WEDC — Water Engineering and Development Centre

Poverty and development

What this unit is about

This is the introductory unit to the module which will introduce you to the principles, concepts, challenges and key issues of managing sustainable water supply and environmental sanitation development programmes in low- and middle-income countries, using the management of solid waste as a practical example.

What you will learn

On completion of this unit, you will be able to:

- define the different aspects of both global and individual poverty and describe the consequences of these;

- explain basic concepts of development, development processes, and some of the factors that have a bearing on progress;

- understand why there are international development goals and how national governments and the international community interface with them;

- begin to consider the concept of progress and measurement; and

- start to apply issues of poverty and development to different aspects of water, sanitation and hygiene, and think about the roles of those involved and how people access and use services and facilities.

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1.1 Introduction

This unit looks at how poverty and development affect people, especially those who are vulnerable and marginalized in society. It considers the role of development, and that of the international community, and introduces measurement of progress. Throughout the text, there are examples from water and sanitation to provide context and application of concepts and ideas. A more in-depth exploration of some of the key themes and concepts takes place in subsequent units.

1.2 What is poverty?

There are several different measures of poverty:

- **Relative** poverty is lacking the minimum income needed to maintain the average standard of living in society (i.e. below 60% of the average).

- **Absolute** poverty is where there is material deprivation of basic human needs (e.g. food, safe drinking water, sanitation facilities, health, shelter, education, and information). This is dependent not only on income but also on access to services.

- **Extreme** poverty is living on less than $1.90 international dollars per day, according to the World Bank's Global Poverty Line (See the WORLD BANK WORLD POVERTY CLOCK).

The number of people living in extreme poverty globally is falling. The latest available figures show that the percentage of people experiencing extreme poverty has decreased from 11 percent in 2013 to 10 percent in 2015; during the same period, those living on less than $1.90 a day fell by 68 million to 736 million (World Bank, 2018).

However, this decline in poverty rates is slowing down. The World Bank (2018) estimates that from 1990 to 2015, extreme poverty dropped one percentage point per year on average, from 36% to 10%, however there was only a single percentage point drop between 2013 and 2015.

Extreme poverty remains pervasive in low-income countries in general, and more so, in places experiencing conflict and political unrest. Reductions in extreme poverty have been mainly in East Asia and the Pacific, with a fall of 71 million (notably in China and Indonesia), and in South Asia, with a fall of 37 million (mainly in India). Despite earlier estimates, in sub-Saharan Africa, poverty has increased, with most of the world's extreme poor now living in the region, and no sign of this improving by 2030 (ibid).

Box 1.1 Child poverty

It has long been recognised that poverty hits children hardest. While a severe lack of goods and services hurts every human, it is most threatening to children's rights: survival, health and nutrition, education, participation, and protection from harm and exploitation. It creates an environment that is damaging to children's development in every way – mental, physical, emotional and spiritual (UNICEF, 2007).

1.1.1.1 However, for the first time, the global community has recognized the centrality of children to address global poverty and the distinctiveness of poverty as it affects children. As part of the new SDGs proposed to end poverty, the new agenda aims to 'reduce at least by half the proportion of men, women and children of all ages living in poverty in all dimensions according to national definitions' by 2030 (UN, 2019a).

In many situations, poverty is a matter of survival. Poverty is something people want to escape and poverty is a call to change the world so that many more may survive, have enough to eat, adequate shelter, access to education and health, protection from violence and a voice in what happens in their communities (World Bank, 2010).

Box 1.2. Faces of poverty

Poverty is losing a child to illness brought about by unclean water and lack of sanitation.	Poverty is not having a job or adequate cash income, is fear for the future, living one day at a time.	Poverty is denial of spiritual well-being.	Poverty is exclusion in your own community.
Poverty is suddenly losing everything due to humanitarian crisis and war.	Poverty is hunger.	Poverty is powerlessness, lack of representation and freedom.	Poverty is having inadequate clothing.
Poverty is lack of shelter.	Poverty is exposure to violence and exclusion from access to justice, protection and services.	Poverty is being sick and not being able to see a doctor.	Poverty is not having access to school and not knowing how to read.

Adapted from World Bank, 2010

The diverse range of dimensions of poverty above shows that its reduction depends on more than economic improvement (such as access to credit schemes); it is also about other resources – human, natural, social and physical.

By looking closely at people's lives, it may be possible to improve access to one or more of these resources and provide opportunities to make lives better. For example, a tarmac road – as opposed to a dirt track - brings more traffic, providing a larger market for local goods and services, but it may also introduce local communities to more diseases, leading to the need for improved local health services. Experience in many developing countries shows that these opportunities do not happen on the scale required without sound government policies, the presence of private sector enterprise and investment, and openness to how organizations work to facilitate empowerment of individuals and communities.

UNICEF has developed the Multiple Overlapping Deprivation Analysis (MODA) to measure all the dimensions of poverty as experienced by children. Children are reliant on others for their access to goods and services that are fundamental for their full development, and this tool can support interventions and policies that are more effective in targeting and revealing the most deprived children.

Further reading: See the UNICEF MODA Brochure (UNICEF, n.d.)

Further reading: To find out more about the faces of poverty, read United Nations., 2018. *No Poverty- Why it Matters.*

1.3   Development

The United Nations (UN) divides countries into two major categories, which are 'developed' countries and 'developing' countries. This classification is based on a country's economic status (e.g. GDP, GNP, Human Development Index (HDI), per capita income, industrialization, and standard of living). The economy of a developed country is judged to be highly progressed, with effective technological infrastructure. Countries defined as 'developing' have low levels of industrialization and a low HDI.

The HDI was created in recognition of the fact that the development of any country cannot be assessed only on economic growth, and that the capacity of its people is another vital criterion. The HDI has three dimensions: a long and healthy life, access to knowledge and a decent standard of living (UNDP, 2019).

People are responsible for development: individuals, households, communities, local governments and national governments. The study of development in the context of 'developing countries' includes analysis of economic, social, political and cultural change with special attention to poverty and its dimensions, for example equity and inclusion, gender relations and ethnicity.

