4th NJF Organic Conference
Jun. 19 – 21, 2017
Mikkeli, Finland

Organic Farming as a GHG Emission Mitigation Possibility in Latvia

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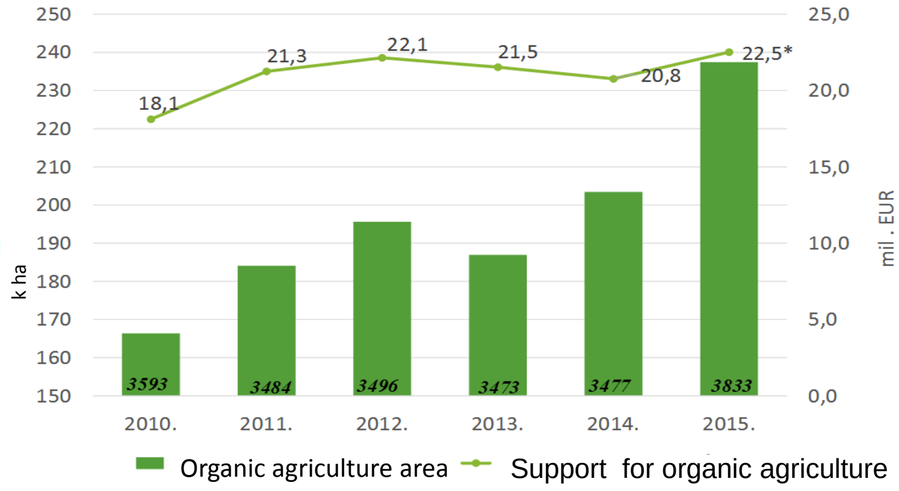
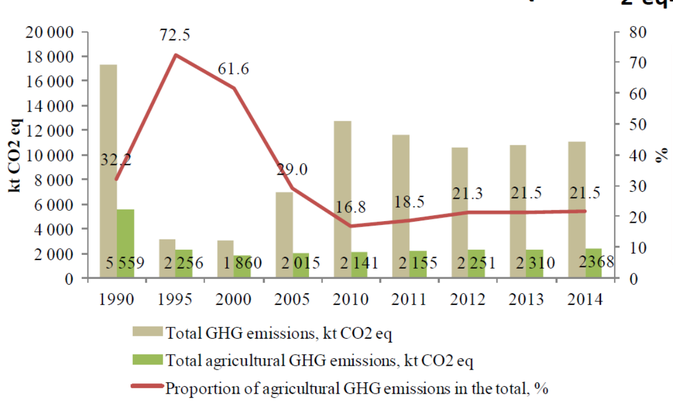
Latvia and organic farming profile

Population: 1.95 million
Area: 64 589 sq km
Agricultural area:1 872 k ha
Organic agr. area: 231 k ha (12%)
Forest area: 3 355 k ha
Currency: euro
GDP per cap PPP: $ 25 195



Background and objectives

Changes in the total and agricultural GHG emissions in Latvia in 1990-2014 (kt $CO_{2\ eq}$)



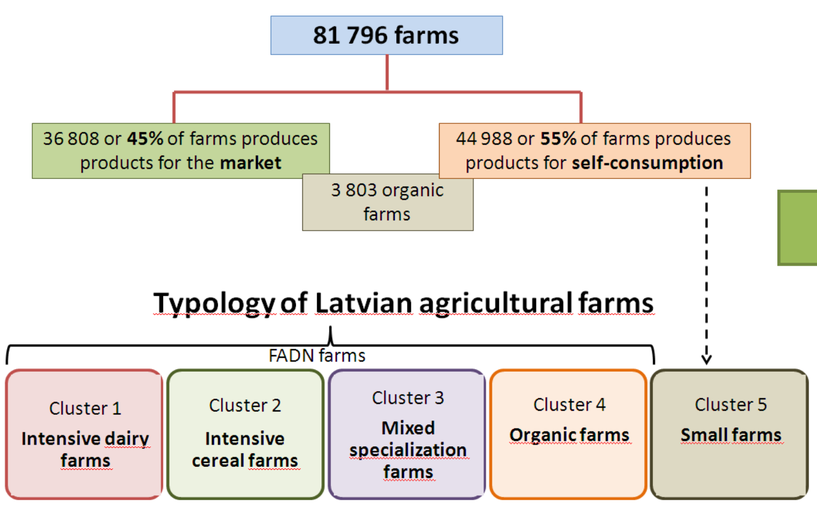
Target by 2030 is -6% compared to 2005 for non-ETS sectors

