A Vision for the Next 20 Years

by Patrick McCully

What will the next 20 years hold for rivers and the communities and ecosystems they support? A glass that is more than half full, we hope. Do a bit of time travel with IRN, and share our vision for 2025:

The ***large dam era*** largely ground to a halt in the second decade of the 21st century. Today large dams are rarely considered as an answer to water and energy needs. In those few cases where there is social acceptance that a large dam is the best available option, the people affected voluntarily resettle on the basis of binding legal agreements that guarantee improvements in their living standards.

Breakthroughs in renewable energy technologies and decentralized microgrids have revolutionized energy systems the way the internet revolutionized communications. Big dams, coal and nukes are now seen as obsolete, dirty technologies. Energy taxes and widespread public support for cuts in greenhouse pollution have spurred a great leap forward in energy efficiency. Developing countries have leapfrogged to the new energy infrastructure, bringing huge economic and environmental benefits, especially for rural areas, which have seen attendant increases in jobs and incomes.

Annual ***new wind turbine installations*** overtook large hydro additions for the first time in 2002. Annual new photovoltaic additions overtook new large hydro in 2008. Since then, while installations of solar, wind, geothermal, biomass, cogeneration, tidal and wave power have soared, large hydro capacity has declined due to dam decommissioning.

While ***global greenhouse gas emissions*** have finally begun to decline, we cannot avoid rapid warming due to past emissions. Erratic and extreme weather events are causing great damage. But a sustained effort to implement "no regrets" adaptation measures such as better flood warning and evacuation systems and improved groundwater management has enabled even the poorest countries to avoid the worst flood and drought disasters.

In wealthy countries and high-consuming sectors of poor countries, ***water consumption has dropped*** drastically due to improved public water supply systems, and more efficient irrigation and household appliances. Dropping demand, together with desalination and water recycling, mean that societies have been better able to cope with extended droughts. Together with widespread promotion and acceptance of ecosanitation, improved water supply means that waterborne diseases are no longer the major killers they were 20 years ago.

Dryland rural areas have seen the ***widespread implementation*** of rainwater harvesting, low-cost small pumps and the adoption of sophisticated organic farming methods based on locally appropriate drought-resistant crops. These have combined with the new energy economy and an end to political support and subsidies for corporate agriculture to greatly improve the living standards of previously impoverished small farmers.

This is, of course, a very hopeful scenario. But it is within our reach if we take the right political decisions. IRN and the global movement to which we belong will keep pushing to ensure these decisions are taken. ■

IRN
International Rivers Network
1847 Berkeley Way
Berkeley, CA 94703, U.S.A.
Change Service Requested

Non-Profit Org.
US POSTAGE
PAID
Berkeley, CA 94703
Permit No. 126

IN THIS ISSUE

Celebrate with IRN!

Join us in celebration of IRN's 20 years of protecting rivers and rights!
November 3, San Francisco

Save the Date!

For reservations please contact Elissa Van Deursen at (415) 785-7850; ecoevents@comcast.net or visit us at www.irn.org

INTERNATIONAL RIVERS NETWORK • A VOICE FOR RIVERS AND RIGHTS
IRN 20 years

World Rivers Review

Volume 20, Number 4 / August 2005

Published by International Rivers Network

20 Years of Success – Happy Birthday IRN!

by Aviva Imhof

The year was 1985. The United States was celebrating the 50th anniversary of Hoover Dam, the grand behemoth that marked the beginning of the big dam era. The World Bank had just approved loans for India's notorious Sardar Sarovar Dam project in the Narmada Valley. And a diverse group of environmental and human rights activists banded together to produce the first issue of the *International Dams Newsletter,* marking the beginning of International Rivers Network. Their vision was simple and yet startlingly ambitious: to develop a worldwide network of people working to change the direction of river development.

Twenty years later, has IRN's early vision been realized? While the era of big dam construction is far from over, little by little, the direction of river development is changing. From building a global river protection movement to stopping destructive dam projects, from advocating for energy and water alternatives to changing international policies, IRN has been at the forefront of the global movement to protect rivers and human rights.

Travel with me back to 1985 to see what we've achieved. In 1985, there were isolated struggles against destructive dams in many countries, but there was no concept of an international dam critics movement.

Fast forward 18 years to 2003. At Rivers for Life: the Second International Meeting of Dam-Affected People and their Allies, more than 300 people from 62 countries met in Thailand, to share experiences and plan for the future. This mushrooming of the movement reflects the dedicated work of IRN campaigners who have been working, together with regional partners, year after year to develop relationships and build networks in their respective regions.

The growth of this movement has translated into real impacts on the ground. Over the past 20 years, there's been a rapid decline in dam-building. The World Bank, which had been funding four new large dams a year in the 1980s, had all but pulled out of dam projects by the late 1990s. And while the World Bank had only one policy governing the social and environmental impacts of its lending in 1985, today it has 10. What's more, today, governments, developers and financial institutions are increasingly being held accountable for their actions. In countries as diverse as Thailand, Guatemala, and South Africa, dam-builders are being forced to pay their debts to the people whose lives and livelihoods have been destroyed.

Photos of IRN staff in the field.

And again, IRN and the global network of river activists we work with have been at the forefront: demanding accountability, justice for affected people, and the right of all people to have a say in their development futures.

But our movement's work is far from over. The past two years has seen a backlash against our successes by the dam industry, the World Bank and powerful Southern governments. Dam building is likely to be on the rise again, and more than ever, IRN is needed in the world.

We will continue our work on the streets, in the boardrooms, and around the world. But we can't do it without you. We hope you will join us in celebrating 20 years of activism for rivers and rights and help us as we look forward to 20 more years of success. ■

Proud Moments in IRN's 20 Years

We've seen many exciting times and had many rewarding achievements over our 20 years of activism for rivers and rights. Here are some highlights from our two decades in the movement.

Less is More: In IRN's 20 years, the world has seen a steep drop in the rate at which rivers are being degraded by big dams, largely due to the work of IRN and our partners to call attention to their many drawbacks. During our first decade, the world saw more than one large dam completed per day. In our second decade, the rate had fallen by half. Available data from the dam industry imply that the rate of dam completion since 2001 has fallen to just one a week.

Policies Affect Practice: IRN's efforts have resulted in stricter environmental and social policies for the World Bank and other international financiers. These policies have resulted in an overall decrease in the number of destructive dams supported by these institutions.

The Pen is Mightier than the Sword: When IRN's Patrick McCully finally finished *Silenced Rivers* in 1996, after years of research and writing, we thought he might be finished, too – from exhaustion. Luckily for all of us who care about rivers, he continued his work at IRN to expose the problems with large dams, and today is IRN's executive director. McCully's groundbreaking book on the ecology and politics of large dams has been called "the best-researched, best-written account of what we have done to our rivers." It has been translated into Japanese, Korean, Chinese, Spanish and Farsi.

Higher Standard: The launch of the WCD report in London, November 2000, was perhaps the single most exciting moment of our 20 years. We pushed for the establishment of the World Commission on Dams and successfully coordinated civil society input into its deliberations. The WCD's findings helped legitimize what IRN had been saying for years: that large dams, while bringing some benefits, have imposed enormous costs on river communities and ecosystems. The WCD also provided a valuable repository of research and analysis on the performance and impacts of dams, and its recommendations are an unprecedented and comprehensive set of procedures for progressive energy and water planning. It's been slow, but we've been able to help ensure that after five years the WCD remains the gold standard in guidelines for dams, and is gradually being accepted by government agencies and the private sector. IRN's Citizens' Guide to the WCD has been translated into more than 15 languages.