Development can accelerate poverty reduction. However, while the goal of development – *the eradication of poverty* – is agreed, the process often is not. The challenge includes how best to integrate the social, technical, economic, institutional and environmental factors that are prerequisites for change to happen and represent entry points to the process of tackling poverty. Moral consideration arises in relation to human rights and ecological, technical and environmental factors. What is clear is that development is about individuals and communities determining and then achieving 'good change'.

1.3.1   Why is development in WASH important?

Readers of the *British Medical Journal (BMJ)* voted for the most important medical milestone since 1840 from a shortlist of 15 factors (Ferriman, 2007). The clear winner was judged to be the introduction of clean water and sewage disposal, also known as "the sanitary revolution". Second in the rankings were the discovery of antibiotics and the development of anaesthesia. This provides evidence for the importance of WASH development, as a third of readers were doctors, a fifth were the general public, one in ten were academic researchers, and one in seven were students.

Box 1.3   Examples of good change through water and sanitation provision

1.2.1.1 The United World Water Nations Development Report (UN, 2019b:1) states that "fulfilling the human rights to safe drinking water and sanitation for all can also significantly contribute to the achievement of the broad set of goals of the 2030 Agenda for Sustainable Development: from food and energy security, to economic development and environmental sustainability".

Providing access to WASH can reduce monetary and non-monetary poverty and reduce the vulnerability of poor and marginal groups to economic shocks. Improvements in water supply and sanitation can also bring about significant health impacts, notably the reduction of diarrhoea, but there are many additional benefits beyond this. Though hard to measure, these benefits are among those most commonly cited by people in low-income communities:

- Accessible water supplies reduce drudgery and increase time for other activities such as education, income-generation or an essential extra hour of sleep.
- Adequate drainage can reduce the cost of controlling mosquitoes, decrease flooding and sewage contamination.
- Facilitating basic services in a participative manner can increase the confidence of socially excluded groups, and especially of women, and be a catalyst for economic activities.
- Improved sanitation facilities afford privacy and human dignity. They can increase school attendance by girls, reduce the vulnerability of females to attack and rape, and make living conditions more pleasant.

For example, a case study in Ghana found that a 15-minute reduction in water collection time led to an increase in girls' school attendance by 8%–12%. This is an example of how improving access to water supply [SDG target 6.1] increases girls' participation in education [targets 4.1, 4.2, 4.5] and addresses gender inequalities [target 5.1], and consequently, supports sustainable development (United Nations World Water Assessment Programme, 2015: The United Nations World Water Development Report 2015: Water for a Sustainable World. Paris, United Nations Educational, Scientific and Cultural Organization).

Women and girls see particular benefits in having effective and safe WASH service provision, since they are the ones who are predominantly responsible for the collection of water, sometimes from distant sources. Easier access to water reduces the time they might spend on activities including household chores and caring for sick family members. This time can then be used for education, paid employment and other income generation activities. Additional benefits are that there can be less sickness in the household, and the living environment can be cleaner and more comfortable. Extended benefits of household or nearby WASH facilities (in comparison to shared and public facilities) can be a reduction in gender-based violence and the stress associated with this risk. Life for women and girls at all stages of the reproductive cycle, from puberty, through the reproductive years to the perimenopause can be made easier with good WASH services. All these effects can result in greater dignity, privacy and status for women. (WSSCC, 2006).

1.4   Vulnerability and inclusion

Intrinsic links exist between poverty, social exclusion and marginalization and therefore not all development can transform the lives of everyone in a given context. Exclusion and marginalization interact with each other; unequal access to cash and land, for example, may result from the lack of access to decision-making, voice and power.

Inclusion is critical, therefore, if development is to be effective. Inclusion means accessing and supporting those who are marginalized in society by existing development and governance processes, and enabling them to take an active part in securing their needs and rights. People in these situations are often termed 'vulnerable'.

Intrinsic links exist between poverty, social exclusion and marginalization

Vulnerability takes different forms. Poor access to water, sanitation and hygiene exacerbates and sustains chronic poverty and can have an acute impact on women, girls and boys, affecting their health, education and social development. Different groups such as those with a disability, older people, transwomen, and those living with HIV/AIDS and chronic illnesses have issues of poverty compounded by the lack of basic water and sanitation services and poor hygiene.

People become the drivers and subjects of their own development, with support to challenge and change the wider institutional and governance systems that maintain the status quo and slow equitable progress. Changing the power dynamics that exist between those without access to resources and the duty bearers with policies and strategies, is critical to realizing rights-based approaches. The need to change behaviours and attitudes is also vital to making this happen.
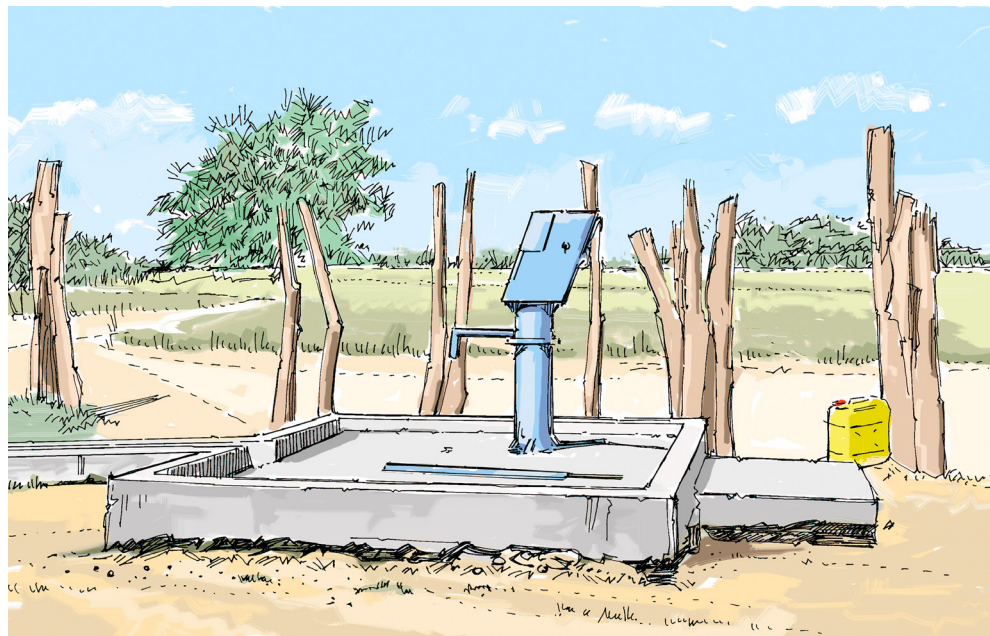
Poverty is compounded by the lack of basic water and sanitation services and poor hygiene.

