

How prepared are we for major shocks to maritime infrastructure systems and has COVID 19 highlighted where we need to improve resiliency?

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Wissen für Morgen



Digitalization



Security & Defence



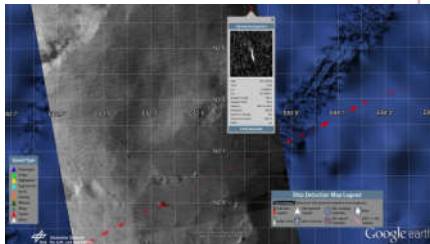
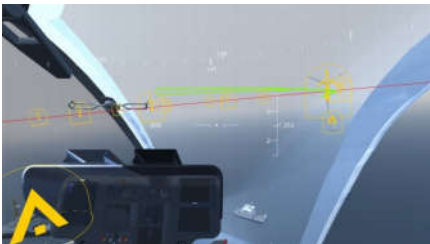
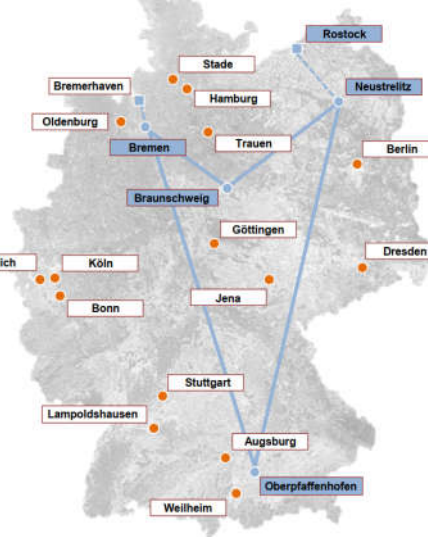
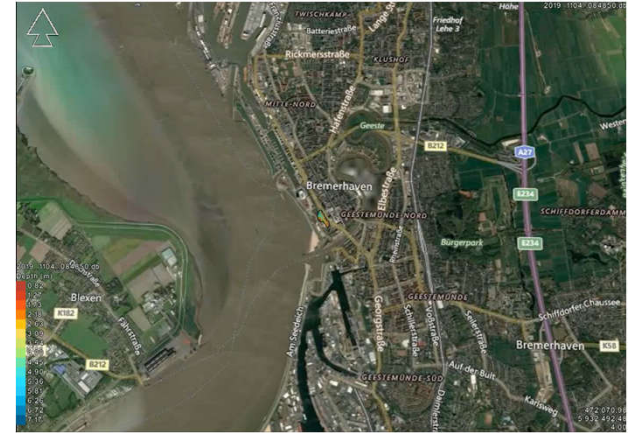
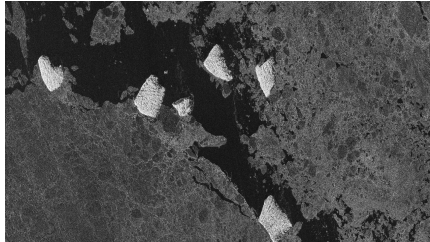
Space

