



Ministry of Agriculture
Republic of Latvia

Climate and ammonia emission reduction policy in agriculture

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Center of Bioeconomy

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IPCC (Intergovernmental Panel on Climate Change)

Special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways

Headline messages

- Current global warming is about 1°C above pre-industrial levels
- Regional warming over land is higher than the global average
- Warming in the Arctic region is two to three times higher than global average
- At current rate, 1,5 °C warming will be exceeded between 2030 and 2052
- Current efforts by countries will lead to global warming of 3°C by 2100
- Geophysically it is still possible to limit the temperature rise to 1,5°C, but it requires major and immediate transformation

Available: <http://www.ipcc.ch/report/sr15/>



United Nations body for assessing the science related to climate change

Provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

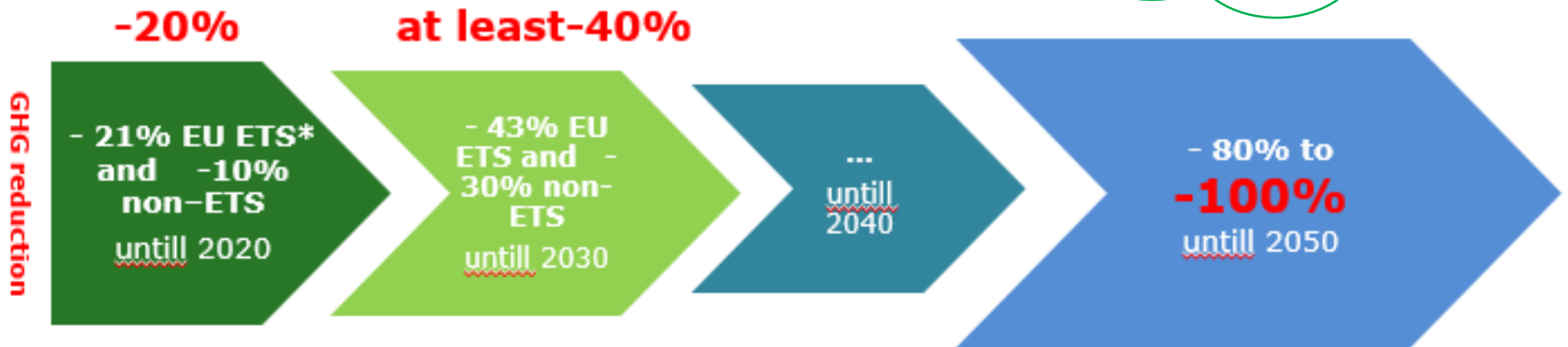
The IPCC currently has 195 members & thousands of people from all over the world contribute to the work of the IPCC



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EU roadmap towards low carbon development

EU first nationally determined contribution (NDC) to the Paris Agreement



Main EU climate change policy tool
– EU **Emissions Trading System (ETS)**.

2005 – launching of the EU ETS

2008 – approval of the **Europe's Climate and Energy Package 2020**

2011 – announcement of the **EU Roadmap for moving to a competitive low carbon economy in 2050**

2013 – launching of all sectors wide climate policy (EU ETS + non-ETS)

