping with extremes in weather in coastal areas of Southeast Asia and community based coastal management in the Caribbean.

Adger, W. Neil; Huq, Saleemul; Brown, Katrina; Conway, Declan; and Hulme, Mike, "Adaptation to Climate Change in the Developing World" *Progress in Development Studies*, 2003, 3 (3), pp: 179–195.

Content: The objective of this article is to assess the current adaptive capacity of the society and how it will cope with the future risks of the climatic related events. The paper explores the nature of risk and vulnerability in the context of the climate change and reviews the evidence on present day adaptation in developing countries and on coordinated international action on future adaptation.

Agarwal, B., "Social Security and the Family in Rural India: Coping with Seasonality and Calamity" *Journal of Peasant Studies*, 1990, 17, pp: 341-412.

Content: This article analyses the coping capacity of the rural people, especially women, to the seasonal troughs in the agricultural production cycle; and the calamities such as drought and famine. And it discusses the effectiveness of the coping mechanisms they adopt; the intra-household sharing of the burden of coping; and the appropriate state and non-state interventions that would strengthen the survival mechanisms adopted by the families themselves.

Agrawala, Shardul; Ota, Tomoko; Ahmed, Uddin Ahsan; Smith, Joel; and Aalst, Maarten van, "*Development and Climate Change in Bangladesh: Focus on coastal flooding and the Sundarbans*" 2003, Environment Directorate and Development Co-operation Directorate, OECD, Paris.

Content: This report presents the integrated case study for Bangladesh with reference to the development and the climate change. The report focuses on three issues: first, recent climatic trends and climate change scenarios for Bangladesh are assessed and key

sectoral impacts are identified and ranked along multiple indicators to establish priorities for adaptation; second, donor portfolios in Bangladesh are analysed to examine the proportion of development assistance activities affected by climate risks; and third, an in-depth analysis is conducted for coastal zones, particularly the coastal mangroves in the Sundarbans, which have been identified as a particularly vulnerable areas to the impacts of the climate change.

Armitage, Derek, "Socio-Institutional Dynamics and the Political Ecology of Mangrove Forest Conservation in Central Sulawesi, Indonesia" *Global Environmental Change,* 2002, 12, pp: 203–217.

Content: Drawing on insights and concepts offered by political ecology and complex systems, processes of mangrove forest conversion and aquaculture development in the coastal zone of Banawa District, Central Sulawesi, are analyzed in this paper.

Bogardi, Janos J., "Hazards, Risks and Vulnerabilities in a Changing Environment: The Unexpected Onslaught on Human Security?" *Global Environmental Change*, 2004, 14, pp: 361–365.

Content: This paper illustrates the deterioration of human security and summarises policy relevant scientific challenges with increasing frequency and magnitude of the extreme events, which have brought hazards and risks into the focus of research interest. It summarizes a comprehensive view on the hazard—risk—vulnerability chain using flood as an illustrative example.

Campbell-Lendrum, Diarmid, "How much does the Health Community Care about Global Environmental Change?" *Global Environmental Change*, 2005, 15, pp: 296–298.

Content: This article discusses the problems of the health research in the context of global environmental change. It gives three principal explanations: lack of information on the links between global environmental conditions and health states; a methodological tradition that is designed to deal with direct, compartmentalised cause-effect relationships rather than systemic stresses; and a focus on preventing or treating individual diseases, with little input to decisions on their root causes.

Cannon, Terry, "Gender and Climate Hazards in Bangladesh" *Gender and Development*, July 2002, 10 (2), pp: 45-50.

Content: This article discusses the impacts of climate hazards in Bangladesh, especially focusing on the gender related issues. The extreme climate events will affect women more and bring additional stress for them.

Chatterjee, Kalipada; Chatterjee, Anish; and Das, Sarmistha, "Case Study 2: India Community Adaptation to Drought in Rajasthan" *IDS Bulletin,* October 2005, 36 (4), pp: 33-52.

Content: This article analyses vulnerability and the community adaptation to drought in Rajasthan, India.

Costanza, Robert; and Farley, Joshua, "Ecological Economics of Coastal Disasters: Introduction to the Special Issue" *Ecological Economics*, 2007, 63, pp: 249-253.

Content: This paper reviews ten papers that apply different frameworks in the analysis of the coastal disaster, seeking to understand their impacts and how to mitigate them, how to predict and plan for them, and how to use this information to redesign coastal areas in a more sustainable and desirable way.

Dang, Hanh H,; Michaelowa, Axel; and Tuan, Dao D., "Synergy of Adaptation and Mitigation Strategies in the Context of Sustainable Development: The case of Vietnam" *Climate Policy*, Special Supplement on Climate Change and Sustainable Development, November 2003, 3 (1), pp: S81-S96.

Content: This article explores possible contradictions and synergies between adaptation and mitigation strategies and the implications for developing countries and sustainable development targets. Following this, it uses the case study of Vietnam to demonstrate how to integrate both mitigation and adaptation strategies that can provide additional benefit to the social welfare of the society.

Dash, Biswanath, "Lessons from Orissa Super Cyclone: Need for Integrated Warning System" *Economic and Political Weekly*, October 2002, XXXVII (42), pp: 4270-4271.

Content: This paper explains the usefulness of the warning system based on lessons learned from Orissa super cyclone.

Del Ninno, Carlo; and Smith, Lisa C., "Public Policy, Markets and Household Coping Strategies in Bangladesh: Avoiding a Food Security Crisis Following the 1998 Floods" *World Development*, 2003, 31 (7), pp: 1221-1238.

Content: This article highlights the contribution of government policy interventions, including trade liberalisation in the early 1990s, to stabilise of rice markets during and after the 1998 flood, which affected about two-thirds of Bangladesh.

