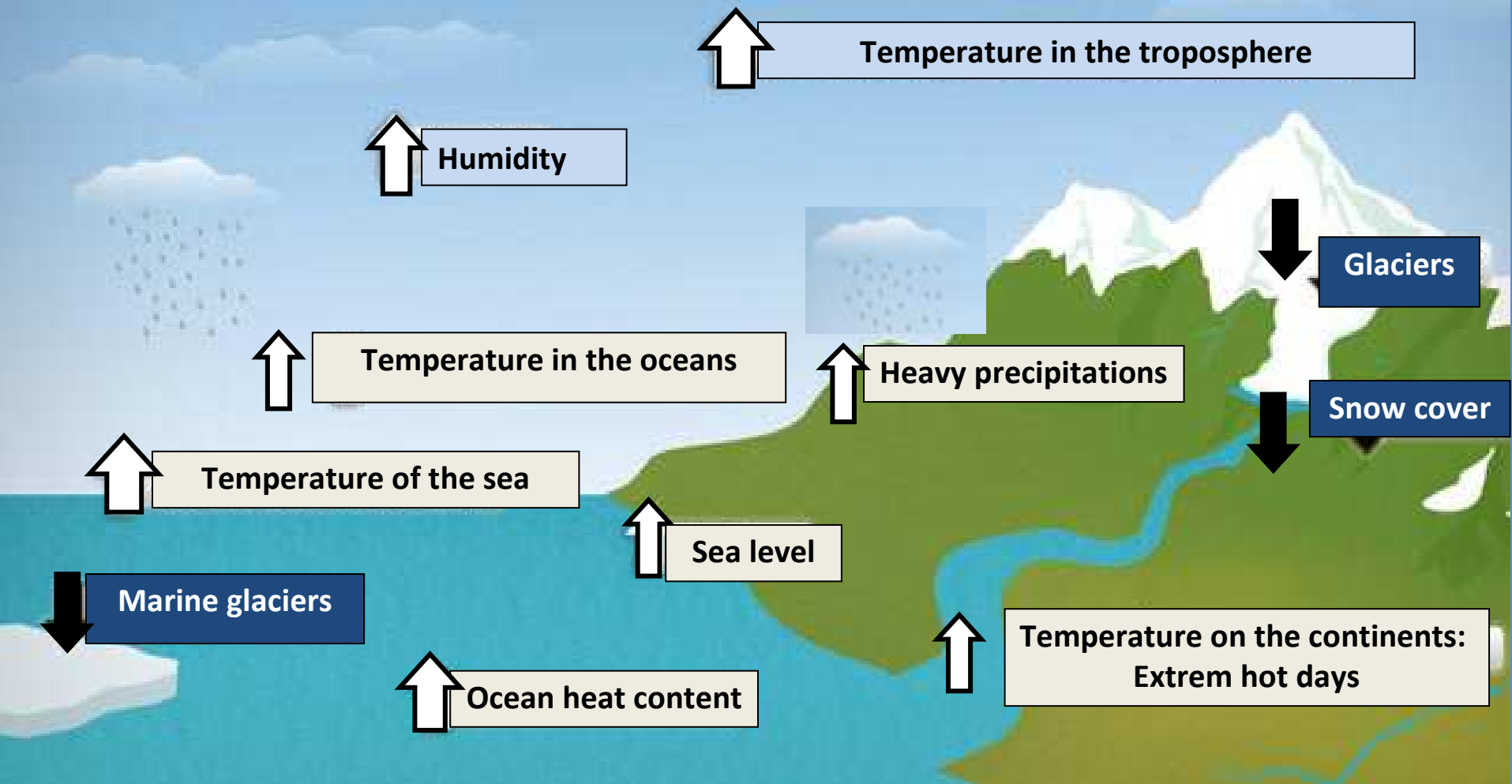


12th Bonn Dialogues, 5th of October

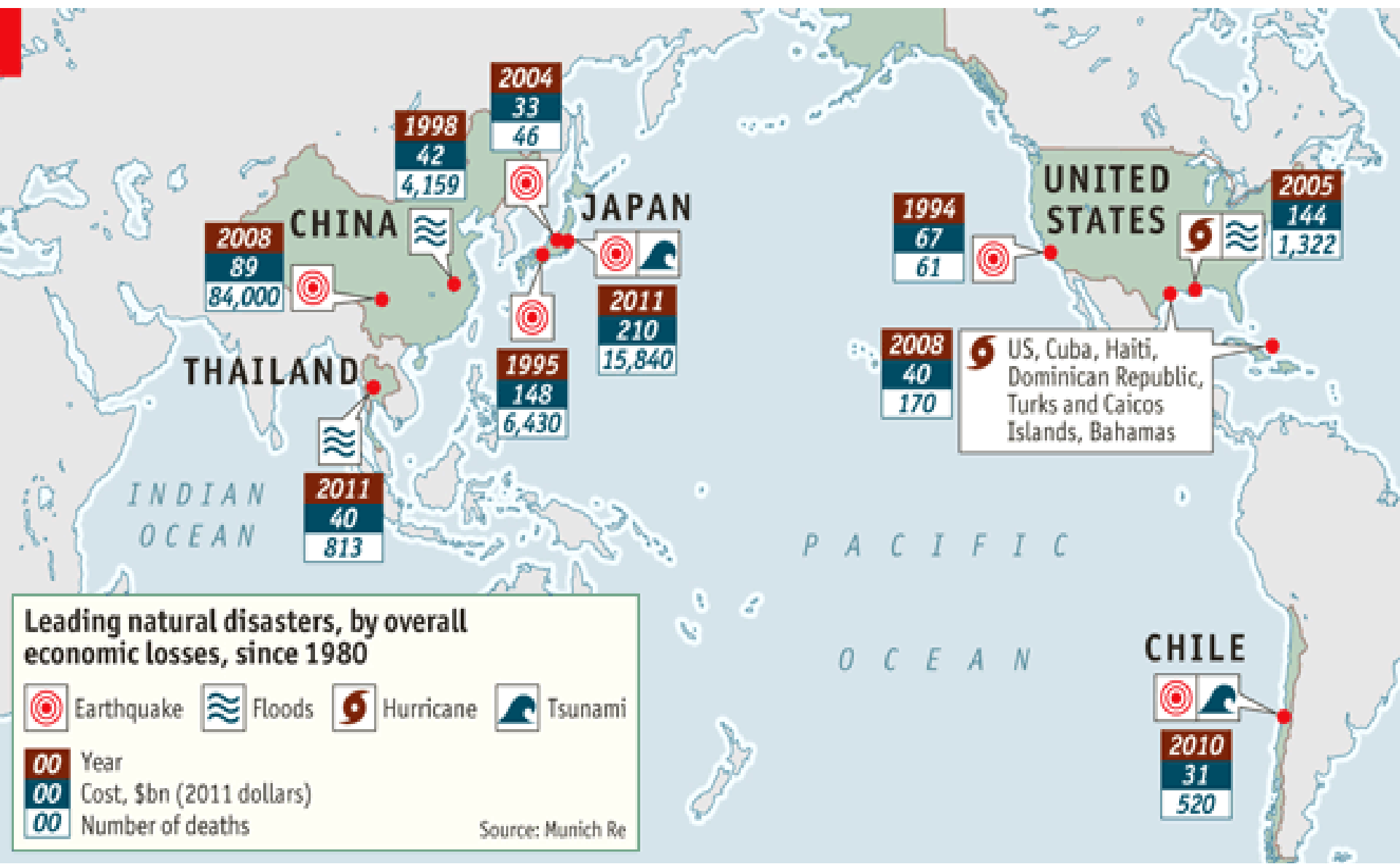
Climate change, social vulnerability and resilience

**Prof. Dr. Úrsula Oswald Spring
National Autonomous University of Mexico
(CRIM-UNAM)
National Coordinator of Water Research
Network, CONACYT
IPCC Lead Author**

Some indicators for climate change and extreme events



Biggest disasters in 3 decades



Economic losses from climate-related disasters have increased, with large spatial and interannual variation, but are higher in industrialized countries, while fatalities are higher in developing countries.

Managing the risks: hurricanes in Mexico, Central America and the Caribbean

Risk Factors

- population growth
- increasing property value
- higher storm surge with sea level rise



Risk Management/ Adaptation

- better forecasting
- warning systems
- stricter building codes
