

Human resource capacity gaps in water and sanitation: Main findings and the way forward



Human resource capacity gaps in water and sanitation



INTRODUCTION

The 'Mind the Gap' study (2009), funded by DFID and executed by the IWA in five countries (Bangladesh, Mali, South Africa, Timor Leste and Zambia) aimed at determining how many and what type of staff is needed for water and sanitation service delivery. An assessment methodology was developed to measure the human resources (HR) capacity and identify gaps in a way that would allow comparison of datasets between countries for specific job categories.

From this study valuable insights were gained and lessons learnt about the challenges in HR development for a sustainable delivery of water and sanitation services. These outcomes informed continued research in six additional countries in Africa (Burkina Faso, Ghana, Mozambique, Niger, Senegal and Tanzania, with support

from USAID) and four in Asia (Lao PDR, the Philippines, PNG and Sri Lanka, with support from AusAID), using a modified methodology and an amended set of criteria.

The results of these fifteen country studies are presented in a synthesis report. This summary of that synthesis aims to provide, to global decision makers and donors, an overview of the IWA efforts and the knowledge they generated on HR development needs in water and sanitation systems and services. It presents an insight in the state of our current knowledge and provides direction on possible next steps to be taken.

BACKGROUND AND RATIONALE

The need for HR development to support water and sanitation services was formally recognised as a priority as long ago as 1977 at the UN Water Conference in Mar del Plata (Argentina) and re-iterated at a 1991 UNDP symposium on capacity building for the water sector in Delft, the Netherlands. Over the past two decades, a number of influential reports focused on water and sanitation have again highlighted the urgent need to develop adequate human resources. The UK International Development Committee (2007)

mentioned that "beyond lack of finance investment, a lack of institutional, organisational and individual capacity at national and local level is more serious".

Employing the right number and calibre of people in a suitably enabling environment to facilitate service delivery is a crucial ingredient in the process of meeting MDG target 7c and, beyond 2015, universal coverage. The health (WHO, 2008) and education (UNESCO 2010) sectors have collected evidence on human resources development needs, but the nature and magnitude of staffing needs for water and sanitation services remain largely unknown.

Generally, the research required to elucidate that HR gaps have received relatively little attention due to the fragmentation and inherent complexities of the water and sanitation systems and services, and the limited availability of data (see box below).

The need to meet the MDG targets has prompted the research of HR deficiencies and needs in water and sanitation. Such research responds to the need for data of donor organisations that often encounter barriers to deliver on their objectives because of the lack of experienced and skilled personnel. The research outcomes may also promote an increase in capacity inflows into the sector, reduce the drain

ACCORDING TO THE GLAAS 2012 REPORT:

- Nearly half of the countries surveyed were unable to answer how many staff are working in the sector;
- Some countries reported fewer than ten staff; and,
- Only a third of the respondents were able to give projections of staffing needs for 2016.

of qualified personnel and support capacity building of existing staff.

Thus, the strategic objective of this research was to develop a methodology to provide an essential data flow for decision-makers in national governments and external support agencies that will allow them to plan their interventions for improved and more sustainable water and sanitation services by addressing HR capacity shortages and gaps.

METHODOLOGY AND APPROACH

METHODOLOGICAL FRAMEWORK

To assess the HR requirements, in terms of numbers (shortages), skills and competencies (gaps), the methodological framework set the following steps to:

- Estimate future population (in target year) to incorporate growth.
- Determine the current water supply and sanitation coverage and calculate the increases needed to achieve (a) the MDG targets and (b) universal coverage.
- Estimate a proxy of HR demand (quantitative) per type of service delivery per 10,000 people, and their needed qualifications
- Determine the existing HR capacity in the country in terms of numbers and skill sets.
- Assess the HR supply over the period until the target year in terms of graduates as well as vocational training.
- Calculate the HR shortages and assess the human resources gaps.
- Provide recommendations for the way in which training institutions can address the shortages and gaps, as well as for alternative ways to meet the identified shortages and gaps.

DEFINITIONS:

In the context of this report, the term '**Human resources development**' relates to the development, management, coordination, financing and remuneration of the human capital in a national workforce to achieve access, coverage and quality of water, sanitation and hygiene services.