Taking it Global: With partners in Brazil, we helped establish the Day of Action Against Dams (March 14) as an international day of celebration of healthy rivers, a day of protest against projects that would harm them, and a day of solidarity with the communities most affected by large dams.

Rivers for Life: Bringing together 300 dam-affected people and river activists to a village built by dam-affected communities in Thailand lifted our souls and strengthened our resolve. Attendees went away with new information, contacts, and friends.

"The People, United, Shall Never Be Defeated": IRN has supported hundreds of grassroots groups, and has helped catalyze regional networks of groups working on dams and rivers in Asia, Africa and Latin America. These groups and networks have excelled at creating a public debate about appropriate development, the protection of rivers and the right of communities to participate in decisions that affect their lives. Many have also succeeded in stopping destructive river-development projects and in restoring damaged river ecosystems.

Saving the Pantanal: IRN helped build a coalition of more than 300 organizations in the La Plata River basin in South America to protect the world's largest tropical wetland, the Pantanal, from the Hidrovia river transportation scheme, and succeeded in getting the project shelved.

A Better Way: Working with groups in Nepal who were promoting better alternatives, IRN helped secure the cancellation of the Arun III Dam, which would have had a price tag twice Nepal's annual budget.

Correcting Injustices: It has taken decades, but finally, the people harmed by the Chixoy Dam in Guatemala have got their government and some of the project's foreign funders to sit down with them to discuss reparations for their suffering. IRN spearheaded an effort to document the project's many injustices (which included massacres).

Keeping the Information Flowing: 20 years of publishing *World Rivers Review* has helped keep the spotlight on key river and dam issues, and the significance of these issues in the greater debate about development and poverty reduction. It also created a publishing space for voices from around the world writing on these issues.

World Rivers Review

Volume 20, Number 4

ISSN Number 0890 6211

Editor: Lori Pottinger

Design/Production:
Jeanette Madden

Printing:
West Coast Print Center

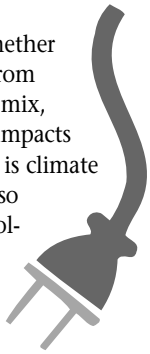
Contact Information:
IRN
1847 Berkeley Way
Berkeley, CA 94703 USA
Tel: (510) 848-1155
Fax: (510) 848-1008
E-mail: irn@irn.org

Printed on Re:Vision
30% tree free kenaf/
70% recycled pcw

Visit IRN's Website:
http://www.irn.org

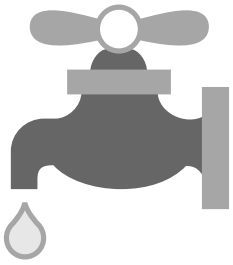
20 Things You Can Do to Support Rivers and Rights

1 Learn what watershed you're in, what its major creeks and rivers are, and threats that degrade water quality. Get involved with local watershed or river groups (or form one!) to monitor watershed and river health.



2 Reduce your energy use. Whether your energy supply comes from hydro, coal, oil, natural gas or a mix, electricity production has huge impacts for us all (not the least of which is climate change). Producing electricity also uses lots of water, usually for cooling (in the US, for example, it is one of the largest uses of water). Replace outdated appliances with new energy-saving models; set your thermostats to save energy; dry your clothes in the sun; replace light bulbs with compact fluorescents (they use one-quarter the electricity of standard bulbs); install a solar water heater at your home; use fewer electric devices; unplug electronic equipment such as TVs and microwave ovens when not in use (which continue to use power when not in use).

3 Participate in the March 14 International Day of Action for Rivers. Learn more about the Day of Action by visiting http://www.irn.org/dayofaction/.



4 Reduce inside water use. Install low-flow toilets and showerheads. The US uses 6.8 billion gallons of water to flush toilets every day (equivalent to 5-1/2 gallons for every person in the world now without a safe water supply). Take shorter showers. Repair dripping faucets promptly. A water faucet leaking one drip per second wastes 200 gallons a year. Research has shown that an average of 8% of all home water use in the US is wasted through leaks.

5 Reduce outside water use. Install a drip system, a rainwater harvesting system or grey-water re-use system to water your garden. Use porous paving materials around your house, to help recharge groundwater.

6 Learn about dams in your area. Are there any whose costs outweigh their current benefits? They might be candidates for decommissioning. Interest local environmental groups and the media in the issue.

7 Raise your voice: write letters to the editor and government officials, join IRN's Take Action list, speak out at community meetings about the impacts of wasteful water and energy use and the importance of healthy ecosystems.

8 Support efforts to increase renewable energy in your neighborhood, community, state, country. Urge your political representatives to take up the issue.

9 Help organize a watershed clean-up (and appreciation) day.

10 Support efforts to improve energy efficiency at the local, regional and national levels.

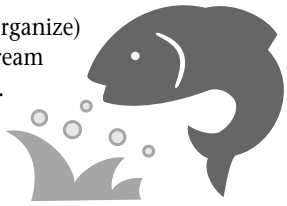
11 Form a citizen's task force to monitor polluting industries in your watershed.

12 Donate to groups building water supply for the world's poorest citizens. Each day almost 10,000 children under the age of 5 in the world's least-developed countries die as a result of illnesses contracted from impure water.

13 Eat lower on the food chain – eating meat requires much greater quantities of water than a plant-based diet (for example, it takes about 6 gallons of water to grow a single serving of lettuce. More than 2,600 gallons is required to produce a single serving of steak). A typical vegetarian diet takes about half as much water to produce as meat-based one.

14 Find out if your local government has policies protecting watershed health, promoting water conservation, caps on groundwater pumping, and monitoring in place for non-point-source pollutants such as agricultural and contaminated urban runoff.

15 Start a letter writing campaign to authorities that regulate large dams in your area, urging them to operate dams so that flows downstream mimic natural flows.



16 Join (or organize) a local stream restoration effort. The US Fish and Wildlife Service estimate that 70% of the riparian habitat nationwide has been lost or altered.

17 Drive and fly less, and reduce your contribution to global climate change. Climate change will have an inordinately high impact on those least likely to afford it, and those who have done little to contribute to it – the world's poorest.

18 Through letters or other actions, protest the World Bank's lobbying on behalf of the big dam industry. Encourage the World Bank to support efficiency and small-scale and decentralized technologies.

19 Join the many local and international efforts to stop corporations taking over water supply systems.

20 Join IRN! Make a tax-deductible donation to IRN and join the international movement to protect rivers and defend human rights. To join, just return the envelope in this newsletter or join online at http://www.irn.org/support. Or sign up online to become a recurring donor to IRN. Online donations help us save postage costs and with as little as $10 a month.

Our birthday present: Colleagues from around the globe talk about the movement, and IRN's role in it.

Voices for Rivers and Rights

The Courage Teacher

by Nick Hildyard (UK)

Allen Ginsberg, the American beat poet, once memorably described Walt Whitman as a "courage teacher." It is a label that could equally be applied to International Rivers Network.

