



THE DAMS NEWSLETTER

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ICOLD ON THE FRONT LINE FOR DEVELOPMENT



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President, ICOLD



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At the beginning of 2007 only eight years remain to face up to the challenges that humanity has established in the Millennium Development Goals (MDGs) to be achieved by 2015. Different international reports indicate that great efforts are being made to improve access to drinking water and basic sanitation, but these efforts are still not sufficient, and there are regions in the world, mainly in Sub-Saharan Africa, where all types of actions have to be taken urgently.

The case of Africa is well known. Seventy per cent of the population lives in darkness, with obvious consequences: No Light, No Clean Water, No Health Care, and No Education. This situation continues while less than 7% of the hydroelectric potential is exploited in the continent. And Africa is only the most extreme case of a world hungry for clean renewable power.

Solving the world's water and electricity problems is a multi-faceted issue, and it must be tackled within the framework of the Integrated Water Resources and Energy Management. All kinds of potentially viable actions must be urgently applied, and experience has shown that dams and reservoirs (large, medium-sized and small) are a very effective and efficient option on many occasions, on the understanding that they must be constructed and operated in an environmentally sustainable and socially equitable way. Dams bring development and well-being for hundreds of millions of people.

It is therefore the duty and mission of ICOLD to promote and develop dams and hydropower in the developing world, Africa being the priority. ICOLD and its 85 National Committees represent great human potential, with more than 10,000 professionals and experts in the field of dams. There are also 24 Technical Committees, in which approximately 400 experts participate, responsible for disseminating State of the Art reviews on technical, economic, social and environmental matters as pertaining to dams. Therefore, ICOLD is available to all the international organisations, governments and other civil authorities, to help achieve the sustainable development targets.

ICOLD also has to make alliances in order to accomplish that mission. That is why we are striving to give new impetus to IWALC, and we are actively looking for cooperation with United Nations organisations. On the public relations front, our new website is finally online and we hope it will serve as a tool to accomplish ICOLD's mission.

Michel de Vivo
ICOLD Secretary General

Luis Berga
ICOLD President

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Country Profile :

Vietnam, new ICOLD member

Vietnam is one of the two newest members in ICOLD. We present here a few facts about this country and its hydroelectric resources and potential.

The country is approximately 331 688 square km (128,066 sq mi) in area, which is slightly smaller than Germany. The topography consists of hills and densely forested mountains, with level land covering no more than 20 percent. Mountains account for 40 percent, hills 40 percent and forests 42 percent. The northern part of the country consists mostly of highlands and the Red River Delta. Phan Xi Păng, located in Lào Cai province, is the highest mountain in Vietnam at 3143m (10,312 ft). The south is split into coastal lowlands, Annamite Chain (central mountains) with high plateaus, and the Mekong River Delta. Mountains 500 m and more high occupy a third of the land. The highest mountain is Fansipan, at 3143m.



The climate is tropical and monsoonal; humidity averages 84 percent throughout the year. Annual rainfall ranges from 120 to 300 cm (47 to 118 in), and annual temperatures vary between 5°C (41°F) and 37°C (99°F).

There are 18 600 km² (1993 est.) of irrigated land in the country, out of 325 360 km² of land area, 55 250 km² of which is arable.

As a result of several land reform measures, Vietnam is now the largest producer of cashew nuts with a one-third global share and second-largest rice exporter in the world. Besides rice, key exports are coffee, tea, rubber, and fishery products. However, agriculture's share of economic output has declined, falling as a proportion of GDP from 42% in 1989 to 26% in 1999, as production in other sectors of the economy has risen. Tourism has become an increasingly important industry in Vietnam. There are over 3 to 3.5 million annual visitors.

Economy

In 1986, the Sixth Party Congress of the Communist Party of Vietnam formally abandoned its centralized planned economy and began introducing market elements as part of a broad economic reform package called «đổi mới» («Renovation»).

In many ways, this followed the Chinese model and achieved similar results. On one hand, Vietnam achieved around 8% annual GDP growth from 1990 to 1997 and continued at around 7% from 2000 to 2002, making it the world's second-fastest growing economy. Simultaneously, investment grew three-fold and domestic savings quintupled.

