

# **ROADMAP TO LOW POVERTY WITH LOW CARBON SOCIETY**

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# THE CHALLENGES FOR EMERGING ECONOMIES

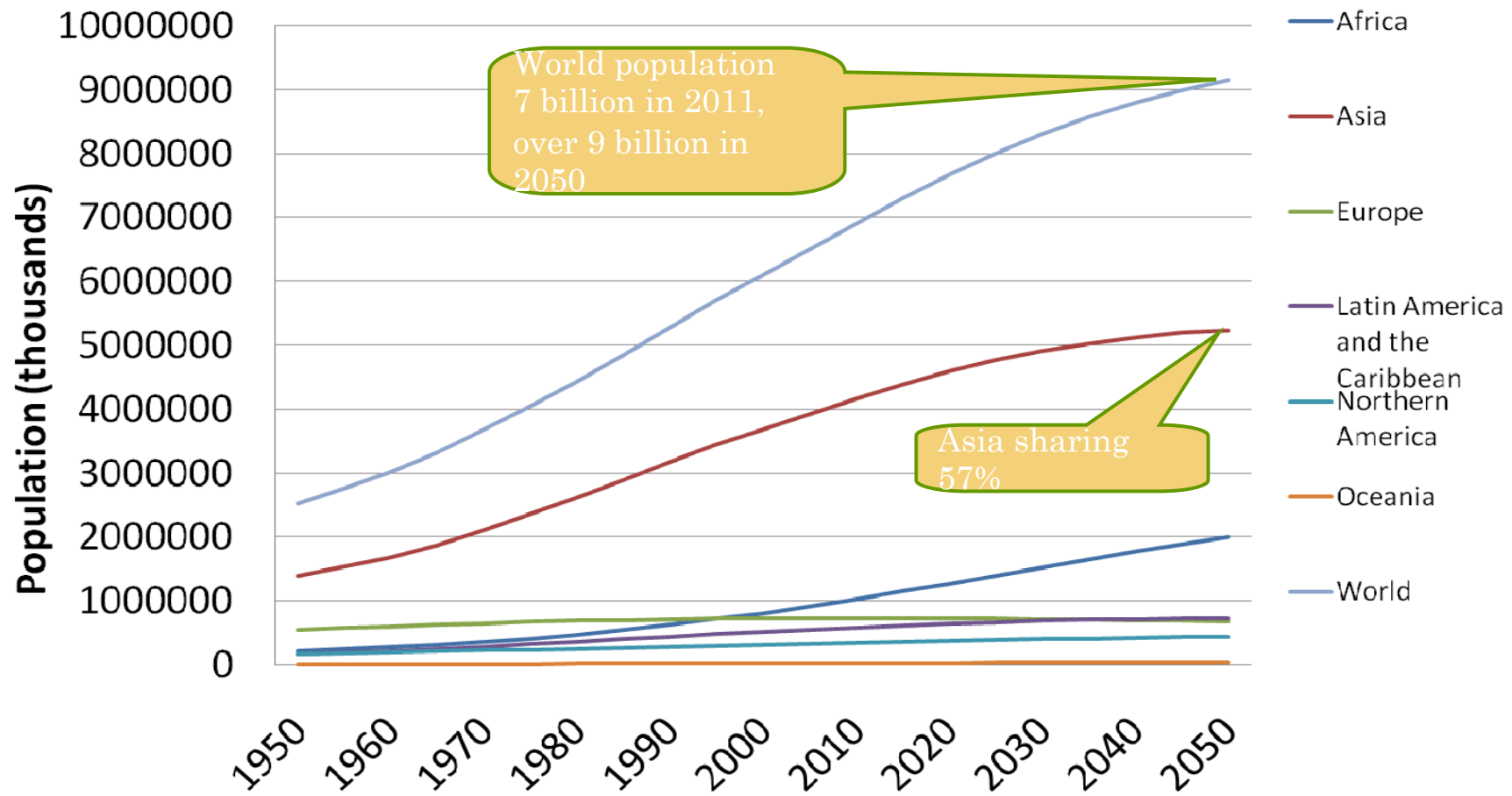
After the recent economic crisis, the emerging Economies of Asia Pacific are facing together:

- Population growth in the “Ring of Fire”;
- Climate change and its impacts;
- Energy demand;
- Green House Gas emissions;

