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Humanitarian
Policy Group

Improving the provision of basic services for the poor in fragile environments

Water Supply, Sanitation and Hygiene International Literature Review

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About the Humanitarian Policy Group:
The Humanitarian Policy Group at ODI is one of the world's leading teams of independent researchers and information professionals working on humanitarian issues. It is dedicated to improving humanitarian policy and practice through a combination of high-quality analysis, dialogue and debate.

The views in this publication are those of the authors are not necessarily those of the Office of Development Effectiveness.

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Acronyms and abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
CAR	Capability, Accountability and Responsiveness
CBA	Community-Based Approach
DFID	Department for International Development, UK
DoC	Drivers of Change
DRA	Demand-Responsive Approach
EC	European Commission
GSF	Global Sanitation Fund
GWP	Global Water Partnership
HIP	Hygiene Improvement Project (USAID)
ICRC	International Committee of the Red Cross/Crescent
IDA	International Development Association (World Bank)
IDP	Internally Displaced Person
IIED	International Institute for Environment and Development
IRC	International Water and Sanitation Centre
IWMI	International Water Management Institute
MDG	Millennium Development Goal
MF	Micro-Finance
NSP	Non-state Providers
ODA	Overseas Development Assistance
ODE	Office of Development Effectiveness
OECD	Organisation for Economic Co-operation and Development
O&M	Operation and Maintenance
SIWI	Stockholm International Water Institute
SPHERE	Humanitarian Charter and Minimum Standards in Disaster Response
SWAp	Sector-Wide Approach
UNDESA	United Nations Department of Economic and Social Affairs
UNICEF	United Nations Children's Fund
WASH	Water Supply, Sanitation and Hygiene
WELL	Resource Centre Network for Water, Sanitation and Environmental Health
WB	World Bank
WDR	World Development Report
WEDC	Water Engineering Development Centre
WHO	World Health Organisation
WSP	Water and Sanitation Program
WSS	Water Supply and Sanitation
WSSCC	Water Supply and Sanitation Collaborative Council

Section 1: Introduction

1.1 Aim and structure of the literature review

The Overseas Development Institute was commissioned to provide a rapid review of recent literature on international practice and experience in supporting pro-poor service provision in fragile states, focusing on multilateral and bilateral donors' approaches. It was requested that particular attention be paid to literature published since the World Bank 2004 World Development Report *Making Services Work for the Poor* (World Bank, 2004), a milestone in international thinking on service delivery. The overall review consists of three sectoral reports (health, water/sanitation and education) together with a Synthesis. This paper constitutes a literature review of the water supply, sanitation and hygiene (WASH) sector.

The purpose of the literature review was to inform the Office of Development Effectiveness' evaluation of service delivery and also contribute to a wider effort within AusAID to better understand donor engagement in fragile environments.

The report is structured as follows:

- **Section 1** discusses the challenges facing WASH service delivery in fragile environments, makes reference to the linkages between WASH service delivery and state legitimacy and describes the scope and limits of the review.
- **Section 2** discusses how the ongoing paradigm shift within the sector, from a projectised, fragmented approach to a more integrated approach, relates to donor engagement in fragile states including instruments and frameworks, and questions relating to aid effectiveness and funding mechanisms.
- **Section 3** highlights particular donor approaches to reaching the poorest and most vulnerable in fragile states, and touches on cross-cutting issues such as gender and sustainability.
- **Section 4** concludes the review by identifying key challenges, trade-offs and options for donors supporting WASH service delivery in fragile environments.

1.2 Challenges to delivering WASH services to the poor in fragile states

Challenge 1: What is the appropriate balance between addressing immediate needs and building long-term capacity?

With regard to WASH, **short-term funding cycles** of 12 months pose a particular challenge in terms of longer-term capacity-building. The result is that implementing organisations have no obligation to monitor the sustainability of community or private operator management arrangements, or to provide longer-term back-stopping support. 'Quick win' projects also more generally run counter to promoting local governance e.g. through local accountability between users and service providers (see Wilson (1998) in Slaymaker et al, 2005:19, for an example from the education sector). By contrast, longer-term project cycles of 24 months[1] are seen by Harvey (2006: 24) as suitable for working in fragile states as they allow for building trust and maintaining a dialogue with government, while also having more time to support user voices and agency for increased accountability. The Government of Australia's support to the rural water supply and sanitation sector in East Timor is an example of a step in this direction. The GoA's commitment of $30 million runs over five years.[2]

There are some examples of emergency relief coupled with efforts to support state-building. German government support to the water sector in Eritrea, for example, is based on emergency relief, i.e. improving the population's short-term access to WASH; but it includes measures to support sector policies, such as developing models for cost recovery. The latter is politically sensitive and has been met with resistance from the Eritrean side (BMZ, 2006; Lindemann, 2006).

Another trade-off between short-term support and long-term capacity-building relates to **procurement** in the water sector. In Southern Sudan, the donor community has recently set up a Multi-Donor Trust Fund (MDTF) that supports a

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[1] According to Harvey (2006: 24), WASH projects normally require a 12-month mobilisation and preparation phase followed by 12 months for implementation.
[2] See AusAid East Timor website: http://www.ausaid.gov.au/country/country.cfm?CountryId=911, accessed July 2008.

number of sectors and is managed by the World Bank. In the water sector, the MDTF procurement rules make it virtually impossible for local drilling companies to compete for contracts. However, supporting the local drilling market is vital for both short-term effectiveness and the long-term sustainability of water sector interventions. Local drillers have a number of advantages: they have better logistics and need less back-stopping support, and they are more accountable to users (as they stay in-country) and therefore tend to provide better-quality work. They are also able to mobilise in a shorter period of time and they are more familiar with the hydrogeology of the area and so able to take more informed decisions (see also: Welle et al., 2008b: 37).

Challenge 2: What is the appropriate balance between engaging with the public sector and with NSPs?

With the changing role of the state from a provider towards a more supervisory and regulatory role in many countries, NSPs play an increasingly important role in WASH service provision. According to a recent literature review of NSPs in the water sector (Moran and Batley, 2004), NSPs include a wide variety of actors from the private sector (small- and large-scale) to NGOs and community-based organisations.[3]

According to Meagher (2005), people supplied by NSPs are less affected by lack of service provision in fragile states than those relying on state provision. Strengthening small-scale NSPs may therefore be a crucial tool to expand and sustain WASH service provision in fragile states. Small-scale operators often operate illegally and with little regulation and quality control. Moran and Batley (2004: 53) review ways to formalise and regulate informal NSPs, while Hirsch et al. (2005: 25) stress the importance of building independent regulatory capacity with regard to formal NSPs. Moran and Batley (ibid.) also make reference to wider governance issues that can undermine effective regulation, and are particularly relevant in fragile state environments. They include avoiding political influence, weak civil society, power

imbalances between the company and its regulator or a lack of regulation and uncertainty about the independence of the judiciary.

