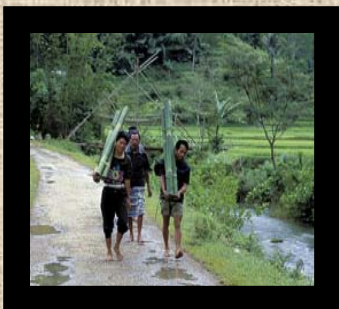
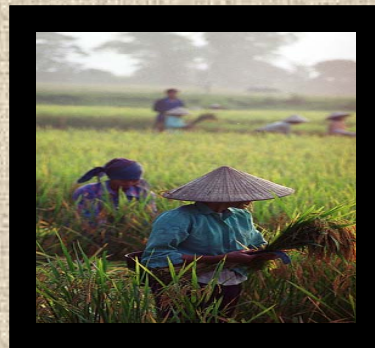


Agricultural Development Through the Climate Change Lens in East Asia and the Pacific (EAP)

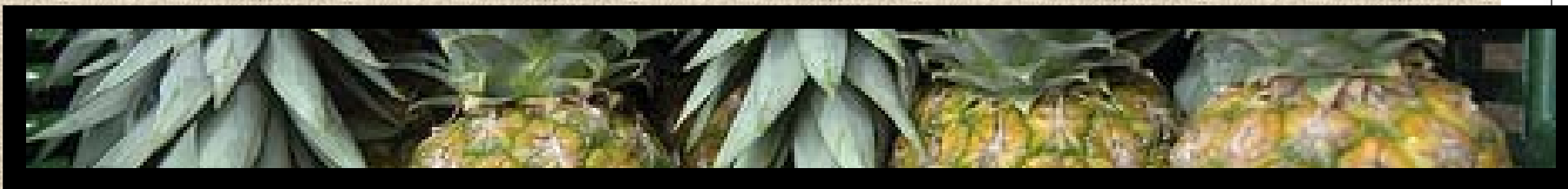


Magda Lovei
Sector Manager
Social, Environment, and Rural Development
East Asia and Pacific Region

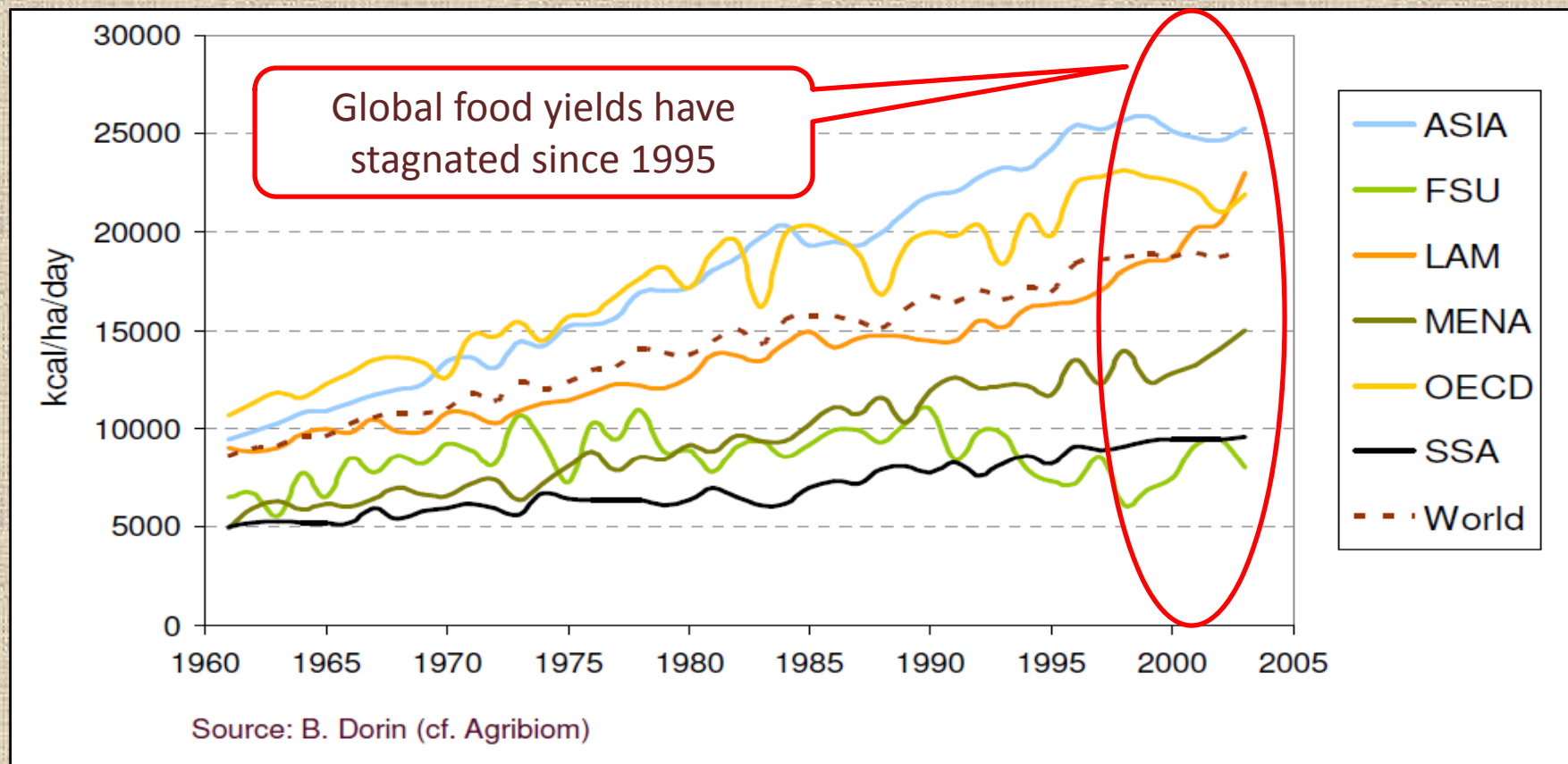
I. Agriculture in a Rapidly Changing Context—a Snapshot



Regional Food Yield Trends



Production of plant food calories per hectare of cultivated land (kcal/ha/day)



