



Europass Curriculum Vitae

Personal information

Surname(s) / First name(s) **Surname – MARKANDYA First name - ANIL**

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E-mail amarkandya@metroeconomica.com

Nationality British

Date of birth 23 September 1945

Gender Male

Occupational field **Environmental Economics**

Occupation or position held Director of Metroeconomica Limited, Environmental Economics Consultancy, established 1983.

Professor of Economics, University of Bath, 1996 – 2012

Scientific Director, BC3 – Basque Centre for Climate Change. 2008 - present

MAJOR FULL TIME APPOINTMENTS

- (a) Economic Assistant with the **Department of Employment and Productivity**, UK, 1968-1969.
- (b) Assistant Lecturer in Economics at the **London School of Economics**, 1969-1970.
- (c) Visiting Lecturer in Economics and Public Affairs, **Woodrow Wilson School, Princeton University**, 1975-1976.
- (d) Lecturer in Economics in the Department of Economics, **University College London**, 1970-1985. Senior Lecturer, 1985-1990. Reader in Economics, 1990
- (e) ting Professor, **University of California, Berkeley**, 1982.
- (f) Research Associate, **Harvard Institute for International Development**, Harvard University, September, 1992-1994. Duties include lecturing at the Kennedy School of Government.
- (g) Senior Environmental Policy Advisor, **Government of Russia** under the USAID NIS program on environmental economics in Russia., 1995-1996. Areas covered included forestry, air and water projects.
- (h) Professor of Economics, **University of Bath**, UK, January 1, 1996-Present. Head of Department 1997-2000.
- (i) Lead Economist, **World Bank**, Working in the Eastern Europe and Central Asia Region, Department for Environment and Sustainable Development, 2000-2004, and FRM 2004-2005.
- (j) Director, Applied Research and International Energy Markets, **Fondazione Eni Enrico Mattei**, Milan, Italy, 2005-6. Applied Research and Sustainable Indicators and Environment Valuation 2006-2008
- (k) Director, Metroeconomica Limited. Consultants in Energy and Environment. Several climate change related projects undertaken, including for UK government.
- (l) Scientific Director. Basque Centre for Climate Change (BC3) Bilbao, Spain

Education and training

<i>Institutions:</i>	University of York, York, UK
<i>Date: from - to:</i>	1964-1967
<i>Degree(s) or diploma(s):</i>	B.A. Economics (Honours)
<i>Institutions:</i>	London School of Economics
<i>Date: from - to:</i>	1967-1968
<i>Degree(s) or diploma(s):</i>	M.Sc. in Econometrics
<i>Institutions:</i>	London School of Economics
<i>Date: from - to:</i>	1975
<i>Degree(s) or diploma(s):</i>	PhD in the Economics of the Environment

Personal skills and competences

Mother tongue(s) **English**

Other language(s)

Self-assessment

European level (*)

French

Spanish

Russian

Italian

Hindustani

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
4	4	4	4	3
3	3	3	3	2
2	1	1	1	1
4	4	4	4	3
3	0	3	3	0

(*) Common European Framework of Reference for Languages

Social skills and competences

Fellow of the Royal Society of Arts (1991). Winner of the Mazzotti Prize for Contributions to Ecology (1991). Special mention by UNEP for contributions to protection of the ozone layer (1995). Member (Editorial Board) **Environmental & Resource Economics** – Kluwer Academic Publishers (1990). Member (Editorial Board) **Environment & Development** – Cambridge University Press (1993). In 2008 I was nominated by **Cambridge University** as one of the top 50 contributors to thinking on sustainability in the world and I won 2nd Prize for a paper delivered to the World Energy Council (2008 Meetings). In 2010 he was nominated as a Lead Author for the 5th **IPCC** Assessment (WGII), starting in 2011 and he contributed to the TEEB Report on the Economics of Biodiversity in the same year. In 2012 he was elected the **President of the European Association of Environmental and Resource Economics** and in 2013 he became a member of the **Scientific Council of the European Environment Agency**.

Organisational skills and competences

Other skills (e.g. computer literacy, etc.): Management, Computer, Languages, Teamwork, Leadership in projects, Planning and organising events, writing articles and reports