Cambodia is an example where the domestic private sector investment in rural water supply has grown considerably. This notwithstanding, in the absence of a regulated market, private provision of water supply can have negative impacts on equity and environmental sustainability. For example, a private investor in a pipe scheme in Takeo province designed a price structure that declined as the volume of water used increased, thereby favouring high water consumption and with this possibly wealthier users. In an unregulated market private pipe and pump operators did not purify water in the absence of strong consumer demands for quality (Salter, 2003: 12). A recent feasibility report for a Rural Water and Sanitation Programme in East Timor highlighted that private sector capacity can be very limited in post-conflict environments and will require targeted capacity-building (un-authored, 2005).

Challenge 3: What is the appropriate balance between supporting central and local government? Issues surrounding support to decentralised WASH service delivery are highly context-specific. In some fragile states, local government remains strong and capable despite turmoil at the centre. In others cases, however, relations between central and local government may lie at the heart of the problem of fragility and it is important to understand the individual situation. An example of the latter is Nepal, where the government increasingly lost control over its territory from 2001/2 onwards. As a result, DFID relied on national NGOs for delivering quick-impact projects on WASH service delivery.

1.3 WASH service delivery in fragile environments

The term 'fragile state' refers to a wide range of operating contexts, and the dimensions of 'fragility' and associated implications for water service delivery may vary significantly. This implies the need for differentiated sector support strategies which are sensitive to the changing operating context and flexible enough to respond appropriately (Plummer and Slaymaker, 2007).

Where fragility is marked by conflict, its impact on WASH services depends on the type and level of conflict. Protracted armed conflicts often render states incapable of performing even the most basic governmental functions, and water is often

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[3] Types of service provision include construction and cleaning of latrines (automatic or manual), public latrine and shower operation with regard to sanitation and kiosk operators, water carriers and water tanker operators as well as local sub-network providers with regard to water supply (Moran and Batley, 2004). It should be noted that the review focused on (peri-) urban NSPs.

one of the first services to go. In such situations humanitarian intervention may be the only viable response in the short term. In the long term, possible solutions may not resemble standard water responses in decentralised sector development – especially where local government is a casualty of war or political instability.

When state fragility relates to unwillingness or incapability to provide core functions such as service delivery, the idealised World Bank model of accountability is fundamentally challenged. Where donor confidence in the ability or willingness of the state to provide services is low, donors tend to channel money through non-state actors, which fundamentally changes the political dynamic and often weakens demand-side accountability. It is increasingly recognised that weak accountability may create opportunities for corruption (this trade-off is further explored in 5.1).

There is therefore a two-way relationship between WASH service delivery and fragile states. On the one hand, fragile environments can have a negative impact on the delivery of services; on the other hand, delivery of services (or a lack thereof) can enhance or undermine state legitimacy. These relationships are explored in 1.4 below.

1.4   Barriers to access to WASH services in fragile environments

Early work by DFID led to a better understanding of the broad characteristics of fragile states where a lack of capacity or willingness to deliver core state functions for the majority of their people, including the poor, makes it difficult to establish effective aid partnerships (DFID, 2005). This work drew attention to the very different problems faced in situations where states are either incapable and/or without political will, including extremely difficult situations of complete state collapse (Somalia) and/or armed conflict (DRC), insecurity and political instability, and state repression (Zimbabwe). In these different situations, barriers to access to WASH services can be political, institutional, financial and capacity-related in nature.

Political and/or institutional barriers: these relate to situations where the government is unwilling to provide services, resulting in low levels of coverage outside political constituencies including systematic underdevelopment of a particular region (e.g. in Sudan) or discrimination

against a particular ethnic group (e.g. the Tamils in Sri Lanka).

Lindemann (2008) argues that WASH services differ from education in that they are 'non-ideological'; that is, they do not directly contribute to (ideological) socialisation. However, implementing WASH services can become politicised if particular parts of the population are preferred based on political, social, religious or ethnic grounds.[4] Political barriers to WASH services can also result in vertical and horizontal inequalities in service provision caused by demobilisation, demilitarisation and reintegration of soldiers and resettlement and reintegration of Internally Displaced Persons (IDPs) or refugees within host communities (e.g. Sudan, Eritrea). In such situations there may be trade-offs for donors between the political imperative to rapidly increase coverage and the need to initiate policy and institutional reforms. It is therefore important that donors also push for policy and institutional reforms such as a review of existing policy and legal frameworks to address existing inequalities, foster re-integration and address other factors underlying state fragility.

Capacity and/or financial barriers: the government may lack the capacity and financial resources to provide services leading to low levels of access and deterioration of existing infrastructure through neglect of Operation & Maintenance (O&M). The potential of non-state actors to fill the 'gap' may also be constrained in fragile states where the enabling environment is not conducive to the emergence of NGOs and the private sector. Consideration of 'optimum' levels of provision therefore needs to be carefully weighed against the actual capacity and financial resources of state and non-state actors to assume these roles and responsibilities. In conflict and post-conflict situations, the state may also lack the capacity to secure physical access to WASH services for its population. Conflict itself can result in water points being temporarily or permanently seized by warring parties and frequently destroyed by retreating armies (e.g. grenades in hand pumps or bodies thrown down wells in Southern Sudan). In post-conflict situations, access to services may

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[4] This can also extend to education aspects of WASH projects: in Nepal, WASH project components that had educational aspects had to be adapted in Maoist-controlled areas as Maoists saw education as their terrain; also, any form of mass meeting (e.g. for community mobilisation) was banned because they were regarded as suspicious by the security forces (Harvey, 2006: 11).

be constrained by the inaccessibility of land (e.g. because of landmines).

Ultimately, the provision of water services depends on the establishment of basic administrative controls and government-wide budgeting processes which go beyond the water sector. Strategies for water service delivery in fragile states therefore need to be closely linked to wider processes of public sector reform and capacity-building, especially at decentralised levels of government. Rather than ad hoc training in relation to individual sector projects, a more systematic approach to building core government capacities for basic service delivery is required. The chronic lack of capacity of local government and the collapse of decentralised systems, the weak and under-resourced operating environment, the peculiarities and inefficiencies in the flow of funds through tiered systems of government are all generic issues to be addressed.

