

# ADAPTATION IMPLEMENTATION: RESEARCH TO IMPACT IN THREE SECTORS

Resilient  
Chicago:  
Climate  
Planning  
for the Future



# Research to Action: Themes

- Collateral Benefits
- Business Case
- Humanitarian Issue





CHICAGO  
CLIMATE  
ACTION  
PLAN



# FIVE STRATEGIES

**Co-Benefits:**

**Improved Quality of Life**

ADDRESSING THE CHALLENGE OF CLIMATE CHANGE

ENERGY EFFICIENT BUILDINGS  
8 ACTIONS

CLEAN & RENEWABLE ENERGY SOURCES  
5 ACTIONS

IMPROVED TRANSPORTATION OPTIONS  
10 ACTIONS

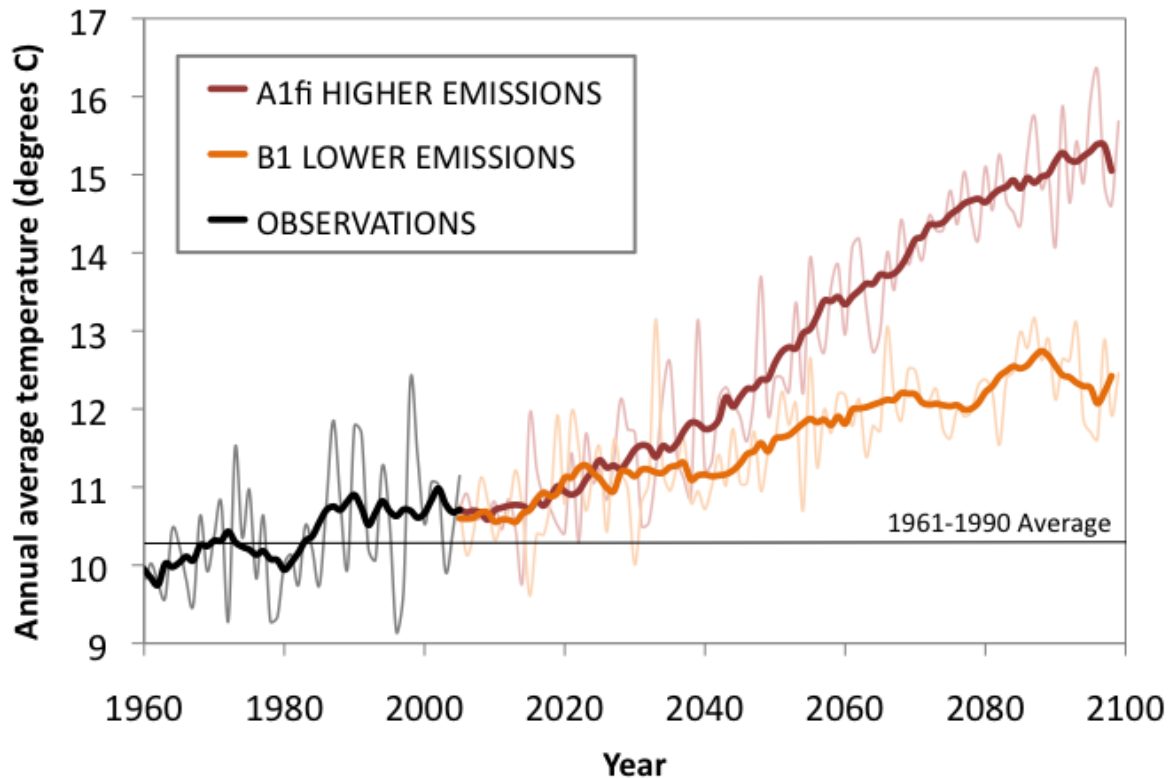
REDUCED WASTE & INDUSTRIAL POLLUTION  
3 ACTIONS

PREPARATION  
9 ACTIONS

=  
35 WAYS  
TO ENSURE A RESILIENT CITY

# Temperature: A warmer Chicago

**Chicago Metropolitan Area Annual Average Temperatures**  
Observations and projections under multiple emissions scenarios



Source: Hayhoe et al. *Journal of Great Lakes Research*, 2010.



