

# European Project

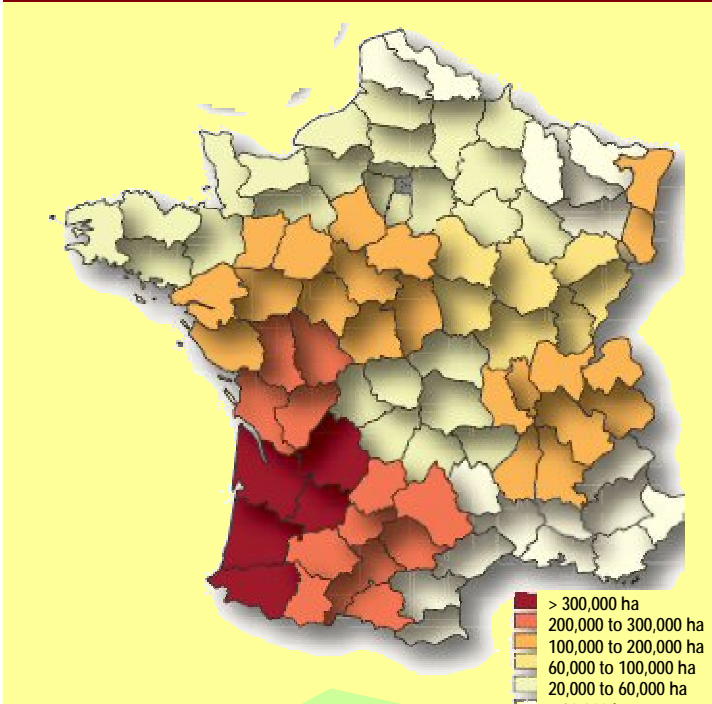


Sixth Framework Programme



## The European project SIGMEA on the Sustainable Introduction of GM crops into European Agriculture

Landscape of maize cultivation in France (Fig. 1)



The Southwest of France largely contributes to the maize uses in Europe: 5.4 MT have been produced in 2006 (44% of the total French production); the 2/3 of the production are exported.

S I G M E A is a Specific Targeted Research Project in the EC Sixth Framework Programme. SIGMEA started on 3 May 2004 and runs for 3 years, with an extension to the end of October. The overall objective of SIGMEA is to set up a science-based framework, strategies, methods and tools for assessing the ecological and economical impacts of GM crops and for an effective management of their development within European cropping systems, i.e. to create a practical toolbox. To achieve this overall objective, SIGMEA partners consist of the principal teams and thus the principal programmes studying gene flow and related subjects over a wide number of countries across Europe. SIGMEA has 44 partner organisations from 12 European countries.

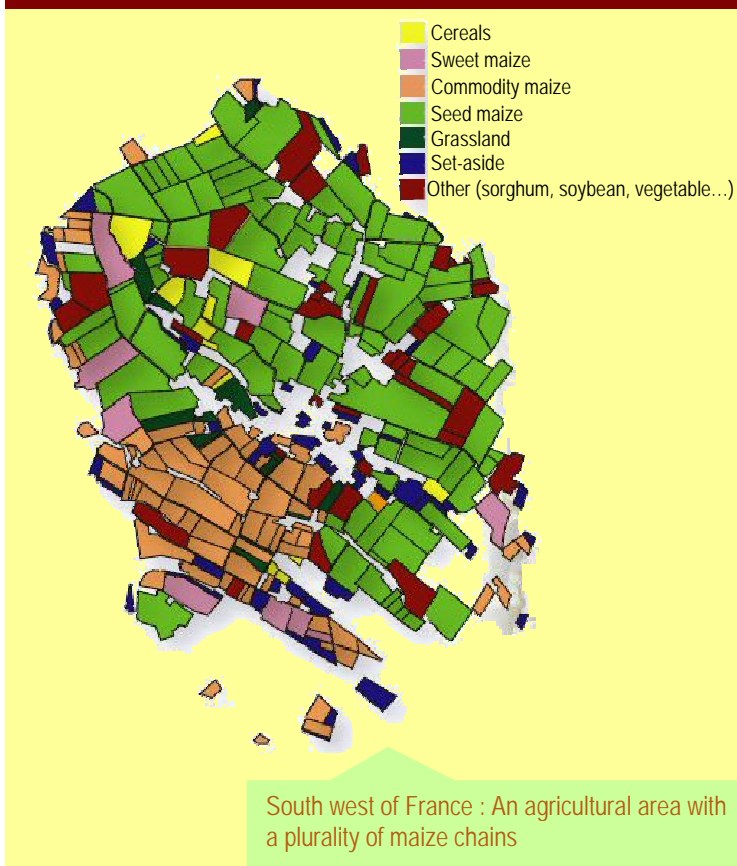
The NIAB (United Kingdom) is the general coordinator of the project, while INRA's scientific coordinator. ARVALIS - Institut du vegetal is a partner involved in the WP7 for the Elaboration of scenarios for introduction of GM crops.

The overall objective of WP7 is to assess the impacts of introduction of two GM crops (Bt-maize and HT-OSR) in selected regions. These impacts have been assessed in terms of ecological and economical consequences as well as in terms of respecting constraints like thresholds for conventional and organic farming systems (co-existence issues).

From existing results on gene flow and ecological impacts and by taking advantage of models, specific mitigation measures have been tested and potential scenarios derived by integrating independent measures. These scenarios have been assessed in terms of their technical and economical feasibility as well as their acceptability by involving the major actors and operators of the production chain.

Scenarios have been elaborated at the landscape level. The same spatial scale has been used for the evaluation of both economical and environmental impacts.

Focus zone studied by ARVALIS : a typical diversity of maize for coexistence studies (Fig. 2)



On a regional scale, ARVALIS gave a general description of the South-West of France: comparison with national references for crop production, potentiality of adoption of GMOs, tendencies for close future. ARVALIS described the different sub-sectors corresponding to different uses for maize (grain for food/feed, sweet corn, waxy, seed ...) and identified the actors from seed production to grain collect. The issue of GMOs was raised with a description of the regional experience with GMOs. At the landscape level, data have been obtained on the land occupation and the main characteristics of the farms : accurate description of the practices based on surveys on farms, in order to feed the gene flow models for further steps of WP7.

The focus zone studied by ARVALIS (*cf fig. 2*) represents a typical agronomic context for different maize productions. Statistical models would lead to achieve cross pollination levels as a result of GM maize introduction (in progress).

To have more information on this project, you can consult SIGMEA's website :

<http://sigmea.dyndns.org>

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