

Climate change and SPS risks and responses

Climate change is not only occurring, it is accelerating. The effects on food safety, animal and plant health are already noticeable, and likely to intensify in the future. While some countries have started to consider how climate change will affect sanitary and phytosanitary (SPS) risks, many are ignoring the linkages. Yet, notwithstanding data gaps, action cannot wait, particularly since strengthening SPS systems can help to mitigate the negative effects of climate change on agricultural production, which is essential to enhance food security.

This briefing note summarizes the main findings and conclusions of a seminar, "Climate Change and Agricultural Trade: Risks and Responses", organized by the World Bank's Development Research Group and the Standards and Trade Development Facility (STDF) in Washington, D.C. on 22-23 September 2009.

How will climate change affect SPS risks?

The effects of climate change on food safety, animal and plant health risks is a relatively new area of study. However, the evidence from recent studies by the Food and Agriculture Organization (FAO) of the United Nations, the World Organisation for Animal Health (OIE) and others is clear. Climate change is one of several global change factors that are contributing to increased and new food safety, animal and plant risks. The impacts are diverse, often unexpected and, in many cases, troubling.

By altering temperature and precipitation conditions at a global level, climate change threatens to shift world patterns of comparative advantage in the production of many crops and livestock products. One example from Colombia indicates that up to 80 per cent of crops and 60 per cent of the surface area will be affected.

Feedback loops and data gaps make it difficult to obtain precise predictions about the effects of climate change on food safety, animal and plant health. However, recent research and experiences on the ground indicate that there are important and complex implications for SPS risks.

Existing natural barriers to the spread of animal and plant pests are losing their effectiveness as evidenced by the recent spread of locusts from Africa to the Caribbean. Warmer temperatures are favouring the growth of aflatoxin-producing fungi such as *A. flavus*, which has recently appeared in the United States and Italy. Similarly, animal diseases like Bluetongue are spreading to new areas, while interceptions of plant pests have increased dramatically following warm, wet weather.

Compliance with SPS requirements is already a challenge for many countries, and climate change will exacerbate this. National SPS systems and resources have not kept pace with the dramatic increase in food and agricultural trade over the past decade. At the same time, the number of private standards related to climate change is increasing, adding to the potential challenges facing producers in developing countries, even though it is not clear how applicable such schemes are under WTO Agreements. Much more therefore needs to be done to enhance SPS capacities and respond to the risks faced.

Key messages

- **Temperature change and extreme weather events will exacerbate the challenge of increasing agricultural production to meet growing global consumption needs.**
- **Climate change is already having impacts on food safety, animal and plant health, and these will likely increase.**
- **Scientific evidence shows that the number of disease outbreaks is increasing, and a wide variety of weeds, insects and pathogens are migrating into new areas.**
- **The challenges posed by climate change are compounded by inadequacies in SPS systems.**
- **Greater emphasis on SPS capacity building offers a practical approach to reduce developing countries' vulnerability.**
- **Local and/or regional strategies are needed to manage and/or control the risks faced.**
- **Ensuring an interdisciplinary approach and enhancing collaboration at all levels is key.**
- **More research is required to better understand the implications of climate change for SPS risks, but mitigation and adaptive actions are already needed now.**

Some possible implications of climate change for SPS risks

- Increase in mycotoxins (e.g. aflatoxins) and appearance of new strains of toxin-producing fungi.
- Changes in the occurrence of chemical and microbiological hazards (e.g. increased frequency of *Vibrio vulnificus* with warmer temperatures).
- Greater use of pesticides and veterinary drugs.
- Changing distribution, patterns and toxicity of harmful algae blooms.
- Increase in the susceptibility of animals and plants to disease.
- Prolonged transmission cycles of vectors.
- Changes in the range, seasonality and incidence of many plant and animal diseases including zoonoses.
- Introduced or migrating alien species of plant or animal pests invade new areas.

What is needed to meet the challenges?

Strengthening food safety, animal and plant health systems in developing countries should remain the top priority. Managing the SPS-related challenges posed by climate change requires competent SPS authorities, coherent regulatory frameworks and core capacities in monitoring and surveillance, inspection and diagnosis, risk analysis, emergency preparedness and response, etc. Renewed emphasis on SPS capacity building offers a practical approach to help reduce vulnerability to climate change in developing countries. In addition to enhancing food safety and improving disease and pest control, this will also contribute towards increased production and enhanced food security.

Understanding what to expect and look for is critical. Looking for the right things, in the appropriate place and in the correct way is essential. Risk-based surveillance, targeted at points of entry, provides a way to improve results and make the best use of resources. Trying to keep out all pests and diseases is unworkable. More and better use should be made of pest-monitoring plans, participatory investigation, interception techniques and new screening technologies, forecasting and early warning networks.

More research is needed. Incomplete data and knowledge gaps increase the challenge. A better understanding of the

ecology of pests and their hosts, not just the correlations between them, combined with improved climate and impact modelling, is necessary to prioritize risks and improve the reliability of predictions.

Improve SPS decision-making. Using decision-making frameworks, and considering the costs and benefits of different control options and strategies, will support priority setting and enhance resource allocation. An iterative and flexible approach is needed to incorporate new knowledge when available, and deal with the unexpected.

Consider climate change implications in standard-setting and implementation. New knowledge about the effects of climate change on SPS risks should be factored into risk assessment and risk management. In some cases, standards, guidelines and codes of practice may need to be revised.

Identify more climate-friendly SPS measures. Some SPS measures (e.g. Methyl bromide treatment) contribute to climate change. More needs to be done to identify replacement technologies for such measures.

Educate and involve concerned stakeholders. While some countries are considering how to address the SPS-related implications of climate change, many continue to ignore or deny the linkages. Increasing awareness among policy-makers and SPS experts, and reaching out to the private sector and general public, would enhance capacity to respond.

Interdisciplinary approaches are essential. Environmental health, human, animal and plant health and food safety are interrelated, and connected to other global change factors (e.g. globalization, technological changes). The *One World One Health* model provides a framework for a more coordinated and holistic approach. More should be done to operationalize this approach and enhance interagency coordination and collaboration in countries (e.g. through joint research, investigation of risks, training, etc.).

Mainstream adaptation in development cooperation and SPS capacity building. This will require efforts to raise awareness about the implications of climate change for SPS risks, and the benefits of SPS capacity building for adaptation as well as trade and development.

Further information

- Background documents, presentations and more information about this seminar is available on the STDF website: www.standardsfacility.org