Drainage and sewerage

A large proportion of wastewater in developing countries is discharged partially treated or untreated directly into rivers, lakes or the ocean, creating a direct negative impact on the environment. At the same time wastewater is increasingly seen as a resource providing reliable water and nutrients for food production to feed growing urban populations. This needs to be done in a safe manner to avoid public health issues. The other major challenge is climate change which will bring an increase in rainfall intensity and a higher chance of urban pluvial flooding. Urban pluvial flooding typically consists of storm water from streets, but also from overflowing combined sewerage systems (i.e. combined sewer systems are still widely used) leading to polluted flood waters with different gastrointestinal and respiratory pathogens. An increase in flooding events implies and increase of public health risk to the population exposed to urban floods in many countries. This module covers the different types of sewers systems available to offer effective sanitation and enhance public health by safely transport wastewater away from the houses, emerging technologies and shifts in paradigm (sustainable urban drainage systems and nature-based solutions).