**on the road of sustainable development towards low poverty with low carbon society;**

# *Future Challenges: Population Growth*

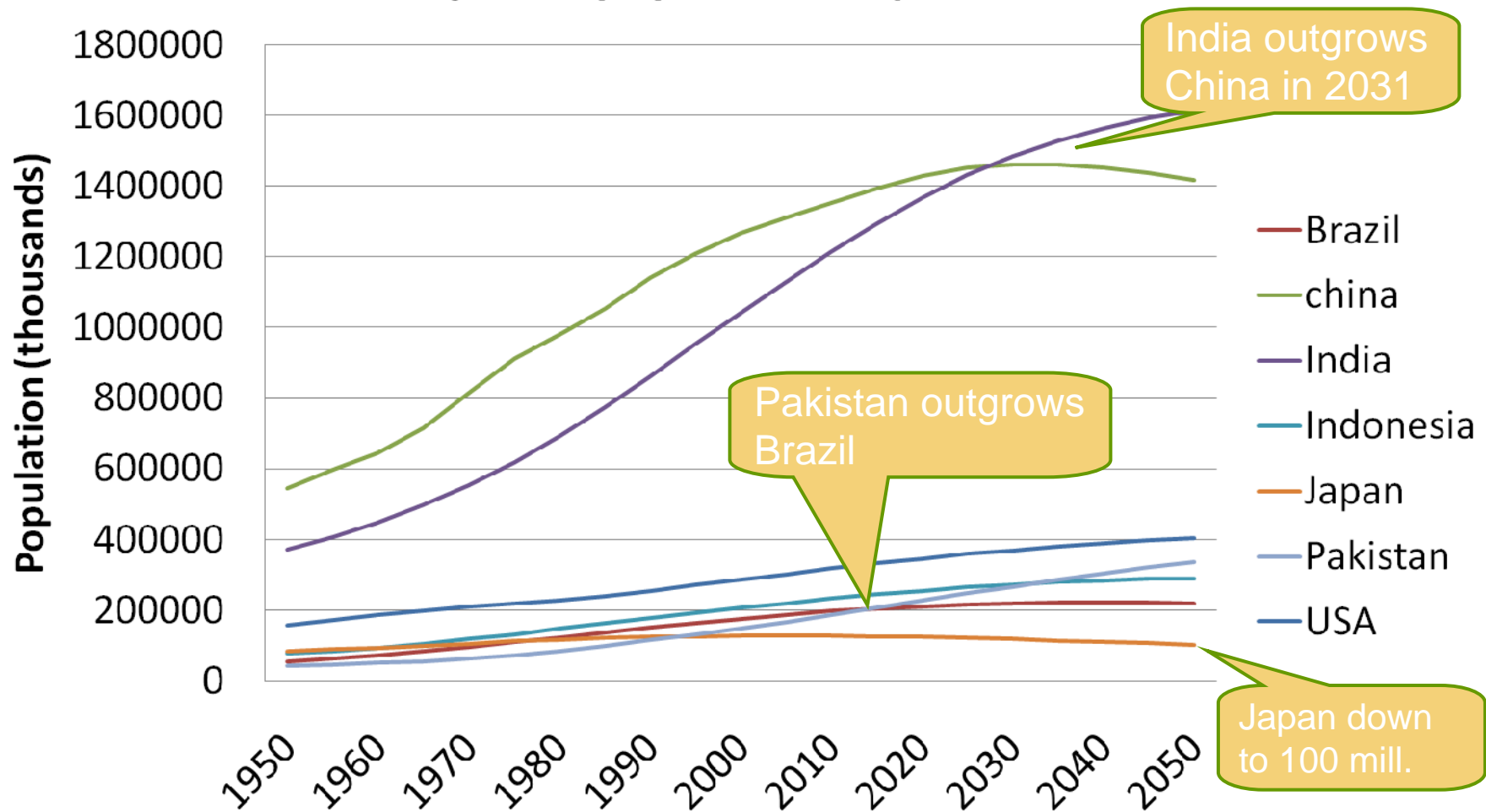
## World Population Projection



Developed from: 2008 World Population Prospects, UNESA

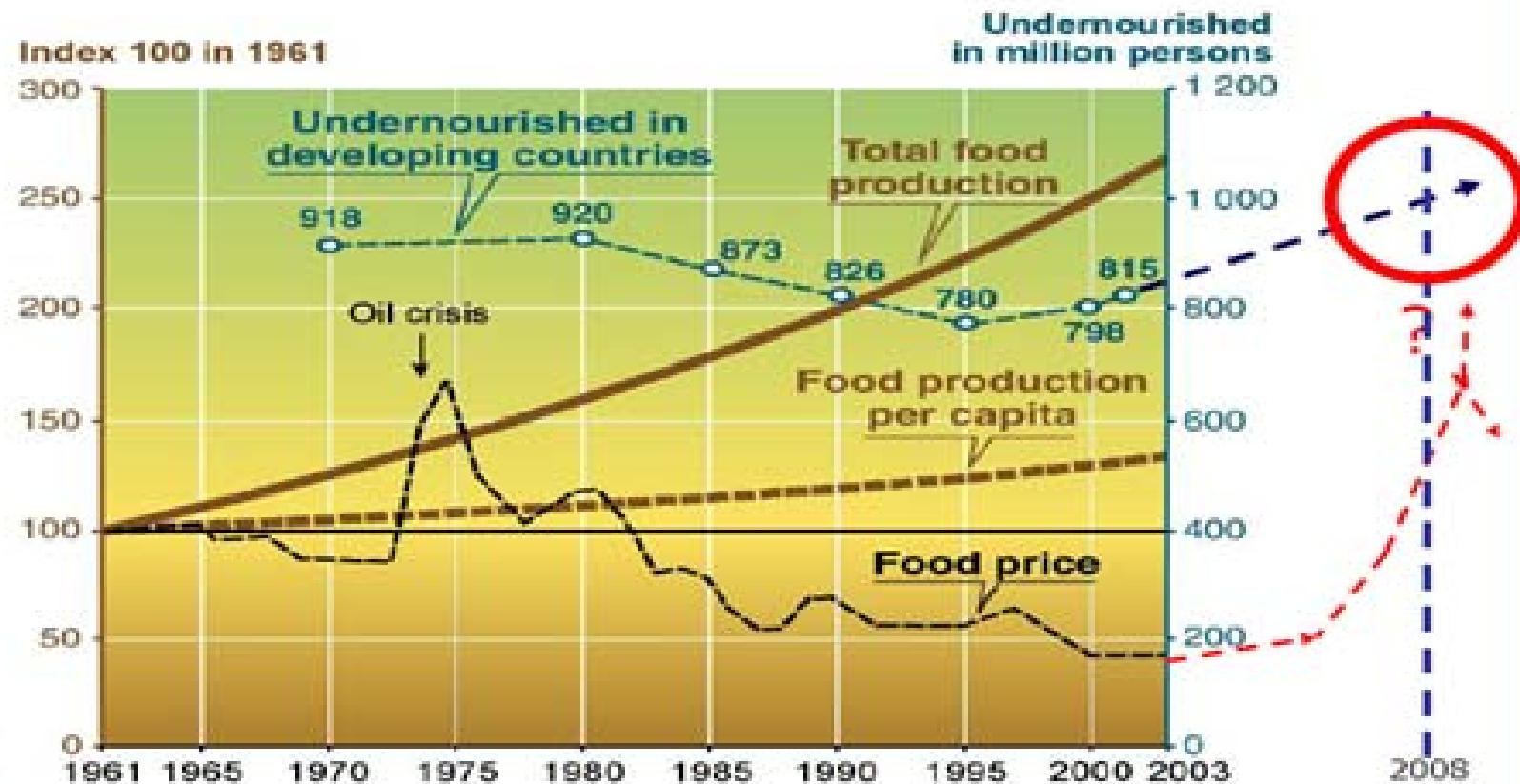
# *Future Challenges: Population Growth*