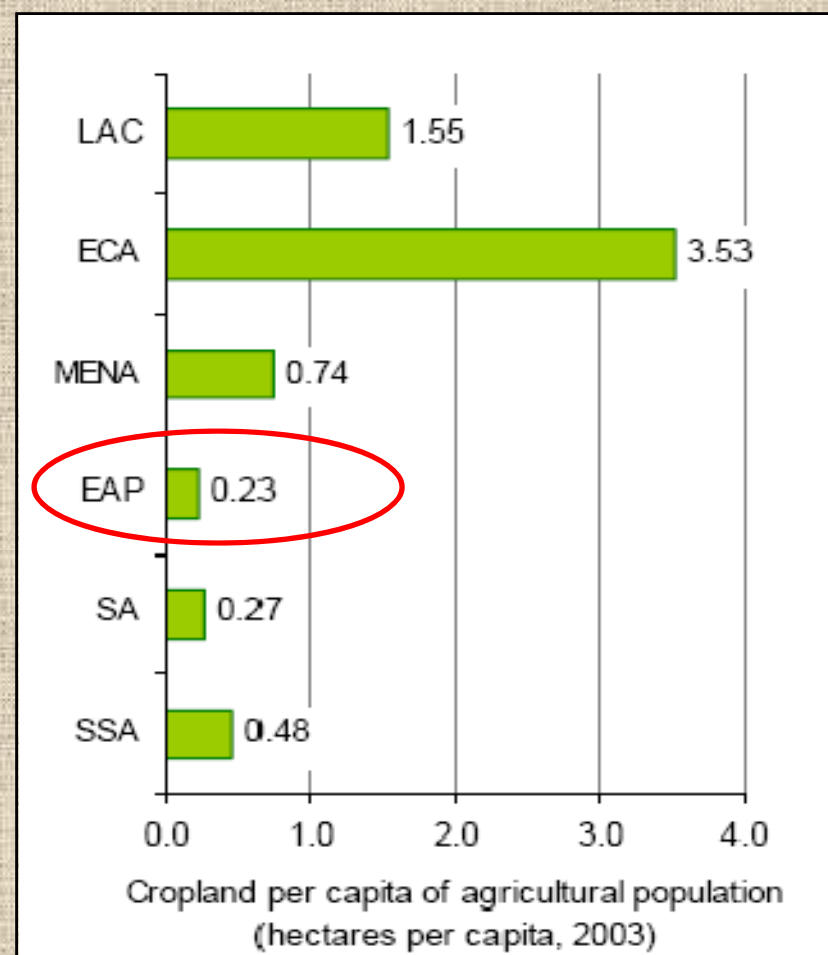
Source: B. Dorin (cf. Agribiom)

Graph produced by Agrimonde 2009

Land Constrains



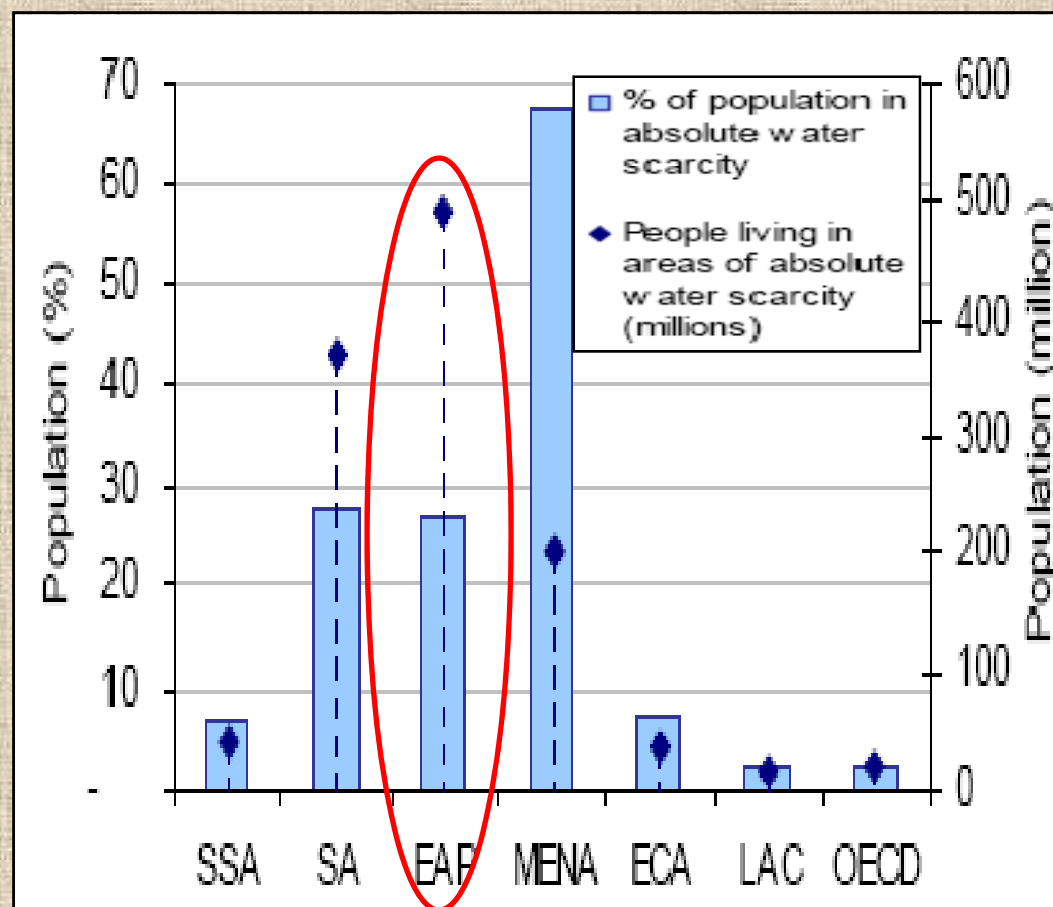
- EAP has the lowest available cropland per capita
- 87% of the global small-holding farmers are in Asia (500 million with less than 2 hectares)
- Increasingly smaller farms— average farm size has declined:
 - 0.56 ha to 0.40 ha in China (1980-99)
 - 3.6 ha to 2.0 ha in Philippines (1971-91)
 - 3.8 ha to 3.4 ha in Thailand (1978-93)



