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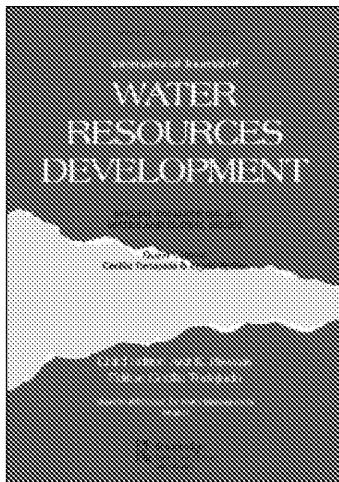
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International Investments in the Water Sector

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ABSTRACT *This paper presents the main results of a detailed study carried out on Official Development Assistance (ODA) and international private investment in the water sector from 1995 to 2004. Publicly available datasets from the Development Assistance Committee (DAC), the World Bank, and the Human Development Reports were collected and stored in a database. ODA programmes were analysed individually to separate the water and sanitation subsectors. The study includes a comparative analysis of public and private international investment, focusing specifically on sanitation. It assesses the success of private participation in the sector and evaluates cross-cutting issues in ODA water programmes.*

Introduction

In order to reach the drinking water and sanitation target of the Millennium Development Goals (MDGs), it is essential that investments are appropriately allocated at every level. As mentioned in the literature (Fay *et al.*, 2005; UN, 2005a), access to such basic services is important in fulfilling other health- and poverty-related MDGs. Despite the importance of this sector, there has been only a small increase in the availability of funds within it. Annual investments in water and sanitation in developing countries amounted to approximately \$28 000 million (including \$14 000 million for waste water treatment) during the mid-1990s (Briscoe, 1999; Global Water Partnership, 2000). Estimates for the contributions made by the each of the actors during that time (Camdessus, 2003) include 65–70% from the local public sector, 5% from the local private sector, 10–15% from international donors (including NGOs) and 10–15% from the international private sector. More recently, overall annual investment is reported to be slightly below \$30 000 million. However, the proportions invested by different sectors have indeed changed: international donors and NGOs have increased their annual commitments from around \$3900 to \$5500 million (OECD, 2007) and international private sectors have reduced their contribution from \$3700 million in the late 1990s to less than \$2000 million in the last four years (World Bank, 2006). The contribution of the local public sector is considered as, at best, stationary, since many developing countries have adopted economic plans that limit

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public expenditure, sometimes as a requirement to receive international aid. Reducing investments in infrastructure has been a normal mechanism to decrease public expenditure, while expecting the international private investment to cover it. This also explains the reduction in financial support from the World Bank for infrastructure in later years (World Bank, 2003). There has been an important growth in contributions within the local private sector of up to \$4300 million per year. The increase in relative local private sector financing is due to their participation in operation and maintenance and the lack of response from national governments to demographic pressures, especially in large cities. Estimations of the evolution of sector financing are summarized in Figure 1.

The future could see an increase in contributions from Official Development Assistance (ODA). The OECD has committed to raising the amounts destined to aid with respect to 0.25% of GNI, which was registered in 2005 (Gupta *et al.*, 2006); the 15 wealthier countries of the EU have agreed to contribute 0.51% of their GNI in 2010 and 0.70% in 2015 (UN, 2005b). If these commitments are fulfilled, ODA could triple by 2015. Furthermore, the United Nations has declared 2005–15 the International Decade for Action: Water for Life (UN, 2004). The Resolution states that the main goal should be a greater focus on water-related issues at all levels and on the implementation of water-related programmes in order to achieve internationally agreed water-related goals. Hence, a considerable increase in ODA funds dedicated to the water sector is to be expected even if there is no sign of it yet (Gurría, 2007). A major challenge within the sector will be ensuring that international funds do not displace national investment. Since the biggest share of funds will be channelled through national governments, there is a risk that they might reduce their own investments to benefit other politically prioritized sectors. Water funds should be somehow earmarked if total investment is to be increased.

