FINAL EXAMINATION

1-what is sanitation and hygiene?

Sanitation and [hygiene](https://www.cdc.gov/healthywater/hygiene/index.html) are critical to health, survival, and development. Many countries are challenged in providing adequate sanitation for their entire populations, leaving people at risk for water, sanitation, and hygiene (WASH)-related diseases. Throughout the world, an estimated 2.4 billion people lack basic sanitation (more than 32% of the world’s population) [1](https://www.cdc.gov/healthywater/global/sanitation/index.html#one), [2](https://www.cdc.gov/healthywater/global/sanitation/index.html#two). Basic sanitation is described as having access to facilities for the safe disposal of human waste (feces and urine), as well as having the ability to maintain hygienic conditions, through services such as garbage collection, industrial/hazardous waste management, and wastewater treatment and disposal.

2-Why are water, sanitation and hygiene important

Water, sanitation and hygiene (WASH) are crucial but often underplayed parts of the prevention and control of a number of neglected tropical diseases (NTDs).

Access to safe water and adequate sanitation, together with good hygiene practices, can reduce the transmission of some NTDs, for example trachoma and intestinal worms (page 29). Trachoma is transmitted by flies, fomites (e.g. skin, hair, clothing, or bedding) and direct contact. Preventing transmission of trachoma can be achieved through access to clean water, appropriate hygiene practices that promote face washing, and access to proper sanitation for the disposal of human waste. Intestinal worms, which affect nearly 900 million people worldwide, is most prevalent in communities where people have inadequate access to toilets and/or hand washing facilities. Worms are transmitted through faecal-oral contact or enter through the skin of the feet in areas of open defecation. Access to safe water and adequate sanitation will help communities affected by both trachoma and soil-transmitted helminthes (STH) to escape from the perpetual cycle of infection and reinfection.

Some global[1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3756645/#B1) and disease specific[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3756645/#B2) strategies have integrated WASH interventions into their programming guidelines. In the case of trachoma, for example, the inclusion of the T’ (face washing) and ‘E’ (environmental improvement) in the SAFE strategy formally acknowledges the strategic importance of incorporating WASH interventions for disease elimination.

The acknowledgment of the importance of WASH for comprehensive NTD control has not always translated into effective incorporation of WASH interventions in NTD control programmers’. Reasons for insufficient integration include the lack of awareness and information sharing between the WASH and NTD sectors, and a short-term view of disease control which fails to recognize, and invest in, the necessary long-term comprehensive activities required for sustainable WASH implementation.

People involved in WASH and NTD programmes should work closely together, in a coordinated manner. This might involve forming local and global partnerships, sharing information and research about disease impact, combining efforts when advocating for resources and political commitment to action, and planning sustainable programmes that meet goals for both the elimination of NTDs and the provision of adequate water, sanitation, and hygiene.

Unless WASH issues are adequately addressed, neglected tropical diseases will not be eliminated in the long term. Control may be achieved by the year 2020, but to prevent continued transmission and re-infection, sustainable WASH interventions are a necessity.

3-What is open defecation?

Open defecation refers to the practise of defecating in fields, forests, bushes, bodies of water or other open spaces. Defecating in the open is an affront to dignity and risk to children’s nutrition and to community health. The elimination of open defecation is recognized as a top priority for improving health, nutrition and productivity of developing country populations and is explicitly mentioned in SDG target 6.2.

Open defecation rates have been decreasing steadily. From 2000-2015, the number of people practicing open defecation declined from 1,229 million to 892 million, an average decrease of 22 million people per year. All SDG regions saw a drop in the number of people practicing open defecation, except for sub-Saharan Africa, where high population growth led to an increase in open defecation from 204 to 220 million, and in Oceania), where open defecation increased from 1 to 1.3 million. Nine out of ten people practising open defecation now live in just three regions.Ending open defecation by 2030 will require a substantial acceleration in current rates of progress, particularly in Central and Southern Asia, Eastern and Southeast Asia and Sub-Saharan Africa.

4-What is sanitation marketing?

Sanitation marketing is an emerging field that applies social and commercial marketing approaches to scale up the supply and demand for improved sanitation facilities. While formative research is the foundation of any sanitation marketing program, essential to understanding what products the target population desires and what price they’re willing to pay for them, components such as the marketing mix, communications campaign, and implementation are also critical to the design and implementation of effective program.

5-what are some of the biggest challenges you face in teaching hygiene and sanitation?

**Challenge 1:**

**The Scale of the Need – Water, Sanitation and Hygiene to Half the World’s Population**

The sheer scale of the issue is a challenge in itself. It will be no small feat for half the world’s population to gain sustained access to safe water, basic sanitation and good hygiene practices (and to do so in 15 years).

Even critical institutions like health care facilities and schools lack water and sanitation. A study in 54 low- and middle-income countries found that 38% of health care facilities lack access to an improved water source, 19% lack sanitation and 35% do not have water and soap for hand washing (World Health Organization & United Nations’ Children’s Fund, 2015).

The scale of the need will increase, particularly as populations grow, available freshwater is used and contaminated at increasing rates, and the climate changes.

