

## Climate Change Adaptation: Planning and Practices

Unfccc workshop  
- Keynote presentation -

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Building on past lessons,  
experience

Filling gaps, overcoming  
constraints

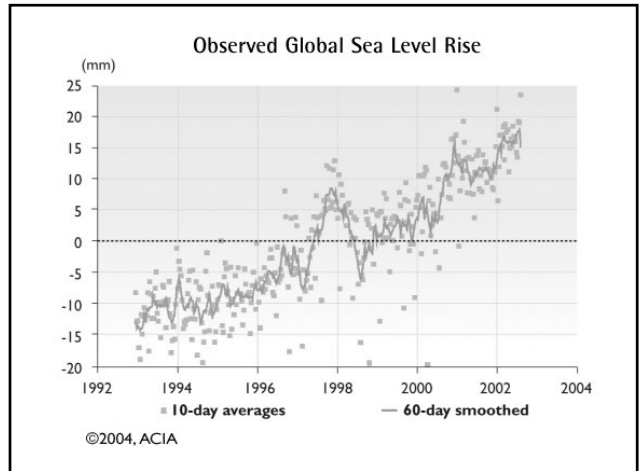
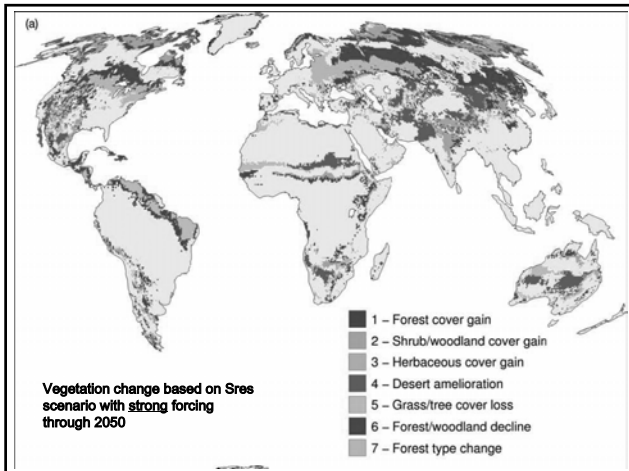
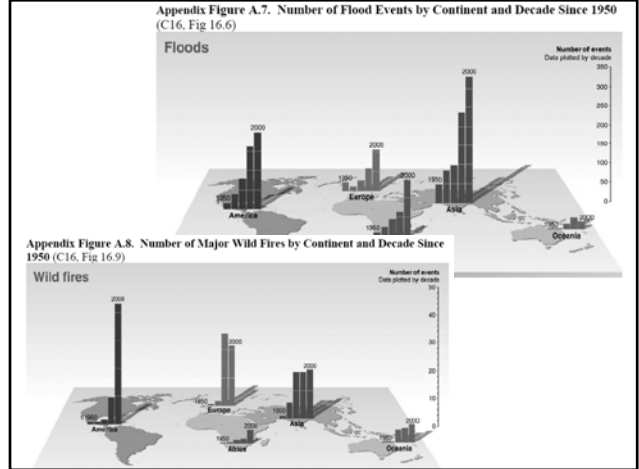
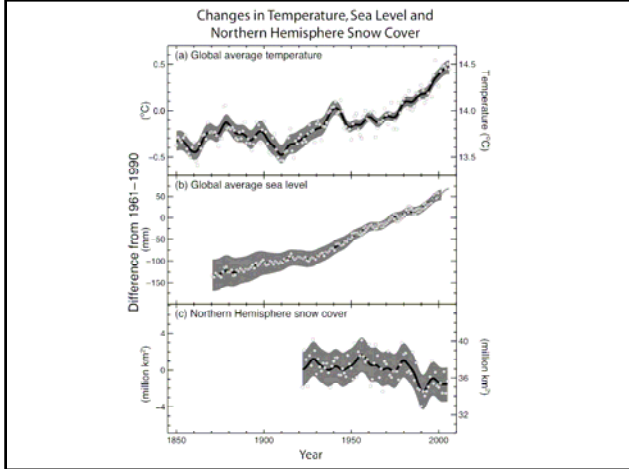
Exploiting opportunities for  
action

## The Nairobi Work Programme

- Methods and tools
- Data and observations
- Modelling, scenarios, downscaling
- Risks and extreme events
- Socio-economic information
- **Planning and practices**
- Research
- Technologies
- Economic diversification
  - ... we need to act holistically in  
key sectors of national economies

