CIGB ICOLD

# THE DAMS NEWSLETTER

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## ICOLD UNTAPPED TREASURES

SECRETARY GENERAL
ANDRÉ BERGERET

With their great wisdom, the ICOLD founders decided, in the section III of the Constitution, that one of the conditions for a National Committee to be considered as a member of the Commission was "*to compile and submit to the Central Office, as soon as possible after election, a register of the large dams in the country, so that this list can be added to the World Register of Dams which has been prepared and is periodically kept up to date by the Commission*". Thanks to the unflagging work of our colleagues, this World Register has been continued and improved up to this date. It does represent a precious contribution of ICOLD to the world patrimony and to the knowledge of dams and a unique tool, may be not enough used by the dams engineering community. Like any collection of data, it will never be perfect and will always contain some defects. The World Register can thus be skewed and distorted.

Benjamin Disraeli, a British Prime Minister in the late 1800's, used to say that "There are three kinds of lies: Lies, Damn Lies, and Statistics". I would answer him with mathematician Frederick Mosteller, according to whom "it is easy to lie with statistics, but it is easier to lie without them". Therefore, however imperfect is the tool, I think it should be preferably used by the engineering community. That is one of the subjects which will be discussed in the next ICOLD annual meeting in Seoul. An extended Committee on the World Register of Dams and Documentation could thus receive the mission of evaluating the value of the Register (who uses it, how often and for which reason ?) and considering how it could be used for public relations and technical information of ICOLD.

More generally, we should think of exploiting more efficiently the wealth of knowledge amassed in our association. We do it fairly well by sharing our experiences on technical matters today. I am sure that we can progress in the way of profiting from the experiences of the past. A dam's life largely exceed the career of an engineer or of an official responsible for it. Its original purpose can also change with time, from electricity production to leisure, from irrigation to flood protection. We in the dam engineering community have therefore to function on a "trans-generational" mode. Some old technical papers published in ICOLD Congresses Acts may thus seem antiquated. But they also conceal treasures of accumulated knowledge. And those lessons from the past can bring us a more in-depth vision of our present and future tasks.

## IN THIS ISSUE

# Worst ecological disaster mitigated with dams

**Dams and canals built in Kazakhstan are providing a solution to the Aral Sea disaster, where all the small scale solutions proposed have been unable to mitigate the economic, social and environmental problems brought by the disappearance of the Sea. In that exemplary case, dams have been a true tool of sustainable development.**

The diminution of the Aral Sea[1] has often been qualified the "worst ecological disaster" of the century[2]. In the course of the last 35 years, the coasts receded more than 150 km. During the same time, the salinity was multiplied by 5 and 28 fishes' species out of 30 died out. What was the fourth biggest inland sea of the planet is now on the way to become a new "Dead Sea".

The course of water elevation and water salinity during the last seven decades is shown in the Figure 1.

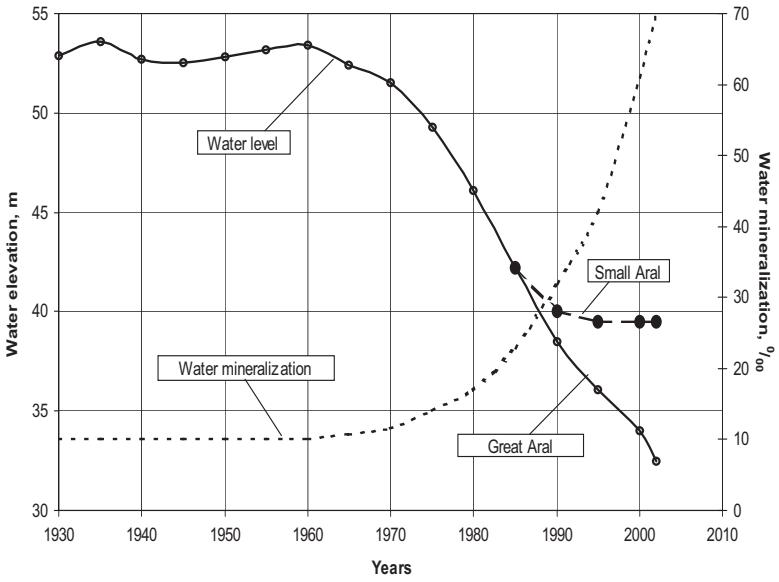



Fig. 1

The Aral Sea has lost more than 60% of its area and approximately 80% of its volume (until 1998). The disastrous economic and human effects are easy to understand: in the Kazak part of the sea, 40 000 people out of 85 000 inhabitants were living on fishing. 16 000 have left the country and those who stayed are submitted to terrible conditions, especially from a health point of view. Cancers and lung diseases (including tuberculosis) are up to 30 times higher than they used to be. The drinking water is heavily polluted with salt, cotton fertilisers and pesticides used for growing cotton. The malnutrition problem only worsens the situation, because of the impact on the immune system.

