

BIBLIOGRAPHY

CLIMATE CHANGE POVERTY & FISHERIES

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**FINAL TECHNICAL REPORT: EFFECTS OF CLIMATE CHANGE ON THE
SUSTAINABILITY OF CAPTURE AND ENHANCEMENT FISHERIES IMPORTANT
TO THE POOR: ANALYSIS OF THE VULNERABILITY AND ADAPTABILITY OF
FISHERFOLK LIVING IN POVERTY**

BY

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- Aaheim, H.A. & Sygna, L. (2000). *Economic impacts of Climate Change on Tuna Fisheries in Fiji Islands and Kiribati*, CICERO Reports. 2000:04, Center for International Climate and Environmental Research, University of Oslo, Oslo.
- Abler, D., J. Shortle 1, et al. (2000). "Characterizing regional economic impacts and responses to climate change." *Global and Planetary Change* **25**: 67-81.
- Acheson, J. M. and M. H. Glantz (1992). Maine lobster industry. *Climate variability, climate change and fisheries*. M. H. Glantz. Cambridge, Cambridge University Press: 147-165.
- Adams, R. M., B. H. Hurd, et al. (1998). "Effects of global climate change on agriculture: an interpretive review." *Climate Research* **11**(1): 19-30.
- Adger, W. N. (1998). Indicators of Social and Economic Vulnerability to Climate Change in Vietnam. Norwich, University of East Anglia.
- Adger, W. N. (1999). "Social Vulnerability to Climate Change and Extremes in Coastal Vietnam." *World Development* **27**(2): 249-69.
- Adger, W. N., Arnell, N. W. and Tompkins, E. (2004) Successful adaptation to climate change across scales. *Global Environmental Change* submitted
- Adger, W. N., N. Brooks, M. Kelly, G. Bentham, M. Agnew and S.Eriksen (2004). New indicators of vulnerability and adaptive capacity. *Technical Report*. Norwich, Tyndall Centre for Climate Change Research.
- Adger, W. N. and P. M. Kelly (1999). "Social vulnerability to climate change and the architecture of entitlements." *Mitigation and Adaptation Strategies for Global Change* **4**(3-4): 253-266.
- Adger, W. N., Huq, S., Brown, K., Conway, D. and Hulme, M. (2003) Adaptation to climate change in the developing world. *Progress in Development Studies* **3**, 179-195.
- Adger, W. N. and Vincent, K. (2004) Uncertainty in adaptive capacity. *Comptes Rendus Geoscience*, in press.
- Agnew, S., 1979. The People and the Land, pp 309-342. In M. Kalk, A. J. McLachlan and C. Howard-Williams (eds.) *Lake Chilwa: Studies of Change in a Tropical Ecosystem*. The Netherlands: Dr. W. Junk.
- Agnew, S. and Chipeta, C., 1979. Fishing and Fish-trading: Socio-economic Studies, pp 343-368 In M. Kalk, A. J. McLachlan and C. Howard-Williams (eds.) *Lake Chilwa: Studies of Change in a Tropical Ecosystem*. The Netherlands: Dr. W. Junk.
- Ahas R. (1999) Long-term phyto-, ornitho- and ichthyophenological time-series analyses in Estonia. *International Journal of Biometeorology* **42**: 119-123.
- Aiken, K.A., Bacon, P.R., & Mooyoung, R. (1992). Recovery after Hurricane Gilbert: implications for disaster preparedness in the fishing industry in Jamaica. *Proceedings of Gulf and Caribbean Fisheries Institute*, **41**, 261-283.
- Akong'a, J., Downing, T.E., Konijn, N.T., Mungai, D.N. Muturi, H.R. and Potter, H.L. (1988). The effects of climate variations on agriculture in central and eastern Kenya. In Parry, M.L., T.R. Carter, and N.T. Konijn (eds.) *The impact of climatic variations on agriculture. Volume 2, Assessments in semi-arid regions*. pp. 123-270. Dordrecht, The Netherlands.
- Alheit J. & Hagen E. (1997) Long-term climate forcing of European herring and sardine populations. *Fisheries Oceanography* **6**: 130-139.

- Alleng G. P. (1998) Historical development of the Port Royal mangrove wetland, Jamaica. *Journal of Coastal Research* **14**: 951-959.
- Allison, E.H. (2001) Big laws, small catches: global ocean governance and the fisheries crisis. *Journal of International Development* **13** (7): 933-950.
- Allison, E.H. (2005) The fisheries sector, livelihoods and poverty reduction in Eastern and Southern Africa. In: *Rural Livelihoods and Poverty Reduction Policies* (eds: F.Ellis and H.A. Freeman). Routledge, London, pp 256-273.
- Allison, E.H. & Ellis, F. (2001). The livelihoods approach and management of small-scale fisheries. *Marine Policy*, **25**, 377-388.
- Allison, E.H., Ellis, F., Mvula, P.M., & Mathieu, L.F. (2001). Fisheries management and uncertainty: the causes and consequences of variability in inland fisheries in Africa, with special reference to Malawi. In *Proceedings of the Lake Malawi Fisheries Management Symposium, 4th-9th June 2001* (eds O.L.F. Weyl & M.V. Weyl), pp. 66-79. National Resource Management Programme, Government of Malawi, Lilongwe, Malawi.
- Allison, E.H. and P.Mvula (2002). Fishing livelihoods and fisheries management in Malawi. *LADDER Working Paper No 23*, ODG, Norwich, U.K.
(<http://www.odg.uea.ac.uk/ladder/>)
- Allison, E.H., G. Patterson, K. Irvine, A.B.Thompson and A. Menz (1995). The pelagic ecosystem, pp 351-377. In: A. Menz (ed.), *The fisheries potential and productivity of the pelagic zone of Lake Malawi/Niassa*. Natural Resources Institute, Chatham.
- Alvarez, L.H.R. (1998). Optimal harvesting under stochastic fluctuations and critical depensation. *Mathematical Biosciences* **152**(1): 63-85.
- Arnason, R. (2003). *Global warming and North Atlantic Fisheries: attempting to assess the economic impact*. Climate change with focus on Natural Resources: The Biological Dimensions and the Economic Consequences, 2-4 June 2003, Copenhagen, Denmark, Center for Fisheries and Aquaculture Management and Economics, University of Southern Denmark. Asian Development Bank (2002). *The contribution of fisheries to the economies of Pacific Island countries*, Asian Development Bank.
- Attrill M. J. & Power M. (2002) Climatic influence on a marine fish assemblage. *Nature* **417**: 275-278.
- Backiel T. & Le Cren E.D. (1978). Some density relationships for fish population parameters. In: Gerking SD (Ed.) *The Ecology of Freshwater Fish Production*. Blackwell, Oxford, UK, pp 279-302.
- Badjeck, M.-C. (2004). *Oil or Fish? Natural resource use and livelihood security of fisherfolk in Cameroon's coastal zone - Draft*, Sustainable Fisheries Livelihoods Programme, FAO, Rome.
- Bailey, C. (1982). Small-scale fisheries of San Miguel Bay, Philippines: Occupational and geographic mobility. *ICLARM Technical Reports* **10**. Philippines: ICLARM.
- Bailey, C. (1997). Lessons from Indonesia's 1980 trawler ban. *Marine Policy* **21**(3): 225-236.
- Baker A. C., Starger C. J., McClanahan T. R. & Glynn P. W. (2004) Corals' adaptive response to climate change. *Nature* **430**: 741.

- Bakun A. (1990) Global Climate Change and Intensification of Coastal Ocean Upwelling. *Science* **247**: 198-201.
- Bakun A. & Broad K. (2003) Environmental 'loopholes' and fish population dynamics: comparative pattern recognition with focus on El Niño effects in the Pacific. *Fisheries Oceanography* **12**: 458-473.
- Barkley Rosser, J. (2001). "Complex ecologic-economic dynamics and environmental policy." *Ecological Economics* **37**(1): 23-37.
- Barnett, J. and W. N. Adger (2003). "Climate Dangers and Atoll Countries." *Climate Change* **61**(3): 321-337.
- Bayley P.B. (1988). Factors affecting growth rates of young tropical floodplain fishes: seasonality and density dependence. *Environmental Biology of Fishes* **21**:127-42.
- Bayley P.B. (1991). The flood pulse advantage and the restoration of river-floodplain systems. *Regulated Rivers* **6**:75-86.
- Beamish R. J., Noakes D. J., McFarlane G. A., Klyashtorin L., Ivanov V. V. & Kurashov V. (1999) The regime concept and natural trends in the production of Pacific salmon. *Canadian Journal of Fisheries and Aquatic Sciences* **56**: 516-526.
- Beaugrand G., Brander K. M., Lindley J. A., Souissi S. & Reid P. C. (2003) Plankton effect on cod recruitment in the North Sea. *Nature* **426**: 661-664.
- Beaugrand G., Reid P. C., Ibanez F., Lindley J. A. & Edwards M. (2002) Reorganization of North Atlantic marine copepod biodiversity and climate. *Science* **296**: 1692-1694.
- Beddington, J.R. and May, R.M. (1977). Harvesting natural populations in a randomly fluctuating environment. *Science* **197**: 463-465.
- Behnke, R.H. Jr., I. Scoones and C. Kerven (eds.) (1993). *Range Ecology at Disequilibrium*. ODI, London.
- Bellido J. M., Pierce G. J. & Wang J. (2001) Modelling intra-annual variation in abundance of squid *Loligo forbesi* in Scottish waters using generalised additive models. *Fisheries Research* **52**: 23-39.
- Bellwood, D.R., Hoey, A.S., & Choat, J.H. (2003) Limited functional redundancy in high diversity systems: resilience and ecosystem function on coral reefs. *Ecology Letters*, **6**, 281-285
- Bellwood, D.R., Hughes, T.P., Folke, C., & Nystrom, M. (2004) Confronting the coral reef crisis. *Nature*, **429**, 827-833.
- Benson, C. and Clay, E. (1998) The impact of drought on Sub-Saharan African Economies. World Bank Technical Paper No. 401. The World Bank, Washington D.C.
- Béné, C., Macfadyen, G., and Allison, E.H. (2005) Increasing the contribution of small-scale fisheries to poverty alleviation and food security. *FAO Fisheries Technical Paper XX* (in press).
- Béné, C. *et al.* (2000). Evaluating livelihood strategies and the role of inland fisheries in rural development and poverty alleviation: the case of the Yaéré floodplain in North Cameroon. Proceedings of the 10th International Conference of the Institute of Fisheries Economics and Trade, Corvallis, Oregon, July 9-14th 2000.

- Berkes, F and C. Folke, editors, (1998). *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge, UK.
- Berkes, F. & Jolly, D. (2001). Adapting to climate change: social-ecological resilience in a Canadian western Arctic community. *Conservation Ecology*, **5**, [online] URL:<http://www.consecol.org/vol15/iss2/art18>.
- Bigg, G.R., Jickells, T.D., Liss, P.S. and Osborn, T.J. (2003) The role of the oceans in climate. *International Journal of Climatology* **23**, 1127-1159.
- Bijlsma, L. (1998). "Climate change and the management of coastal resources." *Oceanographic Literature Review*.
- Binet, D. and J. Servain (1993). "Have the recent hydrological changes in the northern Gulf of Guinea induced the *Sardinella aurita* outburst?" *Oceanologica Acta* **16**(3): 247-260.
- Bird E. C. F. (1993) *Submerging Coasts*. John Wiley & Sons, Chichester.
- Bogstad B. & Gjosaeter H. (1994) A Method for Estimating the Consumption of Capelin by Cod in the Barents Sea. *ICES Journal of Marine Science* **51**: 273-280.
- Bohle, H.G., Downing, T.E. and Watts, M.J. (1994) Climate change and social vulnerability: towards a sociology and geography of food insecurity. *Glob. Env. Change*, **4**, 37-48.
- Bonetto A.A. & Pignalberi, C. (1964). Nuevos aportes al conocimiento de las migraciones de los peces en los rios mesopotamicos de la Republica Argentina. *Comm.Inst Nacional Limnologia Santo Tome*. 1:1-14.
- Bonetto A.A., Pignalberi C., Cordiviola E. & Oliveros O., (1971). Informaciones complementarias sobre migracion de peces en la cuenca de la Plata. *Physis B. Aires* **30**:505-520.
- Bootsma H. A. & Hecky R. E. (1993) Conservation of the African Great-Lakes - a Limnological Perspective. *Conservation Biology* **7**: 644-656.
- Botsford L. W., Castilla J. C. & Peterson C. H. (1997) The management of fisheries and marine ecosystems. *Science* **277**: 509-515.
- Boyer D., Cole J. & Bartholomae C. (2000) Southwestern Africa: Northern Benguela Current region. *Marine Pollution Bulletin* **41**: 123-140.
- Brander K. (2000) Effects of environmental variability on growth and recruitment in cod (*Gadus morhua*) using a comparative approach. *Oceanologica Acta* **23**: 485-496.
- Brashares, J.S., Arcese, P., Sam, M.K., Coppolillo, P.B., Sinclair, A.R.E and Balmford, A. (2004). Bushmeat hunting, wildlife declines, and fish supply in West Africa. *Science* **306**: 1180-1183.
- Broad, K., Pfaff, A.S.P., & Glantz, M.H. (1999). *Climate information and conflicting goals: El Niño 1997-98 and the Peruvian fishery*. Public Philosophy, Environment, and Social Justice, 21-22 October 1999, New York, Carnegie Council on Ethics and International Affairs.
- Broad, K., Pfaff, A.S.P., & Glantz, M.H. (2002). Effective and equitable dissemination of seasonal-to-interannual climate forecasts: Policy implications from the Peruvian fishery during El Niño 1997-98. *Climatic Change*, **54**, 415-438.
- Brody M. & Hlohowskyj I. (1998) Fisheries. In: *Handbook on Methods of Climate Change Impact Assessment and Adaptation Strategies* (eds. J. F. Feenstra, I.