However, estimates of the costs involved in reaching the MDG target for water and sanitation in 2015 differ considerably, ranging from \$9000 to \$30 000 million per year (Toubkiss, 2006). The most recent estimates on progress in reaching these goals reveal discouraging results: 55 countries are off track for the water target and 74 for the sanitation target (UNDP, 2006). With the actual gaining access rate, Sub-Saharan Africa would meet the water target in 2040 and the sanitation target in 2076. The investment required

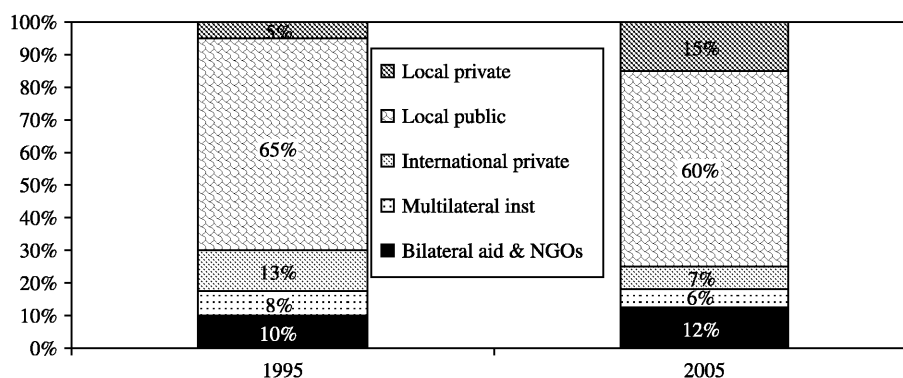


Figure 1. Estimation of water sector financing in developing countries. Comparison made between 1995 and 2005. *Source:* the author, from collected data.

to achieve the MDG for countries with low access to services ranges from at least 1% of GDP to more than 2% of GDP (UN, 2005a).

It is clear that operational and implementable water policies (Biswas, 2001, 2008) combined with an effective allocation of resources are crucial in achieving targets. This includes finance coming from the international donors and also within each of the aid-receiving countries. General aid distribution patterns have been continuously monitored (Alesina & Dollar, 2000; Berthelemy & Tichit, 2002) and related to the achievements of the MDG (Baulch, 2006). The results reveal that the majority of aid, as a whole, remains politically driven. Meanwhile, as well as continent-specific analyses, particular sectors have carried out studies from the perspective of the aid-receiving countries (Mwanza, 2003; Mehta *et al.*, 2005). The present study incorporates both perspectives. It analyses international contributions to the sector and relates them to the lack of services in each country.

The next section illustrates how all the data collected have been used to analyse resource allocation between 1995 and 2004. The following section presents the main results of the analysis, which include general, geographical, subsector and cross-cutting issues. The final section highlights the areas for improvement in the crucial forthcoming years.

Methodology

A database that incorporates information available to the public was compiled from the following sources:

- The Creditor Reporting System (CRS) from the Organization for Economic Cooperation and Development (OECD), which includes all official ODA operations from Development Assistance Committee (DAC) countries (OECD, 2007).
- The World Bank Private Participation in Infrastructure Project Database (World Bank, 2006).
- The United Nations Development Programme (UNDP) Database, from which population data and water and sanitation indicators were extracted (UNDP, 2007).

Disaggregated economic information from individual projects was used (11 743 from the CRS and 306 from the World Bank database), which made it possible to carry out a more thorough analysis that will be discussed later. The behaviour of individual donors was examined. A comprehensive analysis was carried out by including indicators for population and water and sanitation in the database, which thus made it possible to compare levels of access with the investments received.

Despite being the most complete database for development action, the CRS does not permit the separate analysis of information regarding the allocation of funds for water and for sanitation. A description of the subsectors included in the CRS is provided in Table 1.

To separate ODA's fund allocation for water and sanitation, codes 14020 and 14030 must be further divided. For the analysis, all programmes reported under these two codes were separated into three categories: water, sanitation and mixed (water and sanitation combined). In order to reclassify these programmes, the study used the information provided for each of them in their short descriptions. This revealed the actual efforts of donors aimed at water and sanitation; it was also possible to compare this information with private investment, as is described in the next section.

Table 1. Creditor's Reporting System (CRS) description of water and sanitation subsectors

Code	Description
14010	Water resources policy & administrative management
14015	Water resources protection
14020	Water supply and sanitation: large systems
14030	Water supply and sanitation: small systems
14040	River development
14050	Waste management/disposal
14081	Education and training in water and sanitation

Source: DAC (2002).

