

Water Management and Policy

Fall Semester 2007, Seminar: Fridays 12:45 – 3:15 pm; Harvill Room 303

Instructor

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Course summary

We will follow a seminar format. Management and policy challenges driven by surface water and groundwater scarcity will be assessed for the Southwest US, Mexico, and globally. Critical review of institutions coupled with assessment of emerging management systems will lead to consideration of policy alternatives.

Course materials

Reading materials will be distributed in class.

Grading policy

Grades are based on regular participation in seminar discussions, and satisfactory completion of a term paper.

Requirements

Course participants must write an original research paper that is conceptualized, researched, orally presented in class (with feedback from the instructor and fellow students), and finalized as part of the course.

There is no pre-requisite for this course.

SCHEDULE of TOPICS (subject to revision as agreed/ announced)

Date	Topic	Reading / Notes
8/24	Resources, management, and policy: water scarcity as a driver (and subject) of management systems, and water and environmental policy	<p>Oki, Taikan and Shinjiro Kanae (2006). Global Hydrological Cycles and World Water Resources. <i>Science</i> Vol. 313. no. 5790, pp. 1068 – 1072. DOI: 10.1126/science.1128845</p> <p>Postel, Sandra L. (2000). Entering an Era of Water Scarcity: The Challenges Ahead. <i>Ecological Applications</i> Vol. 10, No. 4. (Aug., 2000), pp. 941-948.</p> <p><u>Additional:</u> Clarke, Robin (1991). <i>Water: The International Crisis</i>. Earthscan, London. (193 pages, ISBN 1853831050).</p>
8/31	A typology of management systems (historical, institutional, community, adaptive)	<p>Wittfogel, K. (1957). <i>Oriental Despotism</i>. Yale Univ. Press, New Haven [selected readings].</p> <p>Saleth, R. Maria and Ariel Dinar (2004). <i>The Institutional Economics of Water</i>. The World Bank, Washington DC. [Chs. 1&2: pp. 1-45 & Bibliography pp. 366-383].</p> <p>Falkenmark, M. and J. Rockstrom (2004). <i>Balancing Water for Humans and Nature: A New Approach in Ecohydrology</i>. Earthscan, London.</p> <p><u>Additional:</u> Moench, Marcus, Elisabeth Caspari, Ajaya Dixit (1999). Rethinking the Mosaic: Investigations into Local Water Management. ISET, Boulder CO. [Ch. 1]</p> <p>Gunderson, L. 1999. Resilience, flexibility and adaptive management - - antidotes for spurious certitude? <i>Conservation Ecology</i> 3(1): 7. [online] URL: http://www.consecol.org/vol3/iss1/art7/</p>
9/7	Management domains: regional/ territorial, administrative, and water resource-based delineations	<p>White, Gilbert F. (1963). Contributions of Geographical Analysis to River Basin Development. <i>The Geographical Journal</i>, Vol. 129, No. 4 (Dec., 1963), pp. 412-432. doi:10.2307/1794656</p> <p>White, Gilbert F. (1994). Decision or Procrastination in Floodplain Management. <i>Water Resources Update</i>, Leonard Shabman (ed.). Issue, 1994 - 131.230.120.111</p> <p>Wescoat, James L. (1992). Beyond the River Basin: The Changing Geography of International Water Problems and International Watercourse Law, <i>Colo. J. Int'l Envtl. L. & Pol'y</i>, Vol. 3: 301-330.</p> <p><u>Additional:</u> White, Gilbert F. (1957). A Perspective of River Basin Development <i>Law and Contemporary Problems</i>, Vol. 22, No. 2, River Basin Development (Spring, 1957), pp. 157-187. doi:10.2307/1190252</p>
9/14	<i>Research paper topics</i>	<i>in-class presentation of abstract and preliminary literature review</i>
9/21	Water management and policy in practice	<p>Varady, R. G., and B. J. Morehouse (2004). Cuanto cuesta? Development and water in Ambos Nogales and the Upper San Pedro Basin. In <i>The Social Costs of Industrial Growth in Northern Mexico</i>, ed. by K. Kopinak. La Jolla, CA: Center for U.S.-Mexican Studies, UCSD. pp. 205-248.</p> <p>Scott, Christopher A. and Jeff M. Banister. March 2008 forthcoming. The dilemma of water management “regionalization” in Mexico under centralized resource allocation. <i>IWRM special issue in International Journal of Water Resources Development</i>.</p>

