

# WATER ACADEMY

FRANCE

Henri Smets\*

## **THE COST OF MEETING THE JOHANNESBURG TARGETS FOR DRINKING WATER**

A review of various estimates and a discussion  
of the feasibility of burden sharing

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\* Member of the French Water Academy and of the European Council of Environmental Law  
(e-mail : [henri.smets@smets.com](mailto:henri.smets@smets.com))

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# THE COST OF MEETING THE JOHANNESBURG TARGETS FOR DRINKING WATER

## A review of various estimates and a discussion of the feasibility of burden sharing

### SUMMARY

This report provides a direct calculation of the cost of meeting the Johannesburg targets for water supply and sanitation and a comparison with published data. It concludes that an additional investment of \$10 billion per year is needed to serve the unserved and that development aid for water should at least be doubled. Thus **aid for water should be increased by at least \$3.4 billion per year.**

Such an investment programme for providing water supply and sanitation to the unserved can realistically be achieved because the cost of the necessary additional investment is not too far from current investment. If additional investment was very much larger, a number of parties would refuse to bear higher costs and there would be a financial gap which would prevent the Johannesburg targets to be reached in time.

The success in achieving the targets for water set in Johannesburg will depend on the extent of solidarity between the rich and the poor in developing countries and on the extent of solidarity between developed and developing countries. It remains to be seen whether solidarity for water will be implemented to a sufficient extent.

Special attention is paid to the case of **sub-Saharan Africa** and it is concluded that **aid for water in this area should be tripled** because of the greater needs and the smaller financial means available. This would mean providing grants of at least **\$1.2 billion per year** in addition to current aid for water (\$0.6 billion per year). While such a transfer from industrialized countries is achievable, it might not occur because the financial commitments made so are not sufficient.

The contribution of French development aid policy to the water sector during recent years is analyzed from an international viewpoint. It is found that it should be strengthened in order to facilitate access to water in least developed countries. Various policy proposals are presented.

# INTRODUCTION

According to the 2003 UN World Water Development Report<sup>1</sup>, “Financing the Millennium Development Goals is probably one of the most important challenges that the international community will have to face over the next fifteen years. It is unclear at the moment how much it will cost. Further work is required to have a more accurate and better understanding of the global financial requirements to meet the water supply and sanitation Millennium Development Goals”.

This report examines the issue of how much would be needed for meeting the Millennium Development Goals and Johannesburg targets for water supply and sanitation. It provides a direct calculation of the cost of meeting these targets in developing countries and a comparison with published data. It concludes that additional investment of \$10 billion per year is needed and that development aid for water should at least be doubled. If additional investment is more costly, a financing gap is likely to occur because solidarity is limited.<sup>2</sup> In such a case the Johannesburg targets will not be reached in time.

The investment programme for providing water supply and sanitation to the unserved can realistically be achieved if the cost of the necessary additional investment is not too far from current expenditure. Such a programme is fortunately much less costly than \$100 billion per year, a figure often quoted without making it clear that most of it is not related to the basic needs of poor people without access to water.<sup>3</sup> In 2003, expenditure for water of around

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<sup>1</sup> “Water for People, Water for Life”, Report published at the time of the Kyoto Third World Water Forum, Unesco, March 2003 (p. 334).

<sup>2</sup> As stated by the Secretary General of OECD : “These goals will be difficult to meet, especially since we already see a significant gap between the finances needed to meet these goals and the finances that are currently available”, *Improving Water Management*, OECD, March 2003, p.3.

<sup>3</sup> The Chair of the Global Water Partnership Mrs. Margaret Catley-Carlson has written that : “The World Water Commission reported to the Hague Ministerial Conference in March that although \$70 billion per year is currently being spent on water management, \$170 billion per year is needed if the world is to address the problem of 1.2 billion people without water access and 2 billion without sewage, as well as to take steps to alleviate environmental damage.”, *GWP In Action 2001*, www.gwpforum.org (p.4). In “Fostering Sustainable Development in South Africa” issued by Suez in July 2002), it is stated that : “To reduce the deficit in water and sanitation coverage by 50%, the target set by the United Nations, US\$ 180 billion must be invested each year for developing countries alone-more than twice the current level of investment”. Similar approaches are found in OECD : *Improving Water Management* and *La lettre du pSEau*, N°43, juillet 2003. Fortunately, overcoming the lack of water supply and sanitation in developing countries will not require \$100 billions per year of new investment. But even finding an additional \$10 billion per year will be a challenge.

\$360 billion per year are even being envisaged.<sup>4</sup> But again this is not for meeting the water needs of the poor.

The main difference between various estimates is the level of service to be provided and their unit costs. While it would be nice to promote a high level of service in all countries, progress in many developing countries will be slower and these countries will take more than 25 years to reach the level of service available in developed countries after 50 to 100 years of continuous effort and expensive investment.

This paper does not examine the size of future investment in water supply and sanitation in general. It does not seek to describe the WSS market for future investors and only focuses on providing water service to the poor in developing countries. Readers interested in policy issues could go directly to Part Two where it is shown whether additional investment for WSS can be financed.

This report is a follow-up to the third part of the Report published by the Water Academy :“La solidarité pour l’eau potable”<sup>5</sup> and aims to implement “the much needed solidarity between developed and developing countries” referred to in the Social Charter for Water.<sup>6</sup> As stated by Prof. Marc Gentilini, Chairman of the Water Academy, “ it will not be possible to fulfill the aims of the Johannesburg Summit on Sustainable Development in the area of water if the most deprived are forced to make the greatest effort and are obliged to finance these efforts themselves”.<sup>7</sup>

At the end of the Report, an analysis is presented of the French contribution to the Johannesburg targets and conclusions are drawn on how France could help developing countries in their endeavours to meet the Johannesburg targets for water.

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<sup>4</sup> J.M. Grondin : “Pour parvenir aux objectifs (de Johannesburg), on a commencé à chiffrer les besoins en financement d’infrastructures, estimés à 180 milliards de dollars annuels, alors que ne sont actuellement investis que 80 milliards. Le Rapport Camdessus sur le financement de l’eau dans le monde devrait aboutir à un doublement de cette somme, aux alentours de 360 milliards de dollars nécessaires.”, *Courrier de la planète*, N°70, 2002 (p. 51). As a matter of fact the Camdessus Panel Report “*Financing Water for All*” (March 2003) did propose to increase spending from \$80 billion to \$180 billion to cover household supply and sanitation as well as wastewater treatment, treatment of industrial effluents, irrigation and multipurpose schemes.

<sup>5</sup> Académie de l’Eau : *La solidarité pour l’eau potable*, 2003 ( [www.oieau.fr/academie](http://www.oieau.fr/academie)).

<sup>6</sup> Académie de l’Eau : *Social Charter for Water*, 2000.

<sup>7</sup> Preface to “*La solidarité pour l’eau potable*”.

# Part One

## A REVIEW OF VARIOUS COST ESTIMATES



## A REVIEW OF VARIOUS COST ESTIMATES

In this part, we make a direct calculation of the cost of meeting the Johannesburg targets for water supply and sanitation and we compare it with available estimates of the cost of investment in water supply and sanitation. Because of the many uncertainties and data gaps, such calculations cannot be very precise. But this does not mean that cost estimates should be too “generous”, thus leading to inaction in front of an insurmountable challenge.

### 1. The Johannesburg targets for water

At the WSSD in Johannesburg (2002), States adopted a Plan of action which included the following statement :

“We agree to halve, by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water, as outlined in the Millennium Declaration, and the proportion of people without access to basic sanitation”.<sup>8</sup>

These undertakings are related to the supply of :

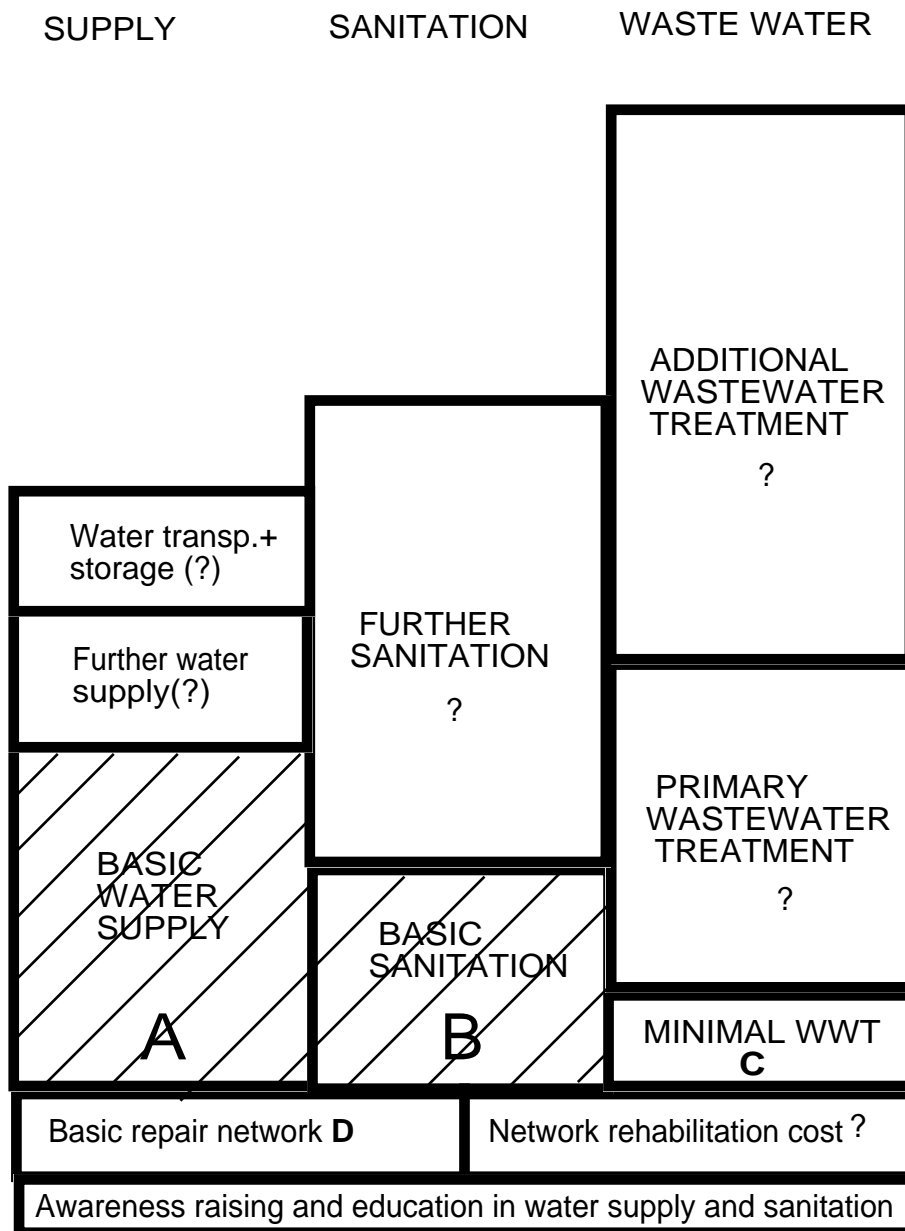
- “safe and affordable water” and the provision of
- “basic sanitation” to
- “people” who do not have adequate access to such water services.

For the interpretation of these targets, we will assume that they are equivalent to access to "improved" water supply and sanitation<sup>9</sup> (Box 1). "Reasonable access" can be broadly defined as the availability of at least 20 liters per person per day from a source within one kilometer of the user's dwelling. Basic sanitation, i.e. the excreta disposal system is considered adequate if it is private or shared (but not public) and if it hygienically separates human excreta from human contact.

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<sup>8</sup> This is a follow up to the Millennium Development Goals : Target 10 : “Halve, by 2015, the proportion of people without sustainable access to safe drinking water”. Target 11 : “By 2010, to have achieved a significant improvement in the lives of at least 100 million slum dwellers”. See Annex 1 for extracts of the Millennium Declaration.

<sup>9</sup> According to the *Global Water Supply and Sanitation Assessment 2000 Report* (hereafter “GWSSAR”), “In past assessments, the coverage figures referred to "safe" water supply and "adequate" sanitation. One of the findings of the current assessment is that there is a lack of information on the safety of the water served to the population and on the adequacy of sanitation facilities. Population based surveys do not provide specific information on the quality of the drinking water, or precise information on the adequacy of sanitation facilities. Therefore, this assessment assumed that certain types of technology are safer or more adequate than others and that some of them could not be considered as "coverage."



**Figure 1. VARIOUS COMPONENTS OF INVESTMENT IN WATER SUPPLY AND SEWAGE**

Investment for meeting Johannesburg targets : A + B  
 Observed current investment : A+B+C+D or more



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**Table 1****POPULATION WITHOUT ACCESS TO WATER IN 2000***(million people)*

<i>Region</i>	<i>No access to safe water</i>			<i>No basic sanitation</i>		
	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>
<i>Africa</i>	44	256	300	46	267	313
<i>Asia</i>	98	595	693	297	1619	1916
<i>Latin America</i>	29	49	78	51	66	117
<i>Total</i>	171	900	1071	394	1952	2346

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**Source :** GWSSAR.**N.B. :** *Official data on access to water is not reliable because the actual population without water or basic sanitation is often larger than shown here. There is no estimate available of the size of the discrepancy.*

Such targets (hereafter “Johannesburg targets”) are only concerned with providing access to water supply and sanitation (WSS) and are mostly related to very poor households which do not have such access.<sup>10</sup> Their main purpose is to fight poverty and to protect human health. They seek to address the issue that at present approximately 1.1 billion people lack access to safe water and approximately 2.4 billion people lack access to basic sanitation.<sup>11</sup>

These targets do not deal with improving existing water systems, nor with municipal

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<sup>10</sup> For a correlation between poverty and access to water, see Figure 13 in section 6.

<sup>11</sup>The exact number of people without access to water or without sanitation is not known because the concept is not clearly defined and statistics are weak. Figures for water supply are between 1.0 and 1.6 billion people and for sanitation from 2 to 2.6 billion people. According to GWSSAR, access to water supply and sanitation is defined in terms of the types of technology and levels of service afforded.

For water supply, this included house connections, public standpipes, boreholes with handpumps, protected dug wells, protected springs and rainwater collection; allowance was also made for other locally-defined technologies. "Reasonable access" was broadly defined as the availability of at least 20 liters per person per day from a source within one kilometer of the user's dwelling. Types of source that did not give reasonable and ready access to water for domestic hygiene purposes, such as tanker trucks and bottled water, were not included. Sanitation was defined to include connection to a sewer or septic tank system, pour-flush latrine, simple pit or ventilated improved pit latrine, again with allowance for acceptable local technologies. The excreta disposal system was considered adequate if it was private or shared (but not public) and if it hygienically separated human excreta from human contact.

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**Box 1**

**WSS TECHNOLOGIES THAT ARE CONSIDERED TO BE  
"IMPROVED"/ "NOT IMPROVED"**

*Improved+*

*Not improved*

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**Water supply**

*Household connection*

*Public standpipe*

*Bore hole (with hand pumps)*

*Protected dug well*

*Protected spring*

*Rainwater collection*

*Unprotected well*

*Unprotected spring*

*Tanker truck provision of water*

*Vendor provided water*

*Bottled water\**

**Sanitation**

*Connection to a public sewer*

*Connection to septic system*

*Pour-flush latrine*

*Ventilated improved pit latrine*

*Simple pit latrine*

*Service or bucket latrines*

*(where excreta are manually removed)*

*Public latrines*

*Latrines with an open pit*

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**Notes :**

+ *The use of improved technologies does not guarantee that the sources of water supply and sanitation are adequate, i.e. safe, sufficient and convenient.*

\* *Not considered "improved" because of limitations concerning the potential quantity of supplied water, not the quality.*

**Source :** GWSSAR

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waste water treatment<sup>12</sup> (the target is for "basic sanitation", not "sanitation" in general) nor with rain water disposal. Figure 1 shows various types of investment for water supply and sanitation for households. In the future larger investment can be foreseen because there will be a need to transport water from farther away, to improve sanitation beyond basic sanitation

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<sup>12</sup> Over 4 billion people discharge untreated wastewater into local water bodies.

and to treat municipal wastewater.<sup>13</sup> As can be seen from Figure 1, investment for meeting the Johannesburg targets is only a small part of total investment in WSS. Future investment in WSS may be much higher than that needed to meet the needs of the unserved. There will also be a need to invest to improve governance in general and governance in the water sector because a number of water utilities have become symbols of bad management and degrading public service.

More generally investment for the Johannesburg targets is only part of total investment in the water sector as a whole which includes, among others, water for industry, water for agriculture/food production, river and water management, environmental protection in relation to water, rain water collection, flood control, reservoirs and dams, irrigation canals, large scale water transfers, etc.

In this paper we refer to “connections” even if the service is not a household connection.

## 2. Progress in terms of population served

During the period 1990 - 2000, population with access to water and sanitation in developing countries has increased. These improvements have been calculated in the GWSSAR (Table 2).

**Table 2. NEW CONNECTIONS DURING 1990 - 2000**  
(million people newly connected or served)

<i>Region</i>	<i>Water supply</i>			<i>Sanitation</i>		
	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>
<i>Africa</i>	87	48	135	84	14	98
<i>Asia</i>	282	303	585	365	216	581
<i>Latin America</i>	75	7	82	73	12	85
<i>Total</i>	444	358	802	522	242	764

Source : GWSSAR.

Using the data collected in the GWSSAR for population served in 2000 and

<sup>13</sup> The Millennium Development Goals include also a Target : “To achieve by 2020 a significant improvement in the lives of at least 100 million urban slum dwellers ” which include improving water services in these areas and in particular sanitation. The Target : “To integrate the principles of sustainable development into country policies and programme and reverse the loss of environmental resources” has direct bearing on the water resource and on waste water treatment. Investment in waste water treatment may be as high as investment in water supply.

demographic growth until 2015, the population which should be served between 2000 and 2015 if the Johannesburg targets are to be met is given in Table 3.<sup>14</sup>

**Table 3**  
**NEW CONNECTIONS DURING 2000-2015**  
*(million people to be connected or served)*

<i>Region</i>	<i>Water supply</i>			<i>Sanitation</i>		
	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>	<i>Urb.</i>	<i>Rur.</i>	<i>Tot.</i>
<i>Africa</i>	210	194	404	212	198	410
<i>Asia</i>	619	361	980	675	857	1532
<i>Latin America</i>	123	23	146	131	32	163
<i>Total</i>	952	578	1530	1018	1087	2105

Source : GWSSAR.

These estimates are confirmed in the Camdessus Panel Report as follows : During the coming fifteen years access to water supply should be provided to an additional 1.5 billion people and basic sanitation should be provided to an extra 2 billion people. Figures 2 and 3 provide a picture of the cumulated number of new connections in 2015 (Johannesburg targets) and in 2025 (universal coverage<sup>15</sup>). They show that the sanitation target will be more difficult to reach and could even be seen as being “very ambitious” considering the general lack of support for investment in sanitation.

Comparing past achievements and progress to be made in terms of number of people newly connected or served, it is seen that efforts to be made in the coming years are larger than in the past. The ratio of the number of new connections per year before and after 2000 is given in Table 4. The total number of people newly connected to water supply or newly served averaged over each period should be increased by 27% and the number of people with new access to basic sanitation should be increased by 84%. During the period 2015-2025, water supply should be increased a little while sanitation should be much more increased.

<sup>14</sup> The number of new connections to be made in 15 years is larger if demographic growth is larger or if the current number of people already served is smaller. In particular, the term “served” does not always mean “served by piped water”. Official data on access to WSS is often quite optimistic because water may be available only during few hours per day and its quality may not be adequate as a result of lack of repairs.

<sup>15</sup> This target is too ambitious because developed countries took much longer to reach full coverage in rural areas. Furthermore it may be more reasonable to aim at 95% coverage because the last %percentage points are always very costly. In Lehman Brother’s analysis, the target for 2001-2015 is to supply 1673 million people and to provide sanitation to 2373 million people.

Table 5 gives the daily effort to be undertaken in the world : every day during 15 years 279 000 people should be newly connected or served to water supply and 384 000 people to sanitation. But the rate will need to be higher if, as can be foreseen, the investment in WSS during the period 2000-2006 remains unchanged.

**Table 4**

**RATIO OF CONNECTIONS TO BE MADE YEARLY  
DURING 2000-2015 AND MADE YEARLY DURING 1990-2000**

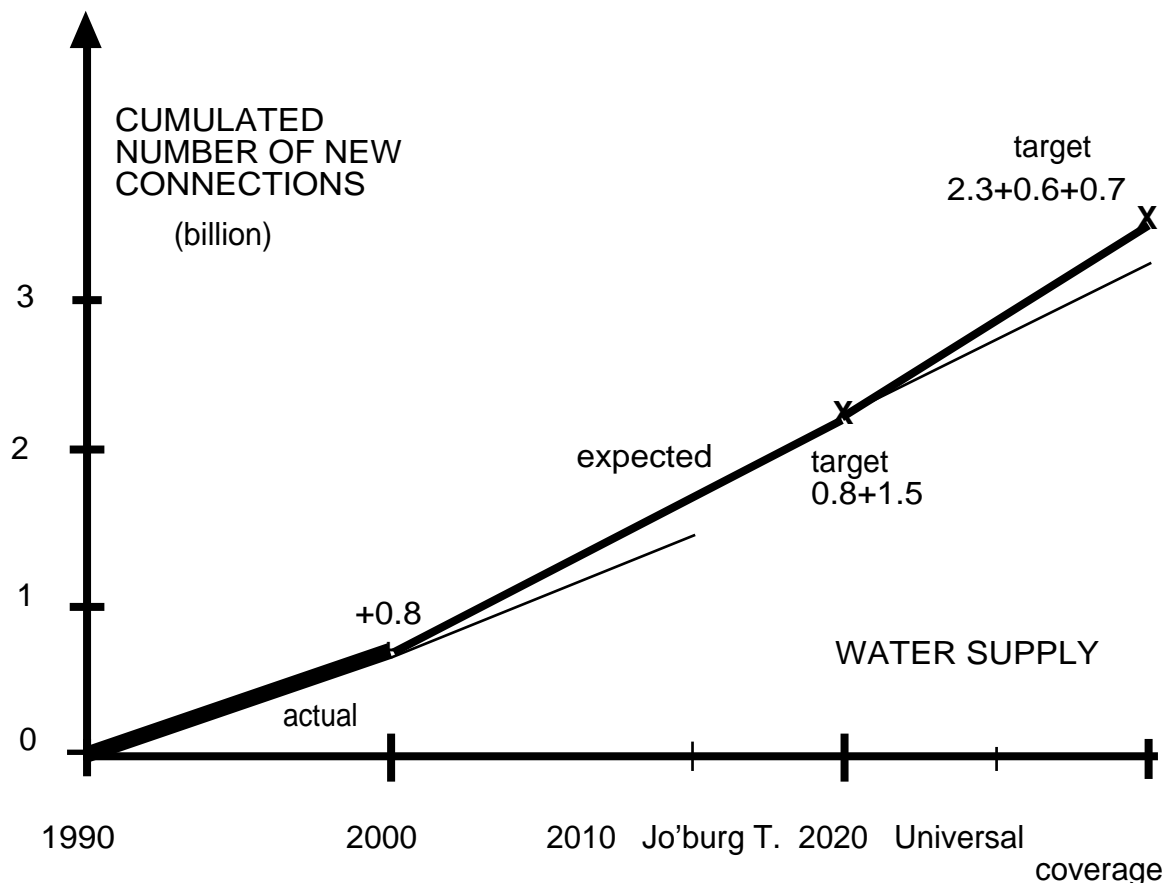
	<i>Urban areas</i>	<i>Rural areas</i>	<i>Total</i>
<i>Access to water supply</i>	1.43	1.08	1.27
<i>Access to sanitation</i>	1.30	2.99	1.84

**Table 5**

**NUMBER OF NEW CONNECTIONS**  
(*thousand connections per day*)

	<i>During 1990-2000</i>	<i>During 2000 -2015</i>	<i>During 2006-2015 (after 5 yr. delay)*</i>
<i>Supply</i>	220	279 (+27%)	319 (+45%)
<i>Sanitation</i>	209	384 (+84%)	501 (+140%)

**Note :** *Delay : if the the rate of connections during 2000-2006 remains what it was in the nineties, the rate of connections in 2006-2015 should be larger in order to meet the target in 2015.*



**Figure 2. NEW CONNECTIONS TO WATER SUPPLY IN ORDER TO REACH JOHANNESBURG TARGETS IN 2015 AND UNIVERSAL COVERAGE IN 2025.**

New connections in Africa, Asia and Latin America during 1990-2000 : 0.8 billion, during 2000-2015 : 1.5 billion and during 2015-2025 : 0.6 billion (unserved in 2015) + 0.7 billion because of demographic growth.

To estimate the corresponding financial effort to be made, we assume that serving a user in urban areas costs four times more than in rural areas. With such an assumption, investment in water supply should be increased by 37% and in sanitation by 48% over what was done in the last decade. Assuming that water supply and sanitation imply roughly similar unit costs and that these costs are the same during the nineties and in the future, the increase in financial effort to meet the Johannesburg targets in 2015 is approximately 42.5 %.

It should be noted that the above calculations are based on official data on population served which often over-estimates the part of population with access to water supply and

sanitation. Thus future expenses in WSS are likely to be larger than calculated here.

Using rounded up figures, we can conclude that meeting the Johannesburg targets is likely to mean **an increase of at least 50 % in the financial effort for improving access to water supply and sanitation.**

**In order to reach the Johannesburg targets, it will be necessary to ensure that the number of new connections made each year increases each year. Concerning water supply, the number of new connections should increase from an average of 80 million per year during 1990-2000 to an average of 102 million per year during 2000-2015 (Figure 2). Similarly for sanitation, the number of new connections per year should increase from 76 million per year to 140 million per year (Figure 3).**

A 50% increase in the average rate of connections can be reached if the number of new connections per year increases each year from 1990 to 2014 by 3.3% <sup>16</sup> and a 100% increase if the number of new connections increases each year by 5.6%.

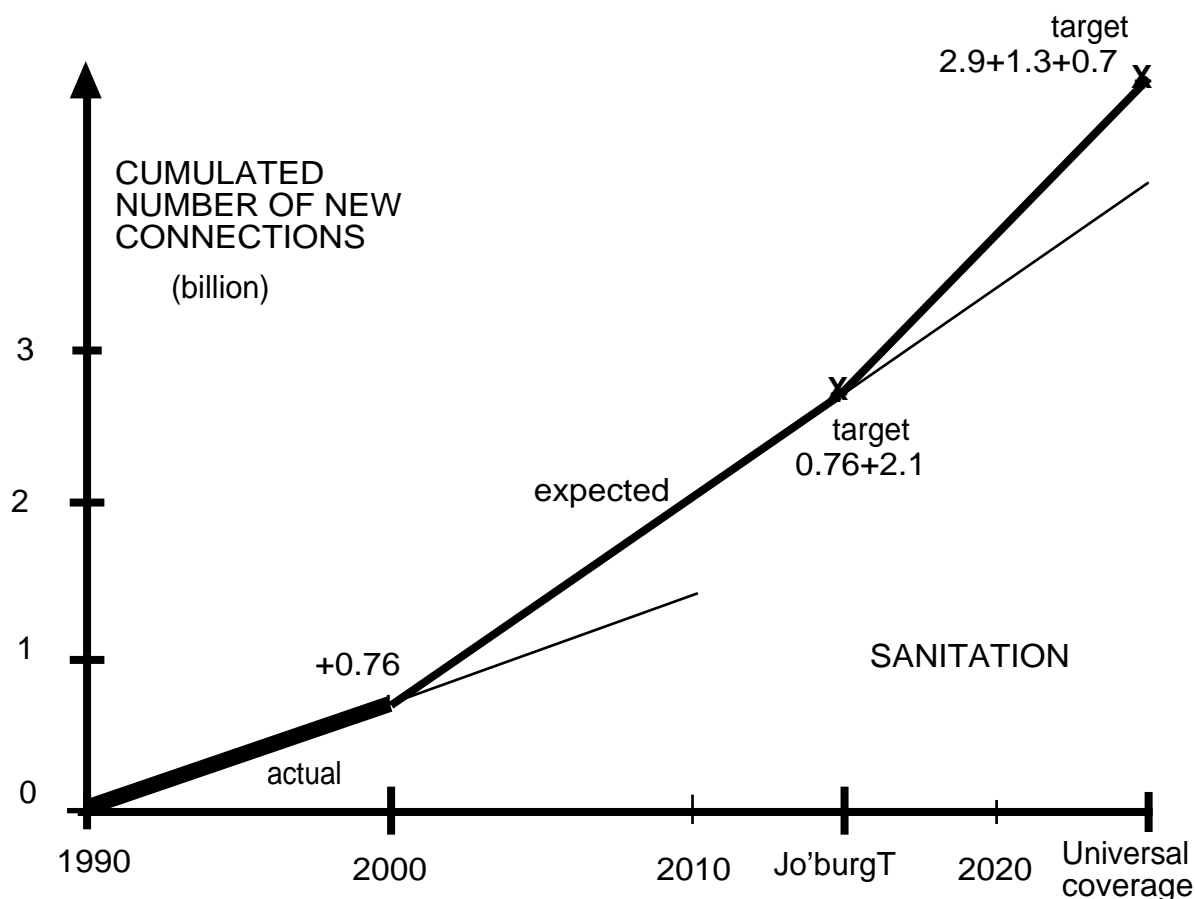
Table 6 gives the growth rate of the yearly number of connections to water supply and sanitation (“r”) in order to meet the Johannesburg targets and assumed rates of economic growth during 2000-2015 period. For developing countries as a whole, the rate of economic growth (3%) exceeds the required rate of growth of connections to water supply (1.9%) but is below the rate of connections to sanitation (4.9%). Thus there will be a need to shift resources from water supply to sanitation to promote better sanitation in developing countries.

The growth rates of connections are higher than the rate of economic growth in Africa and, as a result, serious problems in reaching the Johannesburg targets can be expected to arise in Africa. In this case a Business as Usual (BAU) scenario will not be sufficient.

For Asia, large efforts will be needed to reach the sanitation target but this could be achieved because the effort on water supply is smaller. For Latin America, growth in WSS should be achieved with fewer problems because economic growth is larger than the growth in both rates of connections. Thus the problem of reaching the Johannesburg targets for WSS is narrowed down mainly to Africa and more generally to poor states with small economic growth.

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<sup>16</sup> If the number of new connections is 100 in 1990, it should be 138 in 2000, 163 in 2005, 191 in 2010 and 225 in 2015 (exponential growth).



**Figure 3. NEW CONNECTIONS TO SANITATION IN ORDER TO REACH JOHANNESBURG TARGETS IN 2015 AND UNIVERSAL COVERAGE IN 2025.**

New connections in Africa, Asia and Latin America during 1990-2000 : 0.76 billion, during 2000-2015 : 2.1 billion and during 2015-2025 : 1.3 billion (unserved in 2015) + 0.7 billion because of demographic growth.

Such type of analysis should preferably be carried out at the level of individual countries rather than at regional level because geographic and social solidarity within a country can help to overcome economic disparities. On the reverse, there is little solidarity between developing countries and the success achieved in the area of WSS in one country will not alleviate the failure in another.