Projected populations up to 2050



Developed from: 2008 World Population Prospects, UNESA

# FOOD



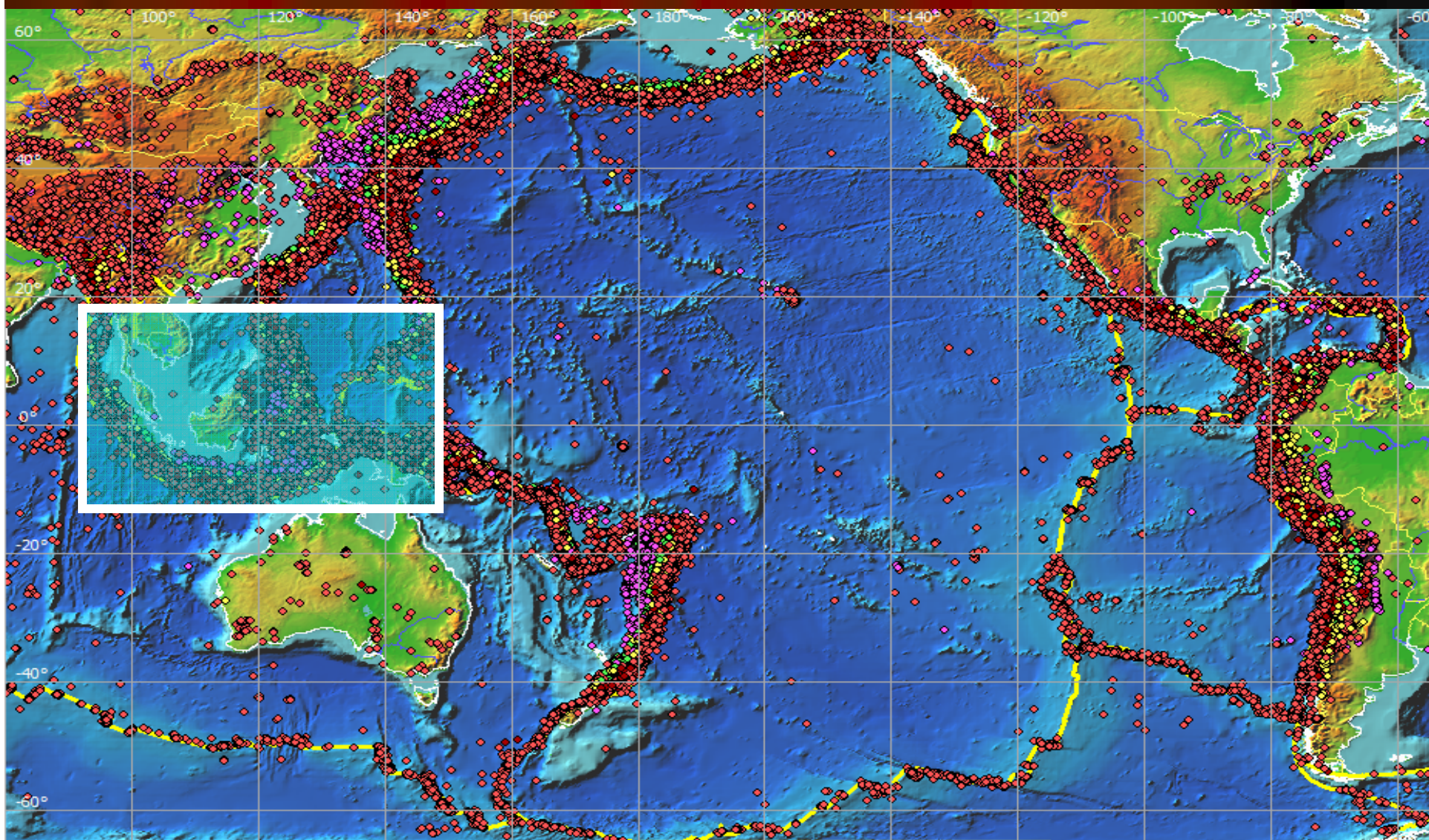
Sources: FAOSTATS, SOFI, Millennium Ecosystem Assessment