Driving licence

Full UK driving licence held

Selected Advisory Positions

- (i) Economic Consultant to the **Asian Development Bank** 1980-1995 (Various projects)
- (ii) Consultant to the **World Bank**, 1995-98 (Various environmental projects)
- (iii) Consultant Economist to the **UK National Institute of Economic and Social Research**, UK, 1985-1986.
- (iv) Advisor to the **Organisation for Economic Cooperation and Development (OECD)** (Environment Directorate) 1986-94
- (v) Consultant to **USAID** Technical Assistance Project in Pakistan attached to the Planning Commission (Energy Wing), Islamabad, 1987-1989.
- (vi) Advisor to the **UK Overseas Development Administration (ODA)** 1992-98 (Various projects)
- (vii) Consultant to **United Nations Environment Program (UNEP)** 1998-95 (Various projects)
- (viii) Chairman of the **UK Interagency Research Panel on Climate Change**, Socio-economic Aspects, 1990.
- (ix) Associate Director, **London Environmental Economics Centre (1998-91)**
- (x) Consultant to **Food and Agricultural Organisation (FAO)** (1991-96)
- (xi) Advisor to the **Government of Switzerland** on the Social Costs of Transport 1990-92
- (xii) Consultant to the **FRG Environment Ministry (Umweltbundesamt)** 1990
- (xiii) Consultant to the **UK Department of the Environment** on Global Emissions Targets, 1990, SO₂ reduction strategies in Europe.
- (xiv) Advisor to **International Fund for Agricultural Development (IFAD)** 1993-95
- (xv) Advisor to the **Inter American Development Bank** on Environmental Valuation, 1990-1991.
- (xvi) Advisor to the **European Commission DG Research** on Research Priorities in the 1990s, DGXII, 1990; on EXTERNE as chief economist, 1992-1997; on Green Accounting, 1994-1996.
- (xvii) Advisor to the **European Commission DG Environment 1991-97**
- (xviii) Resource Person, **African Development Bank**, Environmental and Social Impacts of Agricultural Practices in Africa, and Environmental Costs and Project Appraisal 1990-1992.
- (xix) Advisor to **United Nations Industrial Development Organisation (UNIDO)** on Ecologically Sustainable Industrial Development, 1991.
- (xx) Advisor to the **United Nations Conference on Environment and Development on Trade and the Environment (UNCED)**, 1991.
- (xxi) Consultant to the **Commission for Sustainable Development**, United Nations, on Financing Sustainable Development, 1993-96.
- (xxii) Chief Reviewer, Ganga River Action Plan, and Gomti River Action Plan DFID and **Government of India**, 1995-1998.
- (xxiii) Advisor to **UNDP** on Capacity 21, 1997.
- (xxiv) Member, **UK Government Advisory Committee on Air Pollution and Health**, 1997-1999.
- (xxv) Member, International Panel on Climate Change (**IPCC**), Working Group III, 3rd Assessment Report. Convening Lead Author, 1998-2001. 4th Assessment 2005-2007.
- (xxvi) Advisor, Environmental Impacts of the Financial Crises, **Asian Development Bank**, 1998.
- (xxvii) Nominated Expert, **North American Free Trade Association (NAFTA), Commission for Environmental Cooperation**, 1998-1999.
- (xxviii) Research Programme Reviewer, **Ministry of Environment**, Paris, France, (1998-1999).
- (xxix) Member, International Panel on Climate Change (**IPCC**), Working Group III, 3rd Assessment Report. Convening Lead Author, 1998-2001. 4th Assessment 2005-2007.
- (xxx) Advisor, Environmental Impacts of the Financial Crises, **Asian Development Bank**, 1998.

