



# The role of agriculture in the North Rhine-Westphalian Climate Action Plan

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## Climate protection in NRW – the government's role

1. Participate in shaping framework conditions at the federal and EU level; e.g. through initiatives in Bundesrat (Federal Council of Germany)
2. *Involve citizens, businesses and municipalities in the development and promotion of climate protection initiatives*
3. Setting good examples:  
Conceptualize carbon neutral state government and universities



## Climate Protection Act ➡ Climate Protection Plan:

### § 6 Climate Protection Act :

„Under full participation of various social stakeholders and local authority associations, the State Government shall devise a Climate Protection Plan which is to be adopted by Parliament.”

➡ **Unique participation concept!**



# North Rhine-Westphalia – Energy Supplier No. 1

- Germany's most populous federal state: 17.8 million inhabitants
- GDP: 599.8 billion € (Germany No. 1, worldwide No.19)
- 150 million consumers within a radius of 500 km

## Energy sector in NRW (2012)

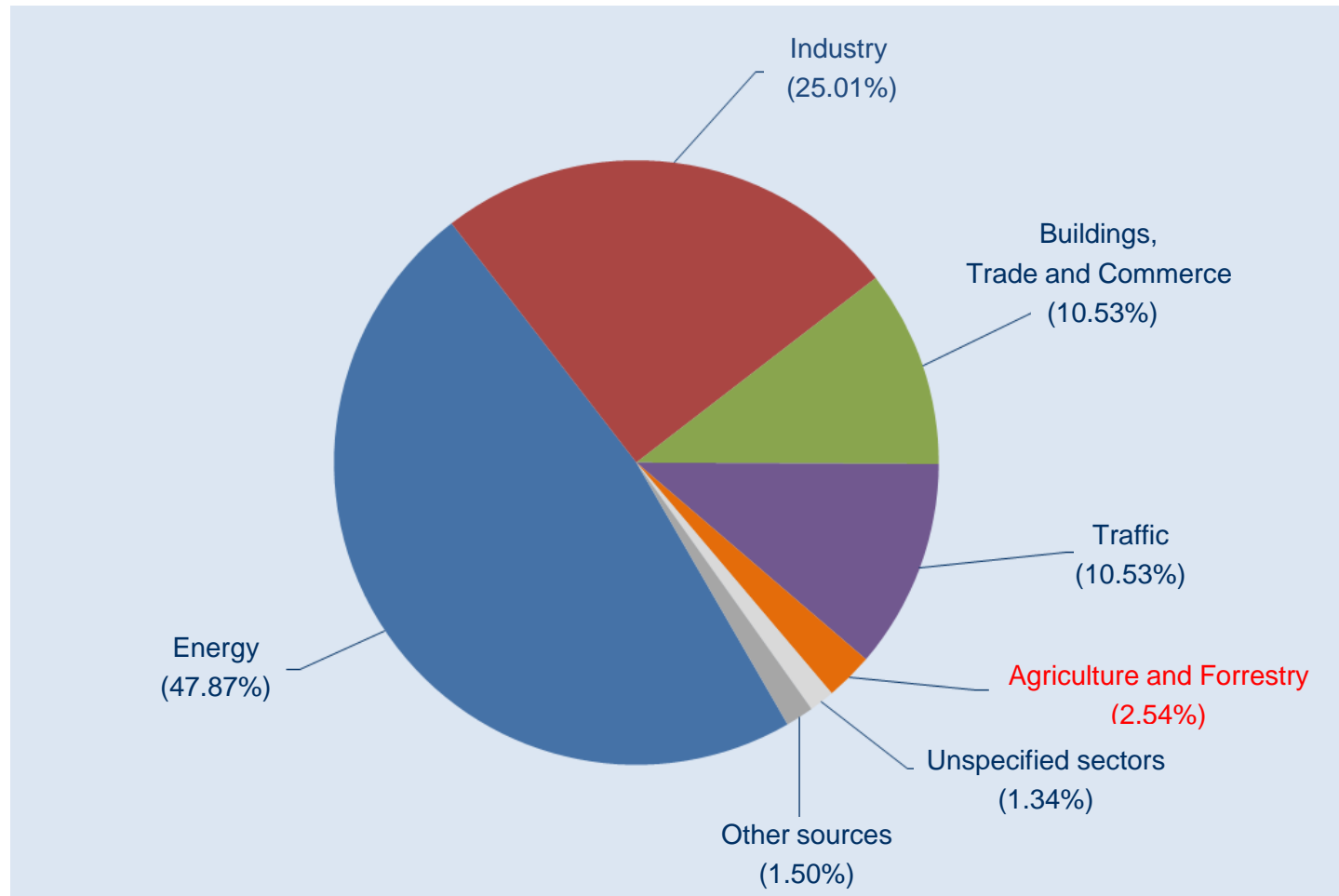
1/3 of Germany's  
GHG Emissions!