In 1989, the loss of water reached such a point that the Sea was divided in two parts: in the south, the Greater Aral Sea is scarcely fed by the Amudarya (some years, this river is so dry that no water reaches the Sea), while in the North, the Small Aral Sea survives thanks to the Syrdarya river.

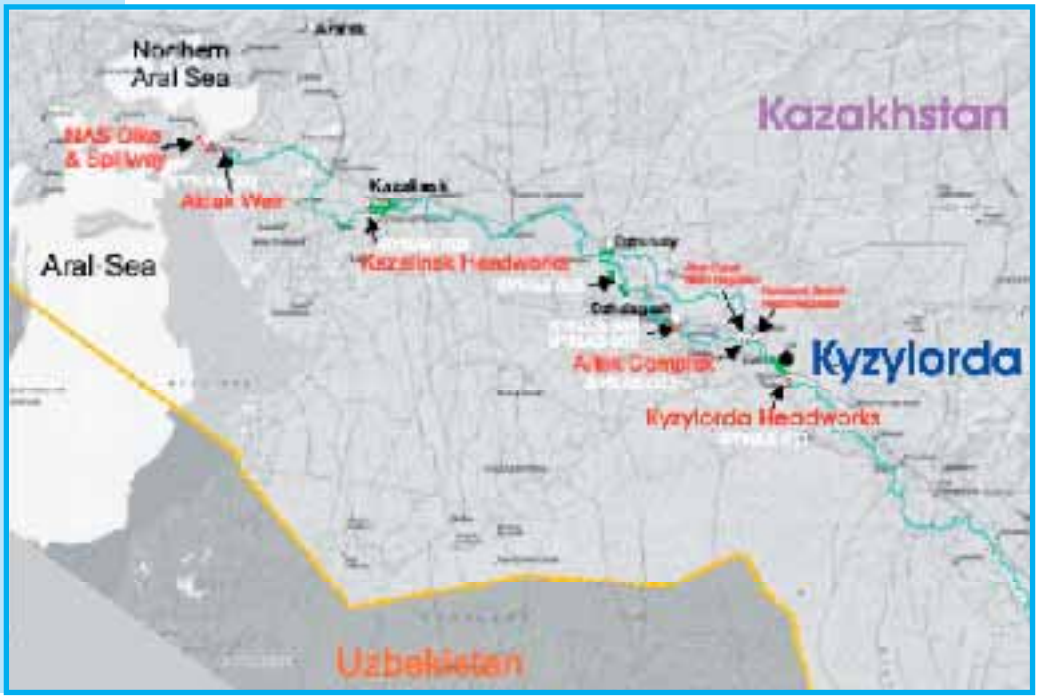
The two rivers are heavily used for irrigation by Central Asia republics. Especially in the last 35 years irrigation has been greatly intensified without compensation measures. In 1956, the central committee of the PC USSR had voted an irrigation plan, which was rapidly followed by the beginning of the drying, around 1960. From 1960 to 1990, the irrigated zone in Central Asia went from 3.5 to 7.5 millions of hectares and the region became the fourth world cotton producer. But during

This boat lying in the middle of the desert embodies the state of fishing industry, once flourishing, in the region of the city of Aralsk. That industry is supposed to rebirth thanks to the project "Reclaiming the Aral Sea"

the same time, the Aral Sea was receiving at the end of the 1980s ten times less fresh water than in 1950. The disaster was quickly recognized by the Soviet Institute of Geography, which published "Problems of the Aral Sea" in 1969. But the situation continued to worsen, up to the point mentioned above.

After the independence, in 1991, there was a lot of expectation from the population that the international organizations would help them in getting out of this situation. They got many promises, but few actions. Disgusted, the Kazakh population decided to build itself for 2.5 millions of dollars its own sand dam, 14 km long and 30 meters wide, which transformed the Small Aral Sea in a lake. Combined with actions to spare water along the Syrdarja, the result was excellent: for the first time in 30 years, the level of the sea increased by nearly 3 meters. Unfortunately, the dam was fragile and got partly destroyed on 3 km by a storm and the ensuing flooding, in 1998. But a most important thing was realized: it was proven that an action was possible to save a reduced Aral Sea. Thus, the situation changed from a relatively hopeless disaster to a much brighter perspective, with the project "Reclaiming the Aral Sea".

