



Climate Change: Implications for Employment

Key Findings from the
Intergovernmental Panel on Climate Change
Fifth Assessment Report

June 2014



Climate Change: Jobs & Livelihoods

Climate change threatens to **ecosystems** such as forests and oceans will affect economic sectors such as **agriculture, fisheries, mining, energy production, pulp and paper** and **tourism**.

Climate change effects will interact with:

- **Population growth**
- **Economic development**
- **Urbanisation and migration**
- **Supply chain globalisation**

Impacts on global employment will be both direct and indirect, and **jobs will be created as well as lost**. People living in poverty will be most affected.



Greenhouse gas (GHG) emissions at current rates are projected to **raise global average surface temperature by 2.6–4.8°C** by 2100.



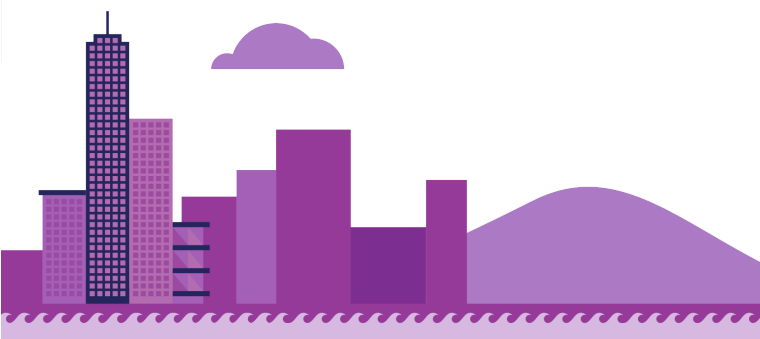
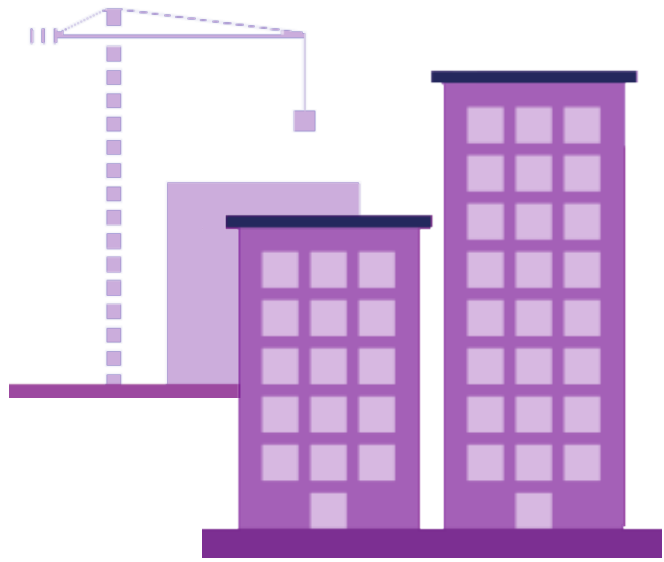
Climate Change: Impacts on Urban & Coastal Zones

Urban areas will be affected by:

- Disruptions to **infrastructure**
- Insecurity and breakdown of **food systems**
- Limited adaption ability of **poor residents**
- Increased **infrastructure spending**
- Increased **municipal jobs**

Coastal zones will be affected by:

- Assets exposed to **sea-level rise**
- **Storm surges** and **extreme weather**
- Decreases in **tourism**
- Decline in **fish stocks** and **fisheries' production**



Coastal Zones contain **10% of the world population** (600 million people), and **65% of cities over 5 million people**.

Climate Change: Impacts on Rural & Poor

Rural livelihoods and incomes will be impacted by:

- Insufficient **access to water**
- **Food insecurity**
- Reduced **agricultural productivity**



People living in poverty will be affected by:

- Slow **economic growth**
- **Existing vulnerabilities exacerbated** by climate change
- **New poverty traps** triggered by climate change



Climate change impacts will make it **harder for people to escape poverty**.



Poor and rural regions are already subject to **non-climate stressors**, such as:

- Underinvestment in agriculture
- Land and natural resource policy problems
- Environmental degradation

Climate Change: **Economic Activity**

Actions and policies to reduce GHG emissions may threaten livelihoods in existing industries, but should create opportunities in new areas.

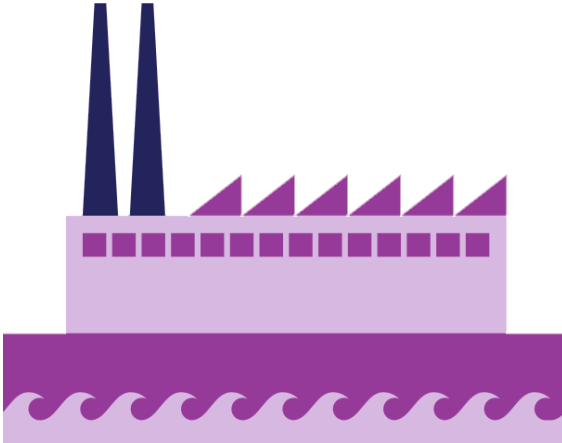
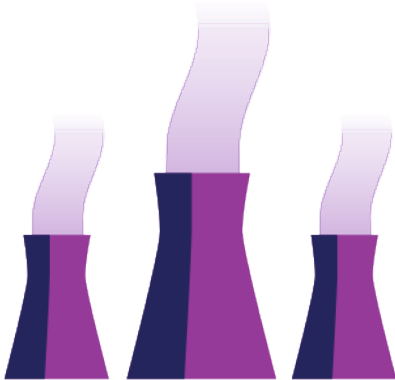
Climate-sensitive sectors, such as agriculture, forestry, fisheries and tourism, **may find it more difficult to adapt** to climate change.