2014 – approval of the **EU Climate and Energy Policy framework 2030**

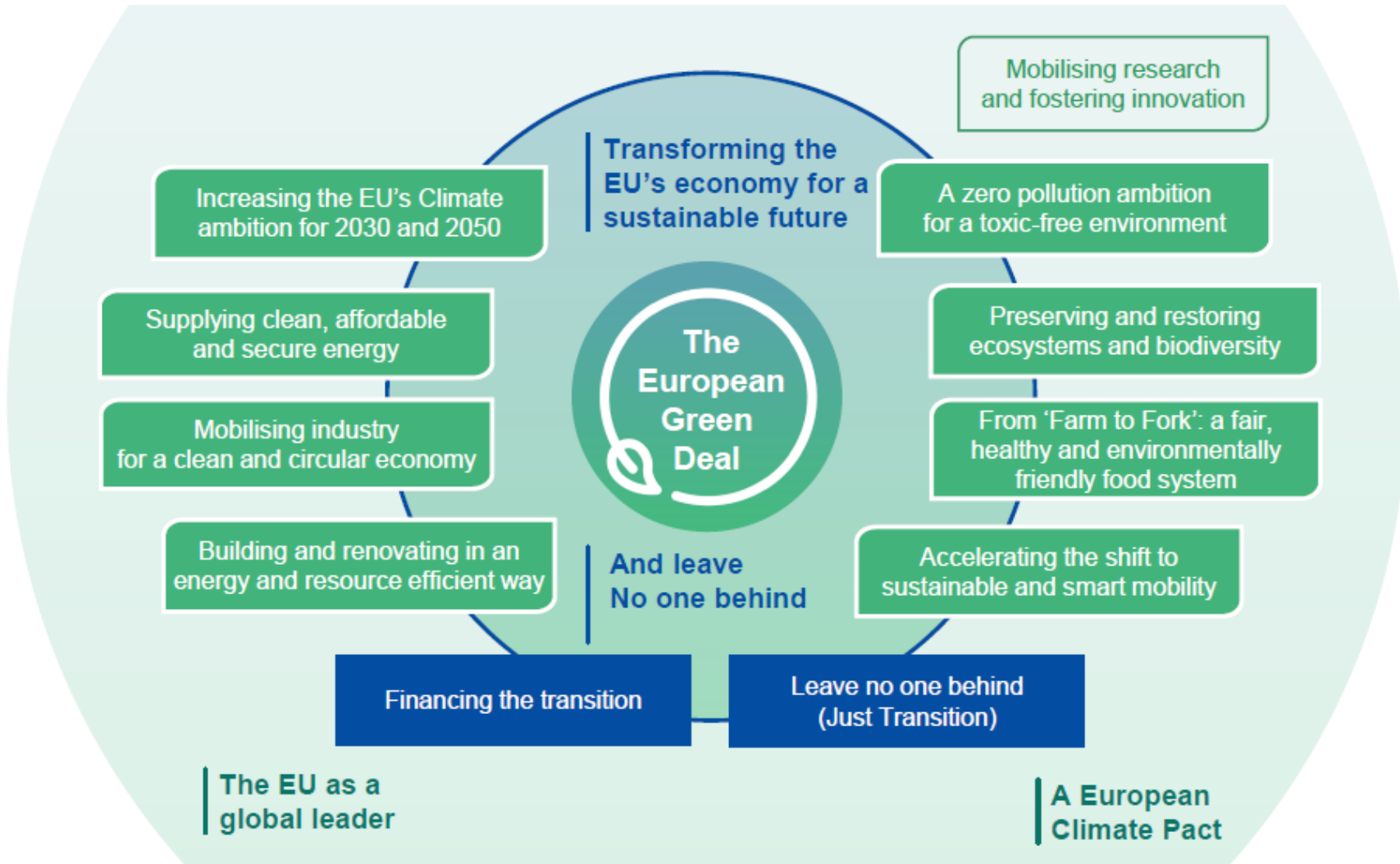
2018 – approval of the **EU climate legislation 2021-2030**

2018 – announcement of European Commission's vision «**A Clean Planet for all. A European strategic long term vision for a prosperous, modern, competitive and climate neutral economy**»



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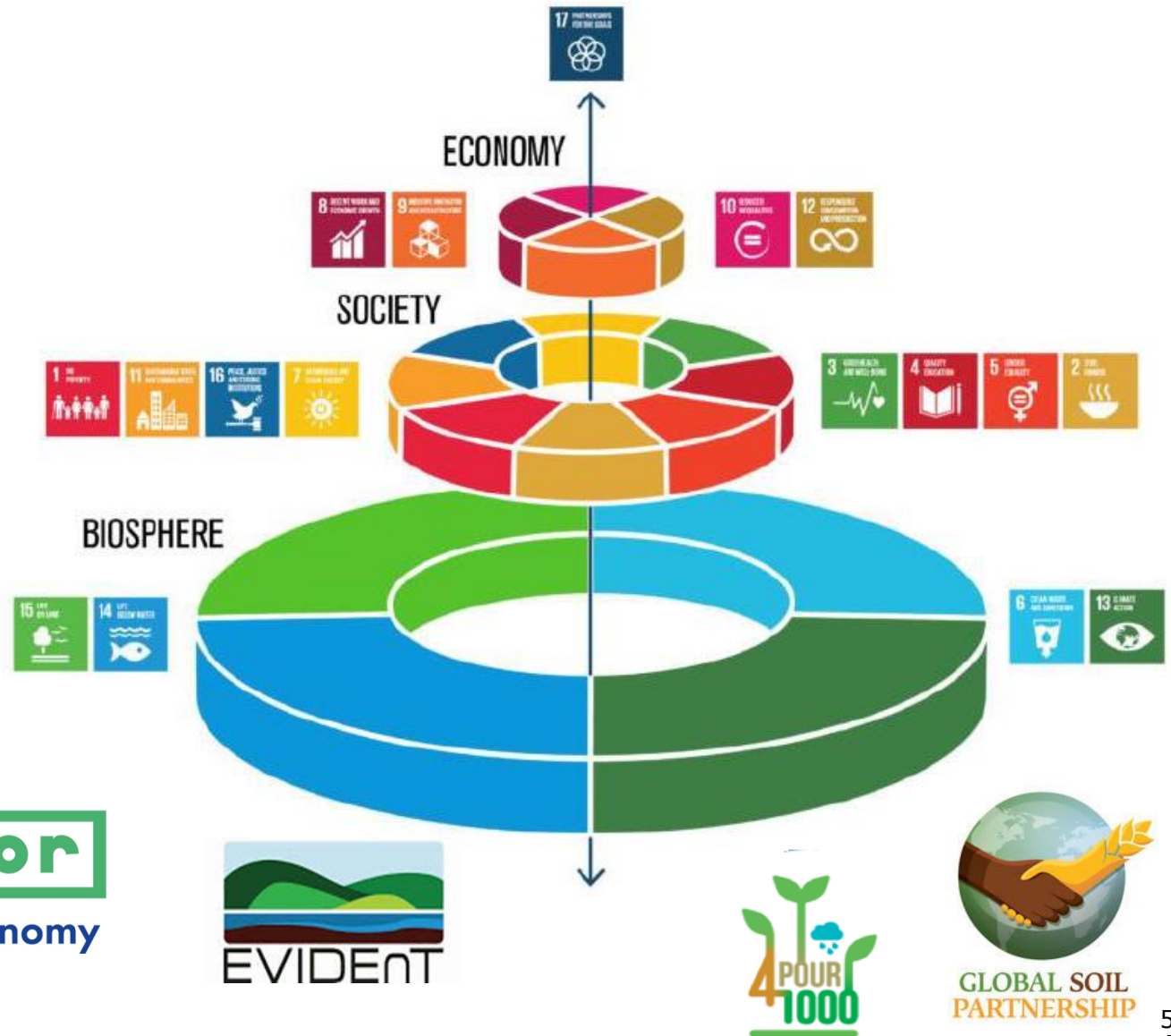
The European Green Deal