While the World Bank refused to finance earlier actions, it has now given the green light for this 85 millions dollars[3] project: 21 millions are brought by Kazakhstan and the rest comes from the World Bank. The first task is to increase the capacity of water flowing into the sea. "Right now, we are flooded during the winter and we are lacking water during the summer, which is stupid" says the regional governor Serikbai Nurgisaev. Some of this flooding water from the Syrdarya is discharged in the Arnassay hollow and is lost for the Aral. The reservoirs built during the Soviet era for cotton irrigation had no locks and were not able to truly regulate the flow of the river. There were also huge losses of water in the leaking



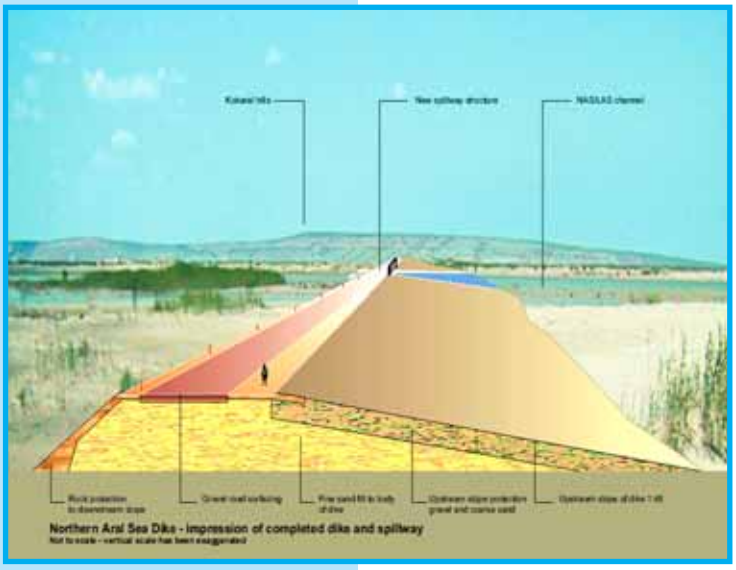

General view of the project "Reclaiming the Aral Sea"

irrigation canals. All the hydraulic works on the Syrdarya have been or will be reconstructed, with the help of Russian public company Zarubejbodstry and of the Chinese Geo-engineering company. The aim is to increase the total maximal flow above 700 $m^3/s$, against 300 $m^3/s$ today.

**Last works on Aitek dam reconstruction, in the Karaozek area, operated by the Chinese Geo-engineering Corporation. The maximal flow in the Syrdarya will be raised from 300 $m^3/s$ to 700 $m^3/s$.**

The second task is to preserve the water flowing into the Sea. It is impossible to save the Greater Aral Sea in today's conditions, because of the bad condition of Amudarya river. The Greater Aral Sea level is now 9 meters under the Small Aral Sea level. A gigantic levee of 13 km is thus being built between the Northern part and the Southern part (the Greater and the Small Aral Seas) in order to spare the water that is leaking towards the South. This Kokaral dam will close the strait connecting the two seas and will raise the water level in the Small Aral sea. Although these works will not be able to restore the Aral Sea in its past state, they will greatly improve the situation.

Of course, the dams and hydraulic works are not the only factor in the project. There are also very important educational and social measures taken to lessen the impact of the consequences of the ecological crisis and to improve the general ecological education of the population. The inhabitants of the region are receiving a financial help. There are many programs implemented to ameliorate the quality of the drinking water and of the health sector. Two research centres on the survey of the ecological situation have been created and 400 environmental experts have been educated during the last 5 years. Water preservation technologies are being introduced, with the help of international experts like the Israeli Fund Mashav (the famous drop-by-drop technology). Agriculture is being diversified: rice culture has been lowered by 35% in ten years and has been replaced by other crops. And the rice which remains the main culture is now cultivated with Italian technology using laser levelling of ground and iterative use of irrigated water.




**The Kokaral dam Northern Aral Sea dike : impression of completed dike and spillway (not to scale, vertical scale has been exaggerated). This work will bring back salinity in the Small Aral Sea to 17 g/l (versus 25 g/l today)**

But an important part of the job will be done by the dams and levees. The main dam will permit to stop the leaks and to increase the level of water in the Small Aral Sea, in the North, to 42 meters rather than 40 today (53,4 in 1960). This will mean 11.7 $km^3$ supplementary water and 870 $km^2$ of dry land covered again by water[4]. The salinity of the water should fall to 17 g/l in the sea and to somewhere between 4 and 10 g/l in the river delta. Today, the salinity is 25 g/l in the North and 46 g/l in the South. This lowering of the salinity will enable the introduction of some adapted fishes, like the brill, or the re-introduction of disappeared fishes, like the carp, the "aralski ousach" or the sturgeon. Thus, it will also enable the rebirth of the fishing industry, from its flat level of 1500 t/year to an expected 17 000 t/year after the construction of the levee.

For years, it has been the consensus within media to accuse "Soviet irrigation" as the main culprit for the Aral Sea vanishing. Now, reality appears somewhat more

complex: First, if it is clear that such technologies were decayed and unsuited for mass irrigation, it is also true that irrigation remains absolutely necessary for this region, mainly relying on rice for its food supply. Secondly, an extraordinary archaeological discovery has put into question the existence of the Aral Sea on long periods of time. Workers repairing the Kokaral dam in 1999 discovered accidentally thumbs in the dry part of the Sea, which date back to the 9th to 13th century. Some skeletons are more than 2 meters high, which denotes a flourishing civilization. Given that those thumbs were discovered in a place which was covered by 14 meters of water in 1960, it is now established that the level of the Aral Sea did fluctuate wildly during the centuries, without man's action.