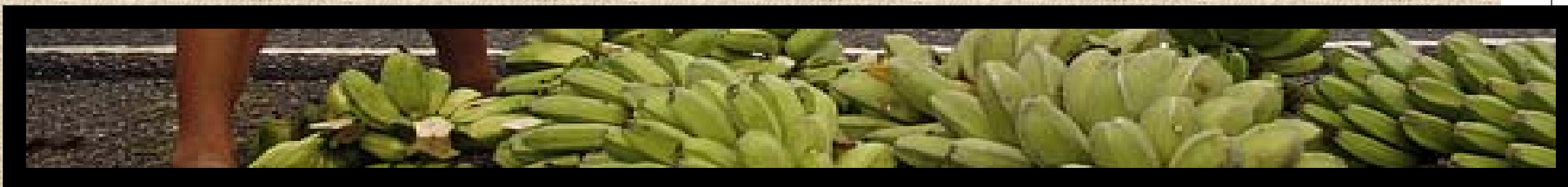
Water Constrains



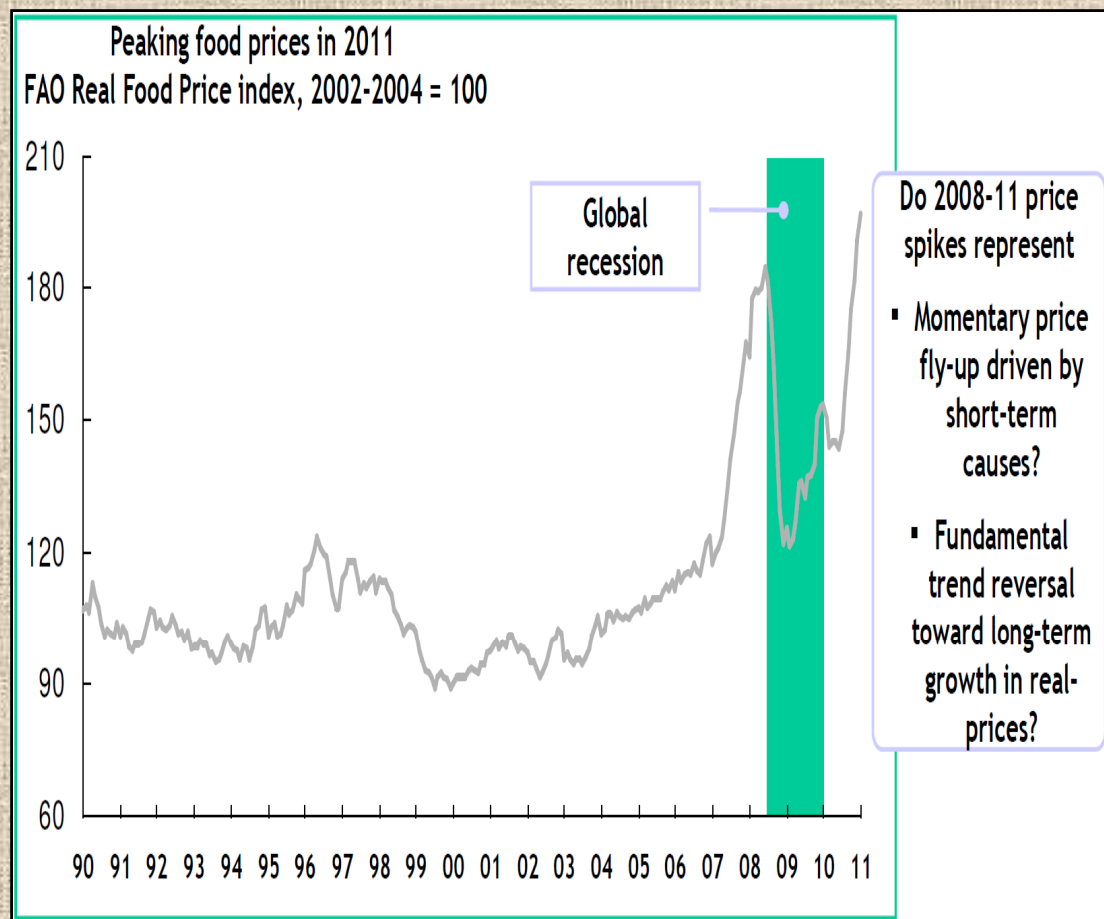
- Physical water shortage in China (270m people at risk in Western China)
- Economic water shortages in Vietnam, Cambodia, Myanmar and Laos



Food Price Volatility



- Significant impact on \$1 per day poor for whom food typically represents 65% of expenditures
- Limited supply response and low reserve stocks creating increasing vulnerability to external price shocks



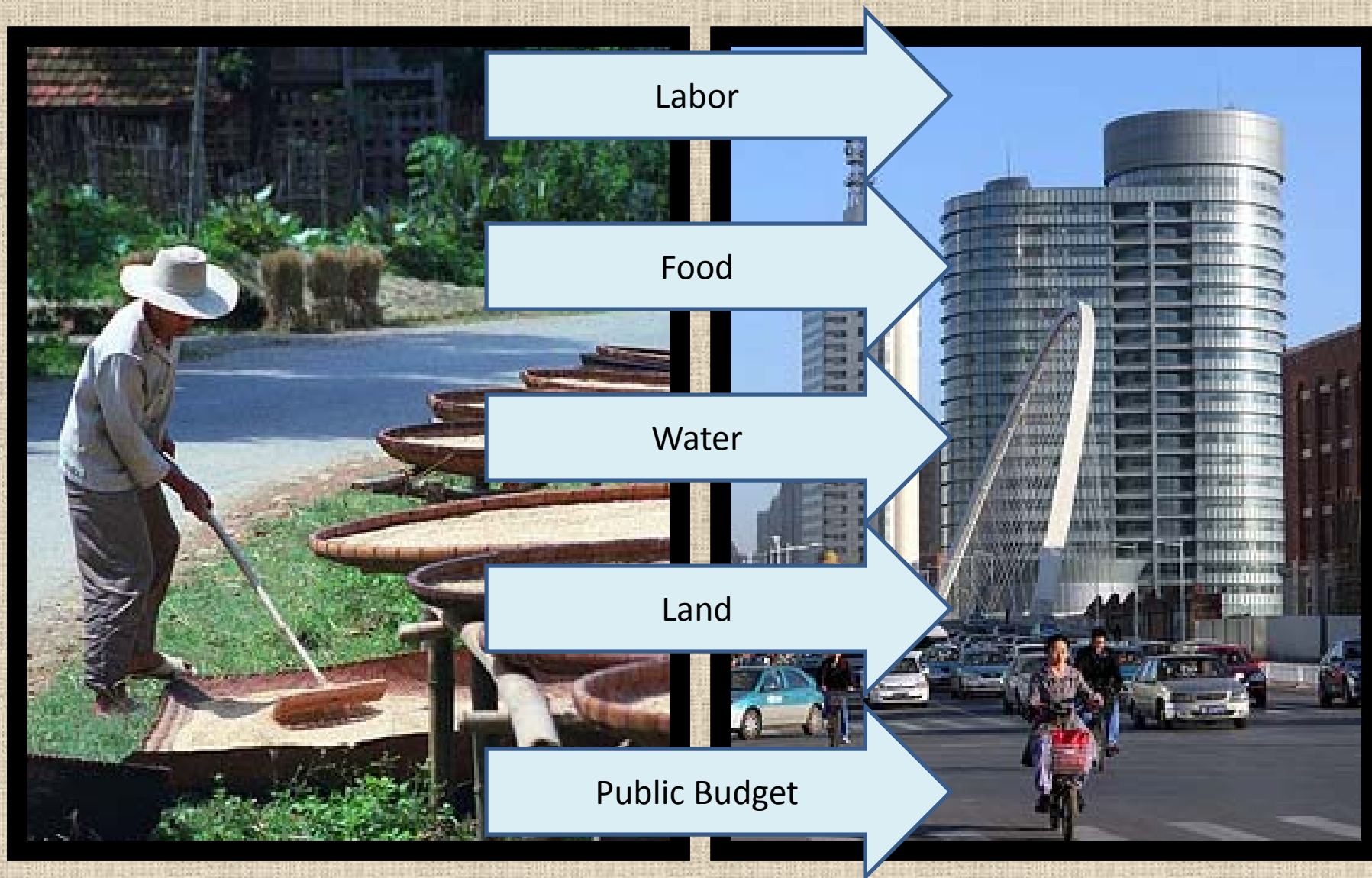
Source: IFC 2012

Regional Transformations

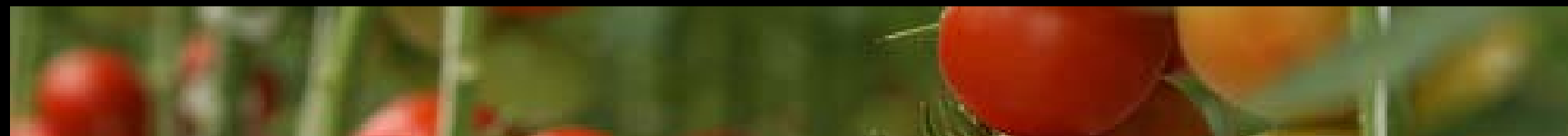


- Increasing economic growth and wealth, but rising inequality
- Increasing population (11% growth between 2010 -2020), but declining rural share
 - Urban areas are expected to expand from around 38% of population at present to 62% by 2030
- Rapid urbanization and economic concentration, lagging regions emerge
 - Urban areas are engines of economic growth, but need inputs from rural:
 - Bangkok, Hanoi + Ho Chi Min City contribute to > 50% of GDP
- Changing consumption patterns
 - More meat, vegetables and high value products
 - Higher quality and safety requirements