To date, solutions have tended toward infrastructure, implemented by a few organizations. This approach alone has not been successful in reaching everyone, and there aren’t enough local people with the required knowledge and skills to deliver universal, safely-managed WASH by 2030. The current formal systems for training, such as university and vocational programs, are important but will not produce enough WASH practitioners to meet the demand by 2030.

*No single solution will result in universal access by 2030. A range of adaptable and scalable solutions are needed to overcome geography, gender and socioeconomic barriers.*

*Solutions will require many organizations working cohesively to provide smaller-scale, decentralized WASH services, especially at the household level. Those many organizations need support and increased capacity in order to reach unsaved populations with sustained WASH services.*

**Challenge 2:**

**The Variability of the Problem and Therefore the Solutions**

Water and sanitation issues are highly variable from location to location, from season to season and community to community; and people who lack WASH are often living in the most challenging geography and climate.

One-size-fits-all solutions have not worked and cannot be the strategy to scale-up reach. For example, water quality, rainfall and hydrology are site-specific and have important implications on technology selection and sitting. Incorrect choices can exacerbate an already poor condition (e.g. digging a simple pit latrine that further contaminates groundwater).

*Customized water and sanitation services are needed that capitalize on existing local knowledge of conditions; and local people need to have the capability to make informed choices and be able to respond effectively to changing conditions.*

**Challenge 3:**

**Sustaining Water, Sanitation and Hygiene Services for the Long-Term**

Focus over the past decades has been on water and sanitation infrastructure. This approach is costly in up-front capital, operations and ongoing maintenance. It requires a highly educated, skilled workforce and often doesn’t reach the most marginalized communities, nor address specific contextual challenges.

Sustained operation and maintenance of this infrastructure has been challenging. For example, 30% of water hand-pumps in Africa are not working (RWSN, 2009). The failure of community water and sanitation systems is often a failure of operation and maintenance, rather than a failure of the basic technology.

*Addressing this failure requires learning from the successes of that infrastructure that have been used and maintained for many years. At its core, we need to (i) increase skills and knowledge of people to use and maintain the technology and/or service and (ii) select water and sanitation products and services – including household-level solutions – which are affordable to implement, operate and maintain and appropriate to the context.*

**Challenge 4:**

**Reaching People Most in Need**

Overwhelmingly, it is the poorest who lack better water and sanitation. Virtually the entire poorest 25% of the world’s population does not have piped water and the inequality in coverage between rich and poor is even greater for sanitation than for water (JMP, 2014).

*Addressing this challenge requires both supporting those who serve the people most in need and providing water and sanitation solutions that marginalized households can afford over the long-term.*

**Challenge 5:**

**Integrating Water, Sanitation and Hygiene (WASH) for Health**

Many of the water and sanitation approaches employed to date in international development focus on providing either improved water or improved sanitation or improved hygiene. Global monitoring programs, such as the Joint Monitoring Program of UNICEF and the WHO count access to each of the three separately. Alternatively, organizations have the vision to implement all three and struggle to do so when faced with the realities on the ground.

All three – water, sanitation and hygiene – are intertwined and all three are needed for sustained impact. Water, sanitation and hygiene are fundamental for healthy homes and broader systemic change.

The question is then how to implement so people have water and sanitation and hygiene for generations? Start with interventions that will be (i) the easiest for households to adopt immediately and for the long-term, and (ii) provide an entry-point for motivating action on other WASH components. Furthermore, longer term commitments are needed that work towards households having all three components: water, sanitation and hygiene.

**In Conclusion:**

**Overcoming Challenges to Reach Everyone by 2030**

Addressing these five challenges will go a long way towards achieving universal access to safe water and sanitation by 2030. We will reach that goal through many organizations implementing many projects of varying scale, technology and approach.

There are thousands of existing local organizations and government agencies that are best-suited to reach their own populations with safe water and basic sanitation. In the weeks, months and years ahead, alongside these organizations, we need to build capacity, create and sustain demand, provide products and services, monitor for improvement and provide appropriate financing.

In this way, we can collectively achieve sustained services for generations to come.

**References:**

JMP [Joint Monitoring Programmed] (2014). *Progress on Drinking Water and Sanitation 2014 Update*. WHO Press? Geneva.

6-what is sustainable sanitation?

Someone asked me this on the ‘phone the other day, so I set about seeing what other people and organizations thought about this.  
  
The 2003 WHO-IRC report [Linking technology choice with operation and maintenance in the context of community water supply and sanitation](http://www.who.int/water_sanitation_health/hygiene/om/wsh9241562153/en/index.html) defines sustainable water and sanitation as follows:   
  
*“A service is* sustainable *when:*  
*■ It functions properly and is used.  
■ It provides the services for which it was planned, including: delivering the required quantity and quality of water; providing easy access to the service; providing service continuity and reliability; providing health and economic benefits; and in the case of sanitation, providing adequate sanitation access.  
■ It functions over a prolonged period of time, according to the designed life-cycle of the equipment.  
■ the management of the service involves the community (or the community itself manages the system); adopts a perspective that is sensitive to gender issues; establishes partnerships with local authorities; and involves the private sector as required.  
■ Its operation, maintenance, rehabilitation, replacement and administrative costs are covered at local level through user fees, or through alternative sustainable financial mechanisms.  
■ It can be operated and maintained at the local level with limited, but feasible, external support (e.g. technical assistance, training and monitoring).  
■ It has no harmful effects on the environment.”*  
  