1.4.1   Inclusion and the design of water and sanitation technology

Water and sanitation technology too often pays insufficient regard to use by those who are marginalized and vulnerable in society. Simple considerations such as the heights of taps and handles or the spacing of footrests on a latrine slab can make all the difference to accessibility and ease of use.

The location and the way that technology interacts with the community are important. For example, women may not be able to use a handpump sited near a mosque. While men see a tapstand purely as a place for collecting water, women may see it as a place to meet others and discuss points of common interest. Designing facilities to promote such interactions may make them far more desirable to users. Similarly, designing a latrine superstructure enabling use for bathing or laundry may considerably increase its value to women but have little impact on men.

> ### Box 1.4   Case study: Indian women demand their right to water
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> **1.3.1.1** The Centre of Rural Studies and Development (CRSD), an Indian rights-based organisation, selected women to take part in advocacy and human rights training. The women formed groups in their villages, held meetings to raise awareness about women's issues, and analysed solutions and strategies that could help improve their lives. They organised workshops between community leaders and the Rural Water Supply Department aimed at making the department more responsive. They developed support networks and used the media to pressurise the government to take corrective measures. They also demanded their rights through peaceful rallies and demonstrations. Consequently, the women now feel more confident to articulate their demands to a variety of stakeholders. Men are starting to accept the women's new leadership roles and the Rural Water Supply Department is more responsive and accountable to the communities. The quality of services has improved and **1.3.1.2** women spend an average of 20% less time collecting water.
>
> *Source: Jansz and Wilbur (2013)*

In the context of water supply, it is important to recognize that women and men use and manage water in different ways. For example, women and girls use it more for domestic purposes, while men and boys compete for water from the same sources for farming and livestock. Moreover, the burden of poor water and sanitation facilities falls more heavily on women than on men.

Women often have different privacy requirements from men. This can mean, for example, that in densely populated areas they are only able to use public defecation spaces after dark. Such practices may expose women to significant risks of harassment and gender-based violence. In such cases, the demand for household latrines may be much greater among women.

1.5   Social development

Development and particularly *social* development promotes local, national and global institutions that are responsive, accountable and *inclusive*; empowering poor and vulnerable people to participate effectively in the development process. Social development is the process of listening to poor people and promoting their voices in the development process, understanding and addressing their needs, priorities and aspirations, and building formal and informal institutions (World Bank, 2019b). It instils social cohesiveness and necessitates comprehensive risk assessment to maximize impact. It is at the centre of initiatives for the improvement of human well-being and is an essential foundation for sustained economic development.

Social development is the process of listening to poor people and promoting their voices in the development process

The ultimate aim of social development is to lift individuals and communities out of poverty and into a realm in which fulfilment of the individual is achievable. In practice, addressing social development concerns means:

• being responsive to demand;

• reaching poor or disadvantaged populations and socially excluded groups;

• promoting empowerment, local voices and ownership;

• recognizing the different needs and contributions of women as well as men; and

• encouraging the participation of all stakeholders in the development process.

Increasingly development agencies are favouring the use of rights-based frameworks to guide programming decisions. Focussing on rights involves people in a far-reaching transformational development process beyond identification of need. An example is WaterAid's Citizens' Action Initiative (CAI) for use in rural areas (WaterAid, 2010), where 'Interface Meetings' are organised between citizens (who often have poor services) with service providers and local government (who often have limited resources).

1.5.1   Achieving development

Achieving, or rather moving towards development is inevitably about being ranked somewhere along a continuum, whether this be a self-imposed measure of progress or that of others. It is not a permanent state and so-called 'developed' countries still struggle with many aspects of it. For example, the UK

only ranks sixteenth in the list of 29 high income countries in terms of relative child wellbeing (UNICEF, 2013).

In respect of developing countries two main sources referred to are: the United Nations Development Programme (UNDP) Human Development Report and the World Development Indicators, published by the World Bank.

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Box 1.5   The World Bank and UNDP

The World Bank is the largest provider of development assistance ($20 billion each year). It offers loans, advice and 'customized resources' to more than 100 developing countries and countries in transition. It focuses on the poorest people in the poorest countries, working directly with national governments and other organizations including multilateral, NGOs and private agencies (World Bank).

The United Nations Development Programme (UNDP) is part of the United Nations. It is politically neutral and its co-operation is impartial. UNDP acts as a development partner for United Nations relief agencies and national governments. It is committed to the principle that development is inseparable from the quest for peace and human security. The UNDP works to help countries in their efforts to achieve sustainable human development (UNDP).

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The UNDP Human Development Report (UNDP, 2019) presents statistical information related to country development achievements in different areas of human development: longevity (life expectancy); knowledge (adult literacy combined with mean years of schooling); and standard of living.

The World Bank collects and annually publishes data against a range of indicators: world view, people, environment, economy, states and markets, and global links. The indicators include size (for example, population, Gross National Product [GNP] per capita, average annual growth rate) and quality of life categories (life expectancy, adult illiteracy etc.). Under the 'people' category (which is a health sub-category), the selected indicators include the percentages of the population of each country with access to safe water and sanitation. Procedures for data collection vary between countries, so caution is required.

For the fiscal year 2020, the World Bank also classifies economies into four stages of economic development using the World Bank Atlas method, based on Gross National Product (GNP) per capita, as follows:

- low-income (defined as those with a GNI per capita of $1,025 or less in 2018);

- lower-middle income (those with a GNI per capita between $1,026 and $3,995);

- middle-income (are those with a GNI per capita between $3,996 and $12,375); and

- high-income (those with a GNI per capita of $12,376 or more).