Aviation

Mobility

Energy





global



european



national



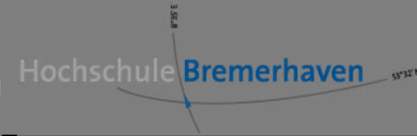
Bundeswehr



regional



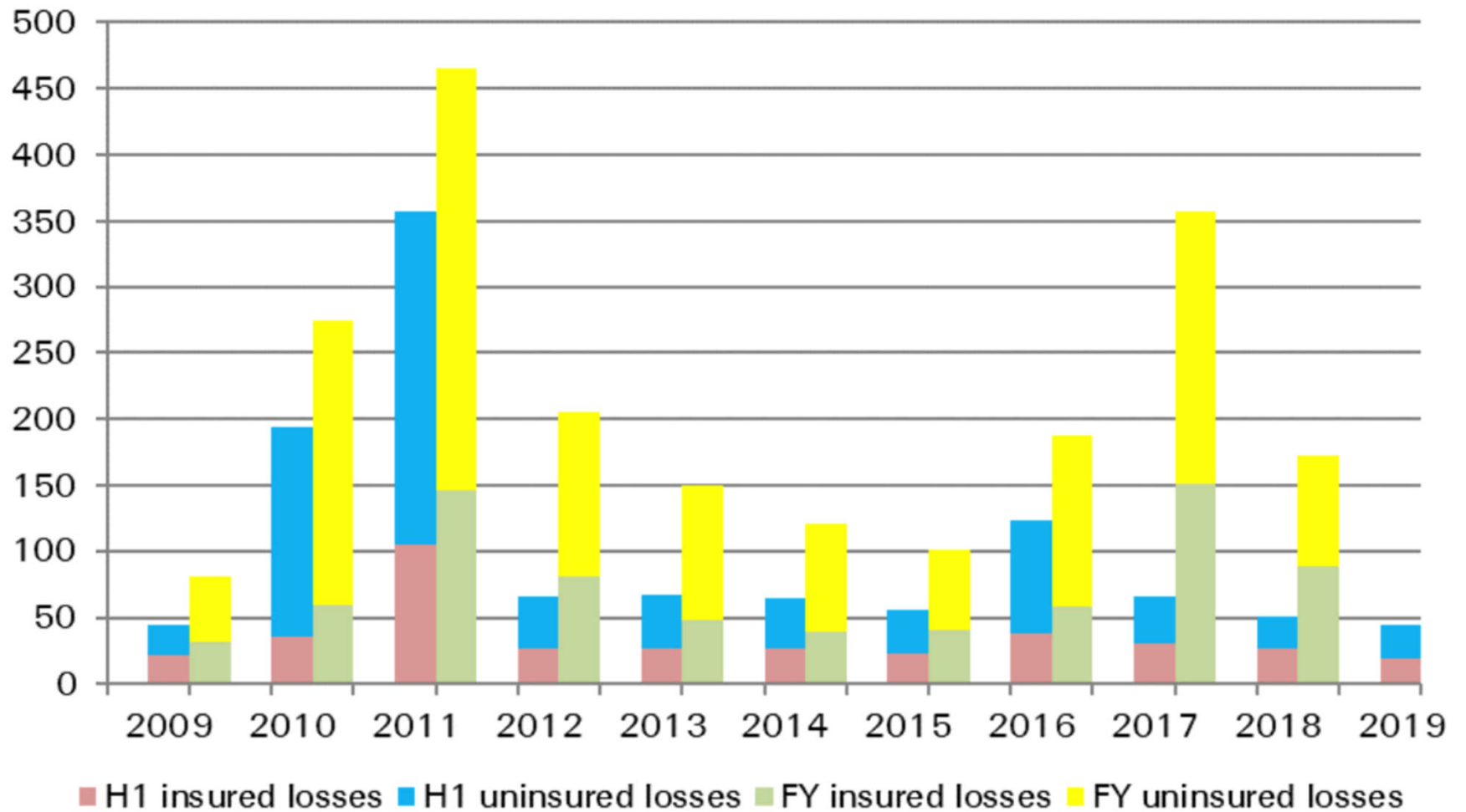
POLIZEI NIEDERSACHSEN



**How successful are we in anticipating risks,
avoiding losses,
reacting to crisis and recovering from
disturbance?**

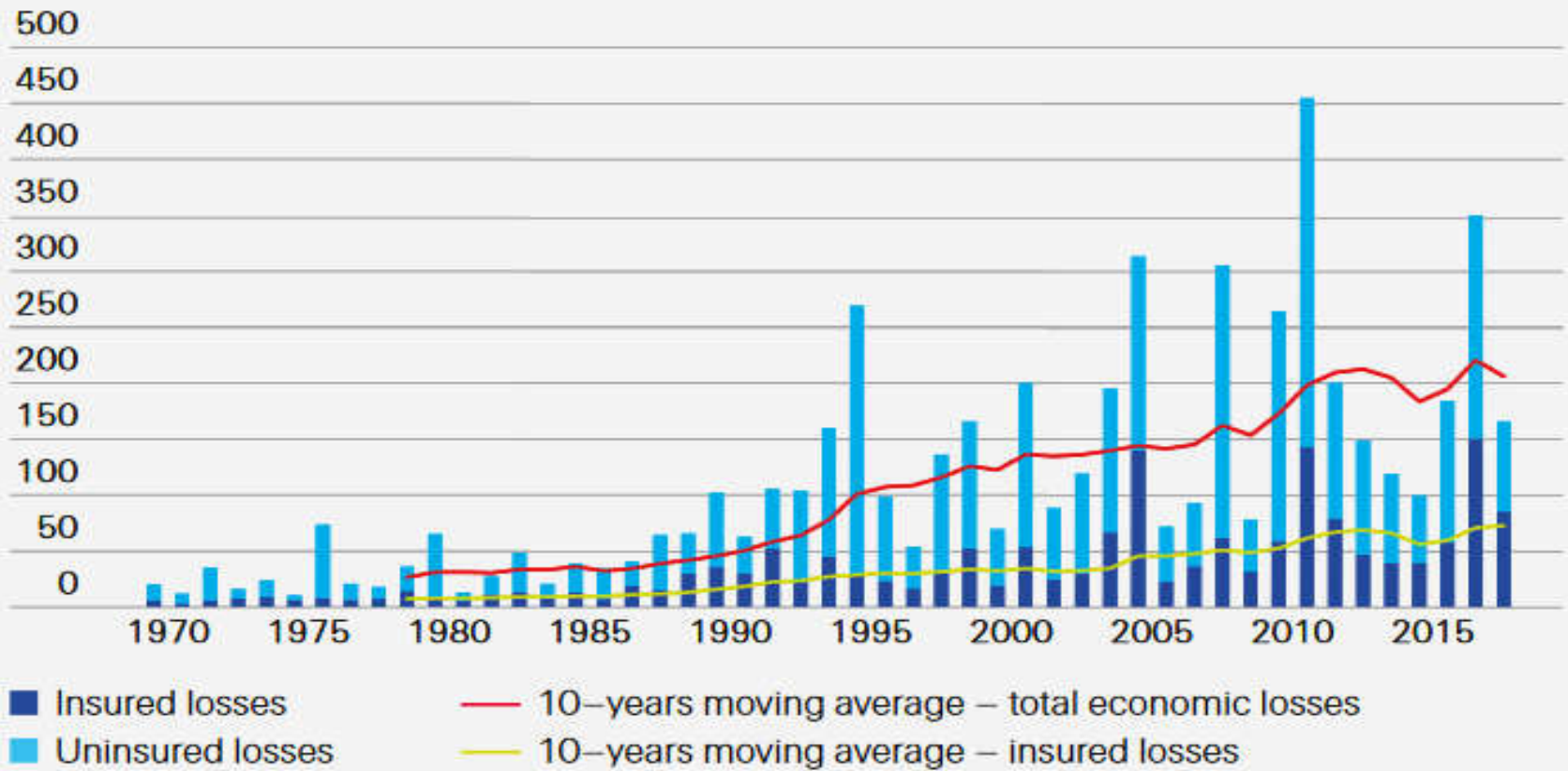


Catastrophic Losses
in billion\$ (2009-2018)
Swiss Re 2019



**Are we getting
better?**





Swiss Re 2019



**What about
the forecasts?**



Top 5 Global Risks in Terms of Likelihood

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1st	Asset price collapse	Asset price collapse	Storms and cyclones	Severe income disparity	Severe income disparity	Income disparity	Interstate conflict with regional consequences	Large-scale involuntary migration	Extreme weather events	Extreme weather events	Extreme weather events
2nd	Slowing Chinese economy (<8%)	Slowing Chinese economy (<8%)	Flooding	Chronic fiscal imbalances	Chronic fiscal imbalances	Extreme weather events	Extreme weather events	Extreme weather events	Large-scale involuntary migration	Natural disasters	Failure of climate-change mitigation and adaptation
3rd	Chronic disease	Chronic disease	Corruption	Rising greenhouse gas emissions	Rising greenhouse gas emissions	Unemployment and underemployment	Failure of national governance	Failure of climate-change mitigation and adaptation	Major natural disasters	Cyber-attacks	Natural disasters
4th	Global governance gaps	Fiscal crises	Biodiversity loss	Cyber-attacks	Water supply crises	Climate change	State collapse or crisis	Interstate conflict with regional consequences	Large-scale terrorist attacks	Data fraud or theft	Data fraud or theft
5th	Retrenchment from globalization	Global governance gaps	Climate change	Water supply crises	Mismanagement of population	Cyber-attacks	High structural unemployment or underemployment	Major natural catastrophes	Massive incident of data fraud/theft	Failure of climate-change mitigation and adaptation	Cyber-attacks