- regional risk pooling

Projected globally: *likely* increase in average maximum wind speed and associated heavy rainfall (although not in all regions)

ipcc
climate change



Gender vulnerability and women's discrimination increase vulnerability of exposed communities: even non-extreme events can have extreme impacts in loss of lives and livelihood

Managing the risks: drought in the context of food security in the drylands

Risk factors

- more variable rain
- ecosystem degradation
- hotter days
- discrimination of women
- poor health and education conditions



Risk Management/Adaptation

- improved water management
- sustainable farming practice
- drought-resistant crops
- drought forecasting

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INTERGOVERNMENTAL PANEL ON climate change



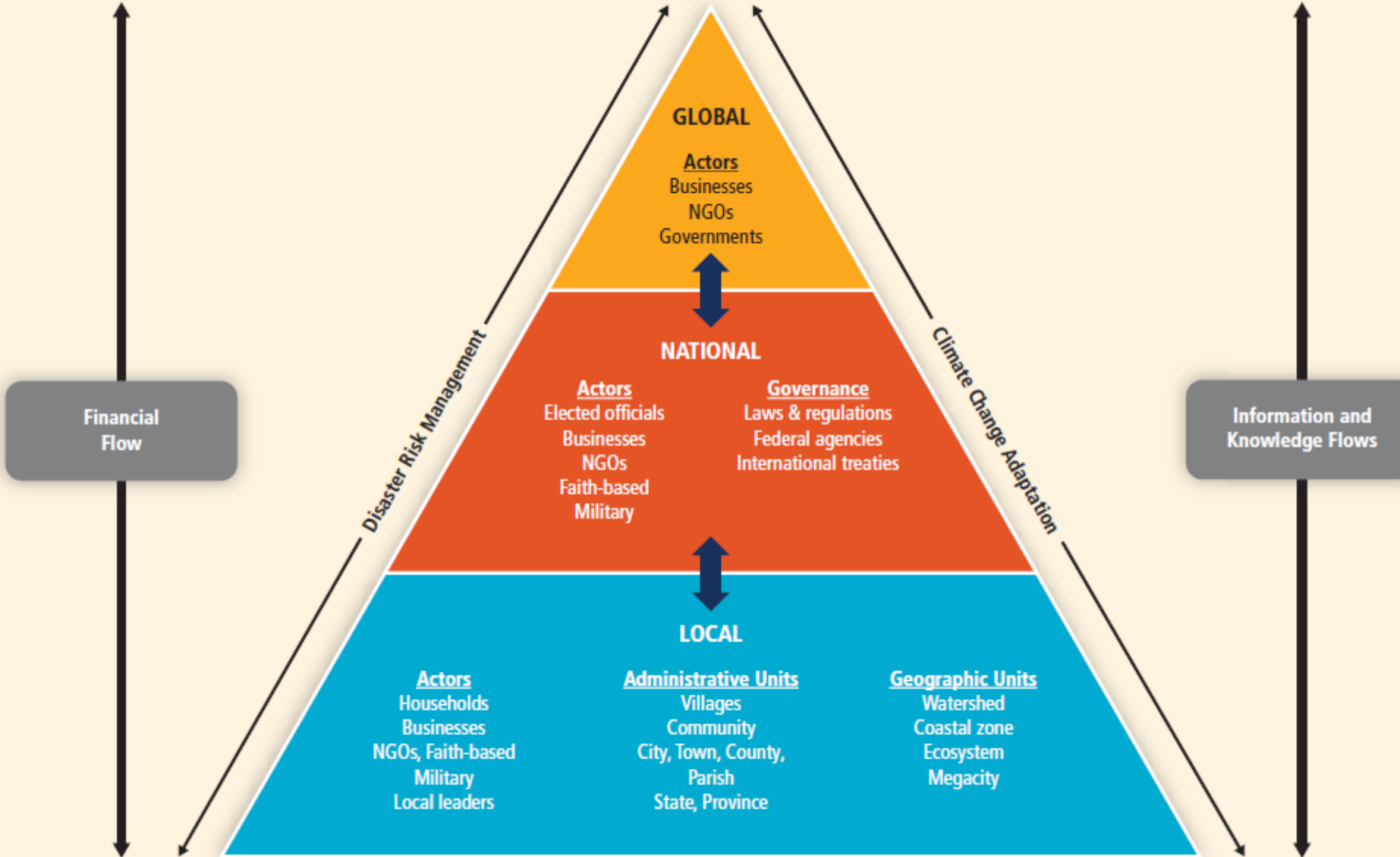
Gender empowerment reduces social vulnerability and climate risks

