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Proposal for a
SCAR Collaborative Working Group on

Integrated pest management for
the reduction of pesticide risks and use

Submitted by France

I - Context and rationale

These are times of change for crop protection in Europe. The European Union is now placing greater emphasis than ever before on crop health and plant protection policies in order to ensure the protection of human health and the environment without compromising food production and competitiveness of the agricultural sector. In 2009, the passing of Regulation 1107/2009 concerning the placing of plant protection products on the market and Directive 2009/128/EC which established a new framework to “achieve a sustainable use of pesticides by promoting the use of integrated pest management and of alternative approaches or techniques such as non-chemical alternatives” mark a turning point. The new legislative landscape means that farmers in the future will no longer have access to the entire range of pesticides they use today and that they will have to adopt Integrated Pest Management (IPM), incorporating alternative approaches or techniques to reduce the risks associated with the use of pesticides. By December 2012, EU Member States must complete and initiate the implementation of the National Action Plans that will make it possible to reach the new objectives. By January 2014, Member States are required to show how the principles of IPM are implemented.

There is therefore a significant long-term need for support in developing policy, new knowledge and effective dissemination and implementation processes in the area of plant protection for the reduction of pesticide risks and use.

Policy
The experience in, the state of development and specific focus of the action plans vary greatly across the EU. France and Germany consider that their current plans regarding pesticide use will require only minor adjustments and are focusing on their efforts on research and extension. Others, such as Hungary and Italy consider that they are in the early stages of policy development. There is also significant diversity in the policy levers emphasised, ranging from the use of pesticide taxes in Denmark to handing over major implementation responsibilities to farmer organisations and the pesticide industry in the United Kingdom. Extracting lessons learned and benefiting from the varied experience across the EU will be useful in helping Member States face the new challenge.

Research programmes
Member States are currently in the process of developing research programmes designed to support their NAP. Some are developing new programmes dedicated to the goals of the NAP.
while others are building on existing research efforts. In addition, reduce the pesticide risk and use without compromising food production and competitiveness of the agricultural sector can only be achieved by redesigning agricultural cropping systems which, in turn, request a new set of innovations. In all cases, the challenge of the new demands coupled with the current increasing scarcity of funding make it difficult for Member States to develop effective research programmes alone. Also, the nature of plant protection research in the context of health and environmental goals is clearly multi-disciplinary. Work at the European level can help to achieve a critical mass, create synergies, and enjoy access to the diverse competencies required by IPM. In some cases, research programmes could be coordinated to create synergies. Some research resources and results can be pooled to make them available to the wider research community.

National research programmes for the development of practices less dependent on pesticides can benefit from each other and create synergies and economies of scale by sharing lessons learned from past research experience, comparing national specificities and by coordinating their agendas.

**Extension**

All Member States must also place great emphasis on implementation. There is a demand for effective dissemination activities and implementation processes to reach the goals of their NAPs. Modifying crop protection practices away from pesticide-based methods means adopting approaches that are new, more site-specific and multi-stakeholder. It is important for advisory services to be informed and learn from what is being done in other countries both in terms of content (innovative scientific and agronomic approaches) and learning approaches (participatory training methods, multi-actor co-innovation).

**II - Build on existing initiatives**

In several respects, there is no need to start *de-novo*, but rather to build on existing incipient projects and initiatives.

**Informing policy**

There have been signs of interest on the part of Member States in sharing national experience in pesticide policies. Past efforts to exchange information on the varied national experiences were very well received by Member States representatives and other stakeholders. The “EU Expert Meeting on National plans and programmes for the reduction of risks associated with the use of plant protection products” in Berlin, March 13 – 14, 2007, the policy symposium “Sustainable Agriculture and Pesticides” organised by the French Presidency of the EU in 2008 which attracted more than 200 participants from across the EU, or the meeting of the “Thematic Strategy Group of Experts” in 2009 are cases in point. At their October 2010 meeting in Brno, CZ, CEUREG – a forum of experts from 20 Central and Eastern European countries that has been meeting annually since 1994 – addressed the new requirements emerging from Framework Directive 2009/128/EC.

In 2009, DG Environment set up the Thematic Strategy Group of Experts and in this context produced two documents, “Development of guidance for establishing Integrated Pest Management (IPM) principles” and “Draft Guidance Document for establishing IPM principles - Supplement to the Final Report”. But these initiatives have yet to be exploited. DG Sanco is now responsible for steering the Thematic Strategy Group of Experts.
ENDURE is one initiative with the potential to contribute to European-level coordination to help achieve the goals of Directive 2009/128/EC. ENDURE is a Network of Excellence in the process of becoming a European Research Group (ERG) bringing together 14 research, extension and educational organisations from 10 European countries. It is committed to working at the European level to create synergies, to strengthen multidisciplinary research and develop new competencies required by IPM, to provide scientific support to fine-tune national crop protection policies, and to facilitate sharing of experiences within the advisory community. ENDURE has conducted a foresight study “European Crop Protection in 2030” to begin to identify the new research areas as well as new approaches to research that need to be developed over the long term to deliver the knowledge and technologies required by more sustainable approaches in plant protection.