economy

environment

geopolitics

society

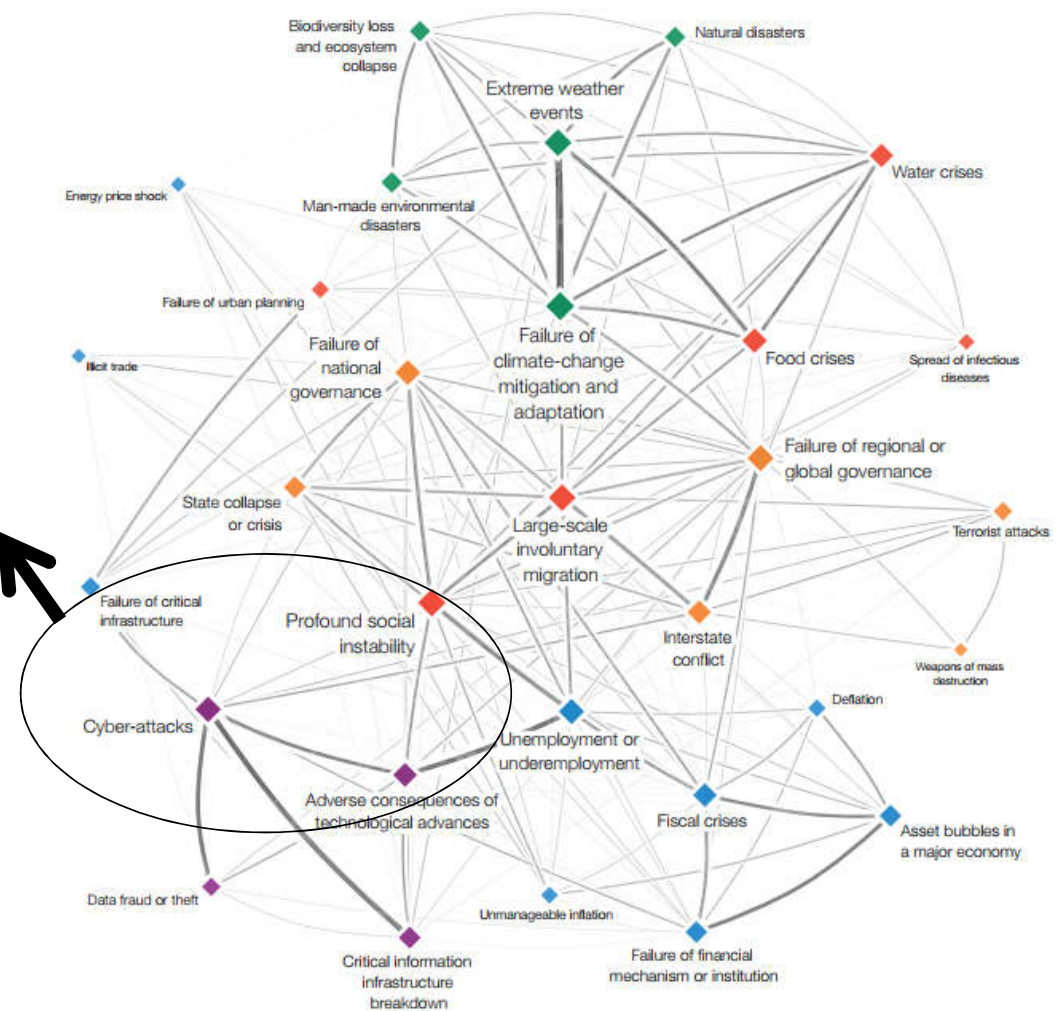
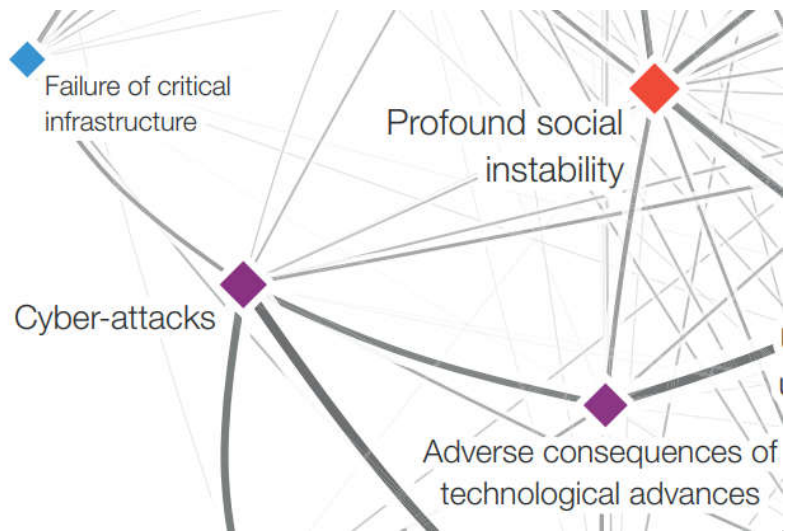
technology

