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 threats 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
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.
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.
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**
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
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**
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).
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

Cambridge Institute for Sustainability Leadership
ipcc@cisl.cam.ac.uk

Bela Galgoczi, ETUI
bgalgoczi@etui.org

European Climate Foundation
AR5@europeanclimate.org

www.cisl.cam.ac.uk/ipcc
www.etui.org
www.europeanclimate.org