The disparate group that first came together in San Francisco to found IRN 20 years ago did so because they needed a network that would strengthen their collective work. IRN has served that purpose for two decades – fortifying and encouraging thousands of dam activists the world over with information and assistance, and ensuring that they are not alone.

The courage IRN has taught is not its own. You can find it wherever like-minded people come together to make common cause. It is the courage generated by solidarity and mutual learning, mutual respect and mutual commitment.

But it is a courage that needs constant nurturing if it is to move beyond posturing or the false security of "whistling in a graveyard." IRN has played a key role in that nurturing, facilitating new links between movements, providing platforms through which the concerns of dam-affected communities can be amplified, and ensuring that the intellectual case for challenging current water policies is kept up-to-date and incisive.

There are many destructive dams that undoubtedly would have been built had it not been for the work of IRN and its associated movements. Indeed, the industry has for a while been on the retreat.

But the dam builders are once again on the move. As John Briscoe of the World Bank likes to tell his hydro-industry audiences (projecting a slide of actor-cum-Governor of California Arnold Schwarzenegger in his role as The Terminator): "We're back."

But it will take more than an unthinking robot to crush either IRN or the movement it has so successfully served. For however powerful the Bank may be, there are some powers that it cannot appropriate. Not least of these is the courage that an active network such as IRN generates.

The author is with The Corner House, which supports democratic and community movements for environmental and social justice around the world. With Teddy Goldsmith, he is the author of The Social and Environmental Effects of Large Dams *(1984).*

We Are Not Alone and We Are Going Forward

IRN has helped to connect us with the outside work though interviews, radio and television. Now many people at the international level know about us, what happened to us, and know of our work to seek reparations. International support is very important to us because we feel that we are not alone; it helps us go forward. Your work with us has made us stronger, and I am happy to see how our communities are getting more knowledgeable. The report on the legacy issues of the Chixoy Dam is very valuable to us. We still need to do a lot of work, beyond the negotiations for reparations, and we still need the support of groups like IRN. The reparations work is so huge; we need the strength from other groups. I am also happy to see that our work is helping other people affected by dams.

Carlos Chen Osorio, Communities Affected by the Chixoy Dam (Guatemala)

IRN's Vital Role in Supporting the Movement

by Joan Carling (Philippines)

When IRN made its commitment in 1998 to support our campaign against the San Roque Dam, it was a decisive step in highlighting the issues faced by the affected communities at the international level. The technical reviews of San Roque's environmental impact assessment, and the critique of the project's contract (or Power Purchase Agreement) commissioned by IRN became instrumental in generating broader support at the national and international levels for the affected communities. This has empowered and inspired affected communities to sustain a stronger campaign against this destructive and useless project.

In 2000, IRN, together with southern NGOs, initiated the formation of Rivers Watch–East and South East Asia (RWESA). The aim of this network is to stop destructive river development projects in East and Southeast Asia, achieve reparations for people affected by existing dams, and promote alternative ways of meeting people's needs for energy and water. RWESA has enabled the development of strong solidarity, linkages and cooperation between NGOs and affected peoples groups in the region, and between local groups and international NGOs, providing an important forum to address dam and river issues in the region.

Photos this page: Toot S./Philippine Daily Enquirer

Protesting the San Roque Dam in the Philippines.

I believe the movement to protect rivers necessarily entails strong solidarity and cooperation between affected communities and broader civil society organizations around the globe. IRN has played, and should continue to play, its vital role in building networks and creating more space to bridge the gap between affected communities and key international players on destructive river projects. This should facilitate an increase in the capacity of affected communities in gaining broader understanding, as well as in asserting their rights. The challenge has always been to empower affected communities to address their problems and issues to protect rivers and livelihoods. Support to affected communities is not just about stopping poorly planned large dams, but also making communities aware of their collective strength to chart their future and live with dignity.

On the other hand, there is a need to sustain stronger pressure on funders and builders of large dams. The gains of the movement for river protection from the work of the World Commission on Dams (WCD) should be translated from a report to actual implementation of its recommendations. This is a tremendous challenge in the next 20 years for the movement to protect rivers, and to promote a rights-based approach to development. With the prevailing unjust system of global finance and economic domination, the movement for river protection must then unite with the broader civil society movement in order to make decisive advances to reach its goal for social justice.

Congratulations to IRN for its 20 years of unwavering commitment and service to river protection and promoting the rights of communities! We celebrate with you the gains and achievements of the global movement for river protection, of which you have played a vital role.

IRN supported the Ibaloi people in their fight against San Roque Dam.

The author is the chairperson of the Cordillera Peoples Alliance, and facilitator of Rivers Watch, East and South East Asia.

Voices for Rivers and Rights

Toward African Rivers for Life

by Liane Greeff

African experiences of dams have been devastating – we have Kariba, Lesotho Highlands, Cahora Bassa, the Aswan High, Manatali, etc. All have left a wake of death and destruction, all have transformed landscapes, brought benefits to some, and brought poverty to others. The legacy today is still reflected in misery in the places all over Africa where forgotten people remember the days of plenty that their great rivers once provided.

I came into the global dam movement seven years ago carrying armloads of ignorance. At first, I was very intimidated by the vast knowledge and experience, as well as the multitude of issues that I was exposed to, through IRN's Paddy McCully, the group of international dam activists in the International Committee on Dams, Rivers and People, and through the World Commission on Dams process (WCD). While I realized the importance of the WCD globally and regionally, my main focus was to ensure that the voices of African people would be reflected in the final outcomes of the WCD process. To this end, my focus shifted toward building the movement in Africa and connecting with dam campaigners and dam-affected people across the continent.

But we Africans were never in this alone; there was always IRN in the background, helping through advice, strategic thinking, fundraising, networking – and simply through friendship. In particular, IRN's Africa campaigners over the past decade – Lori Pottinger, Steve Rothert, Ryan Hoover and Terri Hathaway – have all been of immense help with efforts such as the African WCD Regional Consultation, the launch of NGO networks such as NAWISA and the African Rivers Network, and numerous dam-specific campaigns throughout the continent.

Much has changed in the seven years since the World Commission on Dams came to Cape Town. The movement has grown considerably throughout most regions of Africa, and is now coming together through the African Rivers Network. We are far more connected to the global movement than before. But the dam builders and dam planners are also forging new alliances. While we are stronger and more united than ever before, their plans are becoming exponentially more ambitious – river diversions, mega-projects and regional power pools. The new funders, like the Chinese interests now wooing Africa, are also less transparent or accountable than Western funders, who themselves are not renowned for their transparency or accountability.

If there was one map showing all the dams and diversions planned for Africa's major rivers, it would become painfully clear that unless civil society and the dam movement gets much more powerful than it is now, Africa is bound to make the same mistakes as those who have gone before us. All our wild rivers will become tame, resources upon which livelihoods depend will be taken by the powerful from the powerless, and the spiral of poverty will deepen.

The way forward looks more challenging than before. In particular the development imperative and the non-sustainable developmental approach advocated by the donor agencies and endorsed by African leadership through NEPAD and its promotion of hydropower are formidable obstacles that we need to overcome. To do this, our networks must be stronger, our focus must be clearer and our friends must be many. We must use all our avenues for discourse and protest. The movement must emerge more powerful from the Africa Social Forum (2006) and the World Social Forum in Nairobi (2007). Along this path, we trust that IRN will continue to walk with us toward African Rivers for Life.

The author is with Environmental Monitoring Group in Cape Town, South Africa.