Top 5 Global Risks in Terms of Impact

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1st	Asset price collapse	Asset price collapse	Fiscal crises	Major systemic financial failure	Major systemic financial failure	Fiscal crises	Water crises	Failure of climate-change mitigation and adaptation	Weapons of mass destruction	Weapons of mass destruction	Weapons of mass destruction
2nd	Retrenchment from globalization (developed)	Retrenchment from globalization (developed)	Climate change	Water supply crises	Water supply crises	Climate change	Rapid and massive spread of infectious diseases	Weapons of mass destruction	Extreme weather events	Extreme weather events	Failure of climate-change mitigation and adaptation
3rd	Oil and gas price spike	Oil price spikes	Geopolitical conflict	Food shortage crises	Chronic fiscal imbalances	Water crises	Weapons of mass destruction	Water crises	Water crises	Natural disasters	Extreme weather events
4th	Chronic disease	Chronic disease	Asset price collapse	Chronic fiscal imbalances	Diffusion of weapons of mass destruction	Unemployment and underemployment	Interstate conflict with regional consequences	Large-scale involuntary migration	Major natural disasters	Failure of climate-change mitigation and adaptation	Water crises
5th	Fiscal crises	Fiscal crises	Extreme energy price volatility	Extreme volatility in energy and agriculture prices	Failure of climate-change mitigation and adaptation	Critical information infrastructure breakdown	Failure of climate-change mitigation and adaptation	Severe energy price shock	Failure of climate-change mitigation and adaptation	Water crises	Natural disasters

World Economic Forum, The Global Risks Report 2019 14th Edition





Economic Risk

Environmental Risk

Geopolitical Risk

Societal Risk

Technological Risk



World Economic Forum, The Global Risks Report 2019 14th Edition

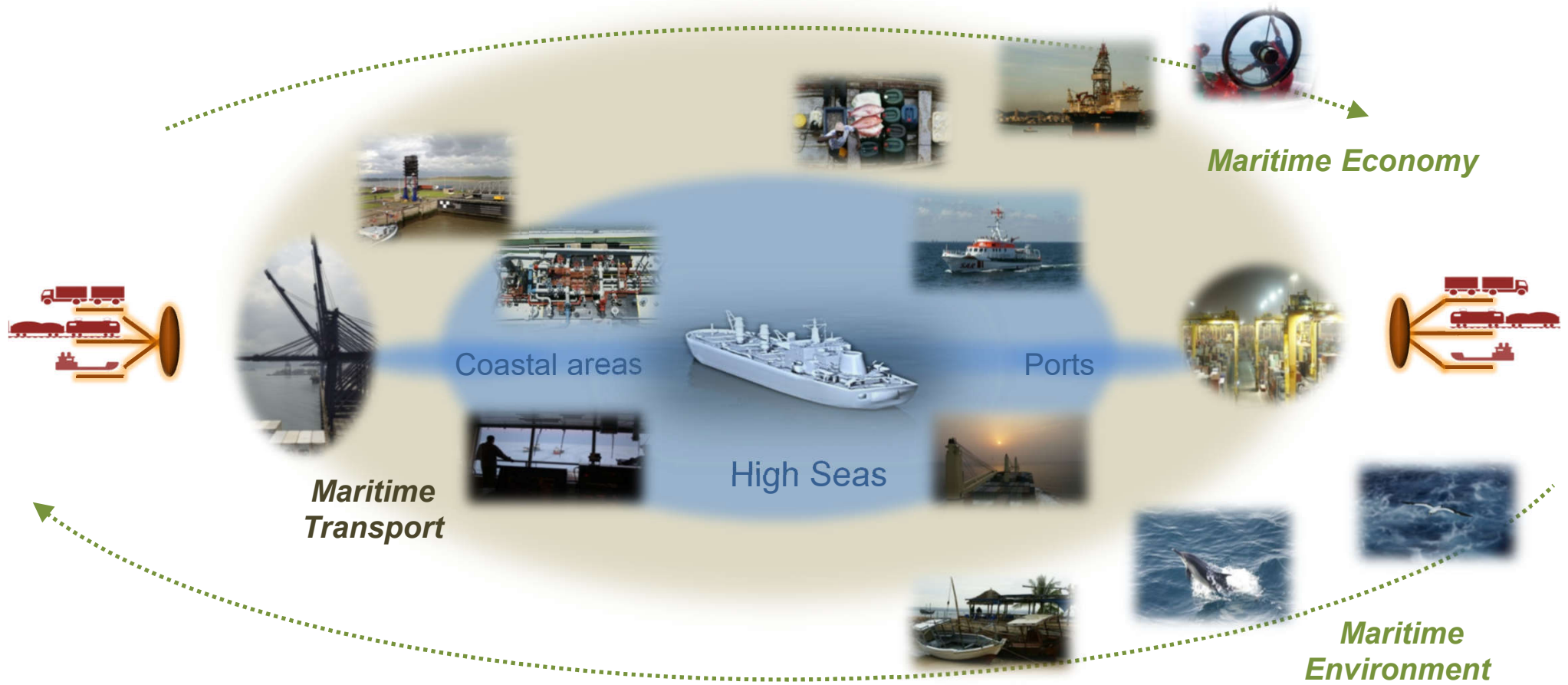


||| **The vulnerability of critical
technological infrastructure
is a growing national
security concern**