- Between **68-89%** of deaths occurs among **women and girls** due to long-term discrimination & self-identity of women to **care** for others
- **Information & training** on vulnerability, exposure, climate extremes, DRR, and resilience-building help people **reducing their risks** and getting prepared for **unknown and unpredictable threats**
- Integrated **water** management, sanitation and drainage improve health, wellbeing and reduce risks of **waterborne diseases**
- **Drought** forecasting, sustainable **farming** practices, drought resistant seeds and early warning reduce risks of hunger
- **Adaption** to changing climate conditions includes maintenance of draining systems, regional risk pooling, relocation from risky locations, early **evacuation** and **disaster risk reduction training**
- **Sustainable development** in the near term reduces longer term social vulnerability
- Managing risks now help **improve livelihood** and wellbeing
- Women maintain **social networks** during normal times and support communities and families during disasters

Local actors with high social vulnerability



Linking local to global actors and responsibilities



Primary Actors

INTERNATIONAL

- Bilateral and multilateral partners
- Intergovernmental organizations

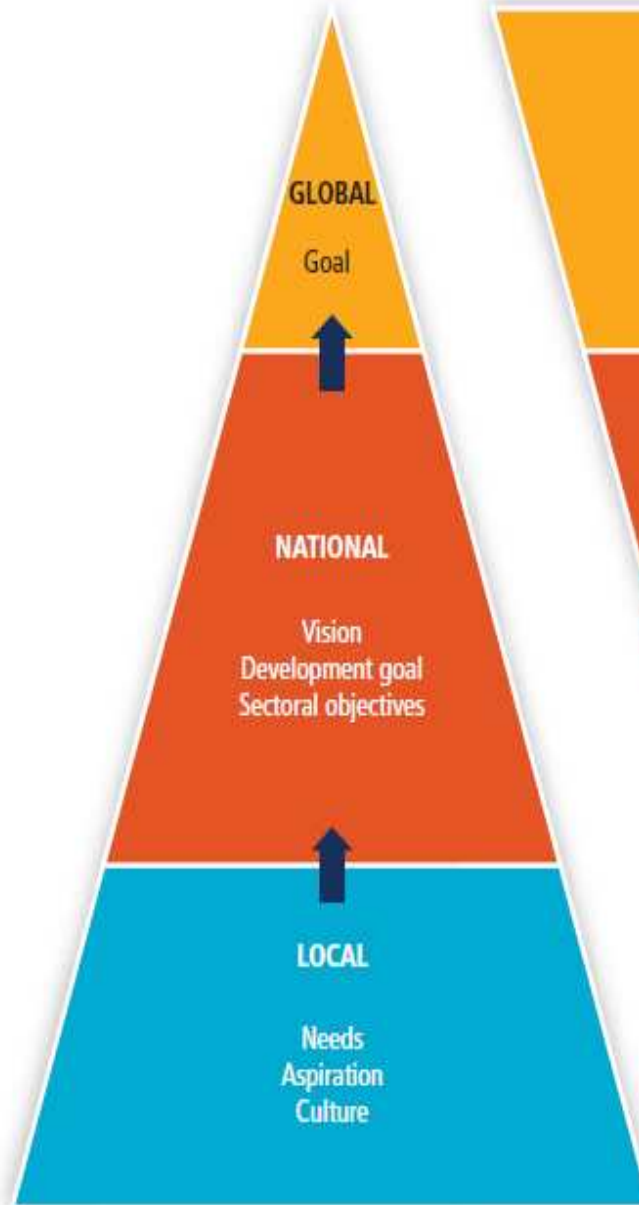
NATIONAL / SUB-NATIONAL

- National government and statutory agencies
- Civil society organizations
- Private sector
- Research and communication bodies
- Local government agencies