Higher Emissions:  
**31 days**

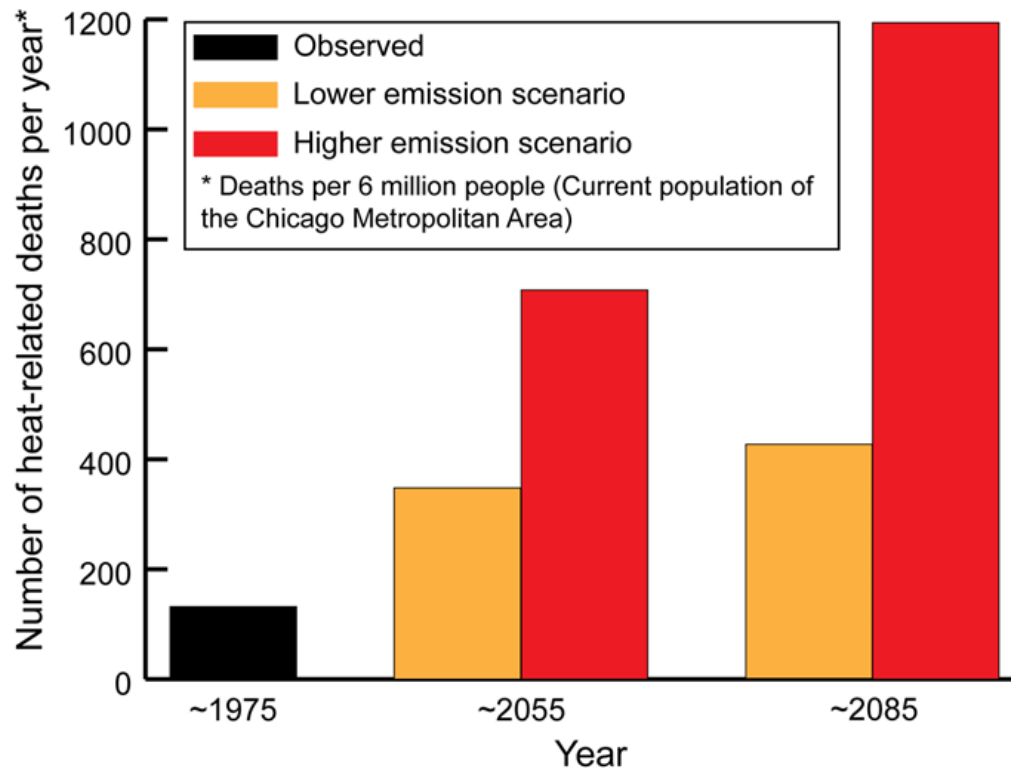
Projected  
number of 100-  
degree days  
per year in  
Chicago

Lower Emissions:  
**8 days**

# Health: Increasing heat-related risks

## Chicago Metropolitan Area Heat-Related Deaths

Observations and projections under multiple emissions scenarios



Source: Hayhoe et al. *Journal of Great Lakes Research*, 2010



# Climate Matters: Emergency Services

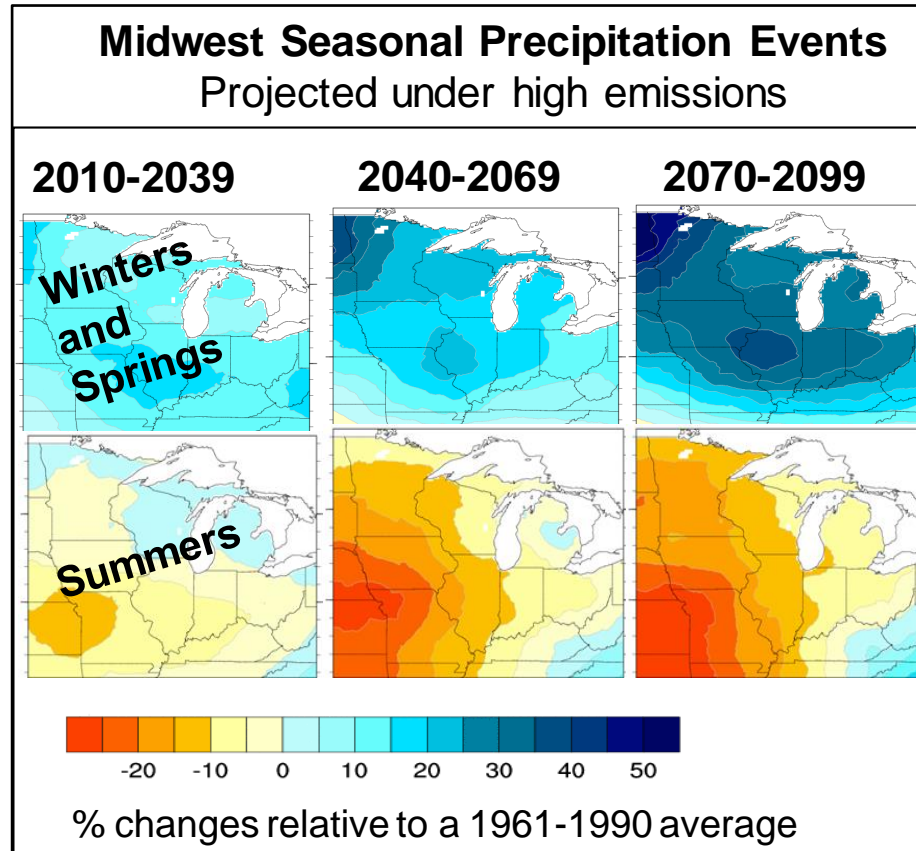
**More heat emergencies...  
More storms...More fires**