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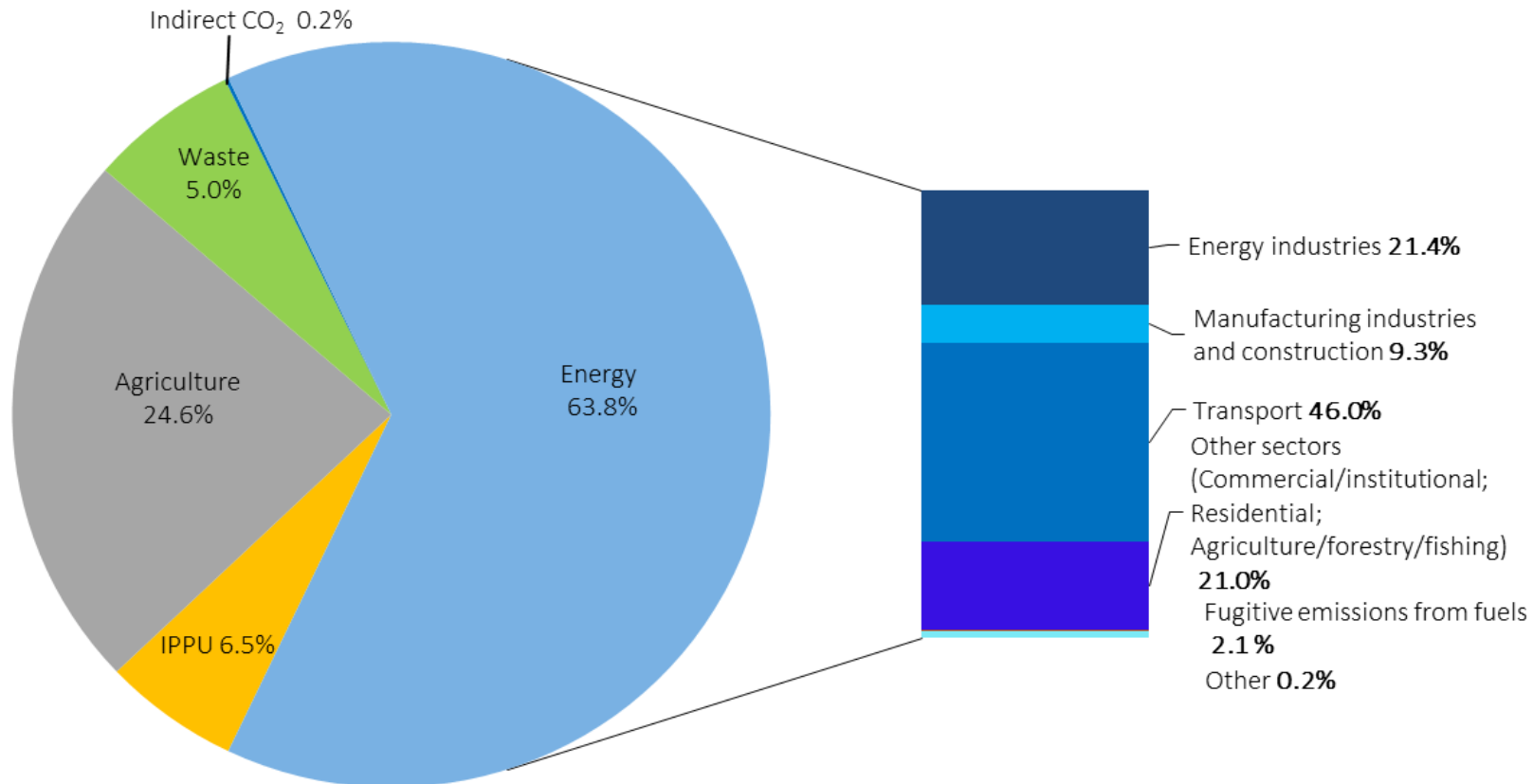
UN Sustainability Development Goals