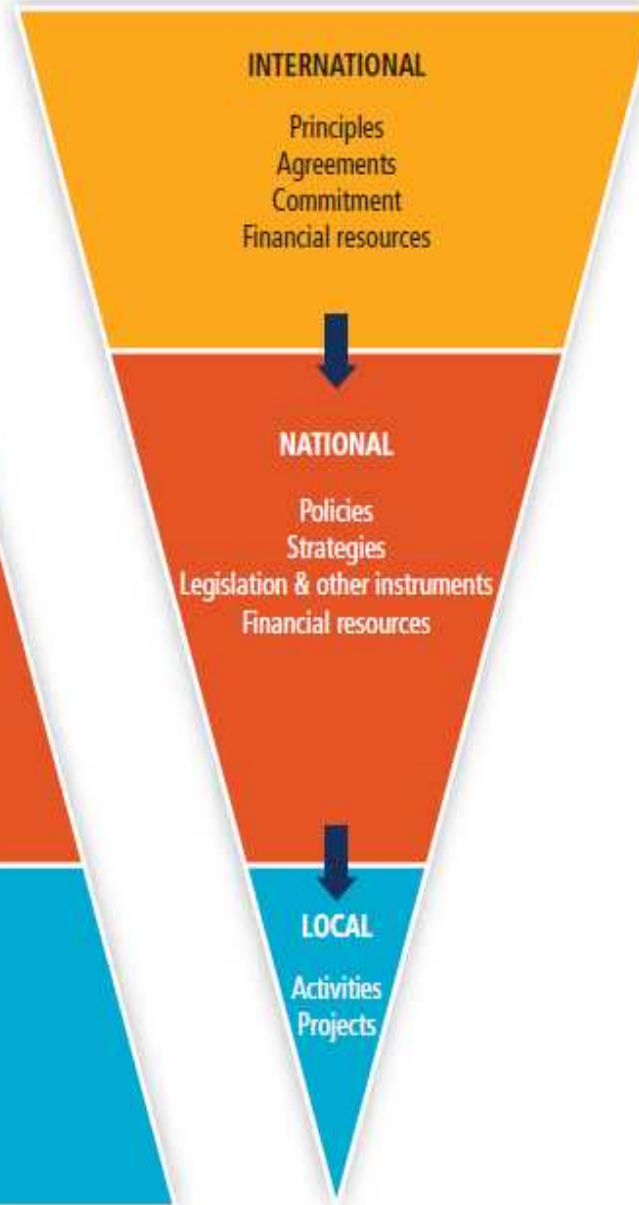
LOCAL

- Individuals, households, and communities
- Private sector
- Community-based organizations
- Faith-based organizations