**One of the remains found in the Aral Sea, dates back to the 9th century.**

Whatever the cause, there are two ways to react in front of an environmental catastrophe like the Aral Sea drying: one is to accuse man and technology and to lament impotently. The other is to use technology, knowledge and education to change the situation for the better. The Kazakhs seem to have chosen the second way, with the help of the policy change in the World Bank[5]. And dams will play a crucial role in this success story ! ●

1. The Aral sea is located in Central Asia in the lowlands of Turan. Administratively the water body is divided between the Republics of Kazakhstan in the north and Karakalpakistan in the south. The latter is an autonomous republic within the republic of Uzbekistan.

2. Médecins sans Frontières (Nobel Peace Prize 1999), Activity Report 2001.

3. All costs are expressed in US dollars.

4. Recently, the old Soviet idea to transfer part of the water resources of Siberia (the Ob River) to the Aral basin, reappeared. The huge 2000 km canal with several pumping stations could provide annually 25 km3 of fresh water, which would be supposedly purchased by Central Asia Republics. But the probability of realization of this plan is very low.

5. ICOLD supports the policy of the World Bank as expressed in its new Water Ressources Sector Strategy. See http://icold-cigb.net/lettowb.htm

# No renewable energy without hydroelectricity !

**The debate is raging on the inclusion or exclusion of hydroelectricity among renewable energies. When the antidam movement is of course in favour of the exclusion, strong answers are coming from the World Energy Assessment chairperson and from Europe.**

During the 13th Joint French-German Council on Environment, which took place February 3 in the French city of La Baule, both Environment ministers, Roselyne Bachelot and Jürgen Trittin reaffirmed their commitment to the ratification of the Kyoto agreement.

"Our joint action (in the fight against global warming) comes within the framework of the Kyoto Protocol and we renew our appeal to Russia to ratify the Protocol" said the two ministers, who wished that "European Union continue to play a key-role in the fight against climate change". Both insisted on the role that renewable energies have to play in that context: "We are determined that the International Conference on Renewable Energies, taking place next June in Bonn, be a real success and give the signal for a global progression of renewable energies" says the final release of the meeting, which also invites their colleagues from the Energy ministries to reach an agreement on "an ambitious objective on that matter". Later, during the press conference, they declared that UE should set a goal to be reached by 2020 : the share of renewable energies in gross domestic energy consumption in the European Union must reach 20% by that year. Presently, it is 6% and the European Commission's White paper for a Community Strategy has set out a plan to double that figure by 2010.

But the two ministers differed as to what exactly was renewable energy. While Jürgen Trittin seemed to stick to the EU definition, which excludes large hydroelectric plants, Roselyne Bachelot insisted that all the renewable energies had to be developed (wind, solar, hydro, geothermic, wood…) and that none should be privileged. She also stressed that "any ambitious objective in that field implies to include large hydroelectric dams". "There are too many coteries among renewable energies, everything is needed", she added.

French and German Environmental ministers discussed renewable energies in their meeting on the Atlantic Coast city of La Baule

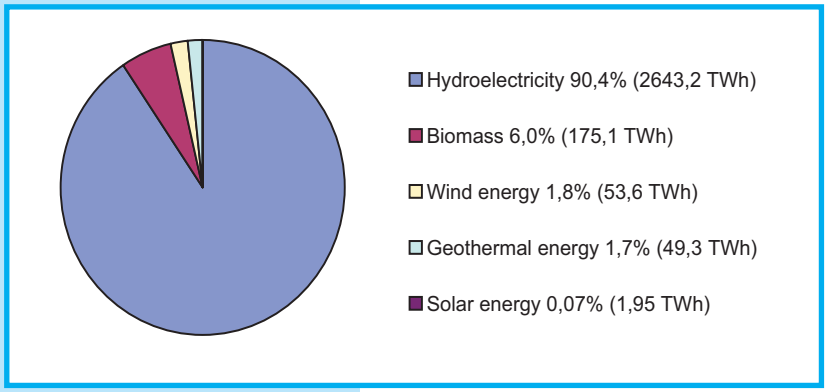
This is a welcomed intervention in the debate on hydroelectricity and greenhouse effect. As is well known, the antidam movements are trying for some years now to counter the idea that dams are not emitting greenhouse gases (we will come back on this question in our next issue). They are fighting a battle in the framework of the so-called "Kyoto mechanisms" (Joint Implementation and Clean Development Mechanism) which were designed to lower the costs of achieving emissions reductions, by means of transactions abroad.