Moreover, the CRS does not include private transactions from countries that do not belong to the DAC or donations from private agencies that do not provide information regarding their geographical distribution. These data are obtained from donor reports.

The database for the World Bank regarding private participation in infrastructures includes contract type, the amount of the investment and the main actors involved. The information is compiled from commercial databases, specialized publications, companies and web resources from multilateral organizations. Therefore the total amounts given are estimates. Data refer to commitments, not disbursements, and include the whole investment foreseen, even if a part of the investment is not private. The database is updated with public information available regarding renegotiated contracts.

Results and Discussion

This section highlights and discusses the main results of the analysis using the following categories:

- Overall trends
- Terms and conditions of official aid compared to OECD recommendations
- Coordination among donors
- Investment in sanitation
- Integrated approach of ODA-financed water and sanitation projects
- Complementarities between public and private international investment
- Success of international private participation

Overall Trends

Between 1995 and 2004 the total contribution of ODA increased moderately (33%), whereas the trends for contribution to those projects from private participation were irregular; there was a large increase at the end of the 1990s followed by a sharp decline after 2001. The water sector accounted for 5% of total ODA as well as 5% of total private investment in infrastructures. ODA investments for the water sector have been mainly descendant during the decade. Due to an increase in commitment in investment from 2002, the year 2004 saw the highest investment rate of the decade, but not by much (\$5609 million in 2004 compared to \$5435 million in 1997). Accumulated commitments amounted to \$46 360 million, \$27 870 million of which originated from bilateral donors and \$18 490 million from multilateral institutions (Figure 2).

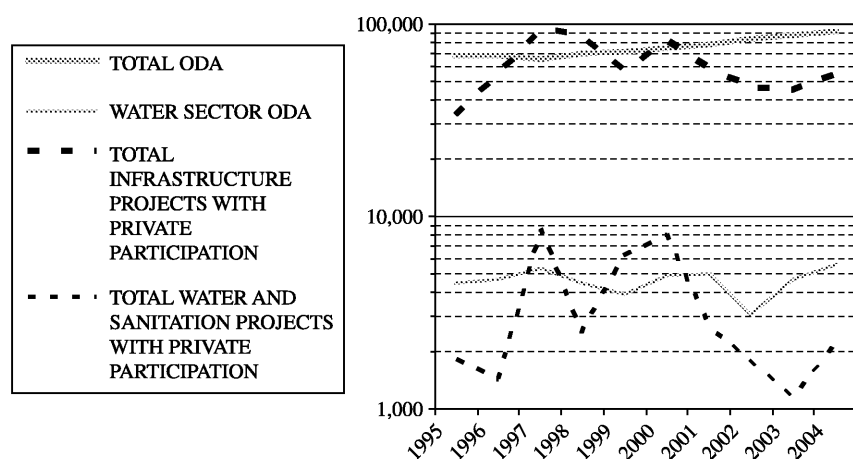


Figure 2. Evolution of ODA and private participation in infrastructure projects. Amounts in millions of dollars (2004). *Source:* the author, from CRS and World Bank data.

Projects with private participation amounted to a total of \$36 280 million. However, this figure does not reflect actual private investment because, as previously explained, the World Bank database includes the total cost of the operation, even if other actors as well as private ones are involved. When estimates are made that include only the share of private participation, the result is \$26 841 million. The amount dedicated to infrastructure is \$23 432 million, and the remaining money is invested in the purchase of licenses and administrative costs. Another point to consider is that the database is not updated when changes in contracts occur, unless the renegotiation is made public. Given the conflicting nature of private participation (see the detailed analysis in the final subsection), with 28% of investments cancelled or in distress (where the government or the operator has either requested contract termination or are in international arbitration), it is reasonable to estimate actual commitments between 1995 and 2004 at approximately \$18 000 million. In addition, most of the contracts are long-term operations (up to 50 years), while ODA programmes rarely last more than 8 to 10 years. This is important when one is considering the real disbursements of both types of investors.