- 95% of German hard coal production
- 53% of German lignite production
- Approx. 1.1 Mio. employees, 33,400 in renewable energies
- Approx. 30,000 MW installed power generation capacity
- Around 1/3 of German power generation → 70% coal, 90% fossil, 8% renewables
- Annual CO<sub>2</sub>-emissions: ~300 Mio. t/a
- Annual per capita emissions: 16 t CO<sub>2</sub>/a





# Greenhouse gas emissions in NRW 2012

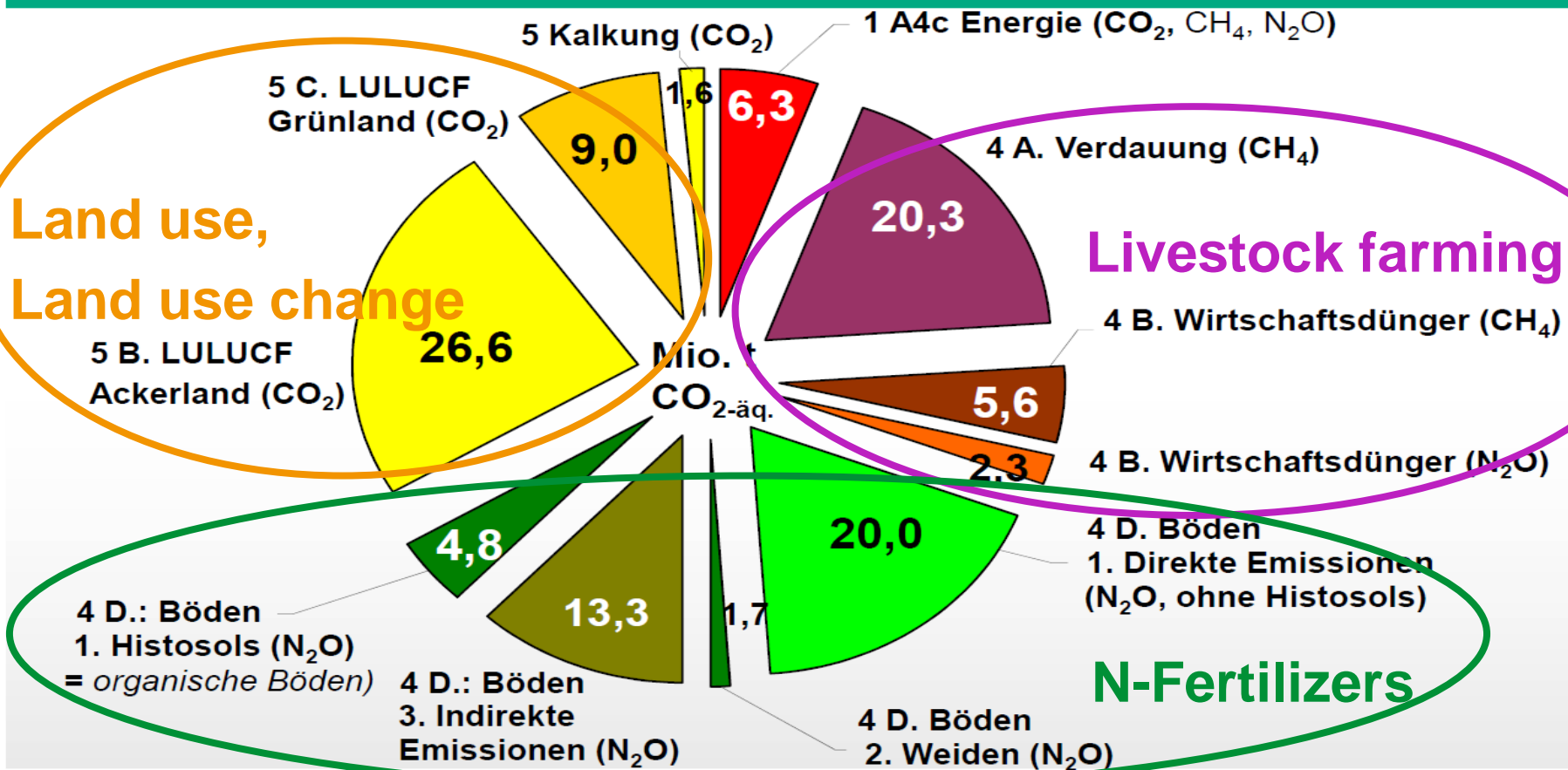




# GHG-emissions of german agriculture

## THG-Emissionen des deutschen Agrarsektors \*)

(ca. 111 Mio. t CO<sub>2</sub>-äq. p.a. = 11,6 % aller THG (inkl. LULUCF) im Jahr 2010)





## Points of discussion in the working group for agriculture

- Suitability of actions in plant production and animal husbandry *without reducing production*
- Review current politics for bioenergy and search for better and more efficient ways for use in electricity, heating and transport
- Significance of carbon-storage in soils, forests, wooden products and how to increase storage and protect existing stocks
- Which political instruments (regulatory laws, research + development, financial support...) are suitable and which of them can be used by the state of NRW?



# Focal points and strategies in agriculture

## Focal point

## strategy

1) N-Fertilizers (organic, mineral)  
(N<sub>2</sub>O)

→ Increase efficiency of N-fertilizing

2) GHG-emissions from livestock  
(methane CH<sub>4</sub>)

→ Reduce emissions from livestock

3) Carbon-storage (in soils, forests,  
wooden products)

→ Conservation, protection and increase of  
carbon-storage in soils; maximise use of  
