FIFTH WATER INFORMATION SUMMIT: REGIONAL PERSPECTIVES ON WATER INFORMATION MANAGEMENT SYSTEMS

OCTOBER 23-25 WATER INFORMATION SUMMIT, FT. LAUDERDALE, FLORIDA, USA 2002

MAPPING GLOBAL INVESTMENT IN WATER PROJECTS: DATA ANALYSES

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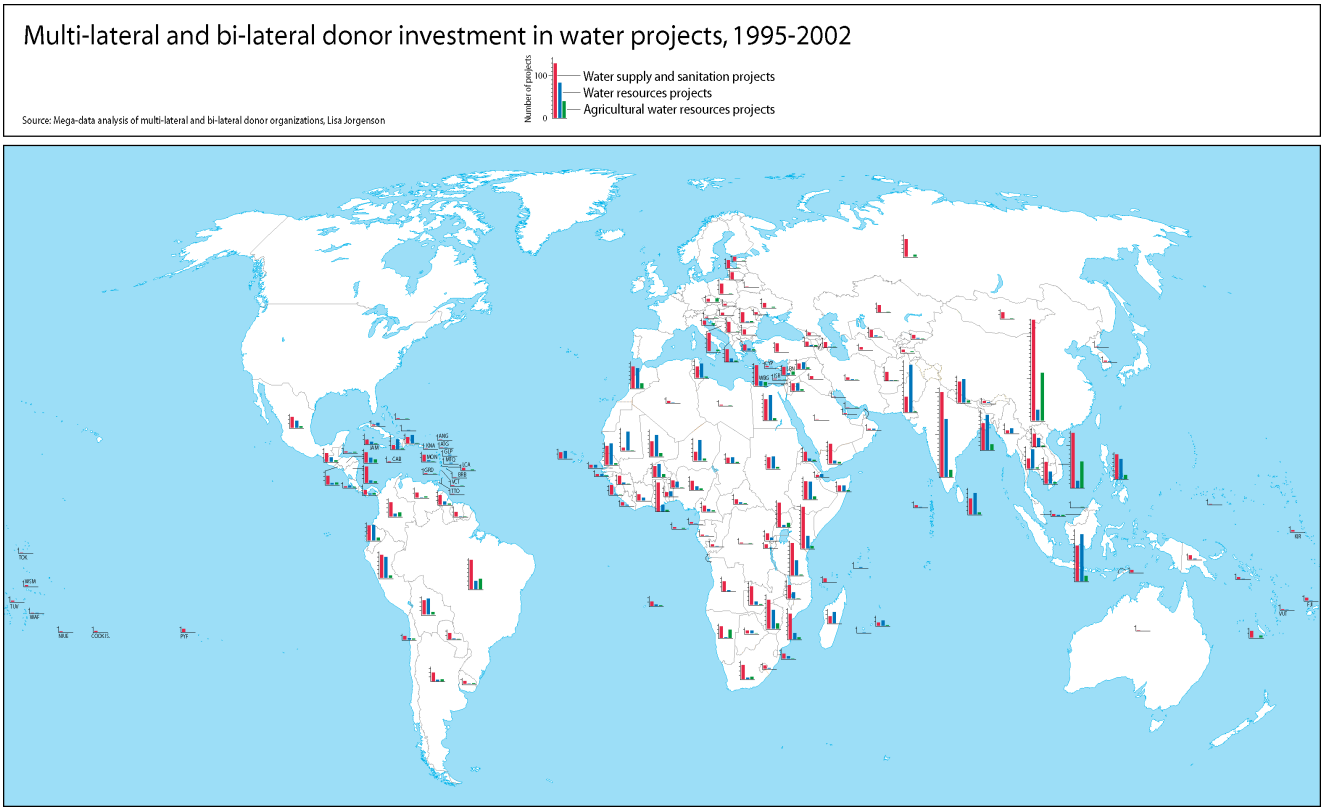
As we look at how to provide water for more of the global population, it might be useful to look at what the multi-lateral banks and bi-lateral country aid organizations have already invested in each country (Map 1).