Joint Implementation offers the opportunity to an Annex I country to achieve (part of) its Kyoto commitment through investments in GHG abatement projects in another Annex I country. Annex I countries are more or less OECD countries

Clean development Mechanism (CDM) intends to encourage the sustainable development of Annex-I countries by means of capacity building and technology transfers. At the same time, CDM should enable Annex I countries to meet part of their Kyoto commitments cost-effectively through abatement projects in Non-Annex I countries. Many issues still need to be resolved before the CDM is to become an effective instrument by which the commitments of the Kyoto Protocol can be met.

One of the problems is that the green movement is fighting tooth and nail to impose their own conception of sustainable development, which is often translated in "zero growth" or "limits to growth" solutions. The ecologist movement has already succeeded in barring completely the nuclear technology from any access to the Kyoto mechanisms. They want now to replicate this "success" with hydroelectricity. During the 9th Conference of Parties to the UN Climate Convention, which took place last December in Milano (Italy), 13 green organizations* published a document called "Twelve Reasons to Exclude Large Hydro from Renewables Initiatives". Besides the usual critics against dams, already expressed in the antidam propaganda, there are some specific points related to greenhouse gases. According to the 13 organizations, "large hydro will increase vulnerability to climate change"… They also claim that "in tropical countries, hydropower plants appear to have a much greater impact on global warming than natural gas plants generating equal amounts of electricity"!

**Structure of the World production of renewable electricity in 2002.**




Source : Worldwide electricity production from renewable energy sources; fifth inventory, Observ'ER - EDF, December 2003

Fortunately, the International Hydropower Association was also present in Milano and underlined in their press release "hydropower's contribution to Kyoto targets". "Hydropower is not just a means of combating GHG emissions; water storage also supports adaptation to climate change. The beautiful synergy relating to the storage of both water and energy within hydropower reservoirs should be optimized wherever possible"

In the European Union, the antidam movement succeeded in having the draft for the Kyoto Protocol Linking Directive mentioning the WCD report in the following paragraph : "In the case of hydroelectric power production project activities with a generating capacity exceeding 20MW, Member States shall ensure that relevant international criteria and guidelines, including those contained in the World Commission on Dams year 2000 Final Report, are taken into account during the development of such project activities."

As is well known to our readers, although there is a general consensus on the basic core values and the strategic priorities referenced in the WCD report, there is also a general rejection of the very WCD guidelines that this EU draft paper wants to impose on hydro projects. Simply because it is widely recognized that those guidelines ("impractical" according to the World Bank Water Resources Sector Strategy) would block most of hydroelectric projects. Also, there is no scientific, technical or sustainability criterion that supports exclusion on the basis of size. This has been recognized by UNEP Executive Director Klaus Töpfer, who said "We are no longer concerned by the small or the large, but the well planned and well managed".

Moreover, the last figures released on the growth of renewable energies in the world are a warning to those who want to restrain large hydro. Even if new form of renewable energies like wind energy or solar cells have experienced huge growth rates during those last years (respectively 29.2% for the wind and 13.5% for the solar between 1993 and 2002) their part in worldwide electricity production from renewable sources is diminishing. An examplary case is the European Union, where hydroelectricity production has decreased by 16.1% in 2002; this is due to unfavorable climate factors but also to restrictions introduced by the new

* : International Rivers Network, Friends of the Earth International, CDM Watch, Campaign to Reform the World Bank, Oxfam America, European Rivers Network, Rivers Watch East & SE Asia, Rivers and People, Network for Advocacy on Water Issues, Energy Working Group of the Brazilian Forum of NGOs and Social Movements for the Environment and Development.

European water directive, which imposes compensation water (minimum flow in the rivers). Thus, despite huge increase in wind and solar production (respectively 33.1 and 41%), Europe is moving away from its ambitious objective rather than nearing it. This shows that any ambitious objective for increasing renewable energies' part in electricity production is doomed to fail, if large hydro is rejected on ideological grounds.

This fact has been recognized by the World Energy Assessment, a program jointly commissioned by UNEP, UNDESA and World Energy Council. WEA is chaired by Jose Goldemberg, former WCD commissioner. Recognizing that affordable modern energy supplies are not accessible to 2 billion people and that the use of fossil fuels is incompatible on the medium term with the goal of sustainable development, the WEA sees only three ways to expand energy services while simultaneously addressing the environmental impacts associated with energy use : energy efficiency, renewables and advanced energy technologies. As renewables, the WEA considers "large hydro, traditional biomass and new renewables (wind, solar, geothermal, small hydro…)". Jose Goldemberg answers to the above mentioned publication (12 reasons to exclude large hydro from renewable initiatives) by saying that "The arguments given against large hydro address a number of problems that might be relevant but which cannot - from a technical viewpoint - eliminate «large hydro» from the category of renewables."