On the other hand, urban unemployment has been rising steadily in recent years due to high numbers of migrants from the countryside to the cities, and rural unemployment, estimated to be up to 35% during non-harvest periods, is already at critical levels. Layoffs in the state sector and foreign-invested enterprises combined with the lasting effects of a previous military demobilization further exacerbated the unemployment situation. The country aims to become a member of the WTO, perhaps as soon as October 2006. In May 2006, Vietnam negotiated a bilateral trade agreement with the US that marked the completion of the bilateral negotiations with WTO members the country needed to qualify for accession to the organization. Among other steps taken in the process of transitioning to a market economy, Vietnam in July 2006 updated its intellectual property legislation to comply with TRIPS.

Vietnam is still a relatively poor country with a GDP of US\$70 billion (2006 estimate). This translates to approximately US\$820 per capita. Inflation is estimated at 14% per year in 2004.

Electricity

Although Vietnam's per capita electricity consumption is among the lowest in Asia, demand has risen in recent years, straining the country's limited generating capacity. Rapid commercial sector growth, population migration to major cities, and elevated living standards have all contributed to a growing demand for electricity. In 2002, Vietnam had a total electricity generating capacity of 8.3 gigawatts (GW) and generated 34.5 billion kilowatt-hours (kWh) of electricity, of which 60% was hydropower. This

share is expected to decrease in the future, despite the building of new hydroelectric dams, because of a number of new fossil fuelled power plants.

The rural electrification program has been accelerated. The first Rural Energy project brought electricity to approximately 500 000 households from 2001 to the end of 2004. A \$220 million World Bank loan for the project is designed to bring power to 2.5 million households. According to the Vietnamese government, village electrification will reach 80% in 2010 (the figure is now slightly above 50%). Similarly, 90% of the total Vietnamese population is expected to be connected to the grid in 2010 (now 87%).

Hydroelectric plants in operation

No	Name	Capacity (MW)	River	Location	Dam's height (m)	Cost of construction (106 US\$)	First operational year
1	Thac Ba	108 MW	Chay	Yen Bai province	45	110	1972
2	Da Nhim	160 MW	Da Nhim	Lam Dong (Da Lat) province	38	50	1964
3	Hoa Binh	1920 MW	Da	Hoa Binh province	128	1500	1984
4	Y-a-ly	720 MW	Se-San	Gia Lai – Kon Tum province	71	700	2001
5	Vinh Son	66 MW	Dak Phan	Binh Dinh province	40	70	1994
6	Song Hinh	70 MW	Hinh	Phu Yen province	43	100	1999
7	Thac Mo	150 MW	Be	Binh Phuoc province	46	150	1995
8	Tri An	400 MW	Dong Nai	Dong Nai province	40	400	1988
9	Ham Thuan	300 MW	La Nga	Lam Dong – Binh Thuan province	93	300	2001
10	Da Mi	175 MW	La Nga	Binh Thuan province	72	180	2001

With the growing industrial demand, electricity demand in Vietnam is forecast to grow 15%-16% per year until 2010. Vietnam currently buys power from China to prevent shortages in the North, and plans to begin purchasing from Laos in 2008.

In January 2005, EVN announced its intention to increase electricity production by 20% within the year and to increase generating capacity to 11 400 MW in 2005 (and 17 500 by 2010).

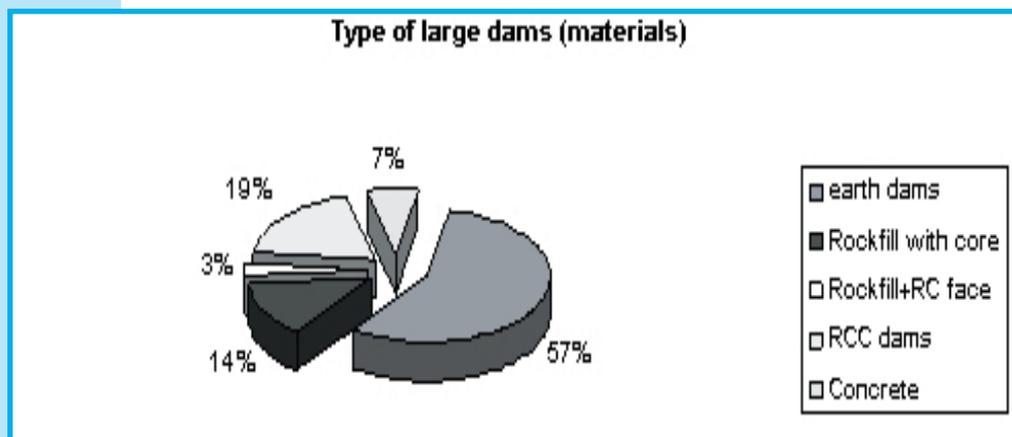
Vietnam currently has five hydroelectric developments underway. The country's Son La project, anticipated to have a generating capacity of 2400 MW by 2012, will be the largest hydroelectric project in Vietnam when completed. In September 2004, construction began on the Ban Ve hydroelectric power plant, expected to begin operations in 2008. EVN began work on four additional hydroelectric projects in late 2004. The Dong Nai 3 and Dong Nai 4, both located in the Central Highlands region, are expected to be completed within four years and to provide approximately 520 MW generating capacity. In December 2004, EVN began construction of the Se San 4 hydropower plant in the Central Highlands provinces of Gia Lai and Kon Tum. The plant is anticipated to have a capacity of 330 MW and to generate 1,390 million kWh per year. Vietnam also plans to build three additional plants in the region by 2010.

