

A Post-Event Review of Hurricane Florence in North Carolina: Lessons Learned



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Dr. Rachel Norton is a Research Associate with The Institute for Social and Environmental Transition-International. She has extensive experience in the fields of sustainability, disaster risk reduction, leadership development, and resilience. Dr. Norton has worked both internationally and domestically to build organizational community capacity and resilience. She has conducted research on Food, Energy and Water Security; flooding; resilience; and wildfire mitigation. She holds a Bachelor of Arts in Geography and Spanish from Middlebury College, a Master of Science in Environmental Studies from the University of Colorado Boulder, and a Ph.D. in Health & Behavioral Sciences from the University of Colorado Denver. Her graduate research focused on resilience and capacity building amongst vulnerable populations in the Rocky Mountain West.

Hurricane Florence: Building Resilience for the New Normal

A Post Event study of flood resilience
in North Carolina



Why flood resilience?

A key focus area of Zurich's corporate responsibility strategy

- Floods affect more people globally than any other types of natural hazard
- As insurers Zurich knows the impact floods have on people's lives and how much damage they can cause



Photo: St. Bernard Project

The Zurich Flood Resilience Alliance

The Zurich Flood Resilience Alliance is a multi-sectoral partnership...

Goal

- Increase social, political and financial investment in community-based flood resilience-building through public, private and third sector partnerships.

How:

- Working at community level to develop best-practices
- Conducting research to deepen learning
- Using resulting knowledge to advocate at local, national and global levels for policy and spending changes that enhance flood resilience



The pre-event prevention case is our starting point



OUR MOTIVATIONS:

- ✓ **DEMONSTRATE AND MEASURE RESILIENCE-BUILDING IMPACT** by our alliance working model, thus enhancing the social return on the Z Zurich Foundation's investment
- ✓ **CREATE INNOVATIVE RESILIENCE SOLUTIONS** by bringing in our skills & expertise and scale them beyond our alliance
- ✓ **ACHIEVE SHARED VALUE BY BENEFITTING COMMUNITIES**, our NGO members, public decision-makers and our customers

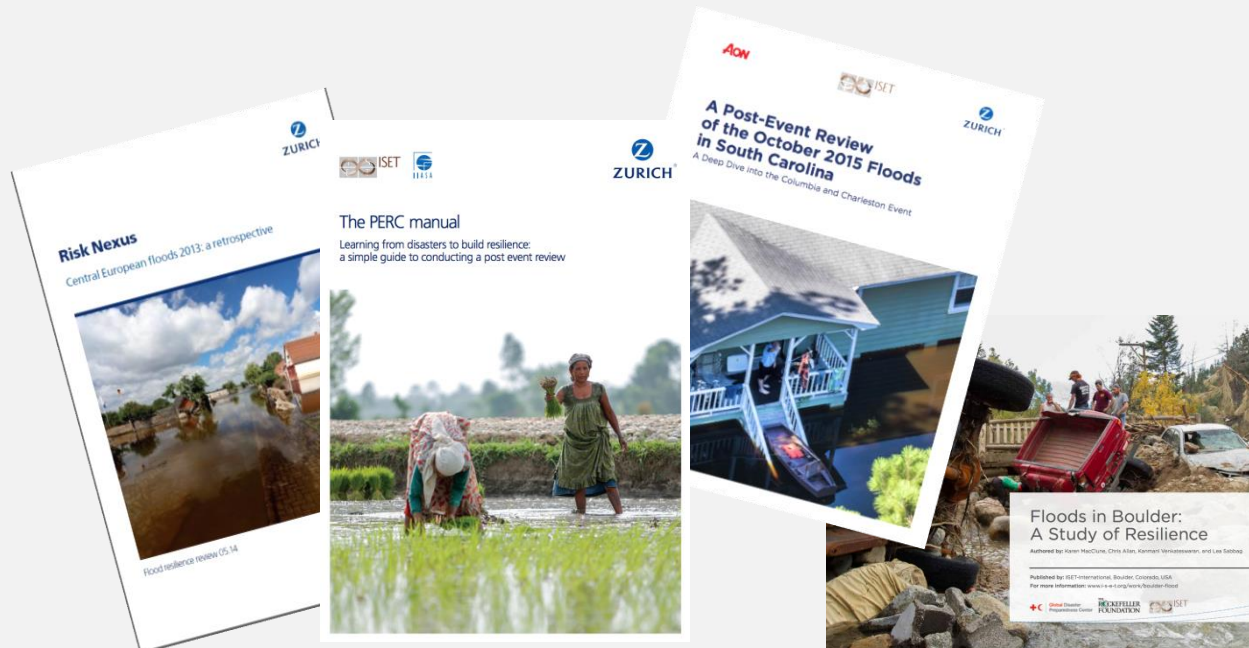
1: Zurich Risk Nexus: Turning knowledge into action – processes and tools for increasing flood resilience, 2015.