The South African Department of Water Affairs and Forestry, in its May 2008 Position Paper [Appropriate Technologies in the Water Sector in South Africa](http://www.dwaf.gov.za/Masibambane/documents/ATStrategyMay08.pdf) (draft, version 4), quotes this section of the WHO-IRC report and adds:  
  
*“Sustainability of a service is achieved when the community wants and accepts the level of service provided, is able to pay for it and the skills are available locally to service the system. It makes sound economic sense if the scheme can be managed locally, as it not only reduces the cost of running the scheme but also ensures that money is retained in the local area. In the case of an advanced technology, however, this may not be possible if operator skills are not available.”*  
  
It goes on to say:  
  
*“A sustainable sanitation service is generally understood to be a system that is affordable to the community and the local government over a long term period without having adverse effects on the environment. Thus:   
pollution is reduced to a minimum and water resources are available for future generations; and   
where affordability refers to the community and the local government’s ability to operate, maintain, extend and replace the infrastructure to obtain a reliable service.”*  
  
UN Water’s “IYS Flagship Publication” [Tackling a Global Crisis: International Year of Sanitation 2008](http://esa.un.org/iys/docs/IYS_flagship_web_small.pdf) doesn’t mention “sustainability” or “sustainable” at all. [The 2008 WHO-UNICEF JMP report](http://www.who.int/water_sanitation_health/monitoring/jmp2008/en/index.html) mentions “sustainable” a few times (e.g., “Millennium Development Goal 7 calls on countries to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.”), but doesn’t attempt to define it.   
  
The UN Millennium Task Force on Water & Sanitation’s 2005 report [Health, dignity, and development: what will it take?](http://www.unmillenniumproject.org/reports/tf_watersanitation.htm) Has this to say:   
  
*“… sustainable access must be viewed from social, economic, and environmental perspectives. Access includes a physical dimension—for example, access to drinking water requires the existence of infrastructure in good working order—but also embraces a concept of use. Access to sanitation, for example, cannot be measured simply by whether a toilet is installed, but must also determine whether that toilet is working and used for safe disposal of excreta with improved hygienic practices. Otherwise, the contribution of the toilet itself to human health will be negligible or even negative. There are likewise two aspects of sustainability, a service aspect and an environmental aspect. In terms of service, sustainable access refers primarily to a type of service that is secure, reliable, and available for use on demand by users on a long-term basis. This is possible when there are credible arrangements to ensure a regular and reliable flow of adequate performance-determining resources—human, financial, institutional, and technical know-how, among others—needed to ensure proper functioning and satisfactory operation and maintenance of service infrastructure. In terms of environmental impact, sustainable access refers to the effects on resources within or outside the service area of the technology and the processes required for adequate access. Thus, such technology and processes should not result in environmental damage or other negative consequences within or outside the service areas, such as exposing people to health risks or creating pollution or degradation of the local living environment or of downstream water resources. In a broader sense, the service should also be one that “meets the needs of the present [generation] without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987); it should be one that does not compromise the goals of sustainable development, namely, economic development, social equity and justice, and environmental protection..”*  
  
We know sustainable sanitation is not just Eosin (see [blog of 21 May](http://duncanmarasanitation.blogspot.com/2008/05/sanitation-challenge.html)). So how about this for a definition?  
  
**Sustainable hygienic sanitation is a sanitation system that is affordable; socially, technically, physically and institutionally feasible; able to be used easily, properly and on demand, and able to be maintained easily, regularly and at low cost, by its users, including women and children, in the long term; provides a hand-washing facility (or has one nearby); and has no adverse effects on the environment**

**7-what are the steps for planning and implementing a successful wash behavior change campaign**

**his chapter outlines the basic steps in planning and implementing**

**CBC, with special reference to the World Bank project design, ap- praisal, and supervision steps. The planning and execution of these steps will be much more effective if a communication/ behavior-change specialist comprises part of the project identification and project prepa- ration teams.**

**The process begins with a situational analysis and review of existing information to learn what key information is already available and what new research is required. Formative research on consumers’, health workers’, and/or policy-makers’ perceptions and practices is intended to gain insights into the reasons people have for particular behaviors related to the nutrition or health problems the program will address. Because the formative research part of the CBC process informs the design of overall project activities (including communication activities), it should ideally be conducted during the project preparation steps to ensure that key activi- ties necessary for achieving the goals of the project are foreseen.**

**Following formative research, a CBC strategy is formulated. It is desirable that by appraisal, initial decisions have been made on the key behaviors, target audiences and a draft message strategy for each, anticipated media, and plans for the development, pretesting, and production of materials.**

**The first steps of project execution include stakeholder meetings, finaliz- ing the message strategy, completing and producing all materials and training staff in communication and other needed skills, and conducting a baseline. Then the program is launched, then monitored, and after two or more years, evaluated to assess impact, and guide decisions on con- tinuing or expanding activities.**