Identifying research priorities

The Joint Programming Initiative “Agriculture, Food Security and Climate Change” (JPI FACCE) is a major joint research effort to ensure food security in the face of climate change and rising demand.

The European Technology Platform “Plants for the Future” is a stakeholder forum for the plant sector, including plant genomics and biotechnology, which has produced a Strategic Research Agenda with a 2025 horizon.

EUPHRESCO is an FP6 ERA-NET which aims to increase cooperation and coordination of national phytosanitary (statutory plant health) research programmes at the EU level through networking of research activities and mutual opening of national programmes.

Although they touch on crop protection, the above three initiatives do not cover all aspects of crop protection but would be judiciously complemented by the thematic coverage brought by ENDURE (IPM for instance).

The International Organization for Biological Control (IOBC) has been involved in IPM research for long and has provided principles, methods and tools, such as its Integrated Production guidelines, for its implementation.

At this stage, several priority areas for innovation have been identified:

- Plant genetics for a better understanding of plant immunity and plant-pest interactions to develop the use and the temporal and spatial deployment of cultivars providing lasting multiple resistances.
- New non-biocidal modes of action for “greener pesticides”
- Indicators for monitoring the fate and evaluating the impact of pesticides.
- Emerging technologies drawing from robotics, biotechnology, nanotechnology, and information technology for affordable crop protection approaches adapted to farmer needs.
- Understanding how biodiversity and natural processes in general can be used to benefit crop protection.
- Applying expertise from ecology, landscape ecology, zoology, botany and hydrology to cultivated systems.
• Compensation for ecosystem services.
• Multi-disciplinary research for researchers to learn how to communicate, share common goals and work efficiently with colleagues outside their own area.
• Social research on new and more collaborative ways to innovate, on the role of the food supply chain, and on the social network farmers are a part of.
• Co-innovation or the purposeful engagement of public and private researchers, extension agents, farmers and other stakeholders of the food system in a collaborative design and development effort.
• Cross-sector collaboration and R&D centres based on the business cluster model.

These priorities represent incipient programmes that are still to be explored, precisely formulated, discussed and agreed to at a European level. They should be developed in consultation with the above initiatives where relevant.

Providing support to extension

Unlike the policy and research spheres, advisory systems do not benefit from a history of cross-European cooperation. AKIS (Agriculture Knowledge and Innovation Systems) is a new SCAR CWG which aims to fill this gap regarding knowledge and innovation in agriculture in general. Regarding crop protection specifically, there are very few opportunities for exchange between advisory services in Europe.

The Farm Advisory System (FAS coordinated by DG AGRI) is a component of the Common Agricultural Policy launched in 2007 to help farmers become more aware of on-farm processes relating to the environment, food safety and animal health and welfare. It covers the overall organisation and the various public and/or private operators that deliver farm advisory services to a farmer in Member States. FAS offers contacts with some of the advisory sphere in each Member States. FAS also offers subsidies to farmers for advisory services that satisfy specific environmental requirements.

The FAO 2003-2006 IPM programme for Western Corn Rootworm working closely with advisory systems in seven CEE countries.

ECPA, the European Crop Protection Association supports training in Integrated Crop Management at the European level.

ENDURE has committed itself to providing support to extension at the European level. It has started to develop a body of materials both in English and in national languages for use by advisers. These include ready-to-use methods compatible with IPM and training guides for advisers involved in IPM learning. Another more recent commitment of ENDURE has been to facilitate exchange at the European level within the advisory sphere by creating a “European Network of Advisors”. Nevertheless, this valuable effort represents “a drop in the ocean” relative to the size and needs of the European advisory sphere.

Cross-national coordination of such initiatives is required to more fully satisfy the current demand.

III - More is needed
In summary, there are existing initiatives of relevance to the new challenges in crop protection that offer a starting point. But their thematic and geographical scopes as well as the degree of information sharing and coordination need to be increased. In addition, they have been mostly focusing on the farm level, if not only the field while a great potential for improving crop protection can be obtained by considering the potential of landscape ecology to reduce pest pressure and develop biological regulation processes. Also, transition to alternative cropping systems needs to consider the economic viability of innovative systems, not only for farmers but also at the supply chain level. Finally, the potential for EU sharing infrastructures, such as field experiments, co-innovation networks and monitoring systems should be evaluated.