In March 2004, the Vietnamese government approved construction of the 2.4 GW Son La hydroelectric project, which began late 2005. One third of the \$2.3 billion investment has been earmarked for the resettlement of families living in the 44 700 hectares to be flooded by the reservoir. The plant is expected to be operational by 2015.

Lastly Vietnam plans to complete its first nuclear power plant by 2020 as an alternative means of meeting demand. In December 2004, the Vietnamese Ministry of Science and Technology submitted a pre-feasibility study for the 2000-MW nuclear plant to the National Assembly.

Dams in Vietnam

Vietnam has a historical tradition in water engineering. Old earth dyke systems in the Red river basin have been built in the North since the 12th Century. The first big channels were dug in the Mekong delta in the South 300 years ago. Some large irrigation systems consisting of weirs, canals and sluices were built in the 1920s and 1930s. More than 2500 pools (each has a storage capacity of less than 5 million m³) and 500 reservoirs have been built. Since 1990, on the lower Da river in the North-West (70 km from Hanoi), there has come into operation a big Hoa Binh reservoir with 9.5 billion m³ capacity (V) and a rockfill dam 128m high with 1920 MW installed capacity. Now a bigger scheme is under construction upstream (it is planned to operate the 1st turbine in 2009) with a storage capacity of 12.5 billion m³ and a roller compacted concrete dam 139 m high (H) rated at 2400 MW.



In Vietnam the highest earthfill dam is 60m, clay core-wall rockfill (CCR) dams are H=54÷128m, concrete face rockfill (CFR) dams are 70÷119m, traditional gravity concrete dams are H=15÷46 m, roller compacted concrete (RCC) dams are H=53÷139m. Beside common technical demands, dam construction calls for much special engineering research work such as flood frequency design, optimum combination of locally available materials, dam and spillway sizes, river diversion versus peak flood, dam material processing, in the light of natural conditions.

Reservoirs fall into two categories, reservoirs designed specifically for energy production, and multipurpose reservoirs which must comply with strict rules regarding operation for flood mitigation, water supply, irrigation and power generation. Today, there are three ambitious ten-year National Programs in operation (2005-2015) with more than US\$10 billion investment:

- Program for Medium and Small Water Systems in dispersed areas in highlands and mountains aiming at local water demand satisfaction and poverty reduction;
- Program for Large Multipurpose Water Systems with big reservoirs (V=0.3÷1.5 billion m³) and high dams (H=50 ÷115m);
- Program for Large Hydro Power Plants with high power capacity (P=150÷2400 MW).

