

COASTAL CITIES TO PAY HIGH PRICE FOR CLIMATE CHANGE



Image credit: Jörg Dietze/Sustainable sanitation

Speed read

- Global flood damage could cost cities US\$1 trillion per year, say researchers
- Coastal cities in developing countries will be hardest hit
- Policymakers need to take action and reduce risks in advance

Global damage from flooding could cost coastal cities as much as US\$1 trillion per year — and developing countries will be hardest hit, a study warns.

According to the paper published today in *Nature Climate Change*, a "risk sensitive planning" strategy is needed to protect coastal cities, which are increasingly at risk because of climate change, subsidence and a growing population.

The researchers looked at the 136 largest coastal cities in the world and found that cities in developing countries are particularly vulnerable to flood losses as they often lack resources for long term planning.

"No city is doomed, but we have to expect huge disasters in the future. And better international coordination to provide support for the affected countries is really important," says Stephane Hallegatte, senior economist at the Sustainable Development Network of the World Bank and lead author of the study.

"For each city we assessed the total cost of potential damages," says Hallegatte. "But we also looked at the relative losses, comparing the absolute cost to the city's gross domestic product, to give an idea of the actual vulnerability of each city."

Among the top 20 cities with highest relative losses in proportion to their gross domestic product in 2005, only three are located in developed countries. The list is topped by cities such as Guangzhou in China, Guayaquil in Ecuador, Ho Chi Minh City in Vietnam, Abidjan in the Ivory Coast, Zhanjiang in China and Mumbai in India.

Predictions for the highest losses in 2050, assuming current levels of defences and optimistic sea-level rises, include Jakarta in Indonesia, Alexandria in Egypt, Algiers in Algeria, and Barranquilla in Colombia.

"We cannot observe the risk increasing in real life until a disaster actually occurs, which is why it's important to analyse and reduce the risk in advance", says Hallegatte.

The paper makes three policy recommendations, including the need for further adaptation — which could cost on average US\$350 million a year per city — and the need to prepare for larger floods and disasters by, for example, strengthening early warning systems and comprehensive insurance schemes for post-disaster recovery.

But adaptation may be a difficult challenge for developing countries because of their

environmental, social and economic conditions. "For example, subsidence — which increases the risk of floods — is particularly high in some cities in Asia like Bangkok or Jakarta," says Hallegatte.

Poverty is a crucial factor that makes developing countries particularly vulnerable to flood losses.

"More disasters are expected in the future, and it is very likely that the poor will be disproportionately affected," says Robert Nicholls, from the University of Southampton, United Kingdom, and another author of the study.

However, the paper does not assess the potential damage affecting those who live in slums and informal settlements, because their livelihoods cannot be economically quantified.

"Our estimate is based on economic parameters that can't show the condition of people who don't produce capital. Thus, policymakers need to combine it with social analyses at a local level," he says.

Nicholls explains that city planners can play an important role in promoting safer urban expansion.

"When urban districts show different levels of vulnerability, local administrators can encourage development in safer neighbourhoods. This is possible in many African cities that are growing rapidly, such as Mombasa," he says.

Peter Allison, a professor of Earth Sciences at Imperial College London, United Kingdom, believes that "there should be more risk awareness and greater publicity".

"The new study is one of the many important tools that policymakers should have. Though, it doesn't address the political issues that come with risk management planning," he adds.

For example, Allison says, it is difficult to compare the relative merit of protecting a structure like a hospital or nuclear power plant against the value of protecting poor, densely populated residential areas.

But Nicholls says: "This issue can't be ignored by policymakers. Without adequate measures, even a small rise in sea level can be extremely damaging. We hope that our paper will make people react."

Source : <http://www.scidev.net/global/climate-change/news/coastal-cities-to-pay-high-price-for-climate-change.html>