PUBLICATIONS: Over 260 publications. Some selected ones are listed below

General and Climate Change and Energy Related

1. *The Economic Benefits of Environmental Improvement*, (with D.W. Pearce), The Environmental Research Trust, Romford, England, 64pp (1986).
2. *The Benefits of Environmental Policy*, (with D.W. Pearce), OECD, Paris, 83pp (1989).
3. *Blueprint for a Green Economy* (with D.W. Pearce and E. Barbier), Earthscan Publications, London, 192pp (1989).
Winner of the Premio Gambrinus Mazzotti for literature on ecology, (1991).
4. *Sustainable Development: Economics and Environment in the Third World* (with E. Barbier and D.W. Pearce), Elgar Publishing, Hants., UK., 217pp, (1990).
5. *Essays in Sustainable Development*, (ed.) FAO (ISSN 0259-2460), Rome, 268 pp (1994).
6. "Is Free Trade Compatible with Sustainable Development?", UNCTAD Review, 1994, pp 9-22.
7. "Trade and Environment: Issues Related to Sustainable Development" in (A. Agarwal (ed.), *Environment and Economics*, Centre for Science and Environment, New Delhi, India.
8. *Environmental Valuation for Sustainable Natural Management*. International Fund for Agricultural Development, Rome. (1996).
9. *The Indirect Costs and Benefits of Greenhouse Gas Emissions*, UNEP, ISBN87-5502458-0, UNEP Collaborating Centre, Riso, Denmark (1998)
10. "Trade and Industrial Impacts of Multilateral Environmental Agreements: A Case Study of the Montreal Protocol". Trade and Environment Report DGII/B4, Commission of the European Communities (with I. Milborrow), European Economy, 1998, 1, 31-90.
11. *Green Accounting in Europe: Four Case Studies*, (With M. Pavan), Kluwer Academic Publishers. 369 pp. (1999).
12. *Reconciling Trade and the Environment* (With V. Jha and R. Vossenaar), Edward Elgar, Cheltenham 359 pp. (1999)
13. "Preferential Trading Arrangements between Kenya and the EU: A Case Study of the Environmental Effects of the Horticulture Sector" pp 83-100. in P. Fredriksson (ed.) *Trade, Global Policy and the Environment*, (With L. Emmerton and S. Mwale). World Bank and Johns Hopkins Press, Washington DC.
14. *Cleaning Rivers in Developing Countries: A Cost Benefit Analysis of the Ganga River Action Plan*, (With M.N. Murty (ed.)) OUP, Oxford and New Delhi, *forthcoming*. (2000).
15. *Transport and the Global Environment: Accounting for GHG Reductions in Policy Analysis* (with K. Halsnaes, and J. Saythaye), UNEP, Paris (2001).
16. *Environmental Economics for Sustainable Growth* (With P. Harou, L. Bellù and V. Cistulli). Edward Elgar, Cheltenham, (2002).
17. *Climate Change and Sustainable Development*, (with K. Halsnaes (eds.)), Earthscan: London (2002).
18. "Climate Change Considerations on Energy Policy: The Case of Russia", (with A. Golub, E. Strukova, P. Mason, Y. Savonov and A. Hunt), *International Journal of Global and Environmental Issues* (2003).
19. "Green Accounting in Europe: The GARPII Project" (with M.L. Tamborra), *forthcoming*, Edward Elgar, Cheltenham, (2004).
20. "Ancillary Benefits of Climate Policy" (with D. Rübbelke), Jahrbücher für Nationalökonomie und Statistik, 224, 4, 488-503. 2004.
21. *CDM: Sustainable Development Impacts*, (with A. Olhoff, K. Halsnaes, and T. Taylor). UNEP Risø Centre on Energy Climate and Sustainable Development: Roskilde Denmark. 2004.
22. "Developing Countries and Climate Change" (with K.Halsnaes) in (A. Owen and N. Hanley (eds.), *The Economics of Climate Change*, Routledge. 2004.
23. "Demand Systems For Goods That Are Close Substitutes: The Quantity Based Demand System (QBDS): A Case Study for Fair Trade Coffee in the United Kingdom" (with I. Galarraga), Economía Agraria and y Recursos Naturales, 4, 7, 109-134 (2004)
24. "Framing Issues" in B. Metz, et al. (eds.). Working Group III of IPCCIV, Cambridge University Press, 2007.
25. "Assessment of the Advantages and Disadvantages of Various Allocation Methodologies for the Post 2012 EU ETS". Report for DG Enterprise, European Commission. (2007).
26. "International Trade, Sustainable Development and the Environment: Implications for Trade Liberalization and Changes in Trading Rules and Environmental Standards" in Klaus Dieter John and Dirk T.G. Rübbelke (eds.), *Development Aid and Environmental Protection*. Peter Lang, Frankfurt. (2007)
27. "Does the Kyoto Protocol Cost Too Much and Create Unbreakable Barriers for Economic Growth", Contemporary Economic Policy, 24, 4, 507-519. **(J)**
28. "Electricity Generation and Health" (with P. Wilkinson), Lancet, 370, 979-990. (2009)