So achieving development is partly about measureable progress towards 'good change'. Since 2000, United Nations member states have committed their governments to reduce poverty through internationally agreed goals to accelerate such change.

Consider who is 'marginalized' in society? In your own society, how do these people access services and have their voice heard?

1.5.2   The role of international development goals

World leaders and leading development institutions at the UN Headquarters in 2000 adopted the United Nations Millennium Declaration, committing to a new global partnership to reduce extreme poverty and setting eight Millennium Development Goals (MDGs) with time-bound targets and a deadline of 2015.

Subsequently, a new set of goals was developed known as the Sustainable Development Goals (SDGs). The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides "a shared blueprint for peace and prosperity for people and the planet, now and into the future". Its 17 Sustainable Development Goals (SDGs) are an urgent call for action by all countries – developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go together with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

Some of the goals are highlighted here:

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

International development goals commit developing countries and development agencies to poverty reduction and pro-poor growth. This necessitates, though does not enforce, improved governance, human rights and social justice. They also have a bearing on high-income countries through reform of domestic and international policies related to trade, agriculture and sustainable development, while looking critically at their financial contributions to international development.

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Box 1.6   The Sustainable Development Goals Report 2019

"This report reviews progress in the fourth year of implementation of the 2030 Agenda for Sustainable Development. The report uses the latest available data to track global progress of the 17 goals with infographics, and presents an in-depth analysis of selected indicators for each goal. It highlights challenges and identifies many areas that need urgent collective attention to realize the 2030 Agenda's far reaching vision. Regional and/or sub-regional analyses are presented to the extent possible.

The information presented in this report is based on the latest available data (as of May 2019) on selected indicators in the global indicator framework for the Sustainable Development Goals, which was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and adopted by the General Assembly on 6 July 2017 (see resolution 71/313, annex). A database of available global, regional and country data and metadata for the SDG indicators accompanying this report is also available".

Source: UN (2019c) The Sustainable Development Goals Report 2019

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For further information: Visit the SDGs Knowledge Platform

Think about why it is important to set international development goals

1.5.3   Development at country level and development assistance

The Millennium Declaration and the 2030 Agenda for Sustainable Development call upon high-income and industrialized countries to grant more generous development assistance, especially to countries that are genuinely trying to apply their resources to poverty reduction. Actual commitments to improving the amount, quality and effectiveness of aid are set against a number of international agreements. However, many countries are yet to realize these commitments, hence the presence of financial gaps in aid to developing and least developed countries.

The Monterrey Consensus (2002) and the World Summit on Sustainable Development pledged world leaders to "make concrete efforts towards the target of 0.7 per cent" of their Gross National Income (GNI) as aid, and also called on recipient and donor countries as well as international institutions to make aid more effective. At their 2002 Summit, the G8 (leading industrialized

nations) leaders stated *"no country genuinely committed to poverty reduction, good governance and economic reform will be denied the chance to achieve the Millennium Development Goals through lack of finance"*.

In 2005, the G8 reaffirmed commitment to increase aid to developing countries, noting the importance of targeting Africa. **The Paris Declaration on Aid Effectiveness (2005)** formalized the actions that donor countries would take to improve the effectiveness of aid, emphasizing *national ownership* of development priorities, harmonization and alignment of donor activities, predictable and untied aid, programme-based approaches, improved procurement and financial management systems, results-orientated frameworks, and mutual accountability. Subsequent summits have reinforced the international community's commitments while also pledging to attend to the consequences of the present global economic and food crises (UN, 2010).

The Accra Agenda for Action (2008) was designed to strengthen and deepen implementation of the Paris Declaration, taking stock of progress and setting the agenda for accelerated advancement towards the Paris targets. It proposed the following four main areas for improvement, namely: ownership by countries of their development processes and policy formulation; inclusive partnerships including donors in the OECD Development Assistance Committee and developing countries, as well as other donors, foundations and civil society; delivering results which ensures that aid is focused on real and measurable impact on development; and capacity development to build the ability of countries to manage their own future.

These declarations have far-reaching effects on how international development works, including how receiving and donor governments set priorities and how aid agencies, multinational or international non-governmental organizations (NGOs) position to support development. Increasingly aid-sector agencies see their role as one of:

• *influencing policy*;

• *facilitating* the evidence base for effective development programming (that is, sourcing and then applying the best evidence gathered by scientific method to decision-making); and

• *enabling* others through capacity development to implement actions at the scale needed to achieve poverty reduction.

Sharing of technical expertise, advocacy, inter-agency collaboration, human, institutional capacity development, and the provision of knowledge products and information services all come under the domain of these agencies. Fewer agencies directly implement physical interventions or 'projects' on the ground. Locally this responsibility falls upon communities, national NGOs, small-scale entrepreneurs and the private sector.

Box 1.7   The evidence base for water, sanitation and hygiene, and health impact

"Sanitary revolution – the greatest medical advance since 1840"

Source: Ferriman (2007)

Imagine the horror of a jumbo jet crashing every couple of hours with no survivors.

Equivalent numbers of children under the age of 5 perish every day from preventable diarrhoea diseases – 5,000 a day (UNICEF, 2006). The provision of adequate and safe water and sanitation is critical to survival and health. Although child survival and maternal health programmes have made considerable progress in reducing mortality associated with diarrhoeal disease, morbidity is essentially unchanged with the effects felt through infant feeding (inappropriate giving of unclean water to infants under 6 months) and nutrition.

Even beyond childhood unclean drinking water and unimproved sanitation facilities – or total lack of safe excreta disposal – cause health problems throughout families and communities. The most common water and sanitation-related diseases are arsenicosis, cholera, fluorosis, Guinea worm, intestinal worms, schistosomiasis, trachoma and typhoid. With the provision of improved water supply and sanitation and better hygiene practices, it is possible to avoid these serious illnesses. In addition, people living with HIV/AIDS can more readily avoid opportunistic infections associated with the disease if their environment is hygienic, their water clean and sanitation facilities adequate.