World Economic Forum, The Global Risks
Report 2019 14th Edition



A holistic understanding of the maritime infrastructure systems



Shipping is defined by constant crisis

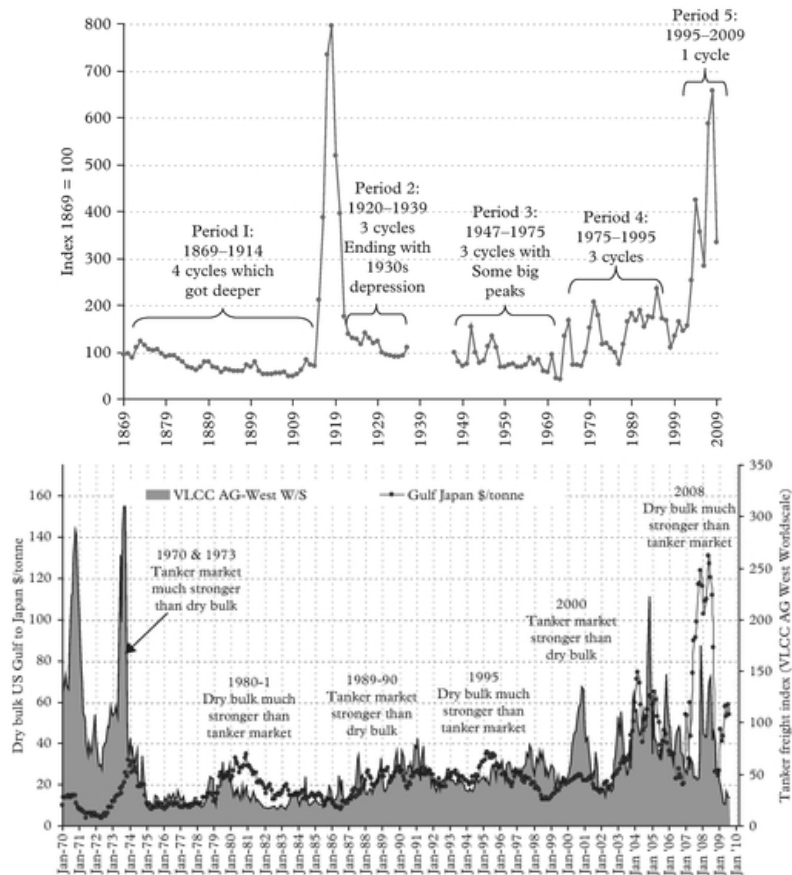
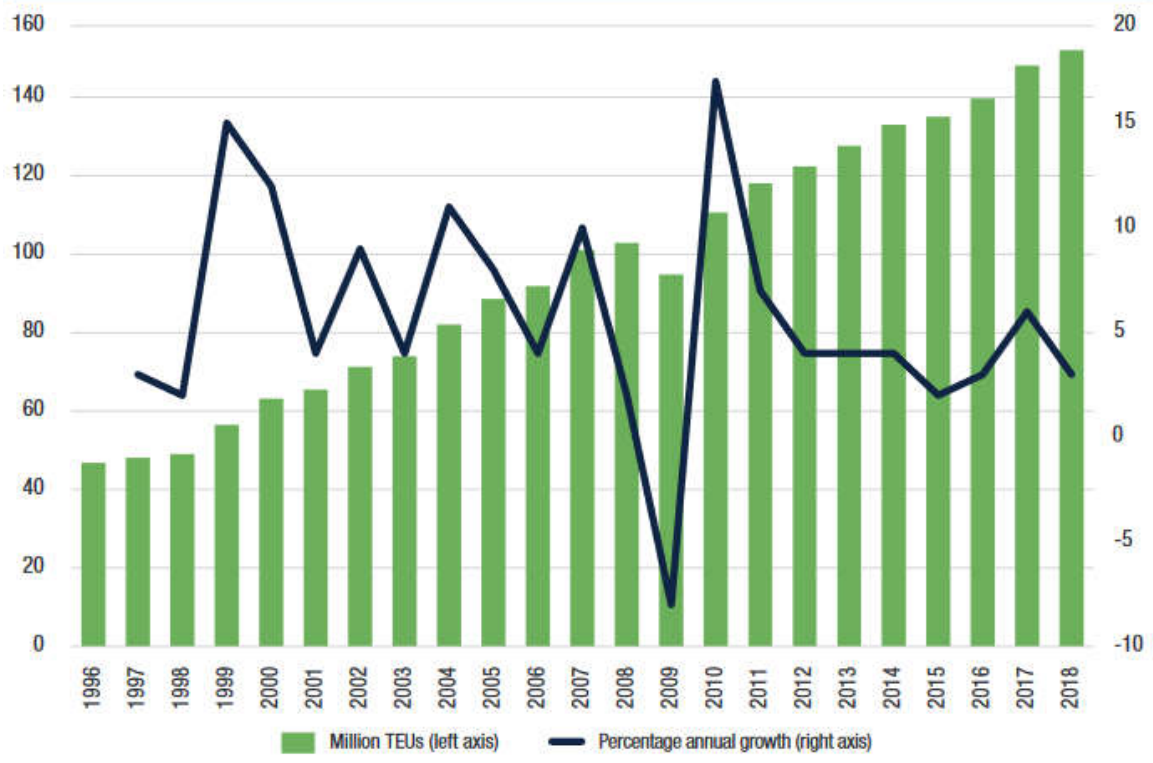