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The composition of Latvian greenhouse gas emissions in 2017

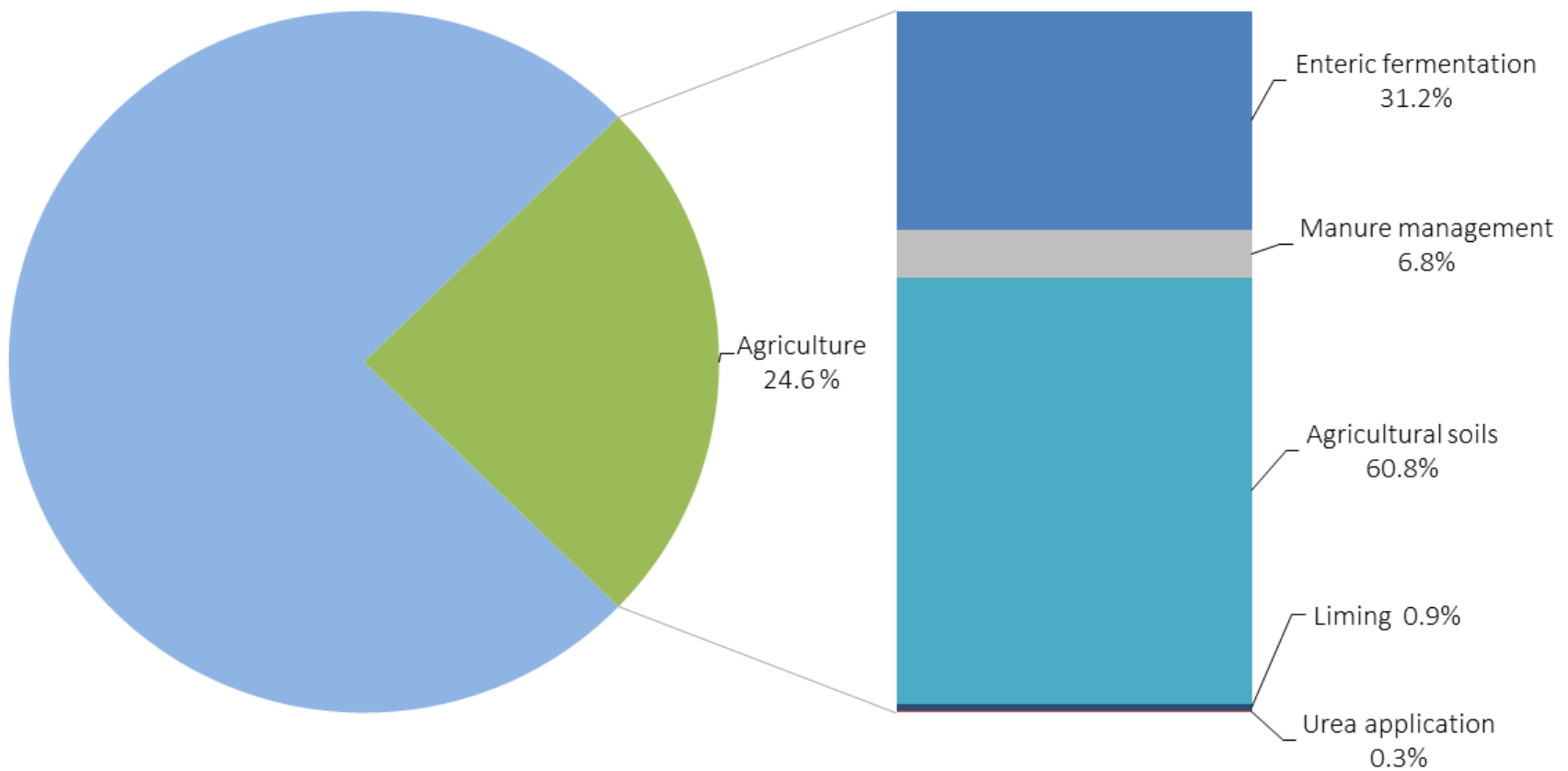


Source: 2019 GHG inventory



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Emissions from the agriculture sector 2017