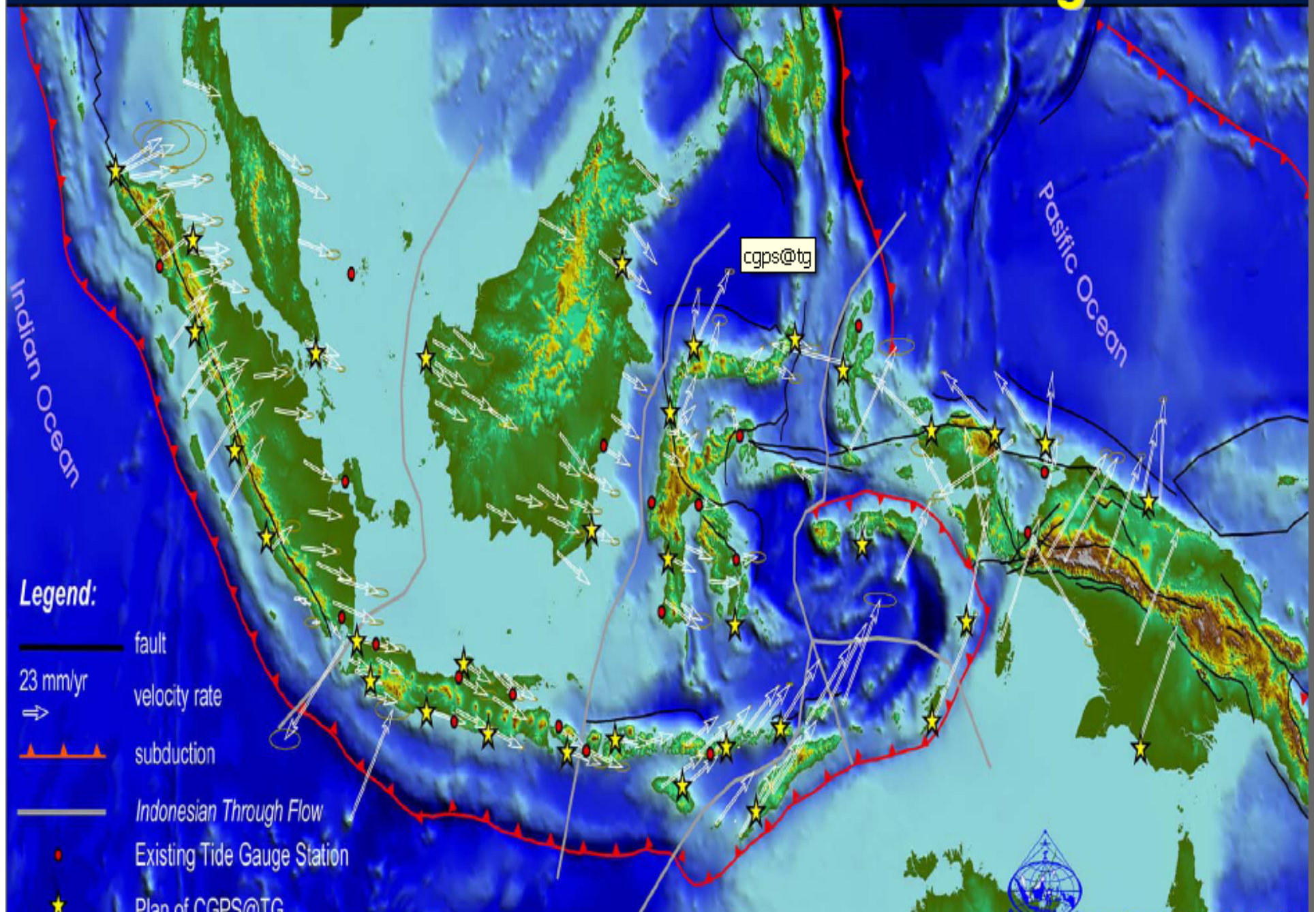
BMKG

# "RING OF FIRE"



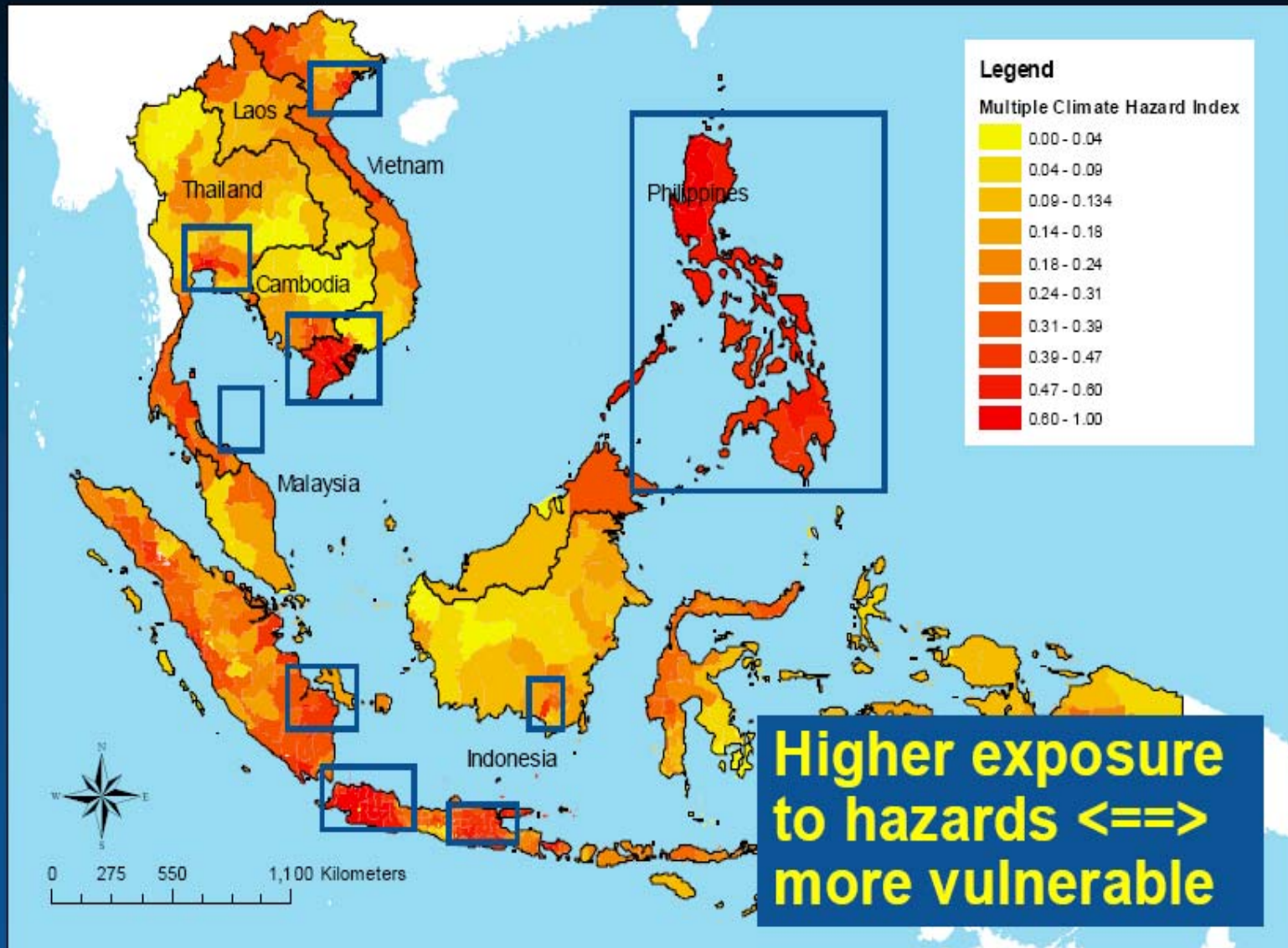