wooden products (esp. for construction)

4) Energy consumption in  
agriculture/horticulture/forestry

→ Reduce energy consumption, increase  
energy efficiency

5) Renewable materials from biomass

→ Increase GHG-efficiency when using  
renewable materials from biomass





## Examples for proposed measures in the climate action plan

- Promote use of wood for use in materials and construction
- Cover storage for manure
- Promote technics with reduced emissions when spreading manure
- Sustainability certification for imports of any biomass
- R+D projects for 2./3.-G biofuels
- Promote best practice examples for fertilizing vegetables
- **Prohibit turning grassland to arable land**
- Reafforestation of fallow land
- Promote legumes
- Increase organic farming
- Check energy consumption of farmers and in horticulture
- Promote investments in efficient energy systems for heating, cooling, ventilation, greenhouses....
- check former moor for rewetting

**All proposed measures were accepted by the government and the parliament!**



## Examples for the implementation of proposed measures

- Regional Nature conservation act is going to prohibit the turning of grassland
- Building Regulations are renewed to facilitate the use of wood for construction purposes (first best practice examples are prefabricated wooden homes for refugees)
- Regional ELER-programm is used for financing promotion of organic farming and legumes, cover of manure-storages, better spreading techniques for manure, investments in energy technics, consulting for more energy and nitrogen efficiency.....
- Study on rewetting of former moor is ongoing