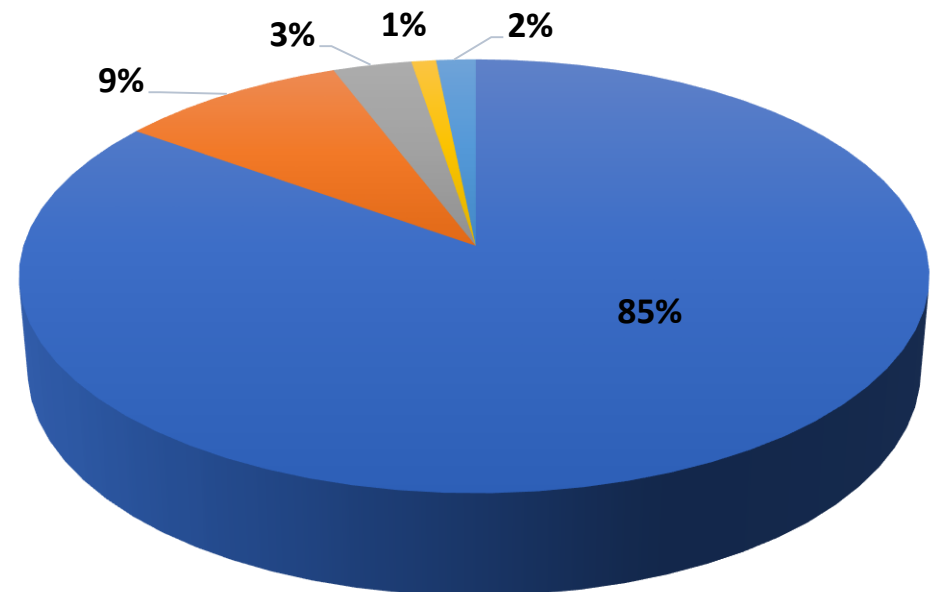
Source: 2019 GHG inventory



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Ammonia emission reduction in Latvia

- **EU National Emissions Ceilings Directive** (adopted in 14.12.2016.): sets emission ceilings for several air pollutants including ammonia.
- Latvia has a commitment from NEC Directive to reduce ammonia emissions **in 2020 and 2030 by 1% below the emission level in 2005.**
- **85%** of ammonia emissions are emitted from agricultural sector in Latvia. It means that policy to reduce ammonia emissions has to be targeted to agricultural sector.



- Agriculture
- Other (Commercial sector; Residential; Agriculture/Forestry/Fishing)
- Manufacturing Industries/Construction
- Transport
- Waste