- The term '**human resources**' refers to sufficient numbers of people deployed to effectively perform the essential functions in water, sanitation and hygiene services delivery, each of whom have the necessary talents, skills, competencies and aptitudes.
- The term '**capacity**' is defined as the total quantity and quality of human resources available to deliver water and sanitation services and hygiene promotion.
- **Adequate capacity** is used as shorthand to mean that the right numbers and the right kinds of people, with the right skills, at an affordable cost, are in the right places at the right times to deliver water, sanitation and hygiene promotion services to meet the MDGs, or to achieve universal coverage
- The term '**gap**' refers to a situation when people do not have the necessary knowledge, skills and/or experience to perform their job in an effective manner, due to a lack of training, introduction of new technologies, insufficient working practice, absence of enabling policy/institutional framework, obstructive legislation or any other 'quality' issue. This definition is focused mainly on those skilled people already in the workplace.
- In contrast, '**shortages**' occur when the demand for a particular occupation outstrips the combination of existing capacity and supply. This definition of a quantity issue covers those in the labour market and those about to enter the labour market.

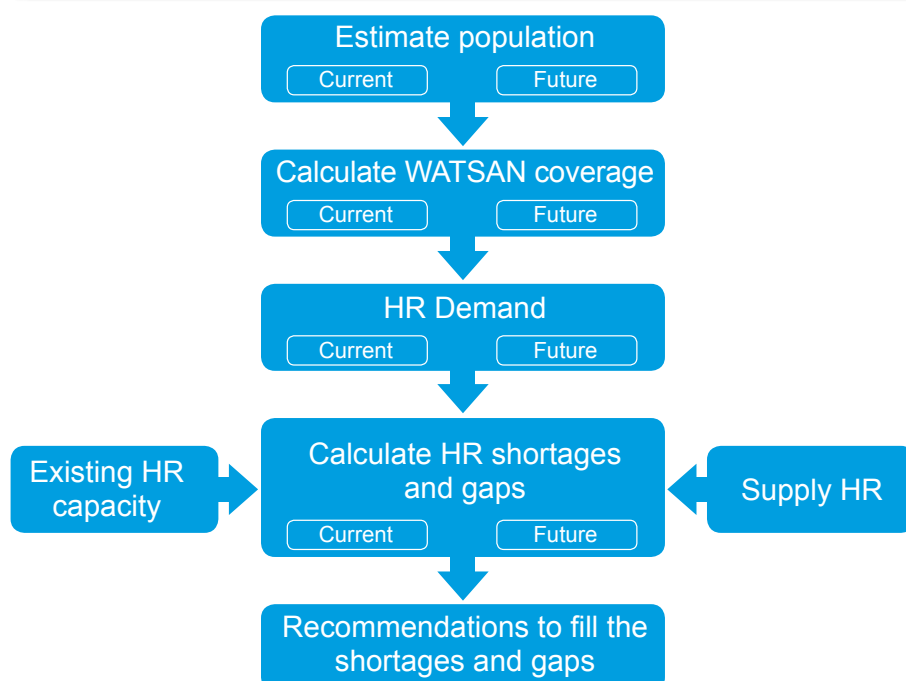


Figure 1: Methodological framework to assess human resource shortages and gaps



DISCIPLINES TO MAP HUMAN RESOURCES CAPACITY

The study distinguished the following disciplines to map HR capacity in water and sanitation:

- Technical specialisation specific to water and sanitation services (WATSAN technical personnel): a person who is professionally engaged in a technical field specifically related to the provision of water and sanitation facilities or infrastructure (for instance civil/environmental engineers).
- Technical specialisation, not specific to the provision of water

and sanitation services (other technical personnel): a person who is professionally engaged in another technical field that is required in the planning, design or operation of water and sanitation facilities or infrastructure (such as hydro-geologists, mechanical/electrical engineers), but is not water and sanitation-specific.

- Management and finance: a person who is professionally engaged in management (for instance finance, human resources (HR) or strategic managers and office managers fulfilling administrative functions) as

well as persons who procure goods and services or cost planners.

- Social development: a person who is professionally engaged in hygiene promotion or other relevant water, sanitation and health professions with a social science emphasis (for instance health promotion specialist, sociologist, community development worker).

COMPONENTS OF THE WASH SERVICE DELIVERY PATHWAY

The study investigated the capacity of these four disciplines and the methodology further distinguished between the HR requirements for three different types of work:

- Design and construction of new infrastructure.
- Operation and maintenance.
- Community mobilisation and hygiene promotion.

The research considered hygiene practices within the context of sanitation delivery.

RESULTS¹

The shortages identified in the case studies varied from surpluses of approximately 4000 in the management and finance disciplines in the Ghanaian water sector to shortages up to roughly 150.000 technical staff to deliver appropriate sanitation in the same country.