Terms and Conditions of Official Aid Compared to OECD Recommendations

The analysis of terms and conditions of the aid delivered reveals contradictions regarding donor's own recommendations. Reported tied aid represented 9% of the transfers during the period of analysis. It is also important to highlight that 16% of bilateral funds did not report this aspect. This lack of reliable information is surprising, considering that specific agreements on reducing tied aid were made long ago (DAC, 1987, 1992).

During the period of analysis, only 33.5% of all the aid devoted to the sector comprised grants. Loans are examined through their 'grant element'. This concept reflects the financial terms of a transaction: interest rate, maturity (interval to final repayment) and grace period (interval to first repayment of capital). It is a measurement of the concessionality (softness) of a loan. It is defined as the difference between the face value

WATER AND SANITATION OFFICIAL DEVELOPMENT ASSISTANCE: 4.636 MUSD/year		
BILATERAL DONORS (60%): 2.787 MUSD/year		MULTILATERAL (40%): 1.849 MUSD/year
TIED (9%)	UNTIED OR PARTIALLY TIED (75%)	NO REPORT (16%)
NOT REFUNDABLE: GRANTS (33.5%)		REFUNDABLE: LOANS (66.5%)
GRANT ELEMENT (62%)		NOT CONCESSIONAL FUNDS (38%)

Figure 3. Terms and conditions of ODA in water sector. Average for 1995–2004 study period.
Source: the author, from collected data.

of a loan and the discounted present value of the service payments to be made by the borrower over the lifetime of the loan, expressed as a percentage of the face value (DAC, 2002). The reference rate of interest for calculating the grant elements is fixed at 10%.

For the decade studied, there was a 62.12% grant element: 81.53% for bilateral transactions and 32.16% for multilateral ones. As a reference, the DAC agreed to have an overall ODA grant element of at least 86%, increased to 90% for Least Developed Countries (DAC, 1978). Four of the five most important donors in the sector (Japan, Germany, the European Union and France), which combined provided 67.65% of bilateral aid, have very low concessionality rates: 72.89%, 87.93%, 70.55% and 65.70%, respectively. Of this top five, only the USA provided a good grant element (100%). Loans given by multilateral banks on commercial terms do not comprise a grant element; this represents 59.88% of all multilateral transfers during the study period. The terms and conditions of the aid provided are summarized in Figure 3.

Coordination among Donors

The current efforts of donors are focused on improving general aid efficiency through alignment and coordination at the national level in aid-receiving countries (EU, 2006). However, there has been no coordination among donors to set priorities based on the needs of individual regions. As a result, politically important regions might receive more aid (regardless of their level of service), while other more disadvantaged areas are ignored.

With regard to the water and sanitation sector, no correlation was found between the amount of aid received and the number of people without service living there. Figure 4 presents the percentage of investment per region during the period studied. The South-Central Asia region (including India) hosts 45.19% of all people living without access to basic sanitation and 34.57% of all people without access to water; despite this, however, it only received 14.87% of investments. Sub-Saharan Africa hosts 26.77% of people without access to water and 16.68% of those without sanitation, and it received 17.42% of total investments. East Asia (including China) received a more even treatment: it hosts 28% of all

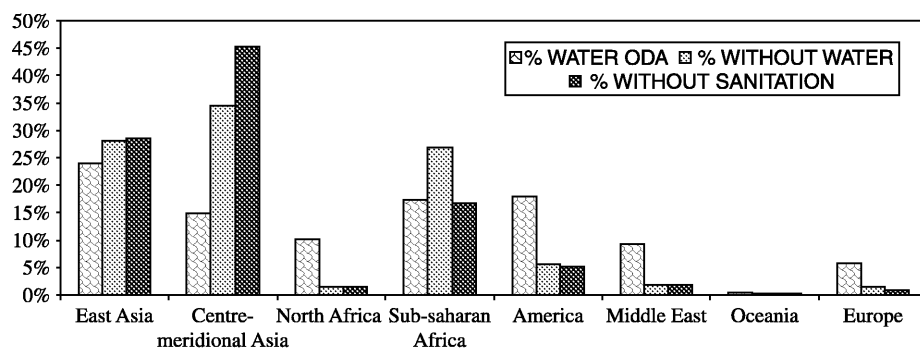


Figure 4. Share of ODA received in 1995–2004 compared with the share of people without access living in that region (access data from 2002). *Source:* the author, from collected data.

people without access to the two services and received 23.99% of investments. Those regions better treated by donors include Central and South America, where only 5% of people without access reside and who received 17.91% of investments; similarly, North Africa and the Middle East, which host less than 2% of the world's population living without access to water and sanitation, received approximately 10% of sector's investment.