## Adaptation planning, practices

- Collecting, analysing and disseminating information on past and current practical adaptation actions and measures, including projects, strategies, local and indigenous knowledge
- Facilitating communication and cooperation – Parties, organizations, business, civil society, and decision makers, other stakeholders
  - ... a rather modest change in the  
light of the challenges we face



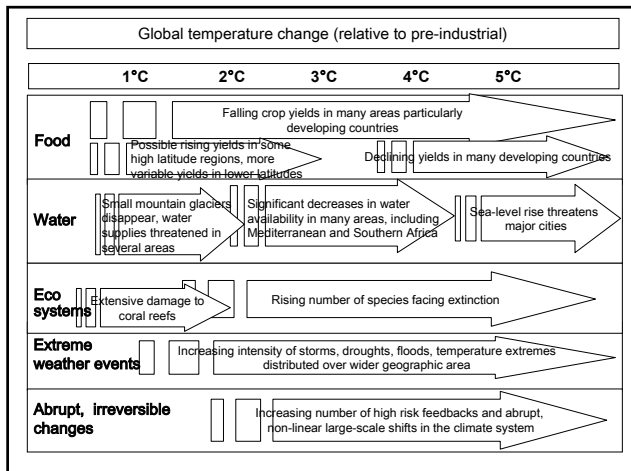
## Exposure to sea-level rise

Table 6.12. Indicative estimates of regional exposure as a function of elevation and baseline (1995) socio-economics. MER = market exchange rates (after Anthoff et al., 2006).

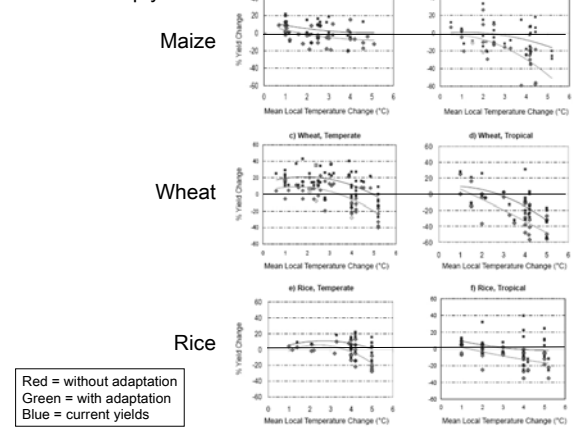
Region	Exposure by factor and elevation above mean high water								
	Land area (km <sup>2</sup> )			Population (millions)			GDP MER (US\$ billions)		
	1m	5m	10m	1m	5m	10m	1m	5m	10m
Africa	118	183	271	9	14	22	6	11	19
Asia	875	1548	2342	108	200	294	453	843	1185
Australia	135	198	267	2	3	4	38	51	67
Europe	139	230	331	14	21	30	305	470	635
Latin America	317	509	676	10	17	25	39	71	103
North America	640	1000	1335	4	14	22	103	358	561
Global (Total)	2223	3667	5223	145	268	397	944	1802	2570

## Implications for agriculture

- Crop yield likely to increase at higher latitudes and decrease at lower latitudes
- Global agricultural production potential likely to increase with increases in global average temperature up to 3°C, but above this is likely to decrease, regional winners and losers
- Increased frequency and intensity of extreme events – droughts, fire, floods - with consequences for chronic and transitory food insecurity
- Loss of nursery areas for fisheries through inundation and coastal erosion in low-lying areas of the tropics
- Local extinctions of commercial fish species at edges of ranges
- Loss of coastal/estuarine agriculture lands due to saltwater intrusion
- Need for improved water storage and more efficient use
- Increased diseases in livestock and transfer of pathogens from animals to humans



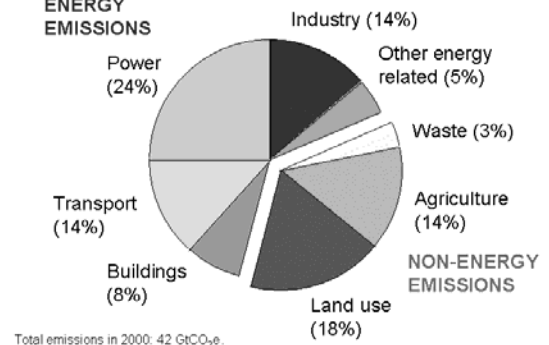
## Trends in crop yields



## Issues for agriculture

- Agriculture, forestry, fisheries as core components of national adaptation strategies and plans of action
- Food security – supply, access, availability, quality – is a key challenge, esp. in food deficit countries
- Environmental goods and services – land and water resource, biodiversity, watersheds, soil fertility, forest products – are key challenges
- Environments at risk – esp. coastal areas and small islands, mountains, arid zones – probably need special emphasis
- Link adaptation actions to mitigation, disaster risk and emergency response, development assistance initiatives

## ENERGY EMISSIONS



## Gaps and constraints

- Systematic national observing systems for - land, water, atmosphere – have declined significantly in poorer countries; data sharing is generally poor
- Lack of experience in successful integrated approaches to climate change adaptation, mitigation
- Are our institutional structures and capacities sufficient to meet the challenge?

