Challenges for disease management: Perennial crops in the tropics and sub-tropics

The work proposed will develop integrated approaches to the management of important pests and diseases of perennial tropical and sub-tropical crops. Activities will address gaps in our knowledge on the disease cycle including climatic and cultural factors that influence the cycle and changes in farming practices. They will develop more effective and sustainable management options which are based on a holistic view of agro-ecosystems and a better understanding of the bearing that climatic changes may have on plant diseases and their management. They should propose novel solutions to improve forecasting, monitoring and information on biotic threats. Proposals should fall under the concept of the 'multi-actor approach'[[See definition of the 'multi-actor approach' in the introduction to this Work Programme part.]] based on genuine collaborations between producers (including small farmers), researchers, advisory services and the commercial sector. Dissemination and demonstration of findings and outputs shall be given particular attention. The integration of social and economic sciences will support the uptake of new methods and tools in plant disease management and take into account the specificities of farming systems. International collaboration is essential to meet the requirements of the topic (see conditions for minimum number of participants under evaluation procedures in section ""Conditions for the SFS call"")

The Commission considers that proposals requesting a contribution from the EU of up to EUR 4 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Favourable conditions for disease development in the tropics and sub-tropics hit perennial crops[[For the purpose of this topic the term ""perennial crops"" is used in a wide sense. It covers crops which are alive year-round, are harvested multiple times before dying and occupy the same plot for at least three years.]] particularly hard, especially in uniform plantings. Overall, losses are thought to be 50 to 100% higher in

tropical than in temperate regions; estimates of the former range from 30 to 50%.The effects of increased climatic variation are expected to further increase the occurrence of pests and diseases as well resistance against crop protection measures. This threatens to affect the production of many economically important crops and the incomes of small holders in particular.

Project outputs will result in an increased uptake of integrated disease management approaches. These will benefit sustainable production of important perennial crops in tropical and sub-tropical regions within Europe and elsewhere by:

- delivering applicable knowledge on the biology of pests and diseases and on the disease cycle;
- expanding the set of sustainable measures and tools available to farmers to prevent and deal with important pests and diseases;
- reducing yield losses and stabilising production;
- enhancing capacity in conventional and low-input farming sectors (including small holder farming) to apply more complex cultural practices, e.g. in line with integrated pest and disease management principles;
- reducing reliance on critical pesticides in farming practices, thereby also supporting product quality and human health (e.g. that of applicators and consumers);
- improving capacity of plant health authorities and advisory services to prevent diseases; and
- triggering product, technology and service innovations in support of plant health and plant protection.

In the longer term projects will help to secure/increase productivity of important perennials in tropical and subtropical regions and at the same time reducing the environmental impact of agricultural activities. They will thereby strengthen the contribution of the agricultural sector to rural economies as well as overall economic and sustainable development.

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