Even though the shortages and gaps varied over the countries, due to varying contexts, coverage rates, mechanisms/ methods of delivery and other influencing factors, overall a significant shortage was observed in the number of technically qualified staff (WATSAN Technical field, and other

¹ Details of the separate country assessments are available in their briefing notes – www.iwahq.org/hrcapacity

Table 1: IWA HRCG study - 10 countries (excluding the 5 pilot phase countries)

	Total		Water		Sanitation	
	MDG	Universal	MDG	Universal	MDG	Universal
BURKINA FASO	29,818	56,261	21,415	30,713	8,402	25,548
GHANA²	312,785	597,461	1,562	11,276	311,223	586,185
LAO PDR	-660	198	-328	375	-332	-177
MOZAMBIQUE	5,299	11,901	5,025	8,845	274	3,056
NIGER³	-2,071	5,020	-3,000	411	929	4,609
PHILIPPINES⁴	63,015 (low productivity) 7,549 (high productivity)	82,588 (low productivity) 15,354 (high productivity)				
PNG	7,365	11,017	3,688	5,648	3,677	5,369
SENEGAL	639	1,167	638	905	1	262
SRI LANKA⁵	2,568	2,345	2,649	2,708	-81	-363
TANZANIA	13,098	18,578	8,928	14,174	4,170	4,404

Note: These shortages have been derived from the samples within the countries. Negative figures indicate surpluses in professionals.

technical fields were required).

Most of the countries studies indicated that within the technical fields especially mid-level and engineering levels were needed. Furthermore, many of the countries reported a high shortage of social development personnel as well considering their required support to community managed facilities.

LESSONS LEARNED AND WAY FORWARD

The following section presents the key findings that support informed

decision making for bridging HR capacity gaps for water and sanitation services and identifies key knowledge gaps that require further research and clarification.

WHAT WE NOW KNOW

The following key points represent clear findings coming out of the synthesis that provide a point of departure for making informed decisions and on-going support to bridging human resource capacity gaps for water and sanitation services:

- Countries with high human resource demand and low service

levels will have little chance to meet MDG target and will be significantly hindered in the progressive realisation of universal access to water and sanitation services. Any future investments to improve and sustain water and sanitation services will be severely undermined unless immediate steps are taken to incrementally address human resource demands ensuring they are met in the medium- to long-term.

- There is a direct correlation between decentralisation of responsibilities and efficiencies

2 In Ghana the extreme high shortages in the sanitation field are because of the very low coverage rate for sanitation, as well as the fact that the study indicated to have included unskilled (or not professionally educated) staff to construct all the facilities

3 The surplus in MDGs (and water) is due to the management and finance disciplines. There is a small shortage in technical personnel and larger shortage in social development category

4 In the Philippines, the complexity of the data collection did not allow the exact same method to be used. Therefore this table only presents total figures that are based on Water and Sanitation technical field personnel and para technicians only. This study did distinguish between low and high productivity.

5 In Sri Lanka the country team saw a larger surplus on sanitation personnel in the long run (for universal coverage) than in the short run, which could have been due to the need for construction now but those personnel will be less needed in the future.



(or lack thereof) at lower levels of government and infrastructure implementation, operations and maintenance. Decentralization of responsibilities is not accompanied with the appropriate financial or human resources to effectively take on the responsibilities. Developing cooperation between local governments and / or consolidation of human resources across neighbouring districts/municipalities is expected to contribute to alleviate some inefficiency.

- There is a clear disparity in the human resource requirements for rural versus urban water and sanitation services requiring separate strategies, funding mechanisms and supporting initiatives to ensure that the human resource demands can be met. However, such strategies should identify areas of joint action at the interface of urban and rural systems, in peri-urban settlements.
- The mismatch between supply (shortage and skills of professionals entering the job market) and demand (the number and skills or workers required) is one of the key factors significantly undermining the sustainability of the water and sanitation sector. Partnerships

between universities, training institutes and employers in the sector need to be established and financed for both technical and administrative functions.

- Sanitation services are significantly undermined by a poor supply of professionals to the sector. In urgent need of attention is the low level and inadequate quality of curricula covering sanitary engineering in universities. Greater efforts need to be made in establishing courses and incentives put in place to attract students.

WHAT WE THINK WE KNOW

The following key points represent unclear or un-confirmed findings coming out of the synthesis that require further clarity and understanding:

- Consideration should be given to incentives and motivations to attract newly qualified and skilled personnel and to retain experienced personnel within the sector so as they are not lost to other sectors.
- Appropriate public policies need to be in place to support job creation, which involves investing in skills to support labour supply and enabling private sector engagement to stimulate an increase in labour demand.