From the Banks of the Mun River

I believe that rivers are life, and that killing rivers is killing ourselves. Rivers meet our basic needs. They make our families happy. If we need anything, we just go catch fish in the river and sell them to pay for what we need, like tuition for our kids. But the dam the government built is killing our lives.

IRN gives us inspiration and hope. IRN has helped us spread our messages, and gives us information – because there are many things we don't know. IRN helped to build a global network. For example, in the second meeting of people affected by dams in Rasi Salai, many people from all over the world came with knowledge and experiences to share, and we have learned from each other. We have the same goal. I want to say that we are the kids from the same mother. Networking is very important, we have to work together from the basins all over the world.

Sudjai Mahachai, a leader of the struggle to protect the Mun River, was affected by Pak Mun Dam (Thailand)

Celebrating IRN, an Ally in Struggle

by Smitu Kothari (India)

Photo: Hari Krishna

The Narmada was the first fight: A "rally for the Valley" in 1999.

I have felt a deep sense of convergence and conviviality with the evolution and work of IRN. Over the years, numerous friends in the movements here, in South Asia and other parts of the world, have seen IRN not as a support organization but as an integral part of our collective struggle.

IRN was set up a few years after I first visited the Narmada valley and got involved in the campaigns that eventually led to the formation of the Narmada Bachao Andolan (the Save the Narmada movement). I remember clearly my first visit to IRN's offices in 1986, the year when, with the support of Bruce Rich and Lori Udall of Environmental Defense, we made depositions before a subcommittee of the US Congress and Treasury on the role of the World Bank in legitimizing and funding destructive development projects like India's Sardar Sarovar dam project.

One of the many lessons that this struggle has taught us is the need to simultaneously address both the root causes and the current patterns of economic development on the water regimes of local communities and of the planet. Despite our collective work – and the movement has secured important gains – our rivers are under a massive onslaught. While the older trends are all visible – damming and diversions; the dumping of industrial, urban and rural chemicals and waste; the politics of unequal access; the erosion of food sources; the direct and secondary displacements of communities and cultures; the decimation and decline of biological life, etc. – there are now new additions to the list of threats. With basins, watersheds and catchments under growing stress, there are now insane proposals to interlink numerous rivers, or to hand over rivers to private corporations. Additionally, aquifers are being emptied at a frighteningly unsustainable rate and, as some of our recent work in India's Northeast suggests, the damming and diversion of rivers can lead to or compound social and cultural conflicts. These conflicts are also manifest in areas where privatization is spreading.

Today, there are urgent new challenges for all of us, including the need for more systematic research on the privatization of rivers, particularly the role of transnational corporations amd IFIs; engaging the academic community – in the pure and social sciences and the technical and engineering institutions – on the politics of water; securing reparations for past harms, including exploring legal strategies when private companies cause sustained harm; advance intelligence on how international capital is being routed into our countries through newer channels; and disseminating success stories, from the decommissioning of dams to the efforts to restore the integrity and equitable access to the natural systems that sustain our cultural plurality and our rivers.

I wish IRN strength and solidarity and look forward to more sustained collaboration in our journey ahead.

The author is with Lokayan and Intercultural Resources, two Delhi-based action-research groups, that support peoples' movements across India.

Finding Strength in Partnership

by Elias Diaz Peña (Paraguay)

I've been so inspired by the resiliency of affected communities the world over to resist and oppose unsustainable projects such as dams; by their love for their territories and their natural heritage, and the commitment of my fellow campaigners to support their struggle.

When we first got involved with the communities affected by Yacyretá Dam, they were very much repressed by the power structure of the dam owners and dictatorial governments. They began to feel empowered when they got information on how to get their pleas heard and heeded, when they learned that there were organizations in their countries and elsewhere that were committed to supporting their cause, and that there were millions of people like them struggling against large dams and the destruction they cause. Belonging to networks and groups that form our "international rivers network" has been an inspiration for our work on the one hand, and an immense source of knowledge and strength.

IRN has made great contributions to the global movement towards saving the planet's rivers. Some of the most outstanding have been the promotion of the process for the World Commission on Dams; the international meetings of dam-affected peoples and their allies; the production and dissemination of technical information about rivers, dams, and good practices in watershed and river management; supporting international networks working on rivers and water, and the publication of *World Rivers Review.*

I hope IRN continues its work in defense of the world's remaining living rivers and the communities that depend on them, and keeps on building the network of committed people and organizations who are also aiming at the same star.

The author is with Sobrevivencia (Paraguay). In 2000 he and Oscar Rivas, co-founder of Sobrevivencia, won the Goldman Prize for their work on river projects in the Río de la Plata Basin in South America.

20 Years of Building a Movement: Memorable

1985

Key events: IRN is founded. ■ First international anti-dam protests disrupt a meeting of the International Commission on Large Dams in Switzerland. ■ World Bank approves loans for India's Sardar Sarovar Project.

"The worldwide pace of large-dam construction is so rapid that unless effective action is taken within the next decade, almost all the world's major rivers will be dammed."

- International Dams Newsletter, Vol. 1, #1

1986

Key events: Brazilian government announces it will begin construction within four years on "the world's largest hydroelectric complex," the Xingu complex on a tributary of the Amazon. (*Note:* the project is still not built, but government continues to talk about building it.) ■ World Bank launches the Lesotho Highlands Water Project (Africa's largest water project).

"I don't think I should have voted for the Glen Canyon Dam. Even though it's created the biggest tourist attraction in my state, I preferred the free-running river. I remember the river."

- Former U.S. Senator Barry Goldwater when asked to name his "greatest political regret," in Vanity Fair magazine

1987

Key events: Swedish parliament outlaws dam building on most of the nation's last free-flowing rivers. ■ The World Bank-funded Balbina Dam in the Brazilian Amazon is completed. The project is widely acknowledged as a failure with huge social and environmental impacts.

"What the World Bank needs is a good dose of 'glasnost' to lift the veil of secrecy on its big projects and let the people who will be affected become part of the decision-making process."

- Brent Blackwelder, one of IRN's founders and president of Friends of the Earth

1988

Key events: IRN organizes the first international conference of dam activists, held in San Francisco. Attendees call for moratorium on destructive large dams, and endorse a Watershed Management Declaration, calling for more sustainable water resource development.

"Today it's often cheaper to save electricity than to build a new hydro dam – and almost always cheaper to save electricity than to run a thousand power plants – even if building it costs nothing."

- Armory Lovins, energy efficiency expert from the Rocky Mountain Institute, quoted in the July/August 1988 World Rivers Review

1989

Key events: Massive public pressure forces Hungarian parliament to abandon Nagymaros Dam and suspend work on Gabcikovo Dam. ■ India's Narmada Bachao Andolan (Save the Narmada) is formed.

"[India's Sardar Sarovar Project] will draw money away from various other schemes which could provide water to these areas [in need] … The government has completely lost track of what must be regarded as its basic objective: finding the best possible way of providing water to the people."

