A changing climate for society

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A CHANGING CLIMATE FOR SOCIETY

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Global warming is happening: The warmest ten years on record since 1850, when temperature data was first recorded, have all been after 1996. 2005 and 2010 specifically, have been the warmest years on record over the last 131 years. The concentration of greenhouse gases in the atmosphere far exceeds the levels observed over the past 100 000 years.

The longer we wait to cut greenhouse gases, the greater climate change will be. Even if we could fully curb global greenhouse gas emissions now, we would still have to cope with climate change. The population in many regions is thus faced with the ever greater and costlier challenge of protecting assets against weather-related risks. These include more frequent and devastating storms, floods, droughts and other natural catastrophes, as well as rising sea levels, crop failures and water shortages.

For Switzerland, assuming an increase of average temperatures of 2–3°C by 2050, this translates into an expected increase of 10 % of precipitation in winter and a decrease of 20 % in summer. At the same time, the frequency of extreme precipitation events, including floods and mudslides, is very likely to increase. They will occur particularly in winter, but possibly despite smaller total precipitation amounts also in summer. In summer heat waves will generally increase. In contrast, in winter cold spells will decrease.

Hurricane Jeanne, landfall Florida, 2004

The good news, at least for Switzerland, is that the consequences of climate change until 2050 seem to be manageable without severe societal problems, provided that the warming does not exceed the expected magnitude. On the other hand, there are many countries, especially developing countries, which will be hit by more serious consequences but do not have the financial resources to adapt.

In a recent climate research study on the Economics of Climate Adaptation, Swiss Re and other partner organizations estimated that even in today's climate locations around the world face annual losses to the equivalent of between 1 % and 12 % of local GDP. This figure could rise to 19 % of GDP by 2030 in some countries. Sustained economic development under these conditions is extremely difficult.

In spite of the enormous exposure society has to climate change, there is hope. The same study revealed that up to 68 % of expected losses resulting from climate impacts can be prevented by cost-effective measures. These include not only measures like improved drainage and irrigation systems, flood barriers, better roof design, building codes and regional planning but also conservation of ecosystems, beach nourishment, vegetative buffer zones.

It seems there is a role to play for landscape architecture. It can contribute to mitigating climate related risks and raising the awareness about the importance of ecosystems for our global society.