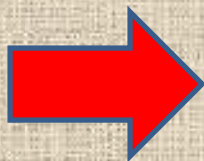
Implications of Rural-Urban Transformation



Looking Forward: Development Imperatives

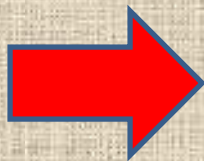


Modern
agricultural
development



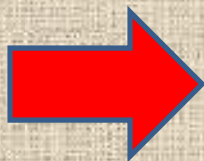
- ***Rapidly modernize agricultural production*** to support intensification and links with integrated supply chains

Sustainable
natural resource
management



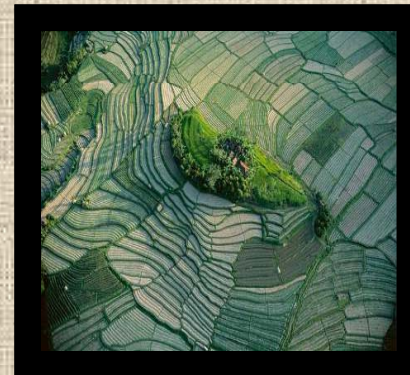
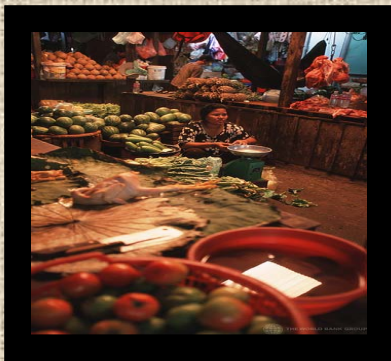
- ***Strengthen environmental sustainability*** through more production with less water and land, and increased provision of environmental services

Integrated rural
development



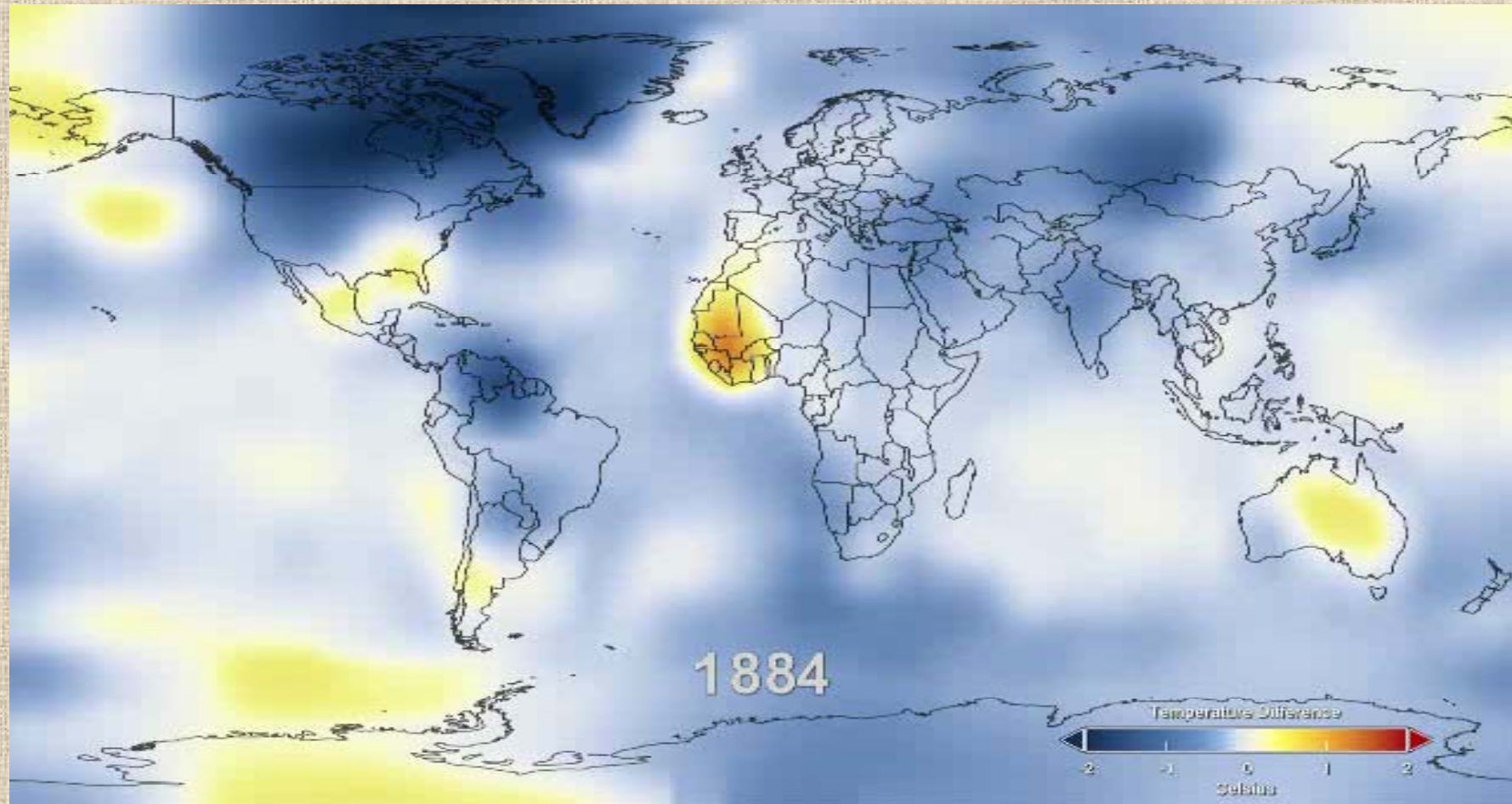
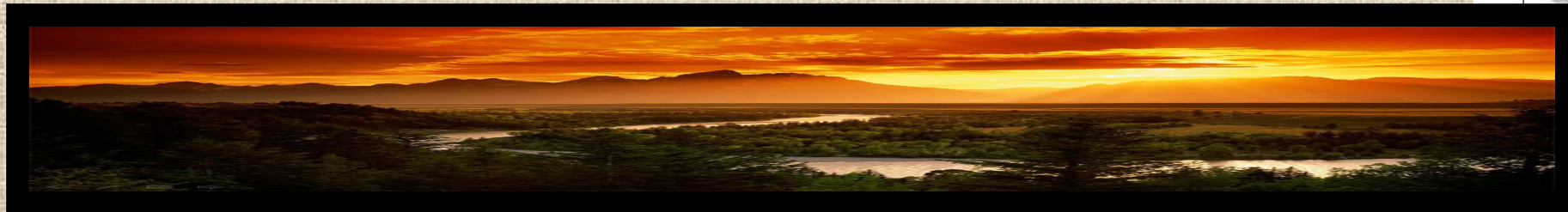
- ***Integrate the poor*** and lagging regions and countries into rapid development process