**The table below provides an overlay of the steps in CBC planning, imple- mentation, and evaluation, with the World Bank planning phases. Al- though the steps are numbered so that they can be referred to in the text below, projects, once underway, may not follow each step in the exact**

**8-What are the challenges faced by wash projects in Africa?**

**Africa and the challenge of achieving access to clean water and sanitation**

[Mr. Bai-Mass Taal](http://africapolicyreview.com/author/mr_bai-mass_taal/) [ANALYSIS](http://africapolicyreview.com/category/analysis/) [Infrastructure & Energy](http://africapolicyreview.com/category/analysis/infrastructure-energy/)

Africa presently reels under serious water challenges. Water-based challenges such as widespread shortage, pollution, degradation, flooding and poor water management in cities and rural centres are problems which dot the African landscape today. This state of affairs is further compounded as the world gets warmer, the rains pour heavier and oceans rise, making rural inhabitants migrate to cities in their millions. African cities are under dual pressure from uncontrolled urbanisation and flooding, worsened by climate-induced water stress.

From Lagos in the west to Dar es Salaam in the east, from Cairo in the north to Cape Town in the south, slum dwellers, the middle class and the elite alike are engaged in the water race. More than half of global population growth between now and 2050 is expected to occur in Africa. Of the additional 2.4 billion people projected to be added to the global population between 2015 and 2050, 1.3 billion will be added in Africa and the difficulties African cities currently face in providing sustainable water services will be further exacerbated.  
It is also estimated that Africa loses 5% of its annual GDP due to poor access to clean drinking water and sanitation; 5% to 25% to droughts and floods in affected countries; and 2% to regular power outages. In addition to the cost of insufficient water security, the cost of climate change in Africa is estimated to be 1.5% to 3% of GDP by 2030, and is expected to reach 10% by 2100 under a business-as-usual scenario.

The above extant challenges have propelled African leaders into taking many steps, including the adoption of a Common African Position (CAP) with origins soaked in Agenda 2063, an African Union-driven agenda aimed at creating the Africa which Africans want to see by the year 2063. The Common African Position also fed into the UN Post-2015 development processes, which culminated in the historic adoption of the 2030 Agenda by 193 UN member states. The New Global Development Framework, anchored around 17 Sustainable Development Goals (SDGs) with a total of 169 targets covering economic, social development, water security and environmental protection, comes with the overarching goal of eradicating global poverty in all its forms by 2030.

Nine months down the line, the SDGs continue to interface with growing challenges in the interlinked economic, social and environmental dimensions of sustainable development. Approximately 340 million people in sub-Saharan Africa still do not have access to potable water, and a further 508 million do not have access to improved sanitation. The African Development Bank estimates that Africa needs US$11 billion per year to achieve the SDG6 of ensuring that everyone has access to potable water and sanitation. Added to Africa’s apparent lack of financial resources to meet this goal is a gaping lack of capacity and weak institutions, non-implementation of commitments and weak policies.

The water challenge in Africa calls for newer and innovative ways of ensuring water security for all Africans. The equitable and sustainable management of all the continent’s water resources remains a credible key to achieving a prosperous Africa, as there is no doubt that Africa is blessed with a blue economy.

The African Ministers’ Council on Water (AMCOW) recognizes the fact that, without regional and international solidarity laced with a shared vision, strong cooperation between different countries and strong partnerships, the noble objective of eradicating poverty and ensuring access to water and sanitation by 2030 will remain a mirage. Hence AMCOW, in collaboration with the African Union Commission (AUC), the African Development Bank (AfDB) and other development partners, is providing the sectoral leadership needed to tackle the water challenge in Africa with a cocktail of innovative solutions and strategies.

One of these is the adoption and implementation of the N’gor Declaration on Water and Sanitation by Africa’s Water Ministers. The N’gor Declaration, Africa’s implementation platform for SDG6, seeks to commit African countries to updating national water and sanitation management policies, regulatory frameworks and programmes, as well as preparing national strategies and action plans for achieving SDG6; adopting innovative mechanisms to manage demand and improve efficiency in the production, supply and utilisation of water in all sectors; prioritizing the implementation of programmes that seek to extend access to water supply and sanitation services, and increase the productivity of water used in various sectors, while working to close the gap in Africa’s infrastructure deficit, especially by prioritizing the implementation of water projects under the Programme for Infrastructure Development in Africa (PIDA). Other focal emphases of the N’gor Declaration include ensuring that appropriate national spending targets for quality investments in water and sanitation are consistent with national sustainable development strategies; and further prioritising the development of institutional and human resources capacity.

Also, the Rural Water and Sanitation Initiative and African Water Facility, both AMCOW initiatives hosted by the AfDB, have contributed immensely in building the momentum towards achieving the Africa Water Vision 2025. This sees the effective and efficient management of water resources as a precursor to the provision of adequate and equitable access to safe water and sanitation, thereby making a critical contribution to Africa’s progress towards sustainable growth and development.

It is AMCOW’s belief that the current funding landscape for the water sector is grossly insufficient to meet the financial deficit and, most importantly, achieve SDG6. This calls for innovative approaches for financing water and sanitation infrastructure, as a huge challenge lies in the mobilisation of financial resources to achieve the SDG6 target of ensuring that everyone has access to potable water and sanitation.