Map 1. – Multi-lateral and bilateral donor investment in water projects, 1995-2002. Source: Mega data analysis of multilateral and bilateral donor organizations by Lisa Jorgenson. (See apendix file for this and other maps).

This presentation looks at how the project portfolios of many of the major donor organizations funding water have made their project investments available on the web.

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During the early 1990's IDRC in Canada took on the task of providing a mainframe computer system called the International Network for Development Information Exchange (INDIX). This provided a system where you could search the project files and reports of more than 70 international, regional, national and non-governmental development agencies, and more than 150 developing country organizations.

In 2000, the World Bank took over this project folding DAI.INDEX into the design of the Development Gateway computer system. The Development Gateway does not just have word search capabilities on old record reports but can provide interactive project files as the work is being performed.

LOCATING WATER PROJECT DATA

Using the Development Gateway, I investigated how many "water projects" had been financed by the international donor community. The projects I was trying to focus on are projects relating to the use, quality, and allocation of water resources. Limiting the search to projects active between the dates from 1995 to 2002, projects records can be located within the Sector Categories:

Water Supply or Sanitation projects	3658 projects
(with country names)	3169
Water Resource Management projects	617

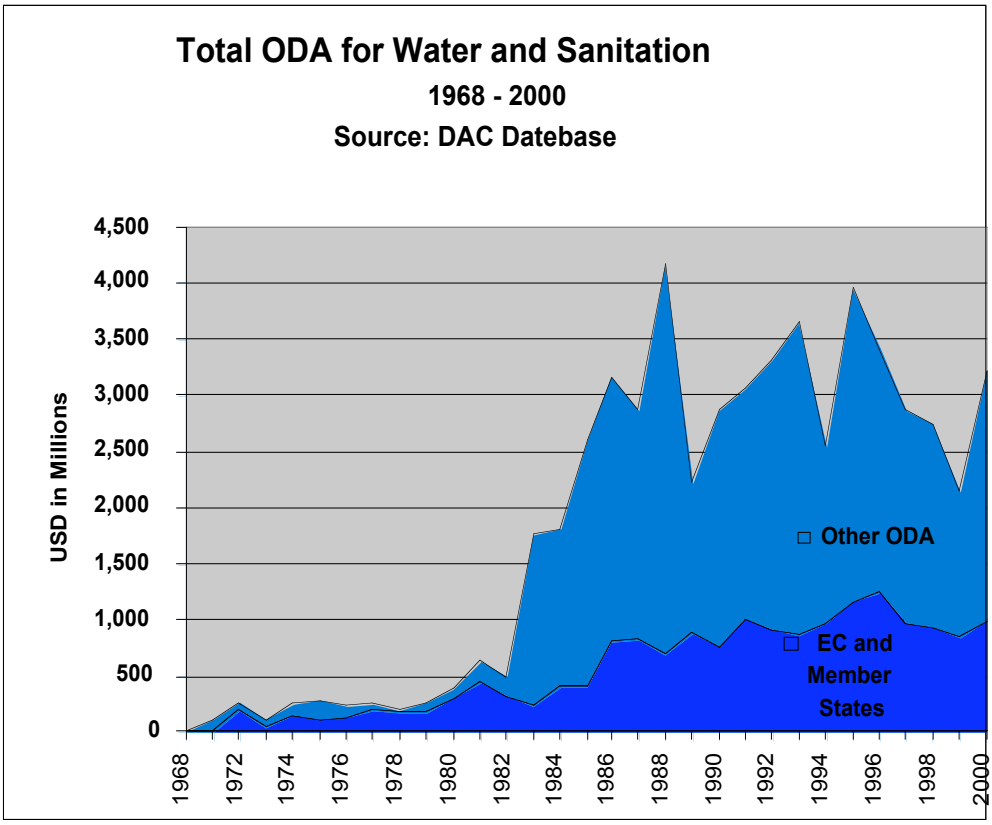
However, researching the use of water in Agriculture is more difficult because the Development Gateway uses the Sector pull-down named "Food Security". In this area project data can be found by using the DAC Code key words" "Agricultural Water Resources". This will bring up a list of 2229 projects. However, sorting by completion date you will find 1819 projects that have no dates. Investigating the quality of this data, however, shows that most of the undated files came from OECD in 1996 and therefore, it might be possible to presume that these were active project in 1996. The WB will be working with this data over the next year