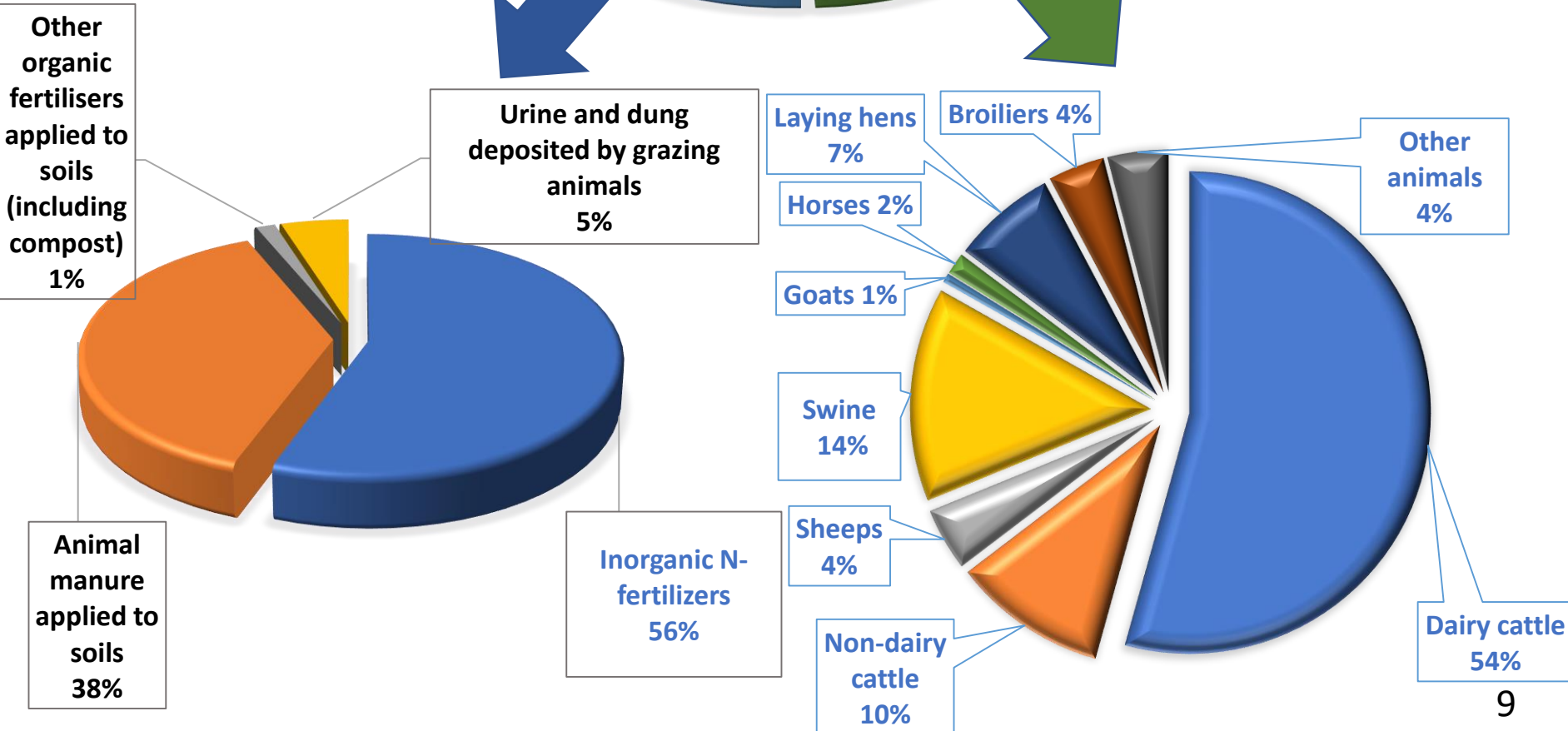
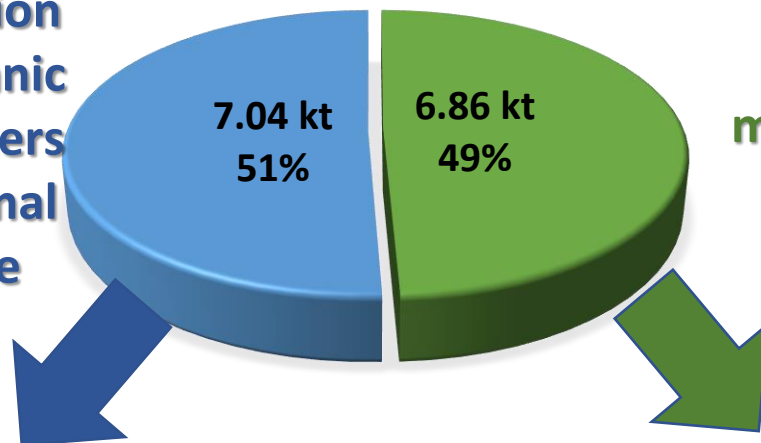
Ammonia emissions from Agriculture in Latvia 2016



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**Application
of inorganic
N-fertilizers
and animal
manure**