Basic water, sanitation and hygiene improvements could eliminate 3 to 4 per cent of the global burden of disease yet many health professionals still do not recognize the value of their promotion, as demonstrated by the over reliance on treatment interventions (oral rehydration therapy (ORT) and zinc) to control rather than prevent diarrhoea episodes.

The major child survival and development focused agencies have made tremendous strides in promoting and acting upon *water, sanitation and hygiene for public health.* Increasingly water, sanitation and hygiene indicators appear in health monitoring schedules – most typically, the promotion of sanitation, handwashing with soap, household water treatment and safe drinking-water storage. This has happened because there is now credible evidence-based support for action.

For example, academic reviews have reported a significant reduction in the risk of diarrhoea as a result of handwashing or handwashing with soap and the provision of clean water and sanitation. WHO (2011) reported that:

"Reductions in diarrhoea incidence have reached 5% for water supply at source, 19% for water quality interventions (results after 12 months), 36% for sanitation interventions, and 47% for hand washing with soap (estimates from pooled analyses)"
https://www.who.int/elena/titles/bbc/wsh_diarrhoea/en/
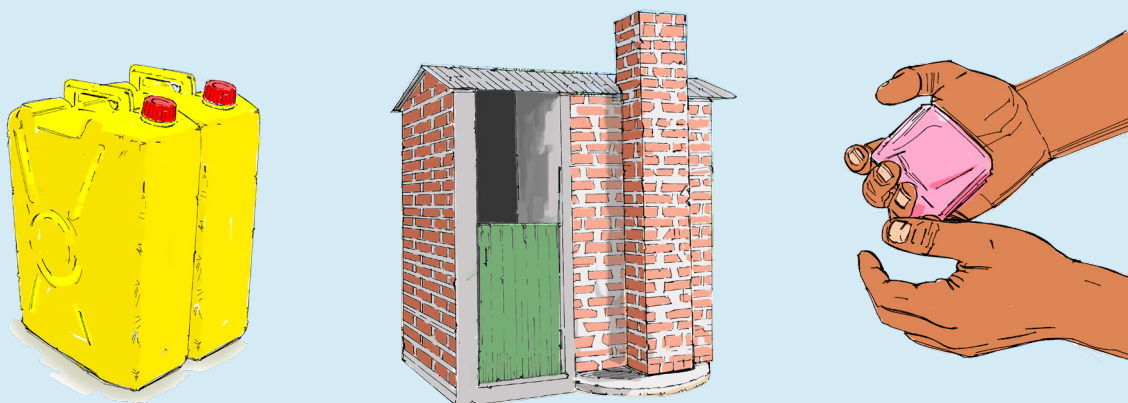
Basic WASH improvements could eliminate 3 to 4 per cent of the global burden of disease

1.5.4   Capacity development

The issue of 'capacity' and its development underpins much of this module. Capacity of an individual is about attitudes, skills, knowledge and experience. It is also about having the right legal and regulatory, policy, institutional and organizational elements in place to minimize the presence of 'bottlenecks' and accelerate progress. The theme of capacity – be it education, training, skill development, workshops, resource enhancement or technical support – commands considerable attention, and resources.

Box 1.8   Human resource capacity in Ghana's water sanitation and hygiene sector

1.4.4.1 Adequate human resources (HR) capacity in the water and sanitation sector plays a pivotal role in improving and sustaining access to potable water and improved sanitation. This study highlighted the human resource (HR) capacity and gaps in Ghana's water, sanitation and hygiene sector. It is based on data collected from five public sector organisations, six non-governmental organisations, 14 private sector institutions and 12 training institutions. Results indicated that the proportion of technical HR was high (75%) in water service delivery, while technical personnel in the sanitation sub-sector was low (2%), leading to low sanitation coverage and ineffective sanitation service delivery. The female proportion ranged from 16 to 44% (average of 22%). There was a shortage of technical personnel in public WASH due to unattractive working conditions, attrition and lack of qualified graduates to fill positions. Average annual graduates' supply from non-technical programmes to WASH was five times more than that from technical ones There was a lack of commitment to implement policies on developing adequate HR capacity in WASH due to weak institutional arrangement. There is the need to develop policies on HR career progression and capacity building programmes as well as gender-sensitive recruitment policies for WASH.

Source: Oduro-Kwarteng et al, 2014

Find out more about the human resource capacity gap in the water and sanitation sector.

1.5.5   Linking population, poverty and development

Population dynamics, including growth rates, age structure, fertility and mortality, migration and more, influence every aspect of human, social and economic development (UNFPA, 2010). Although global population now stands at 7.7 billion, global falls in birth rates, the stabilizing of the world's population in part due to investments in reproductive health, education, women's empowerment and gender equality are all reducing poverty.

However, for some developing countries, population growth remains a significant issue. 2019 figures show the yearly change in population growth in Europe as 0.06 %, 0.73 % in North America, and 0.87 % in Asia. This compares with a rate of 2.49 % in Africa. (https://www.worldometers.info/world-population/#growthrate)

> ## Box 1.9 Annual population growth rate
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> Population in the world as at 2018-2019 is growing at a rate of around 1.07% per year (down from 1.09% in 2018, 1.12% in 2017 and 1.14% in 2016). The current average population increase is estimated at 82 million people per year.
>
> Annual growth rate reached its peak in the late 1960s, when it was at around 2%. The rate of increase has nearly halved since then, and will continue to decline in the coming years. It is estimated to reach 1% by 2023, less than 0.5% by 2052, and 0.25% in 2076 (a yearly addition of 27 million people to a population of 10.7 billion). In 2100, it should be only 0.09%, or an addition of only 10 million people to a total population of 11.2 billion.
>
> World population will therefore continue to grow in the 21st century, but at a much slower rate compared to the recent past. World population has doubled (100% increase) in 40 years from 1959 (3 billion) to 1999 (6 billion). It is now estimated that it will take another nearly 40 years to increase by another 50% to become 9 billion by 2037.
>
> The latest world population projections indicate that world population will reach 10 billion persons in the year 2055 and 11 billion in the year 2088.
>
> *Source: World Population Clock: 7.7 Billion People (2019)*

1.5.6   Urbanization

Urbanization, which is when a country's population changes from primarily rural to urban, is also significant because, almost universally, developing countries are witnessing rapid growth in their cities. Whereas less than 22 per cent of the developing world's population was urban in 1960, in 2018, 55% of the world's population lived in urban areas, a proportion that is expected to increase to 68% by 2050, with almost 90% of this increase taking place in Asia and Africa (UN, 2018). Urbanization inevitably leads to increased demands for infrastructure, water and sanitation, health and education services.

