Agriculture and climate change in Poland

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Ministry of Agriculture and Rural Development | Poland

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Engaging workshop on the Global Research Alliance on Agricultural Greenhouse Gases
Structure

- Introduction: Polish agriculture at glance
- Greenhouse gas emissions in the Polish agriculture
- Mainstreaming of climate action into policies and actions
- Challenges and needs

Photos: Katarzyna Kowalczewska, Wanda Klepacka, Jacek Walczak.
Key facts about Polish agriculture

- Agricultural land 49.6% of total country area
- 88% of agricultural land utilized by family farmers
- 2nd in the EU-27 (after Romania) in terms of number of agricultural holdings
- Nearly 40% of population live in rural areas (14.9 million)

Source: Central Statistical Office 2011
Climate conditions

Precipitation sums

Length of growing season

Source: IUNG PIB
# Agricultural production in Poland

<table>
<thead>
<tr>
<th>Production of some agricultural products</th>
<th>Place in the world</th>
<th>Place in the EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>blackcurrant</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>rye</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>potatoes</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>sugar beet</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>triticale</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>apples</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>cow’s milk</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>champignons</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Rural Development, January 2014
Importance of agriculture in the Polish economy

EUR 19.9 billion
EUR 14.2 billion
EUR 5.7 billion

* estimates for 2013

2.3 millions of persons work in agriculture = 15% of the total work force in Poland
Average area of agricultural holding

- small farms (1 - 5 ha)
  55% of the total number of farms

- the area of holdings raises from south east to north west

Source: IUNG PIB
Changes in agricultural land in Poland

Source: dr Jerzy Kopiński, IUNG PIB: Summary meeting on the IUNG’s research programme 2014, based on the data from Central Statistical Office.
Intensity of agricultural production in Poland
Number of livestock units (LU) per 100 ha in EU 27

Source: Central Statistical Office 2013
Number of livestock units (LU) per 100 ha

- Average between 2010-2012: 48.0 LU *100 ha⁻¹ UAA
- Map presents LU on areas under good agricultural practice (90% in PL)

Source: dr Jerzy Kopiński, IUNG PIB: Summary meeting on the IUNG’s research programme 2014, based on the data from Central Statistical Office.
Milk yield per cow (annual average in liters)

Source: Eurostat
Gross plant production

- average between 2010-2012: 39.7 yields * ha⁻¹ UAA
- map presents areas under good agricultural practice (90% in PL)

<table>
<thead>
<tr>
<th>Yields * ha⁻¹ UAA</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 35.0</td>
<td>Light Yellow</td>
</tr>
<tr>
<td>35.0 – 40.0</td>
<td>Yellow</td>
</tr>
<tr>
<td>40.1 – 45.0</td>
<td>Orange</td>
</tr>
<tr>
<td>45.1 – 50.0</td>
<td>Purple</td>
</tr>
<tr>
<td>&gt; 50.0</td>
<td>Red</td>
</tr>
</tbody>
</table>

Source: dr Jerzy Kopiński, IUNG PIB: Summary meeting on the IUNG’s research programme 2014, based on the data from Central Statistical Office.
GHG emissions in the Polish agriculture
GHG emissions in the Polish agriculture

- Share of agriculture in the total emissions: 8.6%
- 2011 – CH4 & N2O in total (CO2 equivalent Gg) was 31.2% lower than in 1988 due to changes of the Polish economy
- Since 2004 – stabilization of the level of emissions (EU CAP, livestock constant)

GHG emissions in Polish agriculture in CO2 equivalent

Cattle in years 1988-2012

Pigs in years 1988-2012

Drop by 1/3

Source: KOBIZE
GHG emissions in the Polish agriculture

Aggregated emissions of CH$_4$ and N$_2$O 2010 (EU 27) per Utilised Agricultural Area (kilotonnes CO$_2$ equivalent per 1000 ha)

Share of agricultural emissions in total emissions (2011)

- Methane (CH$_4$): 34.1%
  - Enteric fermentation
  - Manure Management

- Nitrous Dioxide (N$_2$O): 83.8%
  - Agricultural soils
  - Manure Management

Source: Eurostat, KOBIZE
Policies
Mainstreaming of climate actions into EU policies

- EU 20-20-20 climate strategy
- EU adaptation strategy
- LULUCF Decision [529/2013/UE]
- MMR Regulation [525/2013/UE] – national low carbon strategies
- 20% of EU budget for climate action 2014-2020
  - Greening of the Common Agricultural Policy
  - More targeted action in Rural Development Programmes 2014-2020
  - Horizon 2020: around 35% of the Horizon 2020 budget should be climate-related expenditure
  - Cohesion policy: 20% to investments in efficiency and renewables in more developed and transition regions
Mainstreaming of climate actions into national policies and actions

- National strategy for sustainable development of rural areas, agriculture and fishery 2012-2020
- National Adaptation Plan until 2020 (with a prognosis up to 2030)
- Direct Payments (c.a. 14 mils. of ha = 90% UAA) (3 measures for climate and environment in 2014-2020)
- Rural Development Programme

![Diagram showing Direct Payments (national + EU funding)]
EXAMPLES: climate actions in rural development

Agri-environmental sub-measures (2007-2013) entail mitigation (M) and adaptation (A)

- Sustainable agriculture \textbf{A+M}
- Organic farming \textbf{M}
- Extensive grasslands \textbf{M}
- Protection of endangered bird habitats outside and inside NATURA 2000 \textbf{M}
- Maintaince of endangered genetic pool of farm animals and agricultural crops \textbf{A}
- Protection of soil and water \textbf{A+M}
- Buffer strips \textbf{M}

Source: dr Jerzy Kozyra, IUNG PIB 2009
New Rural Development programme

RDP 2014-2020

- Knowledge transfer and information actions
- Advisory services
- Quality schemes for agricultural products, and foodstuffs
- Investments in physical assets
- Restoring agricultural production damages by natural disasters and catastrophic events and introduction of appropriate prevention actions
- Farm and Business Development
- Basic services and village renewal in rural areas
- Setting-up producer groups

- Investments in forest area development and improvement of the viability of forests
- Agri-environmental-climate measure
- Organic farming
- Designation of areas facing natural and other specific constraints

- Co-operation
- LEADER

Adaptation + Mitigation

- c.a.33% contribution to the EARDF
Challenges and needs

- Depending on the context: EU climate policy post 2020
- Shift in thinking: towards OPPORTUNITY...
- Mitigation in agriculture and food sector
- Downscaling of emission inventories (specialization of agriculture vs. emission hotspots)
- Methodological challenges of inventories of land, land use, and land use change
- Assessing agricultural practices for different farm types in terms of cost effectiveness and climate impacts for mitigation and adaptation
Thank you for your attention

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