Building Climate Resilience in Thailand's Private Sector

Workshop | Wednesday, 28 February

The Stock Exchange of Thailand

BSR®

The Business of a Better World

What is climate resilience?

To prepare for the reality of climate change, businesses need to reduce their risk and build resilience, defined as the **ability to anticipate, absorb, accommodate, and recover** from the impacts of climate change.

Intergovernmental Panel on Climate Change, 2014

Why assess risk and build resilience?

- Understand the associated impacts and costs on your business
- Find where your business can reduce costs, protect value, and create value
- Disclose data to boost stakeholder confidence in your business and maintain your social license to operate

Climate Risk

Climate change and Thailand

Impacts vary across the country, but trends are clear.

Temperature rise

- Average temperature rose by .95C between 1955-2009; above global average of .69C (*Thailand Meteorological Department; Thailand Research Fund)*
- Average temperature could rise from 29-33C in early 21st century to 33-35C by 2100 *(Thailand Research Fund)*

Tropical storms

- Tropical storms increasing in frequency and intensity (*Thailand Meteorological Department*)
- Intensity of southwest monsoon season could increase 3-5 percent by 2100 (*TransRe*)

Climate change and Thailand

Rainfall

- Heavier rainfall in the southern peninsula; less rainfall in northeastern region (*Thailand NDC*)
- Projected large rainfall events, accumulating over 100mm per day, leading to waterlogging, pest infestation, and fungal disease
- Flooding in the industrial zone is projected to increase 30 percent by 2050 (*The World Bank*)

Drought

- Severe drought in 2015-2016 diminished access to freshwater for drinking and business production (*TransRe*)

Climate change and Thailand

Sea-level rise

- 1993-2008, the sea level in the Gulf of Thailand rose about 3-5mm per year, compared to a global average of 1.7mm (*TransRe)*