- Burton, J. B. Smith & R. S. J. Tol) pp. 14.11-14.37. United Nations Environment Programme, Nairobi & Institute for Environmental Studies, Vrije Universiteit, Amsterdam.
- Brooks, N. (2003). *Vulnerability, risk and adaptation: a conceptual framework*, Tyndall Working Paper. No. 38, Tyndall Centre for Climate Change Research, Norwich, UK.
- Brooks, N., W. N. Adger, et al. (2005). "The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation." Global Environmental Change: Accepted.
- Brown B. E., Dunne R. P., Goodson M. S. & Douglas A. E. (2000) Marine ecology - Bleaching patterns in reef corals. *Nature* **404**: 142-143.
- Brown B. E. & Suharsono (1990) Damage and Recovery of Coral Reefs Affected by El Niño Related Seawater Warming in the Thousand Islands, Indonesia. *Coral Reefs* **8**: 163-170.
- Burkett, V., J. O. Codignotto, et al. (2001). Coastal zones and marine ecosystems. *Climate change 2001: impacts, adaptation, and vulnerability*. J. McCarthy, O. S. Canziani, N. Leary, D. Dokken and K. White. Cambridge, Cambridge University Press: 343-380.
- Caddy, J.F. and Gulland, J.A. (1983). Historical patterns of fish stocks. *Marine Policy* **7**(4): 267-278.
- Caddy J. F. & Rodhouse P. G. (1998) Cephalopod and groundfish landings: evidence for ecological change in global fisheries? *Reviews in Fish Biology and Fisheries* **8**: 431-444.
- Callaway, D., Eamer, J., Edwarden, E., Jack, C., Marcy, S., Olrun, A., Patkotak, M., Rexford, D., & Whiting, A. (1998). *Effects of climate change on subsistence communities in Alaska*. Proceeding of a workshop: Assessing the consequences of climate change for Alaska and the Bering Sea region, 29-30 October 1998, Fairbanks, (eds G. Weller & P.A. Anderson), Center for Global Change and Arctic System Research, University of Alaska Fairbanks.
- Cannell, M.G.R., Palutikof, J. and Sparks, T.H (1999) Indicators of climate change in the UK. DETR Publishing, Yorkshire, UK.
- Carney, D. (ed.) (1998). *Sustainable Rural Livelihoods - What Contribution Can We Make?* London: DFID.
- Carpenter S. R., Fisher S. G., Grimm N. B. & Kitchell J. F. (1992) Global Change and Fresh-Water Ecosystems. *Annual Review of Ecology and Systematics* **23**: 119-139.
- Carpenter, T. M. and K. P. Georgakakos (2001). "Assessment of Folsom lake response to historical and potential future climate scenarios: 1. Forecasting." Journal of Hydrology.
- Catto, N.R. (2004). *Impacts of climate variation and adaptation for Atlantic Canadian fisheries communities*. Canadian Association of Geographers Annual Meeting, 25-29 May 2004, Moncton, NB, Canadian Association of Geographers.
- Caviedes, C. N. (1981). The impact of El Niño on the development of the Chilean Fisheries. In: *Resource Management and Environmental Uncertainty: Lessons from Coastal Upwelling Fisheries*. M. H. Glantz (ed.). New-York; Chichester, John Wiley & Sons, pp 351-368.

- Chabanet, P., Ralambondrainy, H., Amanieu, M., Faure, G., & Galzin, R. (1997) Relationships between coral reef substrata and fish. *Coral Reefs*, **16**, 93-102.
- Chambers, R. & Conway, G.R. (1992). *Sustainable rural livelihoods: Practical concepts for the 21st century.*, Discussion Paper 296., Institute of Development Studies, Brighton, UK.
- Charles, A. T. 2001. *Sustainable Fisheries Systems*. Oxford: Fishing News Books, Blackwell Scientific.
- Chavez F. P., Strutton P. G., Friederich C. E., Feely R. A., Feldman G. C., Foley D. C. & McPhaden M. J. (1999) Biological and chemical response of the equatorial Pacific Ocean to the 1997-98 El Niño. *Science* **286**: 2126-2131.
- Chifamba, P. C. (2000). "The relationship of temperature and hydrological factors to catch per unit effort, condition and size of the freshwater sardine, *Limnothrissa miodon* (Boulenger), in Lake Kariba." *Fisheries Research* **9**(3): 271-281.
- Chirwa, W.C. (1998) The Lake Malombe and Upper Shire River Fisheries Co-management Programme: An Assessment, pp 61-77. In A. K. Normann, J.R. Nielsen and S. Sverdrup-Jensen (eds.) *Fisheries Co-management in Africa*. U.K.: Institute for Fisheries Management and Coastal Community Development.
- Chong, K., (1993). Socio-economic issues in coastal fisheries management, labour absorption in fisheries: inevitable trends and prospects in employment creation, In: *Proceedings of the FAO Symposium on Fisheries Management in SE Asia*. FAO, Rome, pp 49-69.
- Clark, C. W., T. Lauck, et al. (1995). Managing Uncertain Fishery Resources: The Case for Protected Reserves.
- Clark R. A., Fox C. J., Viner D. & Livermore M. (2003) North Sea cod and climate change - modelling the effects of temperature on population dynamics. *Global Change Biology* **9**: 1669-1680.
- Clemens S., Prell W., Murray D., Shimmield G. & Weedon G. (1991) Forcing Mechanisms of the Indian-Ocean Monsoon. *Nature* **353**: 720-725.
- Cochrane, K.L. (2000). Reconciling sustainability, economic efficiency and equity in fisheries: the one that got away? *Fish and Fisheries* **1** (1): 2-21.
- Cohen, J.E. (2003) Human population: the next half century. *Science*, **302**, 1172-1175.
- Colding, J. and Folke, C. (2001). Social Taboos: Invisible Systems of Local Resource Management and Biological Conservation. *Ecological Applications* **11** (2): 584-600.
- Cole, C. F. (1996). Can we Resolve Uncertainty in Marine Fisheries Management? *Scientific Uncertainty and Environmental Problem Solving*. (J. Lemons, ed). Oxford, Blackwell Science: 233-263.
- Coles S. L. & Brown B. E. (2003) Coral bleaching - capacity for adaptation. *Advances in Marine Biology* **46**: 183-223.
- Condrey, R., D. Fuller, et al. (1992). The US Gulf shrimp fishery. In: *Climate variability, climate change and fisheries*. (ed, M. H. Glantz). Cambridge, Cambridge University Press: 89-119.
- Connell, J.H. (1978) Diversity in Tropical Rain Forests and Coral Reefs. *Science*, **199**, 1302-1310.

- Conover D. O. (1984) Adaptive Significance of Temperature-Dependent Sex Determination in a Fish. *American Naturalist* **123**: 297-313.
- Conway, D., Allison, E.H., Felstead, R. and Goulden, M. (2005). Rainfall variability in East Africa: implications for natural resources management and livelihoods. *Philosophical Transactions of the Royal Society A* **363**: 49-54.
- Corbett, J. (1988) Famine and household coping strategies. *World Development* **16**, 1099-1112.
- Cornejo-Grunauer, P., A. Guituérrez-Espinoza, et al. ([undated]). Ecuador case study. *Reducing the impacts of environmental emergencies through early warning and preparedness: the case of the 1997-1998 El Niño*, United Nations University in cooperation with United Nations Environmental Programme and National Center for Atmospheric Research, Tokyo.
- Corten A. & vandeKamp G. (1996) Variation in the abundance of southern fish species in the southern North Sea in relation to hydrography and wind. *ICES Journal of Marine Science* **53**: 1113-1119.
- Cooke, J. G. (1999). Improvement of fishery-management advice through simulation testing of harvest algorithms. *ICES Journal of Marine Science* **56**: 797-810.
- Costanza, R., d'Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., Limberg, K., Naeem, S., O'Neill, R.V., Paruelo, J., Raskin, R.G., Sutton, P., & van den Belt, M. (1997) The value of the world's ecosystem services and natural capital. *Nature*, **387**, 253-260.
- Craig, J.F., Halls, A.S., Barr, J., & Bean, C.W. (2004). The Bangladesh Floodplain Fisheries *Fisheries Research* **66**: 271-286.
- Crean, K. and K. Geheb (2001). "Sustaining appearances: Sustainable development and the fisheries of Lake Victoria." *Natural Resources Forum* **25**(3): 215-224.
- Crean, K., & Symes, D. (Eds.). 1996. *Fisheries Management in Crisis*. Fishing News Books, Blackwell Science: Oxford.
- Cushing, D.H. (1982). *Climate and Fisheries*. Cambridge: Cambridge University press.
- Cushing, D.H. (1996). *Towards a Science of Recruitment in Fish Populations*. Oldendorf/Luhe, Germany: Ecology Institute.
- Cushing D. H. & Dickson R. R. (1976) The biological response in the sea to climatic changes. In: *Advances in Marine Biology* (eds. F. S. Russell & M. Yonge) pp. 1-122.
- CWP (2000-2005). CWP Handbook of Fishery Statistical Standards. Rome,, Coordinating Working Party on Fishery Statistics, FAO.
- Cycon, D.E. (1986). Managing fisheries in developing-nations - a plea for appropriate development. *Natural Resources Journal* **26**(1): 1-14.
- Dalton, M.G. (2001). El Niño, expectations, and fishing effort in Monterey Bay, California. *Environmental Economics and Management*, **42**, 336-359.
- Dalzell, P. (1996). Catch rates, selectivity and yields of reef fishing. In *Reef Fisheries* (eds N.V.C. Polunin & C.M. Roberts), pp. 161-192. Chapman & Hall, London.
- Dalzell, P., Adams, T.J.H., & Polunin, N.V.C. (1996) Coastal fisheries in the Pacific islands. *Oceanography and Marine Biology*, **34**, 395-531.
- Davidson, O., K. Halsnaes, et al. (2003). "The development and climate nexus: the case of sub-Saharan Africa." *Climate Policy* **3S1**: 97-113.

- De Graaf, G. and Martin, F. (2000). The importance of fishing for different social strata in rural Bangladesh: experiences of the CPP Project. Paper presented at the DFID-SEA Aquatic Resources Management for Sustainable Livelihoods of Poor People e-conference, 9/6-7/7/2000. [<http://naca.fisheries.go.th/dfid/sources/grAAF.htm>].
- De Waal, A. (1997) *Famine Crimes: politics and the disaster relief industry in Africa*. Oxford, James Currey.
- Deacon, R.T. *et al.* (1998). Research trends and opportunities in environmental and natural resource economics. *Environmental and Resource Economics* **11**(3-4): 383-397.
- Dempson, J. B., M.-F. O'-Connell, et al. (2001). "Potential impact of climate warming on recreational fishing opportunities for Atlantic salmon, *Salmo salar* L., Newfoundland, Canada." *Fisheries Management and Ecology* **8**(1): 69-82.
- DFID (2001). *Sustainable livelihoods guidance sheets*, Department for International Development, London.
- DFID (2004) DFID Research Funding Framework. Department for International Development, London.
- Dixon, P-J, Sultana, P., Thompson, P., Ahmed, M., Halls, A.S. & Lorenzen, K. (2003). Understanding Livelihoods Dependent on Inland Fisheries in Bangladesh and Southeast Asia (R8118). Synthesis Report. 158p.
- Dixon, R. K., J. Smith, et al. (2003). "Life on the edge: vulnerability and adaptation of african ecosystems to global climate change." *Mitigation and Adaptation Strategies for Global Change* **8**: 93-113.
- Done T. (2003) Coral reefs and global climate change: implications of changed temperatures, sea level, atmospheric carbon dioxide and cyclone regimes. In: *Global Climate Change and Biodiversity* (eds. R. E. Green, M. Harley, L. Miles, J. Scharlemann, A. Watkinson & O. Watts) pp. 28-30. The RSPB, Sandy, UK, University of East Anglia, Norwich, UK.
- Donn, J. (2004). *Lobster Decline tied to global warming*, Bangor Daily News, 23/10/04,
- Downing, T. E. (1992) *Climate Change and Vulnerable Places: Global Food Security and Country Studies in Zimbabwe, Kenya, Senegal and Chile*. Research Report 1, Environmental Change Unit, University of Oxford.
- Downing, T.E. Butterfield, R. Cohen, S. Huq, S. Moss, R. Rahman, A. Sokona Y. and Stephen, L. (2001) Vulnerability Indices: Climate Change Impacts and Adaptation. UNEP Policy Series No 3. UNEP: Nairobi.
- Downing, T.E., L. Ringius, M. Hulme, and D. Waughray, 1997: Adapting to climate change in Africa. *Mitigation and Adaptation Strategies for Global Change*, **2**, 19-44.
- Drèze, J. and Sen, A. (1989) *Hunger and Public Policy*. Oxford, Clarendon Press.
- Dudgeon, D. (2000). "Conservation of freshwater biodiversity in Oriental Asia: constraints, conflicts, and challenges to science and sustainability." *Limnology* **1**(3): 237.
- Dulvy, N.K., Freckleton, R.P., & Polunin, N.V.C. (2004a) Coral reef cascades and the indirect effects of predator removal by exploitation. *Ecology Letters*, **7**, 410-416.