Eritrea is an example of a combination of political, capacity and financial barriers to access. Characterised as going through an 'enduringly fragile post-conflict transition' (BMZ, 2006; Lindemann, 2006), WASH service delivery in Eritrea is hampered by the overall state of emergency, which leads to financial and capacity constraints in service delivery. With military protection being the political priority in Eritrea, financial, human and material resources are allocated by priority to the military sector. As a consequence, other sectors (including water) suffer from ad hoc sectoral policy-making, weak capacity and shortages of key material inputs such as fuel, cement and spare parts (BMZ, 2006: 13).

1.4 WASH service delivery and state legitimacy

WASH service delivery or the lack thereof can have positive or negative impacts on state legitimacy and can become a contribution to state-building. Because water is essential for daily survival, water-related issues are often a top priority for citizens, particularly in water-scarce environments where water is a key input to people's livelihoods.

Lindemann (2008) refers to Yemen as a case where scarcity of water, in combination with other factors such as a lack of employment and other social services, can potentially increase tension and instability. In Yemen, 95% of annual water withdrawals are used in agriculture for irrigation purposes. Depleting groundwater tables raise the costs for pumping and so favour larger farmers over other users, thereby creating a conflict between domestic and agricultural users (ibid.: 360). Southern Sudan is another example of a state that is subject to localised conflict over land and water between competing ethnic groups (Welle et al., 2008b: 35). Over 70% of the South Sudanese population is dependent on livestock for their livelihoods and competition over grazing land and watering points for cattle is a major source of tension.

At the same time, WASH service provision can play an important role in state-building and in increasing state legitimacy. Again, taking the example of Southern Sudan, WASH service provision is perceived as one of the most important peace dividends in a context where decades of fighting led to the destruction of most basic infrastructure (ibid). According to Wang et al. (2006: 5), water supply lends itself to 'two-track approaches' aimed at simultaneously improving sector governance and service delivery to poor people. By enhancing citizens' voices at the local level, service provision can improve accountability between citizens and the state and thereby contribute to enhancing state legitimacy. In Yemen, German support to the urban water sector included training of community mobilisation workers, who used a number of innovative outreach activities to explain how to make use of new service facilities and the functioning of the new tariff system (Lindemann, 2008: 369).

WASH delivery in fragile states can also be part of cross-sector state-building activities where water, which comes with attractive outputs (waterpoints), could be used as an incentive for less tangible state-building activities such as capacity-building of local administrations. Some WASH interventions are aimed at increasing stability. For example, in Southern Sudan PACT developed a cross-sector project that used a combined strategy of providing roads, wells and support to the police force, targeting youth in order to manage localised conflicts (Welle, 2008b).

1.5 Scope and limitations of the review

The focus of this literature review is on domestic water supply, sanitation and hygiene services in rural and urban areas including in public places, schools and health facilities (see Table 1 for more detail on the types of service provision). The review does not touch on the management of water resources, water for agriculture, industry or other development purposes. It recognises that service delivery is only part of donors' broader engagement in fragile states, which also includes

efforts to address issues of security, stabilisation, peace-building etc. It also acknowledges that WASH service provision depends on actions in a number of other sectors for achieving various Millennium Development Goals (MDGs) and, conversely, that various MDGs are partly influenced by the achievement of the WASH-related MDG targets.

This review is not prescriptive: it does not offer policy prescriptions and does not seek to judge the validity and appropriateness of the various donors' approaches referred to in this review. Nor does it include in-depth country case studies, but points to examples of interventions, or components of programmes, in several countries by way of illustration of more general lines of analysis. Examples are drawn from a range of country contexts including Afghanistan, Cambodia, East Timor, Eritrea, Nepal, Indonesia, the Solomon Islands, Southern Sudan, Vietnam and Yemen.

One particular caveat applies to analysis of the WASH sector. Despite considerable funding levels, international literature on WASH service delivery in fragile states was found to be very limited by an earlier review for the OECD on service delivery in fragile states (Wang et al., 2006). This remains the case today, which limits the country examples used in this report to illustrate the issues covered as part of the wider literature review.[5]

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[5] An upcoming World Bank initiative should help to fill this gap: the Water and Sanitation Program (WSP) aims to develop replicable approaches to accelerate WASH development in Fragile States across Sub-Saharan Africa, South Asia and Latin America (So, 2008).

Section 2: Donor engagement

This section reviews multilateral and bilateral donors' engagement in supporting WASH service delivery in fragile states.

2.1 A paradigm shift

According to Saleth and Dinar (2004: 179f), 'the dominant trend toward decentralisation … is an unmistakable feature of the water sector worldwide'. This global shift away from top-down and supply-led approaches towards Demand-Responsive Approaches (DRA) started in the mid-1990s with an emphasis on water as an economic good (Slaymaker et al., 2005: 13).[6] Decentralisation is characterised by an increased emphasis on the devolution of management and of cost-recovery to the local level with a view to increasing the transparency, accountability, efficiency and sustainability of water services.[7] In rural areas, this has meant shifting to community-managed systems with communities involved in the design and management of their systems including paying for operation and maintenance costs (WB, 2004: 172). In essence, a DRA means that the service should focus on what users want, are able to pay for (in terms of a proportion of the capital costs) and are able to sustain through user contributions – in-kind or cash – that cover operation and maintenance.

Practically, this process is not without problems, particularly in terms of reaching the most vulnerable (see also section 3 below), and creating the right conditions for DRAs can be especially challenging in fragile states. Decentralisation and devolution of power to the *woreda* (district) level in

Ethiopia, for example, has not been matched by financial and human capacities to support rural communities to pursue demands (UNDP, 2006: 102) and to maintain services over time. Approximately one-third of Ethiopia's water supply systems are non-functional at any one time (MoWR, 2007). A case study of two *woredas* found that a mixture of factors including technical problems, lack of spare parts, weak scheme governance and lack of support from water sector offices led to low sustainability (Deneke & Abebe, forthcoming a, b).

Commentators have also noted that DRAs tend to support the interests of more vocal communities that are better able to express a demand, at the expense of the vulnerable and marginalised (McLeod, 2002, in Slaymaker and Christiansen, 2005: 21).