Hydroelectric Potential

Hydroelectric plants to be built by 2020				
No	Name	Capacity (MW)	River	Location
1	Nam Huy – Dai Thanh	342 MW	Gam	Tuyen Quang province (under construction)
2	Son La	2400 MW	Da	Son La province
3	Dai Ninh	300 MW	Da Nhim	Lam Dong province
4	Rao Quan	70 MW	Rao Quan	Quang Tri province
5	Se San III	273 MW	Se San	Gia Lai – Kon Tum province
6	A V-ong I	170 MW	Con	Quang Nam province
7	Song Con II	70 MW	Con	Quang Nam province
8	Ban La	? MW	Ca	Nghe An province
9	Song Tranh II	200 MW	Tranh (connect with Thu Bon)	Quang Nam province
10	Dak My IV	200 MW	Tranh	Quang Nam province
11	Dak Drinh	97 MW	Tra Khuc	Quang Ngai province
12	Se San IV	330 MW	Se San	Gia Lai – Kon Tum province
13	Dong Na III and IV	550 MW	Dong Nai	Lam Dong province
14	Buon C-op	280 MW	Serepok	Dak Lak province
15	Anh Khe – Ka-nak	150 MW	Ba	Kon Tum province
16	Phi-Krong	110 MW	Se San	Gia Lai – Kon Tum province
17	Song Ba Ha	250 MW	Ba	Phu Yen province
18	Lai Chau	800 MW	Da	Lai Chau province

Already Exploited: 18 000 millions kWh
Economically feasible: 52 millions kWh
Technically feasible: 72 millions kWh
Theoretical: 309 millions kWh

The economically and technically feasible figures have been recently revised downward due to environmental constraints (displacement of populations).

Today's hydroelectric dams are relatively new (see tables). There are 10 multipurpose dams, either earthen dams or rockfill dams. Their operational problems are mainly due to their multipurpose nature: it is difficult to optimize operation when faced with conflicting priorities: flood protection, maximizing electricity production, conservation of water resources for the down stream regions, etc. There are also more specific problems with silting, due to erosion in the catchment area subjected to violent rains and deforestation. The reservoir capacity is reduced, which threatens the flood protection role. Lastly, small and old dams are insufficiently maintained, due to lack of money.

A promising future

Electricity of Vietnam public utility has submitted a very ambitious plan to build 45 dams for hydroelectricity in the next twenty years. Among them, the biggest is the Son La Project. With 2400 MW (10 generators) installed capacity, it is expected to produce 9000 MWh. (See tables). According to the announced figures, Vietnamese hydroelectric capacity will increase by 5080 MW by 2010 and 7220 MW by 2020. This would represent a large fraction of the 10 000 MW yearly world market (5% and 7% respectively). Some have questioned the capacity of Vietnam to accomplish this ambitious plan, and expect that gas fired power stations would benefit much more from increased demand, because they are more easily financed through BOT-type schemes and because Vietnam is quite rich in gas resources. ●

World Water Council Director: Dams are necessary to solve «chronic water scarcity»



Daniel Zimmer
WWC Director

Daniel Zimmer was interviewed by the French daily Liberation on May 20. The interviewer began with «many experts think that the fears about Three Gorges Dam or other large dams are rich countries' fears.» In the developing countries, 'there are billions of people to feed and it's unthinkable to stop building large dams! If we do nothing, they will die from hunger'. So explains one of the most famous French geologists, Ghislain de Marcilly. «If you take the Aswan dam, of course it had a disastrous environmental impact, but it enabled Egypt to double its population without famine.» Here follows the interview.

Will the Three Gorges Dam be the last large dam of this type?

Of course not! You just need to look at the situation in the developing countries to understand why. In Africa, for example, they store only between a few dozens and a few hundred cubic meters per capita per year. In the United States and in Europe, this figure is going up to 5000 cubic meters per year, when those regions need less water than Africa! There is a 1 to 100 proportion! We can therefore understand that developing countries want large dams and throw back at us our own economic development when we talk about environmental risks! As for us, we have water for our consumption, for irrigation and even for leisure.

Do the international institutions share this viewpoint?

When the argument began on large dams, the World Bank changed its infrastructural policy, refusing to launch other projects. Today, it recognizes this was an error. It renewed its estimation of the benefits from large dams and completely changed its strategy. For the Bank, if you want the countries suffering from chronic water scarcity to get a minimum of water reserves to survive drought periods, it's imperative to go back to those projects. On the condition, of course, that we take into account and we solve the social, human and environmental problems associated with them. Today, happily, we have made great progress on those points.

But there are still very strong tensions around the Three Gorges Dam...

Of course, there are always tensions around constructions like that. But once again, you need to keep in mind this colossal asymmetry between the developing countries that need to store water to compensate for the hazards of climate, and the developed countries, where that need is less strong. That's an injustice for which the countries from the South are reproaching us more and more and that we can no longer tolerate.

Is there any alternative to large dams ?