## Lessons from the past

- Capacity building requires a long time horizon, outcomes can be problematical, redundancy is helpful
- Long-term investment does not guarantee sustainability
- Even the best data, information and planning do not necessarily translate into good policies or practices
- Institutions, human resources, cross-institutional linkages are key points that deserve attention
- Focus on actions that will influence the people who will be most affected

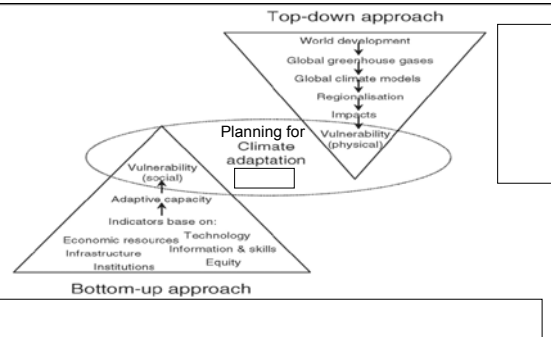
## Opportunities for action

- Sustainable agriculture has always addressed adaptation to climate variability, is foundation for the future
- Link adaptation actions to national policy frameworks that include mitigation, disaster risk reduction
- Build upon risk management efforts in order to:
  - Identify and characterise spatial and temporal threats of increased climate variability at sub-national levels – vulnerable populations, ecosystems
  - Understand decisionmaking and risk aversion behaviour of smallholders; support livelihood approaches
- Maintain the viability of economically important activities in agriculture and rural sector through participation of Finance or Planning ministries
- Use regional transboundary collaboration mechanisms (e.g. river basin agreements)

## ... more opportunities

- Build upon infrastructure already in place – crop yield forecasting tools, drought monitoring and early warning systems, land and water management
- Promote new approaches such as conservation agriculture to help reduce emissions and improve agroecosystem resilience
- Promote bioenergy systems for greenhouse gas benefits and emissions and sequestration
- Use research and technology to undertake plant breeding and develop alternative crops
- Communicate best practices for crop and natural resources management – water, soil, pests, ... – to vulnerable groups

## Making adaptation work in practice



Linking 'Top-down' and 'bottom-up' perspectives and approaches

## FAO framework

- Production systems management
- Legal and institutional
- Policy and planning
- Social and economic
- Ecosystem management
- Research and technology
- Capacity building and knowledge management

LADA - Land Degradation Assessment in Drylands

**Fire information system**  
 Overview the MCOIS Rapid Response System and Data Dissemination from LMD

GLCN  
 GLOBAL LAND COVER NETWORK

LCDS  
 LAND COVER classification system

aquastat  
 CropWat  
 ClimWat

ecocrop

**HORTIVAR** Horticulture Cultivars Performance Database

GTOS  
 GLOBAL TERRESTRIAL OBSERVING SYSTEM

**EMPRES**  
 emergency prevention system

**Global Information and Early Warning System**  
 - on food and agriculture (GIEWS)

**Foodcrops and shortages**  
 Map of unfavourable crop prospects and food supply shortfalls

**Locust watch**  
 Locust and Other Migratory Pests Group

**FAOSTAT**  
 FAO Statistical Databases

**FIVIMS**

Legal Office  
**FAOLEX**  
 Laws, regulations on food, policies agriculture, renewable natural resources

**GLOBEFISH**

**Agro-MAPS**

**FAOAIDEnews**  
 Avian Influenza Disease Emergency

FAO // **GeoNetwork**  
 [ Find and analyze geo-spatial data ]

**Geospatial analysis – a powerful planning tool**

Layer 1: Hydrography rivers and lakes.

Layer 2: Elevation contours

Layer 3: Infrastructure

Layer 4: Soils

Layer 5: Major land-cover types

A range of projections and scales.

### ... beyond Nairobi

- Accelerated transition to carbon-neutral economies, increased energy efficiency, improved management of natural resources
- Financing mechanisms that effectively tap Oda and private investment sources
- A place for adaptation within a post-Kyoto agreement