# Crustal Deformation Monitoring





# All Climate Hazards Index

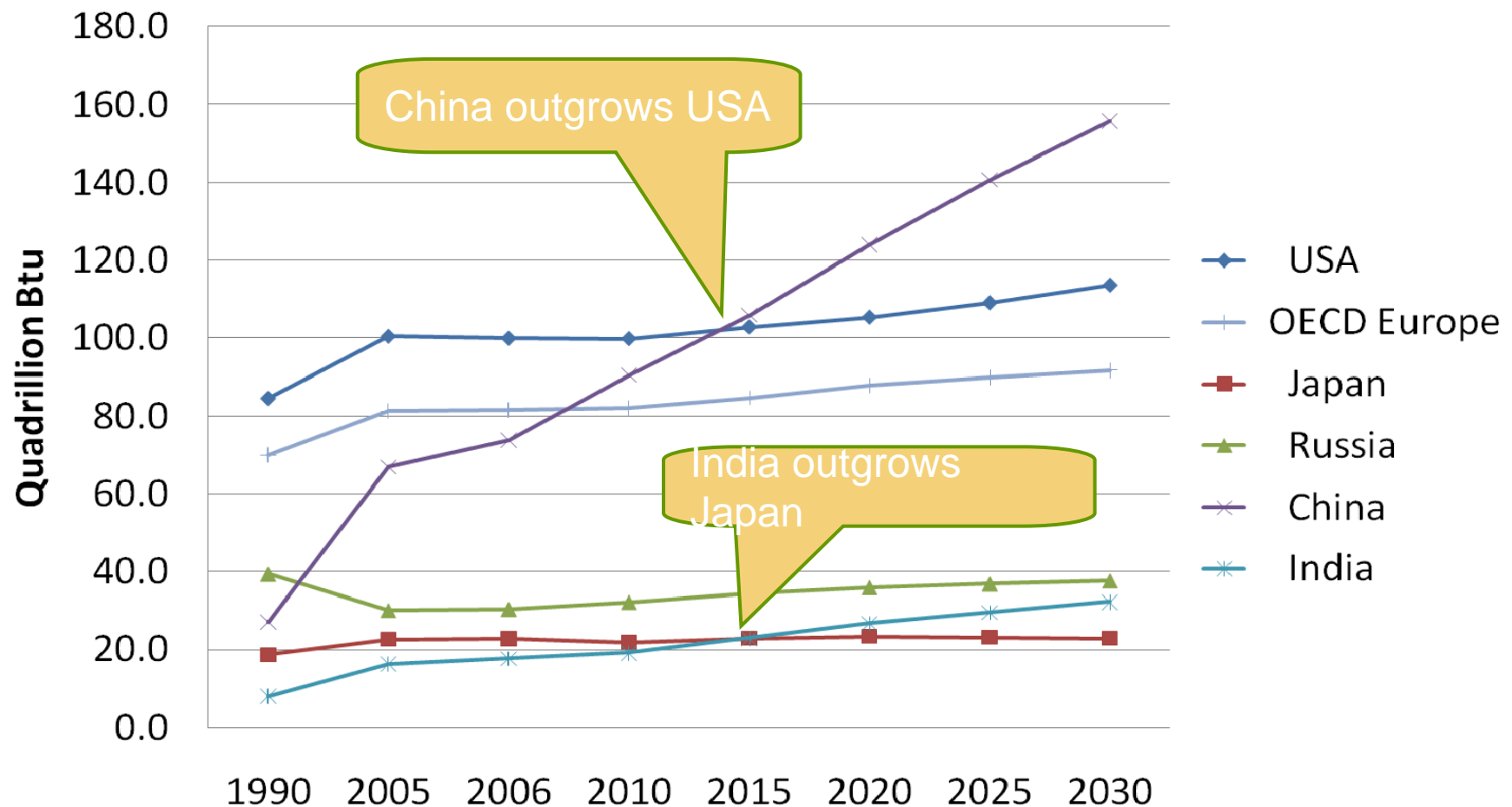


All hazards Index