In order to meet the SDG6 targets, AMCOW consistently advocates the implementation of new and innovative financing mechanisms by governments, the private sector and development organisations. These mechanisms, combined with and supported by Official Development Assistance (ODA), must also take into account the issue of redressing inequalities in access to water and sanitation.

Another strategy identified and advocated by AMCOW as a key priority in moving the innovative financing agenda forward is the development of sector financing plans. In the design and implementation of financing mechanisms, Africa requires the support of development partners in identifying available guaranteed funds, and exploring commercial and development banks’ opportunities to leverage additional resources for ongoing programmes in the region.

The most recent WHO Global Analysis and Assessment of Sanitation and Water (GLAAS) report shows that financing for the water, sanitation and hygiene (WASH) sector is still a significant barrier to increasing access to water and sanitation. To address this gap, there is need for new global financing mechanisms which will prioritise investments and funding for water and sanitation-related projects across the world. This is where the growing call for the establishment of a Global Blue Fund becomes imperative. Other equally important opportunities for innovative financing of water and sanitation identified by AMCOW for application in Africa are; the establishment of water banks, based on domestic resource mobilization (such as pension funds and insurance companies) using repayable finance to bridge the financing gap; National Water/WASH Financing Facility, a mechanism for domestic resource mobilization for the WASH sector with characteristics of pooled investment projects, good governance framework and opportunity for blending private capital with public funding to promote pro-poor policies; blended funding, commercial financing and private equity; and special taxes such as sanitation tax and the use of 1% of taxes for WASH.

Achieving universal access to water and sanitation calls for intensive capacity building. Development partners will have to support Africa’s quest to develop its capacities for the implementation of SDG6, especially in the development of bankable water and sanitation projects. Governments must, however, lead the efforts while external agencies work in a way that supports and builds government capacity to lead and to succeed. All stakeholders must therefore commit to work collectively and adhere to key behaviours that strengthen countries’ capabilities to deliver permanent and accountable access to water and sanitation services.

With these strategies, AMCOW is convinced that Africa can achieve lasting universal access to clean water and sanitation by 2030.  
As Africa embarks on implementing this transformative agenda, it is hoped that the international community, working with governments, the private sector and civil society, will mobilize to create a water-secure future for all.

[Water and Sanitation](http://africapolicyreview.com/tag/water-and-sanitation/)

9-You have visited one of schools in your locality what part of its surroundings can you see that satisfy the criteria for disease prevention? List the parts of the building and its surroundings and state why they are important.

1-latrine

2-clean surrounding

3-Hand washing facility

4-Play ground

Latrine is toilet or even simpler facility which is use as toilet within a sanitation

10-you have asked the local county government to provide a license for your new hotel in town the inspector asked you to assist him to describe the basic hygiene for your business before likening kindly describe

**Food and drink establishments** provide food and drink services to a relatively large number of users in the form of breakfast, lunch, dinner or beverages. Formal food and drink establishments are authorised to practise this service after being licensed by the local authorities. There also exist a number of informal food and drink establishments that provide a service without much interference from the local government. Food and drink establishments have a responsibility to provide safe food and drink to the consumers. The consumers have the right to demand safe food. If food is not prepared and handled in hygienic conditions, it spreads foodborne disease that could affect a large number of people at a time.

The local government (*kebele*) takes actions to ensure the hygienic functioning of these establishments on behalf of the public. The Ethiopian Regional and National hygiene and environmental health regulations can be exercised in the *kebele* by the presence of an appropriate expert who is authorised to enforce them. As a Health Extension Practitioner you can make a link with this authority through regular reporting to ensure that the necessary actions are taken to maintain safe practice.

**11.2  Categories of food and drink establishments**

There are several types of food and drink establishment in rural areas. Some may provide only food; others provide food and drinks such as soft drinks, beer and other alcoholic drinks; some provide only snacks and hot drinks. We describe below those establishments that are likely to be found at *kebele* level.

* *Restaurants* are food establishments that provide lunch and dinner (Figure 11.1) with accompanying drinks.



Figure 11.1  A typical lunch served in an Ethiopian restaurant. (Photo: Basiro Davey)

* *Cafés* provide hot drinks and snacks. Hot drinks include tea, coffee, milk, or a blend of milk and coffee (*macchiato*). The café must have water boiling equipment for coffee and tea preparation. Cakes and doughnuts (such as *bombolino*, *chornake* and *sambusa*) are served as snacks.
* *Tea houses* provide tea and snacks. Snacks are usually plain bread, *sambusa* and *bombolino*. Tea is served after mixing with boiled water in a kettle.
* *Tej bet* is a drink establishment that offers a local light alcoholic beverage made of fermented honey in water, called *tej*, which is served in large measures.
* *Tela bet* is an establishment that provides a local light alcoholic drink called *tela*. They are common in rural areas of Ethiopia.
* *Areki bet* is a drink establishment that provides a local drink containing more alcohol than *tela* or *tej*. It is consumed in smaller quantities.
* A *grocery* is an establishment that provides packed food and drink items. Groceries may also provide hot dishes.
* A *butcher’s shop* is a food establishment that offers meat for sale (Figure 11.2).