"BOTTOM-UP" Functions



"TOP-DOWN" Functions



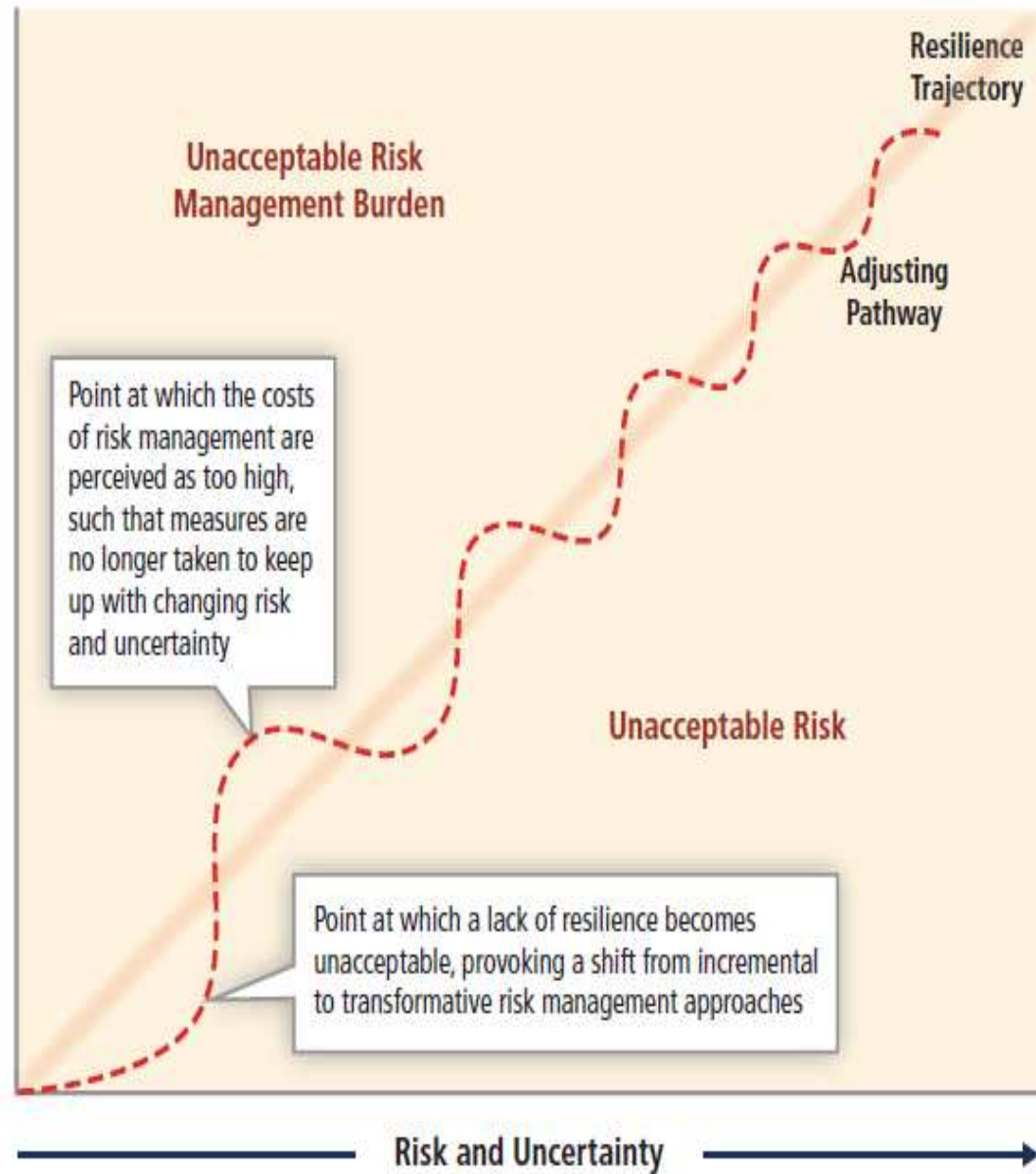
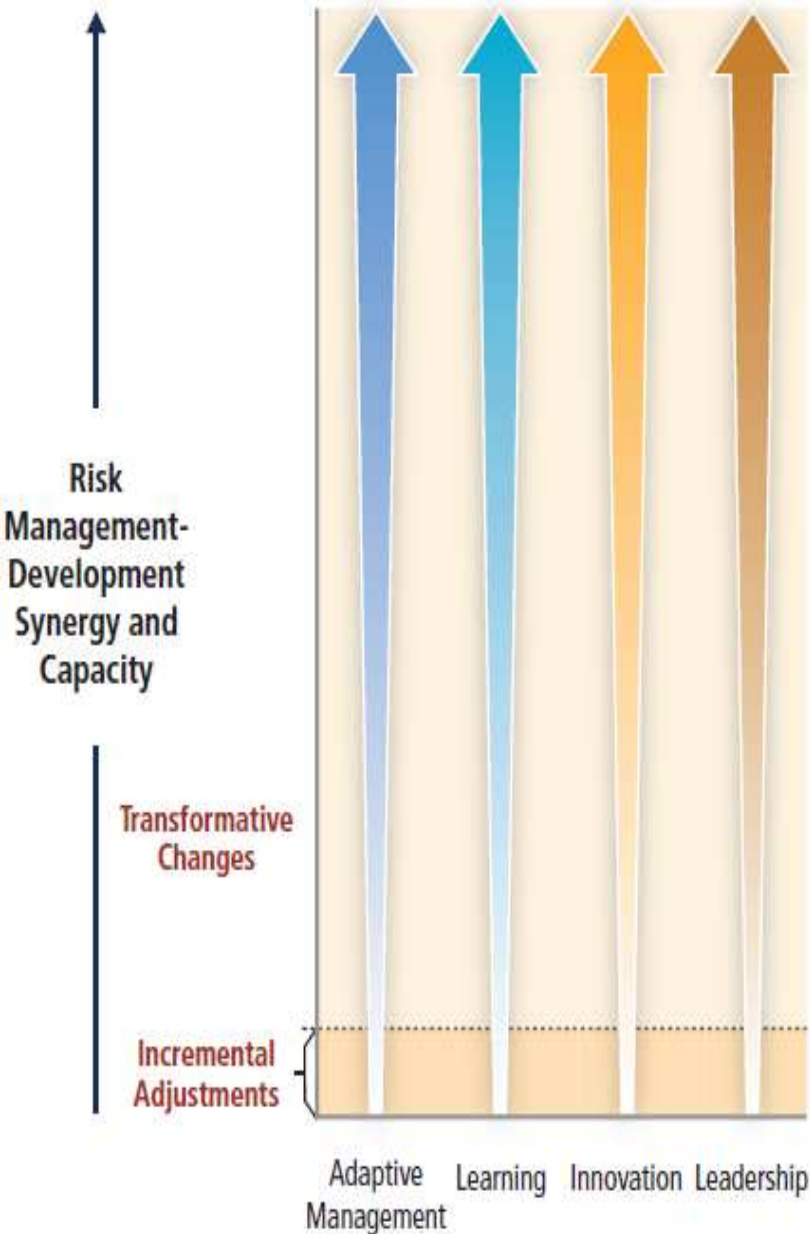
Global Climate Projections

Regional / National Climate Projections

Scientific and Local Experiential Knowledge

Vulnerability, Risk, and Adaptation Assessments

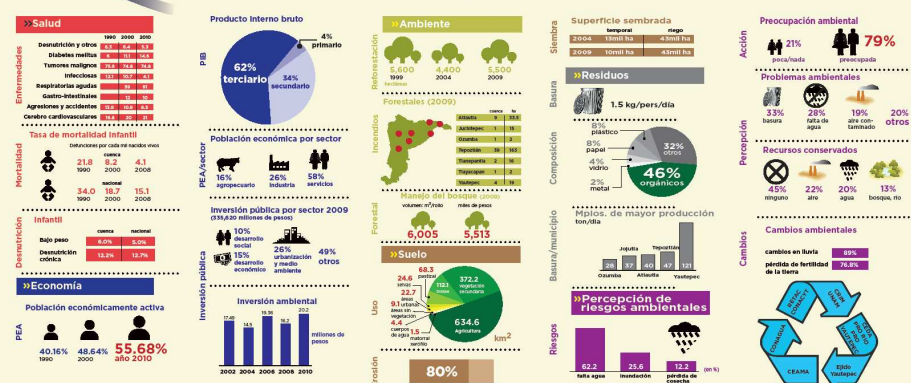
Incremental & transformative pathways to resilience



Mi Río Yauatepec

Niños, niñas y adultos de 13 municipios de los estados de Morelos y México construimos el futuro de nuestro río, para hacer de este pequeño territorio un lugar seguro de trabajo, educación, agua limpia, bosques y selvas.

