CRP RESEARCH THEMES 2010-2015

Detailed descriptions of the three research themes can be found below – just click on the theme title:

Theme I. THE NATURAL RESOURCES CHALLENGE

The sustainable use and protection of natural resources is essential to support continued food production and quality of life for humans, domestic animals, and wildlife. Accountability for judicious use of natural resources includes a holistic approach to cause and effect relationships throughout the agri-food chain. Efficient use of natural resources includes activities in the production of livestock, forestry products, food-crops, and fisheries to provide new, specialty, and value added products, as well as innovative approaches to assessing the vulnerability of the environment to management practices that involve renewable resources considerations.

Examples of topic areas might include:

- Addressing environmental issues related to natural resource stewardship.
- Monitoring and evaluating natural resource stewardship efforts.
- Holistic economic and societal evaluations of systems where natural resources are used in the agri-food chain.
- Planning and management for availability and efficient utilisation of water, soil, air, biomass, and energy.
- Societal options and responses to ensure environmental protection, the availability and quality of natural resources, energy options, and the countryside, including forests.
- Cross-discipline and technology evaluations to assess sustainability, including models and databases.

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Theme II. SUSTAINABILITY IN PRACTICE

Sustainable agricultural systems have been an attractive area of research over the last decade, as it targets maintenance of resources and biodiversity within a productive agricultural system. An ideal agricultural system would maintain or even increase productivity into the future with minimal inputs while conserving natural resources and protecting the environment. However, in the past the custodians of the land have often applied such research in a piecemeal fashion. This is because modern farming incorporates landscape management into a production business, which often has a short-term economic timeframe and entrenched social attitudes. Innovative concepts include therapeutic agriculture, integrated rural and urban management, and nature conservation for efficient biomass production and use (food, fibre and bio-energy). CRP research activities should be designed to assess sustainability of innovative systems and deliver evidence of practical adoption. Adoption of research findings, particularly where the benefits may largely lie well into the future, may face resistance from land managers for social, as well as economic, reasons.

This theme aims to fund activities that link research to adopting sustainable practices, tackle issues that have historically limited such adoption, and bridge research disciplines. Activities in this theme include social and bio-economic considerations, as well as scientific research aimed at providing the information and justification land managers need to assess the risk of adopting new practices that predominately offer long-term benefits in return for a more stable natural resource base. Strategies for sustainable farming systems should analyse the economic, social, and environmental dimensions, as well as their interactions.

Examples of topic areas might include:

- Risk assessment and management related to agricultural practices.
- New tools for predicting, detecting, and fighting pests in a sustainable perspective.
- Strategies that evaluate compromises when human and natural resources, innovative technologies, the environment, and social issues are involved.
- Development and implementation of innovative concepts, including bio-energy, that focus on the efficient use of natural resources while enhancing sustainability.
- Strategies, techniques, and incentives to encourage adoption of production systems that emphasize long-term sustainable goals.

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Theme III. THE FOOD CHAIN

This theme includes new approaches for production of valuable and safe materials and substances within agricultural and agri-food systems which have long-term impacts on the food chain. It will promote research on the scientific links between food production systems, food safety, and environmental outcomes. It will include analysis of public perceptions of both traditional and new products. Research will encompass primary production to end-consumption and deal equally with plant and animal organisms. Special attention will be given to results from the post-genomic (proteomics) area and to the impact of new technologies.

A pathogen-free food chain is important to producers as well as consumers; the economic value of food products can be significantly reduced by various pathogens and pests. This theme promotes research on animal and plant pathogenesis, and animal and plant pests, which have an impact on preservation of agricultural products and on the sustainability of farming.

Examples of topic areas might include:

- Impact of transgenic plants and animal cloning.
- Molecular farming for food production and safety of the resulting animal and plant products.
- New plant protection strategies for sustainable agriculture.
- Monitoring xenobiotics, genetic modifications, pathogens, allergens in the food chain.
- Genomic research relevant to agriculture and aquaculture.
- Micro-array technology relevant to agriculture.
- Emerging diseases and resistance to conventional treatment (new pathogens and strains).
- New technologies for detection, diagnosis and treatment of old pathogens.
- New tools for preventing outbreaks of old and new pathogens.
- Impact of current trade patterns and flows on dissemination of pathogens/pests.

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