Dixit, Ajaya, "Floods and Vulnerability: Need to Rethink Flood Management" *Natural Hazards*, 2003, 28, pp: 155-179.

Content: This paper reviews the nature of flood disaster in the Himalaya-Ganga by focusing on plains of Nepal and argues that conventional approach has not been able to provide the security envisaged and also suggests that vulnerability of people in risk prone areas must be addressed by enhancing resilience capacity.

Faisal, I. M.; and Praveen, S., "Food Security in the Face of Climate Change, Population Growth and Resource Constraints: Implications for Bangladesh" *Environmental Management*, 2004, 34, pp: 487-498.

Content: Food security has been one of the major internal crises for the small country like Bangladesh in reference to the new challenge of climate change, in addition to the existing problems of increasing population growth, declining availability of cultivable land, and inadequate access to water in the dry season since its independence in 1971. In this backdrop, this paper has explored the nature and magnitude of these threats for the benchmark years of 2030 and 2050.

Fankhauser, Samuel; Smith, Joel B.; Tol, Richard S. J., "Weathering Climate Change: Some Simple Rules to guide Adaptation Decisions" *Ecological Economics*, 1999, 30, pp: 67-78.

Content: This paper discusses some of the elements that characterise an efficient strategy to adapt to a changing climate, which may bring severe climate extreme events.

Fernando, M T N; Zubair, L; Peiris, T S G; Ranasinghe, C S; and Ratnasiri, J, "Economic Value of Climate Variability Impacts on Coconut Production in Sri Lanka" *AIACC Working Paper No. 45*, March 2007, START, Washington DC.

Content: This paper assesses the economic value of climate variability, using time-series data of 31 years national annual coconut production from 1971 to 2001 in Sri Lanka.

Few, Roger, "Health and Climatic Hazards: Framing Social Research on Vulnerability, response and Adaptation" *Global Environmental Change*, 2007, 17, pp: 281–295.

Content: This article argues that there is a high correlation between health and climate hazards. It explores how vulnerability to health impacts varies within society and how actors make decisions and take action in relation to climate hazards and health.

Haddad, Brent M., "Ranking the Adaptive Capacity of Nations to Climate Change when Socio-political goals are Explicit" *Global Environmental change*, 2005, 15, pp: 165-176.

Content: This paper posits 11 possible national socio-political goals that fall into the three categories of teleological legitimacy, procedural legitimacy, and norm based decision rules to rank the adaptive capacity of the nations to the impacts of the climate change.

Haque, C. Emdad; and Burton, Ian, "Adaptation Options Strategies for Hazards and Vulnerability Mitigation: An International Perspective" *Mitigation and Adaptation Strategies for Global Change*, 2005, 10, pp: 335-353.

Content: The broad objective of this paper is to address some of the gaps in our knowledge and understanding of the policies, programs, and measures that might be applied to natural hazards and their impacts in an era of the climate change.

Kahn, Matthew E., "Two Measures of Progress in Adapting to Climate Change" *Global Environmental Change,* 2003, 13, pp: 307–312.

Content: The main objective of this article is to highlight the key role of the adaptation in determining the economic and the social costs of the climate change. It uses two data sets, deaths caused by natural disasters and skin cancer deaths in warmer and cooler US states, to test the hypothesis.

Lambert, L. Don, "The Role of Climate in the Economic Development of Nations" *Land Economics*, November 1971, 47 (4), pp: 339-344.

Content: This paper highlights a long recognised notion that tropical climate has detrimental effect on the economic development of the nations.

Lisa, Schipper; and Mark, Pelling, "Disaster Risk, Climate Change and International Development: Scope for, and Challenges to, Integration" *Disasters,* March 2006, 30 (1), pp: 19-38.

Content: This paper reviews the theoretical and policy linkages between disaster risk reduction, climate change and the development. It argues for an integrated approach as reduction of losses to the weather related disasters are important ingredients achieving Millennium Development Goals.

Luo, Haiping; Skees, Jerry R.; and Marchant, Mary A., "Weather Information and the Potential for Inter-temporal Adverse Selection in Crop Insurance" *Review of Agricultural Economics*, September 1994, 16 (3), pp: 441-451.

Content: This study investigates the potential usefulness of the early-season weather information to forecasting corn yields in the Midwest, USA.

Mirza, M. Monirul Qader, "Climate Change and Extreme Weather Events: Can Developing Countries Adapt?" *Climate Policy*, September 2003, 3 (3), pp: 233-248.

Content: This paper argues that vulnerability to extreme weather events, disaster management and adaptation must be part of long-term sustainable development planning in the developing countries. So, the investment needs to focus more on capacity building instead of just investing in recovery operations and infrastructure development procedure.

Mirza, M. Monirul Qader, "Global Warming and Changes in the Probability of Occurrence of Floods in Bangladesh and Implications" *Global Environmental Change*, July 2002, 12 (2), pp: 127-138.

Content: This article discusses the causal relationship between the global warming and the probability of the occurrence of floods in Bangladesh, especially in the Ganges,

Brahmaputra, and Meghna (GBM) rivers. It also sketches the implication of floods on the agriculture sector.

Mustafa, Daanish, "Reinforcing Vulnerability? Disaster Relief, Recovery, and Response to the 2001 Flood in Rawalpindi, Pakistan" *Environmental Hazards*, 2003, 5, pp: 71-82.

Content: This paper conducts a retrospective analysis of the relief and recovery efforts in the aftermath of the 2001 flood disaster in the Rawalpindi-Islamabad in Pakistan.

Paavola, Jouni; and Adger, W Neil, "Fair Adaptation to Climate Change" *Ecological Economics*, 2006, 56, pp: 594-609.

Content: This article identifies social justice dilemmas associated with the necessity to adapt to the climate change, examines how they are currently addressed by the climate change regime, and proposes solution to overcome the prevailing gaps and the ambiguities.

