**Strategic Research on Degeneration of Planting Development of a Seed System Framework for Roots, Tubers and Bananas**

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**RTB Working Paper**

**Correct citation:** Smith, J.S.; White, E.S. and Fulano, F. 2017. Title of document or report. Lima (Peru). CGIAR Research Program on Roots, Tubers and Bananas (RTB). RTB Working Paper. No. 2012-1. Available online at: www.rtb.cgiar.org

**Published by the CGIAR Research Program on Roots, Tubers and Bananas**  
The CGIAR Research Program on Roots, Tubers and Bananas (RTB) is an alliance led by the International Potato Center implemented jointly with Bioversity International, the International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), that includes a growing number of research and development partners. RTB brings together research on its mandate crops: bananas and plantains, cassava, potato, sweetpotato, yams, and minor roots and tubers, to improve nutrition and food security and foster greater gender equity especially among some of the world’s poorest and most vulnerable populations.   
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ISSN 2309-6586

DOI+ISBN

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Abstract

At the beginning of the 21st century, the global food system finds itself exposed to increasing pressures from a broad range of factors. A growing population and changing patterns of food consumption due to globalization, rising income levels and urbanization lead to a higher demand for food products. At the same time, it becomes more difficult to draw additional land into production, while degradation and pressure from alternative uses, such as biofuels, increase. In several regions, surface and ground water is becoming less available and urban and industrial water use is rising. Growing economies require larger amounts of energy, leading to higher energy prices and thus to higher prices of many inputs for agricultural production. This scenario unfolds under conditions of climate change, which through rising temperatures, changing patterns of precipitation and more extreme weather events is likely to negatively affect the conditions for agricultural production in many regions of the world (FAO 2008a).

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Acknowledgments

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# Heading 1

At the beginning of the 21st century, the global food system finds itself exposed to increasing pressures from a broad range of factors. A growing population and changing patterns of food consumption due to globalization, rising income levels and urbanization lead to a higher demand for food products. At the same time, it becomes more difficult to draw additional land into production, while degradation and pressure from alternative uses, such as biofuels, increase. In several regions, surface and ground water is becoming less available and urban and industrial water use is rising. Growing economies require larger amounts of energy, leading to higher energy prices and thus to higher prices of many inputs for agricultural production. This scenario unfolds under conditions of climate change, which through rising temperatures, changing patterns of precipitation and more extreme weather events is likely to negatively affect the conditions for agricultural production in many regions of the world (FAO 2008a).

## Heading 2

In these times, the global food system faces complex challenges. On the one hand, the supply required to meet future demands for sufficient, healthful and affordable food must be met. Assuring food security and ending hunger are high on the agenda of the international community (United Nations 2010). On the other hand, greenhouse gas emissions have to be reduced and biodiversity and ecosystem services maintained (The Government Office for Science 2011).

### Heading 3

At present, however, there is uncertainty about the ability of the food system to meet these challenges (IAASTD 2009). Model based assessments of global agricultural production, for example, expect grain prices to rise significantly over the next 40 years unless productivity growth rates exceed those observed in recent decades (Nelson et al. 2010). The global food price crisis experienced from 2007-2008 and the new recent rise in food prices are harbingers of these developments and have triggered serious concerns among a broader public and drawn renewed attention to the need for agricultural research (Brown 2011).

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