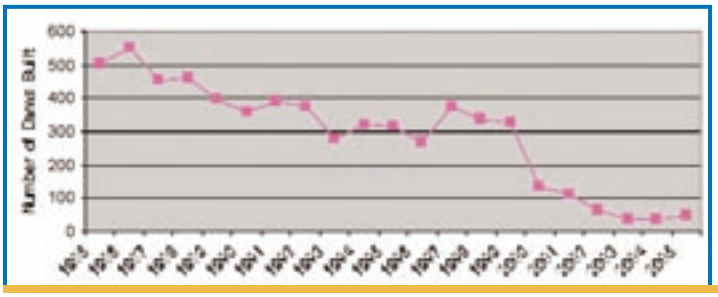
- Baba Amte, author of Cry, The Beloved Narmada

1990

Key events: A government-appointed committee releases a report that recommends against building Tehri Dam in India's Himalayas. The report is suppressed by the government, and a new committee formed that quickly recommends building the dam.

"I just couldn't keep silent while they dammed the last river in Japan."

- Amano Reiko, Japan's first female "master fisherman," protesting a dam on the Nagara River, Japan's last remaining undammed major river



Number of Dams Built Per Year Worldwide

Rate of large dams completed worldwide since the birth of IRN. The apparent steep drop since 2000 may be partly due to poor data collection. Completions peaked in 1978, when 849 dams were finished. (Data: World Register of Dams/ICOLD).

Events and Quotes from IRN's 20-year History

1991

Key events: Brazil's national Movement of Dam-Affected People (MAB) is formed.

"Our mother [Mun River] provided us food and life. With the dam construction, husbands and wives fight, and the fish are leaving the river. We are not against a dam. We are against the disintegration of our communities."

- *Thai village elder, at a meeting between Mun River villagers and Executive Directors of the World Bank, Bangkok*

"We believe this river has a life of its own … It is not for man to kill it."

- *A fisherman in the Okavango Delta, commenting on a plan to dredge, dam and divert the Boro River as it exits the Okavango, in the Washington Post*

1992

Key events: China approves construction of Three Gorges Dam. ■ An independent review of World Bank involvement in India's Sardar Sarovar Project says the controversial project is "beset by profound difficulties" and urges the Bank to "step back" from the project.

"What it all boils down to is undoing the wrongs caused by earlier generations doing what they thought was right … Forty years ago, only a handful of heretics, howling at the wilderness, challenged the notion that the West needed hundreds of new dams. Today … there is more talk of deconstruction than of construction: of minor dams demolished, of big dams made 'environmentally sound,' of marginal acreage retired and water returned to its source, of flows bypassing turbines to flush salmon out to sea."

- *Mark Reisner, author of Cadillac Desert: The American West and its Disappearing Water*

1993

Key events: World Bank withdraws from Sardar Sarovar Project in India, after independent review confirms serious problems first described by NGOs. ■ US Bureau of Reclamation (federal dam-building agency) pulls out of China's Three Gorges Dam project. The agency was on contract to provide technical advice on the massive project.

"If this dam is such a unique feat of engineering, such a fantastic idea, why in heaven's name is the government unwilling to allow public debate about it?"

- *Journalist and Goldman Environmental Prize recipient Dai Qing talking about the Three Gorges Dam in China.*

1994

Key events: NGOs in Nepal file a preemptive claim with the World Bank Inspection Panel, which is considering supporting the Arun III hydro project in Nepal. The claim states that there are much better alternatives to the huge dam, which could be designed and built locally at much less cost. ■ On the 50th anniversary of the World Bank, NGOs present Bank president Lewis Preston with the Manibeli Declaration, calling for a moratorium on World Bank funding for large dams around the world. It is signed by 326 groups from 44 nations.

"The Alliance for Energy suggests that if the US$764 million earmarked for the Arun Dam was used instead on small-scale projects which encourage local capacity-building, more power could be generated – and in less time."

- *Janet Bell, Intermediate Technology Group*

"The World Bank is the greatest single source of funds for large dam construction, having provided more than US$50 billion (1992 dollars) for construction of more than 500 large dams in 92 countries. Despite this enormous investment, no independent analysis or evidence exists to demonstrate that the financial, social and environmental costs were justified by the benefits realized."

- *From the Manibeli Declaration: Calling for a Moratorium on World Bank Funding of Large Dams*

1995

Key events: World Bank pulls out of Arun III project in Nepal. ■ Research reveals that tropical reservoirs can contribute more greenhouse gases than fossil-fuel burning plants.

"I think it is a serious mistake for any region in the world to use what we did on [US] rivers as examples to be duplicated."

- *Daniel Beard, former Commissioner of the US Bureau of Reclamation and former IRN board member*

continued on page 10

1996

Key events: *Silenced Rivers: The Ecology and Politics of Large Dams* is published. ■ European environmentalists defeat plans to build a series of dams on the Elbe River.

"A dam tears at all the interconnected webs of river valley life … Dams are the main reason why fully one-fifth of the world's freshwater fish are now either endangered or extinct."

- Patrick McCully, author of Silenced Rivers.

1997

Key events: First International Meeting of People Affected by Dams held in Curitiba, Brazil.

"Our common struggles convince us that it is both necessary and possible to bring an end to the era of destructive dams. It is also both necessary and possible to implement alternative ways of providing energy and managing our freshwaters which are equitable, sustainable and effective."

- From the Curitiba Declaration, approved at the "First International Meeting of People Affected by Dams," Brazil.

"People are very sad to be leaving their land, their fields, their church, their school, each other. There are no fields like ours anywhere in Lesotho. The main thing is, people do not want to be separated from each other."

- Spokesperson for a village to be submerged under Mohale Dam reservoir, Lesotho

1998

Key events: World Commission on Dams is launched. ■ Three dams are removed to restore salmon on the Loire River in France. It is the first time the national utility had removed dams for ecological restoration. ■ Defying government repression, 10,000 people affected by Three Gorges Dam in China petition the government to resolve resettlement problems.

"Epupa Falls was created by God. Now the government wants to build a dam and cover God's creation. Government should not try to go beyond God."

- Himba Tribal Chief Hikuminue Kapika, Namibia

1999

Key events: A South African newspaper reveals that a dozen major multinational companies involved in building the Lesotho Highlands Water Project – then Africa's biggest dam project – had bribed the project's top official for over a decade. ■ Massive dam protests take place in Thailand, India and Colombia.

"Punishing the corrupt multinationals involved with the LHWP and closely monitoring the implementation of the project's social fund would reassure us of the World Bank's concern."

- Letter from two Lesotho NGOs who work with dam-affected communities

2000

Key events: The World Commission on Dams releases its report, *Dams and Development.*

"It is time for the iron triangle of governments, the dam industry and funders to cease building dams until they have incorporated the WCD's recommendations into their policies and practices."

- Liane Greeff, of the South African NGO Environmental Monitoring Group, at the launch of the World Commission on Dams report

2001

Key events: The Thai government agrees to open the gates of Pak Mun Dam on the Mun River, after two years of protests by villagers affected by environmental changes caused by the dam. ■ Chinese government steps up repression of dissent against Three Gorges Dam. ■ Brazilian government claims to have a "new, improved" plan for damming the Xingu River. ■ Colombian indigenous leader Kimy Pernia Domico, who was active in the fight against Urra Dam, is kidnapped and presumed murdered, likely because of his role in defending communities affected by the dam project.

"Why sacrifice the Xingu River by building dams, when its basin represents one of the country's most important sites of ecological capital in its natural state, capable of contributing as an instrument for sustainable economic development, in harmony with other investment options such as green tourism, fishing, and furnishing clean water?"