- Dulvy, N.K., Polunin, N.V.C., Mill, A.C., & Graham, N.A.J. (2004b) Size structural change in lightly exploited coral reef fish communities: evidence for weak indirect effects. *Canadian Journal of Fisheries and Aquatic Sciences*, **61**, 466-475.
- Dyer, C.L. and J.R. McGoodwin (eds), 1994. *Folk Management in the World's Fisheries: Lessons for Modern Fisheries Management*, Niwot, CO: University Press of Colorado.
- EAD (2000) Lake Chilwa Wetland – State of the Environment. Environmental Affairs Department, Malawi Government, June 2000.
- Edwards M. & Richardson A. J. (2004) Impact of climate change on marine pelagic phenology and trophic mismatch. *Nature* **430**: 881-884.
- Eide, A. & Heen, K. (2002). Economic impacts of global warming: A study of the fishing industry in North Norway. *Fisheries Research*, **56**, 261-274.
- Eliot, I., C. M. Finlayson, et al. (1999). "Predicted climate change, sea-level rise and wetland management in the Australian wet-dry tropics." *Wetlands Ecology and Management* **7**(1-2): 63-2).
- Ellis, F. (2000). *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press.
- Ellis, F. (1998). Household strategies and rural livelihood diversification. *Journal of Development Studies* **35**:1-38.
- Ellis, F. & Freeman, H.A. (2004). Rural livelihoods and poverty reduction strategies in four African countries. *Journal of Development Studies* **40**(4): 1-30.
- Ellison A. M. & Farnsworth E. J. (1997) Simulated sea level change alters anatomy, physiology, growth, and reproduction of red mangrove (*Rhizophora mangle* L.). *Oecologia* **112**: 435-446.
- Ellison J. (2003) Climate change and sea level rise impacts on mangrove ecosystems. In: *Global Climate Change and Biodiversity* (eds. R. E. Green, M. Harley, L. Miles, J. Scharlemann, A. Watkinson & O. Watts) pp. 26-27. The RSPB, Sandy, UK, University of East Anglia, Norwich, UK.
- Ellison J. C. & Stoddart D. R. (1991) Mangrove Ecosystem Collapse During Predicted Sea-Level Rise - Holocene Analogs and Implications. *Journal of Coastal Research* **7**: 151-165.
- Escenbach, W.W. (2004). Climate change effect on Lake Tanganyika? *Nature* **424**: 766.
- FAO (1989). Evaluation of the agriculture situation in the eastern Caribbean countries affected by Hurricane Hugo. OSRO Report. Rome, Food and Agriculture Organization of the United Nations: 63.
- FAO (1995). The Code of Conduct for Responsible Fisheries. FAO, Rome.
- FAO (1998). Yearbook of Fisheries Statistics. Rome, Food and Agriculture Organisation.
- FAO (1999). Numbers of Fishers 1970-1996. *Fisheries Circular No.929, Rev 1*. Rome, FAO Fishery Information, Data and Statistics Unit: 124p.
- FAO (2000). The State of World Fisheries and Aquaculture, 2000. FAO, Rome.
- FAO (2002) The State of World Fisheries and Aquaculture, 2002. FAO, Rome.
- FAO (2004) The State of World Fisheries and Aquaculture, 2004. FAO, Rome.

- FAO (2004b) Low-income food-deficit countries. Rome, Food and Agriculture Organization.
- FAO (undated). *Fisheries and food security*. Food and Agriculture Organisation, Rome. <http://www.fao.org/FOCUS/E/fisheries/intro.htm>. 09/09/04.
- FAOSTAT data (2004). Food Balance Sheets. Rome, FAO.
- FAOSTAT data (2004). Long-term Series (decennial) Agricultural Population & Economically Active Population. Rome, FAO.
- Faucheux, S. *et al.* (1997). Towards an integration of uncertainty, irreversibility and complexity in environmental decision making, Ch 3 in van den Bergh and van der Straaten (eds.) *Economy and Ecosystems in Change*. Edward Elgar.
- Feely R. A., Sabine C. L., Lee K., Berelson W., Kleypas J., Fabry V. J. & Millero F. J. (2004) Impact of anthropogenic CO₂ on the CaCO₃ system in the oceans. *Science* **305**: 362-366.
- Few, R. (2003) Flooding, vulnerability and coping strategies: local responses to a global threat. *Progress in Development Studies* **3**, 43-58.
- Field C. B., Daily G. C., Davis F. W., Gaines S., Matson P. A., Melack J. & Miller N. L. (1999) Confronting Climate Change in California: Ecological Impacts on the Golden State pp. 63. The Union of Concerned Scientists, Cambridge MA and Ecological Society of America, Washington DC.
- Field C. D. (1995) Impact of Expected Climate-Change on Mangroves. *Hydrobiologia* **295**: 75-81.
- Flaaten, O., Salvanes, A. G. V., Schweder, T. and Ulltang, O. (1998). Fisheries management under uncertainty - An overview. *Fisheries Research*, **37**: 1-6.
- Francis, R. C. and S. R. Hare (1994). "Decadal-Scale Regime Shifts in the Large Marine Ecosystems of the North-East Pacific: A Case For Historical Science." *Fisheries Oceanography* **3**(4): 279-291.
- Frankhauser, S., Smith, J. B. and Tol, R. S. J. (1999) Weathering climate change: some simple rules to guide adaptation decisions. *Ecological Economics* **30**, 67-78.
- Frederick, S.W. and Peterman, R.M. (1995). Choosing fisheries harvest policies: when does uncertainty matter? *Canadian Journal of Fisheries and Aquatic Sciences* **52**: 291-306.
- Fromentin J. M. & Planque B. (1996) Calanus and environment in the eastern North Atlantic .2. Influence of the North Atlantic Oscillation on C-finmarchicus and C-helgolandicus. *Marine Ecology Progress Series* **134**: 111-118.
- Fuentes C.M., 1998. *Deriva de larvas de sabalo Prochilodus lineatus (Valenciennes, 1847) y otras especies de peces de interes comercial en el Rio Parana Inferior*. [Drift of larvae of Sabalo *Prochilodus lineatus* (Valenciennes, 1847) and other species of commercial interest in the lower Parana River] Thesis, Universidad de Buenos Aires.
- Fuentes F. and Espinach Ros A., (1998). Distribucion espacial y temporal del ichthyoplnton en un punto del bajo delta del rio Parana. *Revista del Museo Argentino de Ciencias Naturales 'Bernardino Rivadavia'* **8**: 51-61.
- Gaffin, S. R., C. Rosenzweig, et al. (2004). "Downscaling and geo-spatial gridding of socio-economic projections from the IPCC Special Report on Emissions Scenarios (SRES)." *Global Environmental Change A* **14**: 105-123.

- Gardner, T.A., Cote, I.M., Gill, J.A., Grant, A., & Watkinson, A.R. (2003) Long-term region-wide declines in Caribbean corals. *Science*, **301**, 958-960.
- Gaffina, S.R, Rosenzweig, C., Xing, X., Yetman, C. (2004). Downscaling and geo-spatial gridding of socio-economic projections from the IPCC Special Report on Emissions Scenarios (SRES) *Global Environmental Change* **14**: 105–123
- Garcia S. & Le Reste L. (1981) Life Cycles, Dynamics, Exploitation, and Management of Coastal Penaeid Shrimp Stocks. Food and Agriculture Organization of the United Nations, Rome.
- Gaygalas K.S. & Blatneve D.P., (1971). Growth characteristics and the structure and abundance of the bream (*Abramis brama* (L.) stock in the watercourses of the summer polders of the Nyumunas River delts. *Journal of Ichthyology* **11**:682-692.
- Geheb, K. & T. Binns (1997) Fishing Farmers or 'Farming Fishermen'? The Quest for Household Income and Nutritional Security on the Kenyan Shores of Lake Victoria. *African Affairs* **96**: 73-93.
- Genner M. J., Sims D. W., Wearmouth V. J., Southall E. J., Southward A. J., Henderson P. A. & Hawkins S. J. (2004) Regional climatic warming drives long-term community changes of British marine fish. *Proceedings of the Royal Society of London Series B-Biological Sciences* **271**: 655-661.
- Gillet, V. (2003). *Case Study: the vulnerability and adaptive capacity of the Belize fisheries sector to severe weather events*. Climate Change and Severe Weather Events in Asia and the Caribbean, July 24-25, Grand Barbados Beach Resort, Barbados, Carribean Disaster Emergency Response Agency.
- Gillet, R. and C. Lightfoot (2002). The Contribution of Fisheries to the Economies of Pacific Island Countries. *Pacific Studies Series*. Manila, Philippines, Asian Development Bank.
- Gitay H., Brown S., Easterling W., Jallow B., with Antle J., Apps M., Beamish R., Chapin T., Cramer W., Frangi J., Laine J., Erda L., Magnuson J., Noble I., Price J., Prowse T., Root T., Schulze E., Sirotenko O., Sohngen B., Soussana J. & *et al.* (2001) Ecosystems and Their Goods and Services. In: *Third Assessment Report of the Intergovernmental Panel on Climate Change. Climate Change 2001: Impacts, Adaptation and Vulnerability* (eds. J. J. McCarthy, O. F. Canziani, N. A. Leary, D. J. Dokken & K. S. White) pp. 235-342. Cambridge University Press, Cambridge, UK.
- Glantz, M.H. (1981). Considerations of the Societal Value of an El Niño Forecast and the 1972-173 El Niño. In *Resource Management and Environmental Uncertainty: Lessons from Coastal Upwelling Fisheries*, Vol. 11, pp. 449-476. John Wiley & Sons, New York; Chichester.
- Glantz, M.H. (1987) *Drought and Hunger in Africa*. Cambridge University Press, Cambridge.
- Glantz, M.H. (1992) Global warming and environmental change in sub-Saharan Africa. *Global Environmental Change* **2**, 183-204.
- Glantz, M. H. (1992). Global warming impacts on living marine resources: Anglo-Icelandic Cod Wars as an analogy. *Climate variability, climate change and fisheries*. (Ed., M. H. Glantz). Cambridge, Cambridge University Press: 261-290.
- Glantz, M.H. (ed.) (1992). *Climate Variability, Climate Change and Fisheries*. Cambridge: Cambridge University Press.

- Glantz, M. (1996). *Currents of change: El Niño's impact on climate and society*. Cambridge, Cambridge University Press.
- Glantz, M. H. and L. E. Feingold (1992). Climate variability, climate change, and fisheries: a summary. *Climate variability, climate change and fisheries*. M. H. Glantz (ed.). Cambridge, Cambridge University Press: 417-438.
- Glantz, M.H. & Thompson, J.D., eds. (1981). *Resource Management and Environmental Uncertainty: Lessons from coastal Upwelling Fisheries*. Vol. 11. John Wiley & Sons, New York; Chichester.
- Glavin, T. (1999). "Sea change." *Canadian Geographic* **119**(4): 38-48.
- Global Leaders of Tomorrow Environment Task Force (2002). 2002 Environmental Sustainability Index. New Haven, New-York, Global Leaders of Tomorrow Environment Task Force, YCELP, Yale University, CIESN, Columbia University.
- Glynn, P.W. (1996) Coral reef bleaching: facts, hypotheses and implications. *Global Change Biology*, **2**, 495-509.
- GOM (1999) Resource Report, 1999. Fisheries Department, Government of Malawi.
- Goodland, R., G. Ledec and M. Webb (1989). Meeting environmental concerns caused by common-property mismanagement in economic development projects. In F. Berkes, (ed), *Common Property Resources – Ecology and Community-Based Sustainable Development*. London, Belhaven Press: 148-164.
- Goreau, T., McClanahan, T.R., Hays, R., & Strong, A. (2000) Conservation of bleaching events after the 1998 global bleaching event. *Conservation Biology*, **14**, 5-15.
- Gordon, C., Cooper, C., Senior, C.A., Banks, H., Gregory, J.M., Johns, T.C., Mitchell, J.F.B. and Wood, R.A. (2000) The simulation of SST, sea ice extent and ocean heat transports in a version of the Hadley Centre coupled model without flux adjustments. *Climate Dynamics* **16**, 147-168.
- Gordon, D. V. and G. R. Munro, Eds. (1996). *Fisheries and uncertainty. A precautionary approach to resource management*. Canada, University of Calgary Press.
- Government of Malawi. Fisheries Department (1999). *Fish Stocks and Fisheries of Malawian Waters*. Resources Report. Malawi: Government of Malawi.
- Grantham B. A., Chan F., Nielsen K. J., Fox D. S., Barth J. A., Huyer A., Lubchenco J. & Menge B. A. (2004) Upwelling-driven nearshore hypoxia signals ecosystem and oceanographic changes in the northeast Pacific. *Nature* **429**: 749-754.
- Gray W. M. & Schaeffer J. D. (1991) El Niño and QBO influences on tropical cyclone activity. In: *ENSO Teleconnections linking worldwide climate anomalies: Scientific basis and societal impacts* (eds. M. H. Glantz, R. Katz & N. Nicholls) pp. 257-284. Cambridge University Press, Cambridge, UK.
- Gregory, J. M., J. A. Church, G. J. Boer, K. W. Dixon, G. M. Flato, D. R. Jackett, J. A. Lowe, S. P. O'Farrell, E. Roeckner, G. L. Russell, R. J. Stouffer and M. Winton, 2001. Comparison of results from several AOGCMs for global and regional sea-level change 1900-2100. *Climate Dynamics* **18**, 225-240.
- Haakonsen, J.M. (1992). A regional policy on fishermen migration in West Africa - Seminar on Artisanal Fishermen Migrations, Cotonou, Benin, 3-5 December 1991. *Marine Policy* **16**: 237-238.