2.2 Approaches and frameworks

The approach to WASH service delivery taken by donors depends heavily on the context in which the donor is operating. Donor approaches can be broadly distinguished according to short-term (humanitarian) and medium- to long term (state-building) activities. In practice, however, it is rarely a question of either one or the other, or a transition from one to the other. Rather, one finds parallel forms of support. There is no blueprint for service delivery in fragile states but it is essential to recognise the limitations of state-substitutory approaches and to reorient approaches towards delivering services in order to actively support state-building objectives. Like other interventions, state-building will vary from one context to the next – depending on varying levels of capacity (strengthening government policy and implementation structures) or political will (strengthening demand-side accountability mechanisms). Strategies should be based on objective assessment of constraints operating at different levels, both within and beyond the sector (Plummer & Slaymaker, 2007). Below are two examples of state-building in different contexts of state fragility.[8]

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[6] The recognition of water as an economic good is based on the assumption that otherwise water use risks being wasteful and environmentally damaging. This was picked up by the Dublin Principles at the UN Conference on Environment and Development of 1992, which recommended that 'Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources' (UNCED, 1992).

[7] There are three types of decentralisation: deconcentration (to lower levels of central government), devolution (to lower tiers of the state system) and delegation (to non-state organisations) but interpretations of what the different levels entail vary (Yuliani, 2004). Moreover, three forms of decentralisation can be distinguished: political, administrative and fiscal decentralisation.

[8] The OECD Fragile States Group work stream on service delivery commissioned three studies in the water sector that capture donor approaches in different contexts of state fragility. In addition to the example given in the text, the case studies cover German assistance as an example of prolonged emergency relief in Eritrea and

Within the fragile state terminology, Yemen could be classified as under '(enduring) recovery' affected by 'institutional fragility' (Lindeman, 2008: 357). The German development cooperation applies a 'multi-level strategy' in the Yemeni urban water sector that combines state-building activities at the micro-, meso- and macro-levels. The programme is delivered as a combination of infrastructure delivery and sector-governance support. At the macro/meso-level, German capacity-building support focuses on sector reform issues, whereas support at the micro level is centred on the establishment of decentralised and commercialised service utilities. In addition, bilateral sector support includes a number of public awareness and conflict prevention measures. However, there are limitations to a sectoral approach to service delivery in fragile states. Lindemann (2008: 371) argues that a long-term reduction in conflict around water resource management (that also impacts on service delivery in Yemen) remains unsustainable unless it addresses broader issues such as vested agricultural interests. This requires applying pressure at a higher political level, such as the President or Cabinet.

The Solomon Islands Water Governance Project focused on developing water sector-related legislation based on stakeholder consultation and awareness-raising in the Solomons. Given the fragile eco-system on the archipelago, raising user awareness about water management (related to logging, farming and sanitation) is seen as essential for sustaining water supply quality and quantity on the islands. Within the general sector-related state-building activities (the development of a national water policy and water resources legislation), the final project report (KEW, 2007) puts emphasis on a performance-based monitoring system that promotes water conservation at provincial level.

It may be useful for donors to take a governance approach in order to identify levels and ways of engagement to support WSS service delivery in fragile states. Plummer and Slaymaker (2007) explore governance issues in relation to water services. They review two frameworks to analyse governance at sector level which may be useful to understanding WASH service delivery in fragile states. The two frameworks reviewed are the DFID Capability, Accountability and Responsiveness

(CAR) framework and the Drivers of Change (DoC) approach. The authors make reference to a number of governance aspects to strengthen the long (e.g. judiciary and rule of law) and short route (e.g. citizen report cards, water expenditure tracking) of accountability set out in the WDR of 2004. The DoC approach was also used by Hirsch et al. (2005) to assess water governance issues in the Asia-Pacific region.[9]

2.3   Harmonisation and alignment

There are a number of issues related to *aid architecture* at the global sectoral level that also have a bearing on fragile states. Global vertical funding mechanisms that can bring substantive resources to a country but can have a detrimental effect on national level planning and budgeting of service delivery are negligible in the water sector (Welle et al., 2008a: 15).[10] The only vertical fund exclusively dedicated to aspects of WASH is the Global Sanitation Fund, which starts operating with limited funds in 2008.[11] The water sector is also characterised by fewer – and different – players at a global level, particularly compared to health. Multilateral development banks feature prominently in the sector compared to health and education, with the IDA representing 21.8% of all ODA in 2004 (ibid.). Furthermore, the emergence of new bilateral agencies led by China is of significance for the sector because of China's strong history of infrastructure investments (Kharas, 2008).

At country level, there are particular issues with **sector coordination** in post-conflict situations. In particular, the respective roles of the UN and Multilateral Development Banks in post-conflict reconstruction remain unresolved. This may be partly due to the fact that there is no dedicated

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DFID support to Nepal through NSPs and an explicit approach of working on conflict (Wang et al., 2006).

[9] Interestingly, the project (Australian Mekong Resource Centre, 2005a and b) conceptualises conflict as both negative and positive in its effects, and as a DoC in itself rather than an outcome of DoCs.
[10] There might be some funding to the water sector under the Global Environmental Facility but this is likely to be channelled to resources management rather than to service delivery.
[11] The initial group of countries to receive funding might not include fragile states. The criteria for selection include relatively well-developed institutions (a sanitation related policy or strategy, a WSSCC related partner that requests funding and a governmental agreement that the fund can operate in country). See also http://www.wsscc.org/en/what-we-do/global-sanitation-fund/geographic-scope/index.htm accessed 25 June 2008.

water agency within the UN for coordinating efforts at national level and below.[12]

With regard to harmonisation and alignment in fragile states, Christiansen et al. (2004: 4; Slaymaker et al., 2005: 38) suggest 'shadow-systems alignment' as a possible form of engagement where government systems cannot yet be used. Shadow systems alignment uses systems that are compatible (but in parallel) with those of the recipient country, such as budget cycles, audit and procurement systems or staffing structures, wage rates and hierarchies. DFID used a shadow alignment approach for rural water supply and sanitation projects in Nepal (Harvey, 2006: 23). Although resources were channelled through a national NGO rather than the government, the approach to planning, monitoring and evaluation followed national policy and was coordinated with government.

'Sector-Wide Approaches' (SWAps) are typically used in highly aid-dependent countries including those that fall under the fragile states category of states with weak institutional capacity. However, fully-fledged SWAps are likely to be more prominent in countries with higher capacity (e.g. Uganda) and in sectors with a particularly complex aid architecture (e.g. health). A recent three-country review conducted on water sector aid effectiveness (Welle et al., 2008a), comparing progress on aid effectiveness in water with health and education, found that having the mechanics of a SWAp in place alone does not mechanically lead to greater aid effectiveness. Political leadership and institutional capacity are important to develop effective SWAps. In a fragile state context, the emphasis should be on low-level entry points such as shadow-systems alignment and on a political dialogue rather than pushing for a fully-developed SWAp from the start. The value of following an incremental approach towards harmonisation and alignment, such as focusing on low-level entry points that are more heavy on donors than on the government (i.e. harmonisation and policy alignment), is also a lesson from Danida's experience in the sector (Danida, 2006; see also ODI, 2008 for a summary of the issues).