- Low levels of access to and inadequate coverage of courses in tertiary education institutes is a significant bottleneck to meeting human resource demands. Professional Vocational Training institutes may help in meeting these demands.
- The dependence on communities, volunteers and semi-skilled workers in rural areas is not sustainable without adequate institutional and operational support from local government and structured, formalised support from the professional sector.
- The water supply and sanitation sector will benefit greatly from increased gender equality translated into more women being active in service provision in order to improve communication with women and foster the identification and adoption of best practices.
- Operation and maintenance of water and sanitation systems are chronically and universally neglected, with inadequately allocated financial and human resources. The appropriate education and skills requirement to operate and maintain specific technologies has not been appropriately assessed and would greatly benefit the sector.
- From a national public sector perspective it may be assumed that strengthening the human resource base for the delivery of water and sanitation services will alleviate the pressure on human resources (as well as financial resources) in the public health sector – investing in WASH human resource development is investing in health.

WHAT WE DON'T KNOW

The following key points represent significant knowledge gaps that once elucidated will strengthen the evidence

based for informed decision making and on-going support to bridging human resource capacity gaps for water and sanitation services:

- Data on the human resource requirements for water and sanitation services is to a large extent unavailable. This is a major limitation in estimating what human resources are available in which sector and across which skills set. Without credible data to estimate the real human resources shortages across all components and segments of water, sanitation and hygiene provision, the sector will not be able to attract the needed attention. Unlike the health and education sectors, the water, sanitation and hygiene sectors do not have this type of information, making it nearly impossible to ascertain the real shortages.
- There is no information available on the current or needed levels of funding required to support capacity development, either in totality, from government or the donor community. Work should be conducted to ascertain the current level of funding dedicated to capacity development and the funding gap. This work should be carried out within the UN Water GLAAS reporting framework and be linked to work carried out on policy adoption and financial flows.

- Effective policies for improving human resource capacity at a national level are not well documented. More work needs to be done on distilling and synthesising lessons learned from countries who have made significant advances in addressing human resource capacity gaps.
- In formulating the Sustainable Development Goals, consideration should be given to the use of a human resource capacity data for WASH as an enabling environment indicator.

NEXT STEPS

In responding to these findings, IWA has formulated a way forward under three headings:

GLOBAL POLICY AND ADVOCACY

Leading global advocacy efforts with capacity development and education organisations and contributing to global development goals and reporting mechanisms for water and sanitation, including:

- Advocate the importance of investing in human resource capacity development to support sustainable water and sanitation service delivery and improving public health and as a key indicator



for attaining appropriate Sustainable Development Goals;

- Contribute analysis on human resource capacity gaps and support efforts to collect data on existing and required financial flows for human resource capacity development within the framework of the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS).

NATIONAL ACTION

Working with national stakeholders, including ministries, universities, training institutes, professional associations and industry bodies to develop national plans of action for human resource capacity development, using the following key considerations in developing the strategy:

- Appoint and empower an appropriate institution to lead efforts in assessing, monitoring and reporting on national human resource capacity for water and sanitation services;
- Develop, in consultation with all key stakeholder groups, parallel strategies and allocate adequate financial resources for HR capacity development in urban and rural settings;



- Strengthen the administrative and technical capacity of local authorities to provide greater oversight and more structured support for human resources managing and operating decentralised water and sanitation systems;
- Establish industry partnerships between universities, training institutes, the private sector and other employers to better match HR supply with demand;
- Establish partnerships between universities to develop appropriate curricula for sanitary engineering and incentives to enrol a greater number of students;
- Support the establishment and strengthen professional associations to facilitate peer-to-peer support within service providers and provide expertise and knowledge to semi-skilled workers, community workers and volunteers.

FURTHER RESEARCH

To support global advocacy efforts and national action IWA will work with capacity development, education and research institutes to better understand:

- The motivations and incentives for attracting and retaining staff in the sector, with an emphasis on young professionals and females;
- The institutional enablers and bottlenecks to increasing the number of female workers in the sector;
- The need, role and market for Professional Vocational Training (PVT) institutes to support capacity development;
- The education and skill requirements for operating and maintaining specific technologies for water and sanitation systems.



For further information

Further information about IWA's Human Resources & Capacity Development programme can be found at www.iwahq.org/themes/hrcd and 15 briefing notes of the country assessments can be downloaded at: www.iwahq.org/hrcapacity. For more information contact Kirsten de Vette at Kirsten.devette@iwahq.org.

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