Urbanization poses many challenges for governments, planners and service providers, including high population density, growth in informal settlements and lack of environmental protection. In the water and sanitation sector, for example, these and other factors demand new solutions to the problems of poor drainage and household sanitation and intermittent, unreliable or unsafe water supply, without which diseases like cholera and malaria increase.

1.5.7   Climate change

Climate change has for some time been seen as a significant and emerging threat to public health, resources and livelihoods, which has changed views about the protection of vulnerable communities and populations. In the water and sanitation sector, the issue is proving contentious and far from resolved in terms of governance decisions, policy and strategy. The United Nations Synthesis report on SDG6 (UN, 2018) raises an urgent warning, of climate change impacts experienced through changes in the hydrological cycle, such as overall water availability, water quality and frequency of extreme weather events such as floods and droughts.

Box 1.10   Climate change and water and sanitation

1.4.7.1 "Droughts and floods are not uncommon. However, climate change has been affecting the accessibility to water, creating stresses with either too much or too little water supply. It is, therefore, crucial to understand the risks posed by climate change and its impact on drinking water and sanitation services, their management and its impact on human health. The concerns for water supply include damage to water points due to flooding and loss of water resources due to changing rainfall pattern. Sanitation challenges range from damage or loss of existing infrastructure to the risk of runaway excreta. With many vulnerable communities still collecting water from nearby ponds and rivers, they would find it increasingly difficult to locate a source of water during drought. The most vulnerable populations are often the least resilient to deal with the effects of climate change. Moreover, due to the interconnected nature of water, sanitation and hygiene (WASH) services with other sectors, water scarcity and poor water quality increases the risk of diarrhea, which kills approximately 2.2 million people every year, trachoma an eye infection that can lead to blindness) and many other illnesses".

Source: The Undeniable Link: Climate Change and its Impact on WASH*., 2018.*
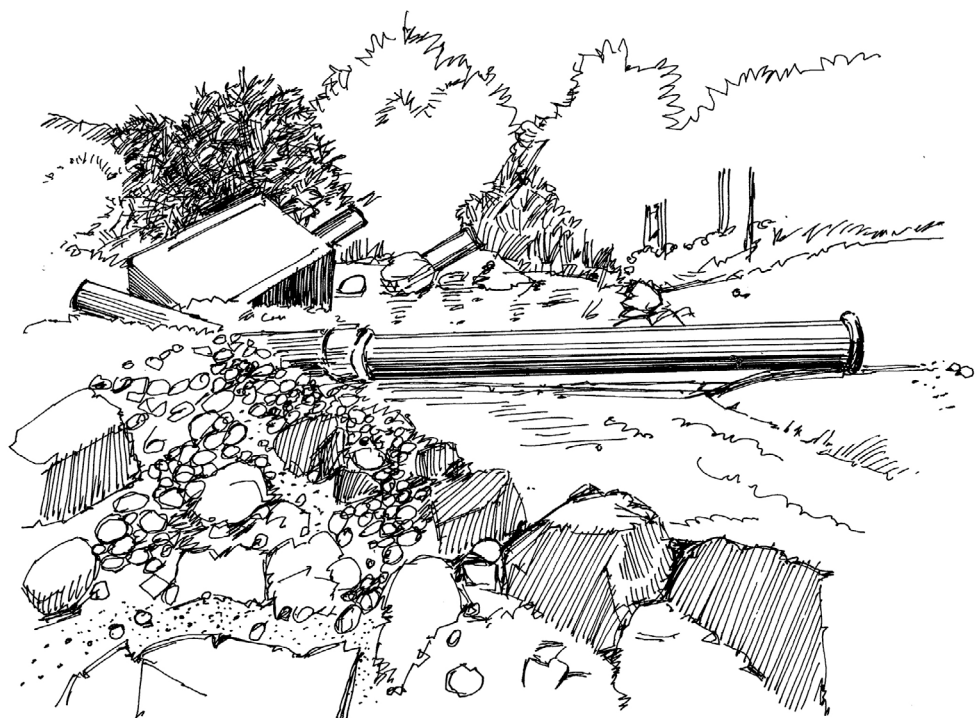
Concerns for water supply include damage to water points due to flooding

1.5.8   Making good change happen and ensuring sustainability

The reality of making good change happen is complicated. Bringing about good change in health and social and economic well-being does not happen quickly, especially in poor and marginalized communities. Development is not about a series of discrete activities implemented in communities by outside agencies, but a multi-dimensional process. This is about fostering situations whereby people can take charge of their lives, make their own decisions and adopt responsibility for the consequences. The process of making development happen is about opening access to choice. This involves the participation of people in a mutual learning experience between themselves, their local resources, external change agents and outside resources. In order to release people to participate in development processes the dimensions of poverty, physical weakness, isolation, vulnerability and powerlessness must be addressed. Robert Chambers (1983, 1997, 2017) has been a leading advocate of putting the poor, destitute and marginalised at the centre when a development problem is identified, policy formulated and projects implemented.

Box 1.11   Rural development

Considerable research into rural development, particularly that of sustainable livelihood and agriculture, has been conducted by Robert Chambers and his colleagues through the Institute of Development Studies (IDS), the University of Sussex (UK).

In his seminal work, *Rural Development - Putting the Last First,* Chambers describes rural development as 'a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need'. He goes on to state that development 'involves helping the poorest among those who seek a livelihood in the rural areas to **demand** and **control** more of the benefits of development.'

Source: Chambers (1983), pp. 144-7.

