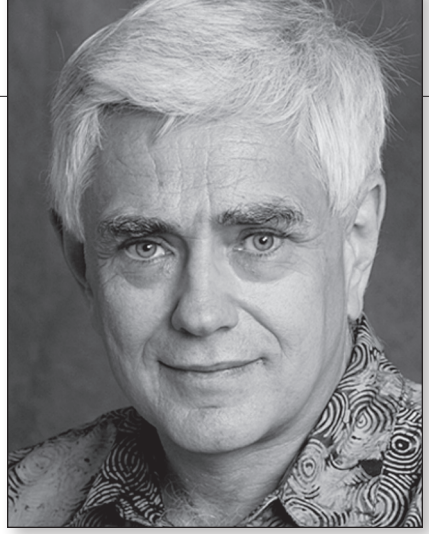

By Bruce Rich

Megadams and Economic Folly

There is a resurgence in the construction of large dams in developing countries. It is led by huge middle-income country financial institutions such as BNDES, the Brazilian national development bank, and China's export-import and national development banks. Each lends more than twice as much as the World Bank. China alone is financing or planning to over 100 new large dams in sub-Saharan Africa and is a main funder of numerous new hydro projects in Southeast Asia and of many new dams in the Amazon basin.

Fearing it is losing relevance as a development lender, the World Bank recently recommitted to large hydro, with 56 percent of its finance for energy generation going for large dams.

Yet the environmental, social, and economic costs associated with large dams are well documented. Dam reservoirs forcibly displaced as many as 80 million people, mainly poor farmers, in the second half of the 20th century. Thayer Scudder, professor emeritus of anthropology at CalTech, recently declared in the *New York Times* that he now realizes that such projects are not worth the cost and that many will inevitably entail "disastrous environmental and socio-economic consequences."

Climate change has created new risks for economies that rely on hydro, causing increased variability in river flows, with less predictable generating capacity. In sub-Saharan Africa, the Amazon River basin, and India, drought-related energy shortages are occurring more frequently. In Uganda, a 2005 drought reduced hydro generation, resulting in a 3.3 percent loss of gross domestic product. A growing number of scientific papers have found that dam reservoirs are significant sources of methane emissions, a super greenhouse gas.

A recent comprehensive review of the economic costs and benefits of 245 large dams on five continents by four Oxford professors in the journal *Energy Policy* found that average costs of large dam projects are nearly double estimates of project proponents, with building time overruns averaging 44 percent.

Noting that their study examined "the largest and most reliable data set of its kind," the authors find "overwhelming evidence" that the real economic costs of large dam projects, calculated even in the narrowest fashion — without factoring in any environmental costs, nor any resettlement or other socio-economic costs, nor even costs of debt servicing or inflation — are for the most part too large to yield a positive economic return. They warn that "policymakers, particularly in developing countries, are advised to prefer agile energy alternatives that can be built over shorter time horizons."

Large-scale hydropower projects ignore the environmental lessons of the past half century

Looking at a large body of literature on decisionmaking under uncertainty, the authors identify "psychological delusion" and "political deception" as key factors for these outcomes. Such delusion is the self-induced condition of overly optimistic estimates of project costs and benefits by experts — in this case most frequently economists and engineers — who are members of inside decisionmaking groups, basing their conclusions on plans and projections, rather than empirical evidence on the outcomes of similar projects in the past. Political deception refers to knowing "strategic misrepresentation by project promoters."

The authors also cite a growing literature on infrastructure delivery documenting "misplaced political incentives" (corruption and pressure to approve large loans) and "agency problems" (conflicts of interest) that inexorably lead to flawed decisions.

The resurgence of mega dams is often justified by the putative need for "transformational" investments that will promote development and energy access for the impoverished. But according to the International Energy Agency, 84 percent of the 1.3 billion people without access to electricity live in rural areas in sub-Saharan Africa and South Asia, where connecting widely dispersed communities to a centralized grid linked to large dams is often much more expensive than off-grid or village or district-scale connections to smaller, local, renewable energy sources.

The IEA concludes that nearly two thirds of new energy access investments should go for such solutions. Moreover, centralized energy investment in Africa and South Asia has benefitted mainly energy-intensive industries such as mining, and consumption by better off consumers in cities. In India, electricity generation has grown 6 percent a year on average since 2005, while the total population with access by a paltry 0.5 percent. Plans for dam building and other mega energy projects would still leave over a billion people worldwide without energy access in 2030.

The resurgence of mega dams exemplifies a perverse political economy and deeply flawed political incentives that ignore the environmental, social, and economic lessons of the past half century. It is an investment path now fostering growing inequality as well as exacerbating a multifaceted global ecological crisis.

Bruce Rich, an ELI Visiting Scholar, is an attorney and author who has served as senior counsel for major environmental organizations. His email is brucemrich@gmail.com.