29. “Abatement Cost Uncertainty and Different Policy Instruments, A Dynamic Analysis using the WITCH Model”, paper presented to the World Economic Council Meeting in Rome, 2007 and awarded 2nd prize among all submitted papers.
30. “Modelling Carbon-Efficient Technological Innovations under Uncertainty” (ed.), 2008 (Routledge).
31. “JESP Symposium: Climate Change and Social Policy”(with I. Gough, J. Meadowcroft, J. Dryzek, . Gerhards,, H. Lengfeld and R.A. Ortiz), Journal of European Social Policy, 18: 353-365. 2008
32. “Valuing Climate Change Impacts on Human Health: Empirical Evidence from the Literature” (with A. Chaibai), Int. J. Environ. Res. Public Health, 6, 759-786. 2009
33. “Climate Change: Alternative Perspectives”, in B. Lomborg (ed.) *Global Crises, Global Solution* 2nd Edition, Cambridge: Cambridge University Press. pp298-304 (2009).
34. “Can Climate Change Be Reversed Under Capitalism?”, Development and Change. 40,6,1139-1152. (2009)
35. “Analysis of Tax Incentives for Energy Efficient Durables in the EU” (with R. Ortiz, S. Mudgal and B. Tinetti), forthcoming Energy Policy. 2009.
36. “Are China and Europe Converging?” (with A. Bastianin and C. Cattaneo), China Economist, July-August. (2009)
37. The Role of Risk Aversion and Lay Risk in the Probabilistic Externality Assessment for Oil Tanker Routes to Europe, (with A. Bigano, M. Cassinelli and F. Sfera) forthcoming, Journal of Transport Economics and Policy, Volume 44, Part 1, January 2010, pp. 93–118 (2009)
38. “Energy Security, Energy Modelling and Uncertainty” (with M. Pemberton), Energy Policy 38 (2010) 1609–1613 (2009).
39. A. Markandya “Climate Change: Alternative Perspectives”, in B. Lomborg (ed.) *Global Crises, Global Solution* 2nd Edition, Cambridge: Cambridge University Press. pp298-304. 2009.
40. A. Markandya, B. Armstrong, S. Hales, A. Chiabai, P. Criqui, SA. Mima, C. Tonne and P. Wilkinson “Public health benefits of strategies to reduce greenhouse-gas emissions: low carbon electricity generation”, The Lancet, Vol. 374 No. 9706 pp 2006-2015
41. A. Haines, A. McMichael, K. Smith, J. Woodcock, A. Markandya B. Armstrong, D. Cambell-Lendrum, A. Dangour, M. Davies, N. Bruce, C. Tonne, M. Barrett and P. Wilkinson “Public health benefits of strategies to reduce greenhouse-gas emissions: overview for policy makers”, The Lancet, [Volume 374, Issue 9707](#), Pages 2104 - 2114. 2009.
42. A. Markandya “Can Climate Change Be Reversed Under Capitalism?”, Development and Change. 40,6,1139-1152. 2009.
43. A. Markandya, R. Ortiz, S. Mudgal and B. Tinetti) “Analysis of Tax Incentives for Energy Efficient Durables in the EU”, Energy Policy. 2009.
44. A. Bastianin, C. Cattaneo and A. Markandya “Are China and Europe Converging?”, China Economist, July-August. 2009.
45. A. Bigano, M. Cassinelli, A. Markandya and F. Sfera, The Role of Risk Aversion and Lay Risk in the Probabilistic Externality Assessment for Oil Tanker Routes to Europe, Journal of Transport Economics and Policy, Volume 44, Part 1, January 2010, pp. 93–118, 2009.
46. A. Markandya and M. Pemberton “Energy Security, Energy Modelling and Uncertainty”, Energy Policy 38 1609–1613, 2010.
47. A. Markandya and A Mishra (eds.). “Costing Adaptation: Preparing for Climate Change in India” TERI Press, New Delhi.258pp. (2010) **(B)**
48. S. Mudgal, B. Tinetti, A. Markandya and R. Ortiz “Tax Incentive Options to Promote Environmentally Friendly Products: The Case of Energy-Efficient Domestic Appliances. In (C.D. Soares J.E. Milne, H. Ashiabor, K. Kreiser and K. Deketelaere eds.) *Critical Issues in Environmental Taxation: International and Comparative Perspectives*, Volume III. Oxford University Press, Oxford. (2010)
49. A. Markandya, Andrea Bigano and Roberto Porchia, (eds.) “The Social Costs of Electricity: Scenarios and Policy Implications”, Edward Elgar Publishing (2010).
50. “Involving Developing Countries in Global Climate Policies”, in Emilio Cerdá and Xavier Labandeira (eds.) *Climate Change Policies: Global Challenges and Future Prospects*, Edward Elgar Publishing. **(CB)** (2010)
51. A. Markandya “Environmental Taxation: What Have We Learnt in the Last 30 years?“, *Rivista di Politica Economica*, 2010.
52. V. Bosetti, R. Lubowski, A. Markandya and A. Golub “Linking Reduced Deforestation and a Global Carbon Market: Implications for Clean Energy Technology and Policy Flexibility”, Environment and Development. **(J)** (2011)
53. A. Markandya, I. Galarraga and A. Ansuageti, *Climate Impacts on Energy Systems: Key Issues for Energy Sector Adaptation* (with several authors). ESMAP, The World Bank, 2010.
54. A. Markandya “Involving Developing Countries in Global Climate Policies”, in Emilio Cerdá and Xavier Labandeira (eds.) *Climate Change Policies: Global Challenges and Future Prospects*, Edward Elgar Publishing, 2010