Agricultural Water Resources projects	1819 projects
(with country names)	378
(with start/completion date)	401

WHO INVESTS IN WATER

The Development Gateway does include major development banks; the World Bank, the Inter-American Development Bank, and some of the African Development Bank project data. However, many other large donor groups still remain outside the system. Coordinating and ordering project portfolios on the 13 agreed reporting categories is expensive. UNDP and UNEP are working on providing better data. The African Development Bank is now partnering with the Development Gateway to add their portfolios.

However, the European Bank for Reconstruction and Development (EBRD) and the Islamic Development Bank do not participate, nor does the Asian Development Bank. These banks do maintain their own project portfolios on the web but the data is not always comparable or readily accessible.

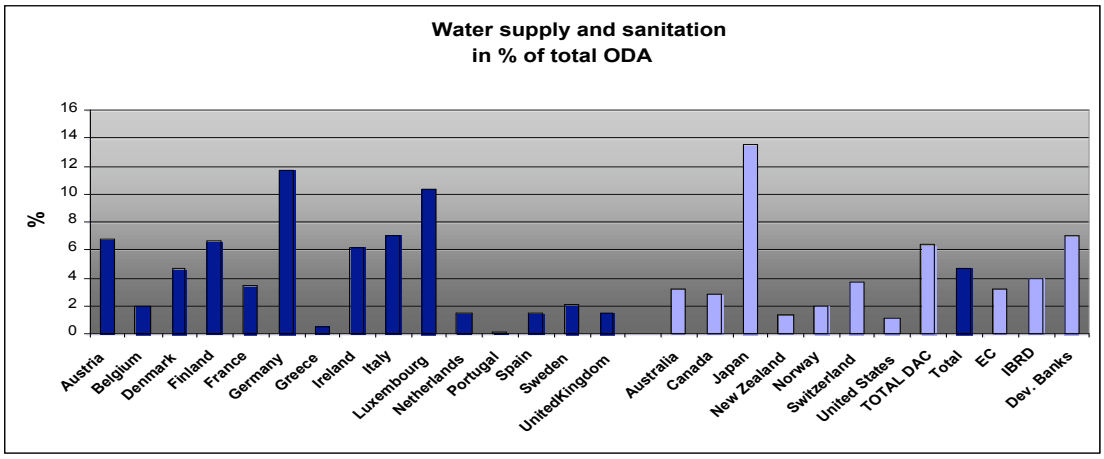


Source: Calculation based on OECD/DAC data for 2000

So urce: Mogens Bregnbaek, DANIDA representative at the WSSD Water Partnership Meeting, Washington, 2002 http://europa.eu.int/comm/environment/wssd/

Some of the multi-lateral donors have very good, and in some ways exemplary designs for organizing the water project portfolios. Asian Development Bank, maintains it's own system what is available on the web with very clear categories for water projects. They formed a "Water Team" after the Morocco World Water Forum meeting. Their project site lists their water projects very effectively along with WHO data to evaluate how a country is performing. It is in a very accessible format. UNDP and the World Bank also have organized their projects in a very accessible way so you can look at their water and sanitation portfolio by country.

Of the multi-lateral banks the EBRD and the Islamic Development Banks are the most difficult. For these 2 institutions the project title is the only way to "hand sort" out their water project portfolio.



