Policy solutions to enhance climate change mitigation through agriculture, forestry and other land use (AFOLU)

Ben Henderson & Guillaume Gruère
Agricultural and Resource Policies Division
OECD Trade and Agriculture Directorate

G20 Workshop on Agriculture and Climate Change
02/09/2021
1. What government policies are currently used?

2. Looking ahead, global economic models shed light on
   - How much agriculture and AFOLU can contribute to climate stabilization goals
   - How to design policy packages that can balance “triple challenge” of food systems

3. Reforms to agricultural support policies are part of the package to address the “triple challenge”
   - Improving the coherence of agriculture support policies
   - Investing in innovation
CURRENT GOVERNMENT POLICIES
There are increasingly ambitious mitigation targets, but supporting policies are still emerging

<table>
<thead>
<tr>
<th>Policy category</th>
<th>Specific instrument</th>
<th>Where it's being applied</th>
<th>Observed progress</th>
</tr>
</thead>
</table>
| Market based instruments                | Carbon pricing                       | New Zealand (possibly by 2025): carbon pricing at farm level for livestock (CH₄) and at processor level for fertilizer (N₂O)                                                                                   | TBD- phased approach  
  – mandatory reporting of farm-level emissions in 2024  
  – government and the agricultural sector developing a system for farm-level pricing by 2025                                                                                                           |
|                                        | Carbon offsets                       | Alberta and Quebec, soon Canada, California, China (potentially linked to the respective emission trading systems)                                                                                  | Observed progress with private buyers, but limited coverage                                                                                                                                                       |
|                                        | Abatement subsidies / auctions       | Emission reduction fund (ERF) in Australia (auctioned emission credits)                  | Observed progress, but limited coverage                                                                                                                                                                            |
| Agricultural support, grants, and preferential credits | Agricultural support                | Common Agricultural Policy in the European Union (EU) and other OECD countries           | Insufficiently studied effect (3.5% of reduction according to one study).                                                                                                                                         |
|                                        | Grants                               | United States (biogaz), China (fertilisers), Australia (energy)                           | -                                                                                                                                                                                                                 |
|                                        | Dedicated credit line                | Brazil (ABC program)                                                                     | Improving efficacy, reaching its objectives                                                                                                                                                                     |
| Environmental regulations               | Pollution regulations                | Nitrates Directive and pollution control (EU)                                            | Potentially effective                                                                                                                                                                                           |
| R&D and knowledge transfers            | R&D                                  | Multiple countries- Global Research Alliance                                             | Contribution to GHG monitoring and mitigation practices.                                                                                                                                                           |
|                                        | Knowledge transfer                   | Multiple countries                                                                       | Increases the adoption of sustainable practices                                                                                                                                                                  |
POLICY MEASURES TO PROGRESS FURTHER
Mitigation policies could reduce ~90% of the AFOLU sector’s GHG emissions in 2050.

A policy package taxing emissions & subsidising C sequestration (consistent with 2°C) could achieve:

- **AFOLU**: ~8 GtCO$_2$e/yr (~90%)
- **Agriculture**: 2.5 – 3 GtCO$_2$e/yr (30 – 45%)

Subsidising non-CO$_2$ abatement & sequestration is half as effective:

- **AFOLU**: ~3.3 GtCO$_2$e/yr (~35%)
- **Agriculture**: 1.3 – 1.6 GtCO$_2$e/yr (14 – 24%)

Reducing consumption of animal products:

- **Agriculture**: 0.8 – 0.9 GtCO$_2$e/yr
- **AFOLU**: ~1.5 GtCO$_2$e/yr

**SCENARIO SETUPS**

- **C price** reaches: USD 70 tCO$_2$eq$^{-1}$ by 2050 in GLOBIOM; and 100 tCO$_2$eq$^{-1}$ by 2050 in MAGNET
- **C tax** applied to non-CO$_2$ & CO$_2$ emissions; and **abatement subsidy** for soil C sequestration and afforestation
- **Dietary measures**:
  - reduction in animal product consumption in high-consuming regions to global average (GLOBIOM)
  - 10% reduction in the consumption of ruminant animal products
- **Food waste**: elimination of food waste by 2030
How do mitigation policies affect the “triple challenge” (food security, livelihoods, sustainability)?

Supply-side policy impacts – Agriculture sector (2050)

Implications for government budgets (C prices consistent with 2°C goal)

- C taxes on agricultural emissions raises 320-570 billion USD
- Subsidy for abating agricultural emissions costs 30-60 billion USD

Note
Consumption: change in kcal/day (GLOBIOM); change in food value at world prices (MAGNET).
Production: change in production value at world prices (GLOBIOM); change in value-added (MAGNET).
Current support policies could be better-aligned to serve the needs of food systems

Just one in six budgetary dollars transferred to the sector is spent to support innovation (and 0.2% for public goods)

Total support is **USD 720 billion**

Total budgetary support is **USD 447 billion**:
- 66 billion is highly distorting
- 180 billion for total general services
- 1.5 billion for public goods

Source: OECD (2021), *Agricultural Policy Monitoring and Evaluation – Addressing the Challenges Facing Food Systems*, https://doi.org/10.1787/2d810e01-en
Productivity growth can help to decouple emissions from production and address the “triple challenge”

Agricultural productivity and environmental pressure

CONCLUSIONS
Exploring policy solutions to progress further

• Design, implement and scale up policy packages to:
  – incentivize lower emission production methods
  – “find the balance” between competing food system objectives
  – incentivize and invest in innovation for sustainable productivity and resilience
  – minimize food loss and waste & help consumers make more informed dietary choices

• Build mitigation into agricultural support – we can afford it!
THANK YOU

Main publications: www.oecd.org/agriculture


Contact us by e-mail: tad.contact@oecd.org / Connect to us on Twitter: @OECDagriculture