**Increased demand on first responders**



# Impacts of Chicago's Changing Climate



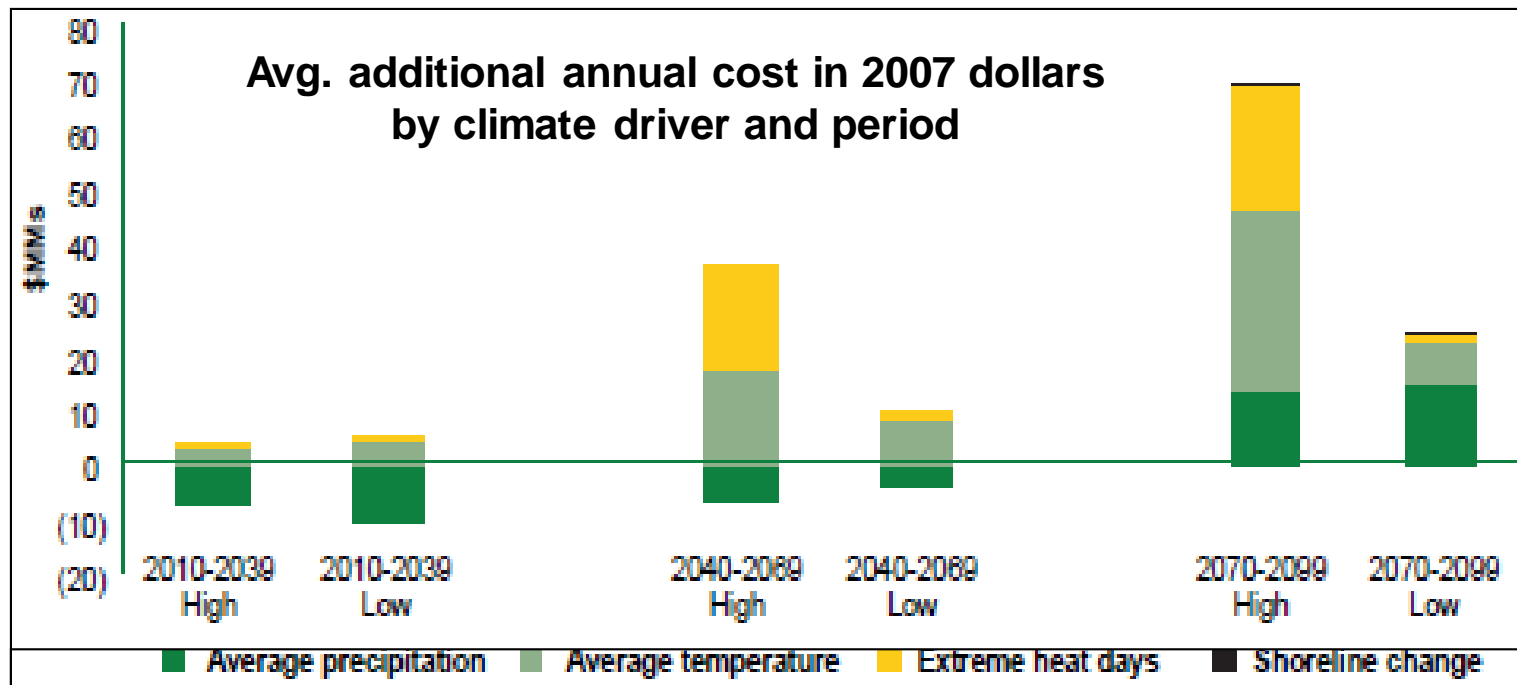
Source: Hayhoe, U.S. Global Change Research Program , 2009

# Climate Matters: Extreme Precipitation

A photograph of a rainy city street. In the foreground, there are several picnic tables with benches, some of which have black umbrellas over them. People are walking on the wet pavement, some holding umbrellas. In the background, there are multi-story buildings and trees with green leaves. The overall atmosphere is overcast and rainy.

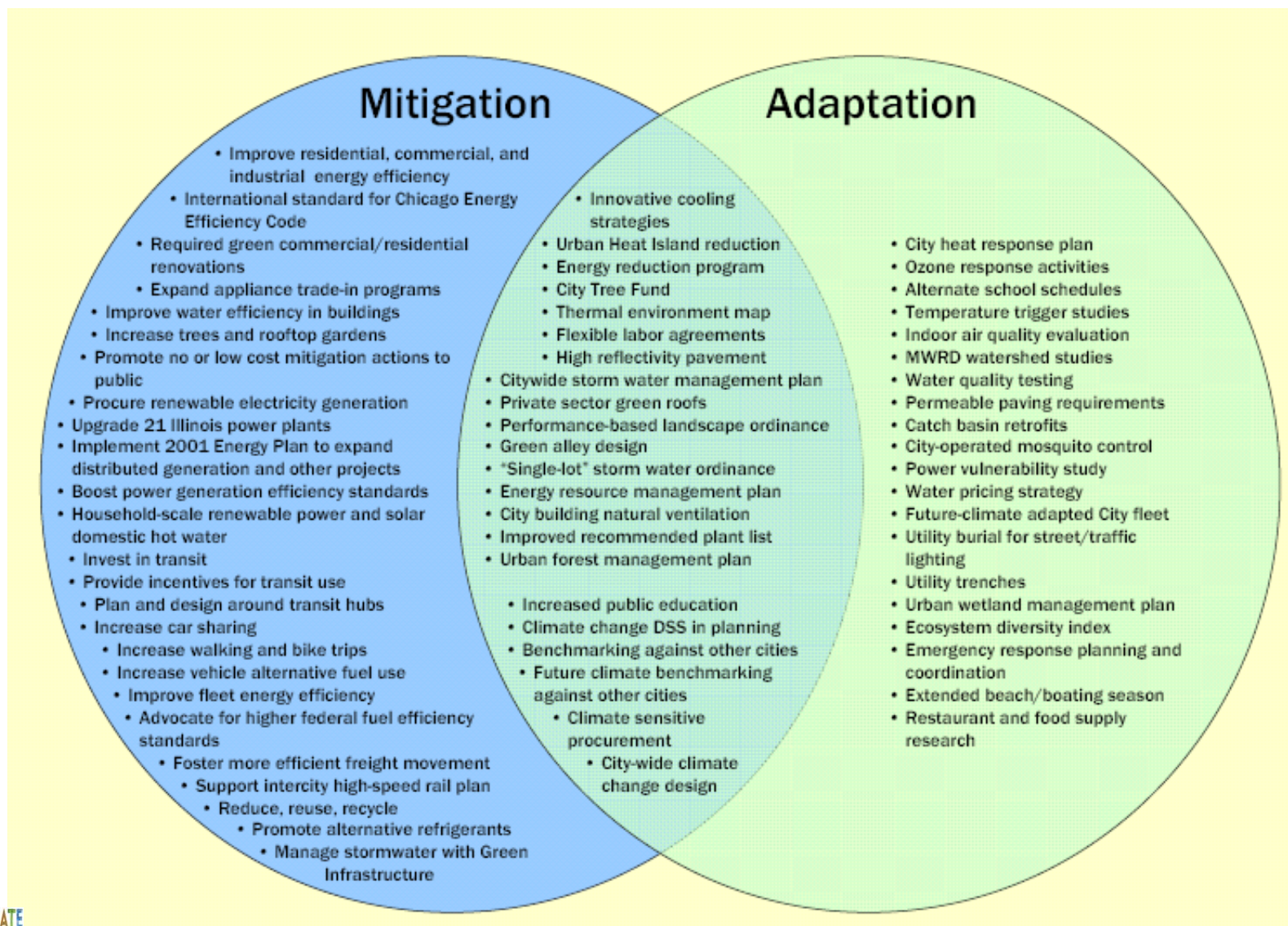
More rain when it is *not* needed,  
less when it *is* needed

