Climate change: Trade as an enabler of diversification

Aik Hoe Lim
Director, Trade and Environment Division, WTO
EXTREME WEATHER EVENTS, TRANSPORTATION AND VALUE CHAIN DISRUPTIONS

The destruction of crops has led to shortages of food (maize), which has affected meat prices and dairy production. World food prices jumped 10% between June and July 2012 (WB).

The insured losses are estimated at US$ 15 to US$ 20 billion. The flooding of manufacturing plants has led to higher prices for hard drives and other electronic devices that depend on them.

Damage estimated at about 15 billion US dollars, including the destruction of crops (wheat) due to drought and fires.

40 mines have been affected by floods, including transport interruptions of coal to coastal ports for exportation.
Climate change impacts fisheries

- Broad impacts brought by climate change in the marine environment: warming water temperatures; changing ocean currents; extreme weather events, storm severity and frequency; and ocean acidification.

Warming Oceans Are Reshaping Fisheries

Marine species are gradually moving away from the equator into cooler waters, and, as a result, species from warmer waters are replacing those traditionally caught in many fisheries worldwide. Scientific studies show that this change is related to increasing ocean temperatures.

- Fish migration: fish which normally thrive in the tropics are quickly migrating in an effort to discover cooler seas. (Cleaner seas)
- FAO experts predict that tropical countries could face up to a 40 per cent drop in the catch potential of traditional and/or commercially valuable species; while high-latitude regions could gain as much as a 30 to 70 per cent increase in catch potential. (BIORES 2015)
- The expansion of ‘dead zones’ driven by climate change.

Source: UBC news (May 2013)
IMPACT OF CLIMATE CHANGE ON TRADE

All about comparative advantages...

Percentage change in crop yields between present and 2050

The regional consequences of market damages are strongest in Africa and Asia.

Percentage change in GDP (compared with no damage baseline)

Source: OECD (2016)
Impacts on agriculture are relatively strong and agricultural and food trade flows are more affected than other commodities

- Generally less imports and exports
- Uneven regional effects across the world
- Agricultural and food products most affected

Source: OECD (2016)
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
5 shared trade and environment gains

1. MORE AFFORDABLE PROTECTION OF THE ENVIRONMENT
2. FASTER ADOPTION OF GREEN TECHNOLOGIES
3. INCREASED INNOVATION & INVESTMENT IN EARTH-FRIENDLY SOLUTIONS
4. OPPORTUNITIES FOR WORKERS & ENTERPRISES
5. A CONTRIBUTION TO SUSTAINABLE DEVELOPMENT
WHAT WILL IT TAKE TO ACHIEVE 2°C?
Delaying action to 2030 will increase the costs of decarbonisation. It will also mean we will need to introduce new technologies more quickly.

HOW MUCH WILL DECARBONISATION COST?
Mitigation costs as share of global GDP over the 21st century

GLOBAL ACTION BY 2020

1.7% GLOBAL GDP

GLOBAL ACTION BY 2030

2.2% GLOBAL GDP

WAITING UNTIL 2030...
...will cost 30% more

...means decarbonising two to three times as fast as if we start in 2020

HOW FAST WILL WE NEED TO DECARBONISE?
Modelled rate of decarbonisation required (%/year)\(^2\)

2–9% a year

HOW FAST WILL WE NEED TO DEPLOY NEW TECHNOLOGIES?
Deployment rates and cumulative capacity (GW/year)\(^4\)

50 52 83 48 23

GAS + CCS BECCS NUCLEAR WIND SOLAR

4% fastest known sustained annual rate of decarbonisation\(^3\)

...means deploying key low-carbon technologies at rates far greater than 50 GW/year: as fast as coal use increased at the start of the 21st century

2000–2010 average annual deployment rates (GW/year)

Coal 160 Gas 100 Nuclear 64 Wind 75 Solar 130

For further information, please visit www.avoid.uk.net/feasibility/moreinfo
... while creating job opportunities...

**PROJECT PLANNING**
- 2,580 person-days

**MANUFACTURING AND PROCUREMENT**
- 19,000 person-days

**TRANSPORT**
- 875 person-days per 300 miles

**PROJECT PLANNING**
- Environment and geotechnical experts: 5%
- Engineers: 11%
- Logistic experts: 14%
- Financial analysts: 28%
- Health and safety experts: 2%
- Legal, energy regulation, real estate, and taxation experts: 40%

*Source: IRENA (2017)*
... while creating job opportunities...

**Installation and Grid Connection**
- **34,500 person-days**

**Operation and Maintenance**
- **2,665 person-days per year**

**Decommissioning**
- **8,400 person-days**

**Installation and Grid Connection**
- Quality control: 0.2%
- Logistic experts: 1%
- Environment experts: 2%
- Health and safety experts: 4%
- Engineers and construction foremen: 7%
- Professionals managing cranes, trucks, etc.: 9%

**Source**: IRENA (2017)
Trade is not a silver bullet, but a necessary part of a coherent diversification framework

A coherent policy framework to promote diversification

- Open trade and investment regime
- Sound environmental policies
- Appropriate system for IP protection
- Technological capacity building
- Sustainable procurement policies
Since 2009, **524 measures** notified to the WTO for climate mitigation/adaptation

If we also consider climate change-related measures (*clustering*) – around 38% of the environment-related measures notified to the WTO are adopted for climate action purposes...
WTO works

A unique WTO forum for trade and environment

CTE supports WTO members in:

• Understanding the links between trade and environmental policies
• Learning from national experiences
• Avoiding green protectionism and strengthening the positive interaction between trade and the environment
• Coverage – Fishing
  - Climate change
  - Other issues
Thank you

hoe.lim@wto.org