Source: Calculation based on OECD/DAC data for 2000

DONOR PROJECT PORTFOLIO WEB SITES

The purpose of my presentation is to provide a list of the web sites that provide information on projects from as many of the multi-lateral donor organizations and bi-lateral donor organizations as possible.

Multi-lateral donors in water (Note: Most of these sites can not be sorted by date. The date represents "Active" projects.) * Indicates the projects were hand selected out of the list by project titles.	**Water Supply and Sanitation projects**	**Watershed Management projects**	**Irrigation projects**
World Bank, http://www4.worldbank.org/sprojects/Default.asp	(Water Supply/ Sanitation) (Date 95-02) 318	(flood protection) (Date 95-02) 41	(Irrigation and Drainage)* (Date 95-02) 146
Inter-American Development Bank http://www.iadb.org/exr/english/PROJECTS/projectsdoc.htm	(Sanitation) 71	(Environment)* 7	(Agriculture)* (Irrigation) 4
African Development Bank http://www.afdb.org/projects/home_projects.htm	(Public Utilities)* 7	(Agriculture)* (Fisheries) 7	(Agriculture)* 10
EBRD http://www.ebrd.com/country/sector/mininfra/signed/main.htm	(Municipal & Env Infrastr)* 37	(Municipal & Env Infrastr)* 7	(Agribusiness)* No projects listed as "irrigation" but several loans to industries that are large water consumers 0

Islamic Development Bank http://www.isdb.org/search/search.htm	(no sector designations)* 4	(no sector designations)* 0	(no sector designations)* 4
Asian Development Bank http://www.adb.org/Water/operations.asp (look for "loans") http://www.adb.org/Projects/reports.asp	(Water Supply/ Sanitation) 10 loans 50 tech asst 62	(Agriculture & Nat Resources)* 33	(Irrigation & Rural Dev.) 3 loans 33 tech asst 41
UNDP (Data shown here from) http://www.undp.org/seed/water/PIP/ProgInfoProfile.htm http://www.developmentgateway.org/node/100647/aidasearch#SEARCHHELP	(Water Resources Planning & Development) 133	(Interregional *Water Resources Planning and Development* Projects) 153	
UNEP http://www.unep.org/gef/resources/resources.htm	(no project designations except GEF)		
Bi-lateral donors			
OECD/DAC – 23 countries (Data shown here from Dev. Gateway) http://www.developmentgateway.org/node/100647/aidasearch#SEARCHHELP	(Water Supply) 344 (Sanitation) 13 (3 dupl.) 354	(Water Resource Management) 46	(Irrigation) 3
US/AID http://www.dec.org/partners/wssd/index.cfm?fuseaction=search.start (Data shown here from Dev. Gateway) http://www.developmentgateway.org/node/100647/aidasearch#SEARCHHELP	(Water Supply) (Sanitation) 29	(Watershed) 9	(Irrigation) 13

The map I am showing I constructed by using the Development Gateway AIDA project listing and adding the other water project portfolios from as many other donor web sites as I could. The map shows projects lists as "active", "ongoing", or "planned or pipeline" projects for "Water Supply and Sanitation", "Water Resource Management" and "Agricultural Water Resources/Irrigation". I went through many of the project lists to delete projects that were not active and completed before 1995.

Unfortunately "Agricultural water resources" is not a standard term now found on the Development Gateway "home page" search engines. These projects had to be pulled out by the "key word" and assembled together with the other non-reporting multi-lateral banks.

The World Bank lists "Irrigation" projects. However, the Asian Development Bank lists their projects under "Irrigation and Rural Development" and is the only site to provide water evaluation tables. This is the best multi-lateral bank site because it allows task managers to look at urban water supply/sanitation information and irrigation/reservoir data side by side. http://www.adb.org/Water/Indicators/tables_charts.asp

OECD in Paris provides for the Development Gateway the data from 23 countries, the European country data and Japan aid (JICA). (SEE bar chart showing major water donors Attachment 3). However, several countries maintain web sites with their own projects portfolios. The best site for water projects coordination is the United Kingdom DFID site that provides a water access button on its homepage. (SEE DFID home page http://www.**dfid**.gov.uk/)

Other bi-laterals such as the United States contribute to the Development Gateway, but do not have dates on some of their projects. This limits your use of USAID project data as a "pull down" on the Development Gateway system.