Thus, until now, the anti-dam campaign has been relatively unsuccessful outside Europe. There are currently 11 large hydro projects being ready for CDM: three in Panama, three in Mexico, two in Costa Rica, one in Guatemala, Colombia and Chile. Most of them are organized through the World Bank Prototype Carbon Fund. But the debate is continuing and will certainly continue for a long time. ●

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# True data about large Hydro

**François Lempérière (Former President of the Technical Committee on Cost of Dams) has written a text on these points, which can be useful for all those who need to debate on the subject. We publish large excerpts from this text.**

Opponents to Dams are now lobbying for excluding large hydropower from renewable energies ; in order to appear responsible they propose, however, to include in renewable energies a part of small hydro (under 10 MW), tidal plants and waves energy. Since small hydro, as they define it, represents about five per cent of the existing and potential hydroenergy; since tidal realistic potential is about 1% of hydropotential; and since waves energy utilization is technically very difficult and extremely expensive, it should be clear that the proposal from dam opponents would excludes from renewable energies the most important and reliable one i. e. the so called large hydro.

**1. What is the hydro potential ?** The technically feasible potential is about 15 millions GWh/year. The potential economically feasible at present market price is 8 millions of which 3 are already in operation or construction. The presently operating hydropower represents 8% of the world energy and by far most of the renewable electricity.
Richest countries are already using most of their hydro potential, developing countries a small part. 90% of future plants will thus be in Asia, Africa and South America.

**2. Alleviating poverty.** The dam opponents present « large » hydropower as preventing the alleviation of poverty because it is not adapted to decentralized needs, for instance in Africa.
It is clear that largest plants are made for large needs and that other solutions may be more adapted to reduced local needs ; but most hydro plants have a 10 to 100 MW power, well adapted to most needs in any country and most hydro potential is situated in countries with huge energy needs (half of it is in 4 countries: China, India, Russia and Brazil).

**3. Sustainability**. Opponents to dams question the sustainability of hydropower when climate change and reservoirs sedimentation are taken into account.
Worldwide models about climate warming foresee within a century a temperature increase in the range of 4° and an average increase of rainfall in the range of 10% in most of the hydropower areas. Although the rain variability and evaporation will also increase, there is no reason to foresee an average large reduction of hydropower output. The relevant increase of spillways capacity, to be made along a century on dams already fully paid has little impact upon hydropower cost efficiency.

The impact of sedimentation on part of world reservoirs may have serious consequences on storage for irrigation but a much more reduced impact on hydropower output because, even a reduction by 50% of a reservoir capacity means a much lower reduction of the hydropower supply. Moreover, the income from hydropower when investments are already paid after 30 or 50 years give huge resources for de-silting reservoirs by flushing or adapted dredging.
The power supplied by existing reservoirs is also often improved by plants refurbishing, new installed capacity and possibly dams heightening.
Decommissionning of powerplants has only applied to a very low pourcentage of existing global capacity.

The WCD Report did suggest that the average life of dams was less than 50 years. The experience of hydropower and reservoirs since one century confirms that the usefulness of hydropower will apply during centuries and that the existing hydro plants will probably supply along the 21th century about 90 % of their present output.

**4. Reducing global warming**. The 2000 WCD report gave totally wrong figures about the impact of dams on greenhouse effects and did suggest that this impact could be quite nil in the 21th century. In fact hydropower prevents use of fossil fuel plants (oil, gas, or coal) with a saving in the range of 300 tons of carbon per GWh.

The saving in the 20th century has been roughly
50 years x (1,5 millions GWh as average) x 300 = 22,5 billions tons.
The saving along the 21th century will be : 178,0 billions tons of carbon.

| | |
|---|---|
| Existing plants: 90 % x 100 years x 3 millions x 300 | 81,0 |
| Plans built between 2000 and 2050 : 75 years x 3 millions x 300 | 67,0 |
| after 2050 : 25 years x 1 x 300 | 7,5 |

*expressed in billions tons*

The possible negative impact on greenhouse effect from tropical reservoirs is very small compared to this positive impact. Hydropower which has saved 20 billions tons of fossil fuel in the 20th century will probably save 150 to 200 billions in the 21th century. Its contribution for reducing the global warming and the waste of oil and gas resources will thus be very important at an attractive cost. The total oil and gas available at present costs is about 200 billions tons.

Conclusion

-Hydropower is and will remain the most important and reliable renewable energy; its overall cost is often attractive as compared with thermal plants and anyway much lower than any other renewable solution.
-Hydroplants over 10 MW represent 95% of relevant existing and potential hydropower.
-Hydropower is presently contributing 8 % of world energy and 20% of electricity produced. These percentages are likely to be the same in the future, if large hydro is not condemned. ●

## Extract of a letter received from Dr Wolfgang Pircher, Honorary ICOLD President

Congratulations on initiating The Dams Newsletter, and all good wishes for many future issues! I am sure it soon will become an indispensable medium to propagate all that kind of important information and urgent messages to our National Committees which do not fit into the format of a circular letter.