## Regional programm to reduce N-emissions

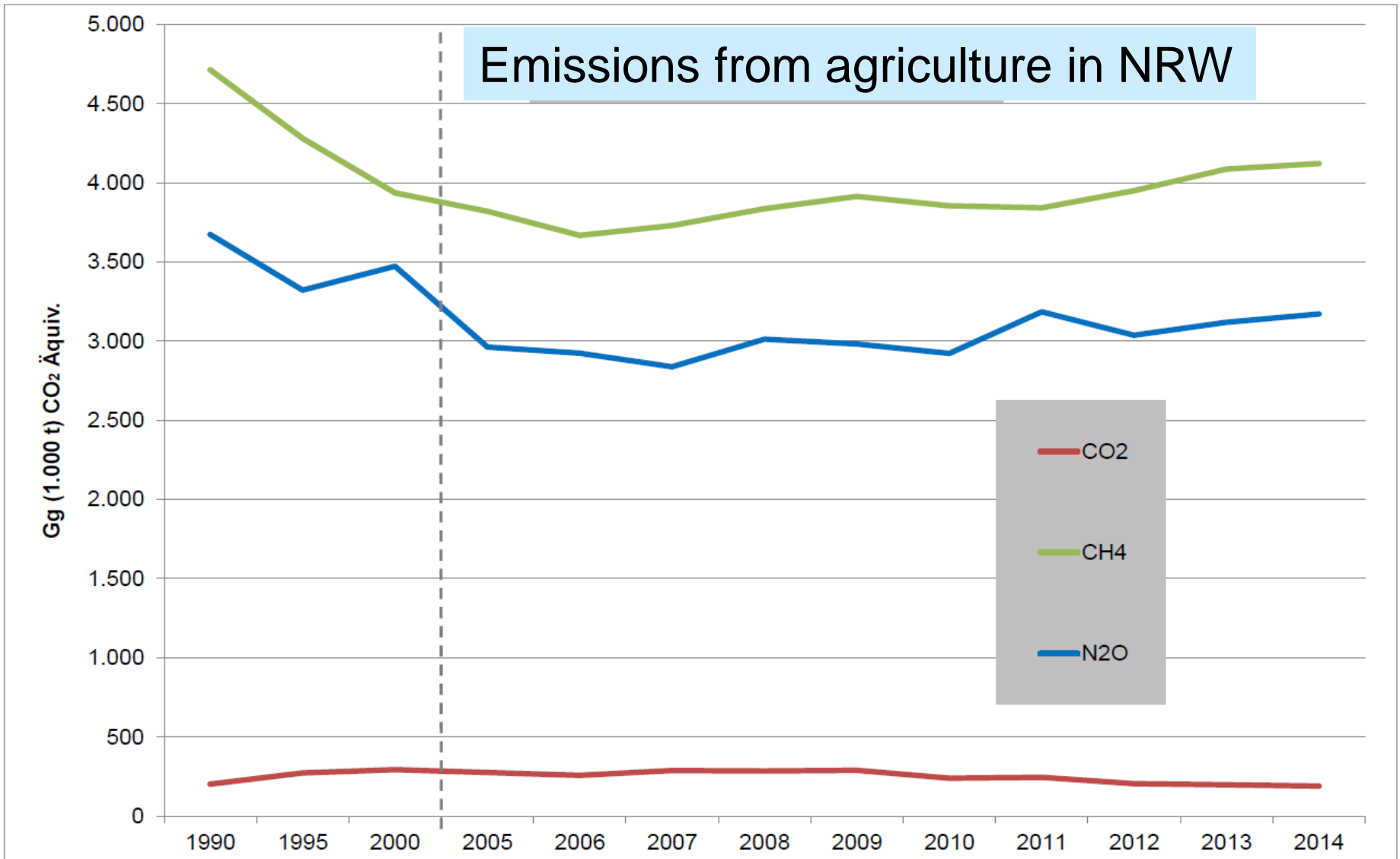
- From 3/16 - 9/16: 546 objects promoted
  - 287 coverings for manure storage
  - 259 spreadings-systems for manure (injection, drag shoes „Schleppschuhe“)
- Leads to better spreading of 1,5 Mio. m<sup>3</sup> of manure on about 60.000 hectars
- Total subsidy: 6,5 Mio. €



**Coming to the crunch question:**

**What will be the estimated results??**

# The starting position





## **Study done by the federal „Thünen-Institute“ (only agricultural sector and LULUC, not for forestry)**

- Method: scenario-calculation using IPCC emission reporting data
- Assumptions for North Rhine-Westphalia (agreed in the working group):
  - Slight reduction of agricultural area
  - No turning of grassland to arable land
  - Crops grown remain the same with the same area
  - Slower increase in yields (from 2010-2030: cereals, potatoes+10%; corn+25%; oilseed-rape, sugarbeets+ 30%)
  - Same number of dairy-cows but producing more milk
  - Number of pigs -15%; poultry -5%