**Table 6****INCREASE IN RATES OF CONNECTIONS DURING 2000-2015**

<i>Region</i>	<i>Economic growth (% per year)</i>	<i>Demogr. growth(% per year)</i>	<i>Water supply</i>		<i>Sanitation</i>	
			<i>Ratio R</i>	<i>Growth rate r (%)</i>	<i>Ratio R</i>	<i>Growth rate r (%)</i>
<i>Africa</i>	1.3	2.1	2	5.5	2.79	8.2
<i>Asia</i>	4.5	1.1	1.12	0.9	1.76	4.5
<i>Latin Amer.</i>	2	1.3	1.19	1.5	1.27	1.9
<i>Total</i>	3	1.1	1.27	1.9	1.84	4.9

**Notes :**

a) *R* = average yearly rate of connections during 2000-2015 divided by average yearly rates of connections during 1990-2000.

b) The ratio *R* and the rate of growth of rate of connections *r* are related through the following formula :  $\sum(1+r)^i / \sum(1+r)^j = 1.45 R$  where  $i = 0, 1, 2, \dots, 10$  and  $k = 10, 11, 12, \dots, 25$  (assuming a constant rate of growth *r* during 1990-2015)..

c) The economic growth rate is an estimate of future growth. The large growth rates for rate of connection in Africa reflect the current low levels of access to water in the region.

d) Expected economic growth rates from World Bank assessment.

**3. Direct calculation of investment for new connections****3.1. Reference unit costs**

The cost of providing access to WSS varies widely with the technology used and local conditions. It is very large when modern “western” standards are used or much smaller with less elaborate technology (hand pumps and latrines). It is larger when international contractors are involved and smaller when local manpower and skills are used. Side payments and various political and financial risks will increase the cost of the project very significantly.

According to the World Bank (1992), the cost of access to WSS in rural areas is \$10/cap. for hand pumps or standposts and \$10/cap. for pour-flush or ventilated improved pit latrines. In urban settings, the unit cost is \$100/cap. for public standposts and \$200/cap. for piped water, house connections. For sanitation, the range is from \$25/cap. for pour-flush or ventilated improved pit latrines to \$350/cap. for piped sewerage with treatment. For

WaterAid (basing itself on WSSCC data)<sup>17</sup>, the unit cost of urban water supply ranged from \$50/cap. for standpipe to \$200/cap. for networked systems. The unit cost of urban sanitation provision ranged from \$25/cap. for a basic pit latrine to \$300/cap. for new sewerage systems. On the other hand, unit cost for sanitation and hygiene in rural areas was estimated at \$10/cap. and unit cost for the provision of drinking water was estimated at \$15/cap.

Typical unit costs of various technologies are given in Tables 7 and 8 below (Source : GWSSAR). Such data has to be adjusted to local circumstances as well as to the size of the population to be served.<sup>18</sup>

**Table 7**

**UNIT COST OF WATER SUPPLY**  
(investment, \$/capita)

<i>Supply system</i>	<i>Africa</i>	<i>Asia</i>	<i>Latin America</i>
<i>Household connection</i>	102	92	144
<i>Standpipe</i>	31	64	41
<i>Bore hole</i>	23	17	55
<i>Dug well</i>	21	22	48
<i>Rainwater collection</i>	48	34	36

According to this data, providing water supply could cost between \$17/cap. in rural areas to \$144/cap. in urban areas and providing sanitation between \$20/cap. in rural areas and \$170/cap. in urban areas. Waste water treatment may require an investment of \$300/cap. (or even up to \$600/cap. if it is elaborate), which is rarely done in developing countries.<sup>19</sup>

<sup>17</sup> In *Financing the Millennium Development Goals for Domestic Water Supply and Sanitation (2003)*, WaterAid points out the high cost of some projects (WaterAid, \$22.5 per beneficiary in Nepal compared to \$38.6 for a World Bank project ; WaterAid, \$13.5 per beneficiary in Mozambique compared to \$180 for a Japanese funded project). As stated by WaterAid, the high cost of some WSS programmes represents a barrier to fulfilling Johannesburg targets, and needs to be challenged. Water Aid quotes £1500 for a 40 ft hand dug well with a pump in Ghana and £470 for a hand pump. *The Guardian*, 23d Aug. 2003.

<sup>18</sup> Unit cost of many technologies are much more expensive for smaller groups of people. For waste water treatment, the range is from \$100/cap. to \$500/cap.

<sup>19</sup> In *Financing Strategies for Water and Environmental Infrastructure (OECD, 2003, p.36)*, it is shown that investment in waste water treatment cost between \$50 and \$150 /cap. depending on the type of treatment and the size of the city. Many groups provide exaggerated investment cost because they seek to collect greater financial support or to provide oversized installations with most advanced technology (which cannot be maintained by the local population or which are too expensive to operate). In GWP : *“Framework for Action”*, 2000 (p.106), the cost of treating municipal sewage is estimated at \$73/cap.

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**Table 8****UNIT COST OF SANITATION**  
(investment, \$/capita)

<i>Sanitation system</i>	<i>Africa</i>	<i>Asia</i>	<i>Latin America</i>
<i>Sewer connection</i>	130	164	170
<i>Small bore hole</i>	52	60	122
<i>Septic tanks</i>	125	104	168
<i>Pour-flush</i>	90	50	60
<i>Ventilated improved pit lat.</i>	57	50	52
<i>Small pit latrine</i>	39	20	60

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**3.2 Other estimates of unit costs**

The crucial factor in calculating cost for serving new users is the amount spent in urban areas which depends on the number of people served (economy of scale) and on the technology used, the nature of the service and other local conditions. As explained by the OECD, “The 20/20 Initiative (Copenhagen) argued that attaining universal access to safe water requires above all, provision of these services in rural and peri-urban areas, and that the poorest groups of people can be reached using low-cost technologies. These are defined as hand pumps, gravity fed systems, rainwater collection and latrines. They exclude most piped water systems, particularly in urban areas”.<sup>20</sup> This “cheap” approach is called into question because “in densely populated areas, clean water and adequate hygiene generally requires reticulated water supply and sewerage systems, which are relatively high cost.”

In the case of household connections, a reasonable estimate could be \$240 per capita for WSS or \$1200 per household (5 persons). In Senegal, the cost of a connection to water supply is \$180 per household and to sanitation \$380 per household. In Latin America, the cost may be higher. In Nicaragua, the average cost in a rural context is \$500 per family.<sup>21</sup> In Buenos Aires, connection costs are \$600 per household for water supply and \$1000 for sanitation, i.e. \$320/cap. for a household of five. In Mexico, new connections are made in

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<sup>20</sup> J.H. Michel : *Development Cooperation*, 1998 Report, OECD, 1999 (page 71). As seen in Figure 10 of the present report, more aid is provided for large systems than for small systems although more people without access to safe water are in areas which require small systems.

<sup>21</sup> *La lettre du pS Eau*, n°42, p.7, fév. 2003 (Le cas de l'eau potable au Nicaragua).

2001 at a maximum cost of \$220/cap. for water supply and \$180\$/cap. for sanitation.<sup>22</sup> The connection fee (which is smaller than the connection cost) is \$300 to \$400 per household in Santiago, Cordoba and Budapest and close to \$200 in La Paz and Amman.<sup>23</sup>

The cost of serving the unserved would be much higher if all new connections during 2000-2015 were household connections or yard taps. In GWSSAR, it is shown that two third of the people living in urban areas in Africa with access to water rely on household connection and one third on other forms of adequate supply (standpost, etc.).<sup>24</sup> Table 9 shows that 60 % of the population with access to water in 2000 rely on household connections. Thus during the period 2000-2015, new connections will not only be based on household connections or yard taps.

The unit costs used in the calculations are for investment in developing countries and not for investment in accession countries which have to meet existing EU standards<sup>25</sup> or in EECCA countries who have to compensate for years of neglect.<sup>26</sup>

In rural areas, water was provided to Moroccan villages at a cost of \$33 per person and in Burkina Faso, the cost of a borehole with pump is \$50 per user (\$10 000 for 150 users). NGOs such as WaterAid have provided WSS at a cost of \$30/cap. or even less. Hence an average figure such as \$50/cap. would seem reasonable for WSS in rural areas.

In a report of the World Water Commission<sup>27</sup>, a figure of \$500/cap. for WSS was used to calculate the cost of connecting 3.5 billion people over 25 years, i.e. to provide household connection to everyone in both urban and rural areas. This has led to a very high cost for WSS (\$70 billion/yr.) and to ill founded statements on future investment in WSS. Actually \$500/cap. cannot possibly be spent for improving water service in the least developed countries over a period of 10 years because individual annual income of most potential users

<sup>22</sup> L. Saade-Hazin : "Social Issues in the Provision and Pricing of Water Services", OECD, 2003. In rural Mexico, in 2000, piped water is provided in dwellings (20.1%), on property (40.2%), in another dwelling (3.8%) or in public fountains (3.1%). The other sources of water are lakes and rivers (29.2%) and water tanks (2.3%).

<sup>23</sup> J. Labre : "Water pricing and social equity", Report to IWA World Water Congress, Melbourne, April 2002.

<sup>24</sup> According to GWSSAR, household connections or yard taps represent 62% of total connections in urban areas in Africa, 82% in Asia and 91% in Latin America.

<sup>25</sup> According to a recent report, €132 per capita is needed to finance compliance with EU Water Directives in Ukraine (*Urban Water Sector Reform in EECCA Countries*, UNECE, KIEV CONF/2003/INF/14).

<sup>26</sup> A Danish report ( by COWI) makes use of the following figures : €300/cap. for piped water and €150/cap. for hand pumps, €150/cap. for septic tanks. The figure for hand pumps is very high because a pump with tubing is worth \$300 (Unicef India Mark II). See *EECCA Component to the EU Water Initiative Programme Document*, KIEV.CONF/2003/INF/33 (p14).

<sup>27</sup> World Water Commission report "A Water Secure World", 2000 (p.51) and W.J. Cosgrove and F.R. Rijsberman : *World Water Vision, Making Water Everybody's Business*, Earthscan, London, 2000 (p.60).

is below \$200/cap.

**Table 9**

**TYPES OF WATER SUPPLY AND SANITATION CONNECTIONS**

<i>Region</i>	<i>Water supply (%)</i>			<i>Sanitation(%)</i>		
	<i>Household connection</i>	<i>Other forms</i>	<i>Not served</i>	<i>Household connection</i>	<i>Other forms</i>	<i>Not served</i>
<i>Africa</i>	24	40	36	13	47	40
<i>Asia</i>	49	32	19	18	29	53
<i>Lat. America</i>	66	19	13	49	29	22
<i>Total</i>	47	32	21	20	32	48

**Source :** *Unesco : Water for Peace, 2003, p. 109 (figures for 2000).*

**3.3 Investment in WSS**

In order to calculate the cost of new connections, average unit costs based on Tables 7 and 8 have been derived<sup>28</sup> (see Table 10). Case A is for providing household connections to water supply and sanitation networks in every new connection in urban areas. In Case B, the service is less elaborate (67% of new connections in urban areas are household connections and 33% of people newly served receive a lower level of service such as standposts in slums. Case B corresponds to interim supply conditions in fast expanding new suburbs because the ultimate target is obviously to provide water inside each dwelling. These cost figures

**Table 10**

**UNIT COST OF INVESTMENT**

<sup>28</sup> These costs may be considered by some NGOs as being "large". The assumed cost of water supply is below the average seen in Table 12 (\$157) and the assumed cost of sanitation is higher than in Table 12 (\$41). Please note that these costs are given per capita and not per household. According to J. Labre, the cost of connection in a new suburb of a city may be evaluated at \$1000 per household (5 persons) and at \$ 350 /household for an additional connection in an existing network.

## TO MEET THE JOHANNESBURG TARGETS

	<i>Unit cost in urban areas (\$/cap.)</i>		<i>Unit cost in rural areas (\$/cap.)</i>
	<i>Case A</i>	<i>Case B</i>	<i>Cases A and B</i>
<hr style="border-top: 1px dashed black;"/>			
<i>Figures used in this report :</i>			
<i>Supply</i>	\$100	<i>67% at \$100 + 33% at \$50 = \$83.50</i>	\$25
<i>Sanitation</i>	\$140	<i>67% at \$140 + 33% at \$90 = \$123.5</i>	\$50
<i>Supply+ sanitation</i>	\$240	\$207	\$75
<hr style="border-top: 1px dashed black;"/>			

*For reference : supply and sanitation in :*

<i>WSSCC : Vision 21</i>	$\$50 + \$25 = \$75$	$\$15 + \$10 = \$25$
<i>GWP: past activities</i>	$\$87.50 + \$137.5 = \$225$	$\$15 + \$10 = \$25$
<i>future activities*</i>	$\$140 + \$169 = \$309$	$\$15 + \$10 = \$25$

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**Note :** \* Data kindly provided by H. Sunman.

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correspond more to Africa and Asia rather than to Latin America where fewer connections are needed.

Using the unit costs of Table 10, the total cost of new connections to WSS (urban and rural) is calculated in Table 11 where it is seen that the additional cost is mostly in urban areas and for sanitation. Investment for new connections should increase from \$13.85 billion to \$20.92 billion per year in Case A and from \$12.25 billion to \$18.95 billion per year in case B. Thus the increase in yearly investment to be financed is \$7.1 billion/yr. in Case A and \$6.5 billion/yr. in Case B.

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**Table 11**

### CALCULATION OF INVESTMENT FOR NEW CONNECTIONS

(\$ billion /yr.)

	<i>Cost in urban areas</i>		<i>Cost in</i>	<i>Total</i>	<i>Total</i>
	<i>Case A</i>	<i>Case B</i>	<i>rural areas</i>	<i>urbA+rur</i>	<i>urbB+rur</i>
<hr/>					
<i>Period 1990-2000</i>					
<i>Supply</i>	4.44	3.71	0.89	5.33	4.60
<i>Sanitation</i>	7.31	6.44	1.21	<u>8.52</u>	<u>7.65</u>
<i>Total investment</i>	11.75	10.15	2.10	13.85	12.25
<i>Period 2000- 2015</i>					
<i>Supply</i>	6.35	5.30	1.45	7.80	6.75
<i>Sanitation</i>	9.50	8.38	3.62	<u>13.12</u>	<u>12.00</u>
<i>Total investment</i>	15.85	13.68	5.07	20.92	18.75
<i>Increase in yearly investment</i>					
<i>Supply</i>	1.91	1.59	0.56	2.47	2.15
<i>Sanitation</i>	2.19	1.94	2.41	<u>4.60</u>	<u>4.35</u>
<i>Total investment</i>	4.10	3.53	2.97	7.07	6.50
				(+51%)	(+53%)

**Note :** Calculation based on average unit costs in Table 10.

**This calculation shows that investment for meeting the Johannesburg targets should probably increase by 50% over what was done previously to improve access to WSS and will require additional outlays of about \$7 billion per year.**

As statistics on population with access to safe water and basic sanitation are not reliable and as future expenses may be larger than foreseen<sup>29</sup>, it would be reasonable to assume that the above calculations underestimate costs. Thus, it may be more appropriate to assume that additional investment to meet the Johannesburg targets will amount to approximately **\$10 billion per year**

Such an estimate is very imprecise because of uncertainties on applicable unit costs and actual number of persons to be served in real situations taking into account the state of neglect of the networks and the availability of proper documentation. Furthermore there is a need to make investment to ensure sustainable operation of existing water systems beyond usual operational and maintenance expenses in order to make sure that presently served people are still served in 2015. The size of such investment is not calculated here but will also

<sup>29</sup> Unit costs for water supply and sanitation may increase as a result of increasing urbanization, increasing water scarcity, decreasing renewable water resources and decades of mismanagement and neglect of existing networks. On the opposite, new technologies should help in keeping WSS cost low.

need to be made in order to meet the Johannesburg targets.

#### 4. Other estimates of investment in WSS

There are a number of estimates of current investment and future investment in WSS. The calculation method is rarely given and many authors rely on the same source<sup>30</sup> without questioning the way it was calculated.<sup>31</sup>

Six types of estimates are found :

- a) the yearly investment in WSS made in the nineties ;
- b) the yearly investment in WSS in the coming years ;
- c) the yearly additional investment in WSS (difference between what was done in the nineties concerning water supply and sanitation and what is foreseen in the coming years) ;
- d) the yearly investment made in the nineties to meet the Johannesburg targets (serving the unserved) ;
- e) the yearly investment in the coming years to meet the Johannesburg targets ;
- f) the additional yearly investment to meet the Johannesburg targets (difference between yearly investment made in the nineties to meet the needs of the unserved and what is foreseen in the coming years).

There is often confusion between estimate e) and estimate f). Typical values for these six estimates are \$15, \$30, \$15, \$5, \$15 and \$10 billion per year.

In order too assess the precise financial consequences of the targets adopted in Johannesburg, it is necessary to make a proper estimate of the number of new connections to be made<sup>32</sup> as well as the unit costs.

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<sup>30</sup> WEHAB Working Group. *A Framework for Action on Water and Sanitation* [www.johannesburgsummit.org/html/documents/summit\\_docs/wehab\\_papers/wehab\\_water\\_sanitation.pdf](http://www.johannesburgsummit.org/html/documents/summit_docs/wehab_papers/wehab_water_sanitation.pdf). "Financing the MDGs is probably one of the most important challenges that the international community will have to face over the next 15 years. It is unclear at the moment how much it will all cost. In the case of water, wide-ranging estimates have emerged. The Water Supply and Sanitation Collaborative Council and the Global Water Partnership (GWP) have estimated that meeting the MDG on water coverage would require between \$14 billion and \$30 billion a year on top of the roughly \$30 billion already being spent." This report and the Unesco report *Water for Peace* (2003) quote various estimates but does not propose an estimate of the likely cost of meeting the Johannesburg targets.

<sup>31</sup> In particular, the estimates before September 2002 are not in line with the goal of "basic" sanitation adopted in Johannesburg.

<sup>32</sup> According to UNDP, population in developing countries will grow from 4.6 billion to 5.8 billion between 1999 and 2015. In 2025 this population may reach 6.5 billion. In the report by Jack Moss, Gary Wolff, Graham Gladden and Eric Gutierrez : "Valuing water for better governance. How to promote dialogue to balance social, environmental, and economic values?", CEO Panel, Kyoto, 10th March 2003, it is assumed that population growth between 2000 and 2015 is only 0.3 billion. In the World Water Vision, the increase of population between 2000 and 2025 is 1.5 billion.



The overall target may also be different. In WSSCC Vision 21 and in World Water Vision of the World Water Council, the aim is full service for everyone in 2025 while in GWP's Framework for Action (2000) the target is the same as the Johannesburg targets adopted in 2002. As shown in Figure 2, universal coverage for water supply in 2025 is a slightly more demanding target than the Johannesburg targets. On the contrary reaching full coverage for sanitation will be more demanding in yearly investment rate than the Johannesburg sanitation target (Figure 3). However it is necessary to first reach the Johannesburg target in order to meet the universal coverage target at a later stage.

#### 4.1 Current investment in WSS in developing countries

The main estimates of current investment in WSS are the following ones:

a) In the World Development Report 1992, the World Bank has provided figures for investment in water supply and sanitation (respectively 1.7% GDP and 0.6% GDP) adding up to 2.3% GDP. These old estimates are very high and can probably be ignored.<sup>33</sup> Little information is available on investment in WSS in developing countries especially those countries which require large investment.<sup>34</sup>

b) Subsequently the World Bank has estimated that investment for WSS in developing countries amounts to 0.4% or even 0.5% of GDP, i.e. \$25 billion per year. For comparative purposes, investment for WSS in France amounts to 0.3% GDP (1.6% of GCF).<sup>35</sup> This World Bank estimate of \$25-30 billion for WSS investment has had a great influence on various estimates made in 1999-2000 (especially GWP and WSSCC).

According to Briscoe and Sunman,<sup>36</sup> annual investment in the water supply and sanitation sector in 1996 in developing countries was \$27-30 billion (\$5 billion from external aid, \$2-2.75 billion from the international private sector and the remainder \$19-24 billion from domestic public and private sources). No background information to support the 0.4% GDP

<sup>33</sup> A more recent figure is \$70 billion per year for "water related investment", i.e. 1.2 % of the GDP of developing countries. Para 98 of *Water Resources Sector Strategy*. Feb. 2003. It should be noted that water related investment is much broader a concept than investment in WSS.

<sup>34</sup> In the 2003 report from the World Water Council : *World Water Actions* (p.83), the authors write that it is extremely difficult to have a clear image of public investment in the water sector because most of it is done at regional or local level. For instance, in Canada, 87% of total public expenses in WSS is made at local government level.

<sup>35</sup> Official statistics for investment for water supply in France is FF 13 billion in 1999 and for sanitation and treatment FF 25 billion (0.45 % GDP). Investment figures from IFEN have been recently reduced from €6 billion to € 4.2 billion (0.3 % GDP) because of improvement in data (G. Leclerc, personal comm.). In *Water for Peace*, Unesco, 2003 (p.339), yearly investment in France for WSS is said to be € 60 per person, i.e. 0.27% GDP.

<sup>36</sup> J. Briscoe (1998): "The Financing of Hydropower, Irrigation, and Water Supply Infrastructure in Developing Countries", Submitted for publication in *International Journal of Water Resources Development*, September 1998. Originally prepared for the UN DESA Expert Group Meeting on Strategic Approaches to Freshwater Management, Harare. H. Sunman (1999): "Towards an Assessment of Financial Flows in the Water Sector", Background paper prepared for the Global Water Partnership report : "*Framework for Action*", 2000.

estimate or the domestic expenses of \$19 -24 billion/yr. has been obtained. It should be noted that these figures refer to more than investment in new connections (Figure 1) because they include investment for waste water treatment as well as investment for the repair of existing networks.<sup>37</sup> It would appear that recent estimates from the World Bank are significantly lower.<sup>38</sup>

c) In 1999 the Global Water Partnership (GWP) investigated investment for water supply and sanitation.<sup>39</sup> It based itself on work by H. Sunman and put forward the figure of \$30 billion per year.<sup>40</sup> Subsequently the figure used was \$28 billion per year, i.e. drinking water, \$13 billion, sanitation and hygiene, \$1 billion and municipal waste water treatment, \$14 billion.<sup>41</sup> Ignoring waste water treatment, current investment in new connections is estimated : \$14 billion per year.<sup>42</sup> If the number of connections had been based on Table 1, the result would have been \$10 billion.

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<sup>37</sup> OECD data on investment in Turkey for sanitation and waste water treatment would support an estimate of 0.1% GDP to which a similar figure should be added for water supply investment. For Mexico, the average investment in WSS in 1996-2001 is 0.07% GDP. Before 1996, it reached a peak of 0.2% GDP. According to the World Bank, total public work expenditure is 0.3% GDP in Egypt and Morocco, 0.4% GDP in Tunisia and 0.6% GDP in Algeria. Water is only a part of this. In Uganda, investment for water is 0.4% GDP in 2001, 5 times more than in 1997 (WaterAid). In many other developing countries investment in WSS is lower.

<sup>38</sup> According to the World Bank (2003), historical water supply and sanitation investment estimated at \$15 billion per annum correspond to 0.25% of GDP. A graph shows that this figure includes approximately \$8 billion for supply, \$4.5 billion for sanitation and \$2.5 billion for wastewater treatment. World Bank : "Water Supply and Sanitation and the Millennium Development Goals", addendum to "Progress Report and Critical Next Steps in Scaling Up: Education for All, Health, HIV/AIDS, Water and Sanitation", March 2003. Addendum 3.

<sup>39</sup>GWP : *Framework for Action : Achieving the Vision. Financial Flows for Water*, Aug. 1999. Also GWP : *Towards Water Security : A Framework for Action*, 2000 (p.76) and Annex III (pp. 104-106). The figures for urban areas are close to the ones used in this report (Table 7).

<sup>40</sup> "The Framework for Action (FfA) report estimated future financing needed for the sector. It suggested that an additional \$8 billion per year for water supply and \$17 billion per year for sanitation was needed in addition to the estimated \$30 billion currently being invested in the sector (GWP 2000). The figures in the FfA were derived by using estimates per beneficiary for rural and urban populations without water supply and sewerage and networked sanitation, each representing a quarter of the total investment needs. The rural per beneficiary cost estimates were drawn from Water and Sanitation Collaborative Council (WSSCC) estimates in Vision 21 and are for low-cost technology solutions". See *"Financing water and sanitation. Key issues in increasing resources to the sector"*, A WaterAid briefing paper written by S. Annamraju, B. Calaguas & E. Gutierrez, November 2001.

<sup>41</sup> This figure was reached by subtracting calculated WSS investment from the \$30 billion estimate for WSS investment put forward by J. Briscoe. It may be much too high as Briscoe's estimate is probably too large.

<sup>42</sup> These figures included 15% for O and M expenses. Investment is \$12.1 billion for supply and \$1.3 billion for sanitation (Total : \$13.4 billion). According to H. Sunman, this is based on supplying water to 112.5 million urban people per year and 112.5 rural people and sanitation to 8.4 million urban people and 8.4 million rural people. Please note that these assumptions are very different from those in Table 1 which were issued at a later stage (80 million people per year for supply and 76 million people per year for sanitation).

d) The same total estimate for WSS (\$30 billion) is found in the World Commission for Water Report : "A Water Secure World" or the World Water Council Report "Making Water Everybody's Business" prepared by W.J. Cosgrove and F.R. Rijsberman (\$30 billion/yr. for WSS in 1995).<sup>43</sup> No details were made available on how the estimate was derived.

Two other estimates for investment in new connections have been provided :

e) According to Mr. P. Woicke, Vice President of the World Bank, direct costs of extending access to the "unserved" (new connections in supply and sanitation) in 2002 can be assessed at \$15 billion per year for investment only. This estimate is based on former GWP estimates; it does not include maintenance costs, financing charges of existing systems, rehabilitation costs of deteriorated systems, wastewater treatment costs nor any cost for transporting or storing drinking water ; the financing is from domestic sources (\$10.1 billion), IFIs (\$2.2 billion), bilateral donors (\$2 billion), private investors (\$0.7 billion).<sup>44</sup>

f) The cost of new connections during recent years can also be inferred from the estimate of the World Bank of \$12-25 billion for the cost of future connections<sup>45</sup>, i.e. \$8 - 16 billion par year.

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**Table 12**

**PAST INVESTMENT FOR WSS**

*(1990-2000 in \$ million per year)*

	<i>Africa</i>	<i>Asia</i>	<i>Lat. Amer.</i>	<i>Total</i>
<hr/>				
<i>Number of persons newly served (million)</i>				
- <i>Water supply</i>	<i>135</i>	<i>585</i>	<i>82</i>	<i>802</i>
- <i>Sanitation</i>	<i>98</i>	<i>581</i>	<i>85</i>	<i>764</i>

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<sup>43</sup> The World Water Commission estimates that the current level of investment of about \$70 billion per year (including \$17 billion for hydropower, \$28 billion for water and sanitation and \$25 billion for irrigation) needs to increase to \$180 billion per year to ensure water security by 2025.

<sup>44</sup> World Bank : "Water Supply and Sanitation and the Millennium Development Goals", addendum 3 to "Progress Report and Critical Next Steps in Scaling Up: Education for All, Health, HIV/AIDS, Water and Sanitation", March 2003. See also World Bank Brief : WSS, Oct. 2002.

<sup>45</sup> World Bank : "Progress report and critical next steps in scaling up : education for all, health, HIV/AIDS, water and sanitation", DC2003-0004, March 27, 2003. Presented to IMF- World Bank Development Committee.

<i>of which in urban areas (million)</i>				
- Water supply	87	282	75	444
- Sanitation	84	365	73	522
<i>Investment for water supply (M\$)</i>	4091	6063	2410	12564
<i>Investment for sanitation(M\$)</i>	542	1104	1503	3148
<i>Total inv.supply and sanitation(M\$)</i>	4633	7167	3913	15712+
<i>of which externally financed (M\$)</i>	3163*	2396	940	6499**
<i>WSS inv. as % of public investment</i>	5.3	3.6	8.3	
<i>Investment cost per person newly served (\$/cap.)***</i>				
- Water supply	303	103	294	157
- Sanitation	55	19	177	41
<i>Part of investment financed by national sources (%)</i>				
<i>Water supply</i>				
- in urban areas	31	66	78	56
- in rural areas	26	60	75	54
<i>Sanitation</i>	48	86	77	74
<i>Supply and sanitation</i>	32	67	76	59

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**Source :** WHO-Unicef : *Global Water Supply and Sanitation Assessment 2000 Report.*

**Remarks :**

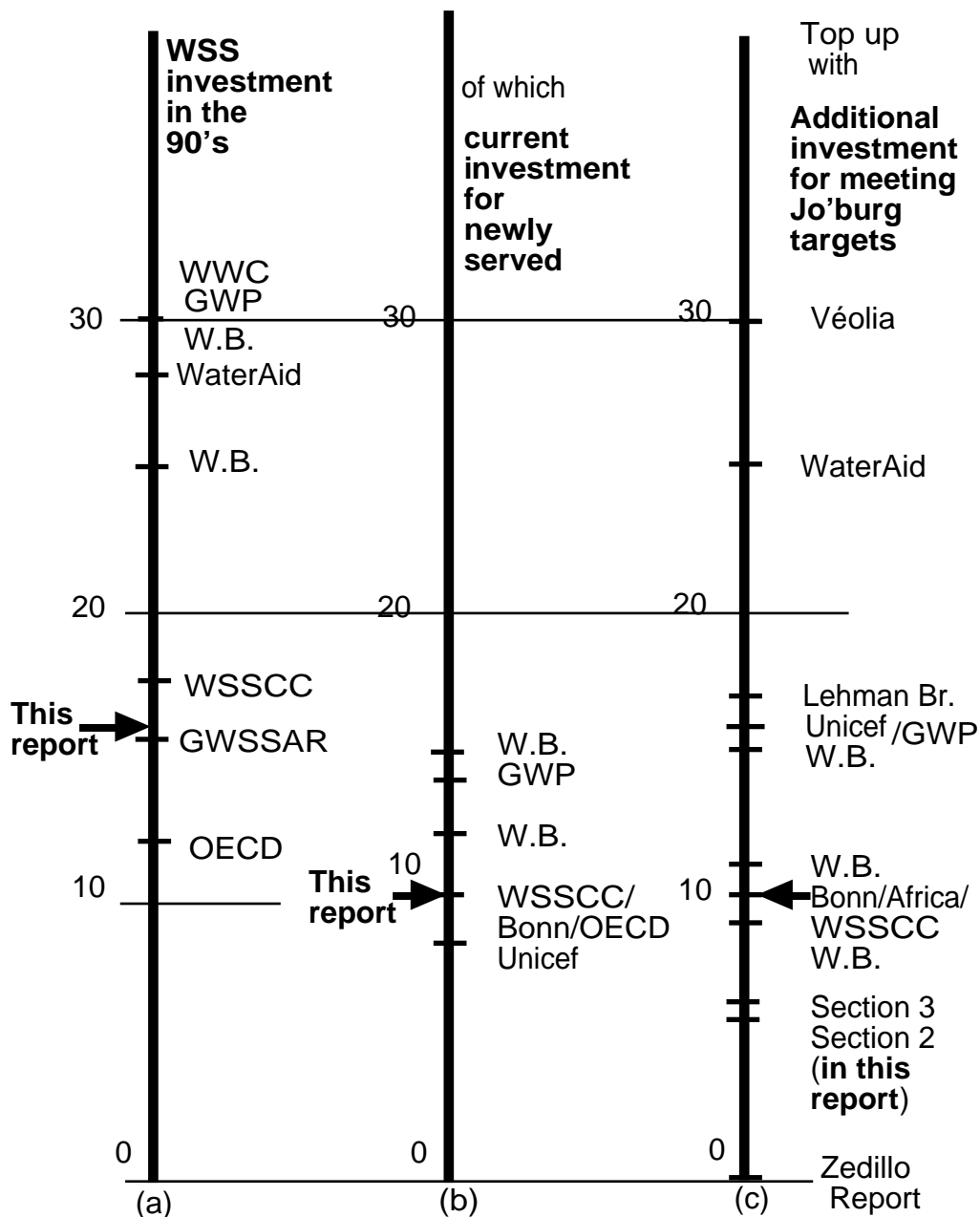
+ *This figure is equivalent to 0.2 % GDP of developing countries (half of W.B. estimate).*

\* *OECD estimate of aid for water is \$0.9 billion in Africa.*

\*\**OECD estimate for aid for WSS is \$3.4 billion.*

\*\*\**The discrepancies between these average investment costs are caused by adding investment for existing connections (repair, renewal, modernizing, etc.) with investment for new connections. These figures are an upper limit of unit costs of new connections.*

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**Figure 4. Various estimates for :**

- a) investment in WSS in the 90's of which :
- b) current investment to serve the unserved ;
- c) additional investment to be made for reaching the Johannesburg targets for water (in addition to current investment).

in \$ billion per year invested in developing countries

***N. B. In this report we consider that the best estimate of future cost for reaching the Johannesburg targets for water is :  
\$10 billion/yr. + \$10 billion/yr.***

Four independent estimates have been provided :

g) In 1998 UNICEF estimated the cost of low-cost water and sanitation at \$8 billion per year in 1995.<sup>46</sup>

h) In 2003, the WSSCC suggested that the current level of investment was \$10 billion per year for new connections<sup>47</sup>;

i) The GWSSAR provided an estimate of \$15.7 billion per year for total investment in WSS during 1990-2000 (Table 12). This figure included more than the cost of new connections.

j) The global environment industry in the area of water supply and treatment is estimated by OECD<sup>48</sup> at \$200 billion per year in 2000 of which a total of \$17.7 billion is for Asia, Africa and Latin America. These figures include both industrial and household water uses. For households only, it could possibly be \$12 billion per year of which \$10 billion for new connections.