# *Future Challenges: Energy demand*

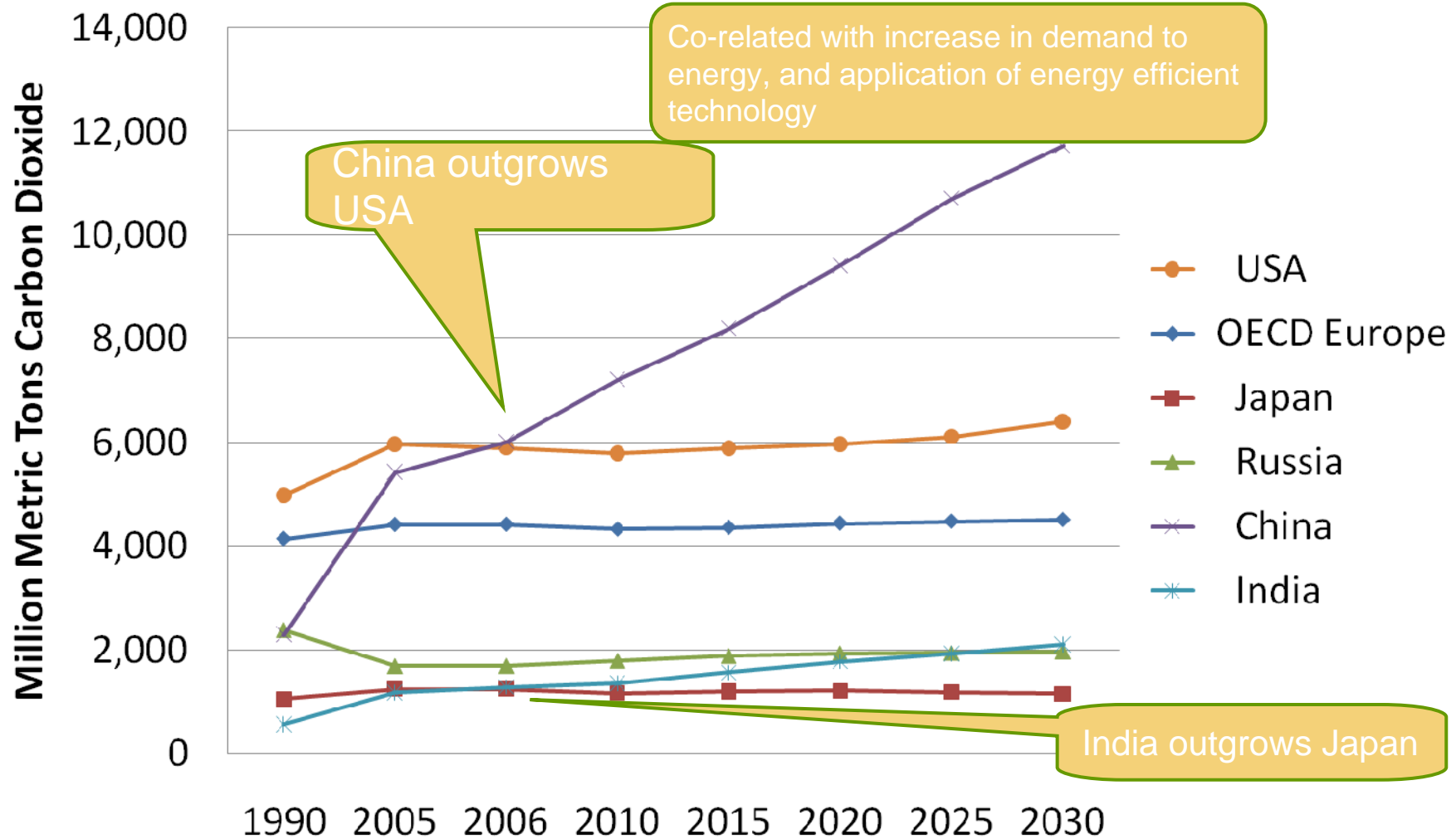
**World Total Primary Energy Consumption by Region/Country**