In Western Africa, for example, we try to manage small reservoirs, farther upstream, to delocalize water storage. Another possibility is underground storage rather than surface storage. That's not always possible but if it is, it is an interesting alternative. ●

New life for IWALC

During the World Water Week, ICOLD was represented by Secretary General Michel de Vivo. He attended in particular a meeting of the International Water Associations Liaison Committee (IWALC). For those who don't know the existence of this committee, a little bit of history is necessary:

When the joint International Council for Science (ICSU) / International Union of Technical Associations and Organizations (UITA) Committee on Water Research (COWAR) was dissolved by ICSU on 1 January 1994 it was replaced by the Scientific Committee on Water Research (SCOWAR). This new ICSU committee, however, did not envisage an internal liaison function for the international Water-related Associations. In a subsequent COWAR meeting held in London in December 1993, it was proposed to continue the collaboration, establishing a new liaison committee; the seeds for IWALC were sown at that time and this committee was established formally during a meeting of representatives of the International Water-related Associations in Cairo (Egypt) on 23 November 1994.

While IWALC Secretary is ICID Secretary General, Mr. Gopalakrishnan, the current Chairman of IWALC is Dr. Christopher George of IAHR. (See the full list of members and observers below). IWALC thus functions like an informal link between the major non-governmental organizations operating in the water sector.

Although IWALC has been in existence for more than 10 years, it has not always been very active. It has revived strongly in the last year because of the new environment. The Committee usually meets once a year in order to exchange information between the committee members and to coordinate efforts in the international arena. The objectives are quite ambitious:

IWALC objectives

- to promote liaison between the international Water-related professional Associations to the common benefit of the Associations and of the people they serve;
- to offer a forum for mutual deliberations;
- to stimulate interrelationships between the Associations, and to achieve a better tuning of their respective activities such as the setting up of working parties and the planning of their meetings; with respect to the latter the regular publication of the Water Associations Congress Calendar by UNESCO is of great importance;
- to initiate integrative approaches where society asks for combined involvement of various specializations for instance by:
 - organising joint symposia and setting up joint working groups on topics of common interest or problems of a broad nature. In doing so the specific responsibilities of the various Associations and their different origins should be respected;
 - jointly publishing the proceedings of symposia and reports of working groups;
 - to fulfil a 'broker' function between the Associations and the large international water programmes such as the IHP and OHP, without affecting the existing bilateral cooperation between the bodies;
 - to report on important developments in the field of global water issues and

- review the activities of the several organizations in this respect;
- to use opportunities for administrative collaboration between the Associations and to share experiences on e.g. organizational, financial and judicial matters;
- to maintain close links with the governmental organizations and agencies active in the water field (e.g. UNESCO, WMO, UNEP) and to create a good relationship with the newly established ICSU Committee, SCOWAR;
- to promote WATER in a general sense, for instance, by supporting initiatives such as World Water Day and the establishment of a World Water Council.

Towards Istanbul 2009

The World Water Forum in Mexico has demonstrated once more that NGOs which are not very representative can have a much bigger impact than professional and scientific NGOs like those assembled inside IWALC. A reinforced role for IWALC is deemed necessary to influence the program of the next WWF meeting: Istanbul, 2009. It has been proposed that IWALC focus its attention on key science and technology issues related to the theme of the Forum. IWALC will bring about the state-of-the-art of knowledge related to the various aspects of the theme in a well-documented, peer reviewed publication and follow-up presentations. Furthermore, IWALC will take the lead in organizing sessions to present the basic content of the subject matter resulting from the outcome and to debate and discuss with the concerned stakeholders and with the public at large participating in the Forum process. ●

IWALC Members

Dr. Christopher George Chairman, IWALC
Executive Director - International Association of Hydraulic Engineering and Research (IAHR)

Mr. M. Gopalakrishnan Secretary, IWALC
Secretary General - International Commission on Irrigation and Drainage (ICID)

Mr. Aly Shady, President, International Water Resources Association (IWRA)

Mr. Michel De Vivo, Secretary General, International Commission on Large Dams (ICOLD)

Dr. Andrew Skinner, Secretary General, International Association of Hydrogeologists (IAH)

Dr. Paul Reiter, Executive Director, International Water Association (IWA)

Mr. C. Van Begin, Secretary General, Permanent Association of Navigation Congresses (PIANC)