- Hailemariam, K. (1999). "Impact of climate change on the water resources of Awash River Basin, Ethiopia." *Climate Research* **12**(2-3): 91-96.
- Hales, S., P. Weinstein, et al. (1999). "Ciguatera (fish poisoning), El Niño, and Pacific sea surface temperatures." *Ecosystem Health* **5**(1): 20-25.
- Hallegraeff G. M. (1993) A Review of Harmful Algal Blooms and Their Apparent Global Increase. *Phycologia* **32**: 79-99.
- Halls, A.S. (1998). *Impact of Hydraulic engineering on the fish production and species assemblages in Bangladesh*. PhD Thesis, University of London, 526p.
- Halls, A.S., Hoggarth, D.D. & Debnath, D. (1998) Impact of flood control schemes on river fish migrations and species assemblages in Bangladesh. *Journal of Fish Biology* **53** (Suppl. A), 358-380.
- Halls, A.S., Hoggarth, D.D. & Debnath, D. (1999) Impacts of hydraulic engineering on the dynamics and production potential of floodplain fish populations in Bangladesh. *Fisheries Management and Ecology* **6**: 261-285.
- Halls, A.S., Kirkwood, G.P. and Payne, A.I. (2001). A dynamic pool model for floodplain-river fisheries. *Ecohydrology and Hydrobiology* **1** (3): 323-339.
- Halls, A.S. & Welcomme, R.L. (in press) Dynamics of river fish populations in response to hydrological conditions: A simulation study. *River Research and Applications*.
- Halls, A.S., Burn, R.W., & Abeyasekera, S. (in press). Empirical Modelling Approaches *In* Stock Assessment and Fishery Management – Guidelines For The Use Of The FMSP Stock Assessment Tools. FAO Fisheries Technical Paper. Food and Agricultural Organisation of the United Nations, Rome, pp75-105.
- Hamilton, L. and O. Otterstad (1998). "Demographic Change and Fisheries dependance in the Northern Atlantic." *Human Ecology Review* **5**(1).
- Hare S. R. & Mantua N. J. (2000) Empirical evidence for North Pacific regime shifts in 1977 and 1989. *Progress in Oceanography* **47**: 103-145.
- Harris G. P., Griffiths F. B. & Clementson L. A. (1992) Climate and the Fisheries Off Tasmania - Interactions of Physics, Food-Chains and Fish. *South African Journal of Marine Science-Suid-Afrikaanse Tydskrif Vir Seewetenskap* **12**: 585-597.
- Harris, G. P., P. Davies, et al. (1988). "Interannual Variability in Climate and Fisheries in Tasmania." *Nature* **333**(6175): 754-757.
- Harvell C. D., Kim K., Burkholder J. M., Colwell R. R., Epstein P. R., Grimes D. J., Hofmann E. E., Lipp E. K., Osterhaus A. D. M. E., Overstreet R. M., Porter J. W., Smith G. W. & Vasta G. R. (1999) Emerging marine diseases - climate links and anthropogenic factors. *Science* **285**: 1505-1510.
- Hales, S., Weinstein, P., & Woodard, A. (1999). Ciguatera (fish poisoning), El Niño, and Pacific sea surface temperatures. *Ecosystem Health*, **5**, 20-25.
- Healey, M. C. (1990). "Implications of climate change for fisheries management policy." *Transactions of the American Fisheries Society* **119**(2): 366-373.
- Henderson M. A., Levy D. A. & Stockner J. S. (1992) Probable consequences of climate change on freshwater production of Adams River sockeye salmon. *GeoJournal* **28**: 51-59.

- Hilborn, R. and Walters, C.J. (1992). *Quantitative Fisheries Stock Assessment: Choice, Dynamics and Uncertainty*. Chapman & Hall.
- Hinch S. G., Healey M. C., Diewert R. E., Thomson K. A., Hourston R., Henderson M. A. & Juanes F. (1995) Potential effects of climate change on marine growth and survival of Fraser River sockeye salmon. *Canadian Journal of Fisheries and Aquatic Sciences* **52**: 2651-2659.
- Hlohowskyj, I., M. S. Brody, et al. (1996). "Methods for Assessing the Vulnerability of African Fisheries Resources to Climate Change." *Climate Research* **6**(2): 97-106.
- Houghton, J. T., Y. Ding, et al., Eds. (2001). *Climate change 2001: The Scientific Basis*. Cambridge, Cambridge University Press.
- Hobday A. J. & Tegner M. J. (2002) The warm and the cold: Influence of temperature and fishing on local population dynamics of red abalone. *California Cooperative Oceanic Fisheries Investigations Reports* **43**: 74-96.
- Hoegh-Guldberg O. (1999) Climate change, coral bleaching and the future of the world's coral reefs. *Marine and Freshwater Research* **50**: 839-866.
- Hoffman J. (2003) Designing reserves to sustain temperate marine ecosystems in the face of global climate change. In: *Buying time: A User's Manual for Building Resistance and Resilience to Climate Change in Natural Systems* (eds. L. J. Hansen, J. L. Biringer & J. R. Hoffman) pp. 123-155. WWF, Berlin, Germany.
- Holbrook S. J., Schmitt R. J. & Stephens J. S. (1997) Changes in an assemblage of temperate reef fishes associated with a climate shift. *Ecological Applications* **7**: 1299-1310.
- Huang, J. C. K. (1997). "Climate change and integrated coastal management: a challenge for small island nations." *Ocean and Coastal Management*.
- Hughes T. P., Baird A. H., Bellwood D. R., Card M., Connolly S. R., Folke C., Grosberg R., Hoegh-Guldberg O., Jackson J. B. C., Kleypas J., Lough J. M., Marshall P., Nystrom M., Palumbi S. R., Pandolfi J. M., Rosen B. & Roughgarden J. (2003) Climate change, human impacts, and the resilience of coral reefs. *Science* **301**: 929-933.
- Hulme, M. (1994) Regional climate change scenarios based on IPCC emissions projections with some illustrations for Africa *Area*, **26**, 33-44.
- Hulme, M, Conway, D. and Xianfu Lu (2003) Climate Change: An Overview and its Impacts on the Living Lakes. A report prepared for the 8th Living Lakes Conference. Tyndall Centre for Climate Change Research. 51 pp.
- Hulme, M., Doherty, R., Ngara, T., New, M. and Lister, D. (2001) African Climate Change: 1900-2100. *Climate Research* **17**, 145-168.
- Hulme M, Jenkins GJ, Lu X, Turnpenny JR, Mitchell T, Jones RG, Lowe J, Murphy JM, Hassell D, Boorman P, McDonald R, and Hill S (2002) Climate change scenarios for the United Kingdom: The UKCIP02 Scientific Report, Tyndall Centre for Climate Change Research, School of Environmental Sciences, University of East Anglia, Norwich, UK. 120pp.
- Hunt, C. (2003). "Economic globalisation impacts on Pacific marine resources." *Marine Policy* **27**: 79-85.
- Hunt G. L., Jr., Stabeno P., Walters G., Sinclair E., Brodeur R. D., Napp J. M. & Bond N. A. (2002) Climate change and control of the southeastern Bering Sea

- pelagic ecosystem. *Deep-Sea Research Part II Topical Studies in Oceanography* **49**: 5821-5853.
- Huq, S. Karim, Z., Asaduzzaman, M., & Mahtab, F. (1999). *Vulnerability and Adaptation to Climate Change for Bangladesh*. Kluwer Academic Publishers, The Netherlands.
- Imperial, M. T. (1999). "Institutional Analysis and Ecosystem-Based Management: The Institutional Analysis and Development Framework." *Environmental Management* **24**(4): 449-465.
- IPCC (2001) *Climate Change 2001: Impacts, Adaptation and Vulnerability. Summary for Policy Makers*. World Meteorological Organisation: Geneva. Available at www.ipcc.ch
- IPCC (2001a) *Climate change 2001: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to The Third Assessment Report of the IPCC*. Cambridge University Press, Cambridge.
- IPCC (2001b) *Climate change 2001: the scientific basis. Contribution of Working Group I to The Third Assessment Report of the IPCC*. Cambridge University Press, Cambridge.
- IRI-IPRC (2002). *Climate and Fisheries: Interacting paradigms, scales and policy approaches*. The IRI-IPRC Pacific Climate-Fisheries Workshop, Honolulu, Hawaii, USA.
- Ishida, Y., T. Hariu, et al. (2001). "Archeological evidence of Pacific salmon distribution in northern Japan and implications for future global warming." *Progress in Oceanography*.
- ISPAN (1992). *Charland Socio-Economic Survey Report, FAP-16, Dhaka*.
- Jackson, J.B.C., Kirby, M.X., Berger, W.H., Bjorndal, K.A., Botsford, L.W., Bourque, B.J., Bradbury, R.H., Cooke, R., Erlandson, J., Estes, J.A., Hughes, T.P., Kidwell, S., Lange, C.B., Lenihan, H.S., Pandolfi, J.M., Peterson, C.H., Steneck, R.S., Tegner, M.J., & Warner, R.R. (2001) Historical overfishing and the recent collapse of coastal ecosystems. *Science*, **293**, 629-637.
- Jacobson L. D. & Maccall A. D. (1995) Stock-Recruitment Models for Pacific Sardine (*Sardinops-Sagax*). *Canadian Journal of Fisheries and Aquatic Sciences* **52**: 566-577.
- Jallow, B. P., M. M. K. Barrow, et al. (1996). "Vulnerability of the coastal zone of the Gambia to sea level rise and development of response strategies and adaptation options." *Climate Research* **6**: 165-177.
- Jallow, B.P., Toure, S., Barrow, M.M.K., & Mathieu, A.A. (1999). Coastal zone of The Gambia and the Abidjan region in Côte d'Ivoire: sea level rise vulnerability, response strategies, and adaptation options. *Climate Research*, **12**, 129-136.
- Jazairy, I., Almagir, M., & Pamuccio, T. (1992). *The state of the world rural poverty: an inquiry into its causes and consequences*. International Fund for Agricultural Development, Rome, Italy.
- Jenkins, M.D. (2003) Prospects for biodiversity. *Science*, **302**, 1175-1177.
- Jennings, S. & Lock, J.M. (1996). Population and ecosystem effects of reef fishing. In *Reef fisheries* (eds N.V.C. Polunin & C.M. Roberts), pp. 193-218. Chapman and Hall, London.
- Jennings, S. & Polunin, N.V.C. (1995a) Comparative size and composition of yield from six Fijian reef fisheries. *Journal of Fish Biology*, **46**, 28-46.