The various estimates of investment are presented in Figure 4. The differences between them are not very large but the differences may have practical significance.

**From the above, it would appear that current investment in WSS in the nineties in developing countries is approximately \$16 billion per year, i.e. investment in WSS on the basis of an early estimate of \$30 billion which was probably too high.**

**As many of these estimates include expenditures for waste water treatment or for activities not directly related to the Johannesburg targets, current investment for new connections could probably be assessed at approximately \$10 billion/yr.**

## **4.2. Future investment in WSS in developing countries**

Many different estimates of future investment in WSS have been made. They are even more problematic than estimates of recent investment because there is uncertainty about the technology that will be used and its cost. By and large these estimates are roughly in line with

<sup>46</sup> Unicef :” Implementing the 20/20 Initiative. Achieving universal access to basic social services”, A joint publication of UNDP, UNESCO, UNFPA, UNICEF, WHO and the World Bank, 1998.

<sup>47</sup> “The present levels of international aid for hygiene, sanitation and water supply are running at approximately \$5 billion per year. Governments in the developing world are spending roughly the same again. Reaching the WASH goal of halving the proportion of people without access to safe water and sanitation will demand at least a doubling of this level of investment”. WSSCC : *Kyoto. The Agenda Has Changed*, March 2003 (p.8). In the Camdessus Panel Report, it is stated that “Using the most basic standards of service and technology, the 2015 goals could be attained at an extra annual investment cost of about \$10 billion” (unofficial estimate by WSSCC).

<sup>48</sup> OECD : *Environmental Goods and Services*, 2001, p.12.

the statement that investment in WSS should double.

#### **4.2.1 Lower estimates (up to \$12 billion additional investment)**

a) The Zedillo report suggested that no additional spending would be necessary to reach the Johannesburg targets because the current rate of expenditure was sufficient. This reasoning has been criticized by many experts and may be ignored.<sup>49</sup>

b) Taking into account past achievements and their cost, the annual investment in water supply to achieve the Johannesburg targets should be increased by 27 % and the annual investment in sanitation by 84% (see Section 2 above based on GWSSAR data). Taking into account the current investment for water supply (\$12.6 billion in Table 12) and the current investment for sanitation (\$3.1 billion), the total WSS investment should increase from \$15.7 billion to \$21.7 billion (or an increase of \$6 billion per year).

c) In a report for the UN Task Force on Water and Sanitation,<sup>50</sup> it is suggested that a basic package to reach the Johannesburg targets would cost \$68 billion for water supply and \$33 billion for sanitation targets over 15 years, i.e. a total of 6.7 billion per year ;

d) Direct calculations (see Section 3 above) led to an increase of investment of \$7.1 billion per year (from \$13.85 billion to \$20.92 billion for new connections in case A).

e) According to WSSCC, the most basic standards of service and technology would require a total investment of \$10 billion per year for new connections.<sup>51</sup> This would probably mean that an additional investment of \$4 billion should be added to a current investment of

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<sup>49</sup> *Technical report of the high-level panel on financing for development (Zedillo Report)*, March 2002. See also Camdessus Panel Report (footnote 9). The reasoning is flawed because a comparison is made between a high estimate of current investment and a moderate estimate of future investment.

<sup>50</sup> This is an average of results from Vision 21, GWSSAR, Nigam and Ghosh and Briscoe and Garn. see "Costs and Resources for WES in the 1990s" by Ashok Nigam and Gourisankar Ghosh, WaterFront, Special Issue, 1994; "Financing Agenda 21: Freshwater, John Briscoe and Mike Garn, The World Bank, February 1994. Background Paper of the Task Force on Water and Sanitation April 18, 2003. Nevertheless this report seems to give its support to the old GWP estimate of \$13+\$17 billion per year.

<sup>51</sup> In *Vision 21* published by WSSCC in December 1999 (p.45), it was explained that the cost of \$9 billion per year is based on expenses of \$50/cap. for urban water, \$15/cap. for rural water, \$25/cap. for peri urban sanitation and hygiene promotion and \$10/cap. for rural sanitation and hygiene promotion. These unit costs (\$75/cap. and \$25/cap.) are very low in comparison with those given in Table 7 and 8 of this report especially concerning sanitation in urban areas. *Vision 21* also explains that "Current estimates of annual expenditure on water and sanitation in developing countries vary in the range \$10-25 billion, most of which is spent on higher level services in urban centers". Using the unit costs of Table 7, investment would be about \$10 billion per year but the unit costs in urban areas are very low. WSSCC was invited to provide additional information concerning its own estimate but did not answer this request.

**Table 13**

**ANNUAL INVESTMENT COST ESTIMATES FOR MEETING  
THE MILLENNIUM DEVELOPMENT GOALS  
IN WATER SUPPLY AND SANITATION**

(\$ billion per year, 2001 prices)

<i>Region</i>	<i>Supply</i>	<i>Sanit.</i>	<i>Total</i>	<i>%</i>
<i>Sub-Saharan Africa</i>	1.9	3.3	5.2	17
<i>Middle East+ N. Africa</i>	0.6	1.2	1.8	6
<i>East Asia + Pacific</i>	2.6	6.9	9.5	32
<i>South Asia</i>	2.1	6.7	8.8	29
<i>Latin America + Carib.</i>	0.8	1.5	2.3	8
<i>Europe + Central Asia</i>	0.2	0.4	0.6	2
<i>Additional production</i>	1.8	-	1.8	6
<i>Total developing world</i>	10.0	20.0	30.0	100

**Source :** World Bank : “Water Supply and Sanitation and the Millennium Development Goals”, addendum 3 to “Progress Report and Critical Next Steps in Scaling Up: Education for All, Health, HIV/AIDS, Water and Sanitation”, March 2003.

**Note :** According to the World Bank, this estimate must be considered the lower end of what meeting the Millennium Development Goals will take for a number of reasons. Furthermore the costs of rehabilitating run-down water and wastewater systems have not been included in the estimates.

about \$6 billion per year. In subsequent estimates investment was \$10+\$10 billion per year.

f) The Bonn Recommendations for Action give an estimate of \$20 billion compared to a current level of \$10 billion, i.e. an additional investment of \$10 billion per year.<sup>52</sup>

g) In February 2002, the World Bank calculated the cost for achieving the Millennium

<sup>52</sup> “Estimates for required global investment in all forms of water related infrastructure vary widely up to \$180 billion annually, compared to a current estimated level of \$70-80 billion. Water supply and sanitation for basic human needs, however, accounts for only a small proportion of these totals : its needs are estimated at approximately \$20 billion annually, compared to a current level of 10 billion.” Bonn Freshwater Conference, Recommendations for Action, 2001 (p.2).



Development Goals.<sup>53</sup> It wrote : “The costs of achieving the environment goals (essentially water and sanitation) have been calculated by looking at a range of estimates, one for achieving universal coverage (\$30 billion a year), another for reaching basic levels of coverage (\$9 billion)”. The World Bank (Mr. Jamal Saghir) suggested in 2002 that the extra annual investment to reach the Millennium target is \$11 billion and the total investment in the future is \$26.7 billion (15.7 +11).<sup>54</sup>

h) An African estimate of investment to meet the Johannesburg targets is \$6 billion in Africa.<sup>55</sup> Assuming that Africa represents 30% of the total this would mean a total of \$20 billion at world level, i.e. an additional investment of \$10 billion assuming that the current investment for new connections is \$10 billion per year.

#### **4.2.2 Higher estimates (over \$12 billion additional investment)**

a) According to Mr. P. Woicke, Vice President of the World Bank, “there is a need to roughly double the rate of investment, to about \$30 billion per year, for water and sanitation alone from a combination of public and private investors over the next decade”.<sup>56</sup> The additional investment for new connections would be approximately \$15 billion per year.<sup>57</sup> A geographical distribution of investment is given in Table 13.

b) According to Unicef, the future cost for low cost water and sanitation is \$24 billion

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<sup>53</sup> See also : Millennium Development Goals. Eradicate extreme poverty [www.worldbank.org/watsan/rwsstoolkit/material/mdg.pdf](http://www.worldbank.org/watsan/rwsstoolkit/material/mdg.pdf). “To reach these ambitious goals, massive amounts of aid are necessary. Current levels of contributions to the water and sanitation sector stand at about \$15.7 billion, and estimates indicate that annual contributions will need to increase by over 60% to \$25.2 billion in order to achieve the goals. The difficult question then arises as to from where this money will come. Clearly this is a call to the developed world to vastly expand their aid programmes.” However, this call has so far remained unanswered.

<sup>54</sup> Camdessus Panel Report, footnote 10. The same figure is provided by Jack Moss, Gary Wolff, Graham Gladden and Eric Gutierrez : “Valuing water for better governance. How to promote dialogue to balance social, environmental, and economic values?”, CEO Panel, Kyoto, 10th March 2003

<sup>55</sup> The Accra Declaration on water and sustainable development (april 2002) includes the following statement concerning Africa : “There is a need for an annual investment level of \$20 billion per year for the development of water infrastructure, as articulated in the African Water Vision for 2025. However, an initial investment target of \$10 billion per year is suggested to meet urgent water needs. The breakdown is approximately as follows: approximately \$6 billion will be required annually to meet basic water supply and sanitation targets, \$2 billion to promote irrigated agriculture and a further \$2 billion to support the software of institutional development, capacity building, research, education and information management.”

<sup>56</sup> *Int. Herald Tribune*, 21st March 2003.

<sup>57</sup> A World Bank estimate given in March 2003 is an additional expense of \$12-25 billion to meet MDG for water. World Bank : Progress report and critical next steps in scaling up: education for all, health, HIV/AIDS, water and sanitation, DC2003-0004, March 27, 2003. Presented to IMF- World Bank Development Committee in April 2003. The \$30 billion consists of water supply \$10 billion, sanitation \$20 billion. In addition wastewater treatment would cost \$20 billion.

of which \$8 billion is the current cost (additional investment : \$16 billion)<sup>58</sup>.

c) According to the Global Water Partnership report<sup>59</sup>, future yearly expenses are : drinking water, \$13 billion, sanitation and hygiene, \$17 billion and municipal waste water treatment, \$70 billion. Disregarding waste water treatment<sup>60</sup>, meeting the Johannesburg targets would imply an investment of \$30 billion/yr., i.e. an extra \$16 billion over the current investment of \$14 billion. As these figures include 15% for operational and maintenance expenses, a small deduction could be made.

d) Mr. Luc Averous (Lehman Brothers) has provided the Camdessus Panel with an estimate of \$17 billion for water supply and \$32 billion for sanitation (sewerage and primary waste water treatment of urban effluents).<sup>61</sup> Assuming that waste water treatment amounts to \$16 billion per year, future investment for WSS could be around \$33 billion, which means an additional investment of about \$17 billion.<sup>62</sup>

e) At the WSSD in Johannesburg, it was suggested that the additional investment needed to meet the Johannesburg targets was \$14-30 billion in addition to \$30 billion already spent.<sup>63</sup>

f) WaterAid suggested an increase of \$25 billion (\$17 billion for sanitation and \$8 billion for water supply) in addition to \$27-30 billion.<sup>64</sup>

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<sup>58</sup> Unicef : Implementing the 20/20 Initiative. Achieving universal access to basic social services A joint publication of UNDP, UNESCO, UNFPA, UNICEF, WHO and the World Bank, 1998.

<sup>59</sup>GWP : *Towards Water Security : A Framework for Action*, Stockholm 2000 (p.76). The report seeks to justify and investment of \$180 billion per year in the future and even quotes a London stockbroker report putting the global market for water services at \$375 billion per year by 2010.

<sup>60</sup> According to OECD, "90% of all wastewater in the developing world goes untreated into local watercourse". OECD : *Improving Water Management*, March 2003. But not so long ago, domestic effluents of Athens, Brussels or Marseilles were discharged un treated.

<sup>61</sup> In the Camdessus Panel Report, it is stated " Providing full water and sewerage connections and primary wastewater treatment to the urban populations would raise the annual cost of the 2015 goal to \$17 billion for water and \$32 billion for sanitation and sewerage." In the report from L. Averous : "Financing Water Infrastructure", 2002, Lehman's estimate (\$49 billion) is lower than the corresponding estimate by WWC (\$75 billion) or by GWP (\$100 billion). The calculations are based on unit costs of \$140/cap. for water supply and \$190/cap. for sanitation for the entire population to be served. As no allowance is made for cheaper systems in rural population, this estimate is very high.

<sup>62</sup> Camdessus Panel Report, footnote 11.

<sup>63</sup> In the "Chairperson's summary of the partnership plenary discussion on water and sanitation, energy, health, agriculture and biodiversity ("WEHAB"), A/CONF.199/16/Add.2, it is stated that "One of the presenters mentioned that there are several estimates made on how much is required to reach the MDGs on water. One of these calculates that it would require between \$14 billion and \$30 billion a year on top of the roughly \$30 billion a year already being spent". In " *Improving Water Management*", OECD states that this a common position of both WSSCC and GWP (p. 32).

<sup>64</sup> Financing water and sanitation. Key issues in increasing resources to the sector. A WaterAid briefing paper written by S. Annamraju, B. Calaguas & E. Gutierrez (November 2001). The \$27-30 billion estimate is from GWP.

g) According to Mr. Henri Proglio (CEO, Véolia Environment), the expense to reach the Johannesburg targets would be \$15 billion per year for water supply and \$30 billion per year for sanitation, i.e. \$45 billion.<sup>65</sup> Assuming that the current expense is \$15 billion, this would mean an increase of at least \$30 billion per year.

h) At the Bonn Conference Mr. M. Muller (South Africa) stated that development aid for water should be increased to \$9 billion per year.<sup>66</sup> Assuming that the current level of aid for WSS is \$3.4 billion<sup>67</sup>, this would nearly amount to a tripling of aid for water (see section 6.4). If aid finances 50% of investment in WSS, total investment for new connections would be \$18 billion.

According to the World Water Council<sup>68</sup>, future investment for WSS (excluding replacement of existing systems because of age or neglect) is estimated at \$75 billion/yr. in developing countries. As this figure includes waste water treatment and repairs, it is not comparable with other estimates of the cost of meeting the Johannesburg targets.

#### **4.3. An estimate of the cost of additional investment for meeting the Johannesburg targets**

We presented here above a number of estimates of the cost of meeting the Johannesburg targets in developing countries but did not quote secondary sources because we are only interested in calculations of this cost. From the above analysis and comparison, it can be concluded that :

##### **a) an additional investment of \$10 billion per year will be needed to serve the**

<sup>65</sup> Henri Proglio : "Eau : urgence à Evian", *Le Monde*, 31 mai 2003. "La dépense annuelle supplémentaire serait de l'ordre de 15 milliards de dollars pour l'eau potable et de 30 milliards de dollars pour l'assainissement". These figures are probably inspired by Lehman's data and are thus larger than what is needed to meet the Johannesburg targets.

<sup>66</sup> According to Mr. M. Muller, Director General of DWAF (South Africa), the Bonn Conference agreed that development aid for water should be increased at least to the level of \$9 billion per year "to address the basic needs backlog, clearly within reach of a concerted international programme." (Extract from "Water Trailers the Challenges for the Jo'burg Earth Summit").

<sup>67</sup> OECD : Creditor Reporting System ; *Aid Activities in the Water Sector 1997-2001*, OECD, 2003. As a whole, development aid and non concessional loans for water add up to \$4.25 billion in 1999-2001 of which 80% is for WSS (\$3.4 billion per year) and the international private sector is probably providing less than \$1 billion per year for WSS. OECD statistics do not include investment in dams and reservoirs for irrigation and hydropower and activities related to river transport. They include expenses related to water resource policy, planning and programmes, water legislation and management, water resource development and protection, river development, solid waste management and disposal, small and large systems of WSS and education and training in WSS.

<sup>68</sup> See World Water Commission report "A Water Secure World", 2000 (p.51) and W.J. Cosgrove and F.R. Rijsberman : "World Water Vision, Making Water Everybody's Business", Earthscan, London, 2000 (p.60).

**“unserved” in addition to current investment of \$10 billion per year** ; this estimate is below many other estimates because we assumed that low-cost technologies would be used.

*We consider that this low estimate should be preferred because it is based on a clear calculational model and not a mix of various data which cannot always be assessed Furthermore our own estimate is between the WSSCC estimate of \$10 billion and the World Bank’s estimate of \$30 billion for future investment to reach the Johannesburg targets.<sup>69</sup>*

**b) additional investment in the area of WSS is likely to exceed \$16 billion per year** because it will also be necessary to invest in the rehabilitation of existing systems and in the improvement of waste water treatment;

**c) thus total investment in WSS for households should double from \$16 billion to reach at least \$32 billion per year.** Larger figures could be contemplated but are likely to exceed available financial means.

While there is a large support for doubling the financial flows for WSS, the main difference with previous statements on doubling funds is that we put forward what it actually means in money terms. The figures (\$32 billion/yr. of investment in WSS between 2000-2015 of which \$20 billion/yr. for serving the unserved) are far smaller than some figures which have been quoted previously. They are also quite small when compared to infrastructure investment in developing countries.<sup>70</sup>

The doubling of investment in WSS has been proposed as early as 1992.<sup>71</sup> It was supported among others in 2003 by President Chirac and the Camdessus Panel but some state

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<sup>69</sup> The World Bank estimate was presented to the UNCSD meeting in May 2003. It is likely to be on the high side. In the second part of this report, we examine whether this high estimate can be financed.

<sup>70</sup> “A recent study of the World bank (July 2003) on infrastructure demand estimates that the annual investment and maintenance needs in infrastructure for developing countries over the period 2005-2010 could amount to – at a minimum – \$465 billion per annum or on average 5.5% of each country’s GDP, and up to 6.9% of the GDP of the poorest countries. New investment needs are estimated to be approximately \$233 billion per year while maintenance needs could be on the order of an additional \$232 billion per year. Traditionally, most investment in infrastructure has been publicly funded. According to a study by DFID, 70% of current total infrastructure spending is still financed by governments or public utilities’ own resources. The private sector contributes roughly 20%-25% while official development assistance (ODA) finances only around 5%-10% Private sector participation in infrastructure, however, has been volatile and heavily concentrated in a few sectors. It increased sharply during the 1990s only to rapidly decline after 1997, returning – and remaining ever since – to levels similar to those in 1994. In contrast, commitments for infrastructure of Multilateral Development Banks (MDBs) have remained relatively stable since 1995, with combined annual average commitments of \$16.5 billion, corresponding to about 43% of total MDB commitments”. Extract from “Implementing the World Bank group infrastructure action plan” (with special emphasis on follow-up on the recommendations of the World Panel on Financing Water Infrastructure), a report to the IMF-WB Development Committee, Sept. 2003. DC2003-0015

<sup>71</sup> In Agenda 21, Chapter 18, adopted in Rio in 1992, it is already stated that : “ Even for the more realistic target of achieving full coverage in water-supply by 2025, it is estimated that annual investments must reach double the current levels. One realistic strategy to meet present and future needs, therefore, is to develop lower-cost but adequate services that can be implemented and sustained at the community level.” Para. 18.49.

representatives were against this policy because of the cost involved. For instance Mexico did not adopt in 2001 a policy fully in line with the Millennium Declaration (September 2000) (Box 2).

Considering that the world community is not committed to financing activities in the area of WSS going beyond those for meeting the Johannesburg targets, **the priority issue is to finance additional investment of \$10 billion per year for giving access to water supply and sanitation. Most of this additional investment will have to be should be financed at national or local level. But part of this new effort will have to be financed through international solidarity, i.e. with greater international aid for water.**

Increasing total investment in the water sector will thus require a change in development aid policies because over the last years, aid for water has been gradually reduced (Table 14). The present calls for additional funds to invest in WSS should not remain unanswered because a few states are not ready to increase their aid.

\* \* \*

In the second part of this report, we shall examine how to finance a large programme of investment in WSS to meet the Johannesburg targets. In particular we shall investigate whether governments could double or even triple aid for water bearing in mind their other commitments. If there is not enough willingness to pay for this programme, we could conclude that the Johannesburg targets are over ambitious and that governments which undertook collectively to meet the Millennium Development Goals are not ready to provide aid funds in line with their commitments.

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**Table 14****TRENDS IN AID FOR WATER**  
(\$ million)

	1996	2001
<hr/>		
<b>To developing countries</b>		
<i>Total aid for water</i>	4022	2979 (- 26%)
<i>of which :</i>		
<i>for small and large systems of WSS</i>	2976	2141 (- 28%)
<i>grants component</i>	733	901 (+ 23%)
<i>loans component</i>	2243	1240 (- 45%)
<hr/>		
<b>To sub-Saharan countries</b>		
<i>Total aid for water</i>	835	782 (- 6%)
<i>of which :</i>		
<i>for small and large systems of WSS</i>	540	536 (- 1%)
<i>grants component</i>	234	250 (+6%)
<i>loans component</i>	306	286 (- 7%)

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**Source :** OECD Creditor Reporting Systems, 2003.

**NB :** OECD data on aid for water includes general administration, river development, solid waste management education to WSS as well as large and small systems of WSS.. The figures for aid in Figures 7 to 10 are three-year moving averages.

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**Box 2**  
**IS MEXICO ON THE ROAD TO MEETING**  
**THE JOHANNESBURG TARGETS FOR WATER ?**

*Mexico is the eighth OECD country in terms of total GDP (PPP adjusted) and its GDP per capita is \$8297 (PPP adjusted) making it the second lowest among OECD countries. Its rate of demographic growth is 1.3% /yr. In 2001, the Mexican Government has adopted a National Programme on the Environment and Natural Resources for the period 2001-2006. which includes the targets to increase water supply from 88% to 89% of the population in 5 years and to increase sanitation from 76% to 78%. During the same period the population with access to safe water in rural areas should increase from 68 to 71%.*

*This programme implies a significant increase in new connections because the population is growing fast but is not fully in line with the Millennium Development Goals adopted by Mexico in 2000 (water supply). If the gap in water supply (6 percentage points) should be filled in 15 years, the progress to be achieved during the first 5 years should have been + 2% rather than +1%. This could be achieved with larger investment in the water sector as was the case in the early nineties.<sup>72</sup>*

*In 2003, OECD recommended that additional resources should be made available to ensure consistency with the internationally agreed objectives. This would mean in particular that the sanitation target after 5 years should be + 4% instead of + 2%.*

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<sup>72</sup> The difference for water supply is not very large. Because of demographic growth over a 5 year period, there is a need to provide new connections to 6.5% of the population and because of the improvement in water supply, there is an additional need of 2%. The current plan is for an improvement of 1%.





## Part Two

# FEASIBILITY OF BURDEN SHARING

## **Monterrey Consensus**

“For many countries in Africa, ODA is still the largest source of external financing and is critical to the achievement of the development goals and targets of the Millennium Declaration and other internationally agreed targets.

We recognize that a substantial increase in ODA and other resources will be required if the developing countries are to achieve the internationally agreed development goals and objectives.”

International Conference on  
Financing for Development  
Monterrey, March 2002

## **FEASIBILITY OF BURDEN SHARING**

*“An estimated 80 per cent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases.” Para 18.47 of Agenda 21, Rio, 1992*

Every day over 6000 people die from water related illnesses in developing countries.<sup>73</sup> As shown by Figure 5, mortality of children before 5 year is closely related to the percentage of population without access to safe water<sup>74</sup> and under the Millennium Development Goals, it should be reduced by 67 %. Public health will be much improved if the Johannesburg targets for water are met. For this to happen, it is necessary to share the financial burden of the investment programme in water supply and sanitation.

Banks, financial institutions and the private sector play a large role by providing the initial funds for making the WSS investment but do not shoulder part of the financial burden because they aim to be reimbursed for money loaned or investment made.

By and large, the main sources of funding for water are internal to the country concerned which will have to increase such sources; As stated by UK NGO's<sup>75</sup>, “The designs of tariff structures and of systems for cross-subsidies between users as well as direct subsidies to those unable to afford water and sanitation services are important and must be done sensitively with wide consultation.” As local financing of water investment is likely to be very low in the poorest countries, foreign assistance will be needed to finance most new water systems.<sup>76</sup>

In this report, we focus on providing access to water for poor users. However it is well known that financial support will also be necessary to improve water governance, develop better legal and financial conditions for private investors, reduce foreign exchange risks, provide a guarantee against default of non-sovereign entities, etc. Activities aiming at

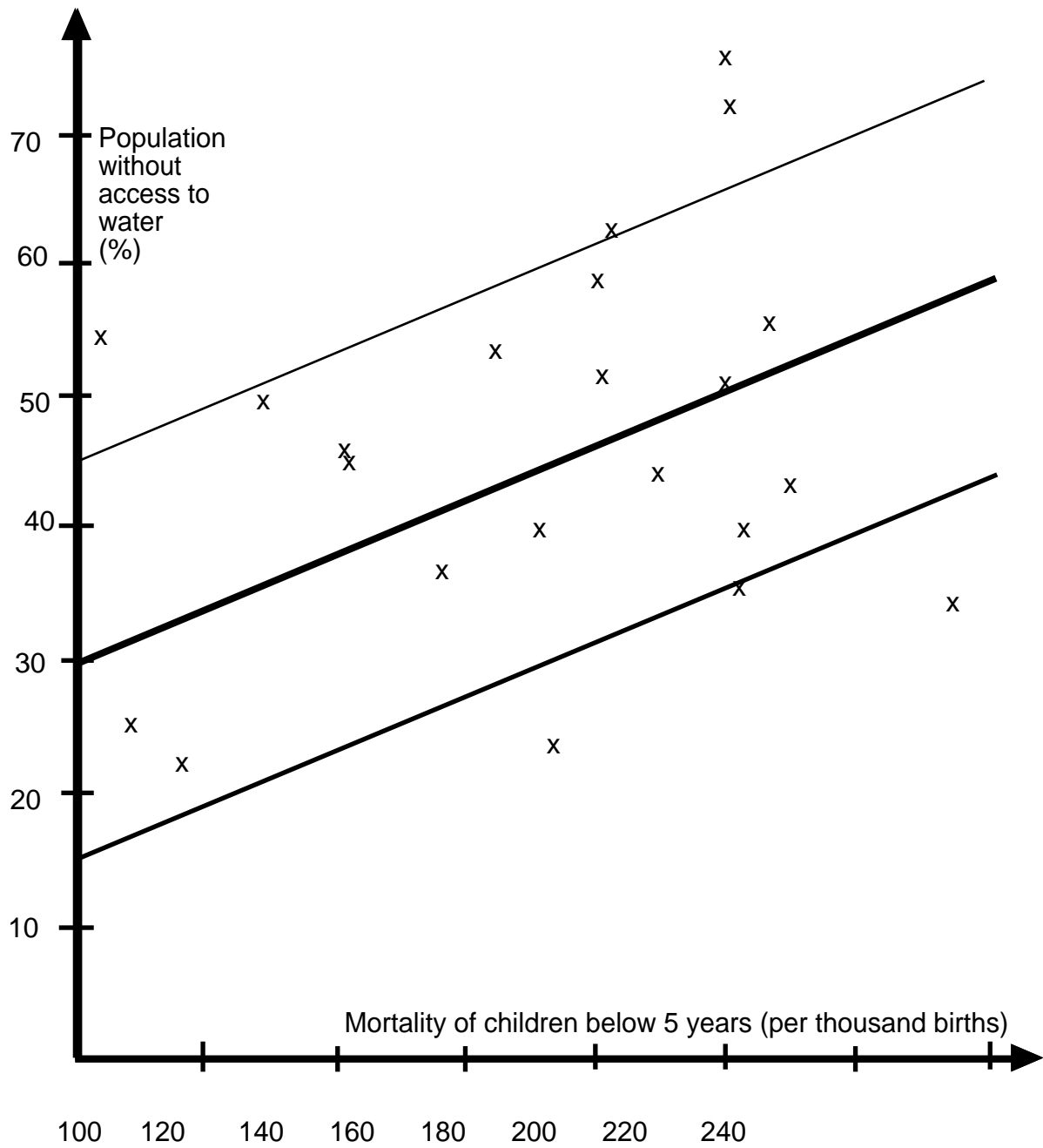
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<sup>73</sup> At least 2.2 million people die from water, sanitation and hygiene associated ill-health (*Water for people*, Unesco, 2003). There are 2 million deaths from diarrhoea and 1.1 from malaria. The figure of 30 000 deaths per day due to water related illnesses is often quoted but is not supported. The mortality rate of children under 5 in 2000 is 91 per 1000 births in developing countries and 171 per 1000 births in least developed countries.

<sup>74</sup> More generally, it is related to the population in extreme poverty, the population without safe water and the population without sanitation.

<sup>75</sup> UK Water Network : *“Hitting the Targets. Recommendations to the G8 for delivery of the Millennium Development Goals on Water and Sanitation”*, May 2003.

<sup>76</sup> It should be recalled that the Johannesburg Plan of Implementation specifies that action will be supported by financial assistance. “Launch a programme of actions, with financial and technical assistance, to achieve the Millennium Development Goal on safe drinking water.”



**Figure 5. CORRELATION BETWEEN LACK OF ACCESS TO WATER AND MORTALITY OF CHILDREN BELOW 5 YEARS IN SUB-SAHARAN AFRICA (each cross is an African country)**

improving governance in the water sector are not considered here but have an influence on availability of funds to make the initial investment and/or reducing their cost which can be

very high if the financial risks are thought to be large.

This part of the report examines how to share the burden of achieving the Johannesburg targets for water bearing in mind that all countries agreed within the Millennium Declaration that :

**“Global challenges must be managed in a way that distributes the costs and burdens fairly in accordance with basic principles of equity and social justice”.**

Section 5 seeks to analyze burden sharing under two different scenarios :

- a) a relatively small additional investment or ;
- b) a larger additional investment for new connections.