# Economic Risk of Climate Impacts

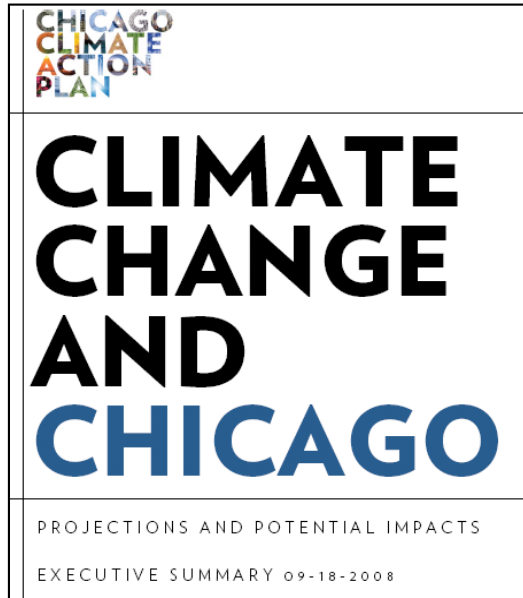




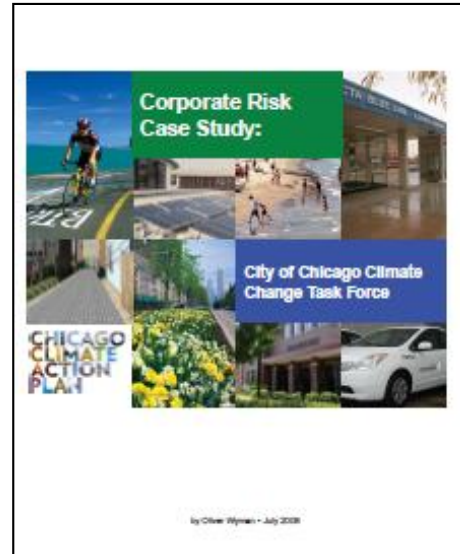
# Mitigation-Adaptation Overlap



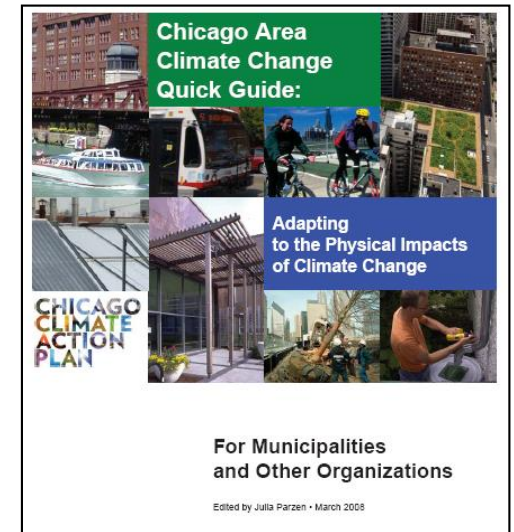
# Adaptation Resources



**Projections and potential impacts**



**Corporate risk analysis**



**Adaptation quick guide**

[www.chicagoclimataction.org](http://www.chicagoclimataction.org)