Sustainability is a central aspiration of development. Interventions alone – be they a water point or latrine – are not sustainable because they are *time bound*. However, the services put in place to maintain, replace and upgrade such interventions over time should be sustainable.

Sustainable development concerns environmental sustainability – that is, meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Concern for sustainable development implies a long-term perspective to policies and the impact of interventions.

Activity: Write down five needs that you have in your life. Then think about any conflicts between these needs. For example, if you listed clean air to breathe but also included travel around the world, these two needs conflict because aeroplanes contribute to climate change.

Think about the needs a developing country has currently and the future impact. For example, what happens when farmers need to increase agricultural yield using irrigation from ground water sources results in the depletion of safe drinking water for the entire country?

Think about other examples where immediate development needs can jeopardize future development. How do we decide whose needs should be met first?

Adapted from: World Bank (2001).

Box 1.12   Making water and sanitation 'good change' happen: the role of engineers and other professionals

and sanitation provision is in part about public health infrastructure solutions designed by civil engine Water ers. Civil engineering is about the "the art of directing the great sources of power in nature for the use and convenience of man" (Thomas Tredgold, 1827). However, getting improvements right requires more than engineers alone. It takes the coming together of numerous disciplines, including engineers, social scientists, educationalists, community development specialists, environmental health workers, economists and technicians – and foremost the people who will use the services, facilities and practices. If engineering projects are going to address society's needs, engineers must have some understanding of society. Normally sociologists or social scientists have this task of analysing and assessing the community's needs, but they are not engineers. To maximize the benefits of the engineering project, sociologists will have to understand what engineers are able to offer a community; and engineers equally need to know something about the community. These two professions, at least, need to work together and with the community.

In a word: communication between disciplines
Engineers use specific terms to describe ideas – consider the engineering senses of 'stress and strain'. These have clear meaning to engineers, but a non-engineer may not think of stress as force per unit area.

Sociologists have their own set of technical terms. One term is gender. This does not mean somebody's sex (which is a biological term), but society's responses to somebody's sex. Thus the fact that women in one community do not usually ride bicycles, but men do, is not determined by the physical differences between the groups, but what society expects of each group. In a neighbouring society women cycle, as the expectation of the community is different.

To work together, different professions have to recognize the strength of the other, and take into account common ground, and above all communication.

1.6   **People and water and sanitation**

What people want from a water supply, sanitation facility and hygiene practice may differ from one to the next. For example, cultural norms, received wisdom, community structures and locale all influence the belief systems that people hold about use and ownership of their resources, and how others may or may not use it.

Further reading: WELL, 1998. *DFID Guidance Manual on Water Supply and Sanitation Programmes.* Chapter 2; section 2.2.2: Custom and culture p.42

Box 1.13   Locating a water point

Social and cultural factors are important considerations in locating communal water points in order to ensure that the facilities are fully used by all members of the community and that users have no objections to their location. There should therefore be an opportunity for all members of the community to contribute to deciding on the location of suitable water points. WSSCC (2006) highlight the effect and benefits of placing women at the core of planning, implementation and operations of WASH programmes. The experiences also show how women's empowerment and the improvement of water supply, sanitation facilities and hygiene practice are inextricably linked. One cannot be successfully achieved without the other.

The aim of the Urban Water Point project in Malawi, funded by the United Nations Community Development Fund (UNCDF), was to construct a total of 600 water points to serve for 4000 households in 50 urban centres. When this project was first implemented, decisions about where these should be placed were largely made by the men of the community, sidelining the women who were actually the main collectors and users of water. This resulted in the pumps falling into disrepair as men had no real interest in ensuring they were properly maintained. Fifteen years into

the project the situation has changed and women now make up the majority of the committee members and take an active role in planning and management processes. For example, Upile Ajibu is a member of the Village Development Committee in Mangochi district, where membership of the water committee is largely constituted of women. This is part of an initiative to ensure at least 30% membership by women on all committees (Tenthani, 2002).

Source: WSSCC (2006)

1.6.1   Thinking about who is in society

One of the types of analysis social scientists carry out is looking at the different groups in society (e.g. rich, poor, men, women, race, class, caste), though considering people as individuals is as valid as that of the various groups that they may belong to. Such groups are not homogeneous. An engineering parallel would be geology, where classification puts rocks into broad groups but each piece has its own individual strengths, composition and characteristics. The terms 'sedimentary' or 'gneiss' describe a rock in general terms, but the engineer will still carry out a site survey before starting design.

Learning about groups necessitates an understanding of group interaction. The development of water and sanitation requires insight into the power relations within a community, especially where these relationships exclude people from decision-making and prevent them voicing their opinion.

Different groups in society will use infrastructure in different ways. In some societies, men may use water for watering livestock while women use it for irrigating vegetable crops. The rich may travel on roads for long distances, with few stops on their journey, while the poor use the same road for more frequent, but shorter journeys, walking and stopping to meet neighbours.

However, it is incorrect to assume that people living in the same neighbourhood or village constitute a single community – especially in urban areas. Divisions include caste, ethnicity, or political factionalism, all of which can make communal planning and management problematic. The Venn diagrams in Figure 1.1 show a simple model of society. This could be for any society, with the proportion of rich and poor changing.

Box 1.14   Developing a classification structure

The two Venn diagrams below are of society and geological rock type; they show the similar processes that professionals use to put some order to the world in which we live. As a subject is investigated, patterns develop that allow us to describe complex systems.