2.4 Instruments and funding mechanisms

Different financing mechanisms refer to either the 'long' or 'short' route of accountability set out by the WDR 2004 (see Synthesis report). Budget support and various pooled funding mechanisms (e.g. multi-donor trust funds) relate to the 'long route' of accountability, whereas social funds and microfinance encourage more direct links between clients and service providers. The former mechanisms are dealt with in the wider literature on aid effectiveness in the sector. The latter are expanded on below.

Social funds are a mechanism developed by the World Bank for financing small projects ranging from infrastructure to social services. Projects are identified by communities and presented to the social fund for financing, typically under the supervision of NGOs or local government (Slaymaker and Christiansen, 2005: 20). In Yemen, the Social Fund for Development covers a number of social sectors including water (the sector received 15% of the fund's total funding in 2004). An institutional evaluation (Jennings, 2006) found that the fund was strong in fostering governance structures at the decentralised and community level (e.g. building community capacity to manage their own development process). With regard to the fund's future direction, the evaluation found that coherence between the fund and line ministries needs to be strengthened and that operations ought to move towards a more programmatic approach. In the water sector this would include aligning the fund with the emerging SWAp.

The Kecamatan Development Project in Indonesia followed a similar approach; it provided block grants directly to sub-district councils to fund development plans through a participatory planning process in order to improve transparency and governance. An external evaluation of the project found that, while it was satisfactory overall, there was too much of a 'hands-off' approach to tackling community-level power relations and community decision-making. Although the project contributed to decentralisation at the lowest level (sub-district and community) it bypassed the district level (WB, 2006).

Micro-finance for water supply and sanitation infrastructure is based on the 'short' route of accountability, that is, a direct link between providers and clients. Historically, micro-finance

has not been widely available for water supply because of medium to long repayment rates (3–5 years), the general lack of links to income generation and the lack of familiarity of micro-finance institutions with the sector (WELL, 2006a). However, there are examples of successful micro-credits to community-based organisations (CBOs), independent providers and municipalities or small utilities. In Cambodia, for example, GRET (an INGO) provides medium-term loans and guarantees to local commercial banks for investors wishing to finance piped water systems (Agbenorheri and Fonseca, 2005: 10). Micro-finance for sanitation happens predominantly in urban areas. It targets private providers and households with micro-finance for household and public latrine construction and for hardware to empty pit-latrines (WELL, 2006b; Mehta and Knapp, 2004). An example is a revolving loan fund for building septic tanks targeting poor urban dwellers in Vietnam (WaterAid Australia, 2008).

However, there are a number of limitations for applying micro-finance in fragile states. First, micro-finance is a way to leverage existing funding sources – its outreach is linked to the outreach of MF services. According to Dayley-Harris (2002: in WELL, 2006a), only 9% of the poorest in Asia had access to MF and only 6% in Sub-Saharan Africa. Secondly, according to Agbenorheri and Fonseca (2005: 13), a number of legal, financial and business conditions are required to create an enabling environment for MF for WSS. Political support and an (enforceable) legal framework are necessary to increase private sector investment, and financing processes around managing funds need to be perceived as transparent to ensure sustainability.

Section 3: Approaches to reaching the poorest and most vulnerable

According to the SPHERE handbook (2004), the groups most frequently identified as vulnerable (i.e. least able to cope and survive in a disaster) are 'women, children, older people, disabled people and people living with HIV/Aids' – a definition that also holds true in non-crisis contexts. In fragile state contexts, people may also be more likely to become vulnerable by reason of ethnic origin, religious or political affiliation or displacement (ibid).[13]

Building states that are capable, accountable and responsive to citizens requires efforts to support both demand and supply. This section therefore explores options on how to deal with barriers to WASH access for the poorest and most vulnerable from a supply- and a demand-side perspective. The supply-side refers to policy-related issues such as pro-poor reforms and targeting issues, while the demand-side looks at ways of strengthening civil society (e.g. community-based approaches) and refers to challenges that may be particularly pronounced in fragile states.

3.1   Supply side

3.1.1   *Pro-poor policy and institutional reforms*
WASH sector problems in fragile states may be due to a combination of inadequate or unclear policy and legislative frameworks and a lack of implementation capacity among sector institutions. In situations where state capacity is weak and multiple different actors are involved in WASH sector activities, it is important to agree a common framework for planning and prioritisation within the sector. The priority in a post-conflict situation is to focus on immediate WASH needs and agree some basic elements of policy in order to maximise the impact of reconstruction and promote greater coherence in the context of rapid scaling-up.

Where policy development involves a significant element of reform, it needs to be accompanied by a 'transition' strategy that is clear to those tasked with implementation at different levels. The challenge of implementation is frequently underestimated and disparities between expectation and delivery can undermine the legitimacy of already fragile states, both internally and externally. Experience from low-capacity environments suggests that success depends on long-term donor commitment to building local capacity through greater local participation in planning, co-administration arrangements and extensive training programmes.

One of the biggest challenges currently facing the sector is to ensure more effective linkage between the goals contained in WASH sector policies and strategies and the intermediary budgetary and administrative processes necessary to reach those goals. The gap between policy and capacity and resources for implementation is particularly apparent at decentralised levels of government. Efforts to decentralise WASH service delivery are themselves contingent on wider processes of administrative and fiscal reform. Resource predictability at local levels is often worse than central levels and can fatally undermine local government performance in developing countries. Decisions regarding the most appropriate level at which to manage different aspects of WASH service delivery need to be based on a realistic assessment of existing capacity and resources, rather than idealised models of democratic decentralisation (Slaymaker, 2005).

3.1.2   *Targeting issues*
With respect to WASH services there are a number of different ways in which supply could be targeted at the most vulnerable.

Spatial: depending on where people are, different strategies are needed. In areas with highly concentrated populations such as urban areas or camps, sanitation and hygiene services are key (in addition to water supply) due to increased risks of cholera outbreaks and other epidemic threats. Populations in dispersed, rural areas have a primary need for basic water supply and hygiene education. A problem here is that targeting may be compromised in practice by implementing agencies that drill boreholes next to roads rather than next to dwellings (see for example Southern Sudan in Welle, 2008b). Another issue is that in practice there is often a lack of coordination

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[13] In addition, Meagher (2005) argues that the impact of state fragility differs between different WASH services. Those served by networked services might be vulnerable because they are most directly affected by state fragility. Weakness in the central and local government structures that govern public service delivery (such as maintenance of supply networks) has a direct effect on service provision. Yet water users dependent on alternative provision – for example, through private water vendors – while they may not be instantly affected by state fragility, are still highly vulnerable, according to Lindemann (2008), being dependent on often expensive services or the use of un-improved sources.

between WASH, health and education interventions with the result that schools and health facilities may be left out rather than particularly targeted as part of WASH provision.