Mr. A.C. Tyagi, Director, Hydrology and Water Resources Department, World Meteorological Organization (WMO)

Prof. Dr. Dogan Altinbilek, President, International Hydropower Association (IHA)

Dr. Pierre Hubert, Secretary General, International Association of Hydrological Sciences (IAHS)

Dr. Terje Tvedt, President, International Water History Association (IWHA)

Observers

Mr. William Lewis, Secretary General, Societas Internationalis Limnologiae (SIL)

Dr. J. A. A. Jones, Chair, IGU Commission for Water Sustainability

Mr. J.J. Bogardi, Division of Water Sciences, International Hydrological Programme, UNESCO

WORLD IN DANGER OF MISSING SANITATION TARGET; DRINKING-WATER TARGET ALSO AT RISK, NEW REPORT SHOWS

Health of rural and growing urban populations particularly at risk without clean water and sanitation

The world is in danger of missing targets for providing clean water and sanitation unless there is a dramatic increase in the pace of work and investment between now and 2015, according to a new report from the World Health Organization (WHO) and UNICEF. The situation is becoming particularly acute in urban areas, where rapid population growth is putting great pressure on the provision of services and the health of poor people.

More than 1.1 billion people in both urban and rural areas currently lack access to drinking water from an improved source and 2.6 billion people do not have access to even basic sanitation, the report shows. The health impact of this can be seen particularly in children. WHO estimates that in 2005, 1.6 million children under age 5 (an average of 4500 every day) died from the consequences of unsafe water and inadequate hygiene.

Children are particularly at risk from water-related diseases such as diarrheal and parasitic diseases. Lack of sanitation also increases the risk of outbreaks of cholera, typhoid and dysentery.

The populations of urban areas in the developing world are growing rapidly and, if the MDGs are to be met, a huge amount of work will have to be done simply to maintain the proportion of those living in cities with access to improved drinking water and adequate sanitation. Currently, 95% of city dwellers have access to an improved source of drinking water, while 80% have access to sanitation services.

Meeting the water and sanitation targets of the Millennium Development Goals (MDGs) will be one of the most effective means of raising the health and general living standards of many of the world's poor. But reaching the water and sanitation targets will require much greater efforts by policy makers, funding and training agencies, planning and construction. These solutions must focus on poor and underserved people worldwide, WHO warns.

In 2000, the world pledged to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation. According to the report, "MDG Drinking Water and Sanitation Target - The Urban and Rural Challenge of the Decade", to meet the sanitation MDG will require a doubling of current efforts. A one-third increase in efforts will be needed to meet the MDG drinking water target.

«It is a tragedy that the world may not reach the water and sanitation MDGs. Safe drinking water and basic sanitation are so obviously essential to health that they risk being taken for granted,» said Dr Anders Nordström, Acting Director-General of WHO. «Efforts to prevent death from diarrhea and other diseases are doomed to failure unless people have access to safe drinking water and basic sanitation. This report underlines the importance of the new WHO strategy on public health and

environment to radically reduce the global burden of disease through preventive health measures. Only by tackling the root causes of diseases such as water and sanitation can we reduce the 24% global burden of global disease caused by the environment.»

Sub-Saharan Africa is still the main focus of concern. An estimated 80% of people without access to an improved drinking water source live in sub-Saharan Africa, Eastern Asia and Southern Asia. Due to population growth over the period from 1990–2004, the number of people without access to drinking water in Sub-Saharan Africa increased by 23%. Currently, just 56% of the population has access to an improved water supply. Just 37% of people in sub-Saharan Africa had access to basic sanitation in 2004, compared to a global average of 59%.

In rural areas, access to an improved source of drinking water and to basic sanitation services was very low in 1990 (the baseline year for measuring the MDGs): only an estimated 64% had access to a drinking water source, while 26% had access to sanitation services. While those percentages rose substantially by 2004 - to 73% and 39% respectively - these numbers still fall way short of what is needed to achieve the MDGs.

From the report comes one example of a success story in terms of raising coverage. In Ethiopia, the Amhara region had a coverage rate for access to sanitation services of only 3.8% in 2003, and only 100 latrines were being constructed annually in each district. In that year, the government initiated a social marketing campaign which increased community knowledge and understanding of sanitation and its linkages to health. Community demand for latrines sky-rocketed, and by 2005, the average number of latrines constructed per district was 26 400. ●

UNDP concurs with WHO on the world water crisis

The 2006 Human development report (Beyond Scarcity: Power, Poverty and the Global Water Crisis) has for the first time been devoted to the water problem. This very important report from the United Nations Development Program focuses on water: access, sanitation, and management issues, and the forces behind shortages.