The clear and concise correction by the Chinese NC of those grossly exaggerated reports on cracks in the Three Gorges Dam which had been spread so eagerly by the international press made an old dream come true, which I had cherished already in my time of office : immediate reaction to any false or distorted reports about dams by a report drafted by the NC concerned, and distributed to all NCs by the Central Office in order to provide all our members with the necessary arguments in discussions with dam opponents in their own countries (a minor flaw : the depth of the cracks, crucial for their possible effect on safety, is indicated for a total of 78 cracks as "less than 3m" on page 6, but said to "extend from 1 to 1.25 m" for a total of 80 on page 2). In my time, Mr Cotillon did not have enough staff to take care of such a service, whereas you have now a managing editor. I do hope, that his indispensable counterparts will soon be available to him too: a Media Correspondent nominated by each NC. (…)

Narmada : it is good that the overall success of this extremely contentious project, predicted always by its proponents, is now becoming obvious and acknowledged at least by the national press. To my knowledge, the benefits for the three states receiving the water from Narmada were never seriously denied. Criticism focused rather on the number of people who had to be relocated from the future reservoir (according to an article in *Waterpower & Dam Construction*, March 89, page 20, 237 villages with 67 000 people had to be relocated, contrary to the 14 villages with 4600 families quoted in the Newsletter) and on the harsh methods applied and the mean compensations granted in forced resettlement. (…) So what about updated, incontestable figures on resettlement and indemnification for those affected by the reservoir?

## The Editor replies

Dear Dr Pircher,

Thanks for your comments and your reaction to the first issue of the newsletter.

On the contradiction you mention, we believe the figure to be trusted is the figure mentioned on page 6, since it originates from the chief engineer of the project. The article page 2 was written earlier by the editor, on the faith of figures quoted by Xinhua news agency.

On the matter of displaced families in Narmada, the article in the Newsletter was just a press review. The figures are quoted from the article and do not engage ICOLD. Of course, the Indian National Committee is welcomed if it wants to bring more precisions on this point. We hope, precisely, that the Newsletter can become a tool for dams people to request information from colleagues from other countries in a less formal way than in the Technical Committees or General Assemblies. ●



# World Register of Dams - Version 2003

The updated version of the World Register of Dams is now available on the ICOLD websites, at the price of 180 euros. As Secretary General André Bergeret explains, the World Register "now lists 33,105 dams and five fields have been added : Electric Power Installation, Average Annual Energy Output, Irrigated Areas, Volume of Water Stored for Flood Control and Number of People affected by Resettlement."

With the licence, a login and a password, a book of general information and a note of annual information concerning dams under construction are supplied. That licence is valid until the publication of the next version of the Register, scheduled for 2008.

The order form for the licence can be downloaded on the website: http://www.icold-cigb.org/icoldorder.htm

## New Reservoirs in UK?

This is one of the countries whose media was among the harshest enemies of dam construction. Of course, it could be explained by intrinsic factors : Until recently, United Kingdom was not considered to be threatened by a lack of water and was an energy exporting country. But last December, things began to change. A severe drought affected much of England and Wales, after an exceptionally dry summer and autumn. All over the country, the water levels in reservoirs were very low at the beginning of December. So much so that the water distributing companies were sounding the alarm and drawing plans to increase the water supply.

The Guardian (December 1st) has published a big report on this. "Faced with ever increasing demand for more water in the south of the country and with the problems caused by climate change the water companies have come up with a variety of plans to cope with expected shortages, including new reservoirs, desalination plants and recycling of sewage back into drinking water." (our emphasis) Of course, this idea of new reservoirs has immediately aroused hostility from the environmentalists. Glenn Watts, from the Environment Agency water resources department in Bristol, said : "We found it disturbing that some companies were catering for leakage rate to go up and plan to build more reservoirs instead, claiming it is more economic."

The leakage problem is undeniable. In some cases, the leakage rates are higher than in many developing countries, close to 60% in the London area situated north of the Thames river. The mains in London were built in the Victorian period, with one-third over 150 years old. Thames Water company has decided that the whole network is rotten and now wants to go for a complete replacement Overall, "the average leakage rate for companies is more than 20%, despite considerable improvements since 1997 when John Prescott, the Environment Secretary ordered a program of reduction."

But despite expected further improvements, water companies like Mid Kent Water (region of Canterbury), Thames Water or Portsmouth Water (West Sussex) plan for new reservoirs or enlargement of existing ones. Surprisingly, the Guardian which usually leads the pack of those media who mobilize against dam construction in third world countries, pretending that reservoirs are an oppression against human rights, does not mention this issue.

