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## **Outlook for the Competitiveness of Nordic and Baltic Livestock Sectors on the EU market**

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Several studies suggest that international competitiveness of the agri-food sectors in the Nordic countries is challenged by high production costs as well as restrictions imposed by environmental regulations (e.g. Lind & Zobbe, 2012, Kriščiukaitienė et al., 2012b).

AGMEMOD is an economic data and modeling tool enabling projections of supply balances (production, domestic use, exports, imports and stock changes) for most agricultural products for the EU member states, for the EU as a whole, as well as for a number of potential candidate countries and important trade partners to the EU. The model has been developed by a consortium comprising researchers from 24 of the 28 member states since 2001, and the development project has obtained funding from EU's 5<sup>th</sup> and 6<sup>th</sup> Framework Programmes (Bartova et al., 2007, Kriščiukaitienė et al., 2009, 2012a, Sepp & Jedik, 2010, Sepp, 2011). The AGMEMOD is a dynamic, partial equilibrium model consisting of econometrically estimated behavioural equations for land use, crop yield, livestock dynamics, production output, domestic (industrial and final) use, exports, imports, stock changes and commodity prices for a broad range of crop, livestock and dairy products for each of the EU member states. National markets within the EU are linked together through price linkages, with one of the most important member state markets (in most cases Germany or France) working as a 'key market', where a 'key price' is determined in an EU-level equilibrium between supply and demand, and with prices in the member states being linked to this 'key price'. Exogenous drivers of the model include world market prices of agricultural commodities, macroeconomic trends and a large number of agricultural policy variables.

We focus on meat and dairy production in the Nordic (Denmark, Finland, Sweden) and Baltic (Estonia, Latvia, Lithuania) EU member states. In all these countries, livestock - and especially dairy - production constitutes a considerable share of the countries' agricultural sectors, in terms of production and in terms of exports. We use projected production trends as an indicator of the international competitiveness of the different countries' respective agricultural sub-sectors. As these model projections are based on historical data prior to the projection period, not taking e.g. new technological breakthroughs specifically into account, the projections should be considered as "business-as-usual" scenarios, rather than forecasts.

A decreasing trend in the production of milk was projected in Estonia, Latvia, Finland and Sweden, whereas milk production is projected to increase in Lithuania and Denmark, as well as in the European Union as a whole. With regard to pig meat production, Estonia and Lithuania were projected to increase production more than the EU average, and Latvia and Finland were even projected to exhibit negative growth in pig production.

seems to be a general feature across the Nordic and Baltic countries – and this decrease is relatively stronger than in the EU-27 as a whole. Hence, competitiveness of beef from these countries seems to be under increasing pressure in the future. Another general trend is the positive growth rate in the production of cheese in all countries, except Sweden, with

Denmark and Lithuania growing more than the EU-27 average. For other livestock commodities (pigs, cow milk and butter), the picture is more mixed, with apparently increasing trends in Lithuania, Estonia and Denmark, and decreasing trends in Finland and Latvia. For grain production, the three Baltic states were projected to exhibit above-EU average growth, which might reflect that model parameters have been estimated on data from a period with significant technological progress in grain production in these three countries.

Sector-level market projections, such as those in the AGMEMOD model, can provide insights in the overall trends in the competitiveness of different commodity sectors in different countries. Such information can be useful for assessment of the potential needs for adjustments in e.g. agricultural or environmental policies in the different countries. On the other hand, it should also be noted that such aggregated models provide only a limited level of detail, for example in the course of explaining inter-country differences in the trends or heterogeneity in competitiveness across farms.

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