Figure 1.5 Global containerized trade, 1996-2018
(Million 20-foot equivalent units and annual percentage change)



Source: UNCTAD secretariat calculations, based on data from MDS Transmodal, World Cargo Database, May 2019.



Source: https://lawexplores.com/shipping-market-cycles/#cap_lbl0087



Current Covid-19 Impact

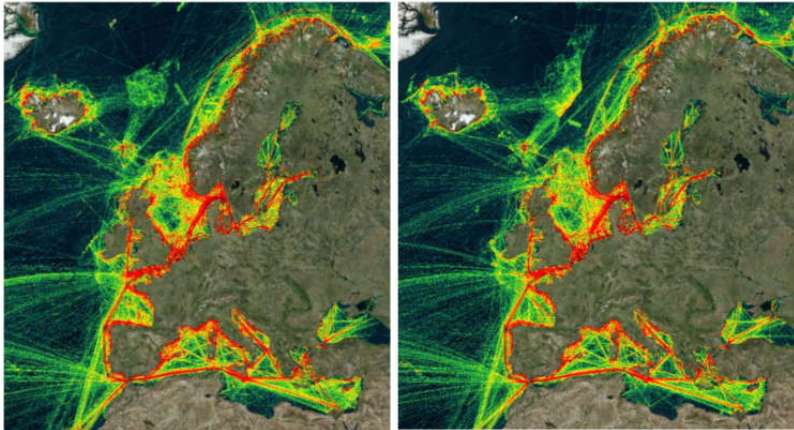


Figure 6: All ship types: ship traffic density in August 2019 (left) and in August 2020 (right)

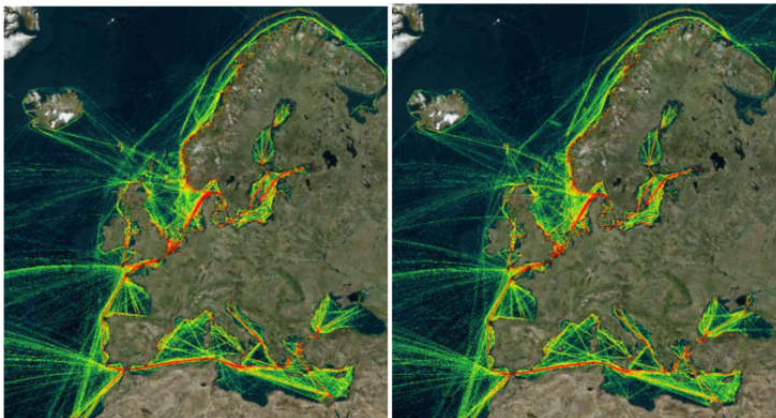


Figure 7: Cargo vessels: ship traffic density in August 2019 (left) and in August 2020 (right)