55. A. Markandya and J. Mysiak “The Economic Costs of Droughts”, in A. López-Francos (ed.), *Options Méditerranéennes: Economics of Drought and Drought Preparedness in a Climate Change Context*, CIHEAM, Zaragoza. 2010.
56. A. Markandya, J. Pan, Z. Yan) “Adaptation Approaches to Climate Change in China: An Operational Framework” *Economía Agraria y Recursos Naturales*. 2011.
57. I. Galarraga, M. Gonzalez-Eguino and A. Markandya “The Role of regional Governments in Climate Change Policy”, *Environmental Policy and Governance*, 21, 3, 164-182, 2011.
58. I. Galarraga, M. Gonzalez-Eguino and A. Markandya “Handbook for Sustainable Energy”, Edward Elgar, Cheltenham. 612pp, 2011.
59. I. Galarraga, A. Markandya N. Osés, A. Chiabai and K. Khatun “Aportaciones desde la economía de la adaptación a la toma de decisiones sobre Cambio Climático: un ejemplo para la Comunidad Autónoma del País Vasco”, *Economía Agraria y Recursos Naturales*, 11,1, 105-128, 2011.
60. S Traerup, R.A. Ortiz and A. Markandya “The Costs of Climate Change: A Study of Cholera in Tanzania”, *International Journal of Environmental Research and Public Health* 8, 4386-4405, 2012.
61. I. Galarraga, M. Gonzalez and A. Markandya "Willingness to pay and price elasticities of demand for energy-efficient appliances: combining the hedonic approach and demand systems" , *Energy Economics*, 33, S66-74, 2011
62. R. A. Ortiz; A. Golub; A. Markandya, O. Lugovoy; and J.Wang “Dicer: A Tool for Analyzing Uncertainties in Climate Policy Analysis” *Energy Economics*, 33, S41-49, 2011.
63. M. Grasso, M. Manera, A. Markandya and A. Chiabai, “The Health Effects of Climate Change: A Survey of Recent Quantitative Research” *Int. J. Environ. Res. Public Health*, 9, 1523-1547. 2012.
64. J. Martin-Ortega, M. Gonzalez and A. Markandya “The costs of drought: the 2007-2008 case of Barcelona”, *Water Policy*, 14, 539-560. 2012
65. “The Montreal Protocol and the Green Economy: Assessing the Economic Impact and Co-benefits of a Multilateral Agreement”, (with N. Dale) UNEP, 2012. ISBN 978-92-807-3200-9. 2012. **(B)**
66. J. C. Refsgaard & K. Arnbjerg-Nielsen & M. Drews & K. Halsnæs & E. Jeppesen, H. Madsen & A. Markandya & J. E. Olesen & J. R. Porter & J. H. Christensen. The role of uncertainty in climate change adaptation strategies—A Danish water management example, *Mitig. Adapt. Strateg. Glob Change*, 18, 3, 337-359. 2013.
67. A. Markandya and R.A. Ortiz “Beyond Current Practices: The Role of the External Costs of Carbon in Climate Decision-Making” (with R.A. Ortiz), *Journal of Industrial Ecology*, 15, 666-668. 2012.
68. A. Longo, D. Hoyos and A. Markandya “Willingness to pay for ancillary benefits of climate change mitigation” *Environment and Resource Economics*. 51, 1, 119-140. 2012.
69. “India’s Economic Growth and Environmental Sustainability: What are the Tradeoffs?” *World Bank Policy Research Working Paper N° 6208* (with M. Mani, A. Sagar and S.Sahin). 2012.
70. “Energy and the Environment: Using Lessons Learned from the MDGs to Build Sustainability” Paper for the Commonwealth Secretariat (CCGE(13)3), *Consultative Group in Energy and the Environment*, February, 2013.
71. “Deforestation in private lands in Brazil and Policy implications for REDD programs: An empirical assessment of land use changes within farms using an econometric model” (with D. Heres and R.A. Ortiz), *International Forestry Review*, 15 (2), 1-13. 2013.
72. “International Side-Payments to Improve Global Public Good Provision When Transfers are Refinanced through a Tax on Local and Global Externalities” (with D. Ruebelke and M. Altmeyer), forthcoming, *International Economic Journal*. DOI:10.1080/10168737.2012.759986. **(J)**
73. “Walking away from a low-carbon economy? Recent and historical trends using a regional decomposition analysis”, (with L. Mundaca and J. Nørgaard), forthcoming *Energy Policy*. 2013 **(J)** .
74. “Climate Change Policies: Alternative Perspectives” in Lomborg B. (ed.), *Global Problems, Smart Solutions*, Cambridge University Press. 2013. **(CB)**
75. “From Shadow to Green: Linking Environmental Fiscal Reforms and the Informal Economy”, (With M. Gonzalez and M. Escapa) forthcoming, *Energy Economics*. **(J)**
76. “Low Climate Stabilization Under Diverse Growth and Convergence Scenarios (with M. Gonzalez, P. Criqui and S. Mima), *Energy Policy*, 64, 288-301.
77. *Routledge Handbook of the Economics of Climate Change Adaptation* (with Ibon Galarraga and Elisa Sainz de Murieta (eds.)), 452 pp., Routledge: London and New York. **(B)**.
78. “Estimating the health effects of greenhouse gas mitigation strategies: addressing parametric, model and valuation challenges”, (Justin V. Remais, Jeremy Hess , Kristie Ebi, Anil Markandya , John Balbus, Paul Wilkinson, Andy Haines, Zaid Chalabi), *Environmental Health Perspectives* 02/2014; DOI:10.1289/ehp.1306744. **(J)**

