C3: Integrated approaches in Conservation, Environment and Society.

Instructors: Nitin Rai (coordinator, nitinrai@atree.org), Durba Biswas, Ankila Hiremath, Siddhartha Krishnan, Jagdish Krishnaswamy, Sharad Lele, and Veena Srinivasan.

Credits: 3 credits (16 sessions of 3 hours each)
Schedule: Semester 2; 14 January to 28 April 2016. Thursdays, 10 AM to 1 PM.

Course description:
The course will introduce students to approaches in studying human-environment interactions. The course will engage critically with studies that cut across disciplines. The sessions will aim to explore ways in which different approaches can be applied: from development of integrated ideas/concepts, to the application of frameworks and methods. The course is thematically organized and comprises readings that use such diverse perspectives as political economy, institutional analysis, environmental justice, resilience theory, sustainable livelihoods, conservation biology, and political ecology.

Session format
This seminar course will be reading and writing intensive. Assigned readings will form the basis for class discussions. The instructor will briefly introduce the session and then open it up for discussions. Participation of students in class discussion is essential and will form the basis for participation scores. Students will submit a written response to the readings the day before class. The critique will be shared with other students and instructors.

Written response
Write a response to the set of session readings (about 1000 words) on the central ideas, the conceptual frameworks and the methodological aspects of the readings. The response might also identify gaps in approaches how these ideas might relate to your own work. The responses are due at 5 PM the Wednesday before class and to be uploaded to the Google folder marked 'C3 Written Responses'. The folder will be accessible by all course instructors and students and will form the basis of discussion in class.

Final paper
Students will submit a final research paper on a contemporary human-environment issue using a conceptual approach introduced in the course. Students will submit an outline of their paper by end of March for discussion with the course coordinator. Final papers are due on the 28th of April 2016.

Course assessments:
1. Written responses for each week. (40%)
2. Students will be expected to participate actively in class discussions (20%)
3. Final paper (40%)

Course schedule

Session	Date	Session	Instructor
1	January 14	Integrating the Natural and Social	Nitin
2	21	Novel Ecosystems	Ankila
3	28	Fire and Forest Dynamics	Ankila
4	February 4	Resilience in Ecological Systems	Jagdish
5	11	Resilience in Coral Reef Ecosystems	Jagdish
6	18	Coupled Human-Environment Systems	Veena
7	25	Population and Environmental Change	Veena
8	March 3	Environmental Justice	Siddharth
9	10	Environmental Justice: Indian Environmentalism	Siddharth
10	17	Forest Degradation: Soppinabettas	Sharad
11	24	Forest Degradation: Van Panchayaths	Sharad
12	31	Political Economy	Durba
13	April 7	Political Economy of Water	Durba
14	14	Deforestation Narratives	Nitin
15	21	Political Ecology of Land and Forests	Nitin
16	28	Interdisciplinarity and the Environment	Nitin

Readings

Session 1: Integrating the Natural and Social

Adams, W. 2007 Thinking like a Human: social science and the two cultures problem. Oryx, 41(3), 275–276

Ghosh, A. 2008. Wild Fictions. Outlook India. http://www.outlookindia.com/article.aspx?239276.

Pretty, J. et al., 2009. The Intersections of Biological Diversity and Cultural Diversity: Towards Integration. Conservation and Society, 7(2):100-112

Session 2: Novel Ecosystems

Hobbs, R. J., E. Higgs, and J. A. Harris. 2009. Novel ecosystems: implications for conservation and restoration. Trends in Ecology & Evolution 24:599–605.

Marris, E. 2011. Rambunctious Garden. Saving Nature in a Post-Wild World. Bloomsbury, New York.

Murcia, C., J. Aronson, G. H. Kattan, D. Moreno-Mateos, K. Dixon, and D. Simberloff. 2014. A critique of the "novel ecosystem" concept. Trends in Ecology & Evolution 29:548–553.

Robbins, P., and S. A. Moore. 2013. Ecological anxiety disorder: diagnosing the politics of the Anthropocene. Cultural Geographies 20:3–19.

Trueman, M., R. J. Standish, and R. J. Hobbs. 2014. Identifying management options for modified vegetation: Application of the novel ecosystems framework to a case study in the Galapagos Islands. Biological Conservation 172:37–48.

Session 3. Fire and Forest Dynamics

Pyne, S. J. 1994. Nataraja : India's cycle of fire. Environmental History Review 18:1–20.

Ratnam, J., W. J. Bond, R. J. Fensham, W. A. Hoffmann, S. Archibald, C. E. R. Lehmann, M. T. Anderson, S. I. Higgins, and M. Sankaran. 2011. When is a "forest" a savanna, and why does it matter? Global Ecology and Biogeography 20:653–660.

Sankaran, M., and J. Ratnam. 2013. African and Asian savannas. Pages 58–74 Encyclopedia of Biodiversity. Vol 1.

Sundaram, B., S. Krishnan, A. J. Hiremath, and G. Joseph. 2012. Ecology and impacts of the invasive species, Lantana camara, in a social-ecological system in South India: Perspectives from local knowledge. Human Ecology 40:931–942.