It concludes that funding an additional investment of \$10 billion per year may be achievable.

Section 6 examines the case of sub-Saharan Africa where aid for water should be particularly large. The role of France in this area is examined subsequently and it is concluded that it should be strengthened to help African countries to meet the Johannesburg targets for water.

## **5. Financing additional investment to serve the unserved**

In most countries the largest part of investment in WSS is paid by official bodies such as the Ministry of Public Works, the Ministry of Interior, the Ministry of the Environment, the Fund for Social (or Rural) Development, municipalities, official or unofficial foreign aid. Table 15 gives examples of burden sharing. Box 3 shows how the financial burden of new water connections was shared in Morocco.

Banks and financial institutions will provide loans to finance the initial investment which will be reimbursed when buying water or paying taxes. In general users in developing countries pay a small share of water investment and in many countries only part of the operation and maintenance cost. Thus investment for water will be mostly paid by taxpayers.<sup>77</sup> Rich or large users of the water utilities generally pay a larger unit price for water than poor or small users (progressive tariff) and finance cross subsidies. However it is likely that they do not bear the true cost of the water they consume and that a full cost recovery policy would imply an increase in the average price of the water they use.

### **5.1. The additional investment is \$10 billion per year or less**

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<sup>77</sup> In Mexico, users pay on average 35% of true water cost. Attempts to raise water prices have not yet been successful because low electricity and water prices are thought to be a “normal” social policy for the State. A low electricity price is thought to be a way to redistribute the rent arising from Mexican oil to all citizens. A low water price is thought to be part of a normal public health policy to the same extent that a free school policy is part of a normal educational policy.

In this section we shall assume that current investment to serve the unserved will be continued (\$10 billion per year) and that additional investment for the same purpose will be made (\$10 billion per year). The distribution of the cost of a \$20 billion programme between regions is given in Table 16. The cost per person is about the same in the various regions but its effect on income varies by a large factor. In the case of sub-Saharan Africa, it amounts to 1.1% GNI, which is approximately equal to 5% of the income of the people without water.

**Table 15**

**SHARING THE BURDEN OF INVESTMENT IN WSS**

*(in % of total cost)*

<i>Final payer of the cost of connection</i>	<i>Without external aid</i>	<i>With limited external aid</i>	<i>With large external aid</i>
<i>New users (connection fee and water tariff)</i>	10	5	0 <i>(unaccounted free work)</i>
<i>Other users (cross subsidies in favour of new users)</i>	20	15	0
<i>Taxpayers : State (ministries), special devel. funds, province, municipality.</i>	40 5 15 10	30 5 5 5	20 10 0 5
<i>Foreign aid (ODA, NGOs, etc.)</i>	0	35	65
<i>Total</i>	100%	100%	100%

**N.B.:** *Loans will be reimbursed by users and taxpayers.*

### Box 3. MOROCCO BRINGS WATER TO ITS RURAL AREAS

*In 1995, the Moroccan Government launched an ambitious programme to provide safe water supply to the rural areas. In 2001, 6.1 million people in 10560 villages obtained access to water supply at a cost of Dirham 2 billion (\$200 million), i.e. \$33 /cap. The relative level of water supply in rural areas increased from 14% in 1995 to 47.8% in 2001. The goal is to connect 11 million people in 31 000 villages in 2005. This large governmental project is financed by the State (60%), foreign aid (20%), rural municipalities(15%) and the users(5%). A solidarity tax of 5% on all water bills was created to support the programme. Users in villages pay a water charge to the fountain keeper to finance operational and maintenance costs.*

**Table 16**

#### FUTURE INVESTMENT IN WSS BY REGION

(period 2000-2015)

<i>Region</i>	<i>GNI /cap. \$(PPP) (10<sup>3</sup>)</i>	<i>Death &lt;5 yr. (10<sup>3</sup>) %</i>	<i>Pop. &lt;\$1 wat. %</i>	<i>No wat. %</i>	<i>Cost \$bill.</i>	<i>Cost \$/inh.</i>	<i>Cost/ GNI 10<sup>-3</sup></i>
<i>Latin Amer.</i>	6900	34	11	12	2.6	4.9	1.4
<i>Mid.East.N.Afr.</i>	5430	54	2	12	1.5	5.0	2.2
<i>East Asia</i>	3790	44	16	24	6.9	3.8	4.2
<i>South Asia</i>	2570	99	37	16	5.4	3.9	8.7
<i>Sub Sah. Africa</i>	1750	171	49	42	3.6	5.3	11.6

**Notes :** *No wat. : % of the population without access to safe water in 2000. The total cost of \$20 billion per year for WSS is distributed between the various regions on the basis of Table 13. Poverty : % population below \$1 per day in 1999.*

To carry out a relatively large programme of WSS is a big challenge because water is a sector which does not usually attract priority attention from governments of developing

countries.<sup>78</sup> As described by the World Bank, progress made so far towards meeting the Johannesburg targets is very limited : “At present rates of service expansion, about 37% of the developing world is on track to reach the water supply target and about 16% to reach the sanitation target.”<sup>79</sup> This slow progress reflects the fact that WSS is competing against many other socio-economic sectors to attract new investment to meet the Millennium Development Goals.<sup>80</sup> In the past, the water sector was able to attract about 15% of public investment in infrastructure and 5% of private investment in infrastructure.<sup>81</sup> Similarly water is a small sector in development aid.<sup>82</sup>

If the past trends continue (i.e. under a Business as Usual scenario, BAU), future economic growth can be expected to facilitate the financing of new investment in the water sector in many developing countries especially in the intermediate income countries. In many such countries, continuation of a BAU scenario may be sufficient to meet the Johannesburg targets (see Table 6 in section 2) because the economic growth rate exceeds the rate of growth of the rate of connections.

On the contrary, in countries with very large needs and low economic growth, such as many African countries, a BAU scenario will be insufficient to bring in the large increase in investment for water which is called for to meet the Johannesburg targets. Additional sources of funding will thus have to be found to finance the increase in investment but may be quite

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<sup>78</sup> As explained by WaterAid, “Developing countries, in general, do not prioritize spending on the sector – low cost water and sanitation receive only between 1% (sub-Saharan Africa) to 3% (Latin America and the Caribbean) of government budgets (2000). Water and sanitation budgets struggle for allocations, especially where basic social services as education and health are prioritized. At Johannesburg, the Chairperson’s summary of the partnership plenary discussion on water and sanitation, energy, health, agriculture and biodiversity (WEHAB). (A/CONF.199/16/Add.2) shows the depth of the problem : “There is a low priority assigned to water by countries as evidenced by the decrease of ODA for this sector, by the reduction of investments by International Financial Institutions, by the low priority in national budgets, and by the absence of water as a central feature in major regional programmes. “

<sup>79</sup> World Bank : “*Water Supply and Sanitation and the Millennium Development Goals*”, addendum 3 to “Progress Report and Critical Next Steps in Scaling Up: Education for All, Health, HIV/AIDS, Water and Sanitation”, March 2003.

<sup>80</sup> In “*Goals for Development: History, Prospects and Costs*” (April 2002), Shantayanan Devarajan, Margaret J. Miller and Eric V. Swanson provide a breakdown of additional development aid to reach the Millennium Development Goals : Education \$20 billion, Health \$22 billion, Water \$13 billion. In this case, the allocation of aid for water amounts to less than 24 %. See also “World Bank Estimates Cost of Reaching the Millennium Development Goals at \$40-60 Billion Annually in Additional Aid”, Press Release No: 2002/212/S (February 20, 2002).

<sup>81</sup> World Bank statistics concerning \$754 billion investment by the private sector in the nineties: telecommunication and power generation : 72%, water, 5%. In 1996, total infrastructure investments to developing countries for electricity, road, telecommunications, and water, was in the order of \$230 billion. Of this figure, some \$25.3 billion went to water and sanitation.

<sup>82</sup> As shown by OECD, aid for water is only 5% of total DAC aid and 9 % of aid allocated by sector. In the UK, water aid by DFID is 4% of bilateral programmes on specific sectors (£87 million in 2001). NAO Report, “Department for International Development : *Maximizing impact in the water sector*”, Jan. 2003.



limited because of various socio-economic constraints.

a) Poverty constraints

The simplest method to finance investment for new connections would be to require new users to pay for them (user-pays principle). There would be two prices for water : a low price for those who have already access to water (from subsidized water services), and a higher price for the poor people who have to pay new connections without receiving subsidies. As such an approach is very unequitable, it is not likely to be followed and new connections will be subsidized.

Furthermore very poor people may not be in a position to finance significant additional expenditure for water. If a new connection cost \$200 per person in urban areas and if the user has an income of \$0.5 per day per person, paying the connection fee over 10 years would mean setting aside 11 % of daily income for getting access to water and in addition they would have to pay a significant part of the operational and maintenance cost.<sup>83</sup> As this scenario is unlikely to happen, connection fees to be paid by poor users will have to be reduced to a small fraction of the real cost and the remainder should be paid by national solidarity (subsidies and cross subsidies) or by external sources. For instance in Senegal, 90% of connecting fees of poor households is subsidized.

The maximum amount that poor people would be willing to pay to finance new water investment is difficult to ascertain and would vary with the depth of poverty and historical factors and the cost of alternative sources of supply. The unwillingness to pay for water in rural areas is very large because people have a free alternative, a tradition of using polluted water and reserve their meager means to other more essential goods. Furthermore, a new safe water system is of no use to them if it breaks down and obliges users to revert to traditional water sources.

Assuming that the price paid for water is 4% of income<sup>84</sup> of which the operational and

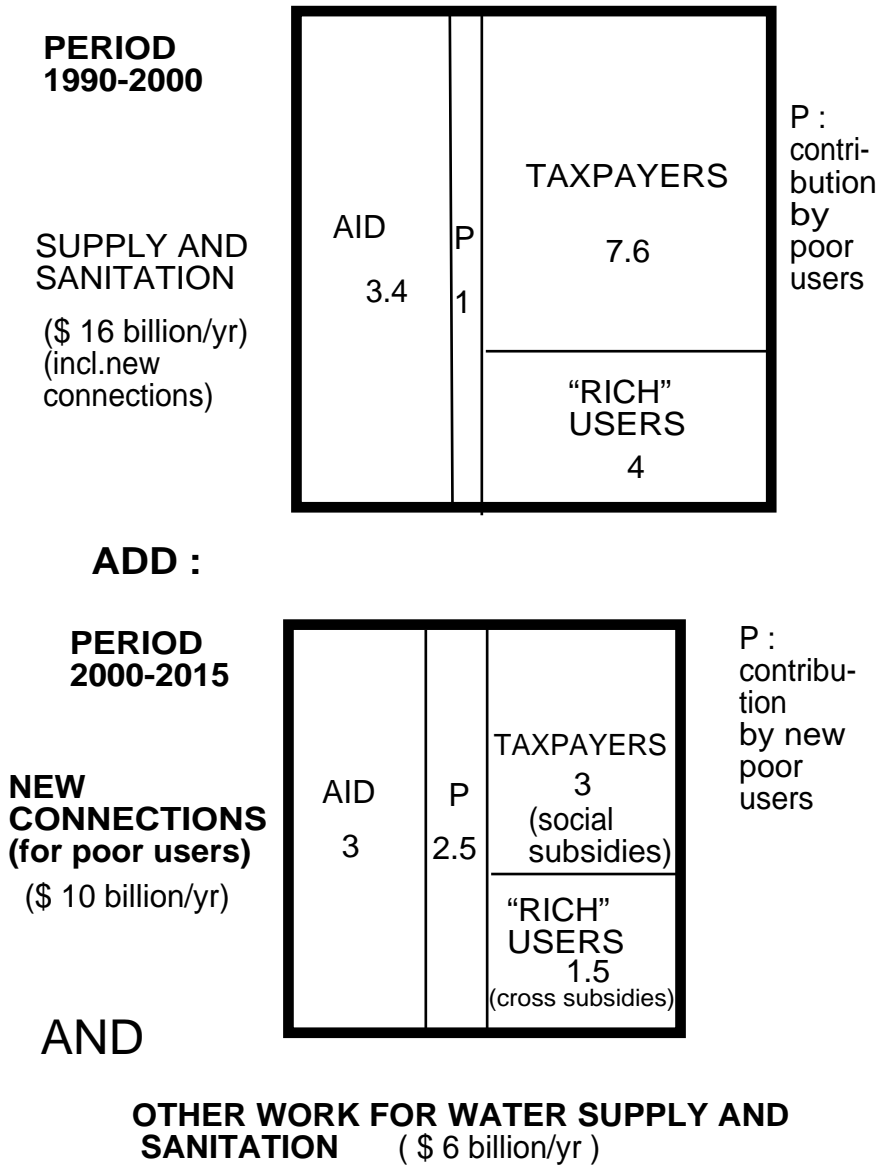
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<sup>83</sup> Assuming that such cost is \$0.3/m<sup>3</sup>, the expense for 40 l of water per day is 0.012\$ per day or \$0.36 per month (2.4% of income if income is \$0.5 per day).

<sup>84</sup> There are no agreed benchmark for affordability in developing countries. While the limit of 5% is often proposed, there is no real justification to choose any figure between 3 and 6% of the income of the user. In western Europe, water is considered to be "much too expensive" if it costs over 3% of income. However a better approach might be based on three times the percentage of income applicable to an average household because affordability is a relative concept. This would be consistent with General Comment n°15 on the right to water according to which : "Any payment for water services has to be based on the principle of equity, ensuring that these services, whether privately or publicly provided, are affordable for all, including socially disadvantaged groups. Equity demands that poorer households should not be disproportionately burdened with water expenses as compared to richer households"(para. 27).

Figure 6

## A SCENARIO FOR FINANCING INVESTMENT IN WSS IN DEVELOPING COUNTRIES



AID	TAXPAYERS	"RICH" USERS
0.4	3.5	2.1

Total :	Foreign aid	6.8 (21%)
	Tax payers	14.1 (44%)
	Rich users	7.6 (24%)
	Poor users	3.5 (11%)

maintenance cost of the water supply system is 2% of income<sup>85</sup>, it would mean that the connection fee should not cost more than 2% of income. If the daily income is \$0.5 per person, the total connection fee cannot exceed \$3.6 per year per person. Over 10 years, very poor users would be able to pay \$36, i.e. 18% of the connection cost it is \$200 or 72% if it is \$50 per person. But if interest is taken into account, poor users will provide much less towards investment cost.<sup>86</sup>

Even in intermediate income countries (i.e. where the average income is well above \$2/cap.), there are small groups of very poor people such as pensioners or indigenous communities who could not afford a rise in the price of water.

#### b) Solidarity constraints

Because of social considerations, a large fraction of the cost of new connections for the very poor may have to be paid by people who already have access to water.<sup>87</sup> The size of the transfer will vary from one country to another because providing support for water investment may be seen in some countries as a good method of social support of poor communities (support in kind). For instance, in Burkina Faso, water at standposts is free in rural areas while it is paid in richer urban areas. In other countries water is not a priority issue because it affects only marginal communities which have little influence on public decision making. Thus such countries prefer investing in areas of direct benefit to people closer to the government and leave water supply to be financed in rural areas by foreign aid.

Figure 6 shows an example of burden sharing of an investment programme for water (\$16 billion) which is paid by poor users (\$1 billion), taxpayers (\$7.6 billion as direct subsidies), “rich” users (users who are already connected) (\$4 billion, cross subsidies) and foreign aid (\$3.4 billion). This is only an example because poor users could possibly pay more and rich users could possibly pay less. Part of this programme is for improving the network and part for providing water to the unserved.

In order to meet the Johannesburg targets, additional investment should be made for

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<sup>85</sup> As shown by J. Labre (“Water pricing and social equity”, report to IWA World Water Congress, Melbourne, April 2002), the poorest households (lowest quintile) pay less than 2% of their income to acquire 40 l/cap./day in 9 out of 11 cities surveyed (3% in La Paz and Antalya). This is the result of a deliberate policy of subsidizing the first tranche of water consumption. If a household consumes 40 l per day per person at \$ 0.5/m<sup>3</sup>, it spends \$0.1 per day for water. Assuming an average income of \$0.5 per day per person, water is 2 % of household expenditure.

<sup>86</sup> If a user has to finance an investment of \$100 over 10 years, the yearly installments with an interest rate of 15% are \$20. If water costs \$ 1 per cubic meter and if each person consumes 40 liter per day, the daily cost for water is \$ 0.04, i.e. 10% of an average income of 0.4 \$ per day.

<sup>87</sup> In Mexico (GDP : \$8297/cap.), 37% of the rural population (23 million inhabitants in settlements of less than 2500 inhabitants) has a daily income of less than \$1 per day. Those who lack access to water are also very poor. Solidarity between the rich (74% of the population lives in urban area where access to water is 94.6%) and the poor could solve this problem(solidarity charge or cross subsidy). However the priority issues are to improve water fee collection and to increase water prices to finance new investment.

new connections for the poor (an additional \$10 billion per year programme). In addition, it is assumed that water supply and sanitation for users who have access to water will be improved at a cost of \$6 billion per year. Thus an additional \$16 billion investment programme for WSS will have to be financed on top of existing investment (\$16 billion). This programme is only feasible if all parties agree to pay their share.

Poor users (1.5 billion people who will receive access to water during 2000-2015) could, for instance, agree to contribute \$2.5 billion (25% of additional investment for new connections). This will mean that they will pay or \$1.67 per person per year during 15 years. A larger contribution of poor users to new investment would probably not be socially acceptable and the poorest users are unlikely to even pay this relatively small amount.

Tax payers and users who are already connected (“rich” users) could, for instance, agree to pay an additional \$4.5 billion to finance new connections for the poor (through increased subsidies financed by tax payers and through larger cross subsidies paid mostly by large users in the form of progressive tariffs). For instance, large users could be asked to pay a

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#### **Box 4. FINANCING REQUIREMENTS FOR WSS IN THE WORLD**

*Industrialized countries who already provide at most \$4.3 billion per year as aid for water in developing countries are likely to be asked to provide an additional \$3 to 5 billion to help in financing additional investment in WSS in these countries. Such an increase could be compared with the expected increase in WSS investment to be paid by industrialized countries for themselves or as part of their programmes with transition countries. According to the OECD, the current level of investment in the water sector outside Asia, Africa or Latin America is \$180 billion per year.<sup>88</sup>*

*Such investment is likely to increase for the following reasons :*

- a) renewal and upgrading of existing WSS networks and facilities in industrialized countries<sup>89</sup> (at least an additional \$20 billion per year in the US and an additional \$10 billion per year in the European Union)<sup>90</sup> ;*
- b) improving water services in EU accession countries (at least \$1 billion per year as*

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<sup>88</sup> OECD : *Environmental Goods and Services*, 2001, p.12.

<sup>89</sup> The a new value of French investment in water works is €193 billion (€3300 /cap. of which € 1400 for water supply ducts, €480 for water treatment, €1200 for sewerage and €220 for waste water treatment). *OIEAU Nouvelles*, décembre 2002.

<sup>90</sup> According to USEPA, investment needed for water infrastructure in the US is \$151 billion over 20 years and for waste water \$140 billion over 20 year, i.e. about \$15 billion each year in the US only.

transfers within EU<sup>91</sup> and the remainder paid locally) ;  
c) improving water services in EECCA countries (\$1 billion per year provided by industrialized countries and the remainder paid locally<sup>92</sup> ).

The expected increase in aid for WSS in developing countries (\$3.4 billion/yr.) is smaller than the other expected increases in investment in WSS to be paid by industrialized countries (over \$30 billion/yr.) and is a small fraction of current investment in WSS in industrialized countries (\$180 billion/yr.). The WSS market is growing and in 2015 could be three times larger than what it was in 2000 mostly because of large increases in North America and Europe.<sup>93</sup> Improvements in waste water treatment and combatting industrial pollution are also requiring further investment.

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larger part of the cost of water.<sup>94</sup> With such a programme they would have to increase their expenses for water from \$11.6 billion to \$16.1 billion (+\$4.5 billion) because of new connections for the poor and from \$16.1 billion to \$21.7 billion (+\$5.6 billion) because of an improvement of WSS for their direct benefit. On the other hand, their share in the investment programme would decrease from 72.5% to 68%. Assuming that the investment annuity is 50% of the water bill, the increase of the water bill is 11% in the first case (50% of 4.5/19.6) and 9% in the second case (50% of 4.5/25.2).

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<sup>91</sup> Investing €300/cap. for 110 million people over 15 years would imply an investment of €2.2 billion per year. Industrialized countries are unlikely to pay more than €1 billion per year from cohesion or regional development funds. Improving existing WSS systems in accession countries to meet EU standards is said to cost \$132 /cap. Total investment in the water sector may reach €6 billion per year. For the EIB, "investment in Europe's water sector, in order to meet the requirements of the acquis communautaire by the year 2015, is expected to reach €30 billion annually". This figure is related to more than WSS for households. It is doubtful that accession countries would be able to invest 2 % GDP in WSS considering that OECD countries invest less than 0.5% GDP for this purpose.

<sup>92</sup> Investment required in EECCA is about € 5.5 billion per year for maintaining existing systems and €2.2 billion/yr. for new systems, i.e. 1.1% GDP. *Strategic Partnership for Sustainable Development*, KIEV.CONF/2002/INF/33 ( May 2003). Aid for water to EECCA is quite limited so far. According to the report "Environmental Financing in Transition Countries" (KIEV.CONF/2003/INF/37, para 62), "it seems unlikely that EECCA countries will be able to operate and maintain environmentally-related infrastructure, let alone to further expand it or to achieve the Millennium Development Goals, without increased levels of global assistance." Current investment in EECCA for water is below €1.5 billion/ yr. because funding is not even available to pay for operational expenses.

<sup>93</sup> Lehman Brothers : *The Global Water Industry*, Jan. 2002. The growth is from \$138 billion to \$427 billion in 2015. According to PriceWaterHouseCoopers, about \$20 billion per year is needed in the European Union to complete work on sanitation and \$35 billion per year in the United States for water supply and sanitation (*L'eau ; une problématique financière mondiale*, 2001).

<sup>94</sup> Such a policy has been implemented in Mexico because electricity was heavily subsidized (households were paying 27% of the cost of electricity in Mexico City and 42% on average in the whole country). After a tariff reform, households using less than 140 kWh per month (75%) kept their subsidized tariff. Households consuming between 140 and 250 kWh received a lesser subsidy and those consuming more than 250 kWh did not benefit from any subsidy. In India, only 55% of electricity generated is billed and 41% is regularly paid. Electricity for household and especially agriculture is heavily cross subsidized by industrial and commercial users. IEA : *Electricity in India*, OECD,2002. In Delhi, drinking water price is 4% of water cost.

Such solidarity payment could be justified by humanistic or altruistic views ; it has positive effects on rich users who benefit from better hygiene and better health conditions for the poor users and who be exposed to less epidemics. However solidarity transfers for water are likely to be limited because officials, elected representatives and the ruling elite are usually unwilling to make large shifts of resources to accommodate the needs of the poor.

### c) Development aid constraints

In the example dealt with in Figure 6, \$3 billion for new connections and \$0.4 billion for other work are not paid by developing countries but by foreign aid (grants in aid, debt write off under debt canceling programmes or gifts from foreign NGOs).

It is foreseen that total ODA will increase but the actual size of the increase will need to be specified. In view of the conclusions of the Monterrey summit, it may reach \$16 billion per year (in 2006 ?) or possibly a higher figure such as \$30 billion in a more distant future bearing in mind that ODA in 2002 is \$57 billion.<sup>95</sup>

OECD considers that “Aid flows and cooperation between OECD and developing countries on water supply and wastewater treatment need to be **increased significantly** if the Millennium Development Goal on access to water and the World Summit on Sustainable Development target on access to wastewater treatment services are to be met”.<sup>96</sup> In his recent report, Mr. M. Camdessus stated that financial flows for WSS in developing countries “need to at least double” but did not specify the actual size of such an increase.<sup>97</sup>

In the example of Figure 6, we suggested that the additional cost of meeting the Johannesburg targets for water was \$10 billion per year of which 30% would come from foreign support. As a whole, industrialized countries would provide an additional \$3.4

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<sup>95</sup> Member countries of the OECD's Development Assistance Committee increased their official development assistance to developing countries by 4.8% in real terms, accounting for inflation, from 2001 to 2002. The total amounted to \$57 billion, equivalent to 0.23% of their combined resources, measured as gross national income (GNI). Donor countries committed to increasing their official development assistance (ODA) to developing countries in the context of the International Conference on Financing for Development held in Monterrey, Mexico, in March 2002. According to OECD estimates, fulfilling these promises would raise ODA in real terms by 31% (about \$16 billion) and the ODA/GNI ratio to 0.26% by 2006. DAC member countries account for at least 95% of worldwide ODA disbursements. Twelve of the twenty-two DAC member countries reported an increase in ODA in real terms. OECD Press communiqué, 22/4/2003.

<sup>96</sup> OECD : *Improving Water Management*, March 2003 (p. 121).

<sup>97</sup> *Financing Water for All*, Report of the World Panel on Financing Water Infrastructure (March 2003). Foreword. “Overall ODA for water should be doubled, as a first step...The increase in ODA should preferably be done by increasing the amount of grants” (Executive Summary, p.5)(see also Annex 2 of this report).

billion/yr. as grants.<sup>98</sup> In this example **aid for water would be moving from about 6% to about 10% of total aid.**

**While foreign aid for water may look large in absolute terms, it represents a small fraction of total investment of industrialized countries for WSS (Box 4). Providing an additional \$3.4 billion per year for WSS is achievable : it would require increasing the total volume of aid, canceling part of foreign debts and/or shifting part of aid to the WSS sector from other sectors. However no commitment to this effect was made so far at international level.<sup>99</sup>**

**Table 17**

**ESTIMATED ANNUAL INCREMENTAL COSTS FOR MEETING  
SELECTED MILLENNIUM DEVELOPMENT GOALS  
IN LOW- AND LOWER-MIDDLE INCOME COUNTRIES**  
(*\$ billion per year*)

	<i>Cost of target</i>	<i>Official devel. aid*</i>
<i>Primary education (recurrent cost)</i>	8 - 10	3 - 4
<i>Health +HIV (recurrent and invest. cost)</i>	15 - 30	10 - 20
<i>Water and sanitation (invest. cost)</i>	12 - 25	7 - 15
<i>Total</i>	35 -65	20 - 39

**Note :** \* ODA for water is assumed to be 60% of the estimated incremental cost. Such high level of additional aid may be unrealistic.

**Source :** World Bank : “Progress report and critical next steps in scaling up: education for all, health, HIV/AIDS, water and sanitation”, DC2003-0004, March 27, 2003. Presented to IMF-World Bank Development Committee in April 2003.

## **5.2 The additional investment is above \$10 billion per year**

<sup>98</sup> In the nineties, aid for water was around \$3.4 billion per year of which \$2.3 billion for large and small systems of WSS (grants : \$0.9 billion). The proposed doubling means that \$3.4 billion additional aid would be provided for large and small systems of WSS.

<sup>99</sup> According to Mr. M. Muller, Director General of DWAF (South Africa), the Bonn Conference agreed that development aid for water should be increased at least to the level of \$9 billion per year “to address the basic needs backlog, clearly within reach of a concerted international programme. Rich world delegates did not welcome evidence that current policies based on community and country self-sufficiency would not enable the least developed countries to eradicate their water backlogs. They could not acknowledge that the target their heads of state committed to at the UN Millennium session - reducing by half the number of people without access to safe water by 2015 – was out of reach” (Extract from “Water Trailers the Challenges for the Jo’burg Earth Summit”).

If the additional investment for meeting the Johannesburg targets exceeds \$10 billion per year, the problem of finding parties to pay for it will be more difficult to solve. For instance, if the additional investment is \$16 billion (IMF-WB estimate, Table 17) and if ODA increases to reach 50% of the incremental costs as suggested by the World Bank, the additional aid for water should reach \$8 billion per year in addition to current aid for water<sup>100</sup>.

Such a scenario would be difficult to implement for the following reasons :

a) A large increase in ODA for water sources would be needed but is problematic because development aid for water is decreasing (see Figure 7 based on OECD /CRS data and Table 14).<sup>101</sup> While a reversal of the trend is foreseen, a substantial increase will be difficult to finance.

b) If total additional aid is \$16 billion, it is most unlikely that half of it would be allocated to water.<sup>102</sup> In the OECD Development Report of 1998<sup>103</sup>, it is suggested that 12.5 % of additional aid for social purpose would be allocated for water. Using this ratio, additional aid for water would then be limited to about \$2 billion.<sup>104</sup> An increase to \$3.4 billion for water (21% of \$16 billion) could be envisaged but would be on the high side and not likely unless

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<sup>100</sup> OECD : Creditor Reporting System ; *Aid activities in the water sector 1997-2001*, OECD, 2003. As a whole, development aid and non concessional loans for WSS (small and large systems) add up to less than \$3.4 billion per year in 2001 and the international private sector is providing less than \$1.2 billion per year. Thus foreign sources have probably provided at most \$4.6 billion to finance expenditure in WSS in developing countries. These figures are commitment figures which may possibly exceed disbursements by some 20% but, on the contrary, they do not include non official aid. Hence commitments may be a good indicator of aid for water to developing countries. According to GWSSAR external sources of financing have provided about \$6.5 billion (of which perhaps \$2 billion from international private sources). The difference between these estimates is probably due to an overestimate of WSS investment in developing countries in GWSSAR.