POTENTIAL USE OF WATER PROJECT DATA

Now what I would like to show you is the how this donor "water project loading" looks when overlaid on a series of maps that show on the base map more information on the status of developing countries. I have colored these maps so the range of color with show a continuum of "stress" conditions from gold to blue. Yellow being stress and darker green higher levels of resources and development. Maps 1-6 are in the appendix to facilitate downloading. The titles are listed below:

Map titles:

1. Multi-Lateral and bilateral donor investments in water projects, 1995-2002.

2. Freshwater Resources per capita (cubic meters), 2000

   See also: World freshwater resources, 2000 and 2025 (pie chart) and Water-short countries in 2000 and 2025 (Map)
   www.populationaction.org/resources/publications/peopleinthebalance/pb_water

   Countries projected to experience water stress or scarcity by 2025.
   http://itt.com/waterbook/scarcity.asp

3. Population with access to improved water resources (percent), 2000

4. GDP Growth per capita, 1990-99

5. Income per Person, GNI per capita, 1999

6. Net Private Capital Flows per capita, 1999

Looking at developing countries exhibiting stress in all of these five areas and comparing where the donor community has funded water projects, these series of project maps might provide a good way to see what is being done in water investment. Other factor not mapped could be countries with mega cities. By 2000, 23 cities in the world contain over 10 million people, and 18 of these mega-cities are in the developing world. Funding small and mid sized towns in these countries could slow the growth of these problem cities

It also might suggest where some countries have been missed as we move into this new century. Johannesburg provided a substantial promise of new investment in water. This composite map might suggest new areas where this new investment might be needed. (Composite map).

IMPROVING WATER PROJECT DATA

The Development Gateway is still very much a work in progress. For example, the World Bank lists on its web site 246 "Water Supply Projects" active between 1995-2002. The Development Gateway system now does not include in it's list 118 of these projects.

The main objective, however, is also to critique how the donor community can improve the way they report out their water project investments.

First, It would be very useful to have a system of pointers to "speed dial" into the web sites of the donor organizations who are not reporting now of the Development Gateway. That is what I have tried to provide by following table.

Second, Organizations should be aware of the 13 agreed upon standard data points the development gateway has "Water Supply", "Water Sanitation", "Water Resource Management". As water managers we can help improve the way "irrigation" projects are categorized.

The Development Gateway uses these terms:

DAC 5 Code	**CRS CODE**	**Purpose description Categories**	**Development Gateway descriptions Categories**
140		**WATER SUPPLY AND SANITATION**	**(It uses 3 main categories as pull downs)**
	14010	Water resources policy and administrative management	2. WATER RESOURCE MANAGEMENT
	14015	Water resource protection (Most donor organizations use "floodplain", "environmental mang.", "river basin mang." Environmental mang." "fisheries". Note: "coastal zone" is not well accounted for)	2. WATER RESOURCE MANAGEMENT
	14025	Water supply and sanitation – large systems	1. WATER SUPPLY & SANITATION
	14030	Water supply and sanitation – small systems	1. WATER SUPPLY & SANITATION

	14040	River development	2. WATER RESOURCE MANAGEMENT
	14050	Waste management/disposal	1. WATER SUPPLY & SANITATION
	14081	Education and training in water supply and sanitation	1. WATER SUPPLY & SANITATION
311		AGRICULTURE	
	31140	Agricultural water resources (Most donor organizations use "Irrigation")	3. FOOD SECURITY

Third, Donor organizations could agree to structure more "water" information into the title of their project. This would be very useful. For example the project name could have a template that would standardize the title to facilitate computer word search. The project should specify location (town, or lat/longitude) and the type of water project. This is now done by about 1/2 of the organizations.