Figure 11.2  A butcher’s shop in Addis Ababa. (Photo: Basiro Davey)

* A *bakery* is a food establishment that offers plain bread for sale.
* A *hotel* is a food establishment that offers food, drinks of all types, and bedroom services. The capacity of service and the quality of foods and bedrooms in a rural hotel are less than those of urban hotels.
* Take a walk around the centre of your *kebele* or around the *kebele* office. List the number and types of food and drink establishments you observe. Categorise them according to the kind of service they offer.

[Reveal answer](https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=197&printable=1)

**11.3  Hygienic requirements of food and drink establishments**

This section outlines the basic hygienic requirements that are applicable for the food and drink establishments found at the *kebele* level. Knowing them will help you to make decisions when visiting them for inspections.

**11.3.1  Licensing**

There should be a system for licensing food and drink establishments in *kebeles*. The *woreda* health office is responsible for this licensing system. As the local Health Extension Practitioner, you may be requested to do a preliminary assessment to check the hygienic requirements and report to the *woreda* health office. Most categories of food and drink establishments can be licensed, though *tela bet* and *areki bet* do not require it because of their lower level of health hazards. Please note that the licensing procedure must follow regional and local regulations.

**11.3.2  Location of the food establishments**

Food establishments need to be well away from any source of hazards such as marshy areas, waste disposal sites and flooding. The site must be conveniently accessible to staff and consumers. The establishments should be at a distance from public institutes such as schools and health facilities. Access to clean air and natural lighting is also important.

**11.3.3  Condition of the building**

The space available must be adequate to provide the kind of service that the establishment carries out. Depending on the nature of the establishment, the space may include a kitchen, dining room, drinking room, food storage sites, and a utensil washing site. Building structures and their interiors should permit good hygienic practices, including protection against cross-contamination of food surfaces between and during operations. The provision of a window for each room should ensure adequate lighting.

Structures within processing establishments should be soundly built of durable materials and be easy to maintain, clean and, where appropriate, disinfect. Floor and wall surfaces must be cleanable and washable. The surface of the walls must have a light colour that maximises the interior lighting. The roof must be cleanable and maintained free of dirt.

**Dining rooms and coffee or tea drinking rooms**

The dining room should be very attractive in terms of its cleanliness, lighting and natural ventilation. The cleanliness of the walls, floor and ceiling must be acceptable and the chairs and tables must be in good repair. Food remains must not be dropped on the floor but should be collected and disposed of in a garbage container. The provision of an appropriately sized garbage container, about 10–15 litres, is important.

**Hotel bedrooms**

The principles of healthful housing that you have learned about in Study Session 4 are also applicable to hotel bedrooms. The cleanliness of the bedding (sheets, blanket, hard surfaces), floor, walls and ceiling are important. A chair and table are also useful for the client’s comfort. A small waste bin must be available. Good ventilation and lighting are also essential components of a hygienic bedroom.

**11.3.4  Sanitary facilities**

Food and drink establishments need to offer sanitary facilities, which means handwashing facilities, latrines and urinals. The handwashing facility must have soap; a liquid soap is appropriate if this is available. Separate latrines for men and women are desirable. The number of these facilities depends on the number of clients visiting at peak hours. Generally, one handwashing facility and latrine for 30 clients is appropriate.

Food handlers should be provided with a separate latrine, handwashing and changing facilities at a convenient location. The availability of soap is essential for proper handwashing (Figure 11.3).



Figure 11.3  Soap is essential for proper handwashing. (Photo: Basiro Davey)

**11.3.5  Access to water**

Food and drink establishments require a sustained source of safe water to be used for personal hygiene, food preparation and utensil cleaning. A water tank is one option to ensure the availability of water at all times.

**11.3.6  Waste management**

Food and drink establishments produce organic wastes such as food remains, and liquid wastes as a result of hand and kitchenware washing. These wastes need to be handled properly without contaminating or polluting the immediate environment. Specific information on waste management can be found in the study sessions later in this Module.

**11.3.7  Kitchen and food preparation site**

The space and layout of the kitchen must be appropriate to accommodate the food preparation and kitchen processes. There must be separate sections for raw food preparation and handling cooked food.

* Why is it important to keep cooked and raw food separate?

[Reveal answer](https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=197&printable=1)

The presence of a window and a chimney is essential in order to manage the indoor air pollution that is caused by biomass fuel burning.

The presence of facilities for washing hands and kitchenware is mandatory in a kitchen. Proper shelves for physically separating soiled and cleaned items are also a necessity.

The proper handling of kitchen refuse and liquid waste controls the spread of infestation and food contamination. Food scraps and leftovers must be placed in a covered container. The floor and tables need to be cleaned frequently during the processes of food preparation and cooking.

**11.3.8  Cleaning dishes, drinking utensils and cutlery**

The cleaning of soiled dishes is an important way of preventing communicable diseases. There is an established procedure that the person who is the dish washer must follow. ‘Dish’ in this section includes plates, cups, glasses, spoons, forks and other utensils.

**The three bowl method for cleaning soiled dishes**

The manual cleaning process requires three vats or bowls, each with a capacity of 20–30 litres (Figure 11.4). Washing equipment such as detergent (powdered soap) and a scraping cloth, sponge or cleaning brushes are also necessary.