2: Zurich Flood Resilience Alliance White Paper: Making communities more flood resilient: The Role of cost-benefit analysis and other decision support tools in Disaster Risk Reduction. White Paper, Zurich Flood Resilience Alliance, 2014.

3: Kellett, J. & Caravani, A. 2013, 'Financing disaster risk reduction: A 20-year story of international aid', ODI and the Global Facility for Disaster Reduction and Recovery at the World Bank, London/ Washington.

Post Event Review Capability (PERC)

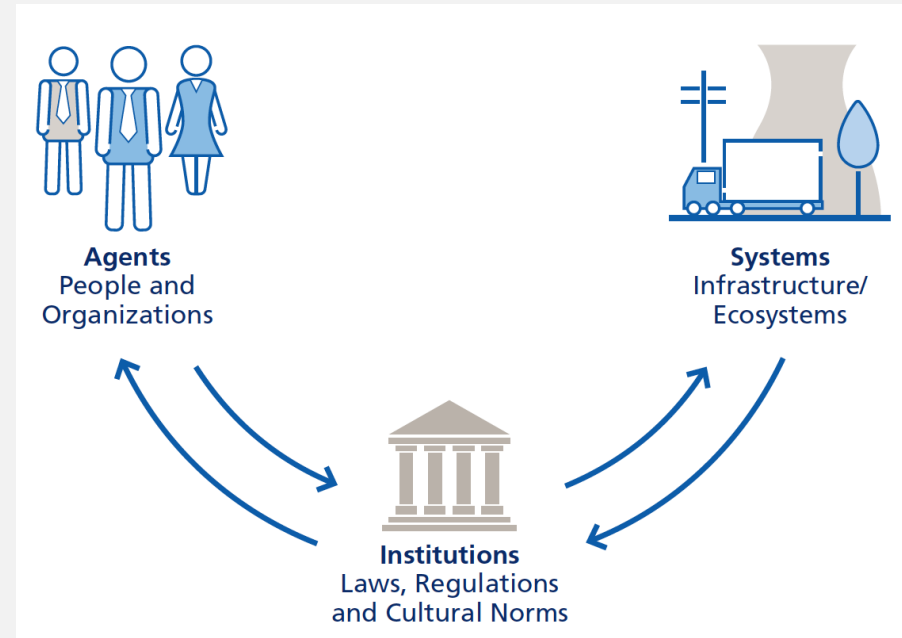
- Learn from flood events and related catastrophes
- Look across scales and sectors, and across all elements of the disaster management cycle
- Amplify successes and identify opportunities for further improvement