- Jennings, S. & Polunin, N.V.C. (1995b) Relationships between catch and effort in Fijian multispecies reef fisheries subject to different levels of exploitation. *Fisheries Management and Ecology*, **2**, 89-101.
- Jennings, S. & Polunin, N.V.C. (1996a) Effects of fishing effort and catch rate upon the structure and biomass of Fijian reef fish communities. *Journal of Applied Ecology*, **33**, 400-412.
- Jennings, S. & Polunin, N.V.C. (1996b) Fishing strategies, fishery development and socioeconomics in traditionally managed Fijian fishing grounds. *Fisheries Management and Ecology*, **3**, 335-347.
- Jennings, S. & Polunin, N.V.C. (1996c) Impacts of fishing on tropical reef ecosystems. *Ambio*, **25**, 44-49.
- Jennings, S. & Polunin, N.V.C. (1997) Impacts of predator depletion by fishing on the biomass and diversity of non-target reef fish communities. *Coral Reefs*, **16**, 71-82.
- Jobling M., Johnsen H. K., Pettersen G. W. & Henderson R. J. (1995) Effect of Temperature on Reproductive Development in Arctic Charr, *Salvelinus-Alpinus* (L). *Journal of Thermal Biology* **20**: 157-165.
- Jones G. (1994) Global Warming, Sea-Level Change and the Impact on Estuaries. *Marine Pollution Bulletin* **28**: 7-14.
- Jones, R. N. (2001) An environmental risk assessment/management framework for climate change impact assessments. *Natural Hazards* **23**, 197-230.
- Jones, S. A., B. Fischhoff, et al. (1998). "An integrated impact assessment of the effects of climate change on the Pacific Northwest salmon fishery." *Impact Assessment and Project Appraisal* **16**(3): 227-237.
- Jul-Larson, E., Kolding, J., Overa, R., Raakjaer Nielsen, J., and van Zweiten, P.A.M. (2003). Management, co-management or no management? Major dilemmas in southern African freshwater fisheries 1. Synthesis report. *FAO Fisheries Technical Paper* **426/1**, FAO, Rome.
- Junk W.J, Bayley P.B, Sparks R.E. (1989). The flood pulse concept in river-floodplain systems. In: D.P. Dodge (Ed.) Proceedings of the International Large Rivers Symposium. *Canadian Special Publications of Fisheries and Aquatic Science*, **106**, pp 110-127.
- Jurado-Molina, J. and P. Livingston (2002). "Climate-forcing effects on tropically linked groundfish populations: implications for fisheries management." *Canadian Journal of Fisheries & Aquatic Sciences* **59**(12): 1941.
- Justic D., Rabalais N. N. & Turner R. E. (1996) Effects of climate change on hypoxia in coastal waters: A doubled CO₂ scenario for the northern Gulf of Mexico. *Limnology and Oceanography* **41**: 992-1003.
- Kalk, M, (Ed.), 1970. *Decline and Recovery of a Lake*. Universtiy of Malawi: Lake Chilwa Co-Ordinated Research Project, Research Report 1966-1970.
- Kalk, M., McLachlan, A. J. and Howard-Williams, C. (eds.) (1979) *Lake Chilwa: Studies of Change in a Tropical Ecosystem*. The Netherlands: Dr. W. Junk.
- Kapetsky J.M. (1974). *Growth, Mortality and Production of Five Species of the Kafue River Floodplain, Zambia*. PhD Thesis. University of Michigan, 194pp.
- Kapetsky, J. M. (2000). "Present applications and future needs of meteorological and climatological data in inland fisheries and aquaculture." *Agricultural and Forest Meteorology* **103**(1-2): 109-117.

- Kaufmann, D., A. Kraay, et al. (2002). Governance Matters II: Updated Indicators for 2000/01. *Research Working Paper 2772*. Washington, DC, World Bank.
- Kawasaki T. (1983) Why do some fishes have wide fluctuations in their numbers? A biological basis of fluctuation from the viewpoint of evolutionary ecology. In: *Proceedings of the Expert Consultation to Examine Changes in Abundance and Species Composition of Neritic Fish Resources*. *FAO Fisheries Report No. 291 (3)* (eds. G. D. Sharp & J. Csirke) pp. 1065-1080.
- Kennedy, V. S. (1990). "Anticipated effects of climate change on estuarine and coastal fisheries." *Fisheries Management and Ecology* **15**(6): 16-24.
- Kerr, R.A. (2004) Three degrees of consensus. *Science*, **305**, 932-934.
- Kim Y. K. & Powell E. N. (1998) Influence of climate change on interannual variation in population attributes of Gulf of Mexico oysters. *Journal of Shellfish Research* **17**: 265-274.
- Kimura S., Doos K. & Coward A. C. (1999) Numerical simulation to resolve the issue of downstream migration of the Japanese eel. *Marine Ecology Progress Series* **186**: 303-306.
- King'uyu, S. M., L. A. Ogallo, E. K. Anyamba (2000) Recent Trends of Minimum and Maximum Surface Temperatures over Eastern Africa. *Journal of Climate*: **13**, 2876-2886.
- Kirkwood, G. P. (1997). The Revised Management Procedure of the International Whaling Commission. In Pritchard, E. K., Huppert, D. D. and Sissenwine, M. P. (eds) *Global Trends: Fisheries Management*, American Fisheries Society.
- Kishindo, Mr., (Ed.), 2001. Zomba: District State of the Environment Report. Zomba District Assembly and Environmental Affairs Department, Government of Malawi.
- Kjerfve B., Michener W. K. & Gardner L. R. (1994) Impacts of climate change in estuary and delta environments. In: *Impacts of Climate Change on Ecosystems and Species: Marine and Coastal Ecosystems*. (eds. J. C. Pernetta, R. Leemans, D. Elder & S. Humphrey). IUCN, Marine Conservation Programme, Gland, Switzerland.
- Kleiner, K. (1994). "Climate change threatens southern Asia." *New Scientist* **143**(1940): 6.
- Kleypas J. A., Buddemeier R. W., Archer D., Gattuso J. P., Langdon C. & Opdyke B. N. (1999) Geochemical consequences of increased atmospheric carbon dioxide on coral reefs. *Science* **284**: 118-120.
- Klyashtorin L. B. (1998) Long-term climate change and main commercial fish production in the Atlantic and Pacific. *Fisheries Research* **37**: 115-125.
- Klyashtorin, L. B. (2001). Climate change and long-term fluctuations of commercial catches - the possibility of forecasting. *Fisheries Technical Paper*. Rome, FAO.
- Knapp, G. (2000). *Implications of climate change for fisheries management*. Microbehavior and Macroresults, 10th International Conference of the Institute of Fisheries Economics and Trade, Corvallis, Oregon, Institute of Fisheries Economics and Trade, Oregon State University.
- Knapp, G., Livingston, P., & Tyler, A. (1998). *Human Effects of climate-related changes in Alaska commercial fisheries*. Proceeding of a workshop: Assessing the consequences of climate change for Alaska and the Bering Sea region, 29-30 October 1998, Fairbanks, (eds G. Weller & P.A. Anderson),

Center for Global Change and Arctic System Research, University of Alaska Fairbanks.

- Knutson and Tuleya (2004) Impact of CO₂-induced warming on simulated hurricane intensity and precipitation: sensitivity to the choice of climate model and convective parameterization. *Journal of Climate* **17**, 3477-3495.
- Laevastu, T. (1993). *Marine climate, weather and fisheries: the effects of weather and climatic changes on fisheries and ocean resources*. Oxford, Fishing News Books.
- Lancaster, N. (1979) The Changes in the Lake Level, pp 41-58. In M. Kalk, A.J. McLachlan and C. Howard-Williams (eds.) *Lake Chilwa: Studies of Change in a Tropical Ecosystem*. The Netherlands: Dr. W. Junk.
- Larkin, P. (1977). An epitaph for the concept of maximum sustainable yield. *Transactions of the American Fisheries Society* **106**: 1-11.
- LeCren E.D. (1958). Observations on the growth of perch (*Perca fluviatilis* L.) over twenty years with special reference to the effects of temperature and change in population biomass. *Journal of Animal Ecology* **27**:287-334.
- Lehodey P., Bertignac M., Hampton J., Lewis A. & Picaut J. (1997) El Niño Southern Oscillation and tuna in the western Pacific. *Nature* **389**: 715-718.
- Lenton, R. (2002). "Managing natural resources in the light of climate variability." *Natural Resources Forum* **26**: 185-194.
- Lindahl U., Ohman M. C. & Schelten C. K. (2001) The 1997/1998 mass mortality of corals: Effects on fish communities on a Tanzanian coral reef. *Marine Pollution Bulletin* **42**: 127-131.
- Lluch-Belda D. (1999) The interdecadal climate change signal in the temperate large marine ecosystems of the Pacific. In: *Large marine ecosystems of the Pacific rim - assessment, sustainability, and management* (eds. K. Sherman & Q. Tang) pp. 42-47. Blackwell Science, Boston, MA.
- Lluch-Belda D., Hernandezvazquez S., Lluch-Cota D. B., Salinaszavala C. A. & Schwartzlose R. A. (1992) The Recovery of the California Sardine as Related to Global Change. *California Cooperative Oceanic Fisheries Investigations Reports* **33**: 50-59.
- Lluch-Belda D., Lluch-Cota D. B., Hernandezvazquez S., Salinaszavala C. A. & Schwartzlose R. A. (1991) Sardine and Anchovy Spawning as Related to Temperature and Upwelling in the California Current System. *California Cooperative Oceanic Fisheries Investigations Reports* **32**: 105-111.
- Lowe-McConnell R.H., (1975). *Fish communities in tropical freshwaters*. Longman, London, 337p.
- Luam Kong, A. (2002). *Impact of climate changes on Caribbean fisheries resources: research needs*. Caribbean food systems: Developing a research agenda, 19-20 September 2002, St Augustine, Trinidad, Global Environmental Change and Food Systems (GECAFS).
- Lucas M.C. & Baras, E., (2001). *Migration I Freshwater Fishes*, London, Blackwell, 419p.
- Luckhurst, B.E. & Luckhurst, K. (1978) Analysis of substrate variables on coral reef fish communities. *Marine Biology*, **49**.
- Ludwig, D. (1980). Harvesting Strategies for a Randomly Fluctuating Population. *J. Cons. int. Explor. Mer*, **39**(2): 168-174.

- Luers, A. L., Lobell, D. B., Sklar, L., S., Addams, C. L. and Matson, P. A. (2003) A method for quantifying vulnerability, applied to the agricultural system of the Yaqui Valley, Mexico. *Global Environmental Change* **13**, 255-267.
- Lum Kong, A. (2002). Impact of climate changes on Caribbean fisheries resources: research needs. Caribbean food systems: Developing a research agenda, St Augustine, Trinidad, Global Environmental Change and Food Systems (GECAFS).
- Luseno, W. K., J. G. McPeak, et al. (2003). "Assessing the value of climate forecast information for pastoralists: evidence from Southern Ethiopia and Northern Kenya." *World Development* **31**(1): 1477-1494.
- MacCraken, M. C., Barron, E.J., Easterling, D.R., Felzer, B.S. and Karl, T.R. (2003) Climate change scenarios for the US national assessment. *Bull. Amer. Met. Soc.* **84**, 1711-1723.
- Mackas D. L., Goldblatt R. & Lewis A. G. (1998) Interdecadal variation in developmental timing of *Neocalanus plumchrus* populations at Ocean Station P in the subarctic North Pacific. *Canadian Journal of Fisheries and Aquatic Sciences* **55**: 1878-1893.
- MacKenzie B. R. & Koster F. W. (2004) Fish production and climate: Sprat in the Baltic Sea. *Ecology* **85**: 784-794.
- MacKenzie, B. R. and A. W. Visser (2001). Fisheries and Climate Change: the Danish Perspective. *Climate Change Research - Danish Contributions*. A. M. K. Jørgensen, J. Fenger and K. Halsnaes. Copenhagen, Danish Climate Center.
- Magadza, C. H. D. (2000). "Climate Change Impacts and Human Settlements in Africa: prospects for adaptation." *Environmental Monitoring and Assessment* **61**: 193-205.
- Magistro, J., Roncoli, C. and Hulme, M. editors (2001) Anthropological Perspectives and Policy Implications of Climate Change Research. *Climate Research Special* **11**, Vol. 19, No. 2.
- Magnuson J. J., Meisner J. D. & Hill D. K. (1990) Potential Changes in the Thermal Habitat of Great-Lakes Fish after Global Climate Warming. *Transactions of the American Fisheries Society* **119**: 254-264.
- Mahon, R. (1997). Does fisheries science serve the needs of managers of small stocks in developing countries? *Canadian Journal of Fisheries and Aquatic Sciences* **54**(9): 2207-2213.
- Mahon, R. (2002). *Adaptation of fisheries and fishing communities to the impacts of climate change in the CARICOM region: Issue Paper - Draft*, Mainstreaming Adaptation to Climate Change (MACC) of the Caribbean Center for Climate Change (CCCC) , Organization of American States, Washington. <http://www.oas.org/macc/bibliography.htm>
- Mahon, R. & Joseph, D. (1997). *Country case study on climate change impacts and adaptation assessments in Antigua and Barbuda (GF/2200-96-43): Fisheries sector assessment*, United Nations Environment Program and Ministry of Trade and Planning, Antigua and Barbuda.
- Mandrak N. E. (1989) Potential Invasion of the Great-Lakes by Fish Species Associated with Climatic Warming. *Journal of Great Lakes Research* **15**: 306-316.
- Mariussen, A. and K. Heen (1998). Dependence, uncertainty and climate change:

- the case of fishing. Global changes and the Barents Sea region, Proceedings of the First International BASIS Research Conference, St. Petersburg, Russia, Institute of Geophysics, University of Münster, Germany.
- Marsh J. A., Dennison W. C. & Alberte R. S. (1986) Effects of Temperature on Photosynthesis and Respiration in Eelgrass (*Zostera-Marina* L). *Journal of Experimental Marine Biology and Ecology* 101: 257-267.
- Mariussen, A. & Heen, K. (1998). *Dependence, uncertainty and climate change: the case of fishing*. Global changes and the Barents Sea region, Proceedings of the First International BASIS Research Conference, St. Petersburg, Russia, (eds M.A. Lange, B. Bartling & K. Grosfeld), Institute of Geophysics, University of Münster, Germany.
- Masood, E. (1997). Fisheries science: all at sea when it comes to politics? *Nature* 386(6621): 105-106.
- May, R. M., Beddington, J. R., Horwood, J. W. and Shepherd, J. G. (1978). Exploiting Natural Populations in an Uncertain World", *Mathematical Biosciences* 42: 219-252.
- McCarthy, J., Canziani, O.S., Leary, N., Dokken, D., & White, K., eds. (2001). *Climate change 2001: impacts, adaptation, and vulnerability*. Cambridge University Press, Cambridge.
- McCauley, R. and T. Beitinger (1992). "Predicted effects of climate warming on the commercial culture of the channel catfish, *Ictalurus punctatus*." *GeoJournal* 28(1): 61-66.
- McClanahan, T.R. (2002) The near future of coral reefs. *Environmental Conservation*, 29, 460-483.
- McDonald M. E., Hershey A. E. & Miller M. C. (1996) Global warming impacts on lake trout in arctic lakes. *Limnology and Oceanography* 41: 1102-1108.
- McLean R. F., Tsyban A., with Burkett V., Codignotto J. O., Forbes D. L., Mimura N., Beamish R. J. & Ittekkot V. (2001) Coastal Zones and Marine Ecosystems. In: *Third Assessment Report of the Intergovernmental Panel on Climate Change. Climate Change 2001: Impacts, Adaptation and Vulnerability* (eds. J. J. McCarthy, O. F. Canziani, N. A. Leary, D. J. Dokken & K. S. White) pp. 343-379. Cambridge University Press, Cambridge, UK.
- Meehl, G.A., Washington, W.M., Collins, W.D., Arblaster, J.M., Hu, A., Buja, L.E., Strand, W.G. and Teng, H. (2005). How much more global warming and sea level rise? *Science* 307: 1769-1772.
- Meisner J. D. & Shuter B. J. (1992) Assessing potential effects of global climate change on tropical freshwater fishes. *GeoJournal* 28: 21-27.
- Metzger, M., Leemans, R., & Schröter, D. (2005). A multidisciplinary multi-scale framework for assessing vulnerability to global change. *International Journal of Applied Earth Observation and Geoinformation*, In press.
- Miller, K. A. (2000). "Pacific salmon fisheries: climate, information and adaptation in a conflict-ridden context." *Climatic Change* 45(1): 37-61.
- Miller, K. A. and D. L. Fluharty (1992). El Niño and variability in the northeastern Pacific salmon fishery: implications for coping with climate change. Climate variability, climate change and fisheries. M. H. Glantz. Cambridge, Cambridge University Press: 49-88.
- Mimura, N. (1999). "Vulnerability of island countries in the South Pacific to sea level rise and climate change." Climate Research 12(2-3): 137-143.

- Mitchell, T. D., T. R. Carter, et al. (2003). "A comprehensive set of high-resolution grids of monthly climate for Europe and the globe: the observed record (1901-2000) and 16 scenarios(2001-2100)." Journal of Climate: Submitted (August 2003).
- Mitchell, T. D., M. Hulme, et al. (2002). "Climate data for political areas." Area **34**: 109-112.
- Mirza M. M.Q., Warrick, R.A. & Ericksen, N.J. (2003). The implications of climate change on floods of the Ganges, Brahmaputra and Meghna Rivers in Bangladesh. *Climate Change* **57**: 287-318.
- Moberg, F. & Folke, C. (1999) Ecological goods and services of coral reef ecosystems. *Ecological Economics*, 29, 215-233.
- Molano B. & McIntyre A. (1990) Precessional Forcing of Nutricline Dynamics in the Equatorial Atlantic. *Science* 249: 766-769.
- Molsa, H., Reynolds, J.E., Coenen, E.J. and Lindqvist, O.V., 1999. Fisheries research towards resource management on Lake Tanganyika. *Hydrobiologia* **407**: 1-24.
- Molsa, H., J. Sarvala, et al. (2002). "Ecosystem monitoring in the development of sustainable fisheries in Lake Tanganyika." Aquatic Ecosystem Health & Management **5**(3): 267.
- Morgan, M.G. & Keith, D.W. (1995) Subjective judgements by climate experts. *Environmental Science and Technology* 29, 468-476.
- Morris, S., Neidecker-Gonzales, O., Carletto, C., Munguia, M., & Wood, Q. (2002). Hurricane Mitch and the livelihoods of the rural poor in Honduras. *World Development*, **30**, 49-60.
- Mortimore, M. and Adams, W.M. (1999) Working the Sahel: environment and society in northern Nigeria. Routledge, London
- Moser, C.O.N. (1998). The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies. *World Development* 26(1): 1-19.
- Moss, B. (1979) The Lake Chilwa Ecosystem – A Limnological Overview, pp 399-416. In M. Kalk, A.J. McLachlan and C. Howard-Williams (eds.) *Lake Chilwa: Studies of Change in a Tropical Ecosystem*. The Netherlands: Dr. W. Junk.
- Moss, R., Brenkert, A. Malone, E.L., 2000. Measuring vulnerability: a trial indicator set. Pacific Northwest Laboratories. Available online: <http://www.pnl.gov/globalchange/projects/vul/indicators.pdf>.
- Moss, R.H., Malone, E.L., Brenkert, A.L., 2002. Vulnerability to climate change: a quantitative approach. Prepared for the US Department of Energy. URL: <http://www.globalchange.umd.edu/cgi-bin/Details.pl?sref=PNNL-13765>.
- Mudie P. J., Rochon A. & Levac E. (2002) Palynological records of red tide-producing species in Canada: past trends and implications for the future. *Palaeogeography Palaeoclimatology Palaeoecology* 180: 159-186.
- Munoz, A. A. (1988). "El Niño impacts on the pelagic fishery management in the Eastern Pacific." Medio Ambiente **9**(1): 35-41.
- Murawski S. A. (1993) Climate-Change and Marine Fish Distributions - Forecasting from Historical Analogy. *Transactions of the American Fisheries Society* 122: 647-658.
- Muter F.-J., Norcross B. L. & Royer T. C. (1995) Do cyclic temperatures cause cyclic fisheries. In: *Climate Change and Northern Fish Populations* (ed. R. J.

- Beamish) pp. 119-129. Canadian Special Publication of Fisheries and Aquatic Sciences No. 121, National Research Council of Canada, Ottawa.
- Neiland, A.E., Weeks, J., Madakan, S.P., & Ladu, B.M.B. (2000). Inland fisheries of North East Nigeria including the Upper River Benue, Lake Chad and the Nguru-Gashua wetlands: II. Fisheries management at village level. *Fisheries Research*, **48**, 245-261.
- Nicholls R. J., Hoozemans F. M. J. & Marchand M. (1999) Increasing flood risk and wetland losses due to global sea-level rise: regional and global analyses. *Global Environmental Change - Human and Policy Dimensions* 9: S69-S87.
- Novaczek, I. and Harkes, I.H.T. (1999) An institutional analysis of local organizations and institutions. *World Development* 27 (14): 623 – 632.
- O'Brien C. M., Fox C. J., Planque B. & Casey J. (2000) Climate variability and North Sea cod. *Nature*: 142.
- O'Brien, K., Leichenko, R., Kelkar, U., Venema, H., Aandahl, G., Tompkins, H., Javed, A., Bhadwal, S., Barg, S., Nygaard, L., & West, J. (2004). Mapping vulnerability to multiple stressors: climate change and globalization in India. *Global Environmental Change*, **14**, 303-313.
- Ogutu-Ohwayo R., Hecky R. E., Cohen A. S. & Kaufman L. (1997) Human impacts on the African Great Lakes. *Environmental Biology of Fishes* 50: 117-131.
- O'Keefe, P., L. Wilson, et al. (2003). Poverty and Climate Change Revisited. Anote for COP9. The Netherlands Climate Change Studies Assistance Programme. North Shields, ETC UK Ltd.
- Ordinola, N. (2002). The consequences of cold events for Peru. In *La Niña and its impacts: facts and speculation* (ed M.H. Glantz), pp. 146-150. United Nations University Press, Toronton, New York, Paris.
- O'Reilly C. M., Alin S. R., Plisnier P. D., Cohen A. S. & McKee B. A. (2003) Climate change decreases aquatic ecosystem productivity of Lake Tanganyika, Africa. *Nature* **424**: 766-768.
- O'Reilly C. M., Plisnier P-D., Cohen A. S. & Alin S. R. (2004) Reply to W.W. Eschenbach: Climate-change effect on Lake Tanganyika? *Nature* **424** 766-767.
- Orlove, B. S. and J. L. Tosteson (1999). The application of seasonal forecasting to interannual climate forecasts based on El Niño-Southern oscillation (ENSO) events: Lessons from Australia, Brazil, Ethiopia, Peru, and Zimbabwe. Berkeley Workshop on Environmental Politics Working Papers. Berkeley, Institute of International Studies, University of California Berkeley: 60.
- Osborn, T.J. and Hulme, M. (2002) Evidence for trends in heavy rainfall events over the U.K. *Phil. Trans. Roy. Soc. (A)*, **360**, 1313-1325.
- Ososkova, T., N. Gorelkin, and V. Chub. (2000). "Water resources of Central Asia and adaptation measures for climate change." Sage Urban Studies Abstracts **28**(3): 0.
- Ostrom, E. (1986). A method of institutional analysis. Guidance, Control and Evaluation in the Public Sector. F.-X. Kaufman, D. Majone and V. Ostrom. New York, Walter de Gruyter: 459-475.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

- Otterlei E., Nyhammer G., Folkvord A. & Stefansson S. O. (1999) Temperature- and size-dependent growth of larval and early juvenile Atlantic cod (*Gadus morhua*): a comparative study of Norwegian coastal cod and northeast Arctic cod. *Canadian Journal of Fisheries and Aquatic Sciences* 56: 2099-2111.
- Ottersen G., Planque B., Belgrano A., Post E., Reid P. C. & Stenseth N. C. (2001) Ecological effects of the North Atlantic Oscillation. *Oecologia* 128: 1-14.
- Palomino, F.M. (1984). Socio-economical effect of El Niño 1982-1983 in the Peruvian coast fisheries. *Boletín ERFEN*, **10**, 11-14.
- Palomino, F.M. (1985). El Niño phenomena and its socio-economic consequences. *PESCA*, **46**, 12-16.
- Palomino, F. M. (1991). "Forty years of Peruvian fisheries." *PESCA* **54**(1-2): 19-23.
- Pan American Health Organization (2000) Fish Mortality in Southeastern Caribbean Countries. *Epidemiological Bulletin* 21:
http://www.paho.org/English/SHA/be_v21n22-fish.htm.
- Panayotou, T. (1982). Management concepts for small-scale fisheries: economic and social aspects. *FAO Fisheries Technical Papers* 228. Rome: FAO.
- Pandolfi, J.M., Bradbury, R.H., Sala, E., Hughes, T.P., Bjorndal, K.A., Cooke, R.G., McArdele, D., McClenachan, L., Newman, M.J.H., Paredes, G., Warner, R.R., & Jackson, J.B.C. (2003) Global trajectories of the long-term decline of coral reef ecosystems. *Science*, 301, 955-958.
- Patz, J.A. (2000). Climate change and health: New research challenges. *Ecosystem Health*, **6**, 52-58.
- Patz, J.A. & Kovats, R.S. (2002). Hotspots in climate change and human health. *British Medical Journal*, **325**, 1094-1098.
- Pauly, D (1997). Small-scale fisheries in the tropics: marginality, marginalisation, and some implications for fisheries management. In EK Pikitch, DD Huppert and MP Sissenwine (Eds), '*Global Trends: Fisheries Management*', American Fisheries Society, Bethesda, Maryland, pp 40-49.
- Pauly, D., Christensen, V., Guénette, S., Pitcher, T.J., Sumaila, R., Walters, C.J., Watson, R., & Zeller, D. (2002) Towards sustainability in world fisheries. *Nature*, 418, 689-695.
- Pavlidis M., Koumoundouros G., Sterioti A., Somarakis S., Divanach P. & Kentouri M. (2000) Evidence of temperature-dependent sex determination in the European sea bass (*Dicentrarchus labrax* L.). *Journal of Experimental Zoology* 287: 225-232.
- Payne, A.I. 2000. The Changing Role of Fisheries in Development Policy. ODI Natural Resource Perspectives No. 59
- Perez, R. T., L. A. Amadore, et al. (1999). "Climate change impacts and responses in the Philippines coastal sector." *Climate Research* **12**(2-3): 97-107.
- Perrings, C. (1998). Resilience in the dynamics of economy-environment systems. *Environmental and Resource Economics* 11(3-4): 503-520.
- Pet, J.S., W.L.T. Van Densen, M.A.M. Machiels, M. Sukkel, D. Setyohadi & A. Tumuljadi (1997). Catch, effort and sampling strategies in the highly variable sardine fisheries around East Java, Indonesia. *Fisheries Research* 31: 121-137.
- Pido, M.D. et al. (1997). A rapid appraisal approach to evaluation of community-level fisheries management systems: framework and field application at selected