II. The Implications of Climate Change





Climate Change From 1880 to 2011



Source: NASA

Climate Change Factoids



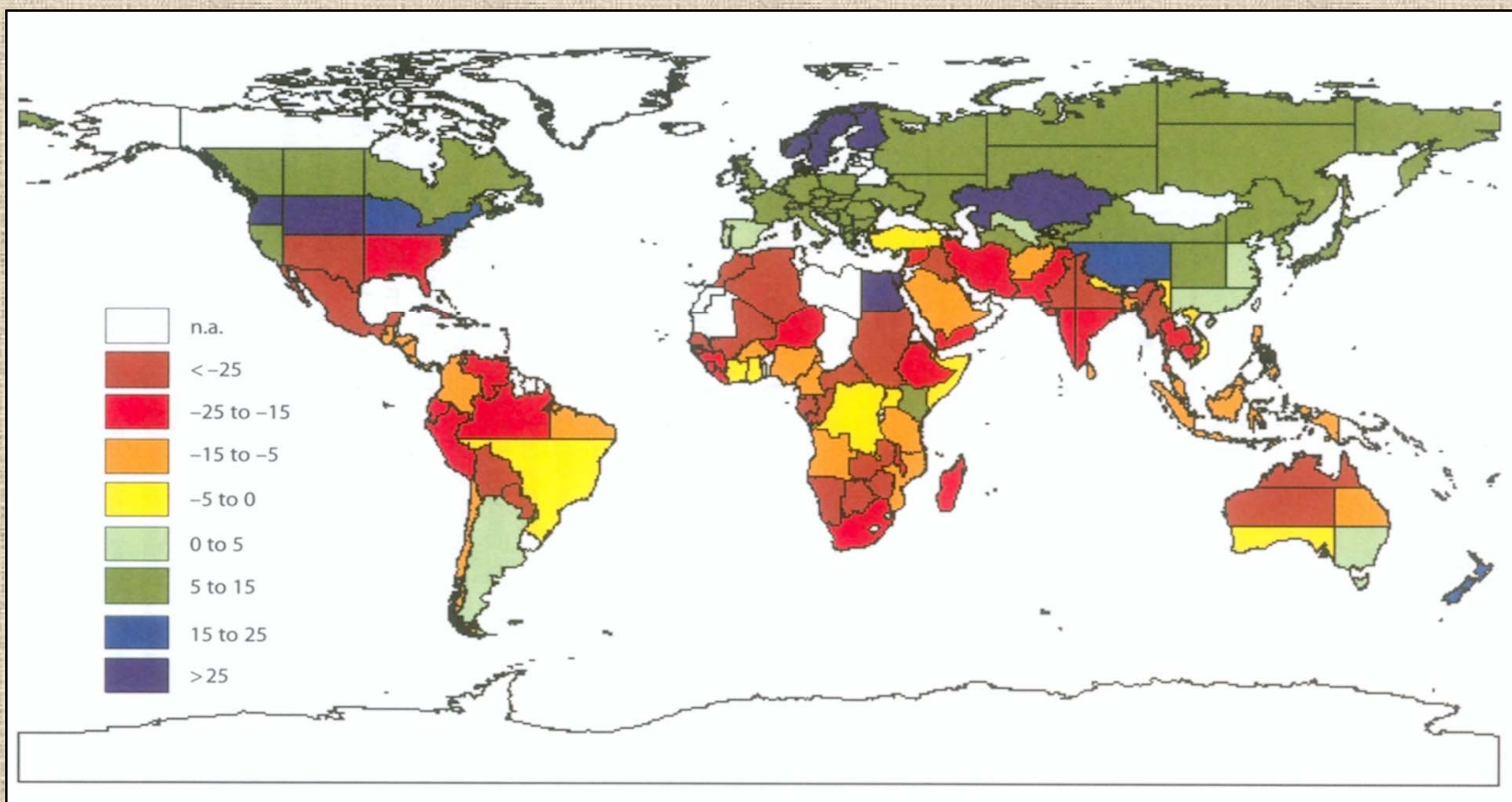
- EAP has 13 of the 30 most climate change-affected countries globally
- Large number of people are affected by cultivated land loss and coastal impacts
 - 130 m people at risk in China
 - 40 m people at risk in Viet Nam
 - 2 m people at risk on Pacific islands
- Increased pest outbreaks projected

Annual cost to developing countries of adapting to a 2°C warmer world between 2010-2050 (by sectors, region, \$ billion)

SECTOR	Climate Scenario	
	DRY	WET
Agriculture, Forestry, Fisheries	2.5	2.6
Water Supply	19.7	14.4
Human Health	1.5	2.0
Coastal Zones	27.6	28.5
Infrastructure	13.0	27.5
Extreme events	6.4	6.7
Total	71.2	81.5
Adding costs differently	70.0	100.0

2005 Constant Prices, 0% Discounting
Source: World Bank Analysis

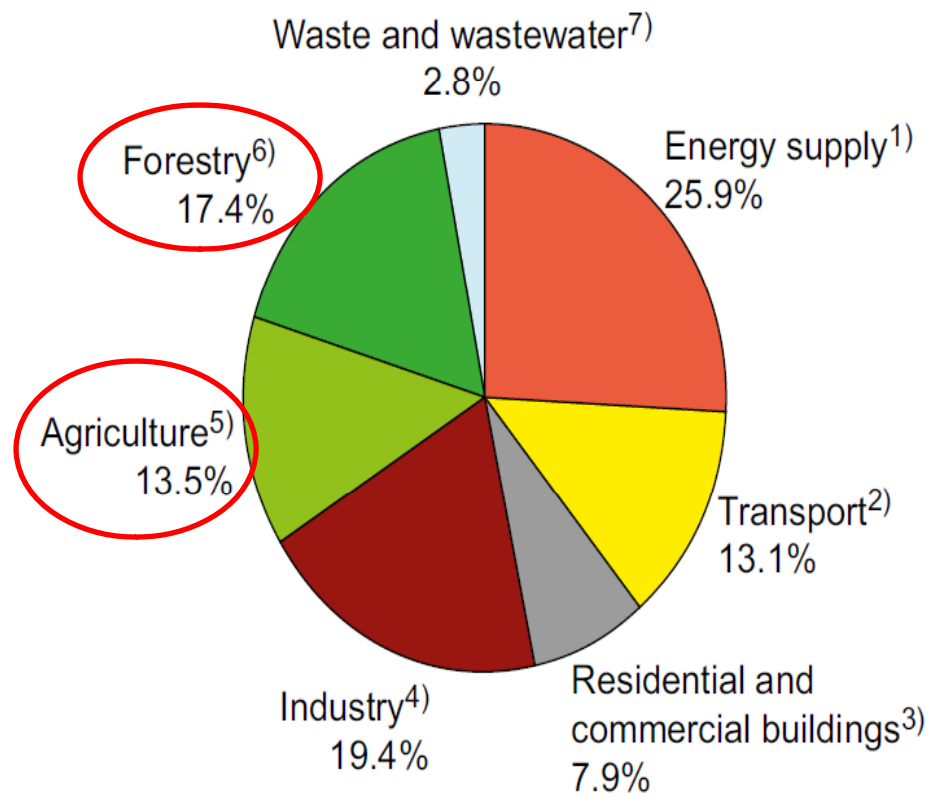
Projected Change in Agricultural Productivity Due to Climate Change (2080)