Pandey, Deep Narayan; Gupta, Anil K.; and Anderson, David M., "Rainwater Harvesting as an Adaptation to Climate Change" *Current Science*, July 2003, 85 (1), pp.46-59.

Content: This paper argues that in the context of climate extremes people may modify dwelling environments by adapting new strategies to optimize the utility of available water, such as harvesting rain rather than migrating to the new areas.

Salequzzaman, Md.; and Newman, Peter, "Integration Prospects of Tidal Energy as a Contribution to the Sustainable Development of Coastal Bangladesh" *International Review for Environmental Strategies*, Summer 2002, 3 (1).

Content: This paper examines the prospects of introducing tidal energy projects in the coastal areas of Bangladesh which are vulnerable to natural disasters. It assesses the potential to help improve the sustainability of the coastal areas through integration of resources into environmental rehabilitation, economic improvement, electricity generation, diversification of production, and other social gains to the communities.

Samal, Kishor C., "The 1999 Super Cyclone in Orissa: Coping Strategies of Women in Ersama Block" *Social Action,* January-March 2005, 55 (1), pp: 72-97.

Content: This article discusses the coping strategies adopted before, at that time, and after the super cyclone of 1999 in the coastal districts of Orissa, India with special emphasis to the women in Ersama block, Jagatsinghpur district.

Smit, B.; Burton, I.; Klein, R. J. T.; and Wandel, J., "An Anatomy of Adaptation to Climate Change and Variability" *Climatic Change*, 2000, 45, pp: 223-251.

Content: This article explains the meaning of the adaptation, and how it has been characterised as well as classified. It also reviews methods to evaluate adaptation options, particularly for the prescriptive analyses.

Smit, Barry; and Wandel, Johanna, "Adaptation, Adaptive Capacity and Vulnerability" *Global Environmental Change*, 2006, 16, pp: 282–292.

Content: This paper reviews the concept of adaptation of human communities to the global changes, especially the climate change. Drawing inputs from both impact studies and vulnerability literature, the article highlights the high importance given to adaptation.

Thomalla, Frank; and Schmuck, Hanna, "We All Knew that a Cyclone was Coming: Disaster Preparedness and the Cyclone of 1999 in Orissa, India" *Disasters*, 2004, 28 (4), pp: 373-387.

Content: This article discusses the adaptation options employed during the super cyclone of 1999 in Orissa, India. In addition, it examines why such a large loss of life occurred and looks at measures taken since then to initiate comprehensive disaster preparedness programmes.

Thomalla, Frank; Downing, Tom; Spanger-Siegfried, Erika; Han, Guoyi; and Rockstrom, Johan, "Reducing Hazard Vulnerability: Towards a Common Approach between Disaster Risk Reduction and Climate Adaptation" *Disasters*, March 2006, 30 (1), pp: 39-48.

Content: This article explores a common approach for disaster risk reduction and the climate adaptation drawing inference from four distinct and largely independent research and policy communities: disaster risk reduction, climate change adaptation, environmental management, and poverty reduction.

Tol, Richard S. J.; and Yohe, Gary W., "The Weakest link Hypothesis for Adaptive Capacity: An Empirical Test" *Global Environmental Change*, 2007, 17, pp: 218-227.

Content: This article again extends the discussion on 'weakest link' hypothesis proposed by the authors in their 2002 paper.

Tol, Richard S. J.; Frankhauser, Samuel; and Smith Joel B., "The Scope for Adaptation to Climate Change: What Can we learn from the Impact Literature?" *Global Environmental Change,* 1998, 8 (2), pp: 109-123.

Content: This paper discusses the extent to which the vast body of literature on climate change impacts can provide insights into the scope and likely cost of adaptation by grouping the available studies into four categories: no adaptation; arbitrary adaptation; observed adaptation; and modeled adaptation.

Yohe, Gary; and Tol, Richard S.J., "Indicators for Social and Economics Coping Capacity-Moving Toward a Working Definition of Adaptive Capacity" *Global Environmental Change,* 2002, 12, pp: 25–40.

Content: This paper offers a practically motivated method, which is designed to assess the potential contribution options to improving systems' coping capacities by focusing on the underlying determinants of the adaptive capacity. The proposed method is used to understand how adaptation could reduce vulnerability in the Netherlands to increased flooding along the Rhine River.

Mitigation of Greenhouse Gas Emissions and Clean Development Mechanism

Azar, C.; and Dowlatabadi, H., "A Review of Technical Change in Assessment of Climate Policy" *Annual Review Energy Economics*, 1999, 24, pp: 513-544.

Content: Most models treat technological innovation exogenously. Examples include models that use an externally specified autonomous energy efficiency improvement (AEEI). This review article finds little evidence to support a typical strategy of modelers, setting AEEI to a constant like 1% per year. The article suggests that modelers must do justice to the dynamics of technological innovation.

Babiker, Mustafa H.; Metcalf, Gilbert E.; and Reilly John, "Tax Distortions and Global Climate Policy" *Journal of Environmental Economics and Management,* September 2003, 46 (2), pp: 269-287.

Content: This paper presents a large scale computable general equilibrium model of the world economy with distortionary taxation, and uses the model to evaluate the efficiency of the number of policies to reduce carbon emissions.

Bastianoni, Simone; Pulselli, Federico Maria; and Tiezzi, Enzo, "The Problem of Assigning Responsibility for Greenhouse Gas Emissions" *Ecological Economics*, 2004, 49, pp: 253-257.

Content: This paper discusses different methods to assign the responsibility for GHG emissions, such as the geographical approach, the consumer responsibility approach, and the carbon emission added approach.

Berg, Elim; Kverndokk, Snorre; and Rosendahl, Knut Einar, "Oil Exploration under Climate Treaties" *Journal of Environmental Economics and Management*, November 2002, 44 (3), pp: 493-516.