Need: in post-conflict situations, IDPs and refugees may have particular needs; for example, long-term IDPs may live in illegal settlements that require innovative approaches such as extending piped services to them. The Pact Sudan Water for Recovery and Peace Programme (2006, Welle et al., 2008b) targets its services at emerging centres of growth, i.e. centres with a high influx of refugees and IDPs in Southern Sudan. The organisation has also developed a participatory approach to project implementation that aims to ensure representation of different ethnic, social and political strata among the prospective beneficiaries in the development and management of water schemes.

Time: drilling of water points is mainly possible during the dry season. Depending on the length of the dry season (which may be as short as 3–4 months e.g. in parts of Southern Sudan), operations in the sector operate in limited time windows. Delays in preparatory work may interrupt service provision for another year.

Appropriate technology: the use of appropriate technologies is important in all contexts but particularly so in fragile states where the state – for capacity or other reasons – cannot be relied upon. Appropriate technologies should generally be simple and use standard plans and drawings (Wang et al, 2006: 24), but what is appropriate also depends on the context. For example, in areas where deep wells are required but fuel is hard to come by or expensive (rendering operational cost-recovery difficult), solar systems might be appropriate – such a technology was introduced by PACT in small towns in Southern Sudan. For communities with no access to roads (e.g. in conflict-affected areas), manual drilling and use of light-weight plastic liners might be an appropriate technology to reach vulnerable pockets of the population (Goyol, 2003). In urban areas or camps, however, provision of water by tankers might be the appropriate solution, at least in the short term.

3.2 Demand side

At the centre of the demand side of service delivery is the citizen as a constituent or user. Demand-responsive approaches, outlined in 3.1, are increasingly applied in fragile states. In rural areas, a particular form of DRA, community-based approaches for service delivery including WASH, have been a popular entry point in situations of protracted conflict, post-conflict or continued weakness or absence of effective government (Slaymaker et al, 2005: 14).

3.2.1 Strengthening/rebuilding civil society in fragile states

Many communities in fragile states are fundamentally broken, irrespective of their economic and political characteristics. The impact of long periods of dysfunctional government, chronic under-investment and marginalisation, war, displacement or natural disaster can result in households and communities that are not willing or able to play a role as citizens in a civil society. The (re)establishment of normal mechanisms of accountability between state and civil society is often sidelined because of this lack of capacity. Recovery, rehabilitation and reconstruction activities like the development of water services provide an opportunity to help rebuild civil society such that the social contract – downward accountability to the people of fragile states – can be created or restored. It requires significant work in building the civic capacity. Shifting from victims (of disaster, war or of an oppressive regime, or simply of neglect) to citizens is a crucial transition, but relatively unexplored territory.

Community-based approaches can be a lifeline for the delivery of services in fragile states. Promoting engagement, needs-based solutions and ownership, community-driven development can allow communities to work simultaneously to rebuild their lives. Processes must involve communities in service 'transition' planning, and promote access to information on how services are being developed in the long term. At the same time, however, community-based approaches in water supply, where it is necessary to allocate resources, procure goods and services, and then manage recurrent finances, are highly susceptible to elite capture, the exclusion of women and other marginalised households, and to leakages at the community level (Slaymaker, 2005).

Strengthening civil society is not, however, limited to efforts to deliver services at the community level. To be empowered to act, citizens and the organisations that represent them and advocate on their behalf need access to information and the capacity to engage with government in dialogue. Yet experience shows difficulties in establishing social accountability even in the most effective states. In fragile states the reticence, fear and disempowerment is often more marked and more

difficult to overcome. Strategies designed to support the development of basic services in fragile states need to take account of the nature of the relationship between state and civil society, and spaces for participation and freedom of expression in order to devise effective demand-led interventions.

Traditional structures such as the tribal authorities found in many fragile states may be central to developing social cohesion and have often been key agents in the resolution of water disputes. But they are also a defining aspect of the hierarchical structures that have marginalised women and perpetuated exclusion of certain groups. Furthermore while their differentiated roles in village conflict, tax collection etc. may be redefined, in many situations they do not have the capacity to take on a role in development.

3.2.2 Demand-side challenges in fragile states

'Do no harm' in conflict-affected communities: problems of user dissatisfaction or inter-/intra-community disputes can be particularly pronounced in divided, conflict-affected communities where existing ethnic, social or economic divisions may have become politicised. In such situations, applying a 'do no harm' approach to project implementation is particularly important. For example, a water supply project in Southern Sudan provided water that was considered unsafe by the user community (there was a general perception among users that water had killed their cattle). A thorough follow-up from the project (involving water-testing and post-project follow-up) was essential to restore trust in the project and the local authority which collaborated with it. Perception of harm may be as important as actual harm here, and measures to reassure consumers include both testing and open communication of results. Failure to do this in Bangladesh led (notoriously) to widespread arsenic poisoning from contaminated wells, a loss of trust in 'improved' water sources and a spontaneous reversion to non-improved sources.

Donor-dependency in fragile environments: A typical problem related to water supply and sanitation provision in post-conflict transition situations is an expectation from the population that services should continue to be delivered free of charge, or else heavily subsidised, as they typically are during emergency and relief operations (e.g. in Afghanistan: Wang, 2006: 31). Coordination of approaches between different relief/development agencies and the government are key to addressing this issue.

3.3 Cross-cutting issues

3.3.1 Gender

Women and young girls often collect water for their families, a task that is argued to reinforce gender inequalities in employment and education (UNDP, 2006: v). In armed conflicts, the civilian population – above all women and children – are the first to suffer from the disruption of water supply. In areas that are not secure, women and children face the risk of rape and abduction. A gender perspective is not only important for achieving equitable (and secure) access to WASH services, but is also important for the effectiveness and sustainability of services (UNDESA, 2005: 11).

With regard to **water supply,** there is ample evidence that including both women and men in the planning and management of schemes increases sustainability. For example, a study from 88 community-managed schemes in 15 countries showed that gender-sensitive and DRA approaches resulted in more reliable supply, better resource protection, higher coverage of recurrent costs and higher levels of access for the poor (Gross et al, 2001 in: WELL, undated). In situations of armed conflict, female involvement in scheme planning and management is particularly important as men may be absent from their communities for extended periods of time (e.g. Southern Sudan).