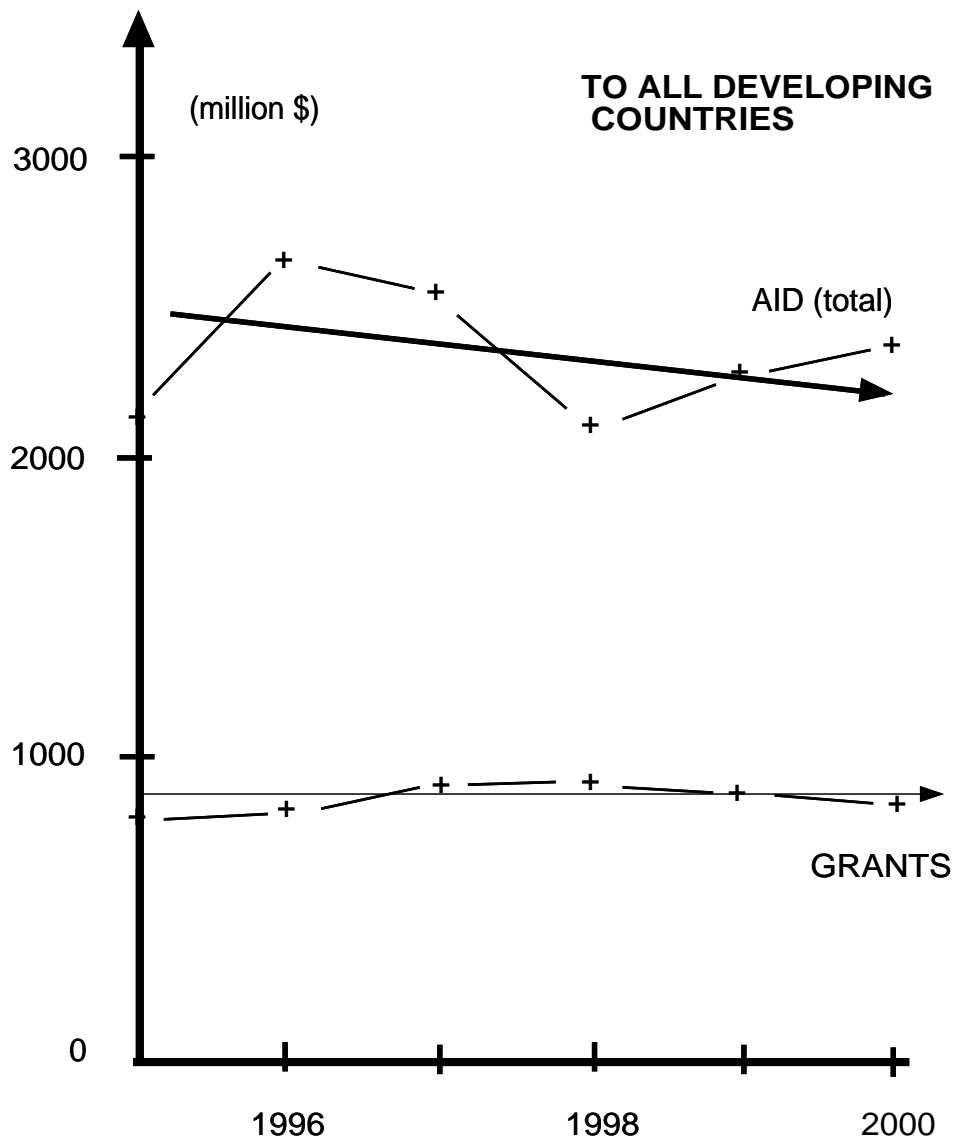
<sup>101</sup> From \$5.5 billion in 1995 to \$4.1 billion in 2001 (OECD Creditor Report System). This is due to a reduction of bilateral and multilateral ODA as well as contributions from IFIs. As explained by the World Bank : "In historical terms, total annual IBRD/IDA financing commitments for water supply and sanitation declined in recent years — from a high of \$1.6 billion in 1995-97 period to \$1.0 billion in the 2000-2002 period. IDA allocations have fallen by 50%, and from 3% to 2% of the total IDA commitment." World Bank : *Water Supply and Sanitation and the Millennium Development Goals*, addendum to "Progress Report and Critical Next Steps in Scaling Up: Education for All, Health, HIV/AIDS, Water and Sanitation", March 2003.

<sup>102</sup> In Table 17, the cost for the water target is 35% of the total cost. It would seem difficult to allocate more than 35% of incremental aid for water, i.e. \$5.6 billion out of an additional aid of \$16 billion. Furthermore there is no reference to the expenditure concerning poverty reduction

<sup>103</sup> OECD : *Development Cooperation 1998 Report*, 1999 (Table IV-1).

<sup>104</sup> If total ODA was doubled (\$50 billion extra), additional aid for water could reach \$6 billion.





**Figure 7. AID FOR LARGE AND SMALL SYSTEMS OF WSS FROM ALL DONORS (three-year moving average).**  
 Source : OECD /CRS

additional aid is growing beyond \$16 billion.<sup>105</sup> If additional aid for water is 15% of total additional aid, it can reach \$3.4 billion only if additional aid reaches \$22.6 billion. On the other hand, additional aid for water reaching \$8 billion would clearly be unattainable in view of competing requirements (such as food, education and health), the relatively small priority given by developing countries to the water issue and the great unlikelihood that total additional aid would grow beyond \$30 billion on average.

c) If additional aid for water is limited to a figure such as \$4 billion, developing countries should fund the difference (\$4 billion) when investment is large. Poor users, taxpayers and rich users would probably resist increasing their shares in the investment and prefer delaying the whole programme. They would point out that they cannot be expected to improve their WSS systems at a faster rate than industrialized countries did some 30 to 50 years ago when they installed WSS in rural areas. Lack of support from industrialized countries (due to foreign war or budget deficits) would easily justify a postponement of commitments made when financial support was more forthcoming.

d) The international private sector, water multinationals and banks are unlikely to provide large funds for the purpose of meeting the Johannesburg targets because the preconditions for such move are not met. The hope that the water sector would become a profitable market attracting large foreign direct investment has not materialized. As a matter of fact, the private sector is decreasing its commitments in WSS<sup>106</sup> especially in poor countries because of the risks.<sup>107</sup> Private investors are more likely to make investment to improve existing water systems in countries with intermediate income, i.e. those which will meet easily the Johannesburg targets or countries with a fast growing economy.

### 5.3 Doubling aid for water

To sum up, the higher the cost of meeting the Johannesburg target, the less likely it will be to agree on burden sharing. If investment for new connections exceeds \$10 billion per year, serious difficulties with financing will arise. Thus there is a need to use low cost technologies and to utilize funds available in the most effective way to provide new connections while continuing the provision of access to water for existing users. The issue of

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<sup>105</sup> If aid as a fraction of GNP remains constant and GNP grows at a rate of 3% per year on average, the average aid over 15 years is 26 % above what is provided at the beginning of the period.

<sup>106</sup> According to the latest estimate from the World Bank : \$0.7 billion per year, i.e. three times less than the figure used previously by the World Bank: \$2-2.75 billion. The total number of projects with private participation in developing countries reached 38 in 1999 and is down to 18 in 2001. The reasons for the small investment by the private sector are the huge capital intensity of WSS and the low potential for returns. Ondeo is considering reducing its investment out of Europe (e.g. Manila, Djakarta, Buenos Aires) and has sold its participation in Northumbrian Water (UK) and Natco (United States) because of insufficient return (*Le Monde*, 5/9/2003).

<sup>107</sup> According to the World Bank report : "Efficient, Sustainable Service for All?", Report 26443 of Sept. 2003, "The water supply and wastewater sector's political importance and the fact that it is by far the most capital intensive in relation to annual revenue makes it the riskiest of all infrastructure sectors for prospective private operators. (The fixed assets to annual revenue ratio for various infrastructures are : Water supply and sanitation, 7 ; Toll roads, 4 ; Electrical power, 4; Telecommunication : 3).

proper allocation of WSS funds between urban areas and rural areas will have to be addressed because urban connections are more expensive than rural connections and attract most funds. Investment should be made on a priority basis in slums in conformity with the related target of the Millennium Development Goals and in rural areas because these areas are poorer than urban areas.

Within developing countries the cost of new connections will be allocated between poor users, “rich” users and taxpayers. Poor users will bear a part of the cost and the rest will be paid by solidarity transfers. But such transfers are limited because rich users are not ready to finance too large a part of the cost for poor users. To resolve this internal problem, foreign aid has a crucial role to play.<sup>108</sup>

**Table 18**

**GRANTS IN AID FOR WATER BY RECIPIENT REGION**  
(period 1999-2001)

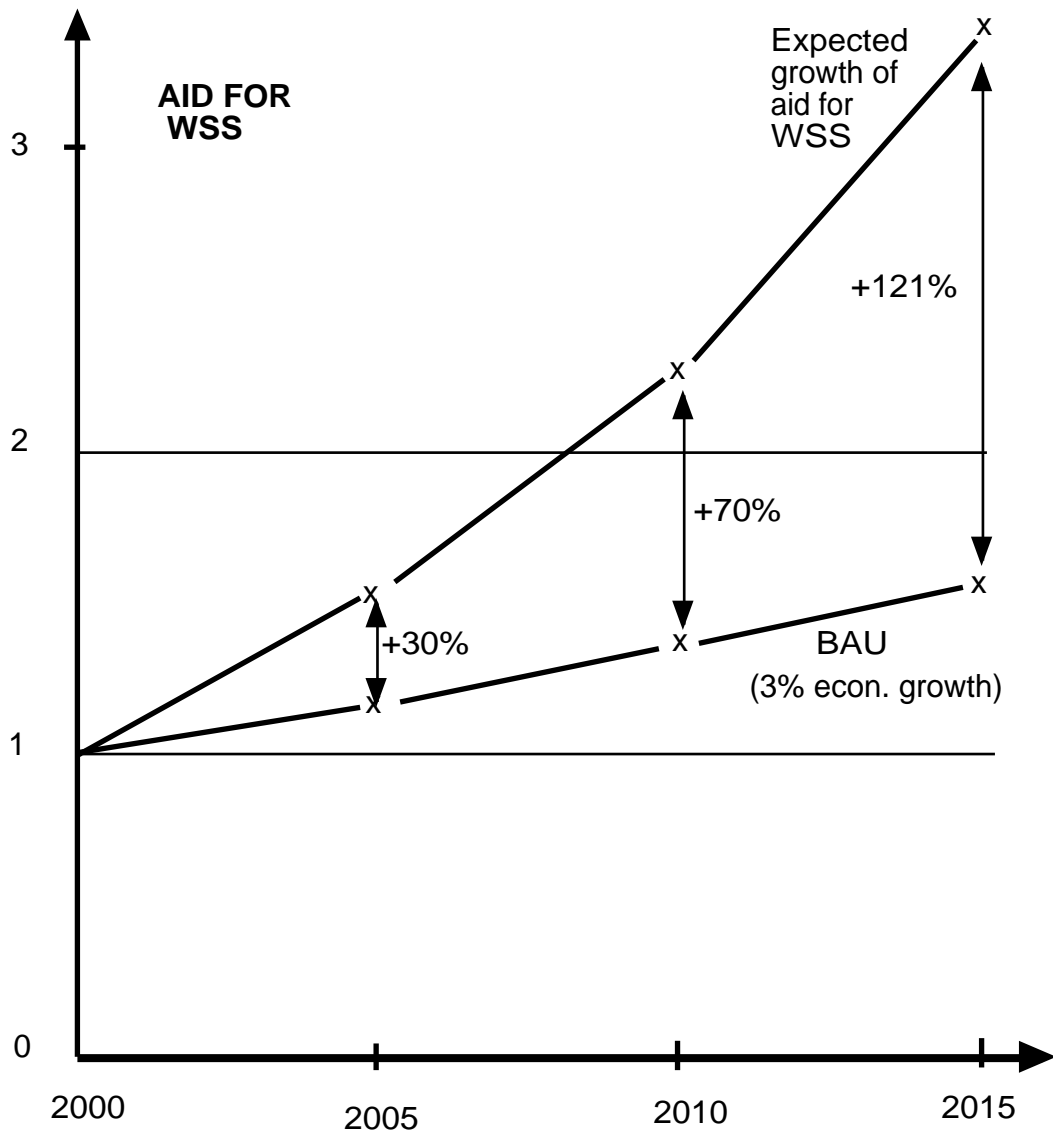
Region	GDP /cap. \$(PPP) (10 <sup>3</sup> )	Death <5 yr. (10 <sup>3</sup> )	No access to water		Grant in aid for water		
			%	million	\$mill.	\$/cap.	\$/pers.WW
Latin Amer.	6880	39	14	69	165	0.33	2.39
Mid.East.N.Afr.	4550	59	13	31	282	1.17	9.00
East Asia	3950	44	24	441	136	0.07	0.31
South Asia	2280	97	15	207	213	0.16	1.03
Sub Sah. Africa	1640	172	43	254	339	0.57	1.33
Total :				1002	1135	0.25	1.13

**Note :** death<5 yr. : number of deaths of children below 5 per 1000 births ; No access to water : % of the population without access to safe water in 2000 ; pers. WW : person without access to safe water in 2000.

**Source :** OECD Creditor Reporting System, 2003.

<sup>108</sup> The French Plan of Action for Africa (Evian, 2003) includes the proposal : “des apports de subventions ou de prêts concessionnels à des opérations, pour tenir compte de la partie non rentable du service (desserte de quartiers défavorisés, par exemple)”.

As a minimum industrialized countries will have **to double official aid for WSS**. Such an increase will be financed partly by economic growth and partly by a shift of resources towards greater aid for water. If it is assumed that aid for water over the period 1990-2000 remained stable (Figure 7) and that it should double on average over the period 2000-2015, this increase can be achieved if aid for water is growing by 8.6% per year. Of this



**Figure 8. EXPECTED GROWTH IN AID FOR WSS AS A FUNCTION OF TIME (assuming that aid for water on average over the period should be doubled of what it was during the previous period : 100%)**

3% could be provided by economic growth and the remainder (5.6%) would have to come from a shift of resources. Such shift would reach 30 % after 5 years, 70% after 10 years and 121% after 15 years (Figure 8). It could easily be achieved if total aid expressed as % of GDP would double during the period. Otherwise there should be a reallocation of funds in favour of the water sector.

The doubling of aid should be mostly in the form of **grants** because the beneficiaries are very poor. Such a task is feasible because current aid for water (ODA : \$3 billion per year) is a small fraction of total aid. Grants for water (42% of aid) amounts to \$1.2 billion per year during 1999-2001. These grants could be given mainly to the poorer countries who are not in a position to finance their investment in water services and depend on donor countries rather than to countries with intermediate income which have already extensive water supply. Sub-Saharan African countries do not receive as many grants as their sanitary and economic situation would justify because part of the grants for water go to countries in richer regions (Table 18).

The increase in aid should be channeled to improve access to water for those people which do not have it (rather than improving access for those who already have it). The quality of aid can be improved by better targeting aid to the areas of greatest need<sup>109</sup>, by providing more support to small scale systems, by promoting low-cost technologies and sustainable systems for use in rural areas. In particular it might be possible to first support those projects which can achieve the largest number of sustainable connections for a given amount of aid. This would mean providing more community systems (wells and pumps) and supporting household connections less.

Another hurdle is the ability of municipalities and other responsible bodies to propose acceptable projects for financing. Small projects may have to be presented to financing bodies together as an overall programme. Means should be given to municipalities or competent ministries in order to prepare programme or project proposals in a form suitable for banks and international bodies because the demand of these bodies in terms of red tape prior to the release of funds and subsequently may be very high for local people who have no training in bureaucratic approaches of the western world. Thus additional funds will be needed for consultants to overcome red tape as well as for providing gifts to those people who need this in order to “facilitate” projects at local level. There is an unfortunate surcharge which needs to be financed as part of the cost of doing business especially in countries with inadequate governance.

However providing an additional \$3.4 billion as grants will not be an easy task because grants for water in official development aid reach at present \$1.2 billion. If aid for water is not doubled there is a great likelihood that the water programme will take more time and that the unserved will continue to use unsafe water and become sick.

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<sup>109</sup> Least developed countries have received \$0.36 billion as grants for water and \$0.26 billion as loans (i.e. 609 million people in least developed countries have received \$1 per person for water). See OECD Creditor Reporting System and *Aid Activities in the Water Sector 1997-2001*, OECD, 2003.

While industrialized countries agreed to provide aid to help developing countries in their endeavour to meet the Johannesburg targets, there is no consensus on the level of the increase in aid. President Chirac<sup>110</sup> spoke in favour of doubling aid for water but no commitment has been made so far at international level to reach such a level of aid. Relatively little additional aid has been made available. The EU has proposed in 2003 to provide \$1 billion for a water initiative programme in Africa (financed from the reserve of the European Development Fund). All announced initiatives or proposals do not add up to \$ 1.7 billion per year, i.e. less than 50% of what is needed as additional aid for water. The current difficulties in financing a \$3 billion per year international programme against AIDS is a clear indication that additional aid for water will not be easy to secure.<sup>111</sup>

Table 19 shows that aid for water (grants and loans in 2000-2001) differs markedly between donor countries. An increase of aid for water in all countries to at least the average level of \$3.1 per inhabitant would generate \$940 million per year to finance additional investment in WSS in developing countries.<sup>112</sup>

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<sup>110</sup> In the New Year speech to the diplomatic corps by the French President, Mr. Jacques Chirac stated on January 7, 2003 : "The decisions taken at the Millennium Summit and the Johannesburg Summit commit the international community. Now these decisions must be put into practice. Our commitment to halve the number of people without access to safe drinking water and sanitation services by 2015 requires a doubling of annual investment in the water sector. In Kyoto and Evian, we will be working out a worldwide plan to achieve that goal." The doubling target is also found in the Camdessus report (Annex 3) but neither the Kyoto declaration nor the G8 statements in Evian give any support to an increase in funding. According to WaterAid, "An investment of \$30 billion per year is desperately needed in order for the water and sanitation MDGs to be met. WaterAid had hoped that the G8 would commit to ensuring that these funds are provided by taking measures such as doubling the share of its own aid spent on water and sanitation from 5% to 10%. However, the Action Plan does not include an investment plan."

<sup>111</sup> Each year 6 million people die from AIDS. Funds necessary to combat AIDS (42 million people infected and 6 million requiring urgent and costly treatment) are estimated at \$10 billion per year. In 2004 \$3 billion is needed of which \$1 billion from USA and \$1 billion from EU. But commitments so far are much lower.

<sup>112</sup> The larger supplements would arise from US (\$545 million), Italy (\$138 million), Canada (\$69 million) and Spain (\$57 million).

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**Table 19****BILATERAL AID FOR WATER BY DONOR COUNTRY**

	<i>Aid</i> <i>mill.\$/yr.</i>	<i>Aid</i> <i>\$/cap./yr.</i>	<i>Grants</i> <i>mill.\$/yr.</i>	<i>Grants</i> <i>\$/cap./yr.</i>
<i>Japan</i>	1166	9.2	127	1.0
<i>Norway</i>	31	6.9	31	6.9
<i>Denmark</i>	31	5.8	31	5.8
<i>Netherlands</i>	81	5.1	81	5.1
<i>Sweden</i>	38	4.3	38	4.3
<i>Germany</i>	347	4.2	192	2.3
<i>Switzerland</i>	26	3.6	26	3.6
<i>Australia</i>	49	2.6	49	2.6
<i>Austria</i>	20	2.4	8	1.0
<i>United Kingdom</i>	140	2.3	140	2.3
<i>Finland</i>	12	2.3	12	2.3
<b>France</b>	<b>120</b>	<b>2.0</b>	<b>41</b>	<b>0.7</b>
<i>Ireland</i>	7	1.9	7	1.9
<i>Spain</i>	62	1.6	15	0.4
<i>Belgium</i>	14	1.4	11	1.0
<i>United States</i>	282	1.0	282	1.0
<i>Canada</i>	23	0.8	23	0.8
<i>Portugal</i>	6	0.6	1	0.1
<i>Italy</i>	34	0.6	7	0.1
<i>Total</i>	2489	3.0	1122	1.4

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**Source :** OECD - CRS : Aid for water in 2000-2001

**N.B.:** Total aid for water and of which grants for water per capita of the donor country. The largest part of aid for water is spent on WSS.

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**Table 20. ACCESS TO WATER SUPPLY AND SANITATION**  
(in % of population in 2000 and variation since 1990)

	Urban	Rural	Total
<i>Access to water supply</i>			
<i>Developing countries</i>	92(+0)	69(+9)	79 (+7)
<i>Least developed countries</i>	82(-4)	55(-2)	62(-1)
<i>Sub-Saharan countries</i>	83(-3)	45(+5)	58(+5)
<i>Access to sanitation</i>			
<i>Developing countries</i>	77(+8)	35(+15)	52(+15)
<i>Least developed countries</i>	71(-2)	35(+3)	44(+3)
<i>Sub-Saharan countries</i>	75(-1)	42(-3)	53(-1)

**Source :** Unicef 2002; [www.wssinfo.org](http://www.wssinfo.org).

**NB :** Urbanization has increased between 1990 and 2000.

### **Box 5. POVERTY IN LEAST DEVELOPED AFRICAN COUNTRIES**

*In sub-Saharan Africa (591 million people), there are 30 least developed countries (360 million people) of which the largest countries are Ethiopia, Dem. Rep. of Congo, Uganda and Tanzania. The average GDP/cap. of the least developed countries in 1995-99 is \$0.65 per day and the average consumption is \$0.52 per day. 65 % of the population, i.e. 233 million people have less than \$1 per day (\$1985) to live on and their average consumption is only \$0.30 per day. Improving access to safe water in sub-Saharan Africa consists mostly of providing a service to people who have on average \$0.30 per day and cannot make savings. If they would agree to set aside 2% of their small income for investment in water, their contribution would be on average \$2.2 per year. Thus they would have to save during many years before they could finance even the cheapest water supply system. In sub-Saharan countries in 1998, undernourishment affected 33% of the population (18% in developing countries) and mortality of children under 5 in 2001 was 172 per thousand births (90 in developing countries). According to the World Bank, poverty in sub-Saharan Africa (population below \$1 per day) will slowly decrease from 49% in 1999 to 46% in 2015 (for the world, the corresponding decrease is from 23.2 to 13.3%, i.e. nearly a reduction by a factor of two).*



## 6. The case of Sub-Saharan Africa

The general considerations developed in section 5 could be applied in the case of a fairly homogeneous group of countries such as least developed countries or Sub-Saharan Africa where economic growth<sup>113</sup> and financial resources are low while poverty and water needs are very large.

When removing South Africa from the statistics, the average GDP of sub-Saharan Africa is \$326 per capita (in 1999 \$).<sup>114</sup> In Mali, the level of yearly expenditure of 4/5th of the rural population and 3/5th of the urban population is less than \$0.5 per day. Undernourishment in Sub-Saharan Africa (proportion of population below minimum level of dietary energy consumption in 1997-1999) affects 34% of the population, i.e. twice the average in developing countries (17% ).

The water situation in these countries is very bad and has worsened over the last decade while it has improved in developing countries in general (Table 20). This is caused in part by very high poverty in Africa and by a large migration from rural areas to ill-equipped urban areas (slums). Because of rapid urban growth, access to water and to basic sanitation in urban areas decreased (Table 20).

The Second Tokyo International Conference on African Development (TICAD II, Tokyo, October 1998) adopted the public health goal to provide safe water for at least 80% of the population by 2005. Needless to say that this will not be achieved. Extrapolation of past trends for Sub-Saharan Africa in the field of water led the OECD to conclude that the Johannesburg targets would be met in 2048 for water supply but would never be met for sanitation.<sup>115</sup>

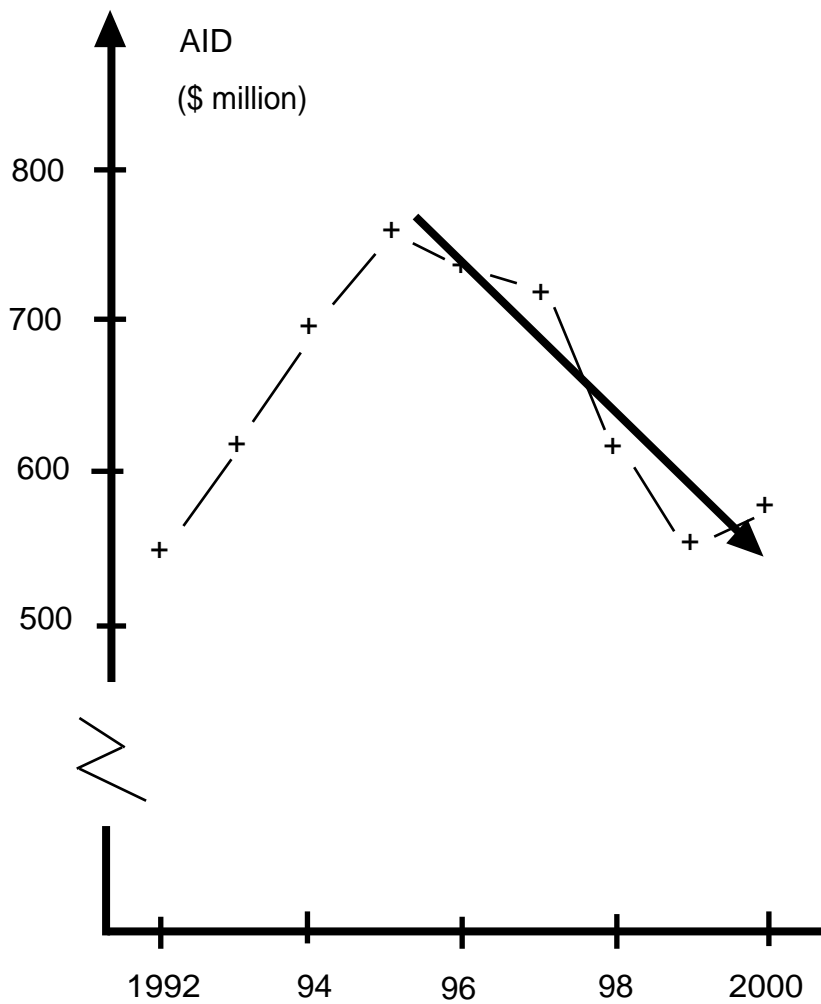
Investment for water supply and sanitation in Africa during the nineties was estimated in GWSSAR at \$4.6 billion per year of which \$3.15 billion from external sources. On this basis, Africa financed 32% of its investment in WSS (\$1.45 billion per year). OECD data on

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<sup>113</sup> The growth rate of GDP per capita of sub-Saharan Africa was 5.2% in 1985-88, 0 % in 1988-91, 1.2% in 1991-94 and 1.1% in 1995-98 (current US dollar converted at PPP exchange rate). Source : World Bank.

<sup>114</sup>With a population of 591 million inhabitants, Sub-Saharan Africa has a GDP of \$984 billion (PPP adjusted) in 1999 (\$1665 /cap.) If South Africa is subtracted (GDP : \$375 billion), the average GDP for the other African countries is \$609 billion for 548 million people (GDP/cap. : \$1111 PPP adjusted). In \$1999, the GDP of sub-Saharan Africa without South Africa is \$179 billion.

<sup>115</sup>OECD : *Development Cooperation 2002 Report*, 2003 (p. 150). Similar extrapolations are found in the UNDP *Human Development Report 2003*. They point to the need to take stronger actions to modify current trends.