- coastal fishing villages in the Philippines and Indonesia. *Coastal Management* 25(2): 183-204.
- Planque B. & Fredou T. (1999) Temperature and the recruitment of Atlantic cod (*Gadus morhua*). *Canadian Journal of Fisheries and Aquatic Sciences* 56: 2069-2077.
- Plisnier, P.-D. (1997) Climate, Limnology and Fisheries Changes in Lake Tanganyika. FAO/FINNIDA: Research for the Management of the Fisheries on Lake Tanganyika. GCP/RAF/271/FIN-TD/72 (available from <ftp://ftp.fao.org/fi/ltr/TD72.PDF>).
- Plisnier, P. D., S. Serneels, et al. (2000). "Impact of Enso on East African Ecosystems: a Multivariate Analysis Based on Climate and Remote Sensing Data." *Global Ecology and Biogeography* 9(6): 481-497.
- Pollnac, R.B., McManus, J.W., Del Rosario, A.E., Banzon, A.A., Vergara, S.G., & Gorospe, M.L.G. (2000) Unexpected relationships between coral reef health and socio-economic pressures in the Philippines: reefbase/RAMP applied. *Marine and Freshwater Research*, 51, 529-533.
- Polovina J. J. (1996) Decadal variation in the trans Pacific migration of northern bluefin tuna (*Thunnus thynnus*) coherent with climate induced change in prey abundance. *Fisheries Oceanography* 5: 114-119.
- Polovina J. J., Mitchum G. T., Graham N. E., Craig M. P., DeMartini E. E. & Flint E. N. (1994) Physical and biological consequences of a climate event in the central North Pacific. *Fisheries Oceanography* 3: 15-21.
- Polunin, N.V.C. & Jennings, S. (1998). Differential effects of small-scale fishing on predatory and prey fishes on Fijian reefs. In *Dynamics of tropical communities* (eds D.M. Newberry, H.H.T. Prins & N.D. Brown), pp. 95-124. Blackwell Science, London.
- Pomeroy, R.S. and Berkes, F. (1997). Two to tango: the role of government in fisheries co-management. *Marine Policy* 21(5): 465-480.
- Pontecorvo, G. (2000). ENSO, regime shifts, the Peruvian anchovetta catch and fisheries management: some preliminary observations. IIFET 200; Microbehavior and Macroresults, Corvallis, Oregon, USA, International Institute of Fisheries Economics and Trade.
- Pontecorvo, G. (2001). Supply side uncertainty and the management of commercial fisheries: - Peruvian Anchovetta, an illustration. *Marine Policy*, 25, 169-172.
- Quiros R. & Cutch, S., (1989). The fisheries and limnology of the lower Plata basin. In: Dodge, D. P. [Ed.] *Proceedings of the International Large Rivers Symposium, Can. Spec. Pub. Fish. Aquat. Sci.* 106, 429-443.
- Raey, M. E., K. Dewidar, et al. (1999). "Adaptation to the impacts of sea level rise in Egypt." *Climate Research* 12(2-3): 117-128.
- Rahmato, D. (1991) *Famine and survival strategies: a case study from Northeast Ethiopia*. Uppsala : Nordiska Afrikainstitutet.
- Reardon, T. and Taylor, J. E. (1996) Agroclimatic shocks, income inequality and poverty: evidence from Burkino Faso. *World Development* 24, 901-914.
- Reaser, J. K., R. Pomerance, et al. (2000). "Coral Bleaching and Global Climate Change: Scientific Findings and Policy Recommendations." *Conservation Biology* 14(5): 1500.

- Regier H. A. & Meisner J. D. (1990) Anticipated Effects of Climate Change on Fresh-Water Fishes and Their Habitat. *Fisheries* 15: 10-15.
- Regier, H.A., Welcomme R.L., Steedman R.J. & H.F. Henderson, (1989). Rehabilitation of degraded river systems. In: Dodge, D. P. [Ed.] *Proceedings of the International Large Rivers Symposium, Can. Spec. Pub. Fish. Aquat. Sci.* **106**, 86-97.
- Reid P. C. (2003) Climate change, ocean processes and plankton regime shifts. In: *Global Climate Change and Biodiversity* (eds. R. E. Green, M. Harley, L. Miles, J. Scharlemann, A. Watkinson & O. Watts) pp. 13-14. The RSPB, Sandy, UK, University of East Anglia, Norwich, UK.
- Reynolds R., Dettinger M., Cayan D., Stephens D., Highland L. & Wilson R. (1997) Effects of El Niño on Streamflow, Lake Level, and Landslide Potential. In: *Impact of Climate Change and Land Use in the Southwestern United States*. U.S. Department of the Interior, U.S. Geological Survey, University of Arizona.
- Rice, J. and J. A. Cooper (2003). "Management of flatfish fisheries-what factors matter?" [Journal of Sea Research](#).
- Richardson A. J. & Schoeman D. S. (2004) Climate impact on plankton ecosystems in the Northeast Atlantic. *Science* 305: 1609-1612.
- Richmond B. M., Mieremet B. & Reiss T. E. (1997) Yap Islands natural coastal systems and vulnerability to potential accelerated sea-level rise. *Journal of Coastal Research* (Special Issue) 24: Island states at risk: 153-172.
- Roemmich D. & McGowan J. (1995) Climatic Warming and the Decline of Zooplankton in the California Current. *Science* 267: 1324-1326.
- Romero J. R. & Melack J. M. (1996) Sensitivity of vertical mixing in a large saline lake to variations in runoff. *Limnology and Oceanography* 41: 955-965.
- Rosen, Y. (2004). Warming climate disrupts Alaska native's lives. [April 20 2004, Reuters](#).
- Rowan R. (2004) Thermal adaptation in reef coral symbionts. *Nature* 430: 742.
- Russek, Z. and M. H. Glantz (1992). Adjustments of Polish fisheries to changes in the environment. [Climate variability, climate change and fisheries](#). M. H. Glantz. Cambridge, Cambridge University Press: 291-324.
- Sagarin R. D., Barry J. P., Gilman S. E. & Baxter C. H. (1999) Climate-related change in an intertidal community over short and long time scales. *Ecological Monographs* 69: 465-490.
- Sagua V. O. (1993) The effects of climate change on the fisheries of the Sahel. FAO, Rome.
- Sarch, M.-T. & Allison, E.H. (2000). *Fluctuating fisheries in Africa's inland waters: well adapted livelihoods, maladapted management*. Proceedings of the 10th International Conference of the Institute of Fisheries Economics and Trade., 2000, Corvallis, Oregon. July 9-14th 2000., <http://osu.orst.edu/dept/IIFET/2000/papers/sarch.pdf>.
- Sarch, M.-T. and Birkett, C.M., (2000). Fishing and farming at Lake Chad: responses to lake level fluctuations. *The Geographical Journal* 163: 1-17.
- Schindler D. W., Beaty K. G., Fee E. J., Cruikshank D. R., Debruyne E. R., Findlay D. L., Linsey G. A., Shearer J. A., Stainton M. P. & Turner M. A. (1990) Effects of Climatic Warming on Lakes of the Central Boreal Forest. *Science* 250: 967-970.

- Schindler D. W., Curtis P. J., Parker B. R. & Stainton M. P. (1996) Consequences of climate warming and lake acidification for UV-B penetration in North American boreal lakes. *Nature* 379: 705-708.
- Schlager W. (1999) Scaling of sedimentation rates and drowning of reefs and carbonate platforms. *Geology* 27: 183-186.
- Sholtz, U., Njaya, F. J., Chimatiro, S., Hummel, M., Donda, S. and Mkoko, B. J. (1998) Status and Prospects of Participatory Fisheries Management Programs in Malawi, pp 407 - 425. In T. Petr (ed.) *Inland Fishery Enhancements. Fisheries Technical Paper* 374. Rome: FAO.
- Schröter, D., Polsky, C., & Patt, A.G. (2004). Assessing vulnerabilities to the effects of global change: an eight step approach. *Mitigation and Adaptation Strategies for Global Change*, In press.
- Scoones, I. (ed) (1995). *Living with Uncertainty - New Directions For Pastoral Development in Africa*. IIED, London.
- Scoones, I. (1998). Sustainable rural livelihoods: a framework for analysis. IDS Working Paper 72. Sussex, U.K.: Institute of Development Studies.
- Scrimgeour G. J., Prowse T. D., Culp J. M. & Chambers P. A. (1994) Ecological Effects of River Ice Break-up - a Review and Perspective. *Freshwater Biology* 32: 261-275.
- SEI, IUCN, IISD, & Intercooperation (2003). *Livelihoods and climate change: combining disaster risk reduction, natural resource management and climate change adaptation in a new approach to the reduction of vulnerability and poverty*. SEI, IUCN, IISD, Intercooperation, <http://iisd.org/publications/publication.asp?pno=529>. 10/05/04.
- Sen, A.K. (1981) Poverty and Famines: An essay on entitlement and deprivation. Oxford, Clarendon Press.
- Shankar, B., Halls, A.S., & Barr, J. (2004). Rice versus fish revisited: on the integrated management of floodplain resources in Bangladesh. *Natural Resources Forum*, 28: 91-101.
- Sharp, G. D. (1991). Climate and Fisheries: Cause and Effect - A System Review. Long-term Variability of Pelagic Fish Populations and their Environment. Proceedings of the International Symposium, Sendai, Japan, Pergamon Press.
- Sharp G. D. (2003) Future climate change and regional fisheries: a collaborative analysis pp. 75. FAO, Rome.
- Sharp, G. D. and M. H. Glantz (1992). Climate change, the Indian Ocean tuna fishery, and empiricism. Climate variability, climate change and fisheries. M. H. Glantz. Cambridge, Cambridge University Press: 377-416.
- Shepherd, J.G. (1991). Stability and the objectives of fisheries management. MAFF *Laboratory Leaflet* 64. Directorate of Fisheries Research. Lowestoft, U.K.
- Shepherd, S. A., J. R. Turrubiates-Morales, et al. (1998). "Decline of the abalone fishery at La Natividad, Mexico: Overfishing or climate change?" Journal of Shellfish Research 17(3): 839-846.
- Sheppard C.R.C (2001) The main issues affecting coasts of the Indian and Western Pacific oceans: A meta-analysis from seas at the millennium. *Marine Pollution Bulletin* 42: 1199-1207.

- Sheppard, C.R.C. (2003) Predicted recurrences of coral mortality in the Indian Ocean. *Nature*, 425, 294-297.
- Sholtz, U. *et al.* (1998). Status and prospects of participatory fisheries management programmes in Malawi, pp 407-425 in T. Petr (ed.) *Inland Fishery Enhancements*. DFID/FAO. *FAO Fisheries Technical Paper* 374.
- Short F. T. & Neckles H. A. (1999) The effects of global climate change on seagrasses. *Aquatic Botany* 63: 169-196.
- Shuter B. J. & Post J. R. (1990) Climate, Population Viability, and the Zoogeography of Temperate Fishes. *Transactions of the American Fisheries Society* 119: 314-336.
- Sims D. W., Genner M. J., Southward A. J. & Hawkins S. J. (2001) Timing of squid migration reflects North Atlantic climate variability. *Proceedings of the Royal Society of London Series B-Biological Sciences* 268: 2607-2611.
- Singh-Renton, S. (2002). The impact of global environmental change on fisheries in the Caribbean - outlining research needs. Caribbean food systems: Developing a research agenda, St Augustine, Trinidad, Global Environmental Change and Food Systems (GECAFS).
- Siung-Chang, A. & Lum Kong, A. (2001). Possible links between reef-fish mortalities in the southeast Caribbean and South American river discharge (July-October 1999). *Bulletin of Marine Science*, **68**, 343-349
- Smit, B., Pilifosova, O. and others (2001) Adaptation to climate change in the context of sustainable development and equity. In McCarthy, J. J., Canziani, O., Leary, N. A., Dokken, D. J. and White, K. S. (eds) *Climate Change 2001: Impacts, Adaptation and Vulnerability. IPCC Working Group II*. Cambridge University Press: Cambridge, pp. 877-912.
- Smith S. V. & Buddemeier R. W. (1992) Global Change and Coral-Reef Ecosystems. *Annual Review of Ecology and Systematics* 23: 89-118.
- Smithers, S. (2003). "Coral reefs in crisis: can the world's coral reefs survive?" *Geodate* **16**(4): 1.
- Soto, C. G. (2001). "The potential impacts of global climate change on marine protected areas." *Reviews in Fish Biology and Fisheries* **11**(3): 181-195.
- Souter D., Obura D. & Linden O. eds. (2000) *Coral reef degradation in the Indian Ocean: Status Report 2000*. CORDIO, SAREC Marine Science Program, Department of Zoology Stockholm University, Stockholm.
- Souter D. W. & Linden O. (2000) The health and future of coral reef systems. *Ocean & Coastal Management* 43: 657-688.
- Southward A. J., Hawkins S. J. & Burrows M. T. (1995) 70 Years' Observations of Changes in Distribution and Abundance of Zooplankton and Intertidal Organisms in the Western English- Channel in Relation to Rising Sea Temperature. *Journal of Thermal Biology* 20: 127-155.
- Spalding M. D. & Jarvis G. E. (2002) The impact of the 1998 coral mortality on reef fish communities in the Seychelles. *Marine Pollution Bulletin* 44: 309-321.
- Spalding, M.D., Ravilious, C., & Green, E.P. (2001) *World atlas of coral reefs* University of California Press, Berkeley.
- Spencer, P. D., and Collie, J. S. (1997). Patterns of population variability in marine fish stocks. *Fisheries Oceanography* 6(3): 188-204.
- Sridhar, L. (2002). *Fishing in Trouble Waters*. Chennai. **2004**.

