

RESEARCH PROGRAM ON Roots, Tubers and Bananas



Prioritizing sweetpotato in the context of roots, tubers and bananas

The CGIAR Research Program on Roots, Tubers and Bananas (RTB) brings together four CGIAR centers - Bioversity International, the International Center for Tropical Agriculture (CIAT), the International Potato Center (CIP) and the International Institute of Tropical Agriculture (IITA) - and CIRAD (also representing the French organizations IRD, INRA, and Vitropic) with more than 350 partners for research on banana, cassava, potato, sweetpotato, yam, and minor roots and tubers. The program has two dedicated clusters of activity on sweetpotato, led by CIP scientists, that will interact with, learn from, and add critical mass to RTB's other work.

About RTB

More than 300 million people below the poverty line in developing countries depend on root, tuber and banana crops for food and income. RTB is working globally to harness the untapped potential of those crops in order to improve food security, nutrition, income and climate change resilience of smallholders, especially women and youth.

RTB crops, including sweetpotato, present common challenges. They are propagated clonally rather than with seeds, which allows yield-reducing pathogens to build up over time. This calls for a strong design of private-public seed systems. The crops' bulk and perishability put pressure on postharvest innovation, and high genetic complexity of each crop means breeding is especially difficult. RTB is changing the way the research centers work and collaborate, creating a more cohesive and multidisciplinary approach to tackle these common challenges. RTB aims to promote greater cooperation among an array of national and international institutions, NGOs and stakeholders' groups while strengthening their capacities as key players. Because the full impact of RTB research depends on how well next- and end-users adopt research options, these are developed together with stakeholders and are informed by their needs and preferences.





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Tapping into underutilized RTB genetic diversity, FP1 collaborates with advanced research institutes (ARIs), universities, national agricultural research systems (NARS), and other CRPs. FP2 supports gender-responsive breeding pipelines to obtain high-yielding and nutrientrich varieties in line with consumer demand and adapted to future climates and resistant to biotic and abiotic threats. FP2 collaborates closely with national breeding, genetics, and phenotyping programs, ARIs, and universities. It is informed by FP3-FP5 as regards the needs of next users of varieties and particular constraints such as disease resistance. FP2 includes a crosscutting component on seed and approaches for demand creation. Scaling occurs with national seed agencies, private companies, service providers, and development partners.

FP3 develops an array of products for pest and disease characterization and management and improved agronomic practices for more resilient cropping systems. Pest/disease risks models related to climate change and pest risks analyses are developed with strategic research partners and the CRP on Climate Change, Agriculture and Food Security. Results are used to devise policy and technical advice for national plant protection organizations and regional and subregional organizations. Optimized land, crop, and water management techniques are developed in collaboration with NARS and universities and promoted through welltrained extension services and other service providers.

FP4 promotes collaborations among public partners (e.g., national research institutes) and private partners (e.g. machinery manufacturers and fabricators, small and medium processors). The objective is to develop and disseminate improved and more efficient processing and post-harvest technologies and protocols for RTB-based food products that help to reduce waste and losses and make healthy and nutritious food available. Moreover, FP4 provides technical evidence and policy advice to national authorities, development partners, and donors for designing and implementing agriculture for nutrition initiatives and education/communication programs. Particular attention is paid to identify value chain opportunities that generate more equitable employment and income opportunities for women and youth.

FP5 has a dual role as a space for systems research and for providing capacity development and backstopping in support of innovation and scaling in FP1–FP4. It provides a livelihood systems-related guiding framework for all FPs to steer them toward promising scaling of innovations, opportunities for advancing gender and intergenerational equity, expected and proven areas of greatest return, and scientific evidence on impactful partnership and scaling models.

RTB's research on sweetpotato falls in to two dedicated clusters of activity (clusters): (1) SW2.6 - User preferred sweetpotato varieties and seed technologies and (2) SW4.4 - Nutritious sweetpotato for expanding markets and improving nutrition.



User preferred sweetpotato varieties and seed technologies (SW2.6)

This cluster is housed under FP2, which consists of interrelated clusters that together achieve the objectives and targets of the flagship. SW2.6 aims to investigate, develop, and disseminate better sweetpotato varieties and ensure that they meet farmer and consumer preferences. This will improve the availability of sweetpotato varieties that are rich in beta-carotene and high in anti-oxidants, to meet diverse user preferences and needs with gender-responsive seed systems. Hence this cluster has strong linkages to the second cluster on sweetpotato, SW4.4.

Nutritious sweetpotato for expanding markets and improving nutrition (SW4.4)

SW4.4, which is under FP4, aims to improve nutrition and diets and provide income opportunities through more diversified and intensified utilization of nutritious sweetpotato. The cluster is focused on expanding and diversifying the use of vitamin A-rich OFSP while also exploring the use of other nutritious sweetpotato varieties through similar technologies and processes. Research will generate improved tools and approaches for enhancing diet quality through sweetpotato; more efficient post-harvest and processing technologies, guidelines, and capacities for nutrition-sensitive value chain development; and better investment and policy frameworks for scaling up the benefits from nutritious sweetpotato. OFSP has accumulated rich insights into scaling and a linked evidence base which through RTB can support learning for similar approaches in our other crops.











A broad alliance of research-for-development stakeholders & partners

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