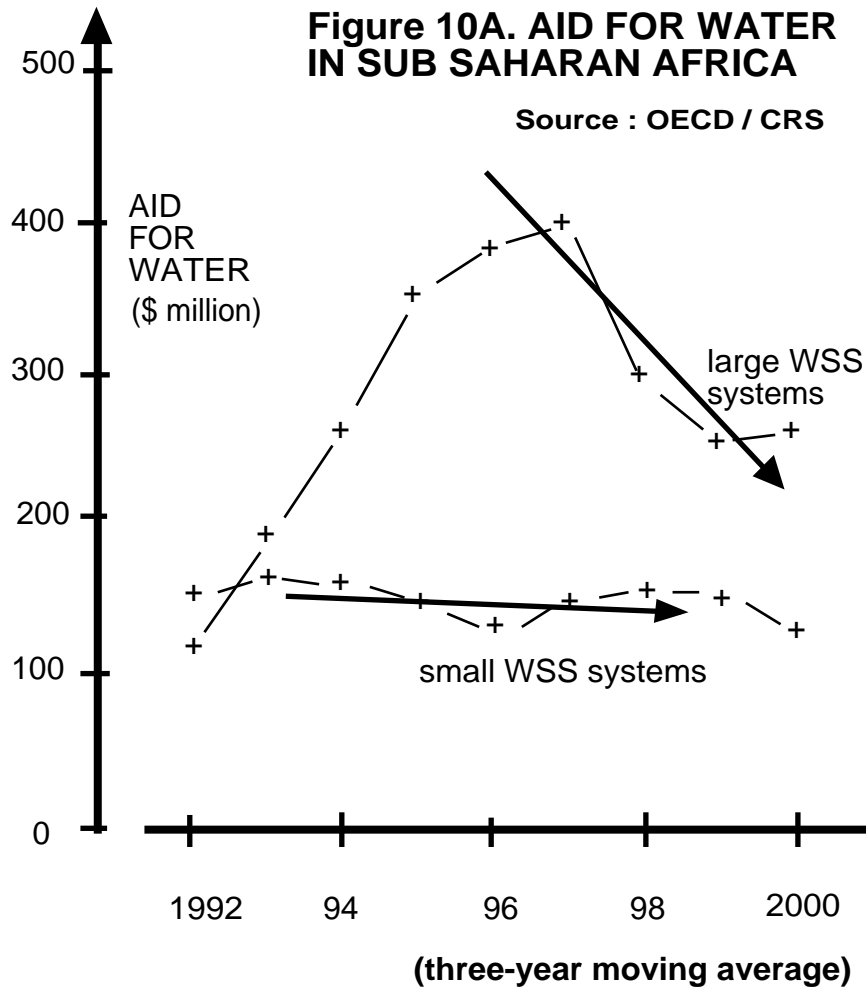


**Figure 9. AID FOR WATER IN SUB SAHARAN AFRICA (all types of activities, three-year moving average).**

Source : OECD/CRS

**Figure 10A. AID FOR WATER IN SUB SAHARAN AFRICA**

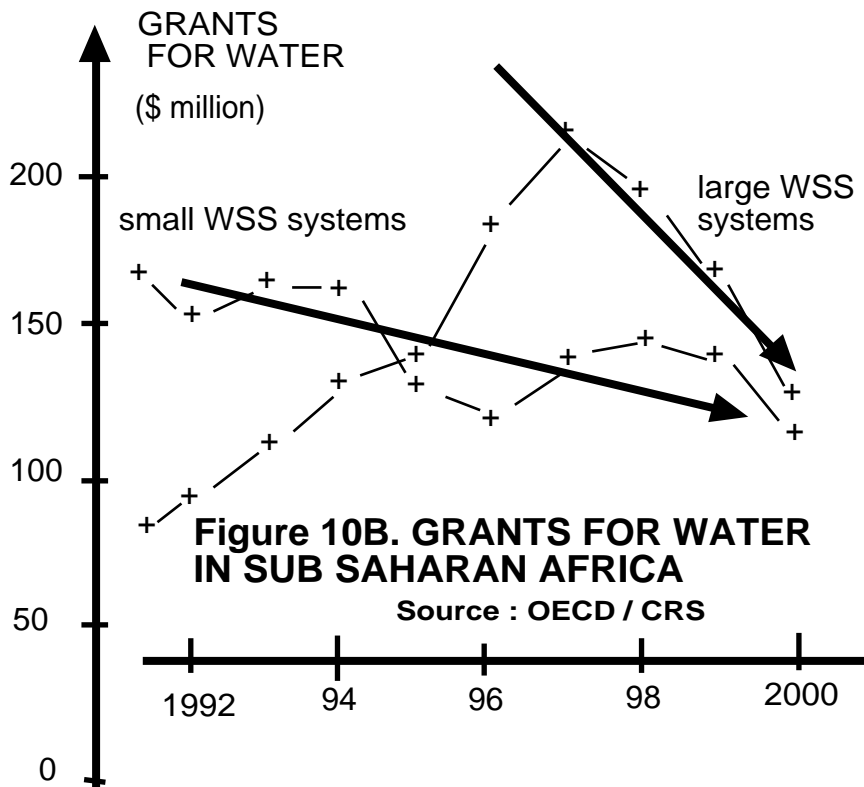
Source : OECD / CRS

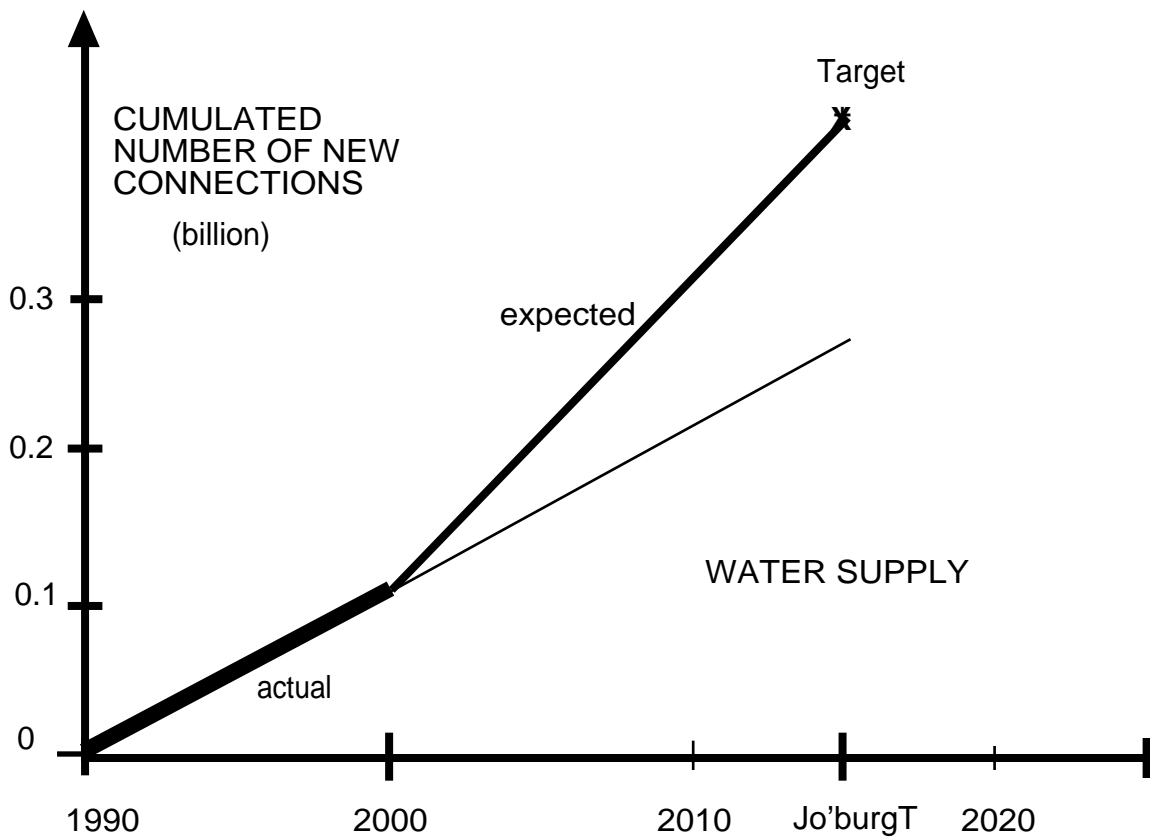


**GRANTS FOR WATER (\$ million)**

**Figure 10B. GRANTS FOR WATER IN SUB SAHARAN AFRICA**

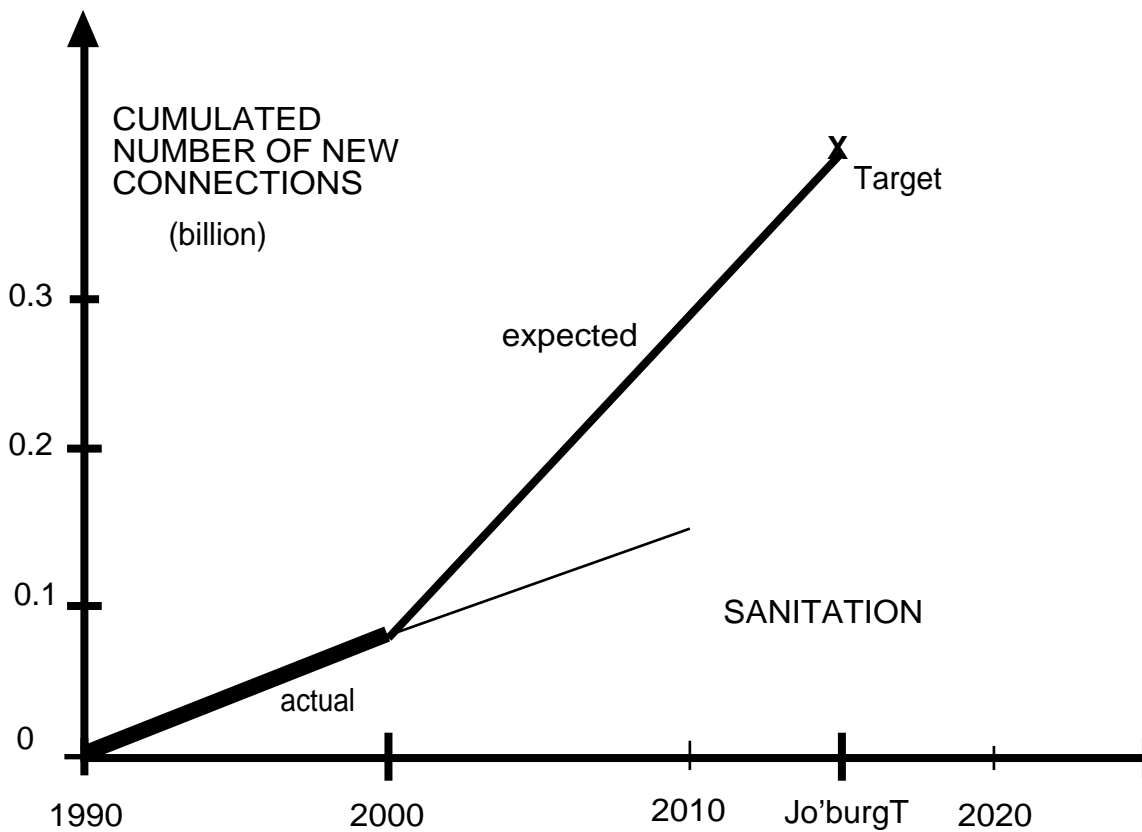
Source : OECD / CRS





**Figure 11. NEW CONNECTIONS TO WATER SUPPLY IN ORDER TO REACH JOHANNESBURG TARGETS IN 2015 IN SUB SAHARAN AFRICA.**

New connections in Sub-Saharan Africa : during 1990-2000, 105 million, and during 2000-2015, 320 million.



**Figure 12. NEW CONNECTIONS TO SANITATION IN ORDER TO REACH JOHANNESBURG TARGETS IN 2015 IN SUB SAHARAN AFRICA.**

New connections in Sub Saharan Africa : during 1990-2000, 75 million, and during 2000-2015, 325 million.

aid may be more reliable.<sup>116</sup> Sub-Saharan countries received \$0.65 billion per year in the nineties as aid for water. Grants amount to 30% of the total.

During recent years, aid for water in sub-Saharan Africa decreased considerably in absolute terms (Figure 9), much more than for developing countries in general.( Figure 7). In particular, less aid was given to large systems of WSS (Figure 10A). Grants remained nearly the same over the period but a decline occurred at the end of the period (Figure 10B). Over the nineties grants for small systems of WSS declined from about \$160 million to about \$120 million. Such declines are due to the decrease in overall aid to sub-Saharan Africa ; for instance in spite of worsening economic conditions, this region received \$21/cap. in 2001 as aid, i.e. much less than in 1990 (\$34/cap. in \$ 2000). Aid for water systems was reduced because donor countries preferred not to provide aid for large WSS systems until institutional reforms were effective.

If we assume that aid financed one fifth of investment in WSS and that aid for WSS is \$0.6 billion per year<sup>117</sup>, investment in WSS would amount to \$3 billion. If aid is larger, for instance 50 % of investment, such investment would be \$1.2 billion. In view of the uncertainty on the size of investment in WSS and on the part paid by aid, we shall assume that investment in WSS in the nineties was \$3 billion per year of which \$0.6 billion per year was aid.<sup>118</sup>

To meet the Johannesburg targets, safe water should be provided to 160 million people in urban areas and to 160 million people in rural areas between 2000 and 2015. Figures 11 and 12 show that the number of persons newly served each year should increase very significantly over what was done in the nineties if the Johannesburg targets are to be met. Such a task will require a considerable increase in the rate of investment in WSS.

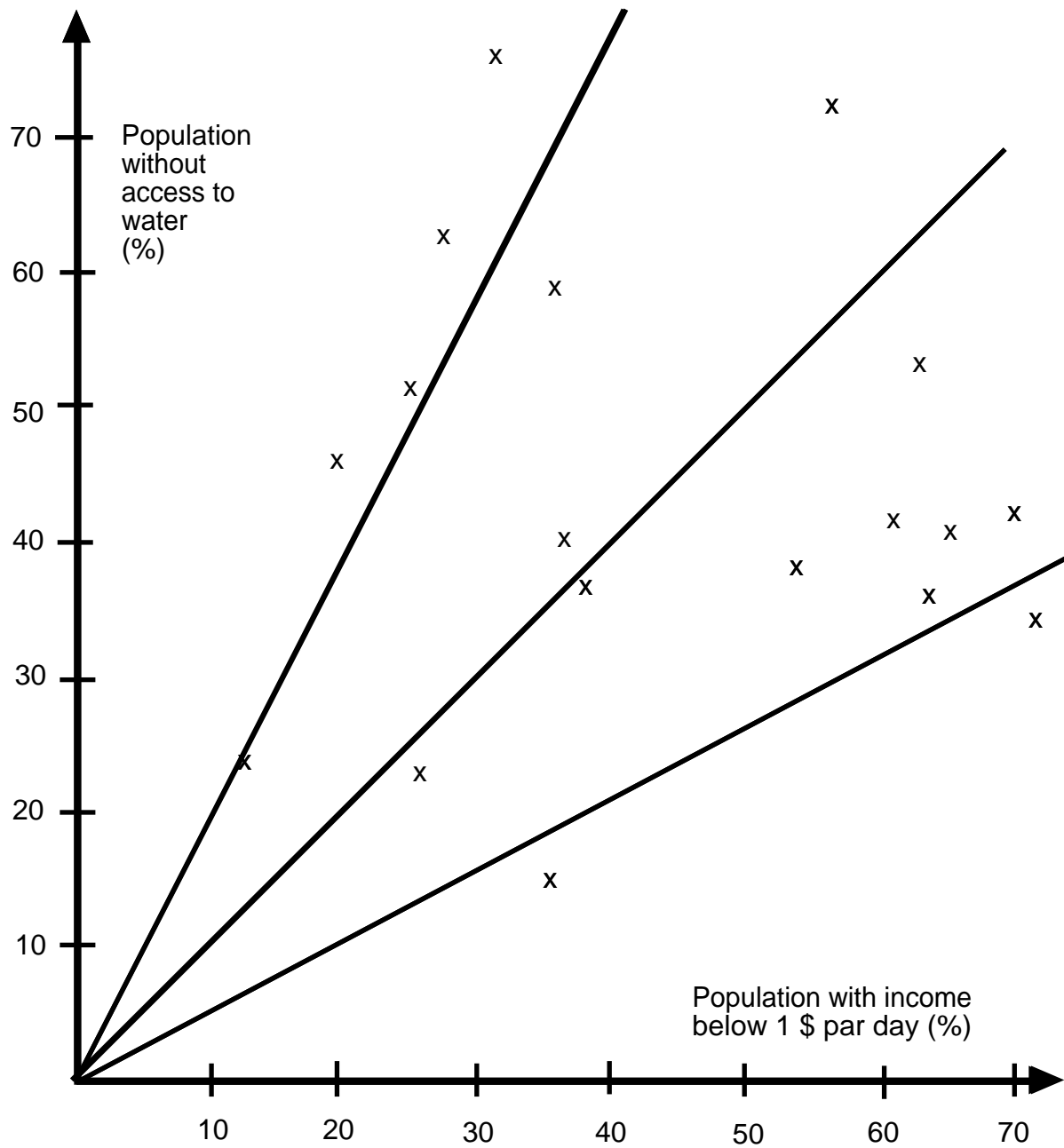
Assuming that connections are made at very low cost, i.e. water supply at \$78 per capita in urban areas (2/3d household or yard connections at \$102/cap. and 1/3d standpipe connections at \$31/cap.) and \$25 per capita in rural areas, investment in new water supply connections would be \$16.5 billion (\$1.1 billion per year). If sanitation is added (\$2.3 billion per year), the cost of meeting the Johannesburg targets may be estimated at \$3.4 billion per

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<sup>116</sup> According to the OECD, during the period 1999-2001, aid for water (\$11 532 million over three years) went to sub-Saharan Africa (16%), Latin America (25%), East Asia (30%), South Asia (11%) and Middle East and North Africa (18%). Grants were respectively 30%, 14%, 12%, 19% and 25% of the total (\$3427 million). The grant to aid ratio is high in sub-Saharan Africa (57%), South Asia (48%) and the Middle East (68%).

<sup>117</sup> In 1999-2001, Sub-Saharan Africa received \$0.6 billion per year as aid for water of which \$0.34 billion were grants. While developing countries received on average \$4.10 per person without access to water as aid for water, sub-Saharan Africa received only \$2.30 per person without access to water (grants : \$1.34 and loans : \$0.96). Grants for small and large systems of WSS in sub-Saharan Africa during recent years has been only \$250 million per year.

<sup>118</sup> In the nineties, the average aid for small and large systems for WSS was about \$450 million per year (see Figure 9 of this report).



**Figure 13. CORRELATION BETWEEN LACK OF ACCESS TO WATER AND POVERTY IN SUB -SAHARAN AFRICA (each cross is an African country)**

year.<sup>119</sup> This is a low estimate based on low unit costs in line with local ability to pay. This should be compared to the current investment in new connections of approximately \$1.8 billion per year.<sup>120</sup>

Two other estimates of the cost of meeting the Johannesburg targets in sub-Saharan Africa are available. According to the World Bank (Table 13), it would cost \$5.2 billion per year and for African ministers, \$6 billion per year.<sup>121</sup>

We shall now examine three scenarios corresponding to a the low and high estimates of investment in WSS and seek to assess whether such investment can be realistically financed.

### **6.1 Financing an inexpensive programme of new connections with strong solidarity**

If the programme of new connections would amount to \$3.4 billion per year, it would be equivalent to 1.1 % of the GDP of the countries concerned. This would be paid by newly served users, the population in general (taxpayers and users of water already connected) and foreign aid.

New users are generally very poor because rich users were served first. There is a good correlation between population without access to water and population with income below 1\$ per day (Figure 13). Poor users could possibly pay half of the investment for water supply which is of direct benefit to them (\$0.6 billion per year or \$1.66 per person per year) but no part of sanitation investment. For instance, people living on \$0.5 per day would have to pay 0.92% of their income for water investment in addition to the operating cost of water supply. This level of contribution could be acceptable because new connections reduce the price currently paid for water by poor users, for instance to water vendors. However it could be seen as a heavy burden on the very poor people (Box 5).

Figure 14 outlines a scenario describing how water investment could be shared between all parties. Assuming that sanitation in poor districts is fully subsidized and that

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<sup>119</sup> In the Camdessus Panel Report (Annex 2), the African Development Bank is estimating at approximately \$1 billion per year the investment for the African continent for a target of 80% of the rural population with access to drinking water supply and sanitation by 2015 (from the present 34%).

<sup>120</sup> Assuming supply cost of \$78/cap. and \$25/cap. in urban and rural areas, investment for new connections in 1990-2000 is 0.8 billion per year. For sanitation, investment is at least \$1 billion per year. Total investment : \$1.8 billion or more. The GWSSAR figure (\$4.6 billion) includes more than investment in new connections.

<sup>121</sup> The Accra Declaration on water and sustainable development (april 2002) includes the following statement concerning Africa : "There is a need for an annual investment level of \$20 billion per year for the development of water infrastructure, as articulated in the African Water Vision for 2025. However, an initial investment target of \$10 billion per year is suggested to meet urgent water needs. The breakdown is approximately as follows: approximately \$6 billion will be required annually to meet basic water supply and sanitation targets, \$2 billion to promote irrigated agriculture and a further \$2 billion to support the software of institutional development, capacity building, research, education and information management."



Figure 14

## FINANCING INVESTMENT IN SUB SAHARAN AFRICA WITH STRONG SOLIDARITY

(investment in WSS is doubled, aid for water is tripled)

**PERIOD**  
1990-2000  
(\$3 billion/yr)

WATER  
SUPPLY AND  
SANITATION

AID 0.6	TAXPAYERS AND "RICH" USERS 2.3
	POOR USERS 0.1

**PERIOD**  
2000-2015  
(\$6 billion/yr)

NEW  
CONNECTIONS  
FOR POOR  
USERS  
(\$ 3.4 billion/yr)

AID 1.2	TAXPAYERS AND "RICH" USERS 1.6
	POOR USERS 0.6

**AND**

OTHER WORK  
FOR WATER  
SUPPLY AND  
SANITATION  
(\$ 2.6 billion/yr )

AID 0.6	TAXPAYERS AND "RICH" USERS 2.0
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Total : foreign aid :	1.8 (+1.2),
taxpayers and "rich" users :	3.6 (+1.3)
poor users :	<u>0.6 (+0.5)</u>
	6.0 (+3)

new investment for water supply is partly subsidized, people with access to water would have to pay \$1.6 billion per year mainly for the benefit of people without access to water. Such solidarity transfer for water (0.5% of GDP) would be equivalent to about one fourth of total public expenses for health (2% of GDP). On an individual basis, it would mean that the richer half of the population (average household expenses : 360 \$/cap.) would have to pay \$5.4 per year per person to subsidize access to water for the poor. As the richer half is likely to use about 100 l/day/cap. at about 0.5\$/m<sup>3</sup>, they would spend about \$18 per year (paid directly or through taxes) for water for their own consumption. Thus the solidarity transfer (\$5.4 per year) would be equivalent to 30% of their water bills.<sup>122</sup> Part of it could be paid by direct subsidies (20% or 2/3d) and part by cross subsidies (10% or 1/3d). All water bills would increase by 10% and a tax on household income (1%) would be introduced.

During the period 2000-2015, there will be other investment for other work in WSS. In the example (Figure 14), we assume that it would cost \$2.6 billion. Thus the total investment would be \$6 billion (a doubling of financial flows). Foreign aid would cover a small part of the cost of other work (not benefiting new users).

For taxpayers and rich users, the transfer to the poor (\$1.6 billion) would be 44% of what they pay for water investment (\$3.6 billion) and 27% of water investment in general (\$6 billion). This transfer is not negligible and could be objected to by taxpayers and rich users who would have to finance a 56% increase in their contribution to burden sharing (from \$2.3 to \$3.6 billion). However assuming that there is a large spirit of solidarity, it might nevertheless be feasible to finance within Africa \$2.2 billion per year to meet the Johannesburg targets.

Foreign aid will also be needed in order to pay part of the investment. Aid for improving access to water for the poor could possibly cover \$1.2 billion per year (current grants for water in sub-Saharan Africa of \$0.34 billion per year<sup>123</sup>). This would imply that the international community would provide an additional \$860 million per year as grants for

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<sup>122</sup> If x% of people with access to water would pay over a period of 15 years "a" for investment for water supply and sanitation and "b" for corresponding operating expenses, if y % of people are newly served and pay "b", if the investment for new connections is paid by people already connected, the increase in the water expenses of people already connected is  $ay / (a+b)x$ . If  $a = 3b$  and if  $x = 50\%$ , the increase is  $1.5 y$ . If the increase in water price for people already connected should be limited to 15 % (maximum of solidarity transfer), y is limited to 10%. In other words, cross subsidies can finance connections of at most 10% of the population during 15 years (i.e. less than the Johannesburg target which is 25% in a poor country where  $x = 50\%$ ). If access to water is much larger, i.e.  $x = 80\%$  as is the case in intermediate income countries, and  $y = 10\%$ , the increase in water price as a result of cross subsidies is 9%. Thus cross subsidies can finance new connections in intermediate income countries.

<sup>123</sup> NGO's have become a significant source of funding for meeting the Johannesburg targets in rural areas. Their action in Sub-Saharan countries may be estimated at about \$40 million per year and has thus become significant in relation to the current official aid for small systems in these countries (\$120 million as grants). Much of their activities is financed by the public in general, by decentralized cooperation and by associations of migrant workers. In some Sahel countries, funding from NGOs in rural areas is probably more significant than funding through official aid.

Figure 15

## FINANCING INVESTMENT IN SUB SAHARAN AFRICA WITH WEAK SOLIDARITY

(investment in WSS is doubled, aid for water is quadrupled)

**PERIOD**  
1990-2000  
(\$3 billion/yr.)

WATER  
SUPPLY AND  
SANITATION

AID 0.6	TAXPAYERS AND "RICH" USERS 2.3
	POOR USERS 0.1

**PERIOD**  
2000-2015  
(\$6 billion/yr.)

NEW  
CONNECTIONS  
FOR POOR  
USERS  
(\$ 3.4 billion/yr.)

AID 2.2	TAXPAYERS AND "RICH" USERS 0.6
	POOR USERS 0.6

**AND**

OTHER WORK  
FOR WATER  
SUPPLY AND  
SANITATION  
(\$ 2.6 billion/yr.)

AID 0.2	TAXPAYERS AND "RICH" USERS 2.4
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Total : foreign aid :	2.4 (+1.8),
taxpayers and "rich" users :	3.0 (+0.7)
poor users :	<u>0.6 (+0.5)</u>
	6.0 (+3)

providing access to water to poor people.<sup>124</sup> Taking into account that foreign aid is also given for other work in WSS, total aid for water in Africa would triple. This would mean that **aid for WSS in sub-Saharan Africa would increase from \$0.6 to \$1.8 billion per year.**

Such aid for water should be compared to the additional funds for aid that will hopefully be made available to Africa in 2006: about \$8 billion per year, or about 50% of additional aid. If 15% of this additional ODA is for the water sector, aid could grow from \$0.6 billion to \$1.8 billion.<sup>125</sup>

To sum up, the investment programme in WSS in sub-Saharan Africa could probably be financed but serious resistance may be met in some recipient countries (lack of solidarity) and even in some donor countries. In addition, funds may be “provided” but never spent because of bureaucratic obstacles.<sup>126</sup>

## **6.2 Financing an inexpensive programme of new connections with weak solidarity**

In the above section, we assumed that 65% of investment for new connections would be paid by people in the country and 35% from foreign aid. Here we take the reverse view and assume that taxpayers and rich users are not ready to make a large investment in water for the poor and are only willing to provide \$0.6 billion (0.19% GDP) while the poor would provide the same amount.

In such a case, foreign aid would have to be increased to \$2.2 billion (65%) (Figure 15).

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<sup>124</sup> The creation and operation of a special fund for African WSS or a special mechanism may be highly desirable in order to shift significant aid resources to Africa for the sole purpose of giving access to water to the poor, mainly those living in slums and in rural areas. This mechanism should be flexible and capable to meet the needs of local communities without excessive red tape. Discussions are under way for the creation of an African Water Fund and an African Water Initiative operating under the African Development Bank.

<sup>125</sup> In a 2003 review of how ODA addresses the Millennium Development Goals and Targets (2000-2001), the OECD reaches the conclusion that 15% of the ODA addressing other MDGs in addition to MDG target 1 (income poverty) is spent on water and sanitation. Water and sanitation is \$3.3 billion out of a total aid of \$52.4 billion and targeted aid of \$21.2 billion. Investment in small systems amount to \$386 million and in large systems \$2262 million.

<sup>126</sup> On 28th April 2003, Mr. Ronnie Kasrils, Minister of water affairs and forestry (South Africa) stated : “The problem Africa faces is that funds, which are said to be available, are in reality so restricted by policy conditionalities and terms which are neither financially nor socially feasible, that they are in effect not available to meet the needs of the poorest, no matter how much is spent on capacity building, or how much effort is spent on project preparation to put a gloss on fundamentally inappropriate proposals. So we are proposing the establishment of an African water facility that will channel capital for infrastructure (as well providing technical assistance where that is really necessary and cannot easily be funded through existing channels). We will insist that the conditions of disbursement reflect our commitment to meet the MDGs, and to meet them fast. So the procedures for the disbursement of the funds must be swift and focused and the governance must reflect both Africa's commitment to achieve those goals and Africa's understanding of its own reality. We will reject any attempt to use the Facility as one more donor controlled window through which to disburse largesse to promote the ongoing round of consultations, conferences and capacity building programmes that in the end simply create a cadre of conference goers from both rich and poor countries, rather than the team of development drivers who are delivering real results which make a difference on the ground.”

The increase in foreign aid for the poor could be partly compensated by a decrease of aid for other work from \$0.6 to \$0.2 billion. Thus total aid would be quadrupled from \$0.6 to \$2.4 billion.

The worst case would arise when taxpayers and rich users refuse to support investment for new connections for the poor because they do not consider it to be a priority. Then foreign aid for new connections would need to reach \$2.8 billion (and probably \$3.4 billion because it would be difficult to ask poor users to pay when the other users refuse to shoulder part of the burden). This extreme case cannot be ruled out because investment in many programmes of water supply and sanitation in poor African countries<sup>127</sup> is nearly fully paid by foreign sources (aid agencies support water programmes more easily than other social programmes).

### **6.3 Financing a more expensive programme of new connections**

The above scenario was built on the assumption that the cost for new connections was “only” \$3.4 billion per year. If the cost of meeting the Johannesburg targets is much larger, i.e. \$6 billion per year, the burden on all parties should be increased (Figure 17). The whole programme would also include other work for WSS (\$2.6 billion) and reach a total of \$8.6 billion per year (i. e. 2.77% of GDP or \$14.6 per inhabitant per year) instead of \$3 billion in the nineties (see upper parts of Figures 14 and 15).

Assuming that the total burden is fully shared by all parties, it may be assumed that :

- a) poor users would agree to increase their share from \$0.6 to \$1 billion (Figure 16A). This would mean that 360 million poor people would have to pay \$2.77 each year during 15 years (or 2.5 % of an annual income of \$110 per person) in order to have a better water service;
- b) taxpayers and “rich” users would accept to increase their contribution from \$1.6 billion to \$3 billion per year, i.e. to pay 50 % of a project which is of little direct use to them ;
- c) development aid would be increased from \$0.6 billion to \$2 billion, i. e. an increase of 233 % for providing access to water to the unserved.

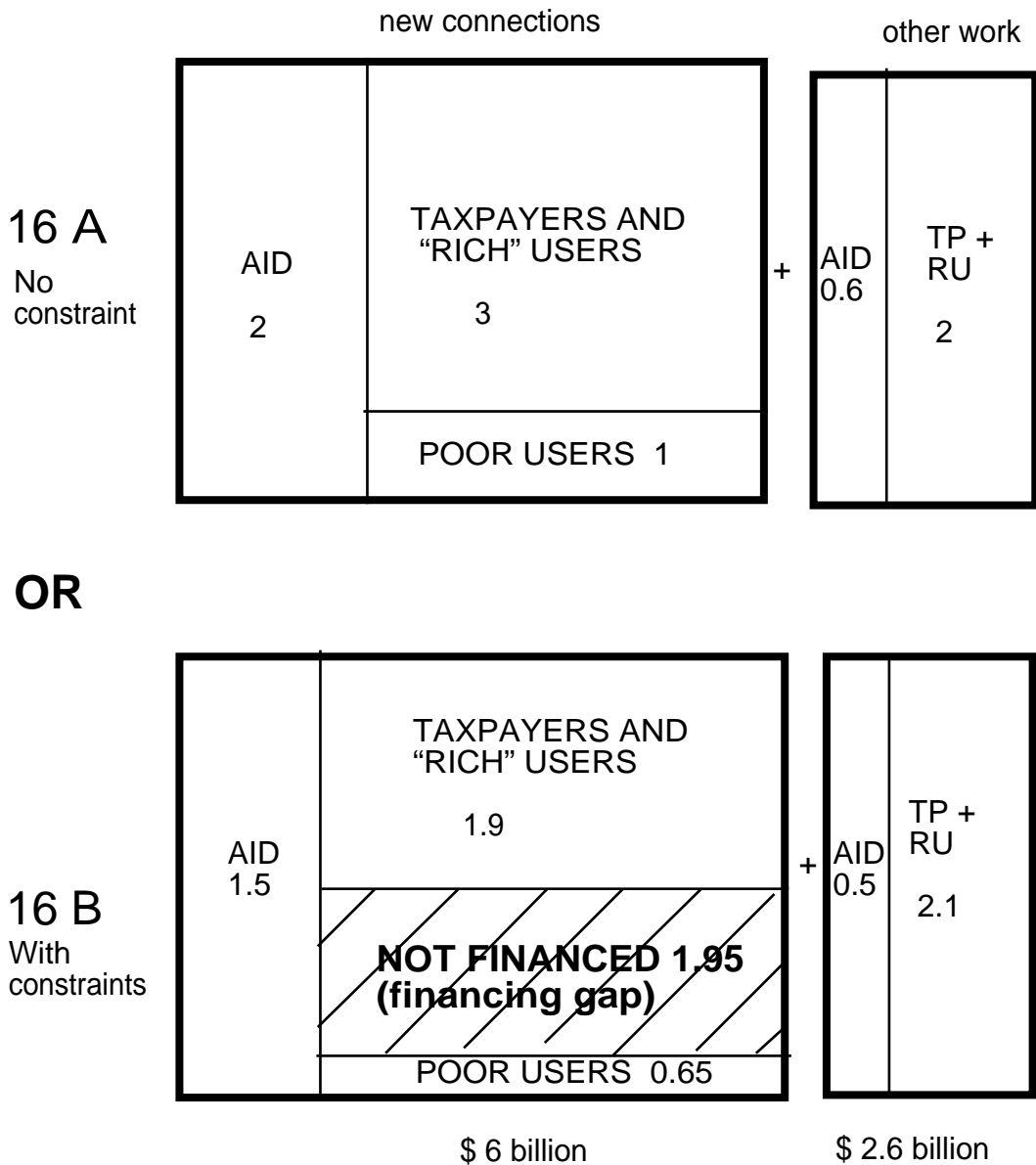
Taking into account investment for other work for WSS, poor users would spend \$1 billion instead of \$0.1 billion, taxpayers and “rich” users would spend \$5 billion instead of \$3.6 billion and aid would increase from \$0.6 billion to \$2.6 billion<sup>128</sup> (over four times).

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<sup>127</sup> Recently sanitation in Ouagadougou (€9.1 million) was nearly fully paid by foreign aid (AFD : € 7 million ; IDA, € 2 million) while Burkina Faso paid € 0.1 million.

<sup>128</sup> Such an increase in aid for water in Africa of \$2 billion is very high when compared to the increase of \$6 billion foreseen for total aid in Africa in 2006 (African governments are not prioritizing water to the extent of spending 33% of additional aid in this sector).

**PERIOD 2000-2015**



**Figure 16. FINANCING WATER SUPPLY AND SANITATION IN SUB SAHARAN AFRICA (\$ 6 billion per year for new connections + \$2.6 billion per year for other work).**

**16A. No constraint**

**16B. With constraints ;**

- a) aid : maximum \$2 billion per year
- b) transfer to the poor : less than 50% of the total cost paid by taxpayers and "rich" users ;
- c) contribution from poor users : less than 1% of their income.

This proposed investment for water of the unserved (\$4 billion or 1.4% GDP when

aid is deducted) may be considered too large with regard to total public expenditure for health (around 2% of GDP). Furthermore, such a programme could be difficult to implement for the following reasons :

- a) total aid for water in Africa may not be increased above \$2 billion (from an initial level of \$0.6 billion) because donors and recipients have other needs to satisfy than water for the poor ;
- b) tax payers and “rich” users are not willing to spend more than \$4 billion for water and national authorities are likely to give priority to other programmes such as education, health or infrastructure of growing cities. In addition, those who have access to water are not willing to spend more for water for the poor than for improving water systems for their own use ;
- c) poor users are not ready to pay more than 1% of their income for new connections (\$0.65 billion).

