Challenges

• Agriculture faces a triple challenge:
  - produce sufficient, nutritious and safe food to meet demand
  - contribute to growth and development
  - manage natural resources sustainably

• Trade is important in meeting economic, social and environmental objectives
  - balance trade-offs, short- and long-term needs

• SOCO 2018 looks at the policy space and the technical challenges
SOCO 2018: Objectives

- Analyse the impacts of climate change on agricultural trade
- Assess the role of agricultural trade in ensuring food security in the context of climate change
- Examine the policy space – domestic support measures and trade policies
- Identify how to strengthen the mutual supportive role of policies that combat climate change and the multilateral trade rules
LIKELY IMPACT OF CLIMATE CHANGE ON AGRICULTURE AND TRADE
Changes in Agricultural Production in 2050: climate change relative to the baseline
FIGURE 2.3
CHANGES IN AGRICULTURAL NET TRADE IN 2050: CLIMATE CHANGE SCENARIO RELATIVE TO THE BASELINE (IN BILLION USD, 2011 CONSTANT PRICES)

NOTE: The final boundary between the Republic of the Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area has not yet been determined.

SOURCE: Based on data provided by Wageningen Economic Research. 2018. Climate Change and Global Market Integration: Implications for global economic activities, agricultural commodities and food security. SOCO 2018 Background Paper, FAO, Rome
FIGURE 2.5
INCREASES IN EXPORTS OF AGRICULTURAL PRODUCTS IN 2050: CLIMATE CHANGE RELATIVE TO THE BASELINE (IN BILLION USD, 2011 CONSTANT PRICES)

FIGURE 2.10
CHANGES IN FOOD PRICES AND FOOD PURCHASING POWER IN SELECTED COUNTRIES/REGIONS IN 2050: CLIMATE CHANGE SCENARIO RELATIVE TO THE BASELINE

EXPLORING THE POLICY SPACE
Exploring the Policy Space

• 2030 Agenda for Sustainable Development

• Paris Agreement under UNFCCC
  - common but differentiated responsibilities and respective capabilities
  - Nationally Determined Contributions (NDCs)

• WTO Agreement on Agriculture (AoA)
  - principle of non-discrimination (GATT I, GATT III)
  - GATT XX on General Exceptions – measures relating to the conservation of exhaustible natural resources… which should not constitute a means of arbitrary or unjustifiable discrimination
  - approaches relate to different processes and production methods (PPMs) – e.g. can similar food products be differentiated on the basis of their carbon footprint
DOMESTIC SUPPORT
Domestic Policies and Support Measures
Market support

- Production-coupled domestic support may result to increased emissions, unless efforts are made to increase emissions’ efficiency – i.e. to reduce emissions per unit of output

- Amber box - within the limits coupled payments and price support can influence the production-mix to reduce vulnerability under climate change

- A shift of focus towards supporting sustainable productivity growth could also take place to address productivity and environmental targets
4. Domestic Policies and Support Measures

General services

ANNEX 2 OF THE AGREEMENT ON AGRICULTURE: GREEN BOX SUPPORT MEASURES.

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Description</th>
<th>Key provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Provision of general services that provide benefits to agriculture or the rural community, such as research and extension, pest and disease control, inspection services, marketing and promotion services and infrastructural services, including those associated with environmental programmes.</td>
<td>Must not involve direct payments to producers or processors. Support for infrastructural services limited to capital costs, not operating costs.</td>
</tr>
</tbody>
</table>

- R&D, training and extension, and infrastructure investments are key in achieving climate change adaptation and mitigation objectives.
- Climate-smart agriculture technologies can promote productivity, foster adaptation and reduce emissions per unit of output.
4. Domestic Policies and Support Measures

Risk management

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Description</th>
<th>Key provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Government financial participation in income insurance and income safety-net programmes.</td>
<td>Compensation for maximum of 70 percent of income loss and triggered by an income loss that exceeds 30 percent compared to a reference period.</td>
</tr>
<tr>
<td>8</td>
<td>Payments (made either directly or by way of government financial participation in crop insurance schemes) for relief from natural disasters.</td>
<td>Triggered by a production loss greater than 30 percent with respect to an average in prior years and limited to replacement cost. Combined payments under paragraphs 7 and 8 not to exceed 100 percent of total loss.</td>
</tr>
</tbody>
</table>

- Increase in frequency and intensity of extreme weather events
- Agricultural insurance costs are high and demand for risk management tools is weak – many programmes are subsidized; as insurance is often Amber Box, support that will be notified may increase
- Weather index based insurance can be provided at lower costs
Domestic Policies and Support Measures

Food reserves

• Food reserves can be important to ensure food security in the face of climate change

• Large scale buffer stocks that aim to stabilize prices tend to be costly and may distort production and trade, if prices were set above market levels

• Food reserves designed to meet emergency food needs can address impacts of production shortfalls due to extreme weather - a regional approach to emergency reserves pool risks and can be efficient – ECOWAS, APTERR

ANNEX 2 OF THE AGREEMENT ON AGRICULTURE: GREEN BOX SUPPORT MEASURES.