However, if you want to look at what water is being used, or the total water commitment in a river basin it is now very hard. The source of water (ie., surface/groundwater rain catchment and amount of water allocation annually) is not now a part of any donor organization project descriptions. The Development Gateway does not feel this will happen soon. Examples of poor titles and examples of better titles of existing projects are listed below:

GOOD Examples of Project Title Listing styles

ISDB	Yammounah and Ouyoun Orghosh Water Supply and Distribution	Lebanon	Ongoing
JICA	Study on the Integrated Management Plan for the Water Environment of Min River in Chengdu District	China	Ongoing
DANI	DUJIANGYAN MUNICIPAL WASTE WATER	China	Ongoing
ADB	Central Java Groundwater Irrigation Development Project	Indonesia	Ongoing
IDRC	Gray water Treatment and Reuse, Tufileh, Jordan	Jordan	Ongoing

POOR Examples of Project Title Listing styles

AFDB	District Water Supply III Project	Malawi	Ongoing
ADB	Rural Water Supply Sector Project	Kazakhan	Ongoing
DANI	Waste Water Treatment Project	China	Ongoing
DFID	Water & Sanitation	Bangladesh	Ongoing
ADB	Irrigation Management Project	Pakistan	Ongoing

Fourth, when you see countries with major donor project loading there is a need for more attention to be put on water resource management, to coordinate and plan for the allocation of the water resources, in the catchment and at the larger river basin level.
The World Resources Institute published a compendium of all donor multi-lateral bank and bi-later aid environmental assessments, but their work ended in 1996. The Dev Gateway provides a list of DAC assessment review but only with contact information. The status of National Environmental Action Plans, a required document for World Bank projects is important. The Asian Development Bank provides their assessments on the web. (SEE web site)

These maps can also help recipient communities have better access to tools. There is very substantial new investment in water coming their way. The "Donor Community" need to provide the recipient community better access to the same management tools they have built for themselves to make them equal "stakeholders". Stakeholders can be better described in the Project documents. For example, government agency, municipal authority, scientific research groups etc.

The project must specify location (town, or lat/longitude) and the type of water project. For example:

22 Water Supply/Saint projects listed for Niger -- 1 project has a town or place name

47 Water Supply/Saint projects listed for Cambodia --15 have town or place names.

This severely limits the utility of many of the most valuable web information sites for local communities. (See Country Evaluation Pages for Niger and Cambodia below:).

Examples: Countries with poor mapping ability for Donor Investment in water projects.

Niger

22 Water Supply/Sanitation projects listed for Niger--- 1 project has a town or place name,

Country	Water scarcity	Improved Access to water resources	Income per person, GNI	GDP per capital growth, 1900-1999	Net private capital flows per capita, 1999
Niger	2	2	1	3	1

Information sources:

Delineation of Drainage Basins from 1 Km African Digital Elevation Data
http://edcsnw3.cr.usgs.gov/topo/gtopo30/papers/basin.html

African Internal Renewable Water Resources of Sub-Basins
http://apps3.fao/faomap/MAPS/284.gif

Maximum Soil Moisture Storage Capacity of Africa-1998
http://apps3.fao.org/faomap/MAPS/282.gif

Percentage of Water Resources used in Irrigation
http://apps3.fao.org/faomap/MAPS/286.gif

Rains: Satellite Images of Cold Cloud Duration
http://www.fao.org/DOCREP/004/X2857E/x2857e09.htm

Cambodia

47 Water Supply/Sanitation projects listed for Cambodia 15 have town or place names.

Country	Water scarcity	Improved Access to water resources	Income per person, GNI	GDP per capital growth, 1900-1999	Net private capital flows per capita, 1999
Cambodia		1	1	3	2

82% of renewable water supplies originating outside borders
27.7 years required for population to double at current rate of natural increase

Population Density in River Basins
ftp://grid.cr.usgs.gov/pub/datafiles/asia/e-popd.gif

http://www.grid.unep.ch/activities/sustainable/wateratlas/

Project information needs to be improved. Of the projects shown here I estimate less than 1/3 can actually be mapped onto a country map with meaningful town or River Basin designations. Without this location data, it is severely limits the usefulness of some of the new hydrological data. It also limits how recipients can value and make the linkages to biodiversity investments, watershed management, or coastal and fisheries issues. This may be the most damaging finding in this investigation of the way donor project portfolios are reported.