Regarding **sanitation**, gender perspectives are less clear but there is consensus that latrines near the homestead ensure privacy, dignity and security for women and girls as they no longer need to travel in the dark to relieve themselves (UNDESA, 2005: 8). Moreover, studies have shown that sanitation facilities increase girls' attendance at schools. A UNICEF study found that school sanitation in Bangladesh boosted girls' attendance by 11% (UNICEF, 1999).

With regard to **hygiene education**, studies found a need to include men as well as women in hygiene promotion. According to UNICEF (in WELL, undated), men do not attach the same importance to sanitation and hygiene practices, and yet they are not the target groups of hygiene education.

3.3.2 Sustainability

Sustainability of water supply schemes is a crucial issue in the water sector. A unique feature of water supply schemes is that failure of the weakest link can lead to the breakdown of supply. Operation

and maintenance and financial sustainability are key challenges in this regard (Hirsch et al., 2005: 13). The management of breakdowns is first and foremost the responsibility of the user community or the private scheme operator. But technical and financial management problems at scheme level (outlined in detail by Mukherjee and van Wijk, 2001) can be exacerbated by the lack of a supportive governance environment. Crucial constraints, often worse in fragile states, include the availability of affordable spare parts via functioning supply chains; M&E systems; and regulation of financial management by the government.

With regard to sanitation and hygiene, lack of sustainability is closely related to an over-emphasis on the provision of hardware at the expense of behaviourial change. The latter is particularly important to increase the sustainability and scaling-up. Compared to water supply, demand for sanitation is low or not fully expressed by households, mirrored on the policy side by not being a priority in the policies and budgets of national governments (WaterAid Australia, 2008: 5).

In Southern Sudan, improving the supply chain was a major topic of discussion in the sector in 2008, three years after the signing of the Comprehensive Peace Agreement. Informal reports and interviews at community level confirmed very high non-functionality rates of water points coupled with a lack of spare parts during an external evaluation of a major water programme (Welle et al., 2008b). Discussions surrounding the improvement of supply chains centred on two alternative models. One model foresees a market-based supply chain via, for example, CBOs involved in WASH projects. The other model suggests a government-led supply chain. According to this model, spare parts would be stored in government warehouses and supplied via government staff.

Reliable information is crucial for effective planning of WASH sector interventions. In cases where the government is absent or not in full control of its territory, the UN (often UNICEF in the water sector) generally takes on a coordinating role that may include developing a database of water points – although this may not always happen in practice. In Southern Sudan, such a database existed and was in the process of being handed over to the government. However, it had not been previously updated on a regular basis and not all actors had deposited their data into it. As a result, the database was of limited use for sector-wide planning and monitoring.

Where government structures are in place but capacity is weak, the focus is on supporting government monitoring systems. WSP-Africa has developed guidelines for Sector Information and Monitoring Systems and provides ongoing country support in SSA (WSP, 2007). The absence of a functioning M&E system was also seen as a crucial bottleneck in Vietnam. The Vietnamese PRSP comprehensively addresses water issues. However, the lack of sector data on the specific needs of different water users at sub-national level limits the usefulness of the PRSP in permitting targeting within the sector (Hirsch et al., 2005: 20).

Section 4: Conclusions

This paper has reviewed the international literature on WASH service delivery in fragile states. It has reviewed barriers to access in fragile states, the relationship between WASH delivery and state legitimacy, donors' engagement in WASH in fragile states, and approaches to overcoming barriers to reaching the poorest and most vulnerable in the sector. It has also reviewed challenges and options for donors operating in this sector.

This literature review confirms the finding of an earlier review (Wang et al., 2006) that published literature on water supply service delivery in fragile states remains extremely limited. Documentation on sanitation and hygiene issues in fragile states is virtually non-existent. However, it has supplemented the available literature by drawing on a wealth of literature on more generic aspects related to WASH service delivery that are also relevant to fragile states – with due acknowledgment of contextual factors.

Existing literature, particularly the studies commissioned for the OECD on service delivery in fragile states, indicates that there is no single strategy for WASH delivery in fragile states. Rather, the approach very much depends on the type and context of state fragility (e.g. conflict, post-conflict transition, weak capacity, willingness) in which the services are provided and also on the natural resource endowment of the country in question. Sanitation and hygiene behaviour change require different approaches from water supply, a fact that is generally acknowledged but tends to be neglected in fragile state contexts.

This review also confirms the key message of the review by Wang et al. (2006) that the water sector is a good entry point for state-building activities, since WASH delivery is non-ideological and water is generally in high demand. It also confirms the established view that approaches that go beyond the typical 12-month funding window for emergency responses are needed to effectively manage transitions and support state-building.

Appendix 1: Working definitions

Defining fragile states

'Fragile state' is a term currently used by the international community to identify a specific category of states, yet there is no one agreed definition of what a 'fragile state' is.[14] According to the widely used OECD-DAC definition, states are fragile when governments and state structures lack capacity – or political will – to deliver public safety and security, good governance and poverty reduction to their citizens. This review focuses on countries where the ability of the state to provide basic services is seriously compromised by the weakness of state institutions, lack of capacity and/or disruption related to ongoing or recent armed conflict or violent insecurity.

WASH service delivery

The standard model of WASH service delivery draws on the framework of accountability[15] developed by the World Bank, which refers to the relationship[16] between three broad categories of actors: *policy-makers*, who decide the level and quality of services to be offered; *service providers*, who deliver the services; and *clients*, who are both consumers of the services and constituents of the policy-makers (WB, 2004).[17]

Table 1 below presents a broad typology of different WASH services and their characteristics in fragile states. This includes:

- **Formal urban water supply and sewerage** infrastructure is characterised by large infrastructure investments and an involvement from the government either as provider or regulator. Access to these services in fragile environments is likely to be limited and improvements in services are unlikely to be feasible in the short to medium term.
- **Urban informal provision** relies typically on Non-State Providers and is private, so that

accountability may rest on being able to hold service providers directly to account. Informal urban provision is often indirectly affected by conditions in fragile states such as price increases or physical inaccessibility due to conflict.

- **Rural and small town water supply** can be based on self-supply or provision by state or Non-State Providers (NSPs) and requires smaller investments than urban infrastructure. In fragile states (depending on the type and level of fragility), provision is likely to be reliant on NSPs, possibly supported by foreign aid.
- **Sanitation services in rural areas** tend to be less focused on supplying infrastructure and more focused on stimulating demand for services through education and 'social marketing' messages. Again, in contexts of state fragility, these are more likely to be provided by non-state actors supported through foreign aid.