Is Application of **organic farming** methods in agricultural production one of the **possibilities to reduce GHG** emissions?
Aim of research to characterise role and contribution of organic farms in agricultural GHG emissions in Latvia.

In 2014, agricultural GHG emissions were +17.5% compared with 2005 level.

Source: authors' construction based on Latvia's National Inventory Report 1990-2016

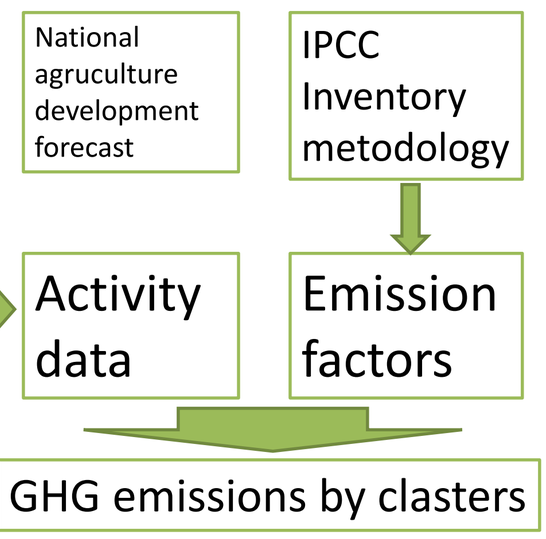
How work was carried out?



Characteristics of identified farm clusters in Latvia

Indicator	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Number of farms	286	110	20797	3473	57130
Used UAA, % from total	15%	9%	46%	10%	20%
Average UAA per farm, ha	992	1552	41	54	7
Agricultural animals, % from total					
Non-dairy cattle	25%	0%	33%	30%	12%
Dairy cattle	65%	0%	22%	7%	5%
Swine	82%	0%	14%	1%	3%
Poultry	93%	0%	6%	1%	0%
Other animals	0%	0%	55%	28%	17%
Utilization of UAA, % from total					
Meadows and pastures	3%	0%	66%	13%	19%
Permanent crops	0%	0%	42%	13%	45%
Arable land	22%	14%	55%	3%	7%
Synthetic N fertilizers, % from total	14%	28%	54%	0%	3%

GHG emissions calculation (conceptual)



Key results and discussion

Indicator	2013	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Total agricultural GHG emissions, kt $CO_{2\ eq}$	2570.33	877.71	307.62	1048.10	184.54	152.35
Average GHG emissions **per farm**, t $CO_{2\ eq}$per farm	**31.42**	**3068.92**	**2796.58**	**50.40**	**53.14**	**2.67**
Average GHG emissions **per UAA**, t $CO_{2\ eq}$ per ha	**1.37**	**3.09**	**1.80**	**1.21**	**0.99**	**0.41**

Organic farms comprises 7% from total agricultural GHG emissions and **comprises relatively small GHG emissions** per utilized agricultural area. **Similar findings** regarding role of organic farms in GHG emission reduction can be found **in other studies.**

Conclusion

Further development and increase in organic areas can be used as one of the GHG emission reduction tools.
Results of this research will serve as background for broader research which aims to identify GHG emission reduction possibilities in Latvia.

Acknowledgements

This research was carried out with the support of the Government of Latvia for project "Value of Latvia's ecosystem and climate dynamic impact on those - EVIDEnT", Contract No 2014/VPP2014-2017, a component of the National Research Programme 2014 – 2017.