Content: This paper focuses on how an international climate treaty will influence the exploration of oil in non-OPEC countries and presents a numerical inter-temporal global equilibrium model for the fossil fuel markets.

Boscolo, Marco; and Vincent, Jeffrey R., "Non-convexities in the Production of Timber, Biodiversity, and Carbon Sequestration" *Journal of Environmental Economics and Management,* September 2003, 46 (2), pp: 251-268.

Content: This article focuses on the importance of the production of timber in the light of biodiversity and carbon sequestration. The fixed logging costs and administrative constraints on logging regulations can create non-convexities in forestry production that includes timber and non-timber products.

Coondoo, Dipankor; and Dinda, Soumyananda, "Causality between Income and Emission: A Country Group-Specific Econometric Analysis" *Ecological Economics*, March 2002, 40 (3), pp: 351-367.

Content: This paper discusses income- CO_2 emission causality based on a Granger causality test using cross-country panel data.

Copeland, Brian R.; and Taylor, M. Scott, "Free Trade and Global Warming: A Trade Theory View of the Kyoto Protocol" *Journal of Environmental Economics and Management,* March 2005, 49 (2), pp: 205-234.

Content: This paper demonstrates how several important results in environmental economics are true under conditions of closed economies and are false or need serious amendments in a world with international trade in goods. It highlights the results in the context of Kyoto protocol.

Das, Samantak; Mukhopadhyay, Dripto; and Pohit, Sanjib, "Role of Economic Instruments in Mitigating Carbon Emissions: An Indian Perspective*"* *Economic and Political Weekly*, June 2007, 42 (24), pp: 2284-2291.

Content: This paper analyses the pattern of energy usage in India and its implications on the carbon emissions. It also examines the influence of pricing and taxation policies on carbon emissions.

Fouquet, Roger, "The Carbon Trading Game" *Climate Policy*, Special Supplement on Defining and Trading Emission Targets, December 2003, 3 (2), pp: S143-S155.

Content: This paper presents a simple game of the market for carbon dioxide tradable permits.

Godal, Odd; and Klaassen, Ger, "Carbon Trading Across Sources and Periods Constrained by the Marrakesh Accords" *Journal of Environmental Economics and Management,* May 2006, 51 (3), pp: 308-322.

Content: This paper examines the potential effects on permit prices and abatement costs of four compliance rules governing emissions trade across sources and periods in the Kyoto Protocol, such as the banking rule that allows excess permits to be used later; the restoration rate rule that penalises borrowing; the commitment period reserve rule that limits sales; and the suspension rule that restricts borrowing and sales

Gundimeda, H., "Can CPRs Generate Carbon Credits without Hurting the Poor?" *Economic and Political Weekly*, March 2005, 40 (10), pp: 973-980.

Content: This paper argues that using CPR lands for carbon credit generation without taking into consideration the needs of rural poor could result in conflicts and extreme hardship for the poor.

Gundimeda, Haripriya, "How 'Sustainable' is the 'Sustainable Development Objective' of CDM in Developing Countries like India?" *Forest Policy and Economics,* Economics of Sustainable Forest Management, June 2004, 6 (3-4), pp: 329-343.

Content: This paper examines the potential implications of the land use change and forestry projects to the rural livelihoods in India. For this purpose, it uses a linearised version of the almost ideal demand system to analyse data collected from a large number of rural households in India.

Gundimeda, Haripriya; and Guo, Yan, "Undertaking Emission Reduction Projects Prototype Carbon Fund and Clean Development Mechanism" *Economic and Political Weekly*, October 2003, 38 (41), pp: 4331-4337.

Content: This article studies the potential costs, risks and returns involved in small CDM projects and looks at the advantages of setting up the large projects.

Gupta, Vijaya, "Climate Change and Domestic Mitigation Efforts" *Economic and Political Weekly*, March 2005, 40 (10), pp: 981-987.

Content: This paper discusses future emissions scenarios in India while highlighting the extent of India's vulnerability to the impacts of the climate change, and critically analyses the initiatives undertaken at home to mitigate GHG emissions.

Heil, M.T.; and Selden, T. M., "Carbon Emissions and Economic Development: Future Trajectories Based on Historical Experience" *Environment and Development Economics*, 2001, 6 (1), pp: 63-83.

Content: This paper estimates the relationship between carbon emissions and GDP using data across countries and over time. It combines this relationship with plausible projections for GDP and population growth to construct a model that offers insights into the likely path of global emissions in the next century.

Howarth, Richard B., "The Present Value Criterion and Environmental Taxation: The Sub Optimality of First-Best Decision Rules" *Land Economics*, August 2005, 81 (3), pp: 321-336.

Content: This paper examines the links between environmental taxes and distortionary taxation in a dynamic model of the climate change and the economic growth. Under first-best conditions, labor and capital would remain un-taxed, and carbon dioxide emissions would be taxed at a rate equal to the present-value marginal cost they impose on future society, setting the discount rate equal to the marginal productivity of capital. Under second-best conditions, however, this decision rule substantially understates optimal emissions taxes when the resulting revenues are used to provide targeted cuts in distortionary taxes.

Jaeger, William K., "The Welfare Cost of a Global Carbon Tax: When Tax Revenue are Recycled" *Resource and Energy Economics*, May 1995, 17 (1), pp: 47-67.

Content: This paper assesses the welfare cost of a global carbon tax when tax revenues finance reductions in the existing revenue-raising taxes. It finds that by lowering the excess burden from existing taxes, a revenue-neutral carbon tax policy has a positive net welfare effect.

Kadekodi, Gopal K.; and Ravindranath, N.H., "Macro-Economic Analysis of Forestry Options of Carbon Sequestration in India" *Ecological Economics*, 1997, 23, pp: 201-223.

