

# Water for an integrative climate paradigm

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International climate negotiations are deadlocked between the affluent global North and "developing" South, between political Left and Right, and between believers and deniers. Now, authors writing in the latest issue of the *International Journal of Water* argue that a more integrative analysis of climate should help resolve these conflicts.

Land use changes and [water](#) management are highly relevant to [climate change](#). To quote hydrologists Juraj Kohutiar and Michal Kravcik of the Slovak People and Water NGO: "Water evaporation is the most important agent of energy transformation on Earth." Unfortunately, some parts of the media simply play the crisis as a highly antagonistic two-headed controversy between Position 1 - human impacts on climate are negligible, and Position 2 - human impacts are significant and a result of [carbon dioxide emissions](#). This has done little for public understanding and has been exploited by others with political and economic agendas.

The Editor of the IJW special issue, "Water and the Complexities of Climate", Ariel Salleh, environmental sociologist from the University of Sydney, says that public eco-literacy is critical to good climate policy formulation. "Overly simplified [climate models](#) are one thing, but governments are proffering economic solutions (like taxes or trading) for ecological problems! This can achieve little on the ground - since economics and ecology deal with two different orders of reality."

Given the political uproar of international climate summits including Copenhagen and Cancun, attention has been deflected from a third

variety of scientific opinion - Position 3 - the integrative climate paradigm. This recognizes a range of first-order climate forcings and human-induced causes as significant as carbon dioxide emissions, such as deforestation, agro-industry, and urbanization.

United Nations climate negotiations promote programs such as the Clean Development Mechanism, where forests in the global South are treated as passive carbon sinks for pollution from industrialized countries in the global North. However, what is commonly overlooked is the fact that intact vegetation actively manages the small water cycle, and cools the earth by converting sensible heat to the latent heat of evaporation.

This thesis is amplified by authors in the IJW special issue. Wilhelm Ripl from the Technical University of Berlin connects mismanagement of water with the running down of ecosystems and thus global warming. Russian physicists Makarieva and Gorshkov argue for closer attention to the climate-regulating effects of forest-ocean interactions. A Czech scientific team led by Jan Pokorny assesses the efficacy of 'Solar energy dissipation and temperature control by water and plants'.

In Pokorny's words: "Ecosystems use solar energy for self-organization and cool themselves by exporting entropy to the atmosphere as heat. These energy transformations are achieved through evapo-transpiration, with plants as 'heat valves' ... While global warming is commonly attributed to atmospheric CO<sub>2</sub>, the research shows water vapor has a concentration two orders of magnitude higher than other greenhouse gases."

Wider implications of the integrative climate model are explored by Schmidt in urban planning. Norris, Andrews and Williams demonstrate the principles in agriculture. Hesslerova and Pokorny show how warming and rainfall loss follow "development" projects that clear fell forests and engineer drainage. Australian political scientist James Goodman and

activist Ellen Roberts expose the social costs on poor communities imposed by what they see as "badly conceived UN climate policies" such as the REDD scheme - Reducing Emissions from Deforestation and Forest Degradation.

A final paper by Lodemann and colleagues is written from the viewpoint of environmental ethics. As Salleh notes: "The challenge is to achieve a climate politics that is at once responsive to local conditions, ecologically effective, socially democratic, and globally just."

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