The sectors that will be most affected include:

- **Energy**
- **Water**
- **Food production and agriculture**
- **Tourism**
- **Transport**



Slow impacts will indirectly change the economic viability of various sectors.



Climate Change: Migration

Migrations of people could be affected by climate change via:

- Intensification of **natural disasters**
- Shortages of **food** or **water**
- **Sea-level rise** in coastal areas or island states
- Increased **competition** or **violent conflict** over resources

Migration can have both **positive** and **negative** effects:

Positive: **Remittances sent back home** from migrants abroad

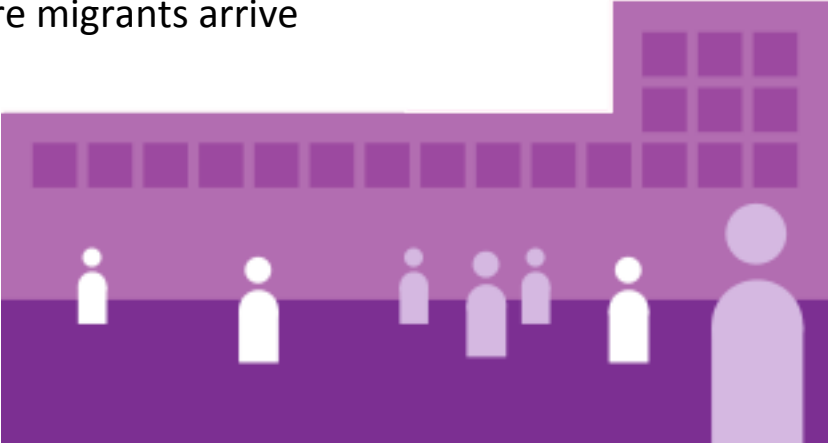
Negative: Increased **burden of work** where migrants leave

Decreased **traditional knowledge transmission**

Demographic and resource pressure where migrants arrive



Migration will be one of the main options for employment adaptation to climate change.



Climate Change: Implications for Employment

Most regions and sectors will experience **negative employment effects**.

- **Extreme weather** and other climate impacts threaten **supply chains** and **logistics**.
- **Rising temperatures** and **disease** will reduce **labour productivity**.

Some regions and sectors will experience **positive employment effects**. Jobs can be created through climate change adaptation efforts such as:

- **Flood relief measures**
- **Roll-out of renewable energy capacity**
- **Energy efficiency initiatives**



Climate Change: Resilience (1/3)

Public investment and private involvement will be critical to climate change adaptation, and can include **individuals, SMEs** and **large corporations**.

- **Climate policies**
 - Increasing energy from renewable resources
 - Encouraging cultivation of biofuels
 - Payments under the REDD markets
- **Agriculture**
 - Reducing market volatility
 - Making global agricultural markets more predictable and reliable
- **Insurance programmes**
 - Social protection measures
 - Disaster risk management



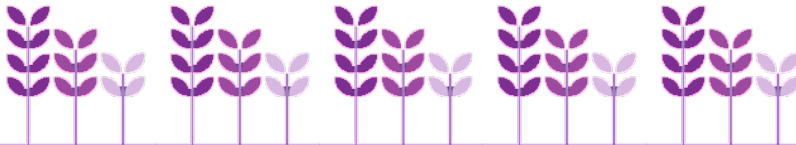
Climate Change: Resilience (2/3)

Potential adaptation options exist and can **directly benefit livelihoods**.

- **Adaptation across food system activities**
Focus on **food security and equity** likely to have the **most direct livelihood benefits**.

- Food production
- Processing
- Packaging
- Transport
- Storage and trade

- **Fishery and aquaculture**
 - Maintaining resilient **ecosystems**
 - Developing **early warning systems**
 - Better-adapted **livestock breeds**
 - Improving access to **credit for adaptation measures**



Climate Change: Resilience (3/3)

Building **resilient systems** will be crucial to maintain economic activity and support jobs.

- **Resilient infrastructure for urban areas**
 - Water supply
 - Sanitation
 - Storm and waste water drains
 - Electricity
 - Transport
 - Telecommunications
 - Healthcare
 - Education
 - Emergency response



Urban areas hold more than half of the **world population**, most of its **built assets** and most of its **economic activities**.



Options available to policymakers for climate change mitigation include:

Decoupling economic growth from an increase in GHG emissions, requiring large-scale transformations in the way the economy works.

Developing a workforce capable of working in 'green jobs', including renewable energy, green buildings, decentralised energy and efficiency.

Reducing energy demand, through energy efficiency and behavioural change.

Increasing supply-side energy measures such as renewable technologies, nuclear power and carbon capture and storage (CCS).



Climate Change: Conclusion

Coastal regions, cities and rural areas are all at risk from different climate-related events.

Climate change effects will disrupt economic activity and jobs, both **in specific sectors** and also by effects **on the entire economic infrastructure**.

Adapting to climate change effects will present both **negative impacts** as well as **employment opportunities**.

Climate change poses a *moderate threat* to sustainable development today and a *severe threat* to future sustainable development, and thus to **employment, livelihoods and jobs**.



Threat Multiplier
A factor that exacerbates the negative effects of other drivers of change.



For more information

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