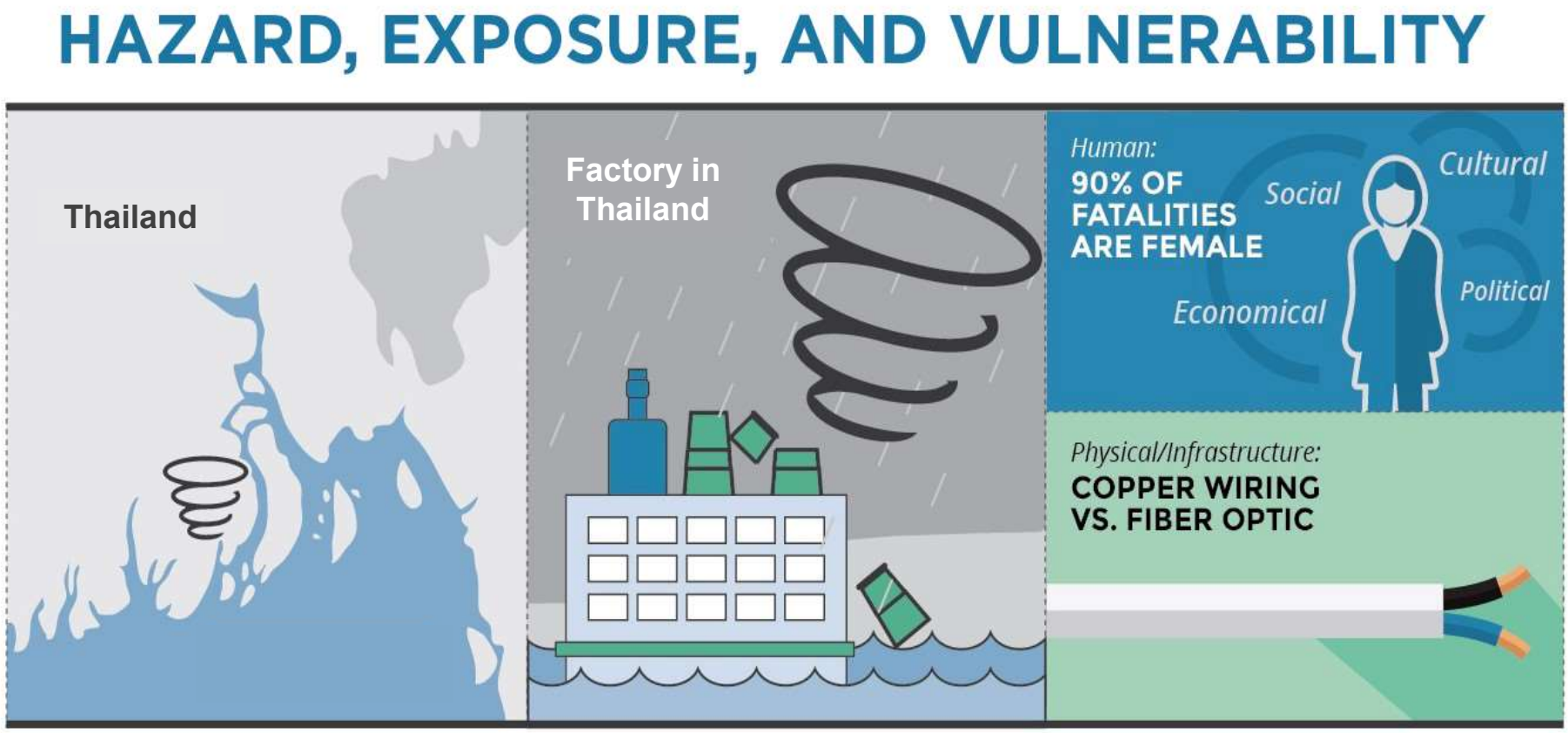
Flooding

- 2011 floods cost 1.4 trillion baht in damages; affected 240,000 small businesses; reduced production in the ICT equipment industry by 73% (*100 Resilient Cities; SEI International*)

Disease

- Increase of water- and insect-borne diseases (*WHO*)
- By 2070, 71 million could be at risk for malaria (*Thailand Meteorological Department*)

3D approach to assess climate risk



BSR's global framework

Vulnerability

Overview

- Considered one of most vulnerable countries to climate change (*IPCC*)
- Deemed one of 16 countries at "extreme risk" to climate change within the next 30 years (*Verisk Maplecroft)*

Low-lying coastal areas

- With 2,420 km of coastline, communities at risk of sea surge
- Land subsidence, particularly along the river in Bangkok could see water-level rise of 25 mm per year (*TransRe)*

Infrastructure

- Greater investment needed in the transport sector (*ADB*)
- Dykes, roads, and floodwalls need improvement; downstream communities also at risk

Vulnerability

Socioeconomic development barriers

- Disparity between urban and rural income, poverty rates, access to resources, and consumption (*ADB*)

At-risk populations

- Women, poor, coastal and rural communities, and farmers often at greatest risk from climate impacts

Freshwater scarcity

- Salinization and drought will add stress to Thailand's water management system and friction of transboundary waterway management (*The World Bank*)
- Agriculture and manufacturing, which are reliant on water for production, will face risks