Figure 11.4  The three bowl system for washing soiled dishes. (Photo: Abera Kumie)

The procedure shown in Box 11.1 uses the three bowl system, which is recommended for the rural setting where running water is unlikely to be available.

**Box 11.1  Dishcleaning guidelines where there is no running water**

1. Decide what to wash first: generally it is best to start with glasses and cups. However, the following description is for washing soiled plates.
2. Fill the first two bowls halfway with warm water (50ºC). Hot water (80ºC or above) is added to the third bowl. A detergent must be included in the first bowl.
3. Scrape the food from dish surfaces and collect it in a garbage container. Place the dish in the first bowl and wash with the detergent until the grease has gone. Washing plate by plate increases cleaning efficiency. Then place the washed item into the second bowl.
4. Rinse the dish well in the second bowl. Any remaining food particles and soap must be taken away by thorough rinsing. Then place the dish into the third bowl.
5. The process of dish washing in the third bowl is called **sanitising** which is a procedure to inactivate and remove the microorganisms that may be found on the surface of the dish. Sanitising is possible by rinsing the dish in hot water at a temperature of 80ºC for one to two minutes. Rinsing in warm water that contains chlorine (50–100 ppm) can replace the use of hot water. Immersing the rinsed dish for 15 seconds adequately sanitises.
6. Dry the dish with a clean cloth or air-dry it. The cleaned and dried dish is then placed in a shelf or rack that has a cover. Dishes must be kept under cover until used. Remove dishes that are not in good condition and replace them with new ones.
7. The water used for washing must be changed frequently as needed. The used water in the first bowl is more frequently changed than that in the second bowl. Continued use of dirty water must not be encouraged. The water temperature in the third bowl must be kept high.

Note that ppm stands for parts per million. It is a measure of the concentration of a substance in a solution.

**Washing cups, glasses and spoons**

The principle of cup washing is the same as that of washing soiled dishes. The three bowl system should be encouraged but two bowls is also acceptable, with warm water and detergent in the first bowl and hot water in the second. The first wash cleanses the grease, while the second bowl sanitises the cups. Cups must be dried with a clean piece of cloth or air-dried before use.

The glass-washing facilities for *birle* in *tej* *bet* should use a three bowl system. The first is used for washing with detergent, the second and third for rinsing.

When cold and hot running tap water is available, sinks with two compartments/bowls are sufficient because the hot running water is used for rinsing and sanitising (Figure 11.5).



Figure 11.5  Washing glasses in a sink with detergents, and cold and hot tap water. (Photo: Abera Kumie)

**11.3.9  Maintaining hygienic kitchen equipment**

All surfaces that come into contact with food should be constructed of appropriate materials and be well-maintained, for example, wooden boards must be smooth and metal tables should be plain and not corrugated. Any surface that is cracked, scored or has an irregular surface is difficult to clean and may harbour dirt. Chopping and cutting blocks for preparing meat or vegetables must be kept clean and covered. All utensils and equipment must be protected from possible contaminants including dust, dirt, insects, rodents and overhead drips. Equipment and food containers should be made of materials with no toxic effect and be designed to ensure that they can be easily cleaned, sanitised and maintained.

Surfaces such as chairs and tables that do not normally come into contact with food should also be clean and in good repair. Always use clean cloths to cover tables and change them whenever necessary.

**11.3.10  Storing and serving foods**

Perishable food items are easily spoiled if stored at room temperature. Foods such as meat should be kept in a refrigerator that can keep the temperature below 10ºC. Semi-perishable foods, such as potatoes and carrots, which are used on a daily basis, need to be stored on a well-ventilated shelf. Shelves must be 50 cm from the ground and well away from wall surfaces. A distance of 1 metre is adequate between shelves. Serving food to consumers should provide maximum health protection. Hot foods should be served while they are hot, and cold foods while they are cold. Foods must be thoroughly reheated if they have been at room temperature for longer than 1 hour.

11-you have to market a plan of action for the promotion of wash in your town briefly describe the activates that need to be included in your plan?

This case shows that aging city schools do not have to be abandoned; they can be successfully revitalized and made contribute effectively to the process of education. Regardless of where a school is located, a healthy school environment is comfortable and secure from danger radiates a “sense of wellbeing” and a sends a caring message. These healthy school environments are the key to a high performance educational institution.

Successfully managing a school environment is a necessary and essential educational investment. Research increasingly shows that there is a clear link between environmental quality of schools and educational performance:

• Facility management systems determine environmental quality in schools.

• The quality of the school environment shapes attitudes of students, teachers and staff.

• Attitudes affect teaching and learning behavior.

• Behavior affects performance.

• Educational performance determines future outcomes of individuals and society as a whole.

In preparing this case, a variety of information and data were examined that were provided by an extensive review of educational facility publications, the Charles Young Elementary School, the University of North Carolina Environmental Studies Program, the US Environmental Protection Agency, the District of Columbia, and the Carpet and Rug Institute.

