

## **PI@ntWeeds, a collaborative weeds identification and information platform**

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PI@ntWeeds is a project dedicated to the development of a global rice weeds identification and information System. It is one of the case studies under PI@ntNet, a web-oriented scientific, informative and educational network and software platform dedicated to the collaborative gathering, share and use of large, multi-disciplinary datasets on tropical and Mediterranean plants.

PI@ntWeeds is bringing fresh thinking to bear on weeds identification and information. By combining fundamental research, agronomical science, open source Information Technology development and information management, it is working towards the improvement of information on weeds and making this information more easily accessible to applications outside plant sciences.

Weeds constitute one of the major factor that impact agricultural productivity. With the current world food crisis, it is crucial to limit growth of weeds and other invasive species in order to support intensive and sustainable agricultural methods. Most of rice weed species are pan-tropical. As such, a global approach for their identification and management is warranted to facilitate the exchange of information among institutions and people working on this topic.

In order to allow such an exchange, PI@ntWeeds is bringing weeds identification into the 21<sup>st</sup> century by leveraging open source software development. It will build a collaborative network to improve the collection, analysis and exploitation of information on about 400 rice weeds species of rice cropping systems around the world.

PI@ntWeeds will rely on a set of tools developed by its partners. These will include the use of IDAO technology which enables users to identify an unknown plant by creating a composite "Identikit" portrait based on a plant's morphological characteristics and geographical location. It will also employ IKONA, a visual search engine for plant recognition. This will enable users to search for a plant by appearance. A combination of several identification approaches will provide tools dedicated to various potential users, e.g., from scientists to agronomists, non-specialists. This will be carried out in collaboration with the University of Davis (USA), the University of Coimbra (Venezuela) and the Africa Rice Center (Benin), and the International Rice Research Institute (Philippines).

This initiative is jointly being developed by an international consortium involving a number of institutions around three main teams: AMAP Research Unit, INRIA-IMEDIA Research Team (2), and Tela Botanica (3), a non-government organization which maintains a collaborative network of French-speaking botanists.

PI@ntNet is a Flagship Programme of Agropolis Fondation (4), a French foundation dedicated to the support of research and education in agricultural science and sustainable development.

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(4) <http://www.agropolis-fondation.fr>