**Florence report
joins 13 other
PERC studies
conducted around
the globe**

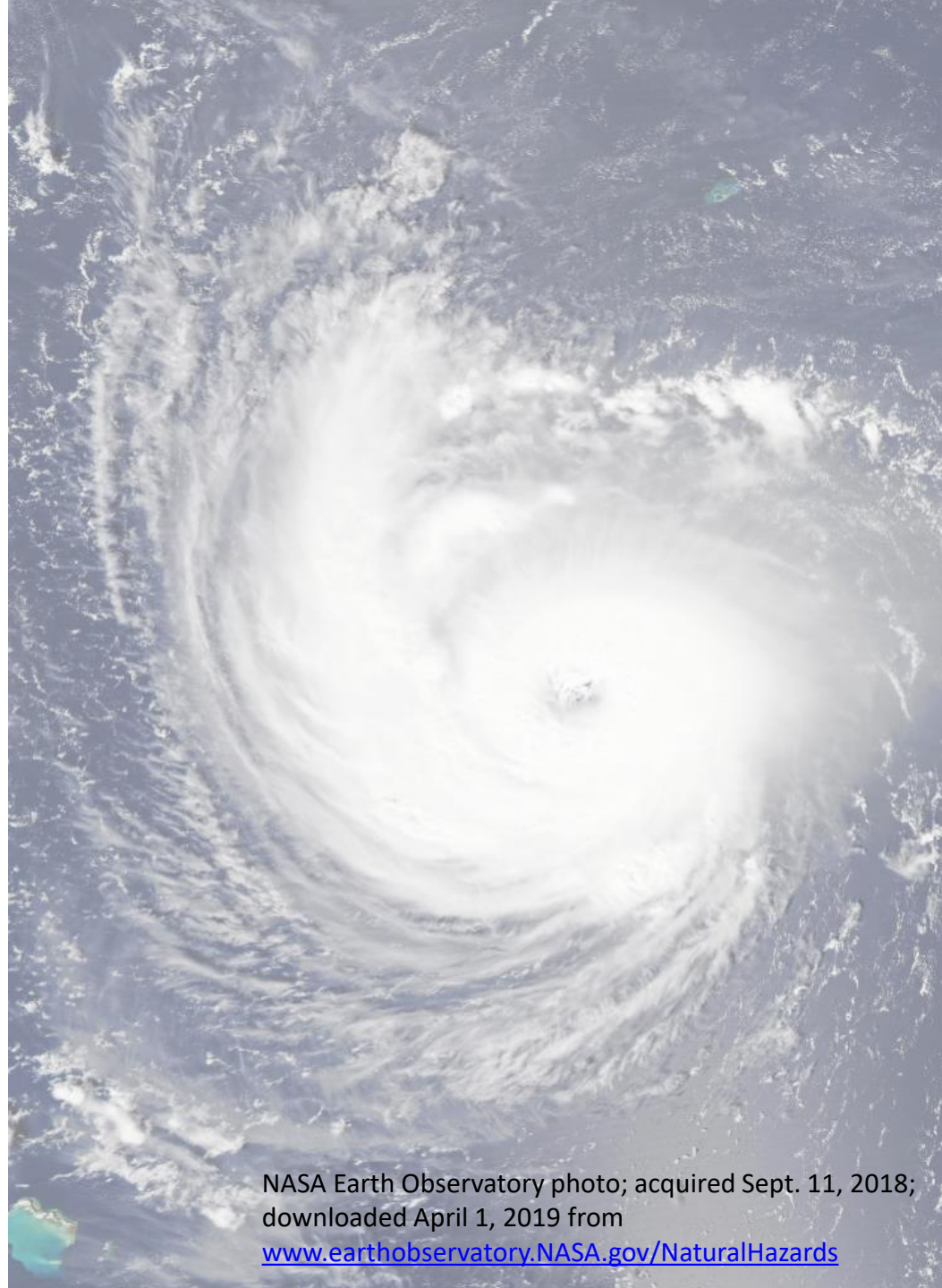
PERC Approach

- Desk research using news articles, reports and papers to understand both current event and flood history
- Visit most affected areas
- Conduct informal interviews
 - Government
 - Businesses
 - Non-profits
 - Researchers
 - Flood-impacted households & businesses
- Deconstruct why the flood manifested in the way it did and became a disaster



Why Florence?

- The storm itself – slow moving, wettest tropical storm to hit the Carolinas
- Catastrophic flooding
- Third major hurricane to impact North Carolina in 19 years
- Flooding: riverine, storm surge
- Secondary failures and losses



NASA Earth Observatory photo; acquired Sept. 11, 2018;
downloaded April 1, 2019 from
www.earthobservatory.nasa.gov/NaturalHazards

Key Insights

- Climate has visibly changed, sea levels have visibly risen, and these trends are likely to continue
- As a Nation, we continue to support high-risk investments and unsustainable development



Key Insights

- Floods contribute to marginalizing vulnerable communities in multiple ways
- Lived experience, even repeat experience, doesn't make people take action
- Economic motivators can be used as levers for both action and inaction

In areas where action requires broader coordination, political risk, or significant financial investment, things that had been problems when Floyd hit in 1999 were still problems in 2018 when Florence hit.



Photo: St. Bernard Project

Key Insights

- The Saffir-Simpson scale is not sufficient to characterize potential hurricane impacts
- Even the best data has limitations and can't substitute for caution and common sense

Floods and hurricanes are not an anomaly in North Carolina. Many homeowners, businesses and communities were able to prepare for Hurricane Florence based on experience from previous floods. However, Hurricane Florence still resulted in new experiences and lessons.