Content: This paper provides a detailed analysis of the forestry options in India to understand their implications on stock and flow of carbon, required investments, value of forest wealth, contribution to GNP and livelihood, demand management, employment, and foreign trade.

Kolstad, Charles D., "The Simple Analytics of Greenhouse Gas Emission Intensity Reduction Targets" *Energy Policy*, 2005, 33, pp: 2231-2236.

Content: In the backdrop of US withdrawal from Kyoto Protocol, this paper presents a simple model and shows that in order to stabilise greenhouse gas concentrations, the rate of decline in intensity must equal the rate of growth of GDP.

Lubowski, Ruben N.; Plantinga, Andrew J.; and Stavins, Robert N., "Land-use Change and Carbon Sinks: Econometric Estimation of the Carbon Sequestration Supply Function" *Journal of Environmental Economics and Management*, March 2006, 51 (2), pp: 135-152.

Content: This article discusses the causal relationship between land-use change and carbon sinks. It investigates the cost of forest based carbon sequestration by analysing micro-data on revealed landowner preferences, modeling six major private land uses in a comprehensive analysis of the contiguous US.

Murphy, James J.; and Stranlund, John K., "A Laboratory Investigation of Compliance Behavior under Tradable Emission Rights: Implications for Targeted Enforcement" *Journal of Environmental Economics and Management*, March 2007, 53 (2), pp: 196-212.

Content: This paper uses the laboratory experiments to test theoretical predictions concerning compliance behavior in competitive emissions trading programs.

Murthy, N. S.; Panda, Manoj; and Parikh, Jyoti, "Economic Development, Poverty Reduction and Carbon Emissions in India" *Energy Economics*, July 1997, 19 (3), pp: 327-354.

Content: This paper analyses CO_2 emissions from energy consumption using an I-O model, for different sectors of the Indian economy in 1990 and develops an alternative scenario for 2005.

Murthy, N. S.; Panda, Manoj; and Parikh, Jyoti, "Economic growth, energy demand and carbon dioxide emissions in India: 1990-2020" *Environment and Development Economics*, May 1997, 2 (2), pp: 173-193.

Content: This article investigates the linkages between economic growth, energy consumption and CO_2 emissions in India by analysing the structure of production and consumption in the Indian economy.

Newell, Richard G.; and Stavins, Robert N., "Climate Change and Forest Sinks: Factors Affecting the Costs of Carbon Sequestration" *Journal of Environmental Economics and Management,* November 2000, 40 (3), pp: 211-235.

Content: The sequestration of carbon dioxide through the growth of forest has received special attention due to the relatively inexpensive means of combating climate change. This paper examines the sensitivity of carbon sequestration costs to change in critical factors, including the nature of the management and the deforestation regimes, relative prices, and discount rates.

Newell, Richard G.; Jaffe, Adam B.; and Stavins, Robert N., "The Effects of Economic and Policy Incentives on Carbon Mitigation Technologies" *Energy Economics*, November 2006, 28 (5-6), pp: 563-578.

Content: The ability to estimate the likely effects of potential climate change policies on energy use and GHG emissions requires an improved understanding of the relationship between different policy alternatives and energy-saving and GHG-reducing changes in technology. This paper summarises several contributions to this literature and suggests the promising areas for continued research on empirical analysis and modeling of induced technological change.

Olsen, Karen Holm, "The Clean Development Mechanism's Contribution to Sustainable Development: A Review of the Literature" *Climatic Change*, 2007, 84, pp: 59-73.

Content: This article reviews the existing literature – of over two hundred studies – to assess the state of knowledge on how the CDM contributes to the sustainable development including poverty alleviation.

Padilla, Emilio; and Serrano, Alfredo, "Inequality in CO_2 Emissions across Countries and its Relationship with Income Inequality: A Distributive Approach" *Energy Policy*, 2006, 34, pp: 1762-1772.

Content: This paper analyses the inequality in the CO_2 emissions across the countries and the relationship of this inequality with the income inequality for the period 1971-1999 with incorporating a distributive approach.

Pandey, Deep Narayan, "Carbon Sequestration in Agro-Forestry Systems" *Climate Policy*, December 2002, 2 (4), pp: 367-377.

Content: This article discusses the importance of the agro-forestry systems for carbon sequestration and other co-benefits, such as helping to attain food security and secure land tenure in developing nations.

Parikh, Jyoti; and Gokarn, Subir, "Climate Change and India's Energy Policy Options: New Perspectives on Sectoral CO_2 Emissions and Incremental Costs" *Global Environmental Change*, September 1993, pp: 276-291.

Content: This paper presents trend in CO_2 emissions in India and examines the implications of the alternative policies to reduce the emissions using a 60 sector I-O model.

Parry, Ian W. H., "Are the Costs of Reducing Greenhouse Gases form Passenger Vehicles Negative?" *Journal of Urban Economics*, September 2007, 62 (2), pp: 273-293.

Content: Energy models suggest that the costs of reducing carbon emissions from transportation are high relative to those for other sectors. This paper discusses why taxes (or equivalent permit systems) to reduce passenger vehicle emissions produce large net benefits, rather than costs, when account is taken of (a) their impact on reducing other highway externalities besides carbon; and (b) interactions with the broader fiscal system.

Parry, Ian W. H.; Williams III, Roberton C.; and Goulder, Lawrence H., "When Can Carbon Abatement Policies Increase Welfare? The Fundamental Role of Distorted Factor Markets" *Journal of Environmental Economics and Management*, January 1999, 37 (1), pp: 52-84.

Content: This paper employs the analytical and numerical models to assess the welfare effects of revenue neutral carbon tax and carbon emission permits, taking into account pre-existing tax distortions in the factor markets.