2 Pueblos Mágicos



PTA: Junta de Tratamiento de Aguas Residuales
 CIEDES: Úrsula Cisneros, Angel Paredes, Ariana Estrada, Alejandro Morales, Hérica Cruz

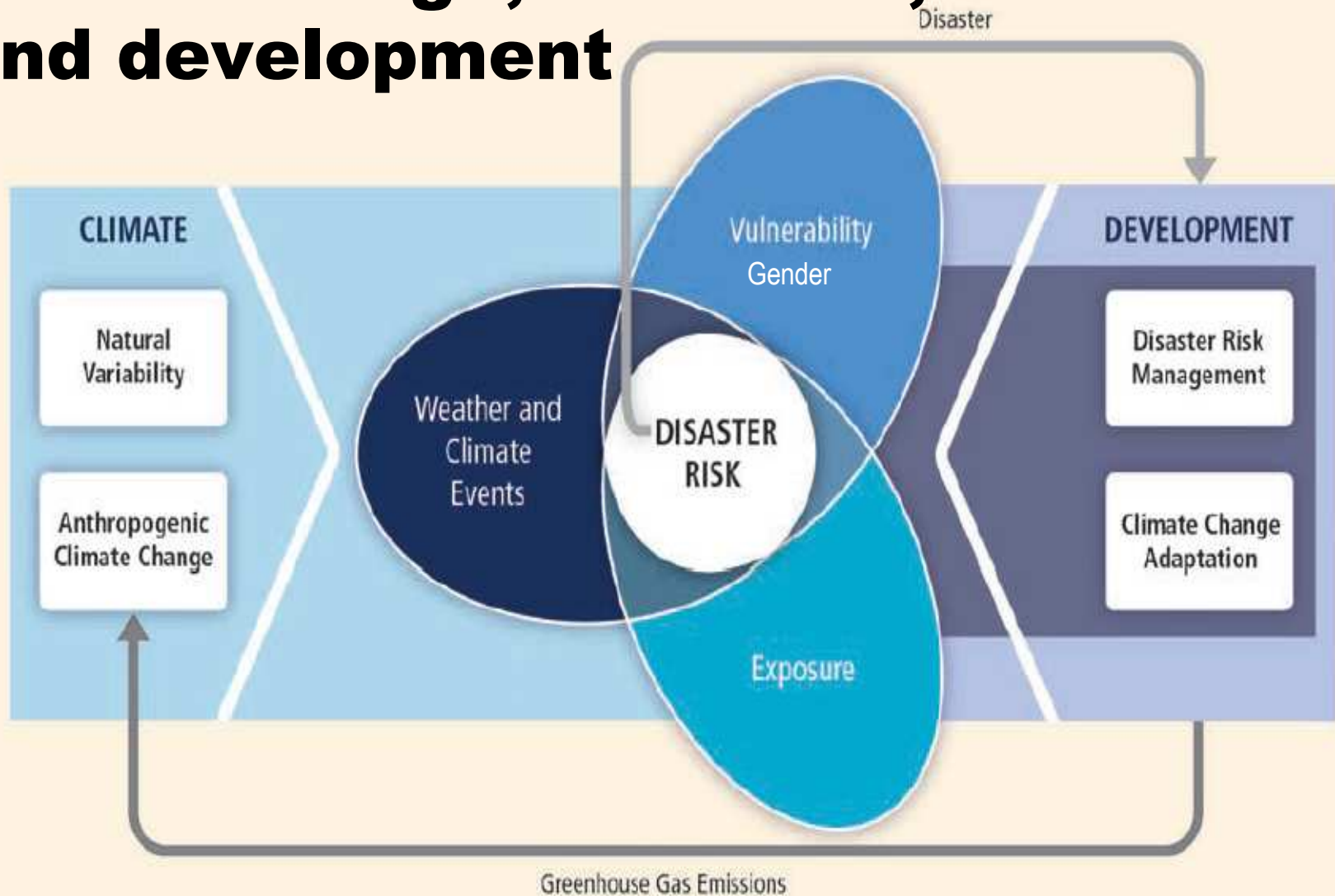
República Mexicana 1,249 km² superficie de la cuenca
 13 Municipios
 278,958 Habitantes