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Description</th>
<th>Key provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Public stockholding programmes for food security purposes.</td>
<td>May include aid for private storage. Purchases and sales must be at current market prices.</td>
</tr>
<tr>
<td>4</td>
<td>Domestic food aid programmes.</td>
<td>Can be direct provision of food or at subsidized prices. Government purchases must be at current market prices.</td>
</tr>
</tbody>
</table>
Domestic Policies and Support Measures
Carbon taxes and carbon pricing

<table>
<thead>
<tr>
<th>Country</th>
<th>Wheat</th>
<th>Rice</th>
<th>Beef</th>
<th>Sheep meat</th>
<th>Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3.0</td>
<td>3.4</td>
<td>11.0</td>
<td>13.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.2</td>
<td>2.5</td>
<td>16.5</td>
<td>16.7</td>
<td>0.2</td>
</tr>
<tr>
<td>China</td>
<td>2.6</td>
<td>4.0</td>
<td>12.5</td>
<td>5.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Ethiopia</td>
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<td>7.1</td>
<td>71.5</td>
<td>25.2</td>
<td>2.8</td>
</tr>
<tr>
<td>European Union</td>
<td>2.4</td>
<td>13.1</td>
<td>8.2</td>
<td>10.1</td>
<td>0.2</td>
</tr>
<tr>
<td>India</td>
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<td>3.5</td>
<td>54.4</td>
<td>22.4</td>
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<tr>
<td>Indonesia</td>
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<td>5.6</td>
<td>22.6</td>
<td>22.3</td>
<td>2.9</td>
</tr>
<tr>
<td>New Zealand</td>
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<td>-</td>
<td>8.9</td>
<td>8.1</td>
<td>0.2</td>
</tr>
<tr>
<td>United States of America</td>
<td>2.4</td>
<td>5.6</td>
<td>6.0</td>
<td>-</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Domestic Policies and Support Measures
Carbon taxes and carbon pricing

• Carbon taxes (carbon pricing or regulations) can reduce GHG emissions – they reduce emitting activities

• Agriculture and land use changes involve emissions of all major GHGs – carbon dioxide, nitrous oxide and methane

• There are technical challenges in estimating tax levels and applying the tax (or pricing) on agriculture
Trade Policies

Strengthening the adaptive role of trade

- In the **short-term**, trade can address rapid onset impacts of climate change
  - countries that experience production shortfalls due to extreme weather can resort to the international market

- In the **long-term**, trade should be a part of an arsenal of polices that strengthen agricultural productivity, increase competitiveness and combat climate change.
Trade Policies
Strengthening the adaptive role of trade

- Well-functioning international markets provide a reliable source of food
- Sound, transparent and predictable trade policies can contribute towards international market stability and support climate change adaptation
  - export subsidies and Nairobi Ministerial Conference
  - import tariffs can influence both the availability and the domestic price of food, but could also influence the global market
  - export bans can add to global price volatility and hurt traditional trade partners
Trade Policies
The role of trade in mitigation

• Agriculture in 2050 will need to produce almost 50 percent more food, feed and biofuel than in 2012
  - such adjustment will result in GHG emissions increases unless emissions per unit of output are reduced

• To tackle higher productivity and reduced emissions objectives calls for reallocation of production to producers that:
  - are more efficient in economic terms (they produce more food using relatively fewer resources); and,
  - operate at higher emissions efficiency (they emit relatively lower emissions per unit of food produced)
## Trade Policies

### Emissions leakage

#### TABLE 5.1
**IMPACT OF EMISSIONS LEAKAGE THROUGH TRADE**

<table>
<thead>
<tr>
<th>Relative emissions efficiency (between imports that displace domestic products)</th>
<th>Impact on global emissions</th>
<th>Result of emissions leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports are produced in systems with <strong>lower emissions efficiency</strong> (higher emissions per unit of output)</td>
<td>Increase in global emissions</td>
<td>Emissions misallocation</td>
</tr>
<tr>
<td>Imports are produced in systems with <strong>higher emissions efficiency</strong> (lower emissions per unit of output)</td>
<td>Decrease in global emissions</td>
<td>Emissions reallocation</td>
</tr>
</tbody>
</table>
Trade Policies
Reducing emissions globally

• In theory, in a mitigating country, border tax adjustments can address carbon leakage
  - low-emitting suppliers would face a low tax and would be able to compete with the domestic product
  - high-emitting suppliers would face a high tax, which could potentially make them uncompetitive

• Any approach to tax adjustments faces challenges
  - determine the carbon footprint for domestic and imported products
  - agree internationally on the measurement
  - climate change should constitute a valid justification under GATT XX (like products and different PPMs)
REGULATIONS AND STANDARDS
Regulations and Standards

Labelling

• Labelling could shape consumer preferences towards agricultural products that are produced by low-emitting methods
  - similar to markets for ‘organic’ and ‘fair trade’ labels

• Technical Barriers to Trade (TBT Agreement) - domestic and imported products be labelled on the basis of their carbon footprint

• Labelling would require an internationally-recognized approach in setting the related standards
  - monitoring and verification requirements are likely to impose additional costs on small family farmers and small-scale producers
Sanitary and Phytosanitary Measures

- Climate change could result in a considerable increase in the uncertainty surrounding SPS threats
  - warmer temperatures may allow for better survival of certain pests and changing pest population dynamics
  - in animals, the distribution of vector-borne diseases will depend strongly on environmental conditions (bluetongue disease)

- SPS Agreement is now more important than ever to ensure the implementation of fair measures that protect human, animal and plant health

- Need to promote appropriate risk assessment, surveillance, monitoring, diagnostics and border infrastructure, especially in developing countries
Thank you