		<p>Mackay, Heather (2003). Water Policies and Practices. In David Reed and Martin de Wit (eds.) <u>Towards a Just South Africa: The Political Economy of Natural Resource Wealth</u>. World Wide Fund for Nature, Washington DC.</p> <p>Van der Zaag, Pieter (2007). Asymmetry and Equity in Water Resources Management; Critical Institutional Issues for Southern Africa. <i>Water Resour Manage</i> DOI 10.1007/s11269-006-9124-1</p> <p><u>Additional:</u></p> <p>Shah, T., C.A. Scott, S. Buechler (2004). A decade of water sector reforms in Mexico: lessons for India's new water policy. <i>Economic and Political Weekly</i> XXXIX (4): 361-370.</p>
9/28	The irrigation debacle: balancing food policy imperatives with competing demands and ecological needs for water	<p>Selected readings from:</p> <p>Shah, Tushaar (2007 manuscript). <u>Taming the Anarchy? Governing South Asia's Booming Irrigation Economy</u>. RFF Press, Washington DC [Ch. 2, 5-8; pp. 41-67, 136-262].</p> <p>Rosegrant, Mark W., Ximing Cai, Sarah A. Cline (2002). <u>World Water and Food to 2025: Dealing with Scarcity</u>. International Food Policy Research Institute, Washington DC [Ch. 1, 9; pp. 1-13, 197-207]</p> <p><u>Additional:</u></p> <p>Remaining chapters of Shah (2007 manuscript) and Rosegrant et al (2002) books for this week, above.</p>
10/5	The big dams debate: World Commission on Dams, resettlement and environmental refugees, dam development and dam de-commissioning	<p>Dingwerth, Klaus (2005). The democratic legitimacy of public-private rule making: what can we learn from the World Commission on Dams? <i>Global Governance</i> 11 (1): 65-83.</p> <p>Brinkerhoff, Jennifer M (2002). Global public policy, partnership, and the case of the World Commission on Dams. <i>Public Administration Review</i> 62 (3), 324–336. doi:10.1111/1540-6210.00182</p> <p>Doyle, Martin W, Jon M Harbor, Emily H Stanley (2003). Toward policies and decision-making for dam removal. <i>Environmental Management</i> 31(4): 453– 465.</p> <p>Pejchar, Liba and Keith Warner (2001). A river might run through it again: criteria for consideration of dam removal and interim lessons from California. <i>Environmental Management</i> 28 (5): 561-575. DOI 10.1007/s002670010244</p>
10/12	The groundwater revolution, economics, rights, sustainability: Arizona, Mexico, India	<p>Colby, Bonnie G. and Katharine L. Jacobs, eds. (2006). <u>Arizona Water Policy: Management Innovations in an Urbanizing, Arid Region</u>. RFF Press, Washington, DC [Ch 1, 13; pp. 1-9, 188-203].</p> <p>Heikkila, Tanya (2003). Coordination in water resource management: the impact of water rights institutions. <i>Water Policy</i> 5 : 331–348.</p> <p>Shah, Tushaar (2007 manuscript). <u>Taming the Anarchy? Governing South Asia's Booming Irrigation Economy</u>. RFF Press, Washington, DC [Ch. 4: pp. 104-135].</p> <p>Jarvis, Todd, Mark Giordano, Shamy Puri, Kyoko Matsumoto, Aaron Wolf (2005). International Borders, Ground Water Flow, and Hydroschizophrenia. <i>Ground Water</i> 43 (5), 764–770. doi:10.1111/j.1745-6584.2005.00069.x</p> <p><u>Additional:</u></p> <p>Loaiciga, Hugo A. (2003). Climate Change and Ground Water. <i>Annals of the Association of American Geographers</i> 93(1): 30–41.</p>