To sum up, increasing investment in WSS from \$3 billion to \$8.6 billion does not seem realistic considering that African countries have made limited effort to improve access to water and sanitation in the nineties and are generally not giving a high priority to their water programmes.<sup>129</sup> More generally large investment in the water sector is not supported at governmental level because water is not a fundamental issue for those who have it already, because water issues are managed at local level and possibly because women have little say on decisions made at national level.<sup>130</sup>

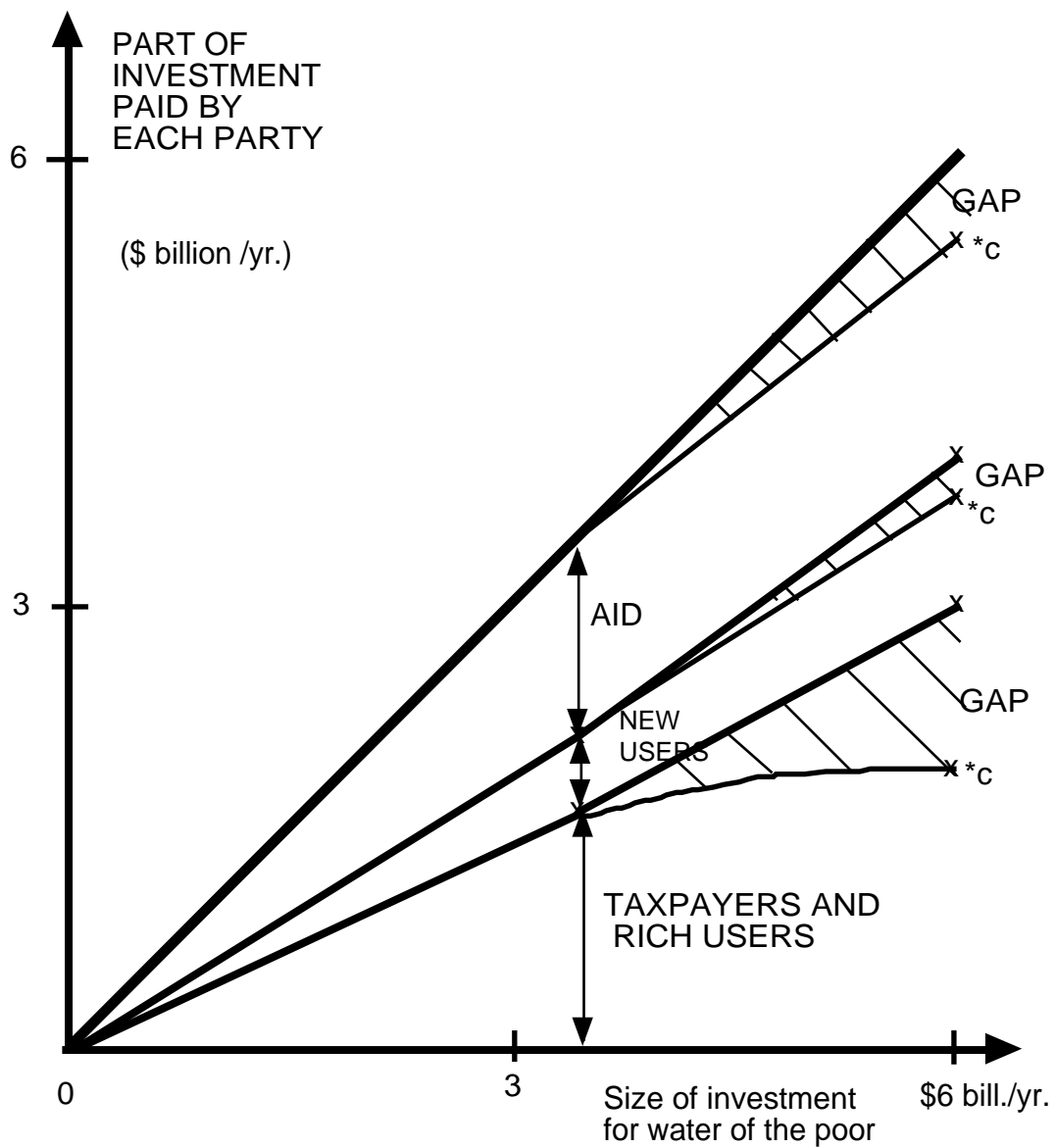
Figure 16 shows a financing scenario which takes into account financial constraints. The financing gap is \$1.95 billion. This example shows that the possibility to finance the cost of meeting the Johannesburg targets becomes more remote when the cost for new connections goes beyond \$4 billion per year. Figure 17 shows how the financing gaps increase with the size of the investment programme.

Because of the financing gap, a costly investment programme to meet the Johannesburg targets in Africa cannot be achieved in time. In the example under discussion, it may be necessary to spread investment for new connections over more than 15 years and the programme could be completed 7 years behind schedule.

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<sup>129</sup> If developing countries invest \$20 billion per year in WSS, such investment would correspond to 0.34% of their GDP. An investment of \$2.4 billion per year in sub-Saharan Africa is equivalent to 0.77 % GDP.

<sup>130</sup> As stated in ERM Working Paper “Financing the EU Water Initiative (June 2003),” Poverty Reduction Strategy Papers in Africa are currently failing to give priority to water resources, water supply and sanitation services as many recipient countries (particularly on Africa) fail to see the potential contribution of the water and sanitation sectors to sustainable development and growth.” “Water investments do not figure prominently in priority investment plans and PRSPs”.



**Figure 17. BURDEN SHARING AS A FUNCTION OF THE SIZE OF THE INVESTMENT (without and with constraints)**

The financing gaps occur because of constraints on the amount which each party is willing to pay.  
 (\* c : with constraints )

#### 6.4 Tripling aid for water to sub-Saharan Africa



To sum up, development aid will play a crucial role in providing access to water in sub-Saharan Africa because the region cannot carry out a large investment programme of WSS. Donor countries should urgently decide to increase aid for water and add as a minimum \$1.2 billion per year to what they already provide (\$0.6 billion per year in 1999-2001). This should be given as grants and be used to provide WSS to those who live in great poverty. As can be seen from Figure 9, aid for water has been decreasing in the late nineties. The first action to take would consist in reversing the recent downward trend, in increasing aid for water to its level in 1996 (\$800 million) and making known the new commitments by donor countries.

The tripling of aid for water in Africa would be consistent with the priority given to meeting the basic needs of the least developed countries.<sup>131</sup> More generally the increase in aid could vary with the degree of poverty in the area which need water infrastructure, the increase being the larger for the most deprived areas.

As can be seen from Figure 18, grants for water are small in a few countries which have great needs, such as Chad, Ethiopia and Angola (but it may be explained by specific reasons such as civil war).<sup>132</sup> If we would disregard these three countries, it would seem that more grants are given to countries with more people without access to water. On the basis of all data, the overall trend is unclear. If Nigeria, Senegal and Zimbabwe are disregarded, it may even be thought that more grants for water are given to countries with less needs. This surprising conclusion can be explained if grants are given mostly to improve existing networks rather than to provide water to the poor who are not served. To conclude, there is no clear relation between the level of grants for water and the level of the needs for water.

But making funds available for WSS investment in Africa will not be sufficient.<sup>133</sup> There must also be a capacity to initiate and manage sustainable water projects meeting the needs of the people directly concerned. In a number of instances available funds for water are not spent because of lack of projects, bureaucratic delays, unwillingness to support small

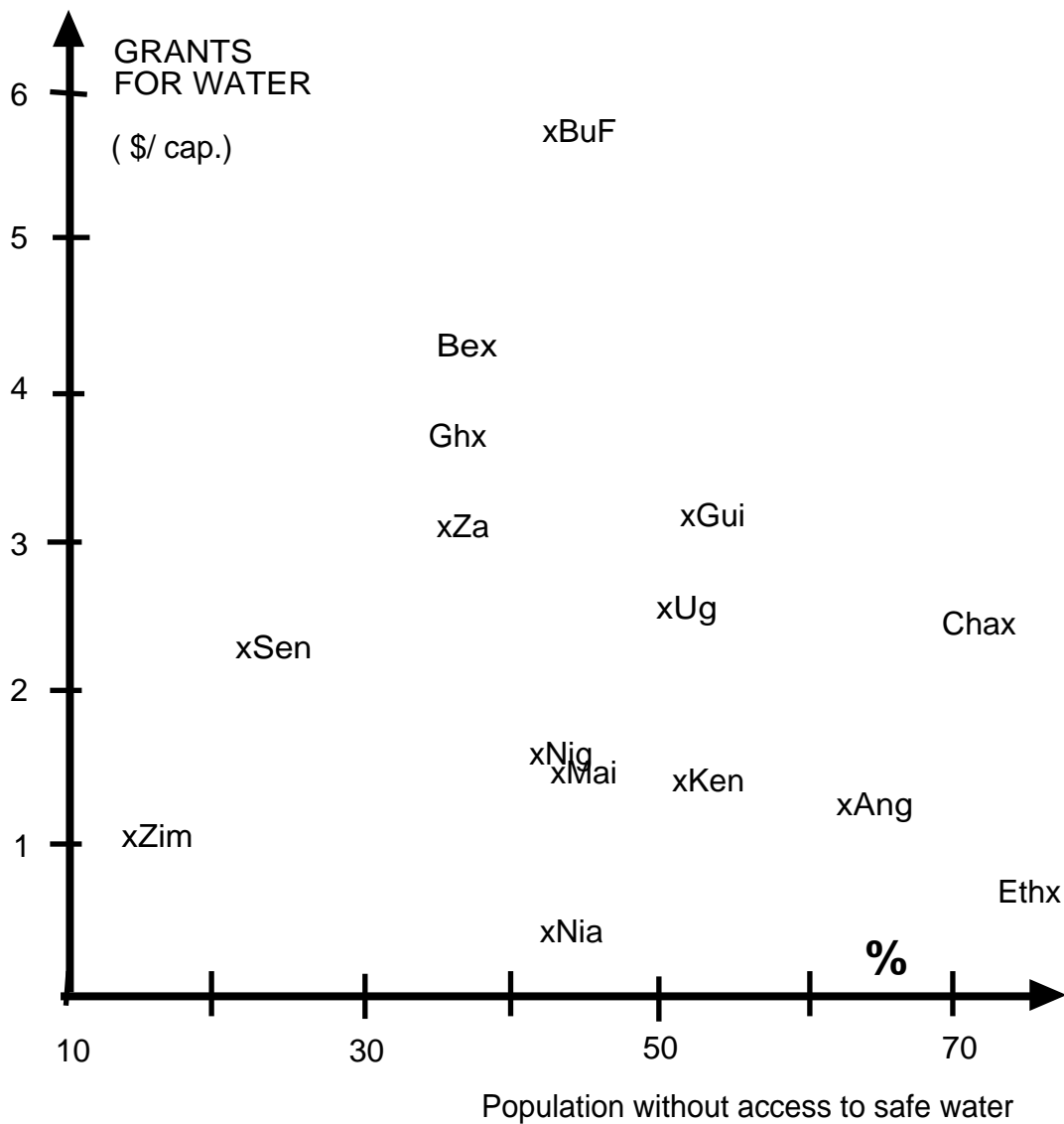
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<sup>131</sup> If aid for water to least developed countries was tripled and aid for water to developing countries was doubled, aid to better off developing countries would be increased by only 79%. A large differentiation in the rate of increase of aid for water would be justified because intermediate income countries could more easily reach the Johannesburg targets.

<sup>132</sup> This correlation was drawn up without considering countries which received little aid or grants because of unfavourable conditions for aid (e.g. civil war, relatively high income) or very small countries (less than 5 million people). The amount of grants for water may be more related to foreign policy than to health policy.

<sup>133</sup> Implementation Report by Africa Personal Representatives to Leaders on the G8 African Action Plan : "To reach the Millennium development goals for water, the problems to be addressed are governance, capacity building and financing". Evian, G8 Summit, June 2003.

projects, etc.<sup>134</sup> In other cases funds are spent on providing household connections to the richer part of society rather than creating standposts for all users and to improve the existing water service rather than to supply water to immigrants from rural areas living in miserable suburbs.



**Figure 18. GRANTS FOR WATER AS A FUNCTION OF POPULATION WITHOUT ACCESS TO WATER (African countries having received more than \$10 million as grants during 1999-2001)**

<sup>134</sup> Implementation Report on the G8 African Action Plan : “Accelerated access to sustainable water supply and sanitation to rural Africa is particularly needed and will be achieved through using flexible, transparent and fast paced procedures for programme and project preparation, appraisal and implementation as well as procurement, disbursements and financial management, with a high degree of involvement of local communities.”

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## **Box 6. THE OFFICIAL FRENCH POSITION ON INTERNATIONAL SOLIDARITY FOR WATER**

*France has consistently taken a positive approach towards aid for water. In January 2003, President Jacques Chirac stated :*

“ Our commitment to halve the number of people without access to safe drinking water and sanitation services by 2015 requires a doubling of annual investment in the water sector.”

*President Chirac’s representative in G8 stated that the aim of France is to double the level of French aid for water in Africa.<sup>135</sup>*

*Concerning international solidarity, Mr. Jacques Chirac stated<sup>136</sup> :*

“Pour réaliser les objectifs du Millénaire et de Johannesburg, qui forment l’horizon commun de l’humanité, nous avons, nous le savons, besoin d’environ cinquante milliards de dollars d’aide publique supplémentaires chaque année. **Où trouverons-nous ces fonds, alors que les budgets nationaux sont soumis à de fortes contraintes ?** La France s’est engagée à accroître son effort de solidarité internationale. Et nous devons explorer des voies nouvelles avec pragmatisme et sans a priori.

Quelles que soient les solutions retenues, il faut que tous ceux qui incarnent une conscience internationale s’engagent et plaident pour faire comprendre que ce geste d’humanité des riches à l’égard des pauvres est aussi un geste de sagesse et de responsabilité grâce auquel nous sortirons des cauchemars de la faim, de la misère, du sida, de l’analphabétisme et de l’oppression.”

*In June 2003, Mr. P.A. Wiltzer, Minister of Cooperation, stated that the four priorities of the French development aid policy were: education, food security, health and water and sanitation.*

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<sup>135</sup> “France has very substantial financial commitments for water in Africa – on the order of 180 million euros per year – and aims to double this effort. Extract from “ *France, a partner of NEPAD : An action plan for Africa*”, Evian, 2003. NB : There is no target date for the doubling.

<sup>136</sup> Séance de clôture du Séminaire de l’Institut du développement durable et des relations internationales (15 avril 2003).

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## Box 7. FRENCH AID FOR WATER IN AFRICA

*France is the largest donor in relative terms (0.36% GNI) among G7 countries (0.19 % GNI). Its aid level in 2002 (0.36% GNI) exceeds the EU average (0.34% GNI). French development aid (Table 21) is scheduled to grow progressively to reach 0.5% in 2007 and 0.7% GDP in 2012.<sup>137</sup> Furthermore it is foreseen that 50% of new and additional aid would be for Africa. Thus aid for water will grow.*

*In comparison with other industrialized countries, France is below average in terms of aid for water and among those giving the least in terms of grants for water (15th out of 19 donor countries) (Table 19). During recent years, loans for water declined and grants remained relatively constant (Table 22).*

*Concerning the French Strategy for cooperation in sub Sahara Africa, the Foreign Ministry told the Senate in November 2002 : “la France **devra reprendre l’initiative en Afrique** sur un certain nombre d’axes majeurs, en particulier dans le cadre de la mise en oeuvre du PPTE, que sont notamment la définition de **politiques sectorielles** cohérentes (santé, éducation de base, **eau**, forêts, pêche,...). “*

*In 2003, the French government adopted a National Strategy for Sustainable Development (Annex 2) which contains no specific statement on the level of aid for water. For the present Government, aid is one out of four priorities and ODA as a whole is scheduled to grow to 0.5% in 2007. However no precise financial commitment on water has been made so far by France in Kyoto or in Evian during the G8 Summit.<sup>138</sup>*

*The French Government has supported the centime for cubic meter initiative in*

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<sup>137</sup>Statement of the French Minister for Cooperation, Mr. Pierre-André Wiltzer (OECD, Paris, 22nd April 2003) : “La France a décidé d'accroître fortement son aide au développement, et elle tient beaucoup à en améliorer l'efficacité. Notre effort quantitatif s'inscrit résolument dans la perspective de la réalisation des objectifs du Millénaire. Notre aide, qui est passée de 0,32 % à 0,36 % du PIB entre 2001 et 2002, devrait atteindre environ 0,39 % en 2003 pour être ensuite portée à 0,5 % du PIB en 2007 et à 0,7 % en 2012.” Out of €6 billion aid, €2 billion is for debt cancellation which is the priority.

<sup>138</sup>The French goal is to double aid for water but no target date has been given. Funds to increase aid for water may suffer from budgetary constraints and could possibly be frozen. “Le ministère des Affaires étrangères a signalé que les crédits d'appui aux initiatives privées et décentralisées (2,95 millions d'euros) et les 10 % des Fonds de solidarité prioritaire ne seront pas dégelés en cours d'année et connaîtront au mieux une stagnation, en 2004. D'autre part, les montants énormes annoncés pour les C2D (remise de la dette) en 2003-2004 et le maintien des engagements au FED, font même craindre une amputation des autres types de crédits APD, pour financer les allègements de dettes”. P.M. Grondin, La lettre du pS-Eau, N°43, Juil. 2003.

Johannesburg<sup>139</sup> and expressed its support for innovative financing schemes. President Chirac stated in September 2002 that debt cancellation could take place in return for investment in WSS.

State funds for aid and for NGO's activities are reduced because of budgetary cuts. French water agencies and water utilities have difficulties to finance cooperative activities concerning water in Third World countries. A new water law which would legalize such decentralized cooperation is foreseen for 2004.

**Table 21**

**FRENCH OFFICIAL DEVELOPMENT AID**

(billion)

	1996	1997	1998	1999	2000	2001	2002	2003
<i>ODA from DAC countries (\$)</i>	55	48	52	56	54	51		
<i>ODA from France (\$)</i>	7.5	6.3	5.7	5.6	4.1	4.1		
<i>in % ODA DAC</i>	13.4	13.2	11.0	10.0	7.6	8.0		
<i>French ODA(€)</i>	6.0	5.6	4.4	5.3	4.5	4.6	5.5	6.1
<i>French bilateral ODA(€)</i>	4.6	4.2	3.1	3.9	3.1	2.8	3.5(?)	4.2(?)
<i>Fr.Bil.ODA to Sub Sah.Af. (€)</i>	1.9	1.9	1.4	1.3	1.3	1.0		
<i>in % Fr. bil.ODA</i>	42	45	44	34	43	36		

Source : Report to French Senate, *Loi des finances 2003, Aide au développement*, Nov. 2002.

## 7. French contribution to WSS in developing countries

France is strongly supporting investment in WSS in developing countries. It is probably the only country which stated that it was supporting the doubling of aid for water as proposed in the Camdessus Panel report but it did not specify at which date such a doubling would occur (Box 6). Actual payments are more limited (Box 7) and French grants for water are relatively small (Table 22).

<sup>139</sup> "France in particular intends to strongly support decentralized funding for water. For instance, conditions for extending a programme like the *Centime pour l'eau* scheme already set up in the Ile-de-France region will be investigated with a view to developing decentralized cooperation, which is expected to take on an increasingly important role. The idea is to foster solidarity between rich populations and those who are deprived of access to water and sanitation.". Extract from "France, a partner of NEPAD : An action plan for Africa", Evian, 2003.

## 7.1. Developing countries in general

France is giving special emphasis to solving the issue of access to water for all (see National Strategy on Sustainable Development, Annex 2). During the period 1996 -2001, bilateral aid for water from France to all developing countries was on average \$206 million per

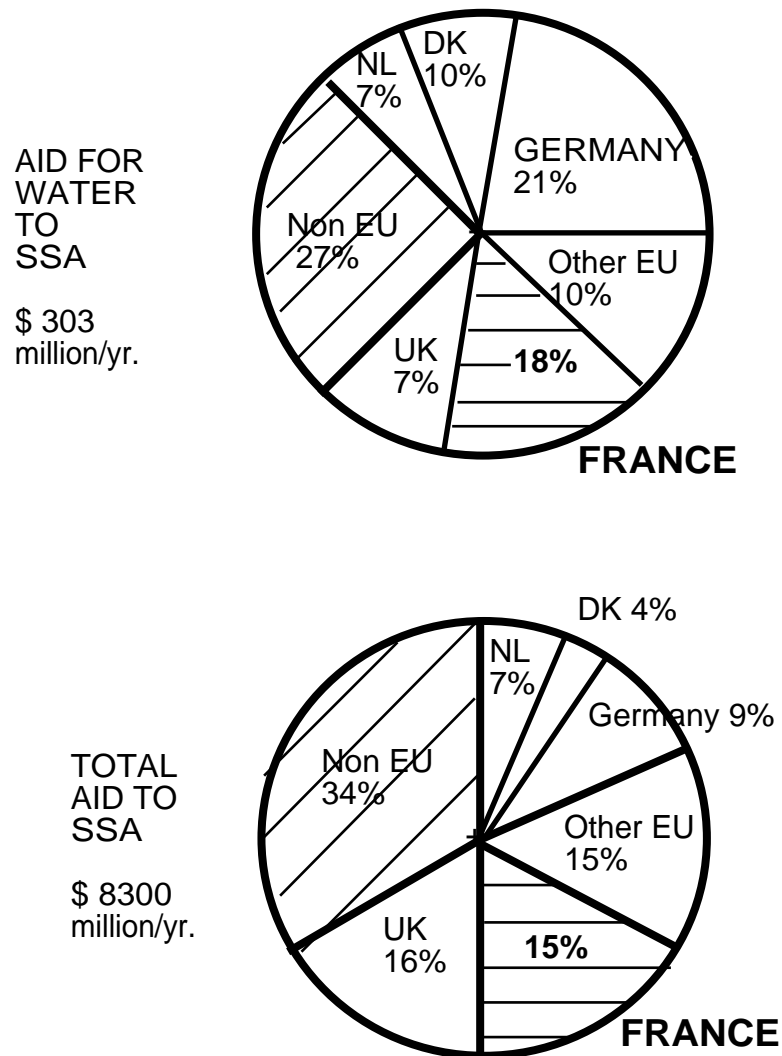
**Table 22**

**FRENCH OFFICIAL DEVELOPMENT AID FOR WATER**  
(million dollars)

	1996	1997	1998	1999	2000	2001	Aver.
<i>From France to all developing countries</i>							
Grants	77	47	30	65	44	38	51
Loans	323	186	125	138	101	57	155
Total	400	233	155	205	145	95	206
<i>of which to sub-Saharan countries</i>							
Grants	58	31	15	54	36	19	35
Loans	110	79	17	36	0	22	44
Total	168	110	32	90	36	41	80
<i>of which for large WSS systems in sub-Saharan countries</i>							
Grants	54	12	3	11	21	8	18
Loans	39	45	17	36	0	14	25
Total	93	57	20	47	21	22	43
<i>of which for small WSS systems in sub-Saharan countries</i>							
Grants	0	15	0	5	0	11	5
Loans	0	0	0	0	0	8	1
Total	0	15	0	5	0	19	6

Source : OECD : Creditor Reporting System, 2003.

year (Table 22), i.e. approximately 5% of the total French bilateral aid.<sup>140</sup> During 2000-2001, French aid for water was 5% of total bilateral aid for water from all DAC countries.



**Figure 19. BILATERAL AID TO SUB SAHARAN AFRICA FROM DAC MEMBERS IN 1999-2001**

<sup>140</sup> In 2000, French ODA for water is 3.8% of the total ODA from France. During 1990-2000, the Agence française du développement (AFD) provided on average €95 million per year for WSS and €97 million per year in 2000-2002.

**Table 23. TRENDS IN THE PORTFOLIO OF  
AGENCE FRANÇAISE DE DÉVELOPPEMENT  
ON SECTORIAL COOPERATION**

	<i>1994-2002</i>	<i>2000-2002</i>	
<i>A. In terms of all projects (%)</i>			
<i>World</i>			
<i>Number of projects on water</i>	<i>34</i>	<i>33</i>	
<i>Volume of projects on water</i>	<i>32</i>	<i>33</i>	<i>Stable</i>
<i>In sub-Saharan Africa</i>			
<i>Number of projects</i>	<i>62</i>	<i>48</i>	
<i>Volume of projects</i>	<i>48</i>	<i>29</i>	<i>Decline</i>
<i>In sub-Saharan Africa</i>			
<i>Number of projects on water</i>	<i>17</i>	<i>9</i>	
<i>Volume of projects on water</i>	<i>12</i>	<i>5</i>	<i>Decline</i>
<i>B. In terms of projects on water (%)</i>			
<i>In sub-Saharan Africa</i>			
<i>Number of projects on water</i>	<i>51</i>	<i>27</i>	
<i>Volume of projects on water</i>	<i>37</i>	<i>14</i>	<i>Decline</i>
<i>C. In terms of all projects in sub-Saharan Africa (%)</i>			
<i>In sub-Saharan Africa</i>			
<i>Number of projects on water</i>	<i>28</i>	<i>19</i>	
<i>Volume of projects on water</i>	<i>25</i>	<i>16</i>	<i>Decline</i>

**Source :** AFD, June 2003. Statistics on projects in the following sectors : water, energy, telecommunication, transportation and urban development (Total : €1.3 billion during 1994-2002 for infrastructure and urban development).

French aid for water has been decreasing since 1996 (Table 22 and Figure 20).<sup>141</sup> In

<sup>141</sup> In 2000-2001 bilateral aid for water of France was on average \$120 million, i.e. \$2 per cap. or 5.3% of total aid (\$2259 million). Aid for water projects may increase once the debt cancellation programme will be over (2005).



2001, the total aid for water from France was well below the average over the last six years, i.e. \$95 million. According to the OECD, the French bilateral aid for water was 2.9% when the average for DAC countries was 4.8%. of total bilateral aid.

Sub-Saharan Africa received \$80 million of aid per year out of \$206 million during 1996-2001 (39%), \$51 million went to North Sahara Africa, \$24 million to the Middle East and \$37 million to Asia. The grant component to sub-Saharan Africa is 44% compared to 25% for developing countries in general.

An analysis of the portfolio of projects of the French development agency (AFD) is showing that water projects remained a relatively stable component of the total but that there was a decline in total projects and in water projects in sub-Saharan Africa. Within projects in sub-Saharan Africa, there is a decline in the proportion of projects on water as if there was less priority given to water in Africa (Table 23).

## 7.2 Sub-Saharan Africa

France was traditionally very committed to providing aid to sub-Saharan countries. Total aid to this region was 55% of total French aid in 1988 but fell to 38% in 2001.<sup>142</sup> During recent years (1999-2001), the French contribution to total bilateral aid was 15% and the French contribution to bilateral aid for water was 18% (Figure 19). In sub-Saharan Africa during 1999-2001, aid for water has come mainly from the European Commission (EDF) (\$68 million/yr.), Germany (\$63 million/yr.) and France (\$55 million /yr.). Denmark is allocating 10% of its total aid to the water sector in this region, Germany, 8.4% and France, 4.4% (EU countries average : 4.1%).

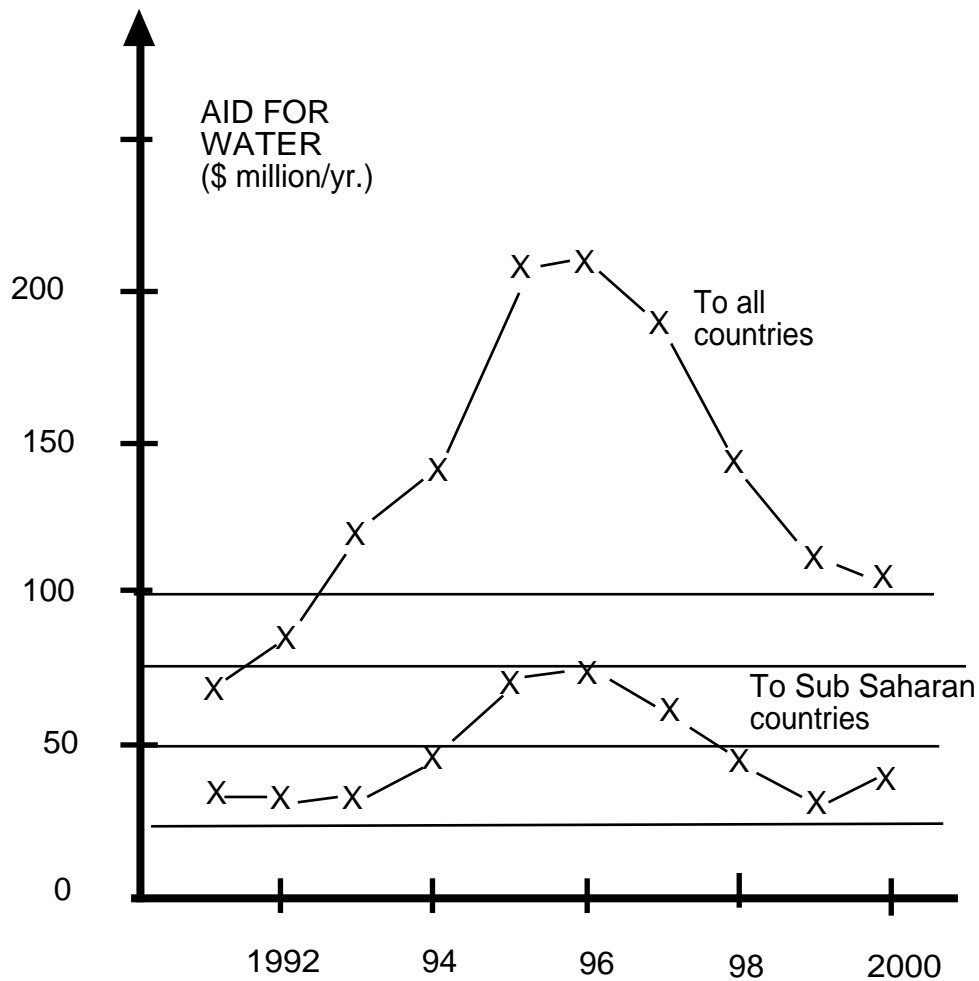
France is promoting greater aid to sub-Saharan Africa (Box 7) but funds theoretically allocated (Table 21) may exceed those really available to these countries. The policy of greater support of Sub Sahara Africa could be implemented by increasing aid for water.

Total French aid for WSS in sub-Saharan countries in 1996-2001 includes \$35 million per year given as grants of which \$23 million is for WSS (Table 22). Most grants are given to large systems of WSS (\$18 million) and \$5 million is for small systems generally in rural areas.<sup>143</sup> French decentralized cooperation and in particular NGOs play a leading role in rural areas because they provide on average over \$ 7 million per year of which \$ 6 million per year

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<sup>142</sup>In 1999, French aid to sub-Saharan Africa was 45.4%, i.e. less than aid from Belgium (61%), Denmark (56%) Sweden (48%), Norway (47%) and United Kingdom (46%).

<sup>143</sup> Much progress has to be made in rural areas where projects are smaller and less attractive to centralized cooperation. "Accelerated access to sustainable water supply and sanitation to rural Africa is particularly needed and will be achieved through using flexible, transparent and fast paced procedures for programme and project preparation, appraisal and implementation as well as procurement, disbursements and financial management, with a high degree of involvement of local communities." Extract from "Implementation report by Africa personal representatives to leaders on the G8 Africa action plan", Evian, 2003.



