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POLICY BRIEF: A new dimension in EU's Climate Adaptation Policy:

EU's vulnerability to climate change impacts outside its borders



A NEW DIMENSION IN EU'S CLIMATE ADAPTATION POLICY:

EU'S VULNERABILITY TO CLIMATE CHANGE IMPACTS OUTSIDE ITS BORDERS

Climate change is leading to increased water scarcity and drought in many parts of the world. This has implications for the European Union (EU) because a lot of the goods consumed or used in the EU are produced abroad. This makes its economy dependent on water resources from beyond its borders.

As part of the IMPREX¹ project, a work package entitled "Water Economy" has been mapping the EU's global dependency on water resources outside its borders and assessing how water scarcity, drought, floods and climate change may disrupt supplies of key food crops that it imports. This information reveals where vulnerabilities to the EU's food security and economic stability lie and identifies which food products may become more expensive or harder to find in Europe in the near and longer-term future.

HIGHLIGHTS - THE EU'S DEPENDENCY ON GLOBAL WATER RESOURCES

- The EU economy is particularly vulnerable to water problems outside its borders impacting on the supply of agricultural commodities and consequent price volatilities related to a shortfall in global commodity supply.
- In the near future supplies of soybeans, rice, sugar cane, cotton, almonds, pistachios and grapes are most likely to be affected because they come from areas with significant or severe levels of water scarcity. In the longer term, products such as coffee and cocoa could be impacted if climate change alters rainfall patterns and thereby increases the risk of drought or other water-related problems in their countries of origin.

- Climate change can affect agri-food importers in a number of ways: biophysical impacts on agricultural production; damage or delays to supply-chain infrastructure; changes in overseas production and world prices; changes in policy; and business competitiveness among trading partners. These impacts pose a business risk for importers.
- The EU relies almost entirely on imports of soybean to meet demand for animal feed for meat and dairy products. It imports around 30-35 million tons per year and produces only 0.9 million tons per year domestically. The deficit in soybean production in the EU poses a significant risk to its economy and especially to the EU meat industry due to high demand for the product, its high reliance on imports and the vulnerability of the crop to drought and water scarcity in the producing regions.
- Around 57% of soybean supply is highly vulnerable to water scarcity in the producing regions. This means that a significant proportion of the EU meat and dairy sector is at risk from weather extremes and climate change happening in the producing regions, particularly businesses rely on import of soybean from Argentina and the USA. Prolonged droughts and water scarcity in these regions can disrupt supplies or cause an increase in the price of soybean. In Brazil, on the other hand, 96% of soybean production is classified as having a low drought and water scarcity risk. Map 1 below shows the global picture figuratively for soybean imports.
- Any disruption to the supply of soybean would also have an impact on other grains. Soybean is a good substitute for corn or wheat so fluctuations in its price would affect the demand and supply chains for these other commodities, which would in turn affect the global grain system.

¹ Improving Predictions and Management of Hydrological Extremes (IM-PREX) project aims to improve society's ability to anticipate and respond to the impacts of climate change and part of the EU's Horizon 2020 grant programme. <u>www.imprex.eu</u>.



Map1: Vulnerability of soybean imports to the EU due to water scarcity

VULNERABILITIES STEMMING FROM OUTSIDE THE EU'S BORDER NEED TO BE INTEGRATED INTO LONG-TERM EU CLIMATE ADAPTATION POLICY AND BUSINESS PLANNING

Climate change impacts outside the EU's borders are expected to pose an increasing risk to agri-food importers in the member states; greater effort is needed to build adaptive capacity and resilience. There is a role for the private sector, individual member state governments and the EU community to support relevant producers in developing countries in order to ensure that climate change impacts are effectively mitigated.

To assist producers and importers and to increase awareness of the risks that climate change poses to the agri-food business, EU policies and business strategies should consider that the EU's economy is highly dependent on goods produced in regions that are vulnerable to water related impacts. They should further promote actions towards mitigating the negative consequences that the EU economy may face by:

- addressing these dependencies on a sectoral basis in EU-wide strategies, such as the Climate Adaptation Strategy and the EU's agricultural trade policy, and in international development strategies at Pan European and regional level;
- taking the associated risks into account when developing bi-lateral relations with trade partners in the future;
- considering the strategic importance of certain re-

gions, such as Southeast Asia and South America, is likely to increase for Europe with respect both to potential climate-induced impacts on water resources and to the need of a continuous supply of commodities imported from these regions;

- channelling investments into measures that will, for example, increase drought resilience and strengthen water governance in order to ensure sustainable, efficient and equitable water use in key producing regions;
- re-directing investments and developing world aid into measures that would enable exporting partner countries to invest in sustainable practices or infrastructure improvements, to expand and diversify their facilities and to better monitor climate change impacts;
- encouraging all EU businesses that are reliant on international commodity supplies to map their dependencies and better understand the water related vulnerabilities in order to sustain their businesses;
- providing better access to information on climate change impacts and the associated financial risks for key sensitive sectors such as meat and dairy, cocoa, coffee, rice and cotton;
- building improved networks and partnerships: promoting knowledge-sharing and creating new opportunities to attract funding and government support for managing the risks associated with climate change outside the EU's borders.

A NEW THINKING IS NECESSARY IN THE EU CLIMATE ADAPTATION STRATEGY

The EU's Climate Change Adaptation Strategy should extend its scope beyond the EU's borders in order address questions such as:

- How are climate change impacts outside EU's border affecting or likely to affect the agri-food industry in Europe and the economy as a whole?
- What are the key determinants of agri-food importers' vulnerability to climate change?
- What is required to improve climate resilience among agri-food producers and importers?

IMPREX's work on EU's water economy will contribute to answer these questions.

IMPREX'S CONTRIBUTION TO THE EU CLIMATE ADAPTATION POLICY

Beyond this, IMPREX has great potential to help implementation of the EU Climate Adaptation Strategy also with regard to other aspects. The project aims to improve society's ability to anticipate and respond to future hydrological extreme events (floods, droughts) in Europe. The knowledge developed by the project will support risk management and adaptation planning at European and national levels for example through:

- enhanced forecast quality of extreme hydro-meteorological conditions and their impacts
- novel concepts in hydrometeorological risk assessments that improve the knowledge base for management and adaptation to climate related risks,

including aspects of future weather and compound events, the links between climate variability and risks, risk-based water allocation, and probabilistic flood damage assessments

• risk management strategies in several water related sectors serving as good practices to inform national and local adaptation planning, such as e.g. water allocation schemes, coordinated operating rules for multi-purpose dams, improved water safety plans, flood risk assessment and damage modelling.



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It provides an overview from first phase of "Water Economy" work package of the IMPREX project. This work package is led by FutureWater in collaboration with Dr. Ertug Ercin from R2Water.

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