There are crucial **inter-linkages** between water, health and education services. On the one hand, health facilities and schools need water supply and sanitation facilities at their sites; on the other hand, health personnel and teachers are important communicators of sanitation and hygiene messages that help to maximise the health impact of water supply and sanitation infrastructure. Moreover, water and hygiene-related diseases impact on school attendance and demand for health services. There is now a growing recognition that policy interventions must take account of these cross-sectoral linkages as well as the wider links with nutrition and other environmental factors, such as pollution and climate change (WB, 2008: xiii).

Furthermore, WASH services need to take account of **livelihood** needs and priorities. This means that the planning and design of water supply services should not just consider health and welfare but also productivity benefits (Moriarty et al., 2004; Nicol, 2000). Water near the homestead can contribute significantly to improving nutrition and health (UNDESA, 2005: 5). Small-scale productive uses (i.e. over 20litres/capita/day) are especially important for survival in fragile states where markets for food and other items are disrupted (Murimiradzomba, 2006, Thorpe, 2004). Key concerns include water for livestock in rural areas and water for kitchen gardens and poultry-raising

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[14] For a review of definitions, see separate Synthesis report.
[15] For a more in-depth discussion of the framework of accountability see the Synthesis report.
[16] The principal-agent model, which underpins the WDR framework, is a helpful and widely used instrument of analysis for understanding accountability relationships. If we think of citizens as the principals, and governments as the agents, then '[a]ccountability is ensured when agents have incentives to do what the principals want them to do' (Grant and Keohane, 2005).
[17] For a fuller account of these relationships and their significance, see Synthesis report.

Table 1: Types of WASH service provision and conditions in fragile states

	Type of Service	Provider	Conditions in fragile states
Urban formal water supply and sanitation	Networked water and sewerage	Government/varying degrees of private sector participation/private provision under public regulation	Often dysfunctional or destroyed
Urban informal water supply and sanitation	Water supply by household wells, water tankers and sanitation by pit latrine or septic tank	Non-State Providers, mostly private	Widely varying importance; likely to continue to function but possibly access limited by high price
Rural and small town water supply	Networked and point source water supply and on-site sanitation	Self supply, CBOs, NGOs, private operators, government or a combination	Dominant type of services; may be dysfunctional (depending on provider)
Sanitation and hygiene education	Social marketing, S&H education	Public sector (health and water sector frontline workers, teachers), private sector, CBOs / NGOs	Typically weak or absent (depending on provider)

in urban areas. The former has been a lon- running concern for agencies operating in fragile states (HPG, 2006; Simpkin, 2005), the latter is a more recent concern (http://www.musgroup.net/).

Water Supply, Sanitation and Hygiene
The Joint Monitoring Programme of the WHO and UNICEF (www.wssinfo.org) defines access to water supply and sanitation in terms of the types of technology and the levels of services involved.[18]

Access to water supply is understood as the availability of at least 20 litres per person per day from an 'improved' source[19] within one kilometre of the user's dwelling.[20] **Sanitation** involves access to excreta disposal systems, which are considered adequate if they are private and if they separate human excreta from human contact.[21]

Hygiene involves behaviours that protect health and prevent the transmission of disease. The three key hygiene behaviours considered of most benefit are a) hand-washing with a detergent, b) safe disposal of children's faeces and c) safe water handling and storage.

In addition to the generalised global guidelines above, the Humanitarian Charter and Minimum Standards in Disaster Response (SPHERE project)[22] define minimum acceptable standards for disaster situations applicable to displaced or conflict-affected communities. SPHERE defines **access to water** in terms of quantity (15 litres/person/day), quality (of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health), distance (within 500m of the household), time (queuing takes no more than 15 minutes and no more than three minutes to fill a 20-litre container) and maintenance. **Access to sanitation** is defined as people having adequate numbers of toilets, sufficiently close to their dwellings, to allow them rapid, safe and acceptable access at all times of the day and night. The SPHERE handbook provides detailed indicators for basic WASH

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[18] The Global Water Supply and Sanitation Assessment Report (UNICEF/WHO, 2000) introduces a definition of coverage that is based on technology type. The report found that past reports lacked information on the safety of water served to the population and the adequacy of sanitation facilities. The new definition takes account of these limitations by replacing the terms 'safe' and 'adequate' with 'improved', based on a technology indicator.
[19] According to WHO/UNICEF (2006), improved water sources include: borehole/tubewell, protected dug well, protected spring, rainwater collection, piped water into dwelling, plot or yard, and public stand pipe.
[20] http://www.wssinfo.org/en/122_definitions.html.

[21] According to WHO/UNICEF (2006), improved sanitation facilities include: pour-flush latrine, connection to a public sewer, connection to a septic system, simple pit latrine with a slab, composting toilet and ventilated improved pit latrine.
[22] http://www.sphereproject.org/.

provision, quality, use and access, design of toilets, vector control, solid waste and drainage.

Globally, around 1.1 billion people do not have access to improved water supplies and 2.6 billion people do not have access to any type of improved sanitation facility. About 1.8 million people die every year due to diarrhoeal and other diseases related to unclean water, most of them children under five years of age (UNDP, 2006). According to the Global Monitoring Report (WB, 2008: viii), countries in fragile situations have the most serious shortcomings in reaching the MDG targets, and according to Berry et al. (2004: 10), states classified as difficult environments account for 54% of people without access to safe drinking water.

Access to water and sanitation is sometimes considered under the heading 'environmental health', and there is a significant overlap with the primary health care agenda. Likewise, there are substantial overlaps with the education agenda. This points to an important issue of strategic coordination in the planning and implementing of basic services across the board (See separate reports on Health and Education sectors).

Appendix 2: Sources, search methodology and bibliography

Sources and search methodology

A systematic search was carried out to identify existing published (and, to the extent possible, unpublished) literature for this review. This included:

- Google and Google Scholar searches by key words (i.e. fragile state, state fragility, water supply, sanitation, hygiene, WASH service delivery, conflict, post-conflict)
- Scanning of reference sections of key reports for further references
- Searching websites of key sector research and implementing agencies (including GWP, IIED, Eldis, IWMI, IRC, SIWI, WaterAid, WEDC, WELL, WSP, WSSCC)
- Searching websites and document libraries of key bi- and multilateral donors (ADB, AfDB, AusAid, DFID, EC, OECD, USAID, WB)
- Email/telephone contact with experts in the field

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