**Manure
management**

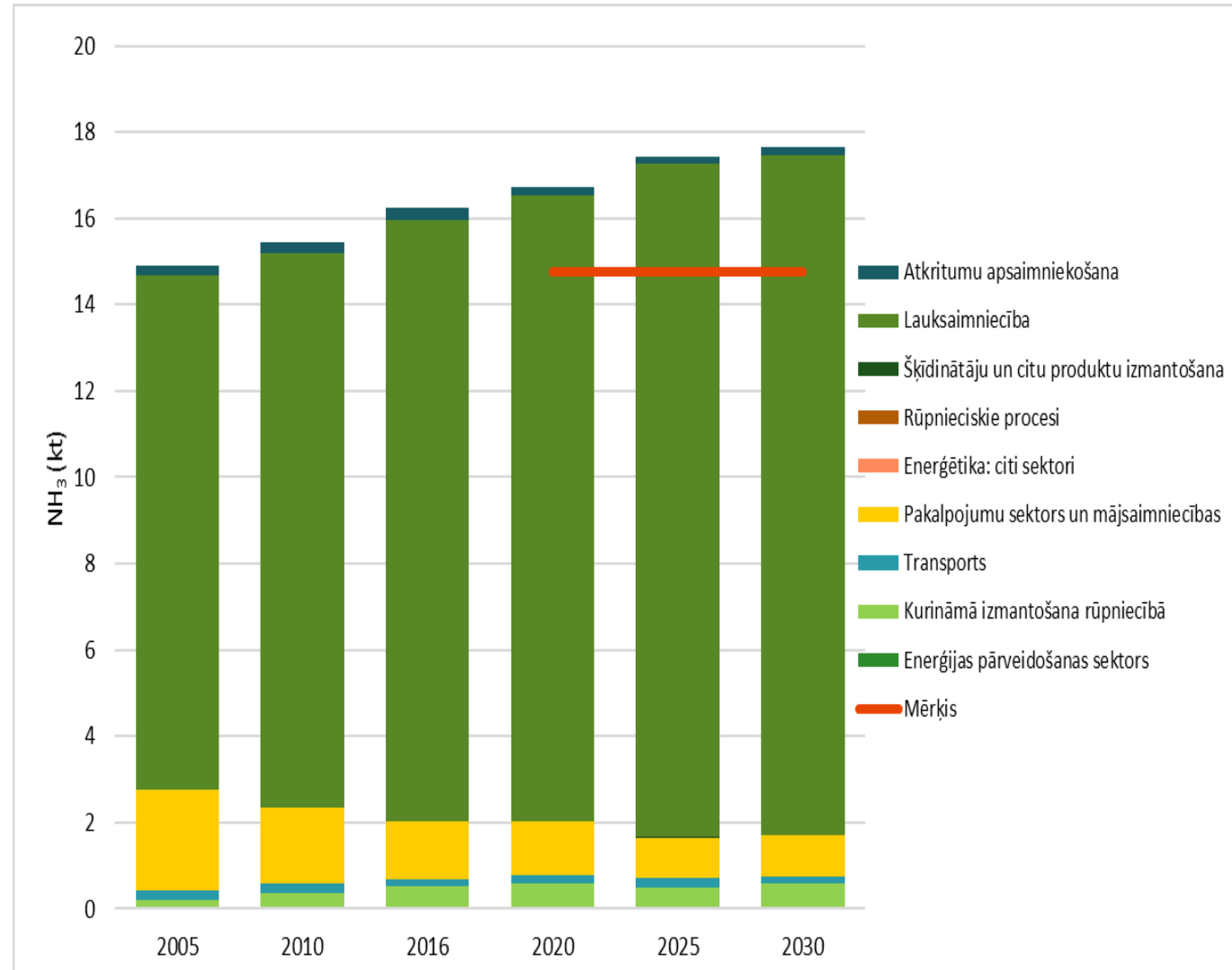




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Ammonia emission projections (without new measures)

- Projected ammonia emissions from agriculture **89%** of total emissions in 2030
- NH₃ emission projections:
 - exceeding **13,4%** from 2020 NEC target
 - exceeding **19,6%** from 2030 NEC target



Perspective ammonia emission mitigation measures



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Low emission manure storage systems

✓ **Slurry tanks with solid and floating covers**
Replacement of lagoons with covered tanks

- ➔ **Promotion of biogas production**
- ➔ **Development of organic farming (dairy cattle)**

Low emission manure spreading systems

Trailing hoses
Trailing shoe
Shallow injection
Deep injection
Incorporation of slurry within 4 hours after spreading and solid manure within 12 hours

Limiting NH₃ emissions from mineral fertilizers

Precision mineral fertiliser application
Fertilisation planning
Nitrogen fixation (legume plants)

Ammonia emission reduction

Measures are focused on:

- Intensive mixed specialization farms that keep their livestock indoors (UAA >400 ha; non-dairy cattle >200; dairy cattle >300; pigs >1000)
- Intensive cereal farms (UAA >200 ha)
- Medium-large mixed specialization farms that graze their livestock (UAA 10 – 400 ha; non-dairy cattle 5 – 200; dairy cattle 5 – 300; pigs 10 – 1000)