The key findings of the work start with the identifiable and measurable environmental conditions required of all high performance schools and the basic finding that an academically successful school must radiate a sense of well-being which is the essence of health. The information gathered for this case study clearly indicates there must be a serious, if not passionate, desire accompanied by positive action, to restore non-performing schools to a constantly healthy state. Effective restoration is achieved through good design that addresses total environmental quality to include general sanitation, good air quality, noise control, lighting and glare reduction, soothing color, and general comfort provided by temperature and climate. The healthy school environment is kept in a steady state only with a thoughtfully organized cleaning and maintenance program. When a school environment is transformed from a state of hopeless deterioration to a healthy condition, attitudes of the students, teachers, parents, and surrounding community turn energetically positive so as to allow for effective teaching and learning.

ESSENTIAL ENVIRONMENTAL CONSIDERATION OF SCHOOLS

Research to date indicates productive, high performance schools manifest common traits (see annotated references in notes section):

• A high performance school seeks and provides adequate space and opportunities for students and teachers to spread out, reflect, interact, exchange information, examine and test ideas.

• The appearance of the school is inviting. Students, teachers, and the local community want it to be there.

• The school has adequate natural lighting that enhances productivity.

• The school strives for student-friendly conditions throughout the building.

• The school is inviting to good teachers and supports their retention.

• The school is designed to reduce stress. It is comfortable, has a consistent temperature, and manages noise.

• The school is clean and sanitary.

• The risk of an adverse health effect is very small.

Student and teacher comfort is indicated as the most important aspect of any school environment. If students are comfortable, then learning becomes much easier. Being comfortable is a combination of several different factors; adequate usable space, noise control, lighting, temperature and climate control, and sanitation.

The classroom is the most important area of a school because it is where students and teachers spend most of their time and where the learning process takes place. The following conditions help make the classroom a better place in which to learn.

Lighting in classrooms must focus on the front of the classroom and over the student’s desks. Glare from hard surfaces is distracting and should be avoided wherever possible. The effective lighting of schools has been related to high performance test scores time and again.

Classes should be designed to accommodate students so that the number of students does not exceed 20. A lower density of students per classroom will increase teacher and student interaction and communication.

Classrooms must be designed with effective communication and interaction in mind. Students should be able to easily see and hear the instructor and other students. Noise must be controlled to levels that do exceed 68db. At about the 68 or 69 db noise level, students begin to have difficulty understanding what is being said and are distracted by noise in other classrooms.

Technology is at the center of the modern educational process, especially for mathematical and analytical skills. Computers in classrooms are very important. Tools, such as the Internet, allow the smooth exchange of information between student and machine, but must be positioned and used in environments that do not cause distraction. Increasingly, students can learn through virtual classrooms when no teacher is available. Comfortable surroundings aid in this form of learning.

Temperature and indoor climate is also important. A temperature of 68-72 degrees is ideal and should be maintained year round. Schools must be designed with good ventilation. Effective filters and cleaning must be functional so as to keep particulate matter, such as dust, out of the air. Odors can also be distract students, but can be removed with good ventilation.

The design of schools is a very important factor when dealing with sanitation related to moisture. Building roofs that leak or will not stop water are detrimental. Water in classrooms leads to mold which can cause allergic reactions. High humidity and standing water also creates an environment favorable to all kinds of bacteria, which can spread diseases.

The cleanliness of schools is also an important aspect of school environments. Clean schools not only lower the threat of the spread of illness, but also convey a caring message to the students and teachers. Cleaning and maintenance of schools is vitally important and is often underemphasized and underperformed. Students feel better going to clean classes and sitting in clean desks and surroundings. Sanitation in schools is important because young children face unique health hazards, especially respiratory infections, asthma attacks, skin disease, and diarrheal outbreaks.

A school environment should be one in which every student feels safe. We find promotion of safety by the increased installation of cameras and monitoring devices throughout the school. Many schools today work with local law enforcement agencies to put security officers in schools. The presence of security officers often gives students a sense of safety and security.

In the final analysis, the primary environmental policy and management objective of every school facility should be that of taking whatever steps are necessary to create a “sense of well-being.” By definition, this is a healthy environment. “Health is the state of complete physical, mental, and social wellbeing.”

THE CHALLENGE OF PUBLIC SCHOOL FACILITIES—CHARLES YOUNG SCHOOL

Schools are not primarily environmental showcases. Schools are special environments that exist for the purpose of enhancing the learning process. They are sensitively built environments housing very special segments of the population. A sensitive environment refers to a place that supports the activities of segments of the population who are very young, very old, or who are experiencing illnesses. From an environmental health perspective, a sensitive environment, such as a school or day care facility, tends to be where adverse health effects manifest themselves in the face of unsanitary conditions.

In the United States there are about 120,000 schools providing for the educational needs of approximately 54 million students. On average, students receive about 20% of their environmental exposure in schools.

The importance of a healthy school environment’s ability to enhance the learning process has been demonstrated in many studies. However, many school facilities throughout the United States, estimated at more than 50%, have environmental problems. Problems are mostly related to water damage, inoperable HVAC systems, and ineffective cleaning. Even though schools are the focus of constant public discussion, political attention, and government support, more effort is needed to emphasize and provide “healthy” school facilities by way of design, operation, and maintenance.

In many center-city schools, students and teachers far too often find themselves in a physical environment that adversely affects their morale, and, in