In his foreword, UNDP Administrator Kemal Derviş takes a strong stand : “The word crisis is sometimes overused in development. But when it comes to water, there is a growing recognition that the world faces a crisis that, left unchecked, will derail progress towards the Millennium Development Goals and hold back human development. For some, the global water crisis is about absolute shortages of physical supply. This Report rejects this view. It argues that the roots of the crisis in water can be traced to poverty, inequality and unequal power relationships, as well as flawed water management policies that exacerbate scarcity.”

The dam's answer to the crisis

Although the dams are part of the solution, it is clear that they cannot, by themselves, solve the problem. Water from reservoirs provides reliable storage of water for treatment and to improve sanitary conditions. However, simply providing access to improved water and sanitation does not guarantee the use of the services or the much expected health benefits to the people. The promotion of fundamental behaviour changes is key to integrating the appropriate use of services into daily routine and needs to start in early childhood. Health and hygiene education programs provided by schools are an integral part of every water and sanitation program. Nevertheless, dams can alleviate the water crisis in the parts of the world where water storage is the main problem to be solved.



Burkina Faso: First National Congress on Dams

Burkina Faso National Committee (CNBB) has organized the first National Congress on Dams in Burkina, which took place on December 05-07 and was a resounding success.

Two themes had been chosen for this first event:

- * **The role of dams in social and economic development of Burkina Faso;**
- * **Pathologies and rehabilitation of dams: principles, methods and techniques.**

The Congress, organized jointly with the Ministry of Agriculture, Hydraulic and Halieutic Resources took place in Ouagadougou, a major African capital. The city also hosts the International Art and Craft Fair, Ouagadougou, better known by its French name SIAO, “Salon International de l’Artisanat de Ouagadougou”, one of the most important African handicraft fairs.

Parallel to the Congress, a technical exhibition and a tour to the Ziga dam was organized. More than 150 professionals, people from the Burkinabe public administration in charge of water, energy and dams, entrepreneurs, engineers and technicians participated in the three-day event. African National Committees, ICOLD President Luis Berga and Secretary General Michel de Vivo also attended. The opening ceremony was presided over by His Excellency Salif Diallo, Minister for Agriculture, Hydraulic and Halieutic Resources, with Laurent Segedo, Minister for Environment, and Pierre Lompo, Chairman of the Burkinabe Association of Civil Engineers also present. The Congress was intended to create a forum for exchanges between decision-makers and professionals and to promote the dissemination of good practice in the study of dam pathologies and rehabilitation; as well as in the field of dam planning as tools for harnessing water and other energy resources for development.

Burkina-Faso is characterized by very irregular rainfall, and geological formations consisting mainly of magmatic rocks with poor water retention capacity. This explains the persistent and recurrent droughts which cause malnutrition and drinking water resource problems, especially with an ever increasing population. Faced with that situation, the public authorities, with the help of NGOs and international cooperation institutions, have launched a programme to build small dams. Dam construction began in the 1920s but increased strongly after 1970. Burkina Faso now has nearly 1500 water storage dams. Ten large dams have been built since the 1980s; they feed drinking water to the cities, produce electricity and develop irrigated agriculture, and improve ecosystems.

“It is now time to evaluate the role played by those dams to create the essential basis for social, economic and cultural progress in Burkina” said Adama Nombre, ICOLD vice-President and organizer of the meeting. Also, water resources development has been done in technically, scientifically, politically, culturally and sociologically constraining environment. The construction and management of the dams has experienced the same conditions. “Thus, important pathologies are appearing today among the dams already built. A number of programs are launched to rehabilitate those dams. It’s important to elaborate the current state of the art in this field of pathologies and dam rehabilitation, in order to have better practice by sharing the positive experiences and the lessons drawn from difficulties met by the profession.”