Gestión ambiental (al final del primer año): Inversión \$ 350 millones	Gestión ambiental mediano plazo (4 años): Inversión \$ 950 millones
<ul style="list-style-type: none"> 3 presas rompedoras y derivadoras 15 actualizaciones de planes de ordenamiento urbano y ambiental 1 modelo matemático de riesgo hídrico 1 PTA Yauatepec rehabilitada Reubicación y ampliación de colectores 1 Asociación de Usuarios del Río Yauatepec 2 viveros y un centro de germoplasma 15 millones de árboles reforestados 3 centros de acopio de desechos sólidos 3 mercados con separación de desechos 3 compostas de residuos orgánicos 15 empresas del río 50 escuelas con educación ambiental 3 juegos recuperados 1 mil hectáreas de producción rural sustentable Manejo integral del manantial Michiate y resolución del conflicto comunitario 	<ul style="list-style-type: none"> 1 presa Morelos 1 1 cauce de alivio en barranca La Noplera 2 viveros con 15 millones de plantas nativas 60 millones de árboles reforestados 4 bioparques y 5 manantiales recuperados 3 programas de desarrollo ecoturístico Construcción de colectores 13 planes de ordenamiento urbano y ambiental 13 centros de acopio 13 compostas de residuos orgánicos comerciales 1 relleno intermunicipal 5 mil ha de producción rural sustentable Escuelas con cultura ambiental Inventario de flora y fauna nativa 2 mil microempresas Programa de ecoturismo
Planeación ambiental (10 años)	
Social Educación socioambiental Abatimiento de pobreza Integración de ONG's Vínculo entre y con Ayudantes Consejo comunitario desarrollo rural sustentable Capacitación nutricional Combate a diabetes Prevención de embarazos en adolescentes Medicina y curaciones tradicionales	Económico 10 mil empleos 10 mil ha de agricultura orgánica Mercado Justo Pago por servicios ambientales 1 centro de encadenamiento productivo 5 mil microempresas 5 mil huertos domésticos 1 mil manejo forestales Ecoturismo cultural
Ambiental 7 presas contra inundaciones 150 millones de árboles reforestados 20 mil ha de suelos recuperados 1 centro de cultura ambiental 3 rellenos sanitarios intermunicipales 1 ordenamiento integral de la cuenca 5 mil ha de riego eficiente 500 ha de árboles frutales	Político Justicia ambiental Legislación ambiental 10 mil ha de agricultura orgánica Tribunal ambiental ciudadano Tribunal ambiental ciudadano Seguridad humana y ambiental Equidad de género Derecho de niños Contraloría ciudadana

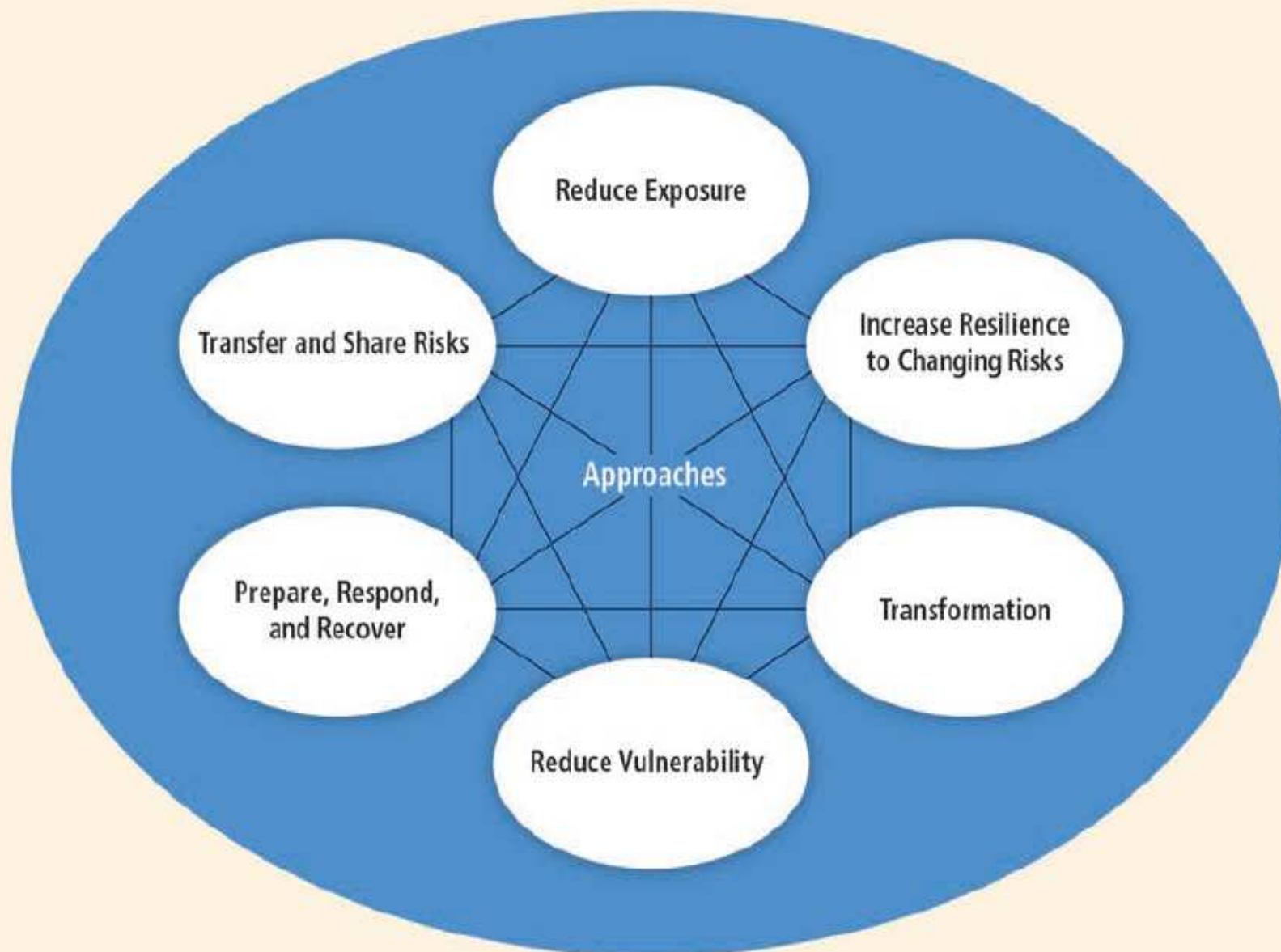
Peasants, traders, micro-entrepreneurs, social movements, NGO's, citizens, scientists, people affected by disasters, women, children, teachers and the three levels of government developed an integrated basin management of the River Yauatepec for reducing risks increased by climate change and are promoting a transition to sustainability from local niches.