Developed from: US Energy Information Administration (2009)

# *Future Challenges: GHG Emissions*

## World CO2 Emissions by Region/Country



Developed from: US Energy Information Administration (2009)

## CO2 EMISSIONS 2004 (million metric tons)

Country	Rank	Emission 2004	Growth 94-04:
US	1	5,912	13%
China	2	4,707	68%
Russia	3	1,685	0%
Japan	4	1,262	16%
India	5	1,113	53%
UK	8	580	2%
Brazil	19	337	26%
Indonesia	20	308	48%

Source: Bacon and Bhattacharya, *Growth and CO2 Emissions*, Environment Dept. World Bank, 2007.



# GROWTH AND CO2 EMISSIONS

1. Russian Federation low emission growth because of dismantling inefficient polluted industries;
2. China's rapid increase of CO<sub>2</sub>e (68%) will surpass US; India will reach soon top 3 CO<sub>2</sub>e emissions countries followed by most developing countries (Brazil, Indonesia and others);
3. Developed countries insist developing countries to actively reduce CO<sub>2</sub>e emissions. Developing countries calls for agreed consensus of "common but differentiated responsibilities;"
4. Global challenge: to strive for sustained growth with low carbon and low poverty level;

## EMISSIONS AND GDP PER CAPITA 2004

Country	Emission ton/p.	GDP \$ PPP/person
US	20.01	36,234
UK	9.75	29,406
Japan	9.87	27,080
Russia	11.71	9,018
China	3.60	5,441
Brazil	1.83	7,406
Indonesia	1.40	3,245
India	1.02	2,831

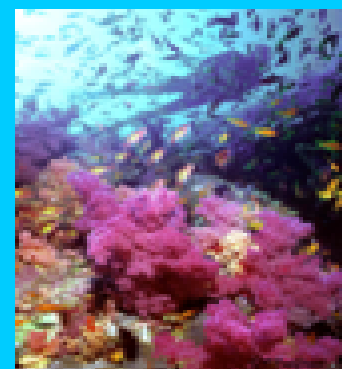
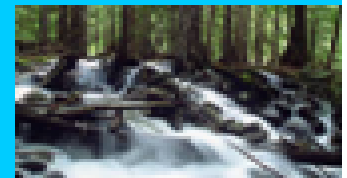
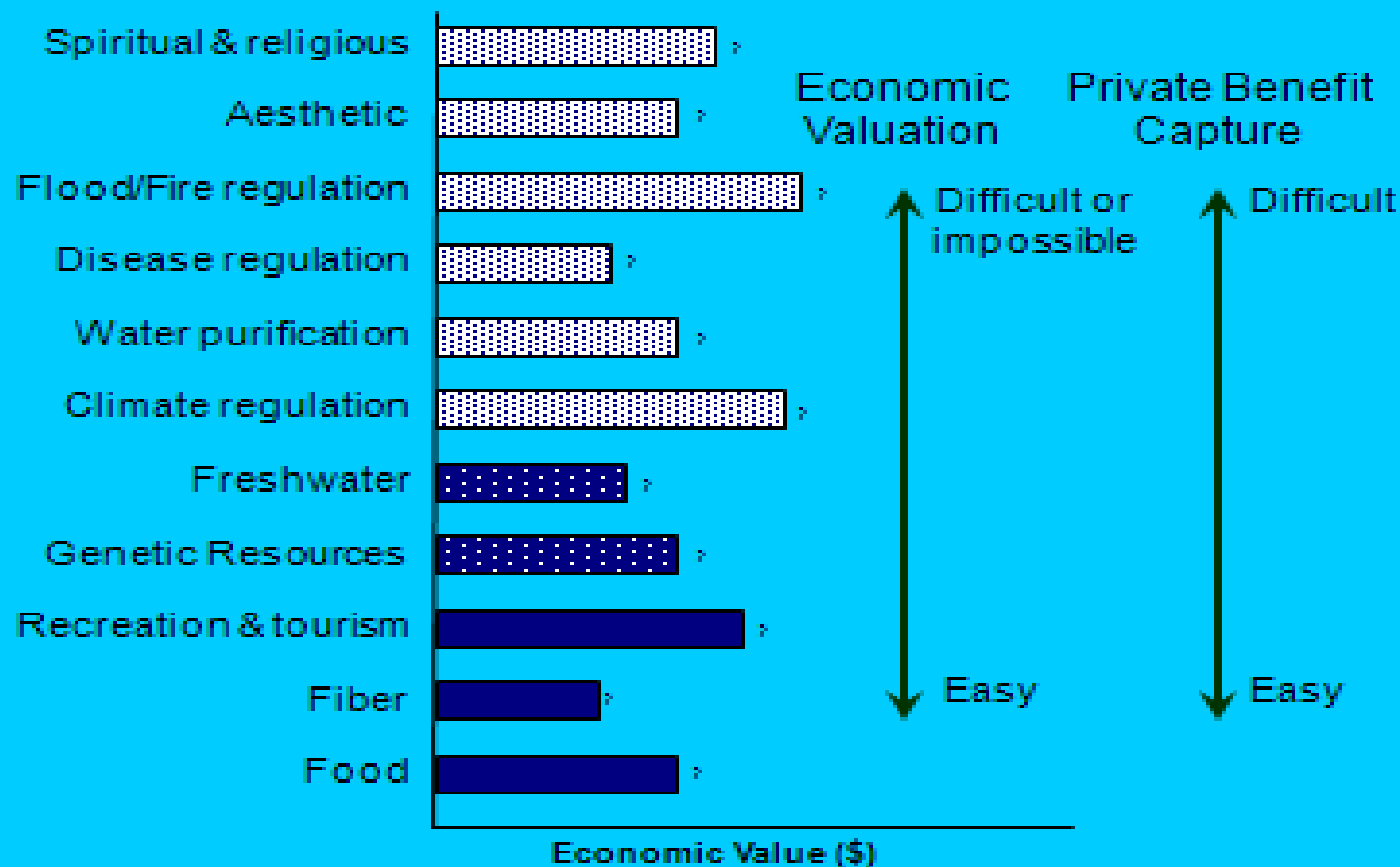
# **THE SEARCH FOR LOW POVERTY WITH LOW CARBON SOCIETY**