Natural Resources and Ecosystem Valuation

1. R. Godoy, R. Lubowski and A. Markandya "A Method for the Economic Valuation of Non Timber Forest Products", Economic Botany, 47, (3), 220-233. 1993.
2. A. Markandya "International Experience with the Economic Aspects of National Biodiversity Planning", *Biodiversity Economics Workshop*, Moscow: Ministry of Environment. 1995.
3. A. Markandya, L. Emmerton and S. Mwale "Preferential Trading Arrangements between Kenya and the EU: A Case Study of the Environmental Effects of the Horticulture Sector" pp 83-100. in P. Fredriksson (ed.) *Trade, Global Policy and the Environment*. World Bank and Johns Hopkins Press, Washington DC. 1999.
4. A. Markandya and M.N. Murty "Cost Benefit Analysis of Cleaning Ganges: Some Emerging Environment and Development Issues", Environment and Development, 9, 1, 61-82. 2004.
5. A. Markandya, S. Arnold, M. Cassinelli and T. Taylor "Protecting Coastal Zones In The Mediterranean: An Economic and Regulatory Analysis", Journal of Coastal Conservation, 12:145-159. 2008
6. A. Markandya et al. "Estimating the benefits from the conservation of provisioning ecosystem services – case study on valuing alternative clam fishing practices in the lagoon of Venice." in M. Kettunen and P. ten Brink (eds.), "Value of Biodiversity: Documenting Examples Where Biodiversity Loss Has Led to the Loss of Ecosystem Services", Institute for Europe Environmental Policy, Brussels. 2006.
7. "Why Is the Price of Bioprospecting So Low"? Paper present to the international Conference on International Ecological Economics, New Delhi, 2006 and to the BIOECON Conference, Kings College Cambridge, 2007
8. A. Markandya "Economics Assessment of Ecosystem Contributions: Valuing Impacts of Air Pollution", Presentation to a meeting in Brussels, European Commission, June 2007.
9. L. Brander, A. Ghermandi, O. Kuik, A. Markandya, P. Nunes, M. Schaafsma and A. Wagtendonk. "Scaling up ecosystem service values: methodology, applicability and a case study". Report to the European Environment Agency, April 2008.
10. Anil Markandya, Paulo A.L.D. Nunes, Ingo Brauer, Patrick ten Brink, Onno Kuik (IVM) and Matt Rayment (GHK), Review on The Economics Of Biodiversity Loss – Phase 1 (Scoping) Economic Analysis And Synthesis, Report Env.G.1/Fra/2006/0073 to DG Environment. March 2008. .
11. A. Markandya The Economic Valuation of Ecosystem Services, Paper Prepared for a Workshop on Greening the Economy: Integration of Monetary and Non-monetary Signals for Decision-Making in Ecosystem Conservation, Brussels, December 4th 2007.
12. Paulo Nunes, H. Ding and Anil Markandya. "The Economic Value of Marine Ecosystems: Lessons from the Millennium Ecosystem Assessment", CIESM Workshop Monographs, N°37, pp. 23-34. 2008
13. L. Braat & P. ten Brink, J. Bakkes, K. Bolt, I. Brauer, B. ten Brink, M. Kettunen, U. Kirchholtes, C. Klok, A. Markandya, M. van Oorschot, M. Rayment, C. Travisi "The Cost of Policy Inaction (COPI): The Case of Not Meeting the 2010 Biodiversity Target." Report to DG Environment. May 2008.
14. "Organic Crops or Energy Crops? Options for Rural Development in Cambodia and Lao People's Democratic Republic (PDR)", Discussion Paper, 101, Asian Development Bank Institute, Tokyo, 2008.
15. A. Sgobbi, C. Giuconi and A. Markandya "Study on Payment for Ecological and Environmental Services in China: A Pilot Study on Payment for Ecological and Environmental Services in Lashihai Nature Reserve, China", *Payments for Environmental Services*, Oxford University Press. 2008.
16. A. Markandya, T. Taylor, M.N. Murty and K. Dhavala. "Counting the cost of vulture declines – an appraisal of the human health and other benefits of vultures in India", Ecological Economics, 2008.
17. A. Markandya and P. Nunes, "The Economics of Ecosystems and Biodiversity (TEEB)", Volume D1 (TEEB for Policy-Makers), Chapter 5: "Rewarding (unrecognised) benefits of Ecosystems and Biodiversity", August 2009.
18. A. Markandya, S. Setboonsarng, Q.Y. Hui, R. Songkranok and A. Stefan. "The Costs of Achieving the Millennium Development Goals through Adopting Organic Agriculture", Discussion Paper, Paper 193, Asian Development Bank Institute, Tokyo, 2010.
19. Markandya, A. and P. Nunes "Rewarding Benefits Through Payments and Markets" in Patrick Ten Brink (ed.) *The Economics of Ecosystems and Biodiversity in National and International Policy Making*. London: Earthscan, 352pp. 2011.
20. E. Ojea, A. Markandya, R.K. Ghosh. P.K. Joshi "Setting Targets for Costing Ecosystem Adaptation", International Journal of Ecological Economics and Statistics, 24, 27-45, 2011.
21. Chiabai, A. Markandya, C.Travisi, H. Ding and P. Nunes "Economic valuation of Forest Ecosystem Services: Methodology and Monetary Estimates.", Environment and Resource Economics, 2011.
22. L. Brander, I. Brauer, H. Gerdes, A. Ghermandi, O. Kuik, A. Markandya, S. Navrud, P. Nunes, M. Schaafsma, H. Vos, A. Wagtendonk "Using meta-analysis and GIS for value transfer and scaling up: Valuing climate change induced losses of European wetlands", Environment and Resource Economics (DOI) 10.1007/s10640-011-9535-1. 2012.
23. A. Markandya and P. Nunes "Introduction to the Special Issue on the Socio-economics and Management of Bioprospecting", International Journal of Ecological Economics and Statistics, 26, 3, 2012.
24. E. Ojea, A. Markandya et al. "Wood provisioning in Mediterranean forests: a bottom-up spatial valuation approach", Forest Policy and Economics, 2012, 20, 78-88. 2012