- Stefan H. G. & Fang X. (1993) Model simulations of dissolved oxygen characteristics of Minnesota lakes: past and future. *Environmental Management* 18: 73–92.
- Stein, M. (1998). "Integrating fisheries observations with environmental data - towards a better understanding of the conditions for fish in the sea." *Journal of Northwest Atlantic Fishery Science*(23): 143-156.
- Stokes T.K., D.S. Butterworth, R.L. Stephenson and A.I.L Payne (1999). Confronting Uncertainty in the Evaluation and Implementation of Fisheries-Management Systems. *ICES Journal of Marine Science* 56 (6): 795-796.
- Tietze, U., G. Groenewold, et al. (2000). Demographic change in coastal fishing communities and its implications for the coastal environment. *Fisheries Technical Paper, No. 403*. Rome, FAO: 151p.
- Timmermann A., Oberhuber J., Bacher A., Esch M., Latif M. & Roeckner E. (1999) Increased El Niño frequency in a climate model forced by future greenhouse warming. *Nature* 398: 694-697.
- Townsley, P. (1998). Aquatic resources and sustainable rural livelihoods. In D. Carney (ed.) *Sustainable Rural Livelihoods: What Contribution Can We Make?* London: DFID.
- Trenberth K. E. (1997) The Definition of El Niño. *Bulletin of the American Meteorological Society* 78: 2771-2777.
- Trenberth, K.E. and Hoar, T.J. (1996) The 1990-1995 El Niño-Southern Oscillation event: longest on record. *Geophys. Res. Lett.* 23, 57-60.
- Tri, N. H., N. W. Adger, et al. (1998). "Natural resource management in mitigating climate impacts: the example of mangrove restoration in Vietnam." *Global Environmental Change* 8(1): 49-61.
- Troade, J.-P. (2000). "Adaptation Opportunities to Climate Variability and Change in the Exploitation and Utilisation of Marine Living Resources." *Environmental Monitoring and Assessment* 61(1): 101-112.
- Trotman, A. R. (2003). *Climate Variability: an essential ingredient in the GECAFS Caribbean food systems project*. Insights and tools for adaptation: Learning from climate variability, Washington, DC.
- Turner, B. L. I., Kasperson, R. E., Matson, P. A., McCarthy, J. J., Corell, R. W., Christensen, L., Eckley, N., Kasperson, J. X., Luers, A., Martello, M. L., Polsky, C., Pulsipher, A. and Schiller, A. (2003) A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences US* 100, 8074-8079.
- Turner R. E. (1977) Intertidal vegetation and commercial yields of penaeid shrimp. *Transactions of the American Fisheries Society* 106: 411-416.
- Tweddle, D. and Lewis, D.S.C. (1990). The biology of usipa (*Engraulicypris sardella*) in relation to fluctuations in productivity of Lake Malawi and species introductions. *Collected Reports on Fisheries Research in Malawi, Occasional Papers* 1: 67-72.
- Tyedmers P. & Ward B. (2001) A Review of the Impacts of Climate Change on BC's Freshwater Fish Resources and Possible Management Responses. *Fisheries Centre Research Reports* 9(7): 1-12. Vancouver British Columbia, Fisheries Centre, University of British Columbia
- Ueber, E., A. Maccall, et al. (1992). The rise and fall of the California sardine empire. *Climate variability, climate change and fisheries*. M. H. Glantz. Cambridge, Cambridge University Press: 31-48.

- UNDP (2002). Human development report 2002. United Nations Development Programme, New York.
- UNDP (2003). Human Development Indicators 2003. New York, Human Development Report Office, United Nations Development Programme.
- University of Michigan 1971. The fisheries of the Kafue River flats, Zambia, in relation to the Kafue Gorge dam. Report prepared for the UN/FAO. Ann Arbor, Michigan, University of Michigan Press. FI:SF/ZAM 11: *Tech Report 1: 161p.*
- UNSTATS (2004). National Accounts Main Aggregates Database. New York, United Nations Statistics Division, United Nations. **2004.**
- van den Bergh, JCJM and van der Straaten J (eds) (1997) *Economy and Ecosystems in Change*. Edward Elgar, 400p
- van der Sluijs J et al. (1998) Anchoring devices in science for policy: The case of consensus around climate sensitivity. *Social Studies of Science* 28, 291-323
- van Zalinge N., Loeung D. & Pengbun N. (2003) Mekong flood levels and Tonle Sap fish catches. In: *Second International Symposium on the Management of Large Rivers for Fisheries* pp. 1-14, Phnom Penh.
- Varis O. & Somlyódy L. (1996) Potential impact of climate change on lake and reservoir water quality. In: *Water Resources Management in the Face of Climatic/Hydrologic Uncertainties* (eds. Z. Kaczmarek, K. Strzepek & L. Somlyódy) pp. 46–69. Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Vasquez-Leon, M. (2002). Assessing vulnerability to climate risk: the case of small-scale fishing in the Gulf of California, Mexico. *Investigaciones Marinas*, **30**, 204-205.
- Vaughan, D. G. and J. R. Spouge (2002) Risk estimation of collapse of the West Antarctic Ice Sheet. *Climatic Change* 52, 65-91.
- Verburg P., Hecky R. E. & Kling H. (2003) Ecological consequences of a century of warming in Lake Tanganyika. *Science* 301: 505-507.
- Vestegaard, T.A. (1996). Social Adaptations to a Fluctuating Resource, pp87-91. In K. Crean and D. Symes (eds.) *Fisheries Management in Crisis?* Oxford: Blackwell Science.
- Walters, C. and A. M. Parma (1996). "Fixed exploitation rate strategies for coping with effects of climate change." *Canadian Journal of Fisheries & Aquatic Sciences* **53**(1): 148-158.
- Waluda C. M., Trathan P. N. & Rodhouse P. G. (2004) Synchronicity in southern hemisphere squid stocks and the influence of the Southern Oscillation and Trans Polar Index. *Fisheries Oceanography* 13: 255-266.
- Ware D. M. (1995) A century and a half of change in the climate of the North East Pacific. *Fisheries Oceanography* 4: 267-277.
- Warren-Rhodes, K., Sadovy, Y., & Cesar, H. (2003) Marine ecosystem appropriation in the Indo-Pacific: A case study of the live reef fish food trade. *AMBIO*, 32, 481-488.
- Watson R. T. & and Core Writing Team eds. (2001) *Third Assessment Report of the Intergovernmental Panel on Climate Change. Climate Change 2001: Synthesis Report*. Cambridge University Press, Cambridge, UK.
- Watters, G. M., G. M. Watters, et al. (2003). "Physical forcing and the dynamics of

- the pelagic ecosystem in the eastern tropical Pacific: simulations with ENSO-scale and global-warming climate drivers." Canadian Journal of Fisheries & Aquatic Sciences **60**(9): 1161.
- Welcomme R.L. & Hagborg D. (1977). Towards a model of a floodplain fish population and its fishery. *Environmental Biology of Fishes* **2**:7-24.
- Welcomme R.L. (1985). River fisheries. *FAO Fisheries Technical Paper* **262**:330p.
- Welcomme R.L. & Halls A.S. (2001). Some considerations of the effects of differences in flood patterns on fish populations. *Ecohydrology & Hydrobiology* **1**(3): 313-321.
- Welcomme, R.L. & Halls, A.S. (2004). Dependence of river fisheries on river flow. In R. Welcomme and T. Petr (eds) Proceedings of the Second International Symposium on the Management of Large Rivers for Fisheries Volume 2, Phnom Penh, February 2003.
- Weller, G. (1998). "Regional impacts of climate change in the Arctic and Antarctic." Annals of Glaciology: 543-552.
- West, J. M. and R. V. Salm (2003). "Resistance and Resilience to Coral Bleaching: Implications for Coral Reef Conservation and Management." Conservation Biology **17**(4): 956.
- Westoby, M. *et al.* (1989). Opportunistic management of rangelands not at equilibrium. *Journal of Range Management* **42**: 266-274.
- Allison, E.H., and F. Ellis (2001). The livelihoods approach and management of small-scale fisheries. *Marine Policy* **25** (5) 377-388.
- Whittingham, E., Campbell, J., & Townsley, P. (2003). Poverty and reefs. DFID-IMM-IOC/UNESCO, Exeter, UK.
- WHO (2002). World Health Report 2002: Reducing Risks, Promoting Healthy Life. Geneva, World Health Organisation.
- Wigley, T.M.L. (2005) The climate change commitment. *Science* **307**: 1766-1769.
- Wilkinson, C., ed. (2000) Status of coral reefs of the world:2000, pp 363. Australian Institute for Marine Science, Townsville.
- Wilkinson C. ed. (2002) *Status of Coral Reefs of the World: 2002*. Australian Institute of Marine Science, Townsville.
- Wilkinson C., Linden O., Cesar H., Hodgson G., Rubens J. & Strong A. E. (1999) Ecological and socioeconomic impacts of 1998 coral mortality in the Indian Ocean: An ENSO impact and a warning of future change? *Ambio* **28**: 188-196.
- Winkler, R. L., A. H. Murphy, et al. (1983). "The value of climate information: A decision-analytic approach." Journal of Climatology **3**: 187-197.
- Wolff, M. and J. Mendo (2000). "Management of the Peruvian bay scallop metapopulation with regard to environmental change." Aquatic Conservation Marine Freshwater Ecosystems **10**: 117-126.
- Wolff, M., C. Wosnitza-Mendo, et al. (2003). The Humboldt Current - Trends in exploitation, protection and research. Large Marine Ecosystems of the World: Trends in Exploitation, protection, and research. G. Hempel and K. Sherman. B.V., Elsevier.
- Wood C.M. & McDonald D.G. eds. (1997) *Global Warming: Implications for freshwater and marine fish*. Cambridge University Press, Cambridge.

- Wood, G.D. (2003). Staying secure, staying poor: the 'Faustian bargain'. *World Development* **31**(3): 455-471.
- Wooster, W. (2002). ENSO forecasts and fisheries. La Niña and its impacts: Facts and speculation. M. H. Glantz. Tokyo; New-York; Paris, United Nation University Press: 116-118.
- Wooster, W. S. and M. H. Glantz (1992). King crab dethroned. Climate variability, climate change and fisheries. M. H. Glantz. Cambridge, Cambridge University Press: 15-30.
- World Bank (2000). Bangladesh: Climate Change & Sustainable Development. Report No. 21104 BD. World Bank Office, Dhaka.
- World Bank (2000). Volume IV: Adapting to Climate Change. Cities, Seas, and Storms: Managing change in Pacific Island Economies. Washington, D.C., Papua New Guinea and Pacific Country Unit, The World Bank.
- World Bank (2003). World Development Indicators Online. Washington, DC, World Bank Group.
- World Bank (2004). *Bangladesh at a Glance*.
http://www.worldbank.org/data/countrydata/aag/bgd_aag.pdf
- World Bank Group (2002). Measuring Poverty. **2004**. World Bank, Washington DC
- WRI (2004). CAIT: Indicator Framework Paper. Washington, DC, World Resource Institute.
- Wunsch, C. (1999) The interpretation of short climate records, with comments on the North Atlantic and Southern Oscillations. *Bull. Am. Met. Soc.* **80**, 245-255.
- Yan N. D., Keller W., Scully N. M., Lean D. R. S. & Dillon P. J. (1996) Increased UV-B penetration in a lake owing to drought-induced acidification. *Nature* **381**: 141-143.
- Yao, H. and A. Georgakakos (2001). "Assessment of Folsom Lake response to historical and potential future climate scenarios - 2. Reservoir management." Journal of Hydrology.
- Zapata, A. & Broad, K. ([undated]). *Peru country case study*, Reducing the impacts of environmental emergencies through early warning and preparedness: the case of the 1997-1998 El Niño. United Nations University in cooperation with United Nations Environmental Programme and National Center for Atmospheric Research, Tokyo.
- Ziervogel, G. & Calder, R. (2003). Climate variability and rural livelihoods: assessing the impact of seasonal climate forecasts in Lesotho. *Area*, **35**, 403-417
- Zhang C. I., Lee J. B., Kim S. & Oh J. H. (2000) Climatic regime shifts and their impacts on marine ecosystem and fisheries resources in Korean waters. *Progress in Oceanography* **47**: 171-190.