The meeting resulted in two resolutions, on the professionalism in the dam business and the strengthening of the CNBB. Two recommendations were also addressed to the decision-makers of Burkina-Faso. They recommend first the strengthening of the existing education structures for dam technicians and the creation of research structures and engineering education in the field of dams. Secondly they recommend the creation of a regulatory framework for dam building and management. The meeting organizers hope that, beyond the initial objectives of the congress, they have succeeded in launching a pole for meetings and exchanges between professionals from the West-African region in order to ensure organisational progress, in the ICOLD framework. ●

DIARY

■ **March 5-9, 2007** ■
Philadelphia, Pennsylvania, USA

USSD Annual Conference:
Modernization and Optimization of
Existing Dams and Reservoirs.
www.ussdams.org

■ **March 18-23, 2007** ■
Atlanta, Georgia; USA

International RCC Dams Seminar and
Study Tour.
khansen@schnabel-eng.com

■ **May 15-19, 2007** ■
Tampa, Florida, USA

World Environmental and Water
Resources Congress.
www.asce.org/conferences/ewri2007

■ **September 30 - October 5, 2007** ■
Sacramento, USA

58th IEC Meeting

stephens@uscid.org;
<http://www.icid2007.org>.

■ **September 17-19, 2007** ■
Munich, Germany

14th German Dam Symposium and
7th ICOLD European Club Dam
Symposium
«Dams in Europe – Tasks and
Challenges».

Topic 1 – New Public Awareness on
Dams

Topic 2 – The Role of Dams in European
Development

Topic 3 – Benefits and Risks of Hydraulic
Structures

Topic 4 – The Economic Importance
of Dams

Topic 5 – Leakage Detection in
Embankment Dams

Topic 6 -- Hydraulic Structures and
Hydropower – Ongoing Projects at
home and abroad

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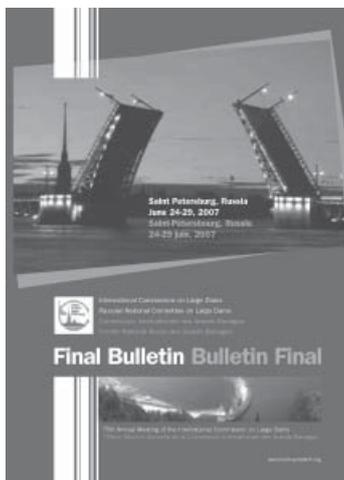
■ **June 24-29, 2007** ■
St.Petersburg

ICOLD 75 th Annual Meeting.
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<http://www.icold-spb2007.org/en/>

This Annual Meeting is being held for
the first time in the former capital of
Russia - the City of Saint Petersburg.
Russia is one of the largest states in
the world, and has major rivers with
abundant water resources. Russia is also
the nation that plays a very important
role in the field of large and very large
dams. The country has some of the
largest dams in the world, and I think
it would be of great interest for dam
experts to see the Russian experience in
planning, constructing and operating
large dams harmoniously with the
environment with their own eyes. Russia
has enormous hydropower potential, and
therefore it also has great possibilities for
developing this type of clean renewable
energy.

Luis Berga

Russia is a country with huge natural
energy resources (coal, oil, and gas), that
will one day be exhausted, no matter
how large they are. At the same time the
hydropower potential of Russia that is
economically efficient and is estimated
at 852 109 kWh of electric power but
to date is only 20% developed. It's
absolutely clear that further development
of this huge and eternally renewed
energy source is necessary. Hundreds of
large dams and hydropower stations have
been built in Russia in various climatic,



geological and seismic zones. The high
scientific and engineering potential of
the Russian hydropower engineers is
well-known all over the world. During
the 75th ICOLD executive meeting
technical committees will be able to
discuss actual problems of designing
and constructing large dams and other
hydropower engineering constructions,
to attend a seminar on “Dams and
Hydropower Engineering in Russia and
the CIS Countries”, an International
Symposium, a traditional technical
exhibition and other arrangements.

Russia has accumulated wide experience
in constructing and operating hydropower
structures. We are implementing a
number of large projects in hydropower
engineering and we have even bigger plans
for future. By 2010 we are planning to
finish constructing Bureisk, Kashkhatau
and Zelenchuck HPPs, and launch the
first Boguchansk HPP building. Our
long-term prospects are the Southern
Yakutsk hydropower units and the Lower
Angara HPPs scheme. We are working
on projects for upgrading operational
hydropower works and other structures
and building new ones.

*Minister of Industry and Power-
Engineering of the Russian
Federation.*

V.B. Khristenko

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