25. Markandya and A. Chiabai “Economic Loss of Ecosystem Services from 1900 to 2050” *forthcoming* In *Economics of Human Challenges*, Lomborg B (Ed). Cambridge University Press. **(CB)**
26. P ten Brink, T Badura, S Bassi, S Gantioler, M Kettunen, M Rayment, M Pieterse E Daly, A. Markandya, P. Nunes H. Ding, R. Tinch and I. Dickie (2011), “ Estimating the Overall Economic Value of the Benefits provided by the Natura 2000 Network” Commission Contract 07.0307/2010/581178/SER/B3, Final REPORT. 2011.
27. Hussain S, Markandya A., Brander L, McVittie A, de Groot R, Vardakoulis O, Wagtendonk A and Verburg P “Ecosystems and Biodiversity”, in Lomborg B. (ed.) , *Global Problems, Smart Solutions: Costs and Benefits*, Cambridge University Press.
28. “The Equivalency Principle for Discounting the Value of Natural Assets: An Application to an Investment Project in the Basque Coast” (With A. Chiabai, I. Galarraga and U. Pascual), , *Environmental and Resource Economics*.
29. “The valuation of ecosystem services and their role in decision-making: constraints and ways forward” (with Marta Pascual) in (P. Nunes, P, Kumar and T. Dedeurwaerdere (eds.)). *Handbook on the Economics of Ecosystems and Biodiversity*. Edward Elgar: Cheltenham.
30. India: Diagnostic Assessment of Select Environmental Challenges Valuation of Biodiversity and Ecosystem Services in India. Report No. 70004-IN. The World Bank, Washington DC. June 2013.
31. “Energy and the Environment: Using Lessons Learned from the MDGs to Build Sustainability” Paper for the Commonwealth Secretariat (CCGE(13)3), Consultative Group in Energy and the Environment, February, 2013.
32. “Applying an Ecosystem Services Framework to Transport Appraisal”: Report for the UK Department of Transport (with Atkins). February 2013.

OTHER RELEVANT WORK EXPERIENCE

Projects I have worked on Related to Trade, Climate Change and Energy during the Last 5 Years

Climate Change

- **EU Framework 7 project CECILIA** on low carbon pathways for the EU to 2050, ongoing.
- **EU Framework 7 project PURGE** on co-benefits of low carbon development in urban areas in Europe, China and India, ongoing.
- **Climate Variability and Adaptation on the Croatian Coast**, study for PAP-RAC in Croatia, ongoing.
- Flexible biofuel policies for the EU, **Ministry of Agriculture, Government of France**, ongoing.
- **IPCC 5th Assessment WGII** Lead Author for the Chapter on the Economics of Adaptation and member of the core writing team for the Summary for Policy Makers 2011-2014.
- Capacity Building Program for senior civil servants in SE Asia on **Climate Finance, TERI and USAID**, New Delhi, 2013
- Adaptation strategies for the regions of **Pas de Calais and Picardie**, for the regional governments (with Artelia), 2012.
- Economics of Adaptation, for **French Ministry of Environment**, 2011-2012
- Economics of Adaptation (**DFID, UK**), 2011
- Economy-Environment Tradeoffs in India to 2030. (**World Bank**), 2010-2012
- Climate Change Action Plan for the State of Orissa (**World Bank**), 2010
- Fiscal Implications of Adaptation to Climate Change in India (**World Bank**), 2010.
- Adaptation Cost Estimation for India (with **TERI** and BC3 Spain) 2009
- Regional Assessment of Climate Vulnerability in India (with **World Bank**), 2009
- The Health Co-benefits of Reducing GHGs (with **London School of Hygiene and Tropical Medicine**) 2009
- Assessing the Study on the costs and benefits associated with the use of Tax Incentives to promote the manufacturing of more and better energy-efficient appliances and equipment and the consumer purchasing of these products. DG TAXUD project. (With Bio Intelligence Services), **European Commission**. 2007-2008
- Assessing the Health Costs of Climate Change (for **WHO**), 2008
- Public Attitudes to Climate Change. **IHOBE, Spain**. 2008
- Methodology for Design of a System for reduction of emissions of GHGs from local government bodies in Basque country. **IHOBE**. 2007.
- Environment Policy and Competitiveness EU ETS. **EC/DG Enterprise and Industry**. 2007.
- “Assessment of the Advantages and Disadvantages of Various Allocation Methodologies for the Post 2012 EU ETS” Report for DG Enterprise. (2007).
- Climate Change Policy in the East Midlands. **East Midland Development Agency**. 2007-2008
- Costing Tools. **UKCIP**. 2006-2007

- Climate Risk Work, Adaptation – 2 case studies: Peru and Tanzania. **RISO**, 2006
- Report for G8 Meeting in Moscow on Energy Security and Climate Change, **UNEP**, 2006
- Isle of Man Climate Change Scoping Study, **Climate Risk Management**, 2005-2006
- Health Impacts of Climate Change in Europe, **EC IPTS**, 2006.
- Climate Change Action Plan for the Basque Country, **Government of the Basque Country**, 2005-2006
- Quantify the Cost of Impacts and Adaptation, Climate Change Impacts and Adaptation: Cross-Regional Research Programme, **UK DEFRA**, 2005-2006.
- Financial Costs of Climate Extremes, **Association of British Insurers**, 2005.
- Social Cost of Carbon, **UK DEFRA**, 2004-2005.