- Letter from the NGO "SOS Xingu"

2002

Key events: European companies withdraw from the controversial Ilisu Dam, proposed for the Kurdish region of Turkey. ■ For the first time, dam-affected people in Lesotho take to the streets in protest to call attention to impacts from the huge LHWP dam project. ■ World Bank approves Bujagali Dam in Uganda, but later pulls out after corruption is found. An IRN-commissioned study reveals the dam to be overpriced by $280 million.

"The people seem to have decided to take control of their water. This would never have happened if thousands of brave men and women had not saved every raindrop that fell on their land."

- Rajendra Singh, whose group Tarun Bharat Sangh helps rural villagers in India undertake rainwater harvesting

2003

Key events: Indian government announces huge engineering scheme to link all of its major rivers with dams and canals, to move water from wetter to dryer areas. The plan is considered a death sentence for India's rivers, and is widely opposed by river activists there. ■ The IRN-sponsored Rivers for Life meeting in Thailand brings together hundreds of dam activists and affected people to network, strategize and learn from each other.

"Water is essential to alleviating poverty. But if you want to do anything about it, you have to start with small farmers and irrigation. Small-scale needs call for small-scale solutions, not mega-dams and industrial-scale development."

- Paul Polak, inventor of the $1 drip kit and founder of International Development Enterprises

2004

Key events: After three years of high-visibility campaigning by NGOs, Spain shelves plans to build 120 dams on the Ebro River. ■ World Bank debars Canadian company Acres, International for bribery on the Lesotho Highlands Water Project, two years after the company was convicted in a Lesotho court. ■ Guatemalan government agrees to reparations talks with those harmed by Chixoy Dam.

"Reparations allows us to get back our dignity – respect for our culture and our rights. Reparations is to be able to provide for our families and live well again, to develop projects to benefit the community … for the people to feel that there is a sense of future."

- Carlos Chen, an indigenous Maya-Achi from Guatemala. His family and 400 members of his community were massacred in 1982 because of their opposition to the construction of the Chixoy Dam on the Rio Negro

"This has become a broad movement of citizens – not just those directly affected like the farmers, ranchers and fishing communities. Those not directly affected feel that the river is not just a source of water, but also an important part of their territorial identity; it is health, it is life. The movement involves citizens who cannot conceive of their land without the river, or with a contaminated, depleted river. The right of a healthy river becomes a basic right of the larger communities."

- Pedro Arrojo-Agudo, after winning the Goldman Prize for mobilizing people to (successfully) fight a plan to build 120 dams on the Ebro River in Spain

2005

Key events: World Bank approves Nam Theun II Dam in Laos. ■ At least 62 people die from a flood caused by unannounced releases from a large dam on India's Narmada River. ■ Pakistan's two-year-old Shadikor Dam bursts during torrential rains, killing at least 80 and leaving thousands homeless. ■ A Swedish research team reveals that of the world's 292 large river systems, 172 are affected by dams.

"The world's more than 45,000 existing large dams have not been built to allow for a rapidly intensifying hydrological cycle. In this sense, all dams should now be considered unsafe."

- Patrick McCully, IRN

"As you know, the political situation in Laos is really difficult and the government is very supportive of this project. So, if me or another Lao person speaks out against the project, we cannot live, even if we identify true deficiencies in the project, and truly wanted to improve the project. I am very sorry, but I cannot directly tell these things to such important people under such a dangerous political situation. It is really unsafe. If I say anything against the project, everything will be finished for me, I cannot work.

- Lao citizen concerned about Nam Theun 2, when asked whether he/she would attend a meeting with World Bank Executive Directors to discuss Nam Theun 2 Dam

PHOTOS

Page 8: An early IRN protest at the World Bank; Glen Canyon Dam, and leading activists from the Save the Narmada Movement. Page 9: Thai activists unveil a protest banner at Rasi Salai Dam; and a joyful scene on the Mekong. Page 10: Medha Patkar and other Indian activists refuse to move from the waters rising behind the Sardar Sarovar Dam; this Himba family would be affected by Namibia's Epupa Dam; and an indigenous man paddles the Amazon. Page 11: At the Rivers for Life meeting (2003) in Thailand; and a memorial to those massacred because of Chixoy Dam.

Will China's Rivers Survive the Next 20 Years?

Record-Breaking Dam Building Boom Could Make Free-Flowing Rivers an Endangered Species in the World's Most Dammed Country

by Ma Jun

For 20 years, IRN has focused a bright light on some of China's most controversial dam projects. For most of that time, it was difficult for Chinese citizens to organize around the issue of large dams or speak out against specific projects. But in recent years, a number of NGOs in China have begun to take on the role of monitoring the government's dam plans – perhaps the most extensive river-engineering plan in the history of the world. Author Ma Jun has is actively involved in China's river preservation work, and is the author of the book China's Water Crisis.

China is facing serious shortages of both water and energy as its rapid economic expansion further strains its limited natural resources. This has fueled a new round of hydropower development proposals in a country that is already the most dammed in the world (see box). China's installed hydropower capacity reached 100,000 megawatts (MW) in 2004, making China the biggest hydropower user in the world (hydro now accounts for about 25% of China's total energy mix). According to plans drafted by China's central planners, the country's installed capacity will reach 150,000 MW by the end of 2010 and 250,000 MW by 2020. China's hydropower developers are urging the planning authority to further boost the installation goal to 300,000 MW by 2025.

Such massive river development is unprecedented, and dwarfs the rest of the world's hydro schemes. The Chinese planning authority believes that the scale of the scheme is a good match for the overall plan to quadruple the nation's economy by 2020, while dam developers jubilantly embrace this 20-year building spree. On maps in their offices and boardrooms, hundreds of new dams have been marked on rivers in southwestern China, which boasts the biggest hydropower potential in the country. At least 114 dams on eight rivers in the region are proposed for the Chinese hydropower sector's "great leap forward."

These dams will be built on the mainstream of major rivers; most of them are large dams. Quite a few of them would set records on either height or size in their own categories in Asia or even in the world. Development rights have been snapped up mostly by the five major state-owned hydropower companies. Smaller investors have also swarmed to the southwestern part of China, elbowing their way in to gain the rights of hydro development on the secondary and tertiary tributaries. The stakes are huge: for instance, some 356 dams are set to be built in the Dadu river basin, a primary tributary of the Yangtze, while in the vast network of Yanglong River, another Yangtze tributary, 339 dams are planned.

Past impediments to growth in China's hydro-industry have been sidelined, thus removing any blocks that previously slowed the rate of dam building, including:

- The engineering gap has been bridged, and Chinese hydro companies are now capable of building dams of impressive scale and complexity;
- The shortage of funds, which has long been a barrier to China's hydro development, is no longer an issue, and state and private investors now rush to vie for a share of the hydro pie;
- The oversupply of electricity, which restricted dam development in the 1990s, is moot now that the Chinese economy seems increasingly stuck in an energy-intensive growth pattern.

While the removal of these barriers might thrill the dam developers, local NGOs and environmentalists worry that the hydro craze will severely overexploit China's rivers and lead to serious environmental and social harm. To those who care about China's rivers, Jinsha, Minjiang, Dadu, Jialing, Wujiang, Yalong, Hongshui, Lancang and Nujiang are not just abstract names or thin blue lines on maps. Instead, they are great ecosystems that nurture biodiversity, the sources of water for millions of people, the creators of some of the world's most magnificent gorges and canyons. They cannot share the enthusiasm of hydropower developers as they know that tripling China's hydropower capacity would mean virtually the end of healthy rivers in China, the fragmentation of ecosystems across China and in downstream neighbor states, and the impoverishment of biodiversity. From a social-equity point of view, they know that hydro expansion is highly likely to displace more than one million people from their homeland in the deep valleys of China's hilly southwest.