- 1. Developing countries have low income with low CO<sub>2</sub>e emission per capita;**
- 2. Developed countries have high income per capita with high CO<sub>2</sub>e emission per capita;**
- 3. After the crisis, the globe must now move away from conventional development with rising CO<sub>2</sub>e emission level, to sustainable development with poverty eradication while reducing CO<sub>2</sub>e emissions and sustaining life supporting ecosystem;**



# ECOSYSTEM SERVICES

Many ecosystem services are public goods



# NEGOTIATION'S CURRENT POSITION

Lowest mitigation scenario: to stabilize GHG concentration by 450-490 CO<sub>2</sub>e & 2-2.4°C temperature requires industrial countries to reduce 25-40% of 1990 CO<sub>2</sub> emission level by 2020.

- EU commit 20% of 1990 level by 2020;
- Hatoyama commit 25% of 1990 level by 2020;
- Industrialized countries' plan: 10-14% of 1990 by 2020;
- US Senators *Boxer-Kerry* bill proposes 20% cut from 2005 level by 2020, House bill's proposes 17%;

# DEVELOPING COUNTRIES' POSITION

1. Adhere to the **principle** “common but differentiated responsibilities”;
2. **Fair right** of utilizing atmosphere for development;
3. Poverty alleviation **first priority**;
4. Strive for **different development model** with co benefits reducing CO2 emissions;
5. China-India-Indonesia have their own **domestic** plan but requires finance, technology transfer & capacity building;



# DEVELOP DIFFERENTLY (1)

1. Develop climate change prone seeds and agriculture, to protect **food security**,
2. Transform sea water to **fresh water** and protect coastal area with productive mangroves;
3. Develop **low carbon** and **renewable energy** with appropriate grid system supporting **clean industry**
4. Shift transportation system & technology from "car" focused to "transport service" with incentives promoting **public** rather than **private** transports;
5. Develop **ecological friendly buildings** and "compact city" architecture and technology;
6. Build medical research and capacity to cope with climate change affected **new diseases**;

## DEVELOP DIFFERENTLY (2)

7. Prefer **renewable** resources and energy above non-renewables. Reduce pollution and CO<sub>2</sub>e emissions per unit of resource/energy;
8. Apply energy **efficiency**, clean technology;
9. Shift **taxes** from human creativity to goods;
10. Use *hedonic pricing* and **contingent** valuation to internalize environmental costs;
11. Raise value added by applying science and technology and imitating nature;

# BIOMIMICRY (1)

**Technocentrism:**  
Values  
centered on  
technology



**Ecocentrism:**  
Values  
centered  
on Nature

Biomimicry could provide a bridge between the two philosophies, since it involves creating technology that values nature.

# BIOMIMICRY (2)

Termite mound





# BIOMIMICRY (3)

Swiss Re  
Tower



# DEVELOPMENT PARADIGMS SHIFT

1. Conventional development must shift towards sustainable development with economic, social and environmental sustainability to reach for *low poverty with low carbon society*;
2. Market failures must be corrected through intervention by *governance* comprising of government, business and civil society;
3. Developed countries need to transfer funding, technology and capacity building of developing countries to reach for *Millennium Development Goals* to sustain the Globe;

# ASIA PACIFIC COMMON INTERESTS

Asia-Pacific faces common challenges of sea level rise threatening islands to sink, “ring of fire”, poverty, erosion of ethnic and biodiversity that serves as an **integrating force** to drive Asia-Pacific regional cooperation to follow a roadmap of sustainable development towards low poverty with low carbon society.

# ACKNOWLEDGEMENT

The picture slides presented in this paper are taken from:

1. Jeffrey .McNeely, IUCN, slides 2007-2009
2. Meteorology and Geofisics Agency, Republic of Indonesia;
3. National Council of Climate Change, Republic of Indonesia, 2009;