Investment in Sanitation

The estimated average figure for access to water and sanitation facilities on a global scale is 79% for water and 48% for sanitation (UNDP, 2007). To assess how consistent donors were in allocating funds within the sector, the share of funds that each donor gave to countries with less than 80% of access to water and less than 50% of access to sanitation was examined. By using access to water as a criterion, the share of funds allocated to countries under the global average for access amounts to 71.23% of all bilateral and 78.65% of multilateral funds. If access to sanitation is regarded as a criterion, the share of funds allocated to countries below the global average for access falls to 36.88% of bilateral and 47.02% of multilateral funds. From the five most important donors in the sector, Japan and France dedicated their efforts to water by allocating 77.48% and 77.45% of their funds to countries with access levels below the average. Germany invested 67.14% of their funds in water-deprived countries, and 35.75% in sanitation-deprived. The European Commission allocated 56.96% of its funds to water-deprived and 27.26% to sanitation-deprived, and the United States dedicated 46.83% to water-deprived nations and 2.92% to those countries under world's average access to sanitation. None of the bilateral donors dedicated more than 75% of their funds to sanitation-deprived countries, and in all cases water-deprived countries received a larger proportion of funds than did those deprived of sanitation facilities. The research revealed that of the three most important multilateral donors the International Development Association (IDA) was the one that performed the best: it allocated 95.47% of funds to water-deprived countries and 78.53% to sanitation-deprived ones.

During the study period, 63% of ODA was dedicated to subsectors 14020 (large water supply and sanitation systems) and 14030 (small water supply and sanitation systems). Bilateral and multilateral donors dedicated 75% and 49% to these subsectors, respectively.

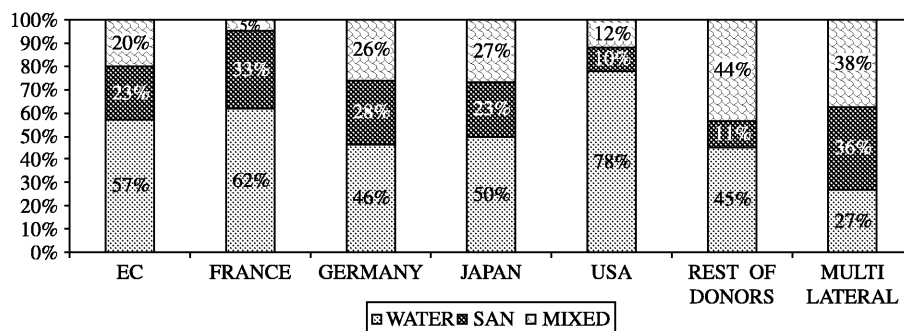


Figure 5. Share of funds (from subsectors 14020 and 14030) invested by bilateral and multilateral donors to access-oriented water, sanitation or mixed (water and sanitation) projects. *Source:* the author, from public data, as explained in main text.

If the analysis is deepened by dividing these subsectors into three categories (water, sanitation and mixed), as was explained in the second section, the results confirm the general overview that sanitation is not being a priority. Figure 5 represents the five most important donors (covering 77% of total bilateral funds dedicated to the sector) and the share of funds invested in each of the three categories mentioned. The rest of the donors and multilateral aid were aggregated.

All of the bilateral donors (with the exception of Portugal and Sweden) and the most important donors (Figure 5) dedicated more funds to water programmes than to sanitation. The average investment from bilateral donors was 2.41 times higher in water projects than in sanitation. The proportion dedicated to water projects was 39.14%. This percentage, as well as being larger than for sanitation, was also larger than the investments made in mixed projects (36.21%). The analysis revealed donations made by multilateral donors to be more equally spread; however, the share of aid dedicated to the aforementioned subsectors was significantly lower (49%). Globally, in terms of the aid dedicated to subsectors 14020 and 14030, 43.13% was invested in water projects, 26.50% in sanitation projects, and 30.37% in mixed projects.