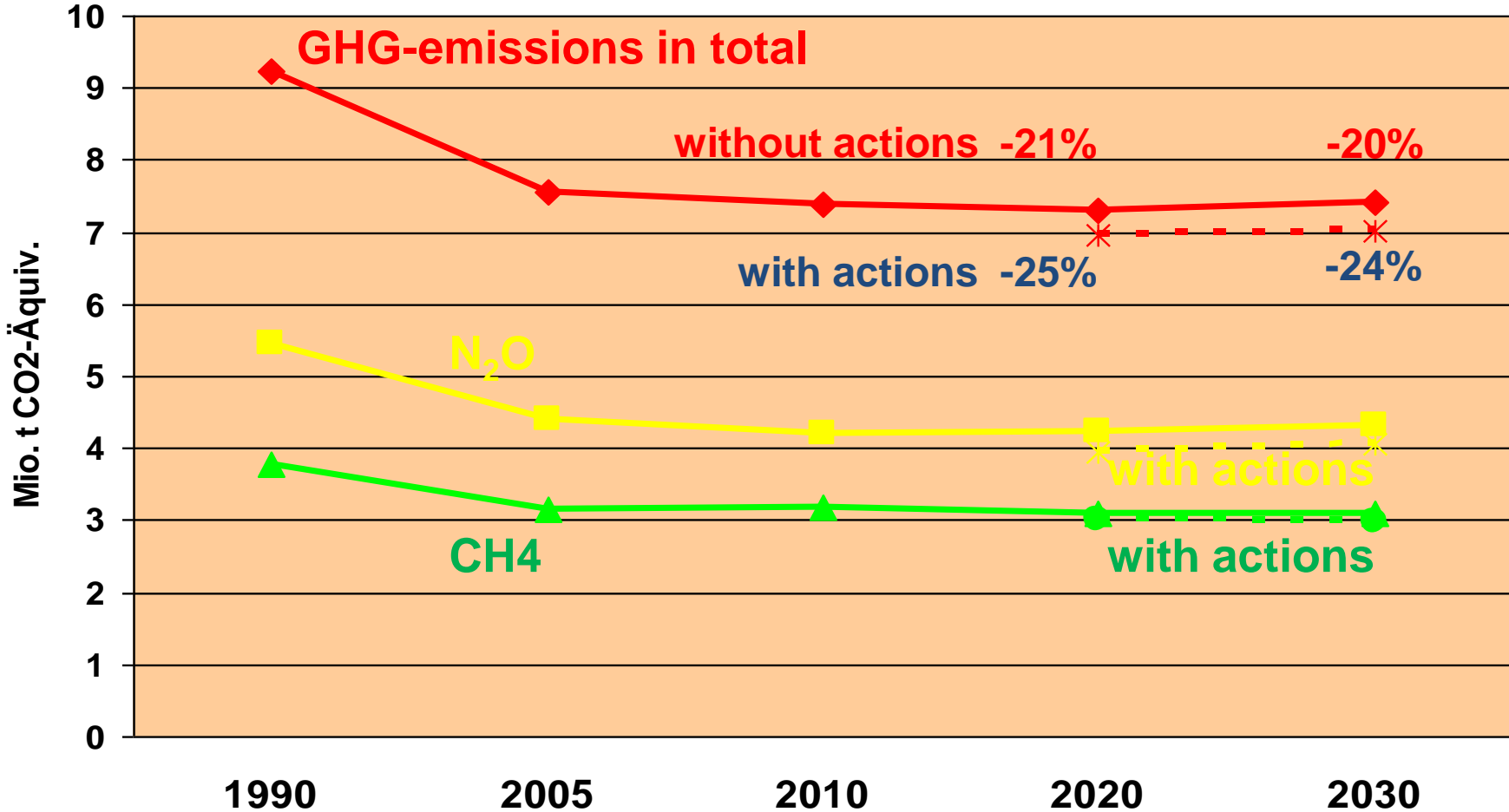


## Study done by the federal „Thünen-Institute“

- Assumptions for the effects of the proposed measures:
  - All storages for manure are covered
  - 90 % of the spreading techniques for manure are emission-reduced (minimum: drophoses „Schleppschlauch“)
  - Manure processed in biogas-plants: 40% in 2020, 50% in 2030
  - 90% of storage for digestate of biogas-plants gas-tight
  - Reduction of nitrogen fertilizers about 20 kg N/ha till 2020



# GHG-emission scenarios in agriculture with/without actions



Source: Johann Heinrich von Thünen Institut 2013





# Thank you for your kind attention!

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