Agriculture's Role in Mitigation

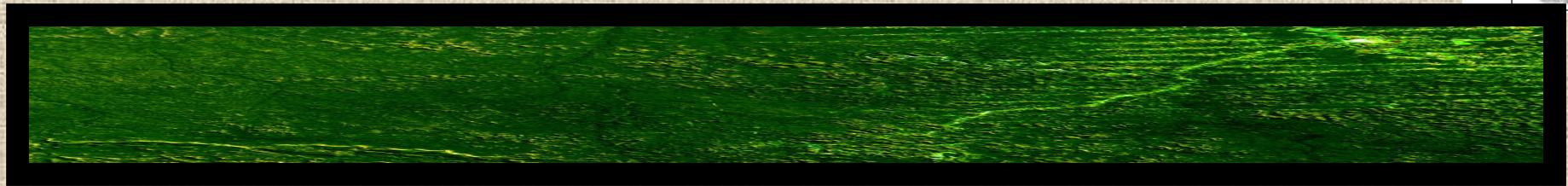


- Agriculture is responsible for 13.5% of global green house emissions
- Primary source of global methane (40%) and nitrous oxide (62%)
- Deforestation and land use change are major contributors

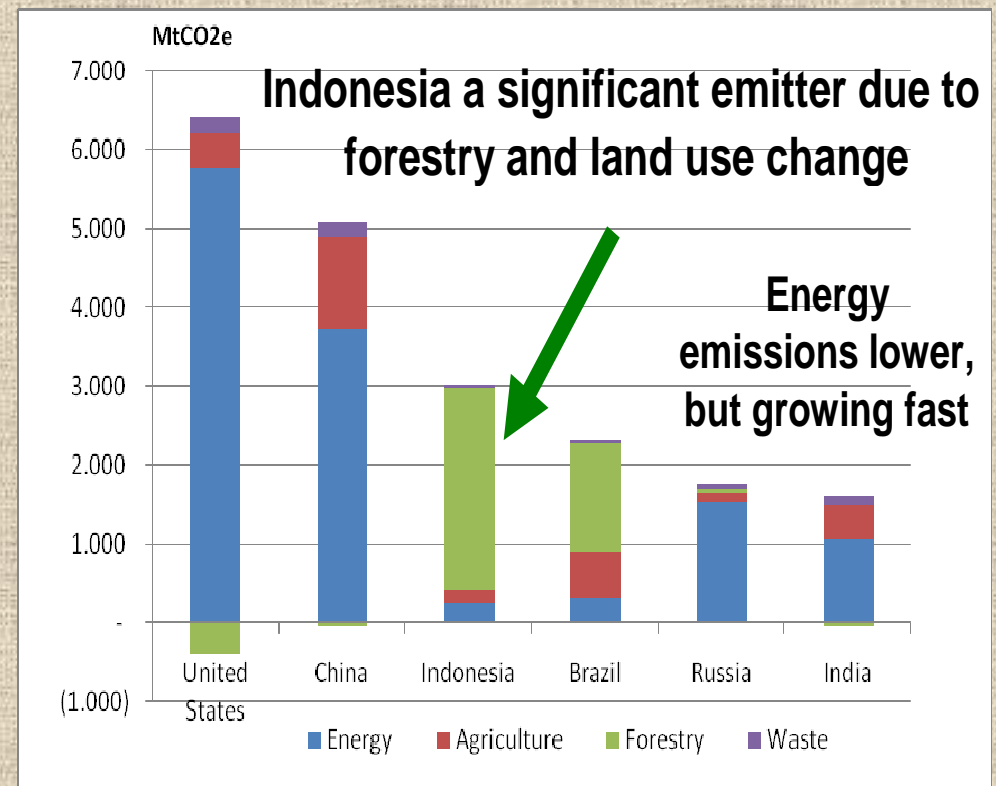


Source: IPCC 2007

REDD

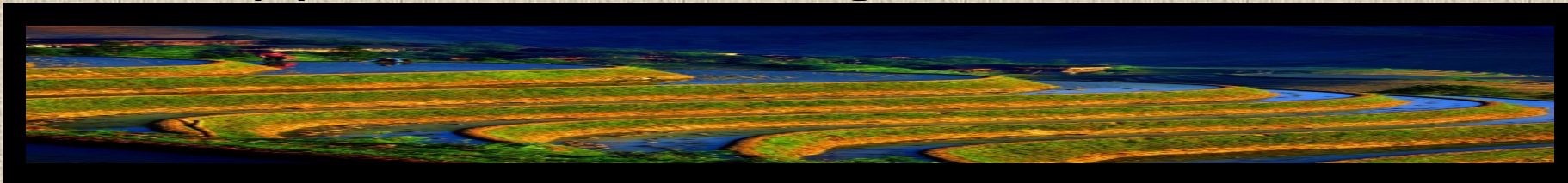


- New impetus for sustainable forest management
- Renewed attention to forest management fundamentals (governance, land tenure, land use planning)
- New financial resources



Source: PT P.E.A.C.E., 2007 compiled from IEA's 2005 annual statistics, US EPA 2006, and Houghton 2003. If EU included, Indonesia stands 4th. Estimate subject to uncertainty.

Looking forward: Opportunities for Agriculture & NRM

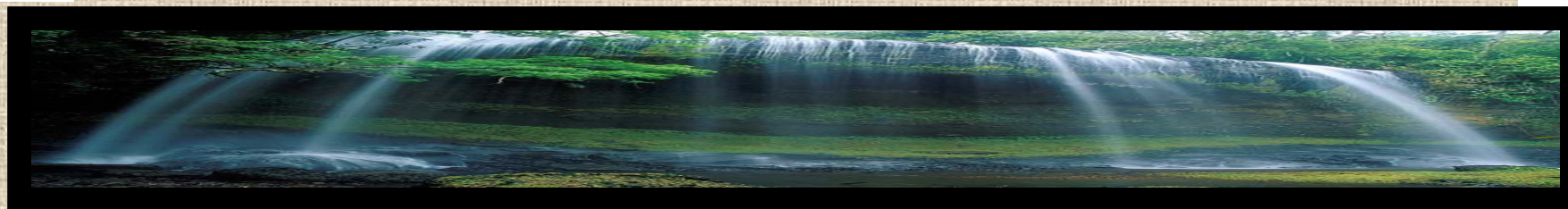


- “Climate-smart” agriculture: simultaneous pursuit of 3 interlinked objectives
 - Improved productivity and food security
 - Enhanced resilience to drought, floods, erosion, heat, and water stress
 - Low carbon growth
- Key elements:
 - Landscape-based approaches
 - Water conservation and harvesting
 - Genetic resources
- Important conditions:
 - Enhanced agricultural research
 - Adaptive management
 - Innovation and continuous learning through testing new approaches

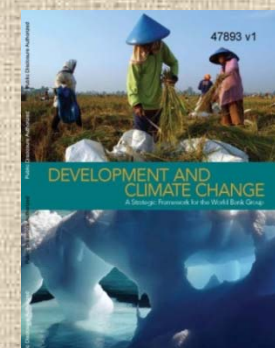
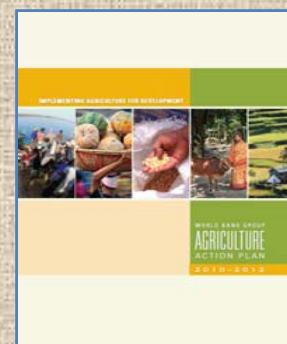
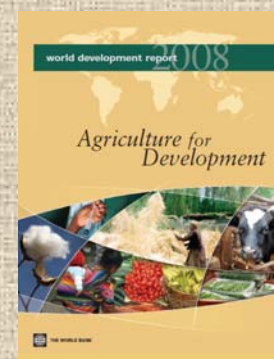
III. World Bank Assistance to Countries in EAP