Energy

- Concentrated Solar Power Study, World Bank. 2010, 2011.
- Kosovo Coal Power Generation II, World Bank. 2010
- Pakistan Energy Sector Review, World Bank. 2009.
- India Coal Fired Rehabilitation Project, World Bank/GEF, 2008.
- Vishnugad Pipalkoti Hydro Electric Project, India, World Bank, 2009.
- Improving Social Protection for Energy in Pakistan, World Bank, 2009
- Security of Energy Supply: Comparing Scenarios From a European Perspective, EU Project, 2009
- Botswana Coal Power Generation Project, World Bank 2008-2009
- Power System Planning in India: Incorporating External Costs and Benefits. Report for the World Bank, South Asia Department (2007).
- Kosovo Coal Project, World bank, 2006-2007.
- External Costs of Fuel Cycles in Europe (including oil, gas, coal), CASES and NEEDS Projects (2004-2007)
- Tajikistan Pamir Private Power Project (with R. Sharma) in: *Reducing Poverty and Sustaining Growth*, Proceedings of a Conference on Scaling Up Poverty Reduction, Shanghai, China, World Bank, Washington DC, 2004.

Projects Related to Biodiversity and Ecosystem Valuation During the Last 5 Years

- Marine Ecosystem Valuation, FP7 projects COCONET and Perseus. Principal Investigator at BC3. Ongoing. <http://www.perseus-fp7.eu/>.
- Valuation of ecosystem services from Natura 2000 sites. Project for DG Environment under subcontract to the Institute for Europe Environmental Policy. 2012. http://ec.europa.eu/environment/nature/natura2000/financing/docs/ENV-12-018_LR_Final1.pdf
- Integrated Coastal Zone Management in the Mediterranean: use of economic instruments for Lebanon, Albania, Croatia, Tunisia and Morocco and overlay of climate change adaptation on ICZM for Albania/Macedonia. PAP/RAC and World Bank. 2007-2012
- Costs of ecosystem degradation in India, World Bank, 2011-2012.
- Costs of Environmental Degradation: Studies for Bahrain, Kuwait and Saudi Arabia; World Bank, 2011-2013
- The Mantaza-Riachuelo Basin in Buenos Aires: An Appraisal of an Upgrading Scheme, World Bank, 2011.
- The Economics of Ecosystems and Biodiversity (TEEB). (TEEB for Policy-Makers) 2009.
- “Organic Crops or Energy Crops? Options for Rural Development in Cambodia and Lao People’s Democratic Republic (PDR)”, Study for Asian Development Bank Institute, Tokyo, 2008.
- Review on The Economics Of Biodiversity Loss – Phase 1 (Scoping) Economic Analysis And Synthesis, Report Env.G.1/Fra/2006/0073 to DG Environment. March 2008.
- Scaling up ecosystem service values: methodology, applicability and a case study”. Report to the European Environment Agency, April 2008.
- “The Cost of Policy Inaction (COPI): The case of not meeting the 2010 biodiversity target.” Report Prepared for EC, DG Environment. May 2008.
- Economics Assessment of Ecosystem Contributions: Valuing Impacts of Air Pollution, Meeting to advice DG Environment, European Commission, June 2007.
- The Economic Valuation of Ecosystem Services, Paper Prepared for a Workshop on Greening the Economy: Integration of Monetary and Non-monetary Signals for Decision-Making in Ecosystem Conservation, Brussels, December 2007.
- Study on Payment for Ecological and Environmental Services in China: A Pilot Study on Payment for Ecological and Environmental Services in Lashihai Nature Reserve, China” Study for the World Bank, 2006-2007. *Payments for Environmental Services: Ecological Economics and Human Wellbeing*, New Delhi: Oxford University Press.

- Choice of Policy Instruments for Modern Regulation of the Environment in Agriculture, Report 070063 for the UK Environment Agency.
- Protecting Coastal Zones in The Mediterranean. SAPMED Programme, Managed from Croatia, 2005-2007.
- “Organic Agriculture and the MDGs: Case Studies from China PRC, Thailand and Sri Lanka”, Study for the Asian Development Bank, 2007-2009. Discussion Paper 193, Asian Development Bank Institute, Tokyo, 2010.
- Counting the cost of vulture declines – an appraisal of the human health and other benefits of vultures in India. Study for RSPB, 2006-2007. Ecological Economics, 67, 2, 194-204.
- Studies of cases where biodiversity loss has led to the loss of ecosystem services, Project for DG Environment under subcontract to the Institute for Europe Environmental Policy, Brussels. 2005-2006.