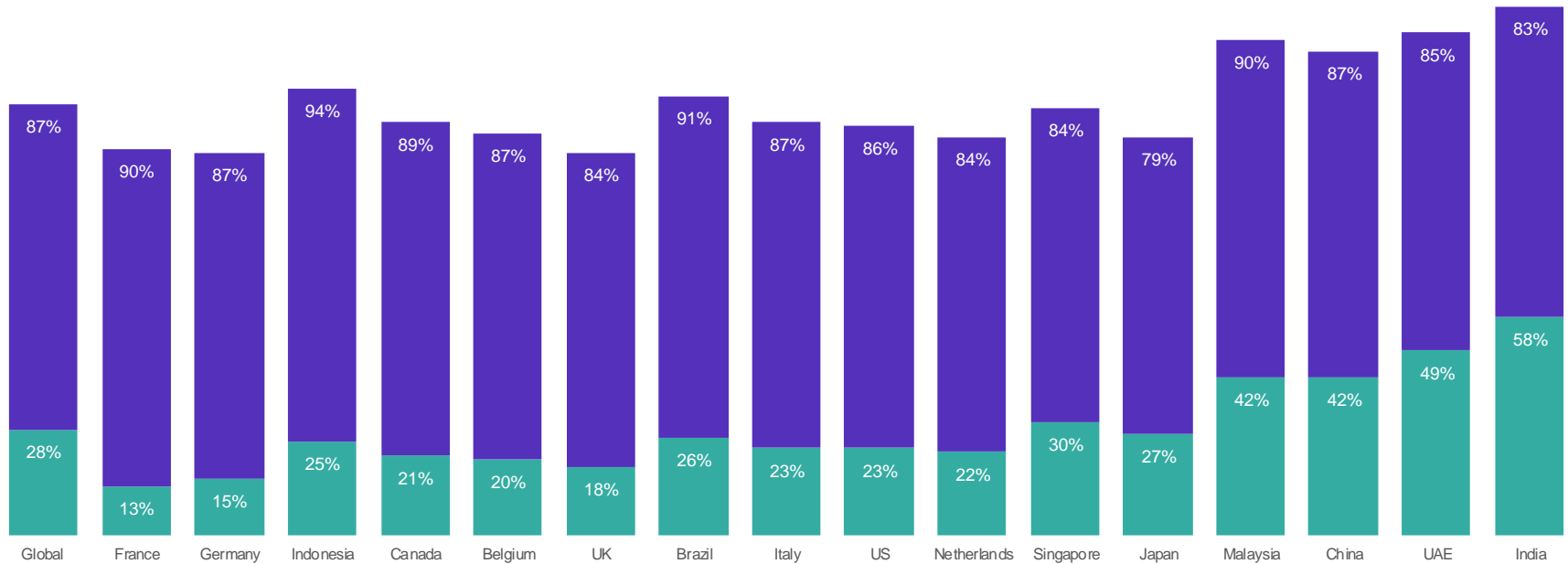
**Edelman**

**Business + Social Purpose**



# Business is Struggling to Address Corporate Responsibility Issues

■ What Business Should Do  
■ Current Performance



# But there is a Shift in Trust-Building From Operational to Societal

## 16 TRUST BUILDING ATTRIBUTES

 SOCIETAL

 OPERATIONAL

**SOCIETAL**  
attributes more important  
to building future trust

- 1 Listens to customer needs and feedback
- 2 High quality products or services
- 3 Treats employees well
- 4 Places customers ahead of profits
- 5 Takes actions to address issue or crisis
- 6 Has ethical business practices
- 7 Has transparent and open business
- 8 Communicates frequently and honestly
- 9 Works to protect/ improve environment
- 10 Addresses society's needs
- 11 Positively impacts the local community

**CURRENT  
TRUST**

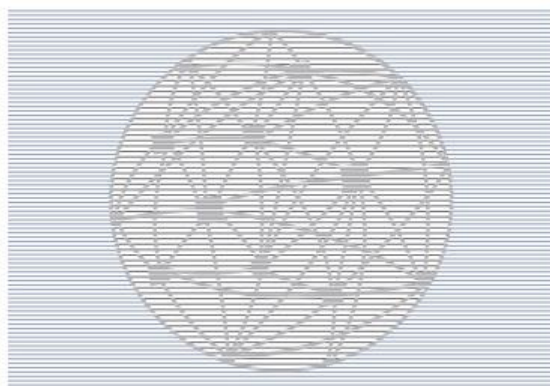
driven by operational  
attributes

- 12 Innovator of new products
- 13 Highly regarded, top leadership
- 14 Delivers consistent financial returns
- 15 Ranks on a global list
- 16 Partners with third parties



Insight Report

**Global Risks 2014**  
Ninth Edition



**Table 1: Ten Global Risks of Highest Concern in 2014**

No.	Global Risk
1	Fiscal crises in key economies
2	Structurally high unemployment/underemployment
3	Water crises
4	Severe income disparity
5	Failure of climate change mitigation and adaptation
6	Greater incidence of extreme weather events (e.g. floods, storms, fires)
7	Global governance failure
8	Food crises
9	Failure of a major financial mechanism/institution
10	Profound political and social instability

Source: Global Risks Perception Survey 2013-2014.

Note: From a list of 31 risks, survey respondents were asked to identify the five they are most concerned about.



More than 70% of corporate respondents saw risks to their supply and value chains from climate disruption



**Why must supply chains collaborate to combat climate risk?**  
CDP Global Supply Chain Report Launch, see how leading companies are catalyzing change

[Cdp.net/supplychain](http://Cdp.net/supplychain)

# Millennials' Expectations

- **88%** believe the for-profit sector should address social and environmental issues  
Source: 8095 survey

- **Almost 90%** would choose an employer with corporate responsibility values that echo their own and 90% would consider leaving if a firm's corporate responsibility values no longer matched their expectations.