Integrated Approach of ODA-financed Projects

The integrated approach refers to the goals of 'gender equality', 'environmental orientation' of actions, 'poverty focus', and 'good governance and participatory orientation', as defined by the Development Assistance Committee (DAC, 2000). Donors qualify as 'principal', 'significant' or 'not considered' the project's implication with each of the cross-cutting issues mentioned. The results of the 11 743 projects analysed are shown in Table 2.

The most important result found upon analysing these aspects was the lack of data provided by donors, which compromises reliable interpretation. This could be the result of reluctance on the part of donors to report that these aspects have not been adequately considered; it could also be that DAC definitions are too vague. Gender was only reported as principal or significant in 11.77% of the cases, and environment in 32.87% of them. Less than 10% of projects were reported to be poverty-focused, and 77.05% of projects did not report on this aspect. In terms of participation aspect, not a single project reported

Table 2. Share of funds allocated depending on their score against cross-cutting issues, as explained in main text

	Principal or significant	Not considered	Not reported
Gender	11.77%	29.36%	58.87%
Environment	32.87%	10.60%	56.53%
Poverty focus	9.59%	13.36%	77.05%
Participation	100.00%	0.00%	0.00%

Source: the author, from collected data.

it as principal, but all of them reported it as significant. Regardless of this, the results indicate that these subjects tend to be ignored during the drafting of project reports. Consequently, it is suggested that DAC should insist on a more rigorous reporting from their members regarding such crucial issues.

Complementarities between Public and Private International Investments

With regard to the income level of aid-receiving countries, bilateral donors contributed 44% of their resources to low-income countries and 53% to medium-income countries. Multilateral institutions dedicated 54% and 45% to low- and medium-level income countries, respectively. A total of 98% of the money invested in projects with private participation was destined to medium-income countries, while Africa attracted only 0.95% of it. Figure 6 displays the results of this assessment, organized by continents, and represents the annual investment per person living in those regions. In Asia the combined contribution from the public and private international sectors is meaningful, since that is a region with a large number of people living without services and receiving low rate of aid per capita (Figure 4). Otherwise, public ODA contributed to (and sometimes co-financed) private investment in Europe and Central and South America. As previously mentioned, the private sector was almost absent from Africa.

In terms of fund allocation in subsectors, large water supply and sanitation systems received 56.32% of total ODA funds (bilateral and multilateral), followed by 17.16% for water resource policies and administrative management. Small water supply and sanitation systems received 13.13% of funds. River development projects received substantial support at the end of 1990s; however, the average for the study period was only 6.06%. The remaining subsectors (water resources protection, waste management and disposal, education and training in water and sanitation) received less than 4%, with only 0.38% given to education and training. Compared to bilateral donors, multilateral institutions focused more on policy issues (25.05%) and paid very little attention to small systems (3.75%) and training (0.07%). The Millennium Declaration has boosted funds engaged in small systems (65% of funds for the subsector were committed after 2000); however, investment in large systems represents over 50% of investments from multilateral and bilateral donors between the period of 2000–2004 despite the lack of services in the rural areas: 72% access to water and 38% access to sanitation, compared to the urban situation of 92% and 76%, respectively (UN, 2006).

By representing the allocation of funds to subsectors from ODA (through the modification explained in the second section) compared with funds invested by projects

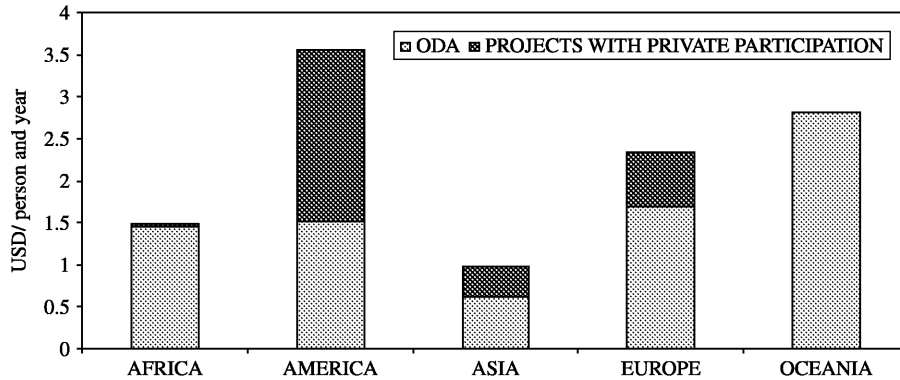


Figure 6. Public and private international investment per capita in water and sanitation, organized by continent. Average for the 1995–2004 study period. *Source:* the author, from collected data

