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Launch of global 'big data' partnership to harness genetic resources for food security

An international initiative launched today will help secure world food supplies by revolutionizing the way plant breeders use crop diversity with the help of 'big data' approaches. Diversity Seek or 'DivSeek', the first ever global effort of its kind, brings together a large number of organizations from around the globe to unlock crop diversity on a massive scale with the aim of accelerating the development of climate-ready, high-yielding and nutritious crops.

World population is predicted to increase by another billion in just ten years. To meet the continuously rising demand for food, agricultural production must rise by approximately 60% until 2050. We need to produce more food on essentially the same land while using similar or less inputs such as water and fertilizers – not exactly a straightforward task when considering the increasingly dramatic variations in weather conditions due to climate change! Boosting agricultural production by further expanding the land under cultivation or irrigating crops seems neither possible nor desirable.

Natural crop diversity, the raw material for crop improvement, stands out as one of the last remaining and environmentally friendly options. The approximately seven million samples of crop varieties and wild relatives, safeguarded in genebanks around the globe, represent one of humanity's greatest and largely untapped opportunities to meet the needs of the growing human population. To this date, scientists have barely scratched the surface of this potential goldmine; not because they don't recognize its value: searching for natural gene variants that, say, reduce the need for irrigating crops, has been as difficult as searching for needles in a haystack.

But this is about to change. Recent technological advances and new tools that are now available, many of which have been deployed in human genetics and molecular medicine, are revolutionizing the way we can explore and utilize crop diversity for the benefit of society. *DivSeek* is a new partnership, initially comprising 69 organizations from 30 countries to do exactly that.

To mark the launch of *DivSeek*, today's Partners' Assembly in San Diego brings together 69 founding organizations. The *Global Crop Diversity Trust*, the *CGIAR Consortium*, the *International Treaty on Plant Genetic Resources for Food and Agriculture* and the *Global Plant Council* will jointly facilitate the coordination of this far-reaching global effort to fully harness natural biodiversity for global food security over coming decades.



Marie Haga, Executive Director of the *Global Crop Diversity Trust* said:

"DivSeek will contribute to bring about a "Greener Revolution", a second major overhaul to global agriculture, this time based on fully harnessing natural crop diversity to achieve food security in an environmentally sustainable manner."

Dave Ellis, Head of the Genebank and Biodiversity Complex at the International Potato Center, said:

"DivSeek allows you to pinpoint characteristics you want from a specific crop variety. When looking for a book in a library in the old days we used to look through a card catalogue, but now we can search not only by title and author, but also by paragraphs, words, word combinations, letters, and letter combinations. DivSeek will provide that detail for crop diversity."

Ruaraidh Sackville Hamilton, Head International Rice Genebank, International Rice Research Institute said:

"The diversity of genes is so great that we can tackle more or less any conceivable development problem that you can imagine plus any problem you can't imagine."

Susan McCouch, Professor of Plant Breeding and Research at Cornell University, said:

"To me, DivSeek is like having all the colors of the rainbow at your disposal: you have the essence, now you can mix and match and create almost any color you like." In this way "...we'll be working on creating different variations of crops, which have the capability to address human need for food – particularly for the most vulnerable people."

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For more information: www.divseek.org

For information on the 69 organizations that are participating initially:
<http://www.divseek.org/interest/>