Source: 2010 Net Impact



# Environmental Cost Impact of Supply Chains

**On average, US firms saw supply chain accounting for 60% of environmental costs**



**Food and Beverage Sector: 92% of environmental costs in supply chain**

# CORPORATE RESPONSIBILITY A BUSINESS STRATEGY

90% companies note that sustainability is a part of business strategy

- 61%: sustainability measures added to company's profit when on the agenda of top management





# Unlocking Global Adaptation Solutions

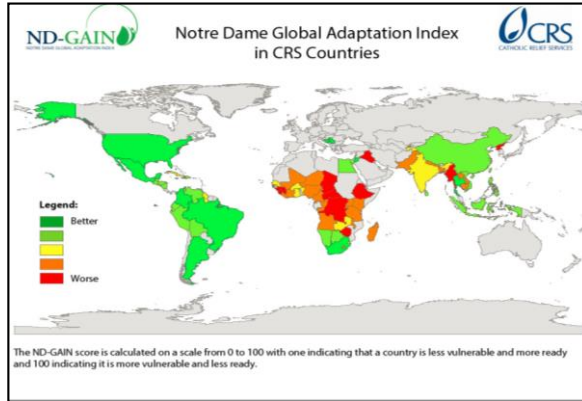
*Country Resiliency Index  
to Inform Decision-  
Making*



Country  
Rankings  
2012

ND-GAIN INDEX				VULNERABILITY				READINESS			
Rank	Country	Trend	Score	Rank	Country	Trend	Score	Rank	Country	Trend	Score
119	Swaziland	=	53.5								
120	India	▲	53.4								
121	Tajikistan	=	53.3								
122	Syria	▼	52.6								
123	Libya	▼	52.1								
124	Micronesia	▼	51.8								
125	Cuba	▼	51.1								
126	Senegal	=	50.9								
127	Benin	▲	50.8								
128	Zambia	▲	50.6								
129	Gambia	=	50.5								
130	Rwanda	▲	49.9								
131	Djibouti	▲	49.6								
132	Pakistan	=	49.4								
133	Cambodia	▲	49.3								
134	Lesotho	=	49.0								
134	Mauritania	=	49.0								
136	Malawi	▲	48.7								
137	Mozambique	=	48.6								
137	Uganda	=	48.6								
139	Laos	▲	48.5								
140	Tanzania	▲	48.3								
141	Burkina Faso	=	48.2								
142	Sao Tome & Principe	▲	48.1								
143	Cameroon	=	47.9								
144	Comoros	▲	47.5								
145	Bangladesh	▲	47.3								

8	United Kingdom	▼	79.7
11	Germany	=	79.3
13	United States	▼	79.0
23	Spain	=	76.1
66	Thailand	=	64.2
105	Philippines	▲	57.4
112	Viet Nam	=	55.9
139	Laos	▲	48.5