10/19	Urbanization – the next global mega-challenge for water management: policy considerations for financial and water resource mobilization and allocation; public and private sector water services provision, the Millennium Development Goals	<p>Schneier-Madanes, Graciela (2005). Conflicts and the Rise of Users' Participation in the Buenos Aires Water Supply Concession, 1993-2003. In Olivier Coutard, Richard E. Hanley, and Rae Zimmerman (eds.) <u>Sustaining Urban Systems: The Social Diffusion of Large Technical Systems</u>. Routledge, New York. pp. 151-171.</p> <p>Bakker, Karen (2003). Trickle Down? Private sector participation and the pro-poor water supply debate in Jakarta, Indonesia. <i>Geoforum</i> 38 (2007): 855–868.</p> <p>Tjandraatmadja, G., S. Burn, M. McLaughlin, and T. Biswas (2005). Rethinking urban water systems – revisiting concepts in urban wastewater collection and treatment to ensure infrastructure sustainability. <i>Water Science and Technology: Water Supply</i> 5(2): 145-154.</p> <p><u>Other resources (not additional reading for this week's topic):</u></p> <p>Bakker, Karen. <u>An Unproductive Commodity: Privatizing Water in England and Wales</u>. Oxford University Press, New York.</p> <p>National Research Council (2002). <u>Privatization of Water Services in the United States: An Assessment of Issues and Experience</u>. National Academies Press, Washington DC.</p> <p>Shirley, M. M. (2002.) <u>Thirsting for efficiency: the economics and politics of urban water system reform</u>. Elsevier Science B.V.</p> <p>Shiva, Vandana (2002). <u>Water Wars: Privatization, Pollution, and Profit</u>. South End Press.</p> <p>Vlachos, Evan and Benedito Braga (2001). The challenge of urban water management. IWA Publishing.</p> <p>von Weizsäcker, Ernst Ulrich, Oran R. Young, Matthias Finger (2005). <u>Limits to Privatization: How to Avoid Too Much of a Good Thing</u>. Earthscan, London.</p>
10/26	Water quality, wastewater, reuse: rethinking management paradigms, crossing jurisdictional boundaries	<p>Selected readings from:</p> <p>Scott, C.A, N.I. Faruqui, L. Rachid-Sally (eds.) 2004. <u>Wastewater Use in Irrigated Agriculture</u>. CABI Publishing, Wallingford, U.K. [Ch. 1, 3, 5, 16, App. 1].</p> <p>Vallotton, A.D., Mexal, J.G., Vallotton, D.G., Erickson, C., Iglesias, L., Jessen, B., Nuñez, R., Picchioni, G., Samani, Z., Zachritz II, W.H. (2000). Sustainable use of wastewater for small communities: a model system for short rotation woody crop production, p. 47-71. Westerhoff, P. (ed). The U.S.-Mexican border environment: Water issues along the U.S.-Mexican border. Southwest Center for Environmental Research and Policy Monograph series No. 2. San Diego State University Press.</p>
11/2	Global change, environmental flows	<p>Smakhtin, Vladimir, Carmen Revenga and Petra Doll (2005). <u>Taking into Account Environmental Water Requirements in Global-scale Water Resources Assessments</u>. Comprehensive Assessment Research Report 2. Comprehensive Assessment Secretariat, Colombo, Sri Lanka.</p> <p>Vorosmarty, Charles J. et al. (2000). Global Water Resources: Vulnerability from Climate Change and Population Growth. <i>Science</i>. 289: 284-287. DOI: 10.1126/science.289.5477.284</p> <p>Poff, N. LeRoy, J. David Allan, Mark B. Bain, James R. Karr, Karen L. Prestegard, Brian D. Richter, Richard E. Sparks, Julie C. Stromberg. 1997. The natural flow regime: a paradigm for river conservation and</p>

		restoration. <i>BioScience</i> 47: 769-784. Pitt, Jennifer, Daniel F. Luecke, Michael J. Cohen, Edward P. Glenn, and Carlos Valdés-Casillas. 2000. Two nations, one river: managing ecosystem conservation in the Colorado River Delta. <i>Natural Resources Journal</i> 40: 819-864.
11/9	[Re-] allocation: economics, legal rights, sectoral priorities	Bruns, Randolph B., Claudia Ringler, Ruth Meinzen-Dick (2005). <u>Water Rights Reform: Lessons for Institutional Design</u> . International Food Policy Research Institute, Washington DC [Ch. 2, 12; pp. 27-54, 283-309] Glennon, Robert (2003). Water scarcity, marketing, and privatization. <i>Texas Law Review</i> 83 (7). <u>Additional:</u> Saleth, RM and A. Dinar (2004). <u>Institutional Economics of Water: A Cross-Country Analysis of Institutions and Performance</u> . The World Bank, Washington DC.
11/16	<i>Research paper presentations, discussion, feedback</i>	
11/30	<i>Paper presentations ... continued</i> Promising alternatives: management and policy for the 21 st Century	Giordano, Meredith, Mark Giordano, Aaron Wolf (2002). The geography of water conflict and cooperation: internal pressures and international manifestations. <i>The Geographical Journal</i> Vol. 168 Issue 4 Page 293 December 2002. Wolf, Aaron T., Shira B. Yoffe and Mark Giordano (2003). International waters: identifying basins at risk. <i>Water Policy</i> 5 (2003) 29–60. Shah, Tushaar, Ian Makin, R. Sakthivadivel (2005). Limits to leapfrogging: issues in transposing successful river basin management institutions in the developing world. In <u>Irrigation and river basin management: options for governance and institutions</u> . CABI Publishing. Gleick, Peter H. (2003). Global Freshwater Resources: Soft-Path Solutions for the 21st Century. <i>Science</i> 28 November 2003: Vol. 302. no. 5650, pp. 1524 – 1528 DOI: 10.1126/science.1089967

Final note

All information contained in this syllabus may be subject to change with reasonable advance notice, and considering student input.