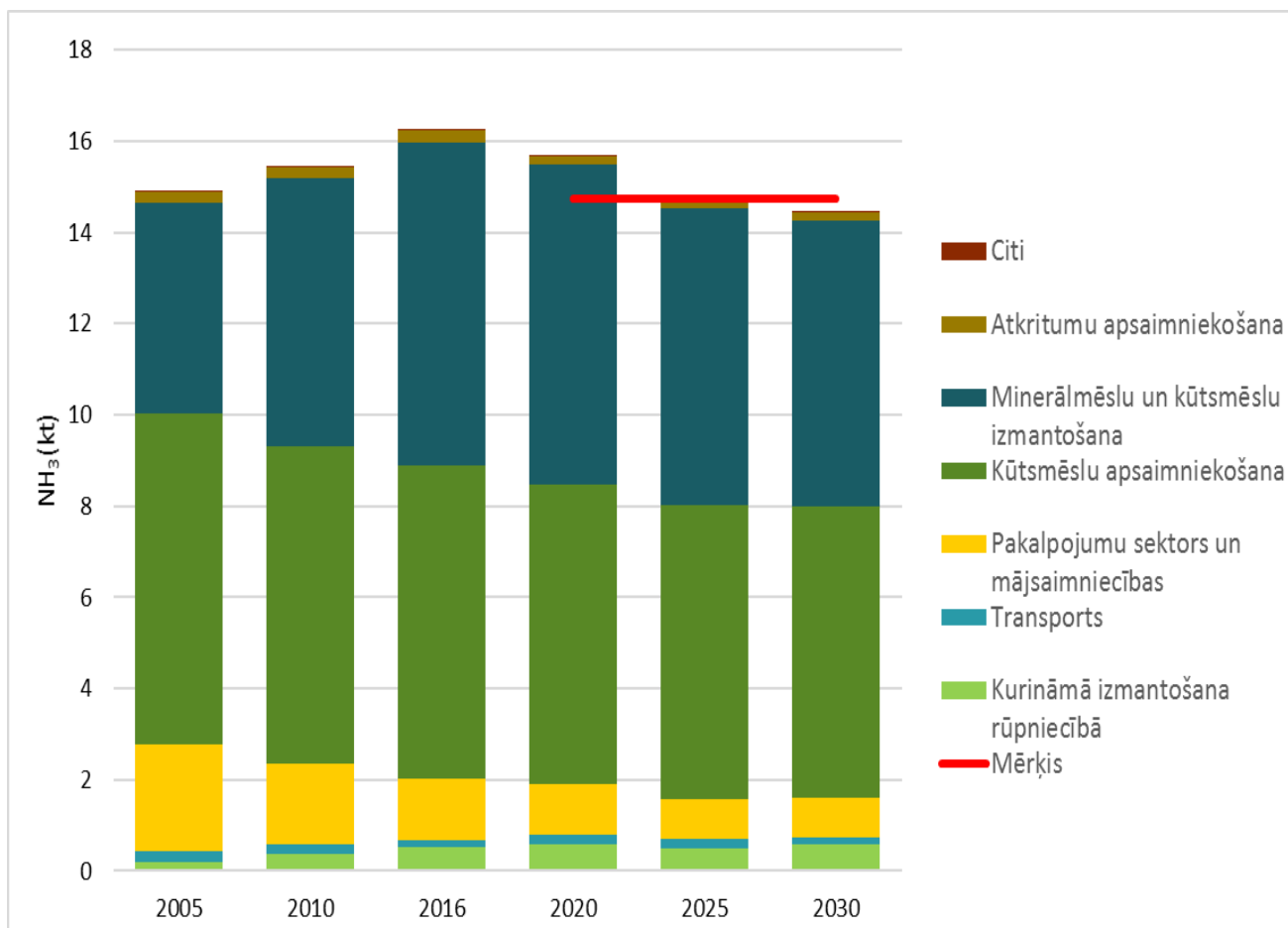
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Ammonia emission projections (with new measures)

• Ammonia emission projections show: if new emission reduction measures are implemented:

➤ Ammonia emissions in 2030 are **2,1 %** below the NEC target

➤ **6,4%** above 2020 NEC target



Measures included in Nat. energy and climate plan 2021-2030		Measures included in «Clean air» action plan 2019-2030
Precision mineral fertiliser application		
Fertilisation planning		
Nitrogen fixing crops as a part of crop rotation		
Facilitation of biogas production		
Direct injection of slurry in soil		
Organic dairy farming (emissions reducing dairy farming)		
Planning feed rations		
Enhancement of the quality of feed		
AGRI LULUCF	Maintenance of drainage systems	Reduced time limits for manure incorporation
	Establishment of orchards	Covering of slurry storage facilities
	Undersowing grass	Replacement of lagoons with cylindrical manure storages
	Green fallow	
FOREST LULUCF	Afforestation	
	Replacement/maintenance of non-productive forest stands	
	Regeneration of stands affected by natural disturbances	
	Forest thinning	
	Recultiv. of historic peat-extraction sites, introducing perennial crops	



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Thank you!