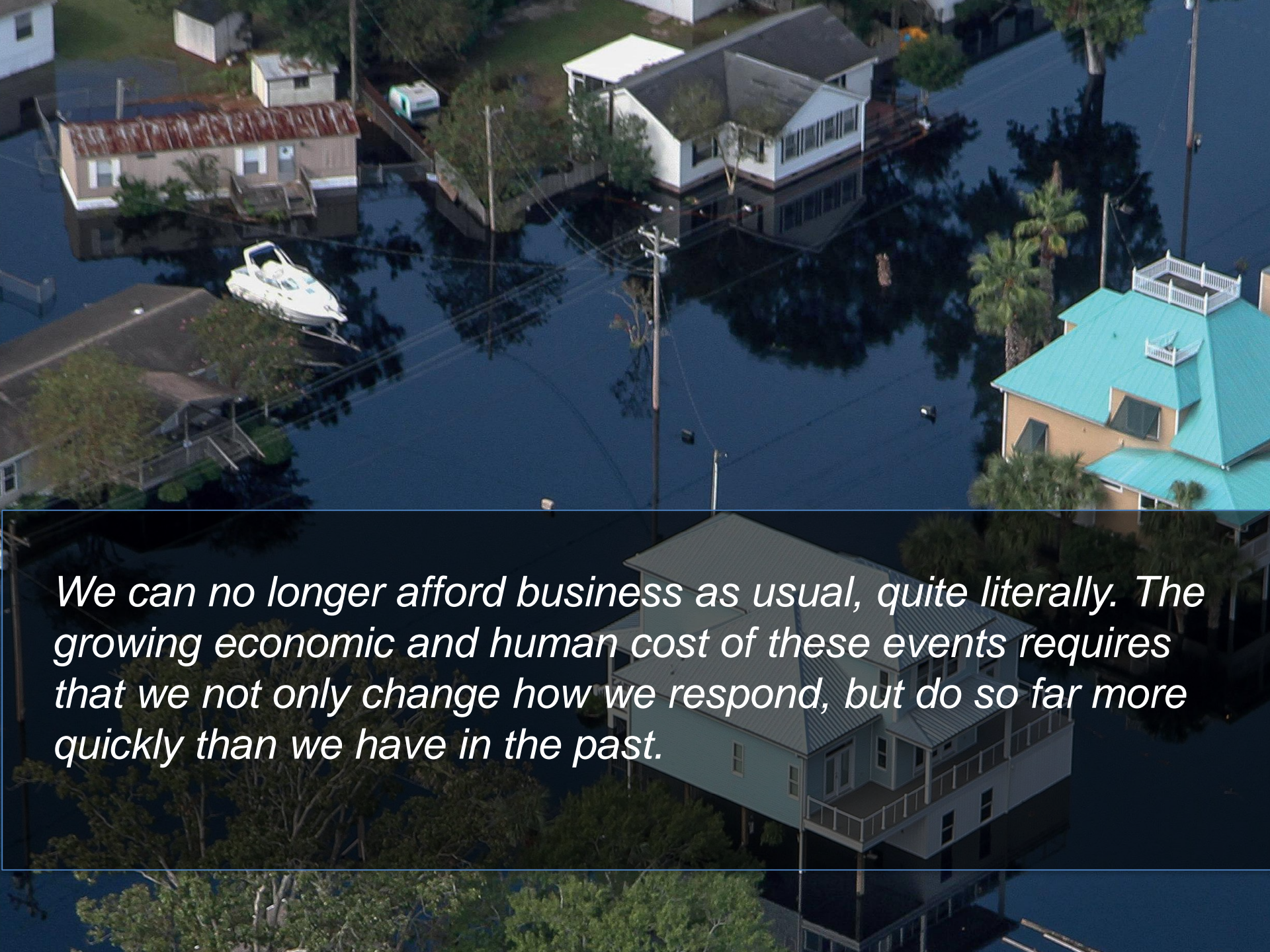


Recommendations

- Now is the time to act — failure to do so will be far more expensive in the long run.
- We need to critically assess where we are building and how we are incentivizing risk.
- Shifting from siloed interventions to a holistic approach is key.
- Change how we communicate risk.
- Insurance is vital, but the right type of insurance and only as a last resort
- Imagine how bad it could be and plan for worse

Only by fully recognizing the probability of a risk and the impacts that risk could have can we really effectively make decisions about the value of mitigation and prevention actions.





We can no longer afford business as usual, quite literally. The growing economic and human cost of these events requires that we not only change how we respond, but do so far more quickly than we have in the past.

Thank you

<https://www.zurichna.com/PERC>

<http://www.zurich.com/en/corporate-responsibility/flood-resilience/>