A Venn diagram is a mathematical tool that shows how categories relate to each other. Social scientists use a very similar technique in discussions with communities – but they call them Chapatti diagrams.
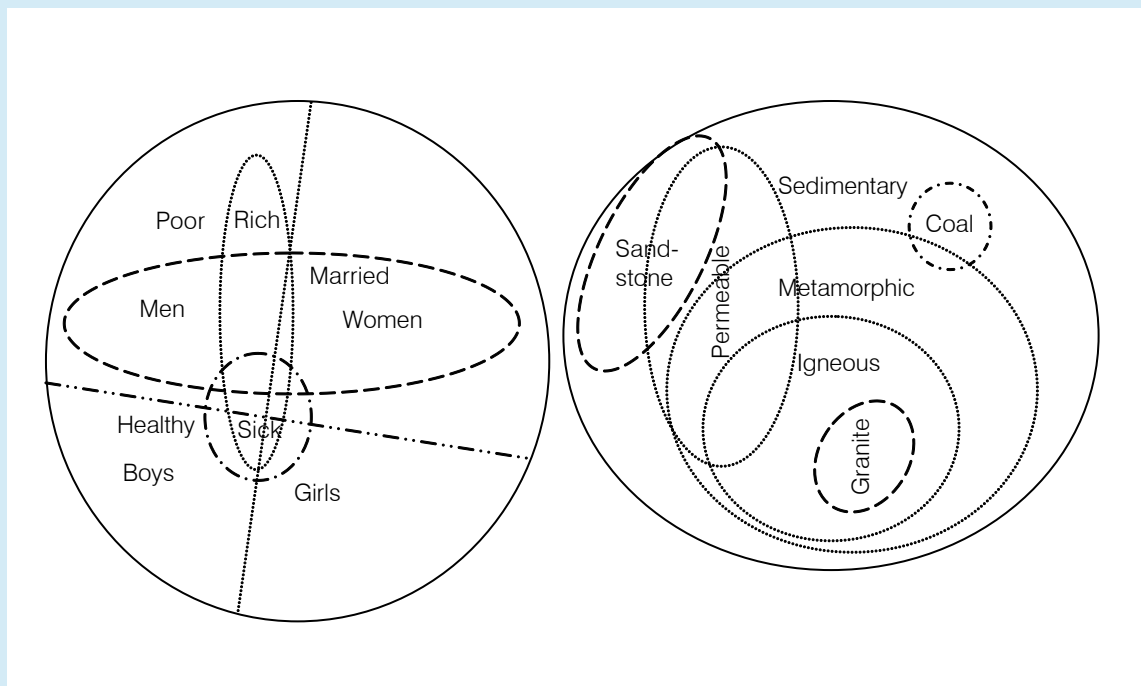

Figure 1.1   Venn diagrams

Some may be mutually exclusive (male or female – cannot be both); others may be subsets of a larger category (boys are a subset of male); yet more may overlap (the poor include men and women).

Different structures are required for different purposes, so a hydrologist needs to know if a rock is permeable or not, while someone looking for coal is more interested if the rock is sedimentary.

Source: WEDC (2007)

Box 1.15   Access to decision-making

Women have a key role as custodians of water sources and in the management of domestic hygiene, and often know a great deal about local water resources and locally appropriate solutions (for example, where best to site public taps). The success of new infrastructure and services therefore depends to a significant degree on the active involvement of women in planning and decision-making. Despite this, women remain marginalized in water and sanitation projects.
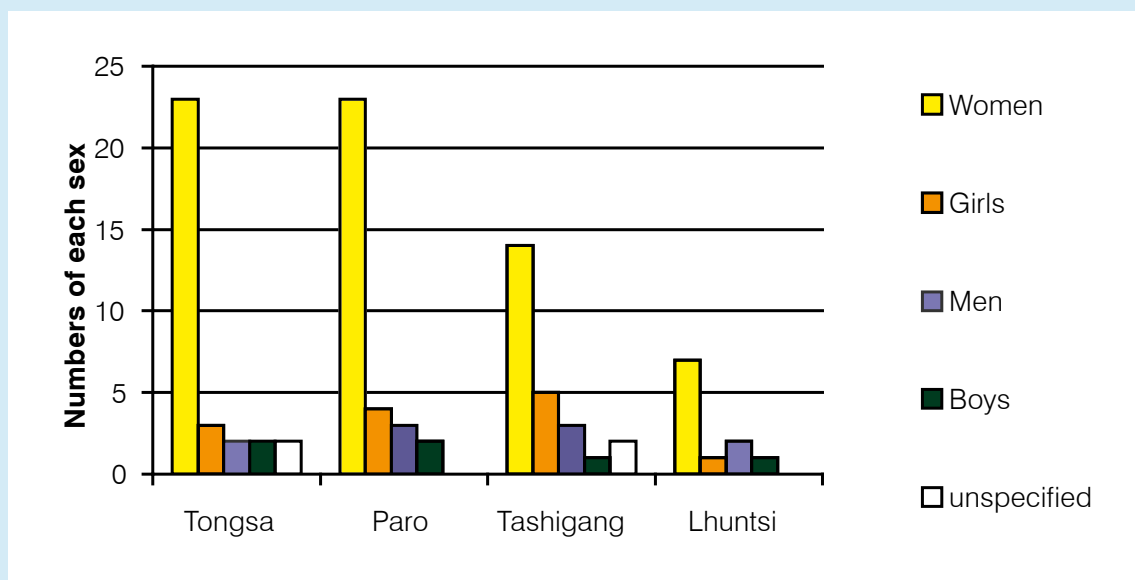

Figure 1.2   Women, the main water collectors – Bhutan

Source: Fry, quoted in WEDC (2007)

A common mechanism for addressing this issue in water and sanitation projects has been to co-opt women as unpaid community workers and/or hygiene educators. Though well intentioned, this can sometimes over-burden women with unpaid work and cancel out the timesaving benefits provided by new, accessible water points. It is more important to involve women directly in decision-making from the outset, and for implementing agencies to employ women in positions of influence.

The technical gains in efficiency by involving men and women in projects can only work if they can contribute effectively. It grossly undermines a female pump caretaker if she is unable to take part in making decisions about the pump. People who are not used to making decisions require capacity building and encouragement, as well work to enhance their status and views within the wider community.

Activity: Describe who has access to decision-making in your immediate family, include your beliefs about who has the power and authority.

1.7   Summary

This unit focuses on poverty and development. Consideration is given to the needs and rights of people with special mention of how those most vulnerable in society have access to the development process. Examples are derived from the water and sanitation sector.

There is an explanation of the political, economic and social aspects of development in relation to international development and an introduction to the role of national governments.

Exploration of access, needs and rights to water and sanitation begins with a discussion of who is involved and how research into these is critical if the services supporting infrastructure development are to be sustainable.

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