



Aerial view of a flooded area in Hoedspruit, South Africa. Photo: World Risk Report/© Gallo Images

24.08.2016 – We are all susceptible to natural hazards, and owing to our particular situations and defense mechanisms some of us are more affected than others.

Published today by the [UN University Institute of Environment and Human Security \(UNU-EHS\)](#) and [Bundeszentrale für Umwelt und Naturschutz \(BfU\)](#) in cooperation with the [University of Stuttgart](#), the World Risk Index (WRI) and World Risk Report (WRR) are annual investigations conceived to better understand disaster risk and its underlying drivers.

The main focus of the study is the threat from natural hazards and the rise in sea level caused by climate change. By looking not only at exposure but also at people's vulnerability in the extent to which they can cope and adapt, the WRI captures the global patterns of disasters in a quantitative manner to identify where and why disasters are most likely to occur. This information is combined with a qualitative analysis of the key factors that lead to disasters. The

WRR systematically ranks 171 countries based on the disaster risks that become apparent.

This year the WRR focuses on the relationship between disaster risk and critical infrastructure. Critical infrastructure refers to that which is essential to the running of a society and economy, such as transport and healthcare, and it makes all the difference in regards to disaster risk. Roads, airports and railways mean that aid can be brought into the country and quickly distributed to those in need. Insufficient infrastructure is a key risk driver because it makes people more vulnerable: if its quantity and quality is inadequate, natural hazards have worse effects and the threat of humanitarian disaster arises. Hazards may be natural, but disasters are not; for example, in 2010 a 7.0 magnitude earthquake hit Haiti claiming 160,000 lives, and an 8.8 magnitude earthquake hit Chile, where despite more than three million people living within 200 km of the epicenter there were only 562 casualties. This discrepancy in casualties can be explained by Haiti's higher susceptibility; a disaster occurs when a natural hazard hits a highly vulnerable society.



Haiti commemorates anniversary of 2010 earthquake. Photo: UN Photo/Logan Abassi

This year's findings highlight risky hotspots for different reasons. The country at the greatest risk is Vanuatu because it is alarmingly exposed to natural hazards and rising sea levels while enduring high levels of prevailing societal vulnerability, and countries in Africa and Central

America have been highlighted mainly for the susceptibility of certain groups.



Children playing (Vanuatu boy). Photo: FlickrR/Graham Crumb

Critical infrastructure depends on hard, technical elements (such as power stations, transportation routes, water infrastructure and ICT) and soft, institutional facilities (such as management and administration). We should never take such protective measures for granted. It is disquieting to realise that these life-lines are especially exposed to flooding, landslides and storm surges, because they are often located in low-elevation coastal zones or along rivers. With climate change, such natural hazards could become more frequent. Infrastructure must be maintained and managed correctly; in Europe alone damage to road and railroad lines caused by flooding is estimated to amount to 417 million euros per year.



Boxing Day York. Photo: FlickrR/Allan Harris

One way to build critical infrastructure is to pursue the Sustainable Development Goals, especially [Goal 9](#) to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation and [Goal 11](#) to make cities and human settlements inclusive, safe, resilient and sustainable. Meeting our needs is an opportunity to be imaginative; here's some inspiration:

In Pickering, Yorkshire this year, flooding was successfully prevented by working with nature using traditional methods that had been cast aside. Leaky dams of logs and branches were installed in becks above the town and bales of heather were fitted to obstruct smaller drains and

gullies, letting normal flows through but restricting and slowing down high ones. Also 29 hectares of woodland were planted and a bund storing up to 120,000 cubic metres of floodwater released it slowly through a culvert. This saved the people of Pickering from much of the devastation that hit northern England.

It is worth noting that flood defences return £8 for each £1 invested, which according to the British Treasury 'helps drive growth'. Thus building critical infrastructure advances [Goal 8](#), to promote sustained, inclusive and sustainable economic growth.

We have a responsibility to prevent disasters. Thanks to the WRI and WRR identifying drivers and hotspots of disaster risk, we can acknowledge our vulnerability to natural hazards as we develop, to handle them to our advantage.