## ...and in the world

The Observer, in a special report) published on February 15, also concentrates on the same problem, claiming that "Britain is the most water-stressed country in Europe", but putting it on a more global perspective. Describing the disasters caused by the lack of water, it then concentrates on the big projects aiming to solve that problem. It quotes the usual critics, mainly against the Three Gorges Dam and the National Hydrological Plan in Spain, which will divert water from the Ebro north to Barcelona and south to the semi-arid regions of Valencia, Murcia and Almeria. But the author, after having reviewed all the means to avoid doing those great projects, is obliged to conclude : "For all those good intentions, though, the scale of the global problem (and perhaps the politics of persuading people to use less water) means more big projects will have to be built in the future". And it ends by quoting David Smith, of UNEP : "Civil engineering projects to transfer water to users are absolutely vital. That is not the issue; the issue is how to ensure the most appropriate civil engineering projects in economic, environmental and social terms are chosen." ●



# Long Term Benefits and Performance of Dams

The 13th British Dams Society (BDS) Conference will be held at the University of Kent, Canterbury between 22-26th June 2004.

BDS invites all from the European and wider family of ICOLD to participate in the conference which will include technical presentations, technical visits and the prestige lecture – the Geoffrey Binnie Lecture, exhibition and a full accompanying persons programme around the historic cathedral city of Canterbury and the surrounding 'Garden of England'.

Technical visits will include visits to water supply reservoirs and flood alleviation schemes including the Thames Barrier.

Conference Topics

Papers have been offered on the following topics:
•The benefits and social impacts of dams
•Lessons learned from historical visits
•Refurbishment and replacement of various elements of dams
•Discontinuance and abandonment of dams
•The use and performance of synthetic materials in dams
•Recent flood events and climate change
•Rehabilitation case histories
•Research
•Risk Assessment
•Instrumention

Guests at the conference will include the President of ICOLD, Mr Cassio Viotti.

# AGENDA

**30 May - 04 June 2004**

Brisbane, Australia
International Conference on Hydroscience and Engineering (ICHE)

**June 1-4 2004**

International Conference for Renewable Energies, Bonn, Germany. The conference convenor is the government of the Federal Republic of Germany, represented by the German Federal Ministry for Economic Cooperation and Development (BMZ) www.bmz.de/en and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) www.bmu.de/en/

The conference will focus on solutions and political commitments to address the challenges which industrialised countries, developing countries and economies in transition are facing: how can renewable energies facilitate access to energy for the 2 billion people without access to modern energy supply, how can they expand their key role for the protection of the global climate, and how can they contribute to economic development and employment as well as to energy security and technological advances?

The website of the conference is http://www.renewables2004.de/

**June 22-26, 2004**

Canterburry, U.K.
(University of Kent)
13th Biennal Conference - ICOLD EUROPEAN SYMPOSIUM 2004, "Long term benefits and performance of dams"
http://www.britishdams.org/meetings_events/04-06-22%20BDS%20Meeting.pdf

**July 6-7, 2004**

Long-Term Water and Energy Security, International Symposium, 6-7 July 2004, Ahmedabad, India. Contact Dr. M. B. Joshi Executive Engineer (Kalpasar) Block No. 8, 7th Floor, New Sachivalaya Complex, Gandhinagar 382 010. Gujarat, INDIA Kalpasar Project 8/7, New Sachivalaya Gandhinagar 382010. Contact cc-nwrs@gujarat.gov.in
www.kalpasar.gujarat.gov.in

**August 16-20, 2004**

HydroVision 2004
Montréal, Québec, Canada
http://www.hcipub.com/hydrovision

**September 13-30, 2004**

Trondheim, Norway
Hydropower and the Environment (HE2004)
For more information regarding the programme and application procedures, please contact us at mail@ich.no
http://www.ich.no/index.htm

**September 21-23, 2004**

1st INTERNATIONAL CONFERENCE ON MANAGING RIVERS IN THE 21st CENTURY : ISSUES & CHALLENGES

Penang, Malaysia
Deadline for abstract submision: March 15, 2004
Contact: Ms. Nor Hasliza Wan Chi
E-mail: rivers04@eng.usm.my
Website: http://www1.eng.usm.my/redac/html/conference/Rivers2004/default.html

**September 27-29, 2004**

Amsterdam RAI, Netherlands
International Conference on Climate Change: a challenge or a threat for water management?
E-mail: Roelof.kruize@dwr.nl
Website: http://www.nva.net

**October 18-20, 2004**

Porto, Portugal
HYDRO 2004: A New Era for Hydropower
Contact: Mrs Alison Bartle or Margaret Bourke
E-mail: conf@hydropower-dams.com

**November 24-26, 2004**

13th International Seminar on Hydro Power Plants, , Vienna, Austria. Deadline for abstarcts is 29th February 2004. Contact Dr Eduard Doujak, Institute for Waterpower and Pumps, Vienna University of Technology, www.tuwie.ac.at

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