Vulnerability

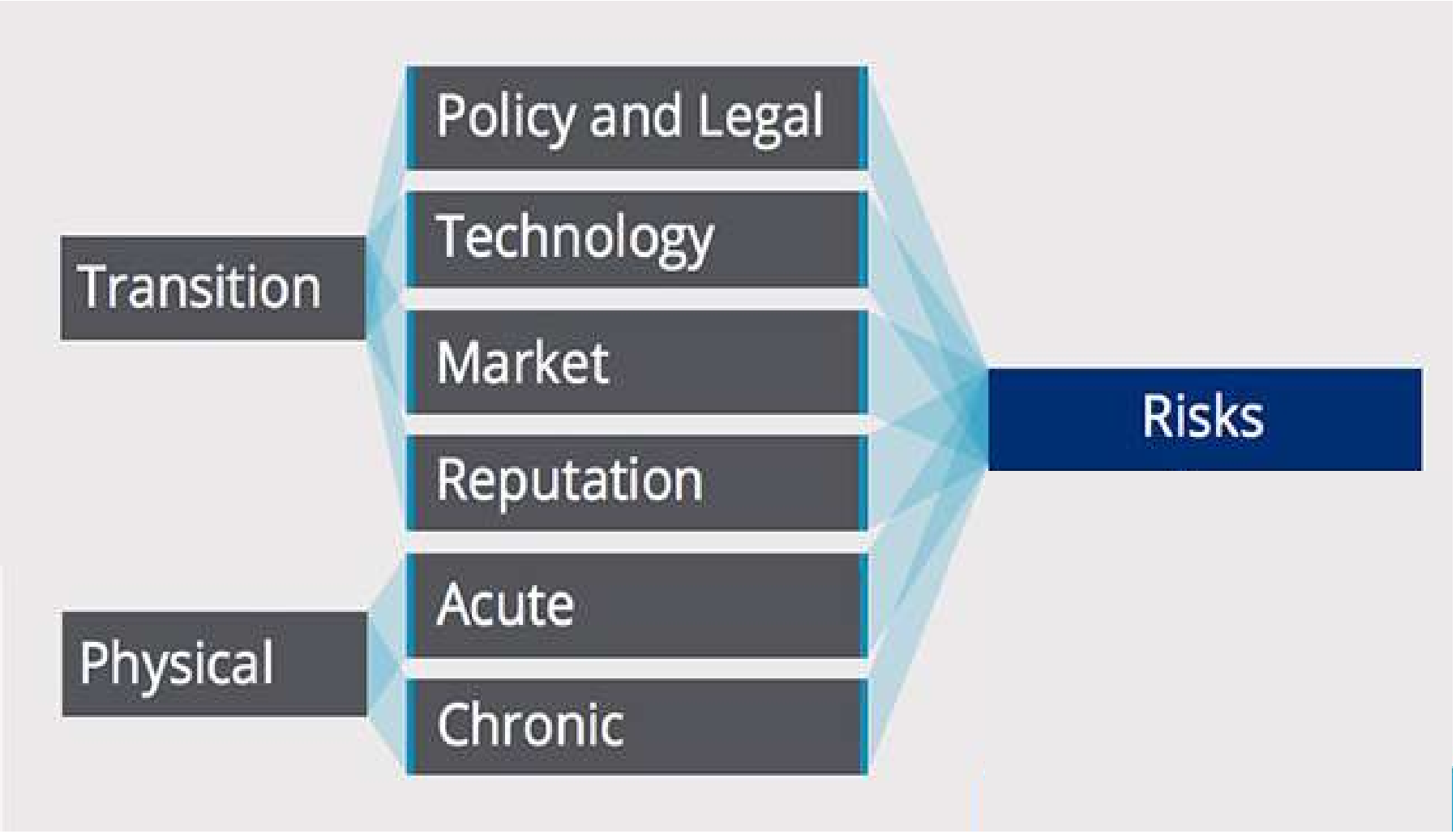
Food Supply Disruptions

- Higher temperatures and flood risks are affecting crop yield and displacing farmers, which impacts production

Small- to Medium-sized Enterprises

- SMEs comprise 99.7% of all business and 78 percent of labor force
- After 2011 floods, 37% of SME survey respondents could not get to work; 26% could not deliver products; 22% had damaged facilities; 45 days of business cessation (*ADPC*)
- Most lack insurance (*SEI International*)

Climate-related risks to business



Source: The Task Force on Climate-related Financial Disclosures (TCFD), 2016

Examples of climate risks per sector

Financial Services	Utilities / Energy	ICT	Property & Construction	Food & Beverage
• Disruption to owned assets and operations • Investment portfolio exposure • Investor and public confidence	• Changing access to energy supplies • Greater demand for energy management solutions • Water availability • Policy and investor pressure • Workforce safety and security	• Product manufacturing and supply chains • Workforce instability • Infrastructure and business processes • Evolving customer needs	• Disturbance to infrastructure and operations • More pressure points with community relations • Water availability • Workforce safety	• Supply chain security • Infrastructure and distribution • Evolving consumer demands • Workforce instability • Water scarcity

BSR's Climate Adaptation Issue Briefs: Mining, Financial Services, Transportation, Energy/Utility, Consumer Products, ICT, Food/Bev/Agriculture.

To assess risk:

- Designate a climate resilience leader
- Incorporate climate risks into enterprise risk management practices and business continuity plans
- Assess risk not only in operations but also within the supply chain and community
- Identify priority areas to address
- Map existing and prospective assets to reduce risk and build resilience
- Disclose findings and course of action

Building Climate Resilience

Assessing Risk and Building Resilience

3D Risk Assessment			Business Risk	Building Resilience
Hazard	**Exposure**	**Vulnerability**		
What climate-related hazards are present in areas where your business is operating and/or sourcing from?	What assets, operations or supporting infrastructure do you have that would likely be affected?	What are some factors that could make you more vulnerable to those hazards?	How will climate risk affect your business (transition risks and physical risks)?	Map your company's assets: • Human • Political • Physical • Financial • Social • Natural What programs can be revised or enhanced to reduce climate risks?

BSR's global framework

Examples of resilience building

Financial Services	Utilities / Energy	ICT	Property & Construction	Food & Beverage
Deutsche Bank offers guidance for customers investing in agriculture. **Henderson Group** created strategy to shift investments away from risky sites and toward more resilient areas.	With its geology branch, **EVN** includes floodwater studies in planning process for site identification; sells analyses as a commercial product to governments, tourism and other companies.	**Jabil's** risk and assurance teams monitor climate risk and factor it into due diligence for M&A; works with suppliers and trade associations on risk mitigation and adaptation. **Hitachi** set up water exposure prevention training for employees located near rivers	**Gammon** offers welfare facilities with air-conditioned rest areas, ice machines and heat stroke prevention measures. They are trialing personal / portable heat stress monitors.	**Unilever** harvests rainwater at select factories and created agriculture standards/tools for suppliers. **ConAgra, Anheuser-Busch InBev, SABMiller** invested in research into more resilient, drought-tolerant, and productive seed varieties.

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Thank you

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Final reports and tools will be available this summer on www.bsr.org