**Figure 20. AID FOR WATER FROM FRANCE  
(small and large WSS systems,  
three-years moving average)**

is spent in Africa for water projects.<sup>144</sup>

<sup>144</sup> Aid to Africa provided by Véolia's Water Forces, Ondeo's Aquassitance, SEDIF (€1 million/yr.), SAGEP, AESN (€0.9 million/yr.), AERM, Regional Councils (Ile-de-France, Limousin, etc.), municipalities (Nantes, Poitiers, Ivry, Evry, Blanc-Mesnil, Cogolin, Lille, Lyon, Grenoble, Dunkerke, Chinon, Rennes etc.), pSEau, CCFD, AFVP, Eau Vive, Ingénieurs sans frontières, etc. French NGOs with African immigrants as members also provide much support to water systems in their homeland. SEDIF spent a total of € 9.1 million for 1.6 million people in 141 actions in 16 countries since 1986. The average cost is € 5.7 per person connected (range : € 4 to 16/cap.). Financing is provided by a charge of € 0.3 centimes /m<sup>3</sup>. French aid to Mali (€ 55 M/yr.) is lower than what the Malians working in France send to their families (€90 M/yr.).

The main recipients of French aid for water are shown in Table 24. Richer countries receive mostly loans and poorer countries grants. During 1997-2001, France has provided over \$1 per capita as grants to three countries (Central African Republic, Chad and Senegal). On the other hand its involvement in countries such as Togo (\$0.37/cap.), Mauritania (\$0.31/cap.) or Niger (\$0.11/cap.) is relatively small. Grants can also be related to the population without access to water ; they are larger than \$2 per person without water over 5 years in four countries.

**Table 24. MAIN RECIPIENTS OF FRENCH AID FOR WATER  
IN SUB-SAHARAN COUNTRIES (1997-2001)**  
(over \$5 million in 5 years)

	<i>GDP</i>	<i>%</i>	<i>GrantsLoans</i>		<i>Total</i>	<i>Total</i>	<i>Grants</i>
	<i>\$/cap.</i>	<i>wat.</i>	<i>(\$million over 5 yr.)</i>		<i>\$/cap.</i>	<i>\$/pers.WW</i>	
<i>Ethiopia</i>	628	61	15.6	-	15.6	0.25	0.7
<i>Mali</i>	753	65	7.7	5.8	13.5	1.23	2.0
<i>Madagascar</i>	799	47	7.1	-	7.1	0.45	0.9
<i>Chad</i>	850	27	16.5	-	16.5	2.2	3.0
<i>Mozambique</i>	861	60	6.7	-	6.7	0.37	0.9
<i>Burkina Faso</i>	965	50	8.5	-	8.5	0.76	1.5
<i>Kenya</i>	1022	49	-	9.8	9.8	0.33	-
<i>Central Afr. Rep.</i>	1166	60	7.0	7.6	14.6	4.1	4.9
<i>Senegal</i>	1419	78	9.2	-	9.2	1.0	4.5
<i>Côte d'Ivoire</i>	1656	77	-	39.2	39.2	2.5	-
<i>Ghana</i>	1881	64	-	8.1	8.1	0.4	-
<i>Guinea</i>	1934	48	4.6	14.1	18.7	2.3	1.1
<i>Morocco</i>	3419	82	-	65.4	65.4	2.23	-
<i>Gabon</i>	6024	70	-	17.3	17.3	14	-

**Note :** *GDP in PPP \$ per capita in 1999; % wat.: percentage of population with access to safe water; grants per person without access to safe water over 5 years*

**Source :** *OECD : Aid Activities in the Water Sector 1997-2002 (2003).*

**Table 25. ROLE OF NGOs IN AID**

<i>Aid to and thr. NGOs (% aid)</i>	<i>Aid to national (mill.\$)</i>	<i>Aid thr. NGOs (mill.\$)</i>	<i>Aid to (\$/cap.)</i>	<i>Aid to NGOs (\$/cap.)</i>	<i>Aid thr. Grants by NGOs (\$/cap.)</i>
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<i>Luxembourg</i>	17.6	1.5	21.8	3.4	3.8	50.7	12.5
<i>Sweden</i>	15.2	95.5	168.4	10.0	10.9	18.9	2.4
<i>Belgium</i>	12.6	45.5	60.6	4.4	4.8	5.9	10.5
<i>Norway</i>	10.5	-	136.9	-	1.6+	30.4	43.0
<i>Canada</i>	10.3	168.5	-	5.4	6.5	-	3.7
<i>Netherlands</i>	10.3	324	-	20	21.0	-	17.0
<i>Spain</i>	9.6	4	136.3	0.1	0.12	3.4	-
<i>Switzerland</i>	9.4	32	51.1	4.4	10.0	7.2	23.5
<i>Austria</i>	8.5	2	39.0	0.25	0.28	4.8	7.4
<i>Denmark</i>	7.9	6	123.9	1.2	1.2	23.4	4.6
<i>Ireland</i>	7.9	20.5	-	5.3	9.4	-	24.9
<i>Finland</i>	7.7	4	25.1	0.8	1.6	4.8	1.3
<i>Italy</i>	7.3	5.6	53.1	1.0	1.1	0.9	0.6
<i>Germany</i>	6.9	-	346.4	-	0.1+	4.2	10.0
<i>United Kingdom</i>	5.9	179	88.1	3.0	3.8	1.5	7.4
<i>New Zealand</i>	4.9	4.5	0.9	1.2	1.4	0.2	5.9
<i>Australia</i>	4.4	0.5	40.5	0.03	0.03	2.1	9.5
<i>Greece</i>	2.3	-	5.0	-	-	0.5	3.4++
<i>Japan</i>	1.7	195.5	-	1.5	2.2	-	1.8
<b>France</b>	0.7	28	-	0.5	0.5	-	3.3++
<i>Portugal</i>	0.6	1.5	-	0.15	0.2	-	0.24
<i>United States</i>	-	-	-	-	-	-	15.1
<i>DAC average</i>	4.7	1168		2.5*	3.0*		8.3

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**Notes :**

a) Part of ODA to NGOs or transiting through NGOs in 2000-2001 in % of total net ODA payments. No data on transit for 7 countries. + means that no data are available for national NGOs.

b) Average aid to NGOs per year during 2000-2001 in \$ and in \$ per capita of donor country.

c) \* : Ratio of total aid to population of countries with national NGO data.

d) Aid to national and international NGOs per capita of donor country for 2000-2001 (average).

e) Grants by NGOs to developing countries: average for 2000-2001 in \$ per cap. of donor country (not included under aid to NGOs). ++France in 1990-91 and Spain in 1998.

**Source :** OECD : Development Cooperation 2002 Report. OECD. 2003. Tables 12. 13. 18.

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### 7.3. Aid policy proposals

#### a) Financing aid for water in developing countries

Doubling aid for WSS in developing countries would mean first reversing the downward trend, moving from \$95 million in 2001 to the average level in 1996 -2001 (\$206 million) in order to reach \$412 million per year in a few years. Such level is not very large as aid for water reached \$400 million in 1996 (€ 6.7 per person in France per year).

If such aid was financed directly by households only, it would mean that they would pay 4% of their water bills (€ 360 per household) as aid for water or about 12 c per m<sup>3</sup>. This amount is insignificant compared to the future increases in water prices because of lead pollution (€ 2/m<sup>3</sup>).<sup>145</sup> The French public is likely to support a small increase on all water bills if it would aim to provide safe drinking water to very poor people who live in miserable conditions in Third World countries. At a rate of 12 c /m<sup>3</sup>, it would be equivalent to 6 liters of water per person per day, an amount of water which people waste without even knowing it.

Such an increase in aid for water could be partly financed by the State aid budget which is officially scheduled to increase, and governmental aid for water could increase from \$90 million to its previous level of \$200 million. NGO's could probably receive greater official support to conduct their activities in the water sector.<sup>146</sup> As shown in Table 25, French NGO's are hardly supported in their action when compared to what is being done in other industrialized countries.<sup>147</sup>

**Imaginative new ways** which President Chirac is advocating could also be used to finance aid for water. For instance, a *charge on water abstraction* ( "contribution de solidarité envers l' Afrique") could be added to the existing water abstraction charge of French water agencies (about 4 c€/m<sup>3</sup>). Such an increase would be compatible with the Water Framework Directive<sup>148</sup> in which it is requested to introduce a charge for the use of the resource itself. If this charge was 1 c€ per m<sup>3</sup> on the total water abstracted (15 000 million m<sup>3</sup> per year for agricultural, industrial and domestic purposes), it would generate at most €150 million

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<sup>145</sup> G. Miquel. *La qualité de l'eau et de l'assainissement en France*, Sénat, Rapport N° 215, 2003.

<sup>146</sup> According to Senator Serge Lepeltier, France is only giving 0.65% of its ODA to NGO's to carry out aid actions when the average in Europe is 5.1%. *La Croix*, 17/7/03. In 2001, S. Lepeltier : *Réconcilier la France et la mondialisation* : ", 2003 : "La France doit faire évoluer sa politique d'aide au développement qui privilégie trop l'instrument bilatéral de coopération (Etat à Etat et gouvernement à gouvernement).L'aide au développement pourrait être plus décentralisée et passer davantage par les ONG. La France est le 15ème pays sur 15 en Europe pour son aide au développement passant par les ONG (0,6% en France contre 10% en Hollande et 30% aux Etats Unis). Si l'aide publique au développement de la France a recommencé à augmenter (objectif à atteindre 0.5% du PNB en 5 ans), les lignes budgétaires destinées à la coopération décentralisée et aux ONG baissent. Il conviendrait dans les années à venir d'infléchir puis de renverser cette tendance." The President of Eau Vive, a French NGO, is asking that French aid delivered through French NGO's be increased to the European average (3.1% of ODA or \$130 million per year).

<sup>147</sup>Data for France are scarce. Official aid to french NGOs is relatively small ( five times less than the DAC average) and France has 14th rank among DAC countries. France which is providing 8% of ODA is only providing to its own NGO's 2.4% of what all NGO's are being provided by DAC countries ( \$1137 million in 2001). This could mean either that France has relatively few active NGO's in this field or that it does not want to promote actions by its own NGOs.

<sup>148</sup> In French law, Art. 9 of the Water Framework Directive is expressed as follows: " Les coûts liés à l'usage de l'eau, y compris les coûts pour l'environnement et les ressources elles-mêmes, doivent être récupérés sur les utilisateurs. Toutefois il peut être tenu compte des conséquences sociales, environnementales et économiques de la récupération ainsi que des conditions géographiques et climatiques." The proposed charge is related to the environmental and resource costs.

because small abstractions would be excluded but only €100 million if irrigation water is completely excluded. In addition, there could be a tax on water abstracted for electricity production. If the rate of such tax is 0.2 c/m<sup>3</sup>, it would generate €50 million per year. If the water charge was limited to drinking water for households, it would only generate €35 million per year (le “centime par m<sup>3</sup>”).

Another source of funding might be a *special charge on groundwater* abstracted for bottling (mineral water, soft drinks, beer, etc.). At a rate of 1 c per liter of water or 1 c per bottle, it would generate at least €100 million (“le centime de la soif”) and could be earmarked for Sahel countries (“les pays de la soif”). Similarly the tax on alcoholic beverages could be increased.<sup>149</sup>

Decentralized cooperation and other forms of cooperation undertaken by civil society to improve access to water in foreign countries could be enhanced by means of a special *charge on treated water* (additional to a waste water treatment charge)<sup>150</sup> which could be used to promote better sanitation in developing countries.

The level of the charges on water could be one or two centimes per cubic meter of waste water. In view of the expected increase of this tax necessary to meet French commitments under EU Water Directives, the part of this tax for international cooperation would hardly be noticed.

The legal form of water “charges” (obligatory) or “gift”(voluntary) should be clarified bearing in mind that it could not be a parafiscal tax (forbidden after 2003) and that it should not increase direct taxation which the government seeks to reduce.

The French law would need to be modified in order to allow official French bodies such as water agencies to finance activities abroad.<sup>151</sup> This proposal was made by the Economic and Social Council in 2000<sup>152</sup> and is found in the Opinion of the Water Academy in

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<sup>149</sup> The tax on alcoholic beverages brings € 3 billion per year ( from 2.5 c per bottle of wine to € 1.3 per bottle of hard liquor).

<sup>150</sup> Proposition de pS-Eau. P.M. Grondin : “Le centime par m<sup>3</sup>, la solidarité sur l’eau contre la pauvreté”, Contribution pour le SMDD, juillet 2002. If French users of drinking water would provide 0.01€ per cubic meter, up to €40 million/yr. could be collected in addition to French official aid for water (€120 million/yr. in 2000-2001). French non official development aid (grants) for water may be about € 6 million per year. This can be compared to \$19 million provided by France as grants for both large and small systems of WSS in Sub Saharan countries in 2001 (Table 22).

<sup>151</sup> Earmarked taxes are not in line with the general principles of public finance. Art.18 of the “Ordonnance n° 59-2 du 2 janvier 1959 portant loi organique relative aux lois de finances” allows exceptions if they are included in a law of finance and are proposed by the Government. The most famous earmarked tax is the CSG (€ 63 billion) but there are 42 other such taxes ( abolished as from 2004).

<sup>152</sup> In November 2000, the French Economic and Social Council adopted the view that the law should officialize the possibility for water services and water agencies to carry out international or humanitarian cooperation activities. Avis “La réforme de la politique de l’eau”, Rapporteur R. Boué, nov. 2000.

December 2002.<sup>153</sup> Support for the c€ per cubic meter charge was given in the French contributions to the G8 Summit in Evian. If mandatory, this charge would need to be adopted by Parliament.

The French policy towards aid for water would benefit from being more clearly spelled out. It would be most useful to state when the French official development aid to be used for WSS will be increased and to provide quantified targets and deadlines (a doubling of aid for water has been announced but without specifying any date). Aid to least developed countries, in particular in sub-Saharan Africa, should be raised in even larger proportion. More funds should be provided to NGOs in line with the practice of other industrialized countries.<sup>154</sup>

### **b) Promoting more effective use of aid for water**

While additional funds are clearly needed, there could also be savings in the use of existing funds. Too many projects became idle because of poor management or design or poor social acceptability. The issue is not to spend more money on water projects (e.g. level of aid) but to bring water to those who do not have it (e.g. level of connection) and are ready to share responsibility in this joint action. It is necessary to ensure sustainable provision of water to a growing number of people rather than unsustainable flow of expenses on water paid by donor countries. Ultimately the goal is public health not public spending, people not money.

In line with the implementation of good governance in water management, France could elaborate a French overall plan or strategy in support of the Johannesburg targets for water. Such plan should include :

- a) quantified targets,
- b) monitoring of progress,
- c) benchmarking and
- d) economic assessment of measures taken.

It would take into account the suggestions of the Camdessus Panel on reporting by developing countries and promote output based aid ( based on people connected and other result indicators rather than input indicators such as volume of concrete or length of pipes) (see Annex 3). Such a plan should preferably be elaborated with all stake holders in a spirit of cooperation. It might suggest that resources are shifted by developing countries from other sectors to the water sector because central administrations seem more interested in financing projects under their own responsibility than water projects under the responsibility of municipalities. It might also seek ways to enhance the preparation of good project proposals of limited scale, to support non sovereign entities such as local utilities, municipalities or inter

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<sup>153</sup> "The contributions of French users for the benefit of users in developing countries should be made legal and used on a larger scale". Extract from the Resolution of the Water Academy in "Solidarity for Drinking Water", Water Academy, March 2003.

<sup>154</sup> In 2003, NGOs have suffered a cut of 30% in their subsidies in spite of the existence of pluriannual plans.

communal bodies, to collect funds in France based on “imaginative new ways” and to strengthen cooperation within France so as to ensure that decentralized projects are undertaken in a favourable context and are monitored.

### c) Special measures in favour of sub-Saharan Africa

France is promoting greater aid for water as part of its policy to improve cooperation with sub-Saharan Africa in the framework of NEPAD.<sup>155</sup> A first move would consist in setting up **a target** for its role in this part of the world.

If France aimed to fulfill **25% of the needs** for water supply in sub-Saharan Africa (320 million people to be served in 15 years), it would have to invest 80 million x \$25, i.e. \$133 million/yr. over 15 years, i. e. over three times more than in 2001. **Tripling French aid** for WSS to sub-Saharan Africa would mean increasing aid from \$49 million to \$147 million, i.e. providing an additional aid of about \$100 million as grants per year, i.e. \$1.6 per inhabitant in France or approximately 1% of an individual water bill.

Action taken by France should also aim to convince other industrialized countries of financing access to water in Africa because France cannot possibly deal with access to water for 300 million sub-Saharan Africans who have no safe water in 2000. In particular France could promote greater involvement of the EU in Africa in the framework of the EU Water Initiative

French projects in the water sector in a few countries in sub-Saharan Africa could be audited from the perspective of the donor in much the same way as is recommended to the recipient countries by the Camdessus Panel Report (Annex 3). This assessment made by the peers from donor and recipient countries should consider the unit cost of connection, the sustainable provision of water, the financing of operational and maintenance costs, the creation of users groups, the errors made and the lessons learned and give emphasis to the output (number of persons served after a few years per € invested) based on proper

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<sup>155</sup> According to the French report to the G8 Summit “La France, partenaire du NEPAD, “il a été décidé à Kananaskis par les pays du G8, sur proposition de la France, d’accorder une place privilégiée au continent africain, qui devrait bénéficier d’au moins 50 % des montants supplémentaires pour la mise en oeuvre des objectifs du Millénaire”. “Partant de 0,32 % en 2001, l’effort français devrait s’élever dès 2003 à 0,39 % du PIB, soit un montant de 6,1 Md d’euros et pourrait atteindre près de 9 Md d’euros en 2007”.

If total ODA of France moves from € 5 billion in 2001 to € 9 billion in 2007, Africa would receive an extra € 2 billion from France in 2007. If the allocation for water is 15% of this sum, € 300 million would be available for water in 2007. Thus it would be quite feasible for France to increase its aid for water in sub-Saharan Africa from an average of € 80 million to an average of € 240 million ( tripling) over the period 2000-2015 ( average increase of € 160 million).

The same document states that : “La France, qui consent un effort financier très important pour l’eau en Afrique – de l’ordre de 180 millions d’euros par an – entend doubler son effort en ce domaine”. This would mean an extra € 180 million for the whole of Africa but without any target date. Furthermore this may be below the first undertaking.



monitoring. This **audit** should investigate the extent to which aid money was used efficiently in a few selected countries. It would be carried out with the active participation of specialized NGOs and be a first step towards the Observatory which would deal with the entire water programme. It should focus on low-cost measures and deal separately with both rural and urban settings bearing in mind the rapid growth of African cities.

## **8. CONCLUSIONS**

Meeting the Johannesburg targets for water in developing countries is a visible political goal with large effects on poverty and health ; it does not involve large new and additional expenses and is achievable with low-cost technologies.

Many developing countries will be able to meet the Johannesburg targets by themselves or with little foreign support because of their level of income and their expected rate of economic growth. There is little need to direct additional aid for water to these

countries which can manage their water issues and can finance the necessary investment through internal means or obtain loans on the international market. Because aid funds for water are limited, they should go first to least developed countries to enable them to meet the Johannesburg targets for water.

The technology to implement will need to be low-cost in order to maximize the number of beneficiaries within a given period of time. Better targeting would be useful to overcome the lack of funds. The available funds should be used efficiently, i.e. be focussed on the poor and on the areas of greatest need. More attention should be paid to water needs in rural areas.

The total additional investment necessary to meet the Johannesburg targets for water is significant but not as large as is often said. **Estimates of \$10 billion per year** would seem reasonable and are below many other estimates which lump together what is required to meet the basic needs of the poor with other needs in the water sector. The necessary additional financial effort is a very small fraction of GDP in most developing countries. Most of such investment would be financed jointly by users who are newly connected and by other users and taxpayers in developing countries.

Moving towards meeting the Johannesburg targets is mostly a task for developing countries which will however require support from industrialized countries. The financial effort to be made by developing countries far exceeds what industrialized countries will have to bear.

**Wealthier countries should commit themselves to provide additional funds for WSS** in the poorer countries, such as those in sub-Saharan Africa, without waiting to have an international agreement on this matter. As shown in this report, the required additional aid is compatible with current aid policies and could be made available because it is a small part of total world investment in WSS.

Foreign aid will play an essential role because it would make it possible to alleviate the financial burden of water investment on the poor. In the least developed countries, foreign aid is essential because these countries have other pressing needs to finance and invest very little by themselves in water supply and sanitation.

If the total additional investment would be larger than \$10 billion per year, serious difficulties to finance it will arise because of a number of economic constraints (poverty constraints, solidarity constraints and aid constraints). More specifically there is a willingness to serve the unserved but only if the cost to be borne is not too high. Expensive programmes will need to be curtailed by moving to cheaper technologies, by lowering the level of service provided, by improving water governance and by spreading expensive programmes over a longer period.

**Total aid for water will need to be doubled to reach \$6.8 billion per year.** As industrialized countries are already providing \$3.4 billion per year for WSS in developing

countries, they would have to provide a **supplementary grant of \$3.4 billion per year**. This task is within reach and could be financed bearing in mind the announced additional aid which will be provided to meet the Millennium Development Goals (50% increase). Because aid for water is likely to be increased as from 2005 rather than as from 2000, the deadline may have to be postponed from 2015 to 2020.

Sub-Saharan Africa should receive most of the increase in aid for water because it is the region which has the largest investment to make and the least financial means to pay for it. Thus it is the region the less likely to reach the Johannesburg targets. **Aid for water in Africa should triple and reach at least \$1.8 billion per year**. At the same time measures should be taken to ensure that available funds reach potential beneficiaries and are used to serve the unserved and not those who are already connected to water supply and sanitation. Considering the magnitude of the problem and the lack of concrete actions over the last years, there is a need to move ahead faster than what is currently being done and to put aside aid funds which will have to be spent later to meet the target.

If there is a shortage in total funds for water, or delays in investing, the Johannesburg targets will not be reached as foreseen but 5 to 10 years later. Because of such a delay, millions of Africans will probably die from water related diseases which could have been avoided if aid for water had been increased sooner.

**France could take a more pro-active position with a view to helping developing countries reach the Johannesburg targets for water.** It should consider implementing the Water Academy recommendations of December 2002 on financing water supply and sanitation<sup>156</sup> :

*“International aid to the least developed countries should be substantially increased in the water sector so that these countries can meet, within the specified time limits, the objectives for water included in the Millennium Declaration and adopted at the Johannesburg Summit.*

*Contributions of French users for the benefit of users in developing countries should be made legal and used on a larger scale.”*

France should draw up an action plan or strategy in the area of water supply and sanitation in developing countries and make it clear what it will do in this area without waiting for other countries to act similarly. This plan should deal with the suggestions included in the Camdessus Panel Report and promote concrete steps to be taken at national and European levels. French action should be carried out in consultation with French stake holders and with key partners in Africa.

The French action plan in support of the Johannesburg targets for water could possibly include :

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<sup>156</sup> Resolution on Solidarity for Drinking Water (December 2002). Text in “*La solidarité pour l'eau potable*”, mars 2003.

- a) quantified targets and deadlines for the implementation of the commitment to increase the part of French *official development aid* to be used for WSS ;
- b) a mechanism to *monitor progress* and to assess action undertaken at international level in the WSS sector;
- c) special measures in favour of water for *least developed countries*, in particular in sub-Saharan Africa, aiming at providing greater aid for water in this region. In particular, greater support to French NGOs operating in the area of WSS in these countries ;
- d) ways to facilitate financing *decentralized cooperation* with developing countries by French municipalities, water supply institutions and water agencies.

## **Annex 1**

# **UNITED NATIONS MILLENNIUM DECLARATION**

(September 2000)

## **Extracts**

We, heads of State and Government,...

We recognize that, in addition to our separate responsibilities to our individual societies, we have a collective responsibility to uphold the principles of human dignity, equality and equity at the global level.

We undertake to address the special needs of the least developed countries. We call on the industrialized countries:

- To implement the enhanced programme of debt relief for the heavily indebted poor countries without further delay
- To grant more generous development assistance, especially to countries that are genuinely making an effort to apply their resources to poverty reduction.

We consider certain fundamental values to be essential to international relations in the twenty-first century. These include:

- **Solidarity.** Global challenges must be managed in a way that distributes the costs and burdens fairly in accordance with basic principles of equity and social justice. Those who suffer or who benefit least deserve help from those who benefit most.

We resolve -to halve, by the year 2015, the proportion of the world's people whose income is less than one dollar a day and the proportion of people who suffer from hunger and, by the same date, to halve the proportion of people who are unable to reach or to afford safe drinking water; by the same date, to have reduced maternal mortality by three quarters, and under-5 child mortality by two thirds, of their current rates.

We resolve to stop the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies.

We resolve to take special measures to address the challenges of poverty eradication and sustainable development in Africa, including debt cancellation, improved market access, enhanced Official Development Assistance and increased flows of Foreign Direct Investment, as well as transfers of technology.

## Annexe 2

# STRATÉGIE NATIONALE DE DÉVELOPPEMENT DURABLE (adoptée lors du Comité Interministériel

## pour le Développement Durable, 3 juin 2003)

### Extraits

#### **Renforcer la lutte contre la pauvreté par une solidarité accrue en faveur des pays en développement**

Le Gouvernement entend poursuivre les objectifs définis pour 2015 lors du sommet du Millénaire, en 2000, confirmés et complétés à Johannesburg, en 2002. Le Gouvernement renforcera la contribution de la France pour améliorer l'accès des populations les plus démunies aux "services essentiels", comme **l'eau** ou l'énergie. Il s'agit de favoriser l'élaboration de stratégies nationales dans ces secteurs et de mettre en oeuvre des projets respectueux des principes du développement durable et destinés, en milieu urbain comme en milieu rural, à fournir **l'accès à l'eau potable**, à l'assainissement et à une forme moderne d'énergie à des populations qui en sont dépourvues.

La solidarité à l'égard des populations les plus pauvres doit être accrue et la gouvernance internationale du développement durable renforcée face à la mondialisation. C'est le sens de la stratégie nationale comme de la stratégie européenne de développement durable, que le Gouvernement s'attachera à consolider lors de l'élargissement de l'Union européenne et de l'adoption d'un nouveau traité.

La France s'est engagée à ce que son aide publique au développement (APD) atteigne, en 2007, 0,5 % du PIB. Cet effort n'exclut pas d'autres sources de financement.

La solidarité doit aussi se développer grâce à une logique de partenariat dépassant celle de l'assistance. Les actions ne pourront, en effet, réussir que si certaines conditions locales sont réunies : cadre institutionnel stable, citoyens, tant consommateurs qu'épargnants, sensibilisés, personnels locaux formés. Les priorités visent, dans les pays où la France intervient et, en particulier, dans la Zone de Solidarité Prioritaire (ZSP), à contribuer à la réalisation des objectifs de la Déclaration du Millénaire et du Sommet de Johannesburg.

Notre action internationale doit impliquer davantage les différents acteurs que sont, outre les Etats, les collectivités territoriales, les organisations non gouvernementales (ONG) et les entreprises.

#### **Contribuer à l'accès des populations les plus démunies aux "services essentiels"**

La France s'est engagée à répondre à des besoins aussi essentiels que l'accès à l'eau potable et à l'assainissement, à des formes modernes d'énergie ou de transports. Il s'agit, par exemple, d'ici 2015, de réduire de moitié le nombre de personnes n'ayant pas accès à l'eau potable et à l'assainissement.

*Objectif* : favoriser l'élaboration de stratégies nationales dans les secteurs de l'eau, de l'énergie, des transports et soutenir des projets de développement durable en milieu urbain

mais aussi rural

**Plan d'actions :**

- encourager l'élaboration de stratégies sectorielles nationales dans les pays de la zone de solidarité prioritaire ;
- assurer à la mise en oeuvre des initiatives partenariales dites de type II, françaises et européennes, annoncées à Johannesburg, notamment dans le secteur de l'eau et l'assainissement ;
- promouvoir, d'une manière générale, les recommandations du rapport Camdessus sur le financement des infrastructures pour l'eau et l'assainissement et promouvoir les "principes de gouvernance" de ces mêmes secteurs ;
- travailler à la mise en place, au niveau international, d'un système d'information de type observatoire permettant de suivre les progrès réalisés dans l'accès des populations à l'eau potable et à l'assainissement ;
- développer les micro-crédits des bailleurs de fonds bilatéraux et multilatéraux pour permettre l'accès à l'eau potable ;
- veiller, en particulier, au soutien d'initiatives en faveur des femmes, premières actrices de l'approvisionnement en eau des familles ;

**Indicateurs de suivi :** *nombre d'habitants ayant accès aux services considérés.*

**Annex 3**

**THE DOUBLING OF FINANCIAL FLOWS  
IN THE CAMDESSUS PANEL REPORT**

The "Report of the World Panel on Financing Water Infrastructure" chaired by Michel Camdessus and entitled "Financing Water For All" contains a number of statements on the

issue of financing water investment for WSS. It was presented at the Third World Water Forum in Kyoto (March 2003) and at the Evian G8 Summit (June 2003).

In the preface to his report, Mr. Michel Camdessus wrote :

**“Financial flows, our main concern, need to at least double. This** doubling, or more, of the volume of finance has not daunted our group. We see it as an indispensable investment if humanity wants to achieve its other aims for health, universal primary education—above all of girls—and reducing absolute poverty by half between now and 2015. The world is capable of this effort.”

In the report itself, the Panel came to the following conclusions :

“Based on the various authoritative estimates of investment requirements to meet targets both for 2015 and 2025, there is clearly going to be a large gap between current financial flows and the investment estimates. The annual funds going into the sector as a whole would need to roughly double. This is the benchmark to be kept permanently in mind.”

Concerning official development aid, the Panel Report stated that :

“Governments of developed countries should be held to account for their commitments to increase aid to the water sector. Overall ODA for water should be doubled, as a first step. Donors and MFIs should aim to make substantial increases in the share of water in their total commitments.

Individual donors should contribute their share towards this target, depending on the size of their current aid to the water sector. This ODA increase should preferably be done by increasing the amounts of *grants*. Donors and MFIs should aim to make substantial increases in the share of water in their total commitments.

Aid donors need to stand by their commitments to increase aid for water, which should **immediately be doubled as a first step**. Donors should focus unremittingly on helping achieve the water MDGs, and later the wider goals of global water security. But in view of the huge magnitude of the needs—particularly for rural populations—and of the very low level of the present contributions to this sector, this doubling can only be considered as a first step.”

The Panel also made the following recommendations :

- “Each country should produce a national water policy and plan, including specific programmes to meet the Millennium targets and beyond.”
- “Countries should state indicators by which their efforts should be judged”.
- “Each country should provide predictable revenue frameworks to their water service



providers, either public or private.”

- “Each country should monitor and report annually their achievements towards the WMDGs”.

\* \* \*

In preparation for the Evian Summit, Mr. Mahmoud Abu Zeid, President of the World Water Council and Mr. Ryutaro Hashimoto, Chairman National Steering Committee, Third World Water Forum, wrote to Heads of State at the G8 Summit and asked that :

*“The donor community should commit an increased percentage of their funds for development and better management of water infrastructure.”*

Similarly Mrs. Margaret Catley-Carlson, Chair, Global Water Partnership and Mr. Mahmoud Abu Zeid, President, World Water Council wrote in a letter to Heads of State :

*“We call on the leaders to signal their collective and individual preparedness to underwrite that financial flows to the water sector need to double, as an initial target.”*

\* \* \*

The G8 Action Plan for water adopted in Evian contains the statement :

“As water is essential to life, lack of water can undermine human security. The international community should now **redouble its efforts** in this sector. In line with the Monterrey Consensus and the WSSD Plan of Implementation, bearing in mind the different needs of rural and urban populations, we are committed to:

- Give high priority in Official Development Aid allocation to sound water and sanitation proposals of developing country partners.”

\* \* \*

***No precise commitment to increase aid for water was adopted in Evian.***

## **THE COST OF MEETING THE JOHANNESBURG TARGETS FOR DRINKING WATER**

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