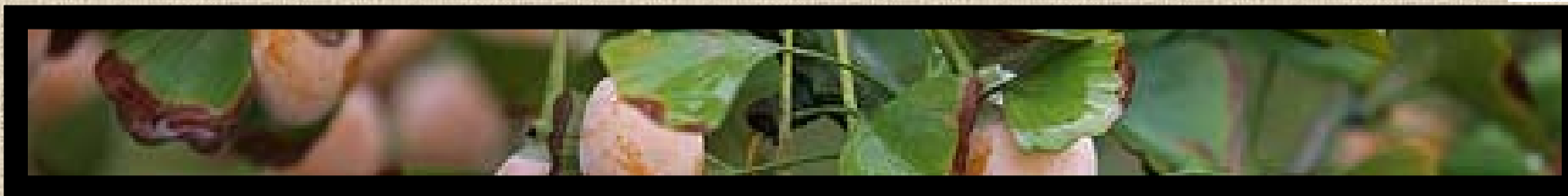
Strategic Frameworks



- Analytical framework:
 - WDRs 2008: Agriculture for Development
 - WDR 2010: Development and Climate Change
- Strategic frameworks for implementation :
 - Agriculture Action Plan
 - Strategic Framework for Development and Climate Change
- IDA16 targets:
 - Vulnerability assessment in all CASs
 - Scale-up of CC analytical and advisory activities
 - Analysis of projects in climate sensitive sectors
 - Monitor investments with CC benefits/co-benefits

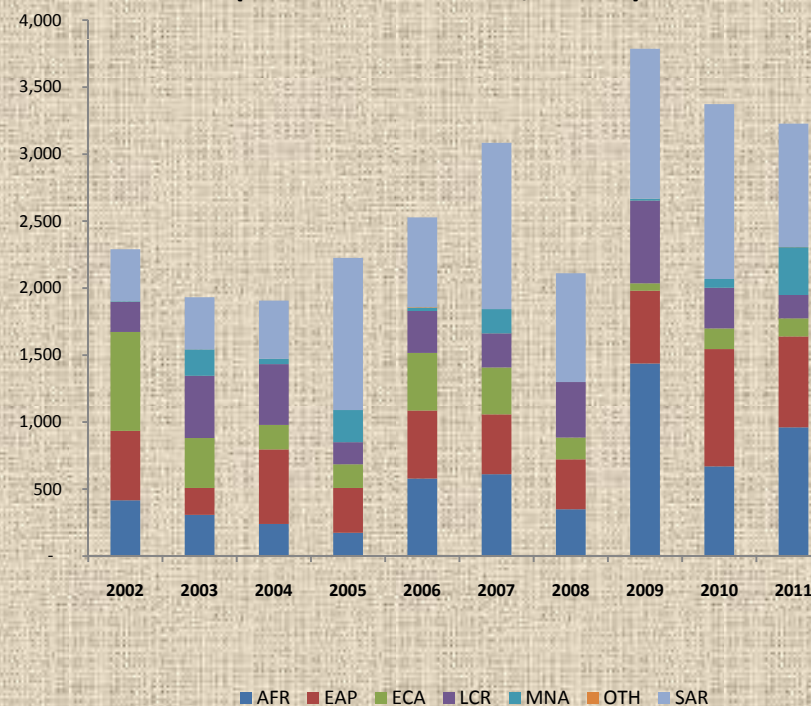


ARD Lending Portfolio FY02-11

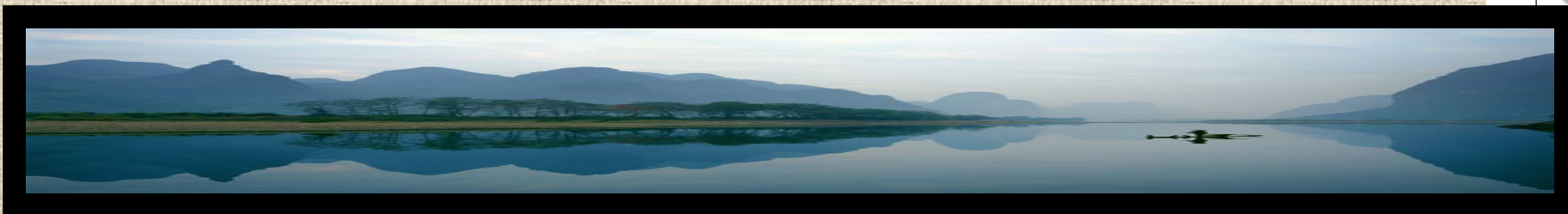


- Bank-wide ARD share: 12% (no of projects), 8% (commitment amount)
- EAP 3rd largest Bankwide
- Largest lending programs in EAP:
 - China (41%)
 - Vietnam (32%)
 - Indonesia (12%)
 - Philippines (8%)

FY02-11 Bankwide Lending under ARD Sector Board by Region (Commitment Amt, US\$m)

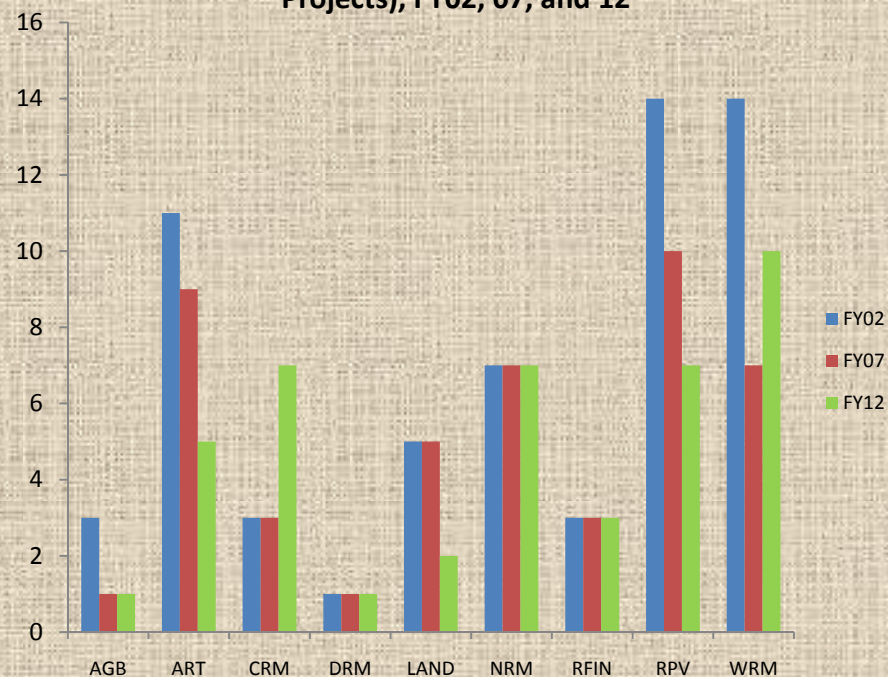


Portfolio Characteristics



- WRM has highest share in the portfolio
- Share of WRM and CRM has increased
- Share of land and poverty reduction projects has declined
- Decreased total no. of projects and volume