with private participation (Figure 7), each actor’s contribution was observed in terms of access-oriented projects (water access, sanitation and mixed projects). ODA funds engaged in these three categories amounted to \$33 808 million, while those benefiting from private participation amounted to \$26 040 million (discounting cancelled or distressed investments, as explained in the next subsection). It must be considered that real private investment engagement was lower. Figures represent total project costs (including other participants’ contributions, such as those of multilateral institutions or national governments). Real private investment will be more slowly disbursed, since contract periods are much longer than ODA programmes, as it has been previously explained. Private investment seldom focused on sanitation operations; the majority of private funds were dedicated to mixed projects and involved the more attractive water supply subsector. Consequently, the addition of public and private investment gives priority to mixed projects (\$23 683 million), closely followed by water (\$23 658 million), and doubles funds dedicated to sanitation projects (\$11 011 million).

In terms of the size of projects, there are large differences between public and private actors: 61.33% of private investment was directed at 145 mixed projects (water and

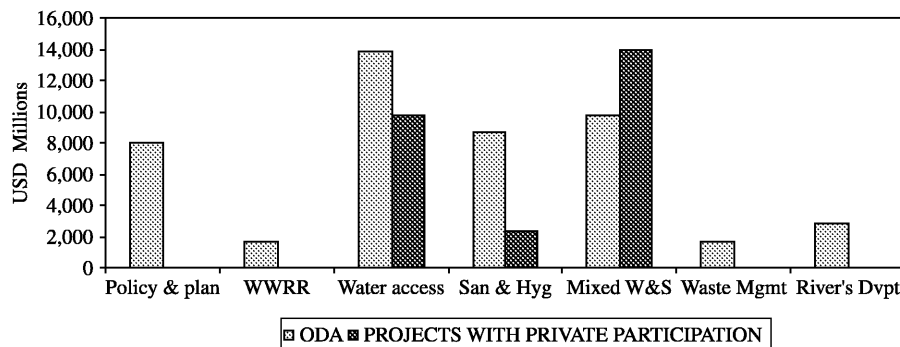


Figure 7. Public and private international investment per subsector (1995–2004), in millions of dollars from 2003. *Source:* the author, from collected data, as explained in the main text.

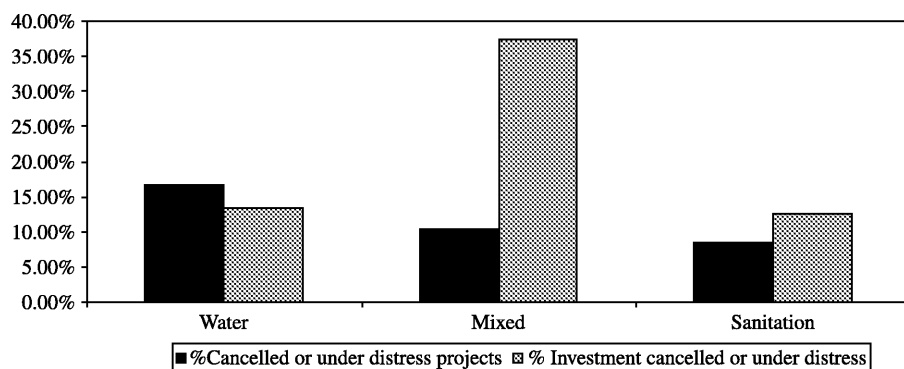


Figure 8. Cancelled or in-distress private participated projects in the water sector (1995–2004 study period). *Source:* the author, from World Bank data.

sanitation) with an average investment of \$153 million; 31.20% was invested in 102 water projects, with an average amount of \$111 million; and 7.47% was invested in 59 sanitation projects, with an average sum of \$46 million. With regard to ODA, 3167 large operations (code 14020) and 3503 small ones (code 14030) were reported, with an average investment of \$8.24 million and \$1.74 million, respectively.