Paul, Shyamal; and Bhattacharya, Rabindra Nath, "CO_2 Emission from Energy use in India: A Decomposition Analysis" *Energy Policy*, March 2004, 32 (5), pp: 585-593.

Content: This paper analyses factors that have influenced changes in energy-related CO_2 emissions in India over the period 1980-1996 using decomposition method.

Pearce, David, "The Role of Carbon Taxes in Adjusting to Global Warming" *The Economic Journal,* July 1991, 101 (407), pp: 938-948.

Content: This early article in climate change literature highlights the importance of the carbon tax in mitigating global warming.

Pizer, William A., "Combining Price and Quantity Controls to Mitigate Global Climate Change" *Journal of Public Economics*, September 2002, 85 (3), pp: 409-434.

Content: Although most of the debate on global climate change policy has focused on quantity controls due to their political appeal, this paper argues that price controls are more efficient. Further the paper suggests an alternative hybrid policy that combines the political appeal of quantity controls with the efficiency of prices.

Pokharel, Shaligram, "Kyoto Protocol and Nepal's Energy Sector" *Energy policy,* 2007, 35, pp: 2514-2525.

Content: This article discusses the ratification of Kyoto Protocol by Nepal and the adoption of the environmentally friendly energy options based on the local resources like hydropower and biomass to reduce the greenhouse gas emissions. In addition, it analyses the benefits of CDM for a country like Nepal, which has low historical emission scenario as well as low per capita income.

Rana, Ashish, "Evaluation of a Renewable Energy Scenario in India for Economic and CO_2 Mitigation Effects" *Review of Urban and Regional Development Studies*, March 2003, 15 (1), pp: 45-54.

Content: RETs are attractive for sustainable energy supply and CO_2 mitigation. This paper uses a CGE-model to analyse the effects of rapid reduction of costs of solar power generation, an important RET, in India.

Rao, S.; Keppo, I.; and Riahi, K., "Importance of Technological Change and Spillovers in Long-term Climate Policy" *The Energy Journal*, (Special Issue #1: Endogenous Technological Change and the Economics of Atmospheric Stabilisation), 2006, pp: 105-122.

Content: This paper examines the role of technological change and spillovers within the context of a climate policy in a long-term scenario of the global energy system. The paper argues that coordinated climate stabilization policies can serve as important institutional mechanisms that facilitate the required technological investments, especially in developing countries and thus ensure long-term cost reductions.

Repetto, Rebert, "The Clean Development Mechanism: Institutional Breakthrough or Institutional Nightmare?" *Policy Science*, December 2001, 34 (3-4), pp: 303-327.

Content: The CDM contains perverse compliance incentives and is beset with problems of credit definition, monitoring, enforcement, and potentially high transactions costs. This paper defines some important design safeguards and suggests an alternative approach should the Kyoto Protocol eventually be renegotiated.

Sandsmark, Maria; and Vennemo, Haakon, "A Portfolio Approach to Climate Investments: CAPM and Endogenous Risk" *Environmental and Resource Economics,* August 2007, 37 (4), pp: 681-695.

Content: Is there a role for investments in climate change mitigation despite low expected return? This paper uses a model of inter-temporal expected utility maximisation to analyse the above question, and proposes the applicability of a variant of capital asset pricing model.

Sathaye, Jayant; and Phadke, Amol, "Cost of Electric Power Sector Carbon Mitigation in India: International Implications" *Energy Policy*, 2006, 34, pp: 1619-1629.

Content: This paper explores the conventional assumption that costs of reducing carbon emissions are lower in developing countries based on power generation options in India.

Schmalensee, Richard; Stoker, Thomas M.; and Judson, Ruth A., "World Carbon Dioxide Emissions: 1950-2050" *The Review of Economics and Statistics*, February 1998, 80 (1), pp: 15-27.

Content: Emissions of carbon dioxide from the combustion of fossil fuels, which may contribute to the long-term climate change, are projected upto 2050 using reduced-form models estimated with national-level panel data for the period of 1950-1990. The analysis employs a flexible form for income effects, along with fixed time and country effects, and handles forecast uncertainty explicitly.

Shrestha, Ram M., "Technological Implications of the Clean Development Mechanism for the Power Sector in Three Asian Countries" *International Review for Environmental Strategies,* 2004, 5 (1).

Content: This paper analyses the role of some key technological options, such as fuel-switching and renewable energy technologies for reducing greenhouse gas emissions in the power sector of three Asian Countries: Sri Lanka, Thailand, and Vietnam.

Shukla, P. R., "India's GHG Emission Scenarios: Aligning Development and Stabilization Paths" *Current Science*, February 2006, 90 (3), pp: 384-395.

Content: This paper presents the GHG emission scenarios for India following IPCC SRES framework for the 21st century. The paper argues that development policies and actions, which alter profiles of key drivers of development, should be essential elements of climate mitigation strategies.

Shukla, P. R.; Sivaraman, Balasubramaniam; and Yajnik, A., "The Clean Development Mechanism and India: Firm Responses, Baseline, and Development Dynamics" *International Review for environmental strategies*, 2004, 5 (1).

Content: This paper provides an assessment of CDM from a developing Country's perspective with specific reference to the activities in India. It analyses the nature of initial CDM projects in India, sector preferences, scales, and the possible contributions to India's development priorities.

Shukla, P.R.; Rana, A.; Garg, A.; and Kaspe, M., "Global Climate Change Stabilisation Regimes and Indian Emission Scenarios: Lessons for Modeling of Developing Country Transitions" *Environmental Economics and Policy Studies*, 2006, 7 (3), pp: 205-231.

Content: Arguing that wide regional variability exists in key driving factors of GHG emissions across the world, this paper presents disaggregated national/regional scenarios (for India) while accounting for developing country dynamics in scenario construction and modeling framework.