**Objective**

The objective of this proposed Collaborative Working Group is to facilitate a European-level process in support of national policy, research and extension strategies enabling the development of low pesticide-input pest management in accordance with Directive 2009/128/EC, in particular with respect to article 14 and taking into consideration the potential of new areas of research and innovation.

The specific goals are to:
- Provide a European forum for exchange and needs on research priorities to design cropping systems reducing pesticide risk and use and to facilitate transition to such innovative systems;
- Contribute to the development of NAPs by facilitating sharing of national experiences on pesticide-related policies;
- Support the definition and implementation of national research programmes dedicated to the development of Integrated Pest Management strategies and coordinate national actions where feasible;

**Collaborative Working Group**

This proposed Collaborative Working Group is relevant to EU-27 national authorities responsible for the development of their NAP and strengthening their research and extension programmes pertinent to plant protection. It is also relevant to non-EU European States sharing the goal of developing plant protection management strategies that satisfy the new health and environmental goals.

To-date, we have received expressions of interest from different funders from:

- France
- Germany
- Poland
- Spain
- Denmark
- Belgium
- United Kingdom
- Austria
- Italy

- The following research and extension groups:
  - Institut National de la Recherche Agronomique (FR)
  - Julius Kühn-Institut (DE)
  - Wageningen University and Research Centre (NL)
Main tasks

Policy

Task 1: Scientific Support to NAP development regarding IPM
Share information and a Strength-Weakness-Opportunities-Threats analysis on past national pesticide initiatives and on the current state of NAPs with particular attention to the various ways the principles of IPM (Annex III of Framework Directive) translate into policy within an NAP. The CWG can build on and expand the comparative analysis of NAPs initiated by ENDURE.

Research

Task 2: Sharing information and comparing research programmes
Share information and comparative analyses on past and current research programmes aiming at reducing pesticide risks and use.

Task 3: Identify long-term research needs
The new demands placed on crop protection challenge us to develop new approaches to innovation, integrated and multidisciplinary research, new competencies and new areas of study. The task here is to identify R&D priorities emerging from a collective reflection using scenario-building (based on the ENDURE foresight study "European Crop Protection in 2030") as a conceptual framework. Special attention will be paid to the new areas of research identified above (plant genetics, plant immunity and plant-pest interactions; new non-biocidal modes of action for “greener pesticides”; biodiversity and natural processes in general to benefit crop protection, etc.).

Task 4: Strengthen pest monitoring systems
Deepen understanding of pest monitoring systems to better anticipate pest emergence and as support for sustainable crop protection. Share experiences and methods. Identify instances where monitoring systems can be networked at a supra-national level.

Task 5: Facilitate coordination of research programmes
Several Member States are planning national research programmes as part of their NAP, some of which are explicitly dedicated to IPM. It is probable that opportunities to coordinate such efforts can be taken advantage of to create complementarities and synergies.

Extension

Task 6: European-level reflection on new extension needs
Facilitate knowledge-sharing and a collective reflection on the new challenges in crop protection within the agricultural extension community across Europe: co-innovation networks, new advisory framework and tools, etc. Link with the Collaborative Working Group AKIS and DG AGRI’s FAS programme to be discussed.

**Task 7: Research for extension**
Identify research needs to develop knowledge transfer and implementation specific to the development of low pesticide input pest management.

**Calendar**

The CWG is scheduled for two years. Its first task will be to specify further the contents of each of the above tasks and agree on organization and resources. Each task could be covered by an adhoc working group which could organize workshop and/or carry out surveys. Each task will lead to a report and an executive summary of the CWG will summarize the outcomes.

**Task 1: Scientific Support to NAP development regarding IPM (M1-M18)**

Approach: survey among MS on practical implementation, SWOT analysis, meetings sharing experiences.

**Task 2: Sharing information and comparing research programmes (M1-M24)**

Act as a platform of research policy-makers.

**Task 3: Identify long-term research needs (M6-M24)**

Take advantage of agricultural foresight studies, including ENDURE study on crop protection, to discuss implications for research priorities in crop protection: working group and workshops.

**Task 4: Strengthen pest monitoring systems (M1-M24)**

Analysis of current monitoring systems, requirements to facilitate transition towards IPM and potential harmonization across Europe (working groups and survey).

**Task 5: Facilitate coordination of research programmes (M1-M24)**

Identification of topics of common interest, potential for jointly executed research and for shared infrastructures.

**Task 6: European-level reflection on new extension needs (M1-M18)**

Comparative analysis of extension systems, networking of advisory systems.

**Task 7: Research for extension (M6-M24)**

Development of new extension instruments to accompany transition towards IPM: co-innovation networks, ICT-based advisory systems.