Such is the backdrop against which the rising rivers movement in China has emerged. Today, many local NGOs follow

continued opposite

Half the World's Large Dams are in China

	Dams over 15 m	Dams over 30 m	Dams over 100 m	Dams over 150 m	Dams over 60 m under construction in 2002
World	49,697	12,600	670	155	349
China	25,800	4,694	108	24	88

(Source: Chinese National Committee on Large Dams)

the dams issue, and since 2003 they have made high-profile challenges against a series of dams that they believe will be the most damaging:

- NGOs informed the public and media about how Yangliuhu Dam would harm a 2,200-year-old World Heritage water project that is, amazingly, still serving millions of people today. Some 180 media reports combined with public dissent finally forced the developer to abandon the project in 2003.
- Next, the NGOs turned their focus on a cascade development project on the Nujiang, one of the last two free-flowing rivers in China. Their efforts aroused national public attention on the fate of a remote river that was unknown to most Chinese until then. Again, widespread public concern and a strong focus on the project by the media attention finally led the Chinese Premier Wen Jiabao to halt the project for a more comprehensive environmental impact assessment.
- In mid-2004 the environmentalists began to work on preserving the Tiger Leaping Gorge, shedding light on a massive dam project that will devastate this spectacular world-class landscape, and the rich cultural diversity and the stable economic life of 100,000 people.

Most of the local NGOs doing this work are not ideologically anti-dam. They understand that China needs power to support its rapid economic growth and to meet the rising demand from a more affluent society. What they cannot accept is the mentality that still dominates the hydropower sector, which views every single gorge as a good dam site. They are urging the agencies and developers to review the hard lessons from the past 50 years before they take on the damming of any new gorges. The lessons of China's dam-building legacy, which river activists say have yet to be learned, include the failure to properly resettle 10 million people displaced by China's existing dams, the destruction of ecological balance, the losses of biodiversity, the destruction of natural and cultural heritage sites, the terrible sedimentation problems that have made some of China's biggest dams uneconomic, the exaggeration of benefits, and the cost and time overruns of past projects. What these groups want is a fair and transparent process to decide dam issues.

NGOs and environmentalists believe that it is high time for such a process to be established in China. They argue that China has turned into a market economy and most of the newly proposed hydropower development schemes are free-market capitalism at its worst. They believe that no interest groups or individuals should be allowed to continue making easy money by externalizing these project's huge costs on displaced people, on society in general, on the national economy or on the environment. They argue that best-practice planning for China's energy future requires an open and transparent decision-making process which gives the right to know to all stakeholders and promotes their full involvement.

Currently, decisions on large dams are determined solely by government officials, developers and technical experts. That makes it easy for the insiders to reach agreements between themselves. To ensure the quality and justness of the environmental impact assessment, all stakeholders – especially the dam-affected people and those committed to defending the interests of nature and future generations – must be brought into the process. A real and effective stakeholder involvement depends very much on the active involvement of the media and NGOs. Only when all stakeholder groups are ensured their full right to know and right to participate will China's hydropower development begin to give appropriate considerations to competing social goals, to make fair judgment on tradeoffs, to give fair compensation to dam-affected groups, and to seriously consider cumulative impacts and alternatives.

Tiger Leaping Gorge is slated for a massive dam.

The prospect of China's river preservation may look grim, but there are also many hopeful signs. Growing public awareness and increased attention from civil society on the impact of dams have prompted the government to look at more sustainable development models. The top leadership is chanting the new view of more balanced development and has openly committed to the establishment of a "harmonious society," with the harmony between man and nature one of the key themes. The Internet, with more than 100 million users in China, has boosted transparency on environmental and social issues – a much needed first step in a fair process. However, the old practice of developing hydropower at whatever cost is dying hard and the vested interests will push very hard with their mighty power. Over the next 20 years, these two views will clash vehemently on the fate of hundreds of rivers. The lives of millions of people will very much be determined by this grand hydropower endgame. ■

Fast Facts on China's Dam Plans

The following hydropower projects are the centerpiece of the authorities' big dam plans for China:

- A 12-dam cascade on the middle and lower reaches of the Jinsha River, upper Yangtze)
- A 6-dam cascade on the Minjiang River, a Yangtze tributary
- A 17-dam cascade on the Dadu river, a Yangtze tributary
- A 17-dam cascade on the Jialing River, a Yangtze tributary
- A 10-dam cascade on the Wujiang River, a Yangtze tributary
- A 21-dam cascade on the Yalong River, a Yangtze tributary
- A 14-dam cascade the Lancang River, the upper reach of the Mekong
- A 13-dam cascade the Nujiang River, the upper reach of the Salween
- A 10-dam cascade on the Hongshui River, the middle reach of the Pearl River

Preserving Our Liquid Assets

by Sandra Postel

A personal preface: *I began working on international water issues just over 20 years ago. Much has changed in the water landscape during this time, but one thing has not: the resolve, dedication, and leadership that IRN has brought to the challenge of safeguarding the health of rivers and the livelihoods of poor people who depend upon them. Through its advocacy, its network of partners, and its vital role in the formation and output of the World Commission on Dams, IRN has been instrumental in shaping a new approach to water management, one more urgently needed than ever. So on this 20th anniversary of IRN, I extend my thanks and congratulations. Keep up the vital work!* ***- SandraPostel***

Few realms of policy making are more out of sync with modern realities than that of fresh water. Signs of water scarcity and ecosystem disruption are pervasive and spreading, yet policies continue to promote inefficient, unproductive, and ecologically harmful practices. Heavy subsidies for irrigation water encourage waste rather than efficiency. Unregulated pumping of groundwater drives water tables ever lower and aquifers closer to depletion. Large dams and diversions intercept more river flows and dry up more wetlands, harming downstream populations and ecosystems while often failing to provide their promised benefits. Today, dams and reservoirs intercept about 35% of river flows as they head toward the sea, up from 5% in 1950. Many overtapped rivers no longer reach the sea for extended periods of time, ruining deltaic fisheries and degrading coastal zones.

It almost seems as if the point of public policy is to liquidate Earth's water assets like a store going out of business. The water policies of the twentieth century helped supply drinking water, food, electricity, and flood control to a large proportion of the human population. But they failed to distribute those benefits equitably, and they largely ignored the role of freshwater ecosystems in sustaining goods and services of great value to society. Just because the marketplace does not assign a price to something does not mean that it lacks worth.

There is no side-stepping human dependence on the water cycle. More than 99% of the world's irrigation, industrial, and household water supplies come directly from rivers, lakes, and aquifers. Wetlands and river floodplains protect people from floods, provide spawning habitat for fish, recharge groundwater supplies, renew soil fertility, and purify water of contaminants. Healthy river systems are also vital to life in lakes, estuaries, and many coastal marine environments. Their flows deliver the nutrients and maintain the salinity balances so critical to many fisheries, from the prized blue crabs and oysters of Florida's Apalachicola Bay to the lost fishes of the Aral Sea.