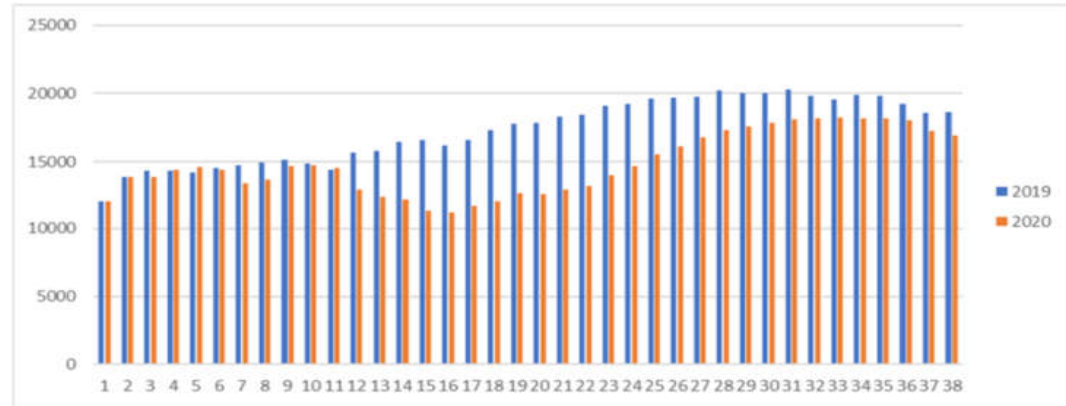


Figure 1: Ship calls reported to SSN in 2019 and 2020 per week

Ship type / Week	2019 vs 2020													26-38
	26	27	28	29	30	31	32	33	34	35	36	37	38	
Bulk carrier	-6%	1%	0%	-8%	-6%	0%	-5%	8%	-5%	-2%	-7%	-8%	-4%	-3%
Chemical tanker	-4%	18%	11%	2%	-5%	-18%	-11%	-28%	18%	-29%	-21%	-7%	-7%	-7%
Containership	-8%	-5%	-10%	-7%	-6%	-4%	-5%	-6%	-4%	-5%	-3%	-2%	-4%	-5%
Cruise ships	-94%	-94%	-92%	-93%	-92%	-89%	-90%	-89%	-88%	-89%	-87%	-86%	-86%	-90%
General cargo	-7%	-9%	-12%	-6%	-4%	-3%	-4%	-5%	-5%	-2%	-5%	0%	-5%	-5%
Liquefied gas tanker	-5%	-14%	-14%	-13%	-3%	4%	-6%	-16%	-1%	-13%	2%	-9%	-16%	-8%
Oil tanker	-5%	-3%	-6%	-2%	-4%	-6%	3%	-4%	-4%	3%	0%	0%	-2%	-2%
Passenger	-60%	-40%	-28%	-30%	-27%	-25%	-25%	-24%	-22%	-24%	-21%	-26%	-31%	-29%
Ro-Ro passenger	-7%	-4%	-1%	0%	-1%	-1%	2%	7%	4%	2%	6%	6%	0%	1%
Ro-Ro cargo	-13%	-9%	-9%	-3%	-5%	-7%	-8%	6%	-3%	0%	-6%	0%	0%	-5%
Vehicle carrier	-27%	-29%	-25%	-33%	-20%	-12%	-18%	-25%	-22%	-21%	-10%	-24%	-14%	-22%
Grand Total	-16%	-13%	-12%	-10%	-10%	-9%	-7%	-6%	-7%	-7%	-6%	-5%	-9%	-9%

Table 2: Evolution in number of ship calls per week for different ship types (most affected ship types indicated in red)

Source: <http://emsa.europa.eu/news-a-press-centre/covid19-impact/tagged/124-covid-19.html>



B Bloomberg

Merck Cyberattack's \$1.3 Billion Question: Was It an Act of War?

Post · Email · By the time Deb Dellapena arrived for work at Merck & Co. ... It hit FedEx, the shipping giant Maersk, the global confectioner Mondelez ... adviser to the Washington-based Center for Strategic and International
03.12.2019



NYT The New York Times

Deepwater Horizon Ten Years On

BP, which operated the Deepwater Horizon through a contractor, said the accident ... Offshore drilling collapsed after the Deepwater Horizon disaster, but a decade ... barrels a day, and oil companies brought seven
04.04.2020



IBT International Business Times

High Seas Piracy Is Alive And Well. Can We Kill It?

In 2009, for example, the MV Maersk Alabama was taken over by pirates (as portrayed in the movie 'Captain Phillips'), leading to the kidnapping ...
25.02.2020



S Spiegel Online

Consequences of Fukushima: German Ports Unsure How to Deal with Contaminated Ships

In a matter of weeks, ships from Japan which may be carrying cargo ... around Fukushima, where radioactivity has been released from reactors ...
30.03.2011



Conclusions

- Shipping is a globally connected infrastructure system
- Shipping is affected by global crisis
- Shipping is in itself a very resilient system
- Learning from this industry means going through a lot of suffering

This does not mean that the industry and the people working within it are not suffering at the moment due to Covid-19