At the project development stage Donors and recipient communities should use information on their River Basin or Catchment area. For example, data from the EROS Data Center that also can show population in-migration into the watershed area.

http://www.na.unep.net/gewex/
<ftp://grid2.cr.usgs.gov/pub/data/datafiles/asia/w_popd.gif>

Browse_Graphic_File_Description: Corresponding (W. Asia) Population Density Map

Or data for Central America on "population" and "floodplains"

http://grid.cr.usgs.gov/gallery/maps/population150dpi.gif

Information on how much water originates in the boundaries of their own country. And Water Atlas maps to educate them on the amount of rainfall, soil moisture, and their own regional needs for water conservation.

Countries whose water use exceeds 100 percent of their renewable water supplies, with population doubling times

Country	Water withdrawals as a percentage of renewable water supplies late 1980s	Years required for population to double at current rate of natural increase*
Libya	374%	20.4
Qatar	174%	33.0
United Arab Emirates	140%	24.8
Yemen	135%	21.7
Jordan	110%	19.3
Israel	110%	46.2
Saudi Arabia	106%	21.7
Kuwait	more than 100%	23.1
Bahrain	more than 100%	28.9

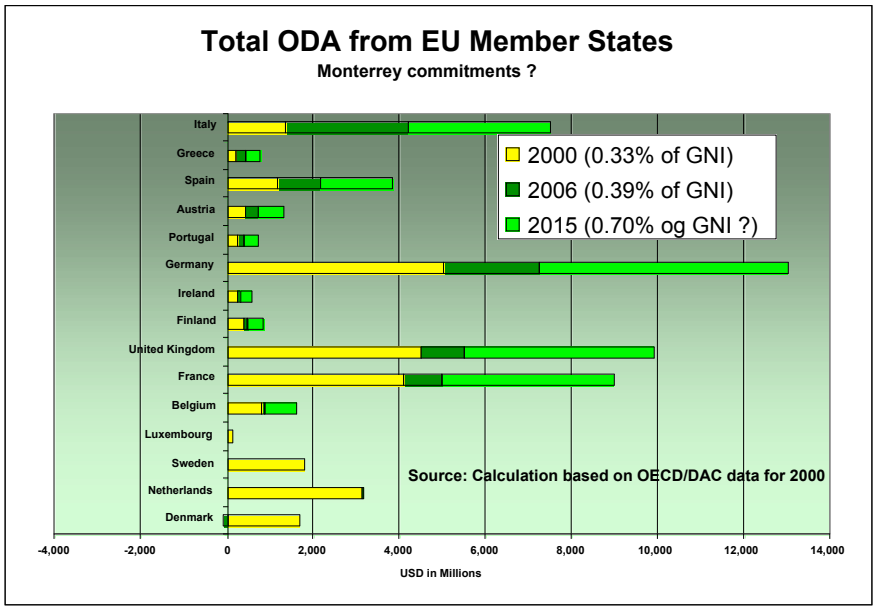
*Excludes rates of migratory flows, which are significant in some of these countries. Source: ITT Industries, Guidebook to Global Water Issues. http://itt.com/waterbook/exceed.asp Adapted from Peter H. Gleick, "Water and Conflict," 1992; Population Reference Bureau, 1993 World Population Data Sheet.