Protecting the health and functioning of freshwater ecosystems needs to be a top priority, not the bottom rung on the ladder. Long the domain of hydrologists and civil engineers, water management needs to include foresters, soil scientists, ecologists, anthropologists, and others who understand the wide range of benefits that ecosystems provide and how nature provides them.

Strategies that value and protect watersheds, wetlands, and floodplains are also critical to reducing hunger, which now saps the health and energy of 852 million people, most of whom live in poor farming regions. Rainwater harvesting methods coupled with affordable small-plot irrigation technologies are enabling poor farmers to boost their crop production by using local water supplies more effectively. Better management of soils, water, and nutrients has quadrupled irrigated rice yields in parts of Madagascar, while also saving water. And researchers studying an extensive floodplain in northeastern Nigeria found that the net economic benefits of direct use of the floodplain – for agriculture, fuelwood, and fishing – exceeded by 60-fold those of an upstream irrigation project that would destroy much of the floodplain.

Fortunately, forward-thinking cities, villages, and farming regions around the world are demonstrating that drinking water, food security, and flood control needs can be met in ways that employ, rather than destroy, ecosystem services. A variety of municipalities are realizing, for example, that healthy watersheds are nature's water factories, and that it pays to protect them. More than half a dozen U.S. cities have avoided the construction of expensive filtration plants by protecting their watersheds. Working in partnership with towns, businesses, and community groups in the Catskills-Delaware watershed, New York City is investing $1.5 billion in watershed measures over 10 years to avoid a filtration plant estimated to cost $6 billion to build and $300 million per year to operate. Bogotá, Colombia, and Boston, Massachusetts have coupled watershed protection with effective conservation efforts, reducing capital expenditures and safeguarding ecosystem services. Bogotá's conservation success has delayed the need to construct new water supply facilities for at least 20 years. Water use in the greater Boston area hit a 50-year low in 2004, following an aggressive conservation program begun in the late 1980s that has indefinitely postponed construction of a diversion from the Connecticut River and saved residents more than $500 million in capital expenditures alone.

From Bogotá to Boston, these examples demonstrate that the challenge of providing safe and affordable drinking water can be synchronized with better protection of ecosystem services. In most cases, however, watershed protection remains a neglected stepchild of water supply systems, and conservation is relegated to drought-response at best. Correcting these oversights is especially important in developing countries, which face simultaneous challenges of reducing rural poverty and meeting the water supply

continued opposite

Toward A New Water Culture

by Pedro Arrojo-Agudo

Pedro Arrojo Agudo

The author is the President of the Foundation for a New Water Culture. He won the Goldman Prize in 2003 for his work protecting the Ebro River in Spain from 120 proposed dams – part of a grand scheme to move water from the wetter north to southern Spain. The plan has since been scrapped. More recently, Pedro has turned his attention to Latin America, where he is working with IRN to organize the First Latin American Conference for a New Water Culture, which will take place in Fortaleza, Brazil this December. The Conference will bring together groups fighting water privatization, environmentalists, dam-affected people, and academics to try to change the paradigm by which water resources in Latin America are managed.

The problem of sustainability of ecosystems is often presented as an obstacle to economic development, impeding the resolution of serious human problems such as that of world hunger. This focus is so wrong, and even perverse.

In reality, restoring and conserving the sustainability of aquatic ecosystems and ending world hunger are complementary and inseparable goals.

The fact that 1.3 billion people are not guaranteed access to clean drinking water, and that 10,000 people (mostly children) die every day as a result, is the human face of a crisis made worse by the fact that we have devastated our rivers, lakes, wetlands and aquifers, in the name of that poorly understood term progress. Not only are these actions unsustainable, but they also promote inequality. This is one of the principal challenges facing humankind in the 21st century.

The solution will require profound changes in our culture and our values. It will mean a new focus on our relationship with aquatic ecosystems, and especially with our rivers. In the same way that we understand that a forest is far more than just a warehouse of wood, we must come to understand that our rivers are far more than just channels of H_2O. Beyond the productive functions by which we make use of water, our rivers perform functions which are key to life, on our continents and territories, but also in the seas and oceans. From this perspective, we must think of these ecosystems as the Heritage of the Biosphere, which must be managed through public or community responsibility and with firm commitments to sustainability.

In order to understand and manage the type of underlying problems that result in conflicts over water, we must understand the roles and interests at play. The uses of water are so diverse, and they interact with values and rights on so many different levels, that it is necessary to distinguish between distinct categories, in order to establish adequate priorities and criteria for their management. In this sense, as was expressed in the European Declaration for the New Water Culture, signed recently by 100 specialists of the countries of the European Union, we must recognize that:

- Water for life, in basic survival functions, not only for human beings (individually and collectively), but also for other living things in nature, must be recognized as the top priority and guaranteed as a human right.
- Water for activities of general interest, in terms of health and social cohesion, should fall on a second level of priority regarding its connection with social rights of citizenship and in the public interest, and should be guaranteed by public institutions.
- Water for development of productive activities and private interests should be relegated to a third level of priority. This is the function for which most of the water resources extracted from rivers and aquifers are used, and is a key cause of problems of shortage and contamination of water resources worldwide.
- Last are those productive uses of water that are illegitimate or even illegal. The overexploitation of aquifers or the irresponsible discharge of contaminants are examples. Such uses should simply be avoided through rigorous enforcement of laws.

From this ethical focus, which defines the new water culture, maximum priority must be placed on guaranteeing universal access to drinkable water and the sustainability of rivers, lakes, wetlands, and aquifers, as two sides of the same coin. To fight for the health of the blue soul of this planet – its aquatic ecosystems – is to fight for the health and the dignity of the people and cultures that inhabit it. ■

Liquid Assets continued

needs of expanding cities and industries, often under very water-stressed conditions.

Healthy ecosystems provide valuable insurance against catastrophic losses from flooding and other natural disasters. For the same reason people buy home insurance and life insurance – to avoid catastrophic losses – societies need to "buy" disaster insurance by investing in the protection of watersheds, floodplains, and wetlands. Global warming and its anticipated effects on the hydrological cycle will make the robustness and resilience of nature's way of mitigating disasters all the more important, as tropical storms, spring flooding, and seasonal droughts increase in frequency and intensity.

Governments need to overhaul water policies and practices in a way that will protect freshwater ecosystems and their valuable services. High priorities include requiring drinking water suppliers to invest in watershed protection; inventorying and setting ecological goals for the health of rivers, lakes, and other freshwater ecosystems; and establishing caps on the degree to which human activities modify river flows, deplete groundwater, and degrade watersheds. Combined with more effective water pricing, these caps will drive up water productivity – the unit value of water extracted from nature – and help to meet human needs while safeguarding nature's vital freshwater ecosystems.

Leadership, commitment, and citizen involvement are the driving forces behind many of the most innovative and successful water projects and policy reforms. Most of these efforts began with a small number of committed individuals, organizations, water managers, or political leaders who decided to buck the odds and push for a different approach. Others now need to augment their efforts. Old approaches and entrenched ways die hard. But the benefits of working constructively with nature's water cycle, rather than further disrupting it, are now too compelling to ignore. ■

An edited extract from Liquid Assets: The Critical Need to Safeguard Freshwater Ecosystems, *published by Worldwatch Institute, July 2005.*