USC Canada
56 Sparks Street
Suite 705
Ottawa, Ontario
K1P 5B1, Canada

TEL: (613) 234-6827
FAX: (613) 234-6842
E-mail: info@usc-canada.org
Web Site: www.usc-canada.org
Founder: Dr. Lotta Hitschmanova

Food, Farmers, and Climate Chaos: About the Issues in the Seed Map

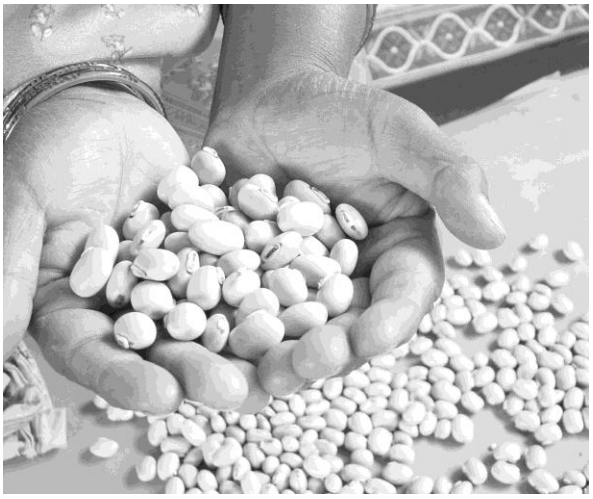
By USC Canada Staff

Peak oil prices have produced a rush for new energy sources, especially from agriculture. More and more farmers are being called upon to grow 'agrofuels' to feed cars, not people. We are drawing down our food reserves to the lowest levels in our lifetime[1].

Meanwhile, climate change is placing billions of farmers at risk, particularly in countries with fragile and vulnerable ecosystems – drylands, coasts, and mountains. While agricultural companies post record profits, small producers in North America and throughout the world are facing unprecedented debt. And hardly anyone is paying attention to the time-tested knowledge and experience of small farmers, especially in the nurturing of diverse and adaptable seed supply systems. We are losing biodiversity when we need it most. What happens to farmers and the food system affects us all.

How will we beat climate chaos, build food security, and safeguard the planet's genetic resources? The Svalbard Seed Bank in Norway, (opened in February 2008) is part of the answer, since it stores many seeds in case of crisis – hence its description as the "doomsday vault". But the true wealth of experience that has the potential to allow us to survive this situation rests in the corners of homes, high in rafters and in the gardens of every person who grows food.

"I am always busy. Crops mature one continually. After feeding our family, I sell nearly 400 bags of ragi (millet), as well as extra rice, vegetables, and tamarind. I am keeping these rare varieties of ground nuts (peanuts) too – they are good for the soil and propagate in an unusual way" Hommabalama, Karnataka, India



[1] References for this article are available from seedmap@usc-canada.org

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However, it is a long path to regaining what has already been lost. The truth is that crop genetic diversity has been lost through the spread of industrial monocultures and agribusiness monopolies. In Mexico, 80 per cent of maize varieties grown in the 1930s are gone. China has lost nine thousand of the ten thousand wheat varieties that were grown a century ago. In the United States, 90 per cent of fruit and vegetable varieties have disappeared in the last century.

> "The climate is changing and hurricanes are becoming more frequent. We decided we need corn varieties with shorter, stronger stalks and roots."
> Isidora Garcia, Honduras

The loss of crop varieties has weakened our ability to adapt to climate change. By the end of this century, the Earth's temperature will increase 1.8 to 4.0 degrees Celsius and average sea levels will rise dramatically. The fifteen plant species and eight animal species that we depend on for 90 per cent of our food energy will not be suitable to new temperatures, drought, water scarcity and flooding. As a result, food availability will decline, particularly for the world's poorest citizens. For example, rice feeds half of the world's population, but yields will decline by at least 20 per cent in the next three decades. India's prime wheat-growing land will shrink by 51 per cent by 2050 due to hotter, drier weather.

Given that the world has acknowledged that climate change is threatening life on the planet, what do we need to do to ensure our survival, other than build Doomsday vaults?