Counting and mapping projects onto a country map can have limitations. For example, how do you count large-scale projects? The Asian Development Bank approved a loan of up to US$35 million to China Water Utilities Group (CWUG), an investment holding company, to fund relatively small water projects that ADB has difficulty assisting directly. Small scale development is difficult to keep track of. Often these small projects are lumped into one loan over a region. Look at UNDP's portfolio.
(SEE Chart http://www.undp.org/seed/water/portfolio.htm.)

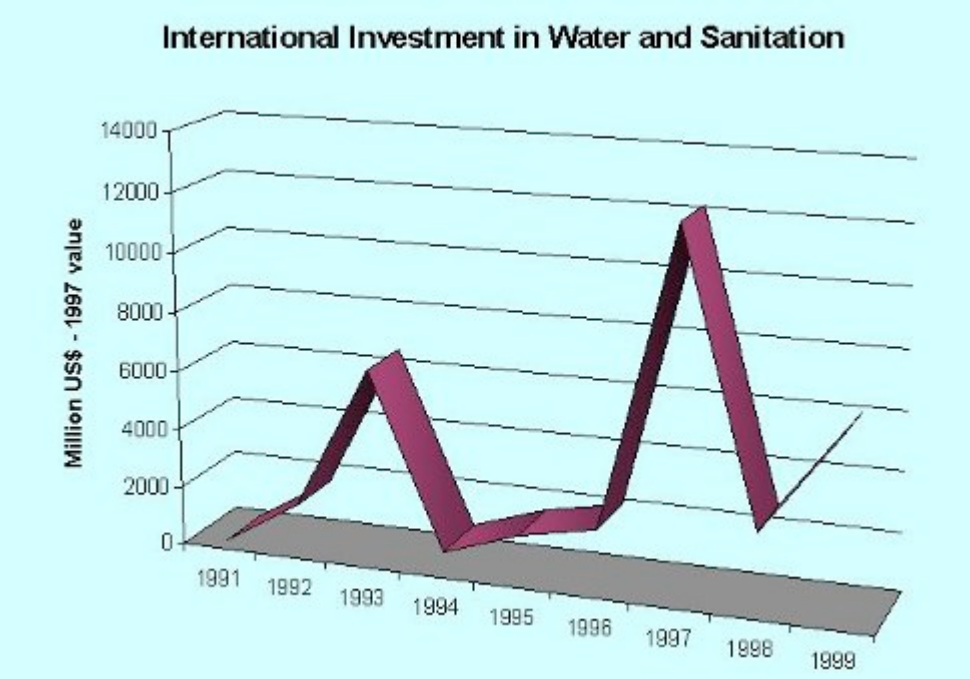
It is also important to note that EBRD is the only multi-lateral bank that has a water code for water intensive industry uses, for example breweries, sugar factories, and food canning processors. The industrial categories are not counted here.

Improving a system to account for water resource development is becoming increasingly more important to track water investment. In Johannesburg, the European Commission President Romano Prodi reported the EU now provides Euro1.4 billion a year in water-related development aid, and will increase this commitment as part of the EU pledge to increase ODA

by Euro 22 billion between now and 2006. It is also very important to note how much more private investment has moved into the field.



Source: Mogens Bregnbaek, DANIDA representative at the WSSD Water Partnership Meeting, Washington, 2002
http://europa.eu.int/comm/environment/wssd/



Source: The Water Page; International Water Companies.
http://www.thewaterpage.com/int_companies1.htm#Economic%20Significance

I would like to be able to direct more people to research centers now available on the web where valuable collections of donor investment in water projects and resources data is available, discuss how some of the sites are cumbersome, and under report water data. The site managers themselves want to shape their sites to perform better for the user. This a valuable time for "user" groups to help inform these systems how to better organize the data to make "sector" classifications and word search terms more useful and less repetitive. Much more needs to be done to quantify the amount of water each project commits to a new use.

It is a pleasure that this conference is taking place. Water managers everywhere have a growing responsibility to plan for and utilize water in the most effective way with better information.