

Too much water

Towards better flood protection

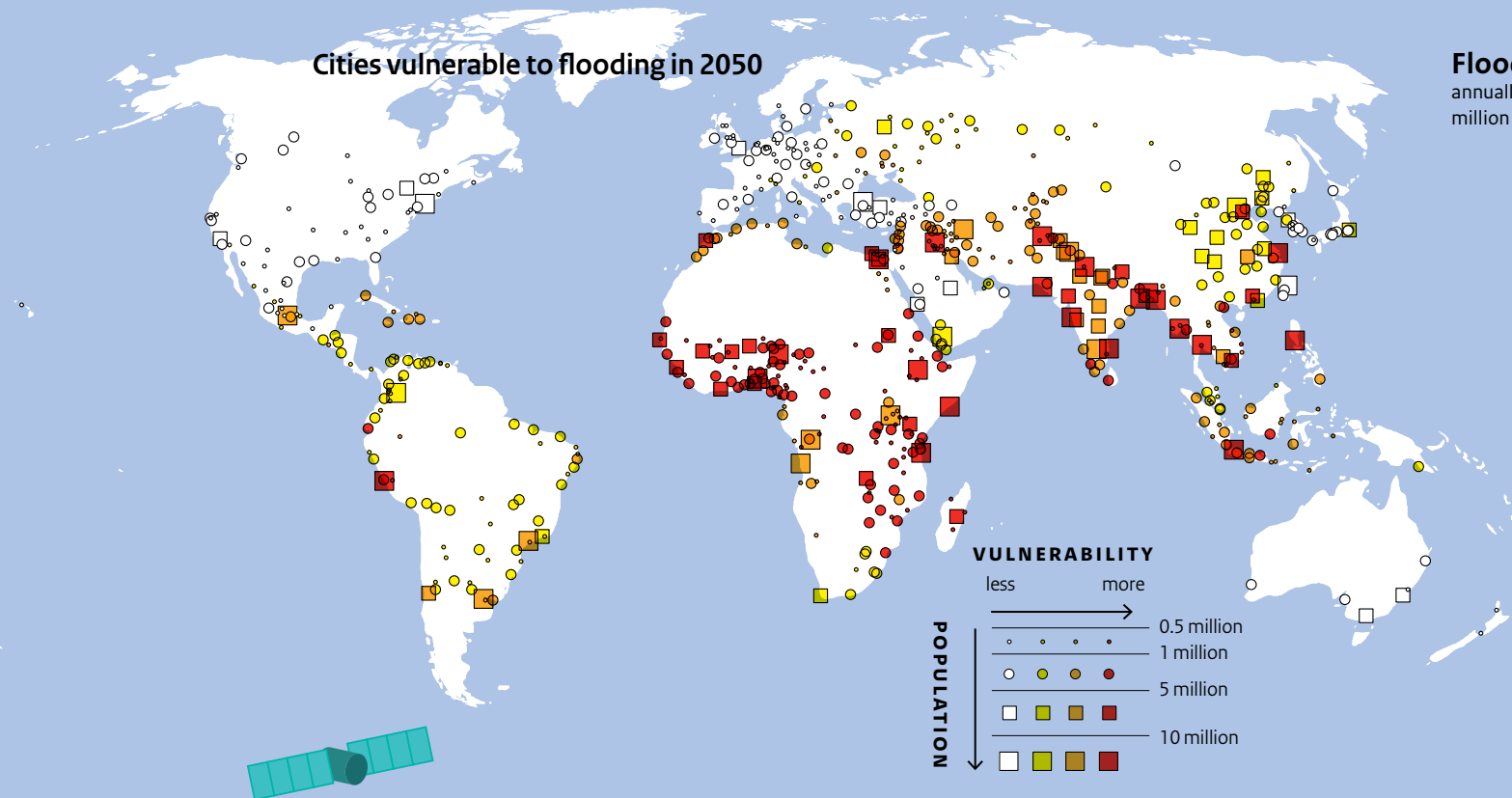
It is estimated that, by 2050, the number of people living in flood-prone areas will be 1.3 billion, or around 15% of the global population, assuming business-as-usual developments. As urban areas expand, hundreds of trillions of dollars worth of infrastructure, industrial plants, office buildings and homes will be increasingly at risk from river and coastal flooding, particularly in Asia. Vulnerability to flooding is unevenly distributed over the formal and informal parts of cities and in most cases, the poorest part of the population occupies the areas with the highest levels of risk. In the context of environmental justice, public authorities

face the challenge of improving the level of protection against flooding without increasing inequality among citizens with regard to flood risk.

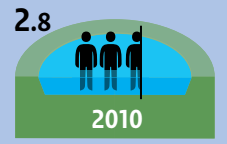
Applying integrated flood protection measures can strongly reduce both the number of people and the economic value that is at risk in case of flooding. There are a large number of potential measures for reducing urban flood risk. These do not only involve levees, storm surge barriers and dams, but also flood-proof construction methods, spatial development, warning and evacuation systems and disaster and recovery plans. An integrated flood risk strategy should be based on a careful

exploration of options, taking into account various types of measures.

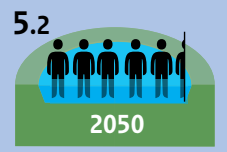
Spatial planning (where to build) and the design of the built-up area (how to build), are powerful instruments for reducing water-related risks and climate-related risks in urban areas. There are many ways to position water-related policies in the urban environment, at various scales, and with many actors involved in the planning and implementation. They require close cooperation between the various social actors and a clear division of responsibilities between government and its different bodies, private companies and individual citizens.



Flood risks in cities
annually exposed urban population million people



At protection level 1:100 years, 2.8 million people are exposed to flooding



Assuming the same protection level, the number of people exposed will almost double...



... but applying protection measures to 1:1000 years can strongly reduce the number of people exposed.

Source: VU, Deltares, PBL