Springer, Urs, "The Market for Tradable GHG Permits Under the Kyoto Protocol: A Survey of Model Studies" *Energy Economics*, 2003, 25, pp: 527-551.

Content: This paper gathers as well as critically analyses the results from 25 models of the market for tradable greenhouse gas emission permits under the Kyoto protocol.

Stavins, Robert N., "The Costs of Carbon Sequestration: A Revealed-Preference Approach" *The American Economic Review*, September 1999, 89 (4), pp: 994-1009.

Content: This paper demonstrates a method by which the costs of carbon sequestration can be estimated on the basis of evidence from land owners' behaviour when confronted with the opportunity costs of alternative land uses.

Sun, J.W.; and Kuntsi, E., "Environmental Impact of Energy use in Bangladesh, India, Pakistan and Thailand" *Global Environmental Change*, 2004, 14, pp: 161–169.

Content: This paper analyses the environmental impact of energy use in Bangladesh, India, Pakistan and Thailand using the International Energy data for the period 1973 to 2000, and focusing on energy intensity and carbon intensity.

Weyant, John P., "Costs of Reducing Global Carbon Emissions" *The Journal of Economic Perspectives*, Autumn 1993, 7 (4), pp: 27-46.

Content: This article projects the costs of reducing carbon emissions and raises several unresolved issues associated with the cost estimates.

Yang, Zili, "Negatively Correlated Local and Global Stock Externalities: Tax or Subsidy?" *Environment and Development Economics*, June 2006, 11 (3), pp: 301-316.

Content: This paper sets up an optimal control problem with negatively correlated local and global stock externalities and explores appropriate policy options.

Yang, Zili; and Nordhaus, William D., "Magnitude and Direction of Technological Transfers for Mitigation GHG Emissions" *Energy Economics*, 2006, 28, pp: 730-741.

Content: This paper discusses the issues associated with technological transfers aimed at reducing GHG mitigation costs using a version of RICE model.

Zelek, Charles A.; and Shively, Gerald E., "Measuring the Opportunity Cost of Carbon Sequestration in Tropical Agriculture" *Land Economics*, August 2003, 79 (3), pp: 342-354.

Content: This paper presents a method for measuring the opportunity cost of sequestering carbon on the tropical farms and derives the rates of the carbon sequestration for timber and agro-forestry systems and also computes incentive compatible compensating payment schedules for farmers who sequester carbon. It is applied to data for an agricultural watershed in the Philippines.

Climate Change Negotiations and Developing Country Position

Aldy, Joseph E.; Barrett, Scott; and Stavins, Robert N., "Thirteen Plus one: A Comparison of Global Climate Policy Architectures" *Climate Policy*, December 2003, 3 (4), pp: 373-397.

Content: This paper critically reviews the Kyoto protocol and thirteen alternative policy architectures for addressing the threat of the global climate change. It employs six criteria to evaluate the policy proposals, such as environmental outcome, dynamic efficiency, cost-effectiveness, equity, flexibility in the presence of new information, incentives for participation, and compliance.

Asheim, Geir B.; Froyn, Camilla Bretteville; Hovi, Jon; and Menz, Fredric C., "Regional Versus Global Cooperation for Climate Control" *Journal of Environmental Economics and Management*, January 2006, 51 (1), pp: 93-109.

Content: This paper examines whether the international environmental public goods provision, such as mitigation of climate change, is better dealt through regional cooperation than through a global treaty. In addition, using a simple dynamic game theoretic model it demonstrates that two agreements can sustain a larger number of cooperating parties than a single global treaty.

Barrett, S., "Kyoto and Beyond: Alternative Approach to Global Warming, Climate Treaties and Breakthrough Technologies" *The American Economic Review,* May 2006, 96 (2), pp: 22-25.

Content: This article proposes an alternative climate treaty in place of the existing Kyoto protocol. It gives equal importance to the mitigation and R&D and has emphasised more on the latter. The article also explores the link between climate treaty and R&D in terms of the technology and financing.

Beg, Noreen; Morlot, Jan Corfee; Davidson, Ogunlade; Okesse, Yaw Afrane; Tyani, Lwazikazi; Denton, Fatma; Sokona, Youba; Thomas, Jean Philippe; Rovere, Emilio Lebre La; Parikh, Jyoti K.; Parikh, Kirit; and Rahman, A. Atiq, "Linkages Between Climate Change and Sustainable Development" *Climate Policy,* September 2002, 2 (2-3), pp: 129-144.

Content: This article discusses on the nexus between the climate change policy and the sustainable development from the developing nations perspective. The paper argues that synergies already exist between climate policy and sustainable development agenda.

Chen, Zhiqi, "Negotiating an Agreement on Global Warming: A Theoretical Analysis" *Journal of Environmental Economics and Management*, February 1997, 32 (2), pp: 170-188.

Content: This paper derives the outcome of the international negotiation on combating global warming and analyses it by using a two country bargaining model. It shows that while side payments between countries will generally be part of an agreement, some of these payments are made purely as a result of asymmetry in bargaining power and have nothing to do with the polluter pays principle or the victim pays principle.

Depledge, Joanna, "The Opposite of Learning: Ossification in the Climate Change Regime" *Global Environmental Politics*, February 2006, 6 (1), pp: 1-22.

Content: Promoting learning among participants is a key function commonly attributed to the international regimes. Such learning, however, cannot always be guaranteed, and regimes may sometimes descend into ossification. In contrast to a learning regime, an ossifying regime is one that is unable to process new information, facilitate the free-flow of new ideas, or foster understanding and trust among negotiators. This paper argues that evidence from the recent history of the climate change regime suggests it is suffering from ossification.

Dutt, Gautam; and Fabian Gaioli, (2008), "Negotiations and Agreements on Climate Change at Bali" *Economic and Political Weekly*, XLIII (3), pp: 11-13.