Session 4: Resilience in Ecological Systems

Gallopín, Gilberto C. 2006. Linkages between vulnerability, resilience, and adaptive capacity. Global environmental change 16, no. 3 (2006): 293-303.

Nelson, D.R., Adger, W.N. and Brown, K., 2007. Adaptation to environmental change: contributions of a resilience framework. Annual Review of Environment and Resources, 32(1):395.

Session 5: Resilience in Coral Reef Ecosystems

Jackson, J. B. (1997). Reefs since columbus. Coral reefs, 16(1), S23-S32.

Arthur, R., 2004. Patterns and processes of reef recovery and human resource use in the Lakshadweep Islands, Indian Ocean (Doctoral dissertation, James Cook University)

Arthur, R., Kelkar, N., Alcoverro, T., & Madhusudan, M. D. (2013). Complex ecological pathways underlie perceptions of conflict between green turtles and fishers in the Lakshadweep Islands. Biological conservation, 167, 25-34.

Session 6: Coupled Human-Environment Systems

Srinivasan, V., Seto, K. C., Emerson, R., & Gorelick, S. M. (2013). The impact of urbanization on water vulnerability: a coupled human–environment system approach for Chennai, India. Global Environmental Change, 23(1), 229-239.

Srinivasan, V. (2015). Reimagining the past–use of counterfactual trajectories in socio-hydrological modelling: the case of Chennai, India. Hydrology and Earth System Sciences, 19(2), 785-801.

Srinivasan, V., Gorelick, S. M., & Goulder, L. (2010). Sustainable urban water supply in south India: Desalination, efficiency improvement, or rainwater harvesting?. Water Resources Research, 46(10).

Srinivasan, V. (2008). An integrated framework for analysis of water supply strategies in a developing city: Chennai, India. PhD Thesis, Stanford University available on proQuest.

Turner, B. L. 2010. Vulnerability and resilience: Coalescing or paralleling approaches for sustainability science? Global Environmental Change 20.4 (2010): 570-576.

Session 7: Population and Environmental Change
Tiffen, Mary, Michael Mortimore, and Francis Gichuki. More people, less erosion: environmental recovery in Kenya. John Wiley & Sons Ltd, 1994.

Session 8: Environmental Justice
Bullard, R. 2000. Dumping in Dixie: Race, Class and Environmental Quality. Westview Press, Boulder, Colorado.

Mohai, P. Pellow, D. and Roberts, J. T., 2009. Environmental Justice. Annual Review Environment and Resources. 34:405–30

Session 9: Environmental Justice: Indian Environmentalism
Mukul Sharma. 2012. Dalits and Indian Environmental Politics. EPW vol XLVII no 23

Amita Baviskar, Kavita Philip and Subir Sinha 2006 Rethinking Indian Environmentalism: Industrial Pollution in Delhi and Fisheries in Kerala., in Joanne R. Bauer (ed) Forging Environmentalism: Justice, Livelihood and Contested Environments. East Gate Book, New York.

Session 10: Forest Degradation: Soppinabettas
Lélé, S. and G.T. Hegde, Potential herblayer production and grazing effects in anthropogenic savannahs in the moist tropical forests of the Western Ghats of India. Tropical Grasslands, 1997. 31(6): p. 574-587.

Lélé, S., Degradation, Sustainability, or Transformation: A case study of villagers' use of forest lands in the Malnaad region of Uttara Kannada district, India, in Energy & Resources Group1993, University of California: Berkeley.

Lélé, S., Sustainable use of biomass resources: A note on definitions, criteria, and practical applications. Energy for Sustainable Development, 1994. 1(4): p. 42-46.

Session 11: Forest Degradation: Van Panchayaths
Prabhakar, R., E. Somanathan, and B.S. Mehta, How degraded are Himalayan forests? Current Science, 2006. 91(1): p. 61-67.

Somanathan, E., R. Prabhakar, and B.S. Mehta, Does Decentralization Work? Forest Conservation in the Himalayas, 2005, Bureau for Research and Economic Analysis of Development: Cambridge.

Session 12: Political Economy
Polanyi, K. 1944. The Great Transformation. New York: Rinehart and Company. (Selected chapters)

Harvey, D. 2003. The New Imperialism. Oxford University Press. London. (Selected chapters)

Session 13: Political Economy of Water
Dubash, N. 2001. Tubewell Capitalism: Groundwater Development and Agarian Change in Gujarat. Oxford University Press, New Delhi.

Session 14: Deforestation Narratives
Fairhead, J. and Leach, M., 1996. Misreading the African landscape: Society and ecology in a Forest-Savanna mosaic. Cambridge University Press, Cambridge.

Session 15: Political Ecology of Land and Forests
Hall, D., Hirsch, P. and Li, T. M. 2011. *Powers of Exclusion: Land dilemmas in Southeast Asia*. National University of Singapore Press, Singapore.

Session 16: Interdisciplinary and the Environment
Dove. M. R. and Kammen, D. M. 2015. Science, society and the environment: Applying anthropology and physics to sustainability. Routledge, London.