Success of International Private Participation

At the time of this study, 37 projects with international private participation amounting to \$10 143 million were cancelled or in distress (where the government or the operator has either requested contract termination or are in international arbitration), i.e. 28% of investment engaged during the study period. The most significant cases for regional trends include East Asia, with 16.98% of projects and 31.41% of the investment (\$4856 million) suffering from cancellation or in distress. Latin America and the Caribbean region saw 12% of projects and 32.17% of investment (\$5278 million) in that situation. Data reveal that large concession projects were the most conflictive, especially in the water supply subsector (17% of projects cancelled or in distress), as shown in Figure 8.

Conclusions

The effective allocation of investments is vital if the Millennium Development Goals (MDG) target for water and sanitation is to be achieved. The study of the period 1995–2004 reveals interesting and also discouraging results regarding international participation in water and sanitation sector. First, the reporting systems are not coherent. Private and public investments are not easily comparable, since distinctions such as geographical regionalization and subsector divisions are not coherent. An important point is that CRS only divides access-oriented projects into ‘large’ or ‘small’, and does not make the distinction between water and sanitation subsectors.

The analysis of ODA demonstrates how far donors lag behind their own commitments both in terms of quantity and quality of the aid delivered to the sector. In terms

of quantity, during the 2000–04 period donors and multilateral institutions only committed 50 million dollars a year more than in the 1995–99 period, despite the Millennium Declaration. Data show large geographical inequalities when the share of aid received by regions is compared to the number of people without access living there and demonstrates the lack of coordination among donors to set priorities. The results of individual analysis were no more encouraging. Some of the most important donors in the sector (Japan, the European Commission, Germany and France) scored a very low performance based on the terms and conditions of aid provision. With regard to the allocation of funds in subsectors, the majority of funds were dedicated to large systems, both by multilateral and bilateral donors. This is particularly unsettling considering the lack of access that rural populations suffer and the supposed poverty-orientated tendency of ODA.

Despite extremely low investment in sanitation, none of the bilateral donors dedicated more than 75% of their funds to sanitation-deprived countries, and consequently water-deprived countries received a bigger share of funds than did those lacking sanitation. The average investment from bilateral donors was 2.41 times more in water projects than in sanitation projects. Investment in water projects (39.14%) was larger than in sanitation and mixed projects combined (36.21%).

Although it is a comprehensive database, the Creditor Reporting System (CRS) is currently not being filled in rigorously enough by donors. Crucial aspects in development programmes such as gender, beneficiary participation, the environment and poverty focus are widely overlooked and frequently absent from reports.

International private participation in water and sanitation projects show little contribution to the achievement of the MDG: 98% of investment was dedicated either to medium- or high-income countries and mostly oriented towards mixed projects costing over \$100 million each; meanwhile, Africa benefited from only 0.95% of the investment during the study period. Simultaneously, private participation has been rather conflictive, with 28% of the investment engaged during the study period being cancelled or in distress, and it is decreasing in latest years. Few complementarities were found between international public and private investment from the perspective of the people without access, since the biggest aggregated investment per capita was destined to America, Europe and Oceania, which are the continents with the lowest number of people without access to water and sanitation.

Based on the analysis here, it can be confirmed that aid was insufficient, of low quality and poorly targeted, from both geographical and sectoral perspectives, during 1995–2004. Quantity commitments until 2015 have already been agreed on from most OECD donors. Current efforts and debates are focused on improving general aid efficiency, through alignment and coordination at the national level in the aid-receiving countries. However, the water MDG requires a broader approach: a global coordination mechanism among donors to encourage needs-based resource allocation. It is also important that donors fulfil their own recommendations regarding the terms and conditions of aid provision. International water and sanitation funds should contribute to existing national funds to effectively increase sector investment and prevent national governments from shifting their own funds to other sectors. It is an objective of ODA to fight poverty and for this reason there should be more focus on deprived (rural) areas and subsectors. The small amount of ODA resources dedicated to sanitation massively contradicts current requirements.

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