## Water

Precipitation change

Freshwater withdrawal

Access to improved water supply







## Food

Crop yield change

Food import dependency

Agriculture capacity, including irrigation and fertilizer





# Health

Climate-change-induced disability adjusted life years

External health resource dependency

Health workers per capita





Shutterstock.com

# Coastal Infrastructure

Land area less than 10m above sea level

Population living less than 10m above sea level



# ND-GAIN Vulnerability Sectors

Water



Ecosystems

Food



Coastal

Health

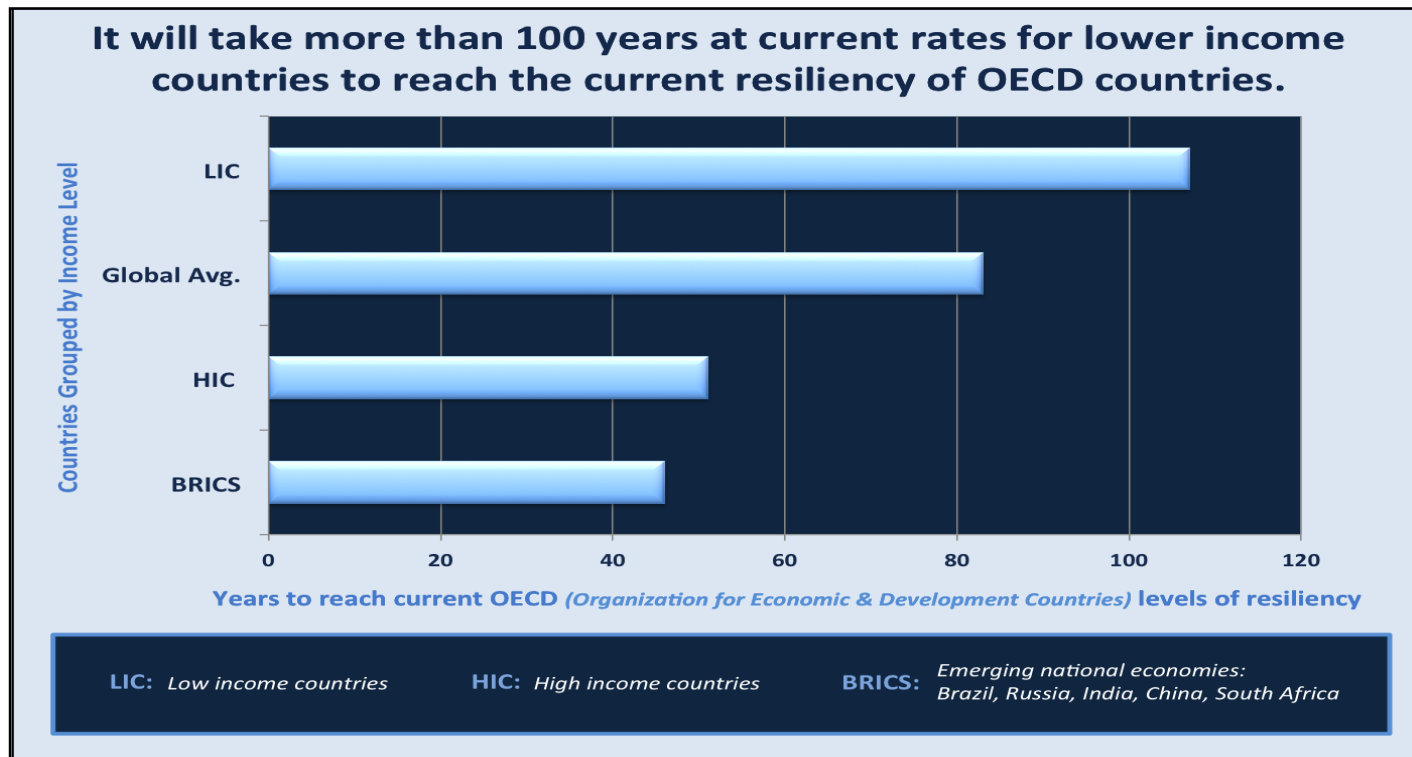


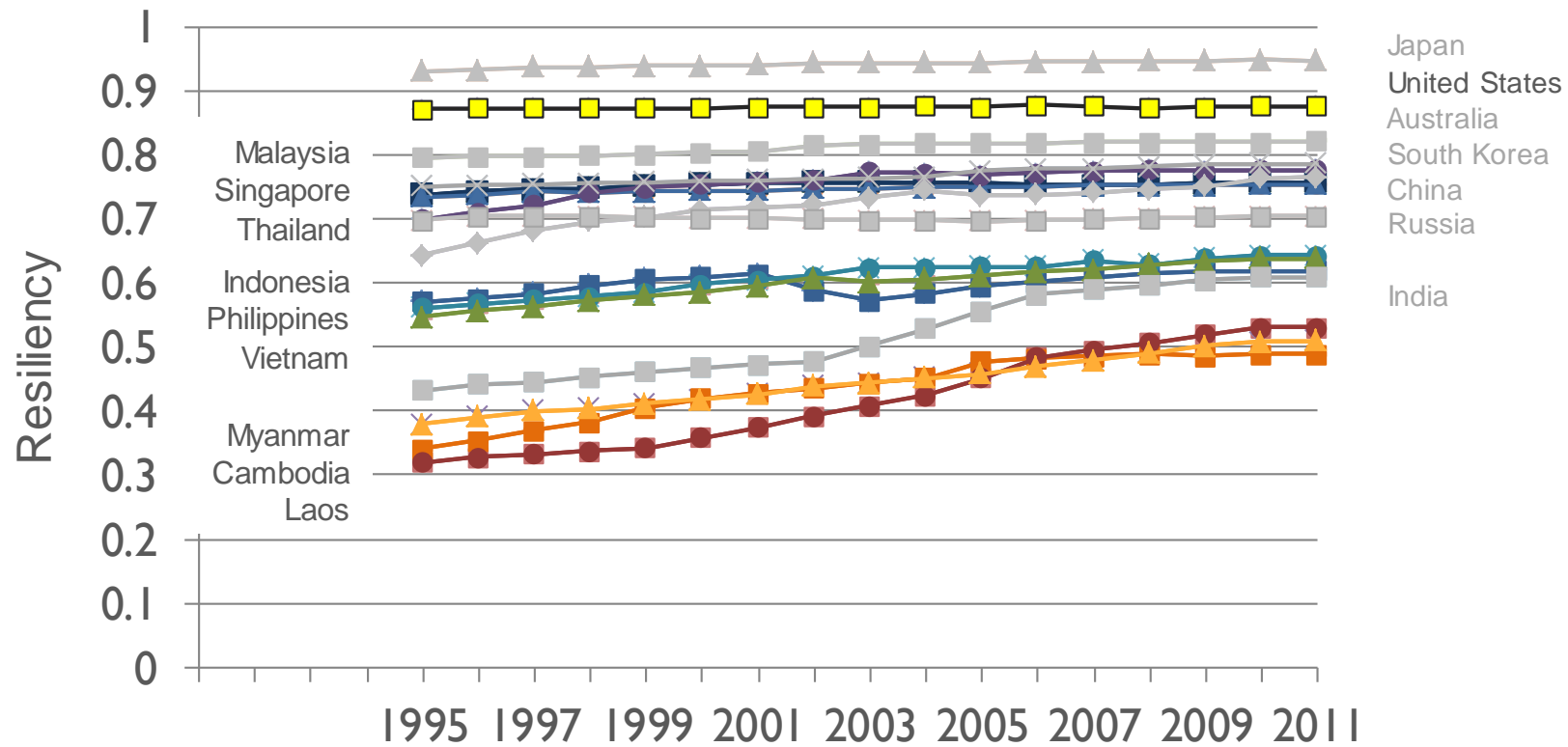
Energy



Transportation

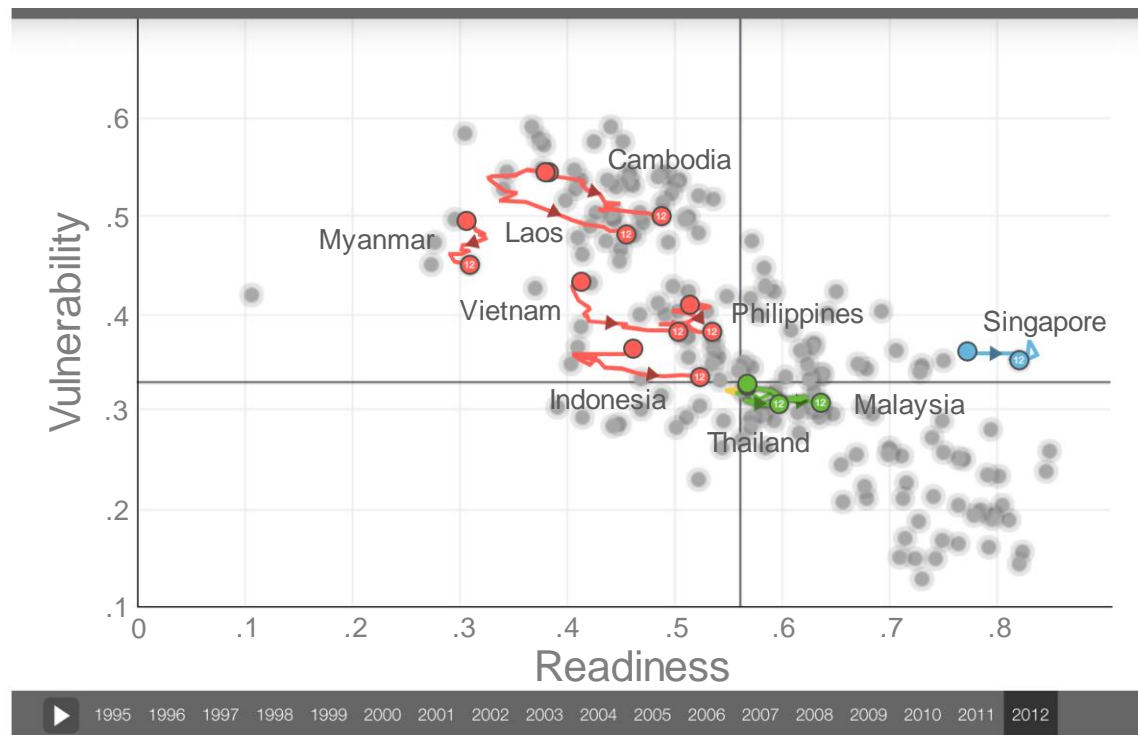
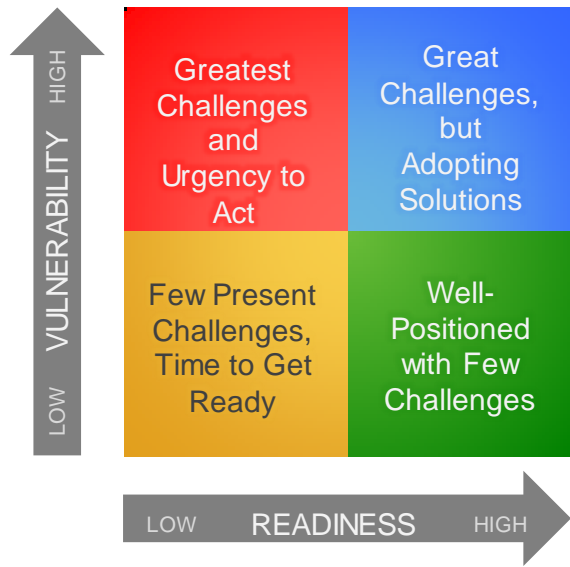






1995-2012

## The ND-GAIN Matrix



- Multinational or local corporation
- Local partner
- ND-GAIN Country rank below 60
- Measureable resiliency
- <http://gain.org/nd-gain-prize>

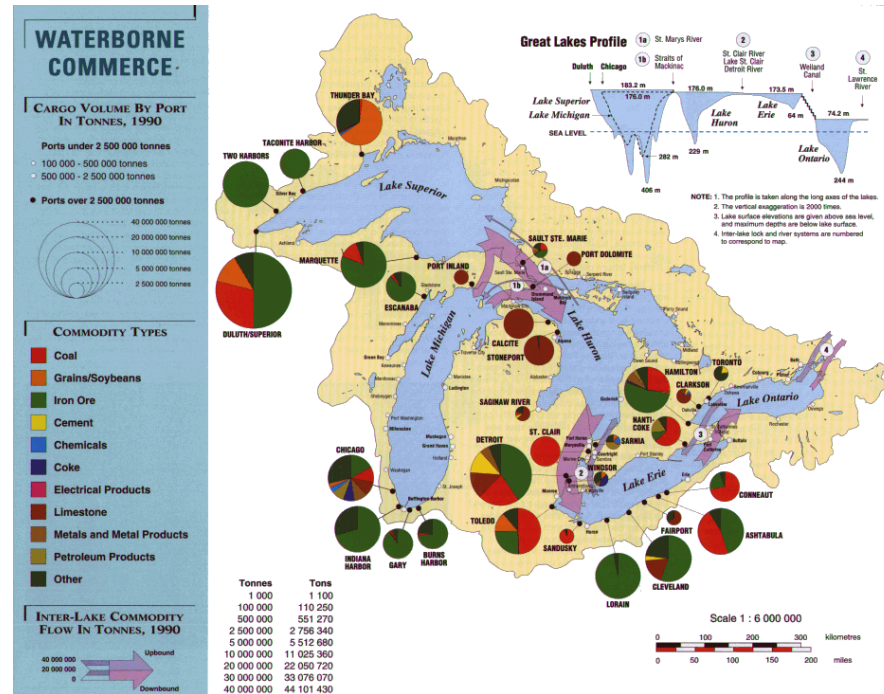




Regional Assessments

Sector Assessments

Urban Assessments



*Readiness \* Vulnerability \* Corporate Stakeholders*

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