Content: This article summarises the Bali climate change negotiations and discusses the dissension between the developed and the developing nation with respect to the reduction of the GHG emissions and analyses the position of India in this dilemma.

Eyckmans, Johan; and Tulkens, Henry, "Simulating Coalitionally Stable Burden Sharing Agreements for the Climate Change Problem" *Resource and Energy Economics*, October 2003, 25 (4), pp: 299-327.

Content: This paper introduces the CLIMNEG world simulation model, which is derived from the RICE model, for simulating cooperative outcomes of climate negotiations.

Fankhauser, Samuel; and Kverndokk, Snorre, "The Global Warming Game-Simulation of a CO_2 Reduction Agreement" *Resource and Energy Economics*, 1996, 18, pp: 83-102.

Content: This paper analyses the incentives, and the benefits of a possible international cooperation to reduce CO_2 emissions. The negotiations are modelled as a reciprocal externality game in CO_2 emissions between 5 world regions.

Field, Barry C., "Climate Change Policy after Kyoto: Blueprint for a Realistic Approach" *American Journal of Agricultural Economics*, August 2004, 86 (3), pp: 857–858.

Content: This article highlights the issues concerning climate policy in the post-Kyoto era, with special focus on monitoring and enforcement, and developing country participation in GHG mitigation.

Grubb, Michael, "Kyoto and the Future of International Climate Change Responses: From Here to Where?" *International Review for Environmental Strategies*, 2004, 5 (1).

Content: This article gives a brief overview of the Kyoto Protocol, its core features of the long-term relevance, the outlook to 2012, and the options for moving forward with a new round of negotiations on international climate change responses.

Gupta, Shreekant, "Dithering on Climate Change" *Economic and Political Weekly*, December 2002, 37 (51), pp: 5073-5076.

Content: This article discusses the issues concerning COP 8 of UNFCCC, at New Delhi, 2002 with focus on Indian perspective. The paper argues that India failed to put forward a well thought out, coherent and long-term climate strategy at COP 8 and missed an opportunity to jumpstart the climate change negotiations.

Gupta, Sujata; and Bhandari, Preety M, "An Effective Allocation Criterion for CO_2 Emissions" *Energy Policy*, 1999, 27, pp: 727-736.

Content: This paper proposes a simple exposition of the 'common but differentiated' responsibility concept and aims to strike a balance between the concerns relating to the choice of the numeraire, e.g. population and GDP in determining emission reduction responsibility between the developed and developing countries.

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Kandlikar, Milind; and Sagar, Ambuj, "Climate Change Research and Analysis in India: An Integrated Assessment of a South-North Divide" *Global Environmental Change,* 1999, 9, pp: 119-138.

Content: The paper describes how activities related to climate science and analyses are performed in India and analyses how these are affected by domestic concerns, and by linkages with various international and Northern institutions and activities. Drawing on the Indian case study, this paper offers some thoughts on what the South can do to build national and regional assessment capabilities to protect its interests in the new international global environmental order.

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Najam, Adil; Rahman, Atiq A.; Huq, Saleemul; and Sokana, Youba, "Integrating Sustainable Development into the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" *Climate Policy*, Special Supplement on Climate Change and Sustainable Development, November 2003, 3 (1), pp: S9-S17.

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Nordhaus, W. D., "After Kyoto: Alternative Mechanism to Control Global Warming" *American Economic Review*, May 2006, 96 (2), pp: 31-34.

Content: This article while arguing that Kyoto Protocol has been ineffective, proposes three potential alternatives such as command and control regulation; quantity-oriented market approaches; and tax or price based regimes for the further enhancement of the climate policy.

Olmstead, S. M.; and Stavins, R. N., "An International Policy Architecture for the Post-Kyoto Era" *American Economic Review,* May 2006, 96 (2), pp: 35-38.

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Panayotou, Theodore; Sachs, Jeffery D.; and Zwane, Alix Peterson, "Compensating for 'Meaningful Participation' in climate change control: A modest Proposal and Empirical Analysis" *Journal of Environmental Economics and Management*, May 2002, 43 (3), pp: 437-454.

Content: The debate over the international climate change regime has so far focused on the efficiency constraint. This paper argues that it has to be equipped to handle the equity concerns in the ongoing negotiations of the climate policy.

Parikh, J., "North-South Issues for Climate Change" *Economic and Political Weekly*, 1994, 29, pp: 2940-2943.

Content: This article analyses the debate on climate change from different dimensions, such as the disparities between regions in terms of the responsibilities for emissions, concentrations, and vulnerabilities. It analyses these issues by dividing the nations as north (developed nations) and south (developing and under-developed nations).

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Content: This article explains the CDM policy of India, provides estimation of potential for a few sectors, and the voices India's concern about the CDM, particularly regarding baselines and related issues.

Parikh, Jyoti; Babu, P.G.; and Kavi Kumar, K.S., "Climate Change, North-South Cooperation and Collective Decision Making Post Rio" *Journal of International Development*, 1997, 9 (3), pp: 403-413.

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Pielke, R. Jr.; Prinns, G.; Rayner, S.; and Sarewitz, D., "Lifting the Taboo on Adaptation" *Nature*, 2007, 445, pp: 597-598.

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Content: This article initially highlights three practical lessons of the Kyoto protocol and argues that a more subtle application of economic thinking supports the same lessons.

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Spash, Clive L, "Climate Change: Need for New Economic Thought" *Economic and Political Weekly*, February 2007, 42 (6), pp. 483-490.

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Content: This paper presents an alternative framework to the approach currently embodied in the Kyoto Protocol for managing the global climate change at post-2012. The framework has two key features: equal entitlement for all people in the world, and scope for incorporating risk notion in setting emission reduction targets.

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