EAP ARD Portfolio by Thematic Cluster (No. of Projects), FY02, 07, and 12



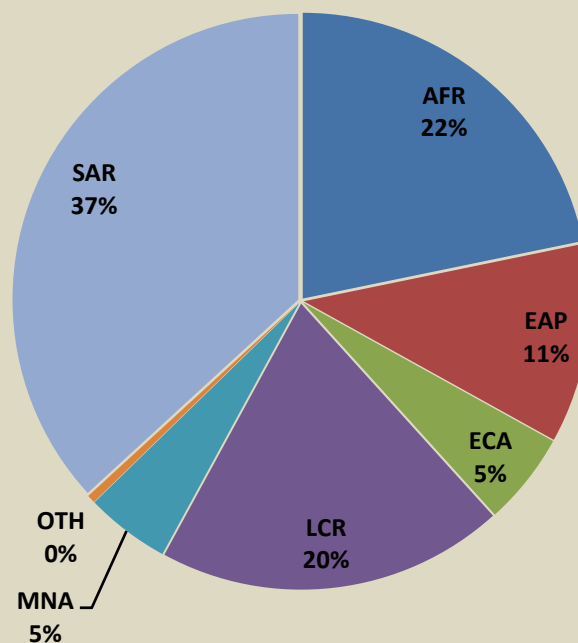
Legend: ART : Agriculture Technology, NRM: Natural Resource Management/Forestry , LAND: Land, AGB: Agribusiness/Access to Markets, RFIN: Rural Finance, RPV: CDD/Rural Poverty/Lagging Regions, CRM: Coastal Resources Management, WRM: Water Resource Management/Irrigation, DRM: Disaster Risk Management

Lending Pipeline FY12-13



- Share of ARD in Bankwide lending to increase slightly to 13% (no. of projects) and 11% (volume)
- EAP is expected to deliver 9 projects/year with an average commitment of about \$600m/year

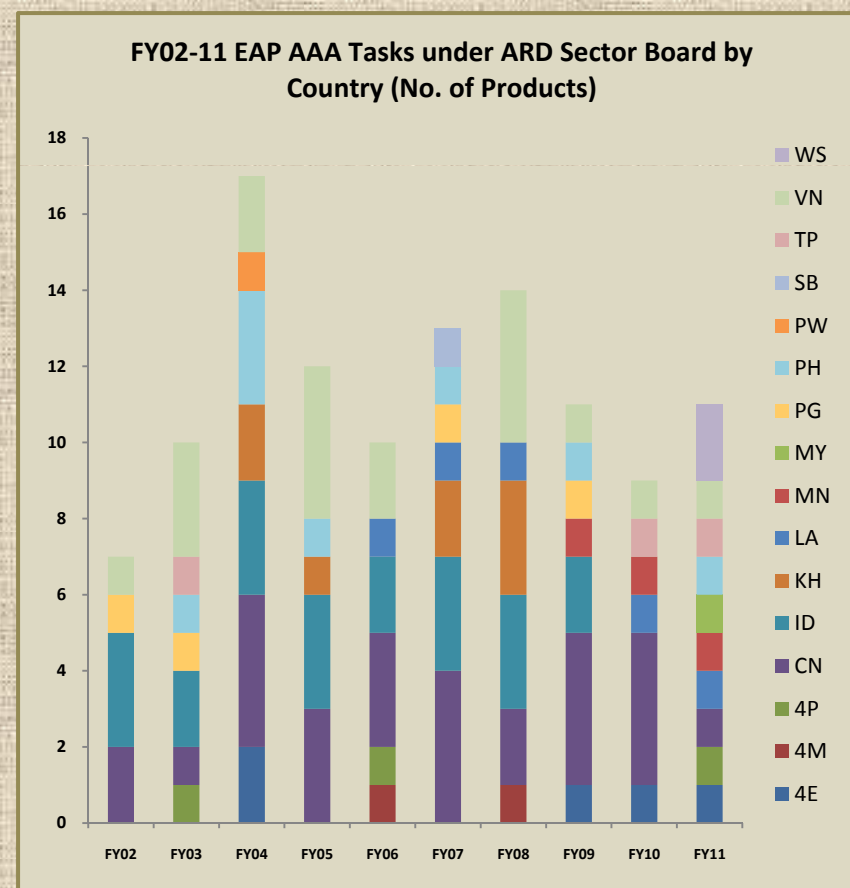
FY12-13 Pipeline under ARD Sector Board by Region
(% of Commitment Amt, US\$m)



Analytical and Advisory Assistance



- ARD's share of Bank-wide AAA is 6%, but declined during FY02-11
- ARD AAA's share in EAP during FY02-11 was 7% on average
- Largest programs: China, Vietnam, and Indonesia

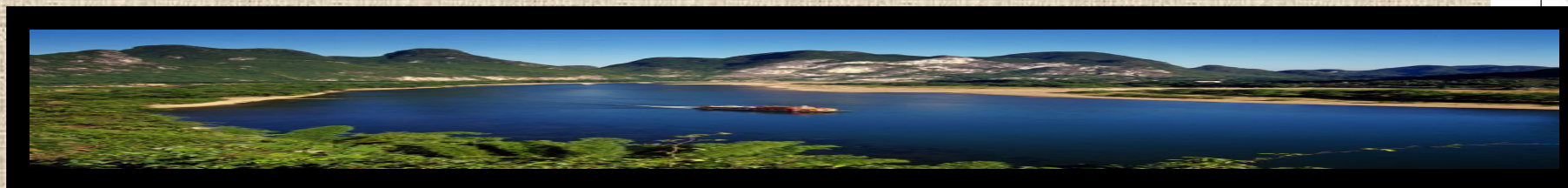


Special Financial Instruments



- Agriculture:
 - Global Food Crisis Response Program (GFRP)
 - Global Agriculture and Food Security Program (GAFSP)
- Climate change:
 - GEF window for climate change, and Least Developed Country Fund
 - Adaptation Fund
 - Pilot Program for Climate Resilience (PPCR) and Forest Investment Fund (FIP) under the Climate Investment Funds (CIFs)
 - Forest Carbon Partnership Facility
 - Bilateral initiatives (e.g. Norway Letter of Intent in Indonesia)

Differentiated Strategy



REGIONAL PRIORITIES: Infrastructure/Urbanization; Poverty/Inequality; Governance; Natural Disasters/Climate Change



DRIVEN AT THE COUNTRY LEVEL BY: Client demand; Results and development impact; WBG comparative advantage; Leveraging with partners; Changing external environment

More

Less

China

- Inclusive Green Growth
- Environment-focused operations
- Interior and western provinces
- Innovation
- China's global engagement

- Complex project designs
- Smaller projects (<\$100 million)

Upper MICs

- Infrastructure, Skills, Food Security, Gender, Green Growth, Climate Change and Disaster Resilience
- Catalytic SILs and Results-based programs
- Fee for Services

- Basic education
- Free standing ESW

Lower MICs & LICs

- Poverty Reduction/MDGs/Vulnerability, Infrastructure, Climate Adaptation, Gender
- Private Sector Development
- Myanmar engagement

- Traditional agriculture
- Small and fragmented operations
- Operations with large IT-based investment components

Pacific Islands & small states

- Regional operations to strengthen connectivity
- Promote regional institutions
- Increased support for macro dialogue
- Engage with emerging/re-emerging WB clients
- Climate resilience, Gender

- Traditional investment lending
- Large ESW reports

Looking Forward



- Increasingly complex development challenges
- Growing sophistication of clients
- Diversity of development assistance landscape
- More active private sector



- Look for innovative new approaches
- Use mix of tools including policy-based and programmatic
- Leverage special financing mechanisms and partnerships
- Use PPPs more actively

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Thank You!



"All I'm saying is now is the time to develop the technology to deflect an asteroid."