We will need to use other varieties that are more resilient to warmer weather and extreme climate events. Most of this diversity is in the global South, where more than a billion small scale farmers, fishers and livestock keepers are key to adapting our food systems to climate change. A significant level of diversity is also retained by individuals in the more food secure areas of the world. Anyone who is interested in local food issues, and the food systems which feed large urban populations, also needs to monitor diversity. The many thousands of varieties fostered and exchanged through Seeds of Diversity and other farming and gardening networks, strengthens our now meagre diversity resources.

Invaluable genetic resources from the global south have rescued the modern food system before. Genes from Mexican farmers' varieties rescued the North American wheat crop from stem rust in the 20th century. U.S. wheat and barley farmers lost US$3 billion between 1990 and 2002 due to a scab disease, and the only defense was found in a Chinese barley variety.

Genetic diversity created by the world's small-scale farmers is most vital resource for developing crops and livestock that can survive hotter, drier conditions and resist migrating pests and diseases. These farmers must be recognized and supported, as they are the valuable foot soldiers in the battle against climate chaos.

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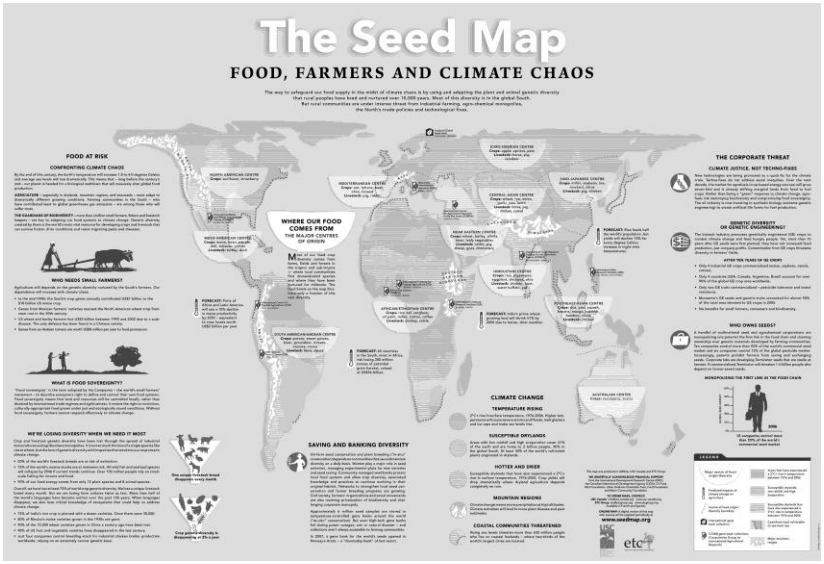

As an international social justice and development agency, USC Canada wants decision makers to know how climate change will impact these small farmers whose seeds are critical to all our food security. A wall-sized "Seed Map" has been developed to highlight regions which are essential to global food security, threats to their ability to safeguard our food supply, and movements that are working to preserve biodiversity and farmers' livelihoods. The Map has been well received by policy makers and Members of Parliament in Canada. In addition, it was shared with participants in the 13th meeting of the Subsidiary Body on Scientific, Technical and Technology Advice (SBSTTA-13) of the Convention on Biological Diversity (CBD) in February 2008. The map is in use in high schools, colleges and universities and by community gardening, environment and food activists across Canada and many in the US as well. The Map is a valuable asset to any discussions or activism on the food, farming or climate change agenda.

The Seed Map

The Seed Map is a teaching and advocacy tool designed to show the state of global agro-biodiversity today. When you order a Seed Map you get an easy to understand, full-size (26"x39") colour world map as well as access to an interactive website (online May 2008). The map is available in English, French, and Spanish. The maps are free if picked up from the USC office in Ottawa. For those we cannot meet in person, the maps may be ordered by visiting www.usc-canada.org or calling 1-800-565-6872 ext.228 (613-234-6827 in Ottawa).

The Seed Map is a project of USC Canada and the ETC Group.