Infomex: mto2009@sigmatel.com

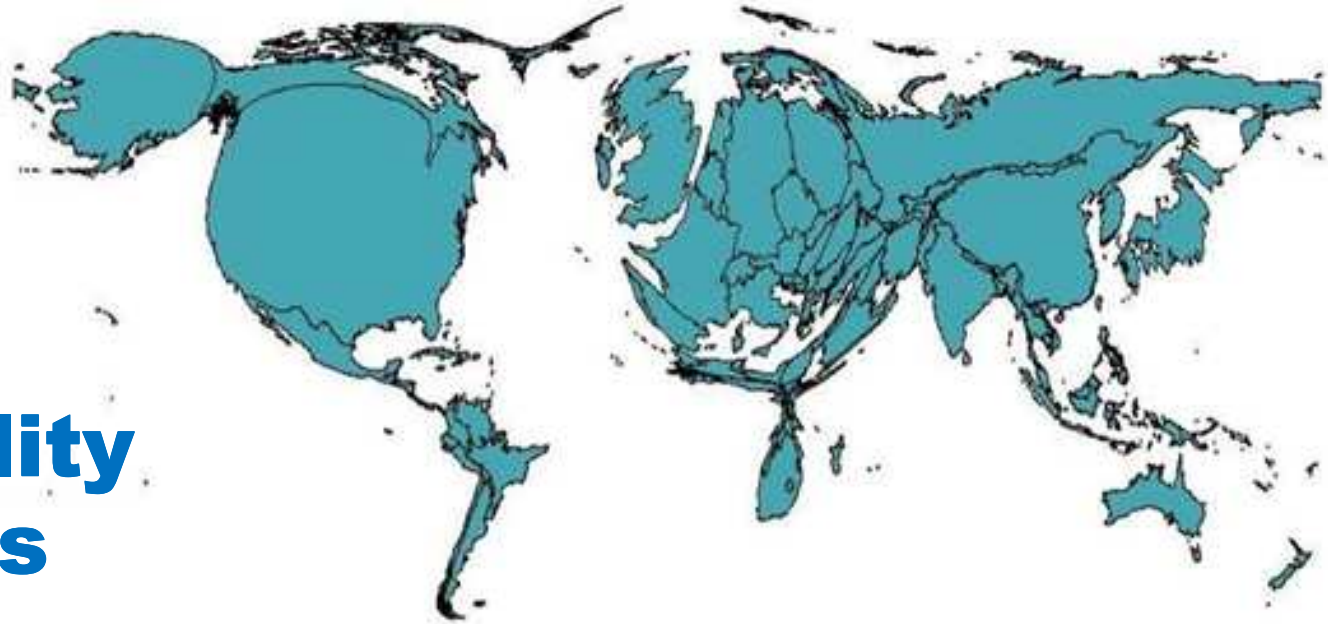
Climate Change, disasters, vulnerability and development



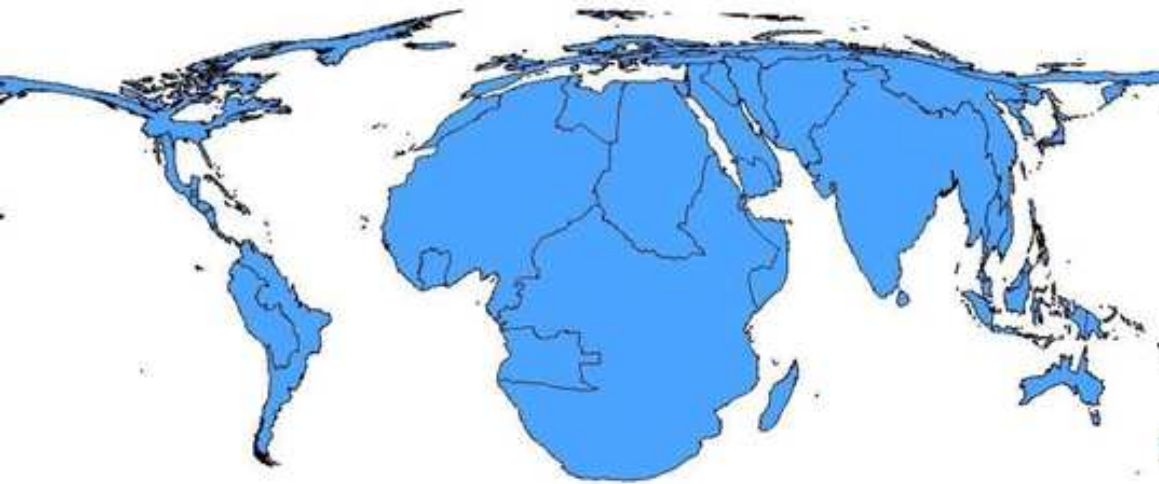
Adaptation and Disaster Risk Management Approaches for a Changing Climate



Cumulative Greenhouse Gas Emissions, 2002



Global responsibility and ethics



Patz et al., 2007



Mortality rate attributable to climate change, 2000

Thank you for your attention

