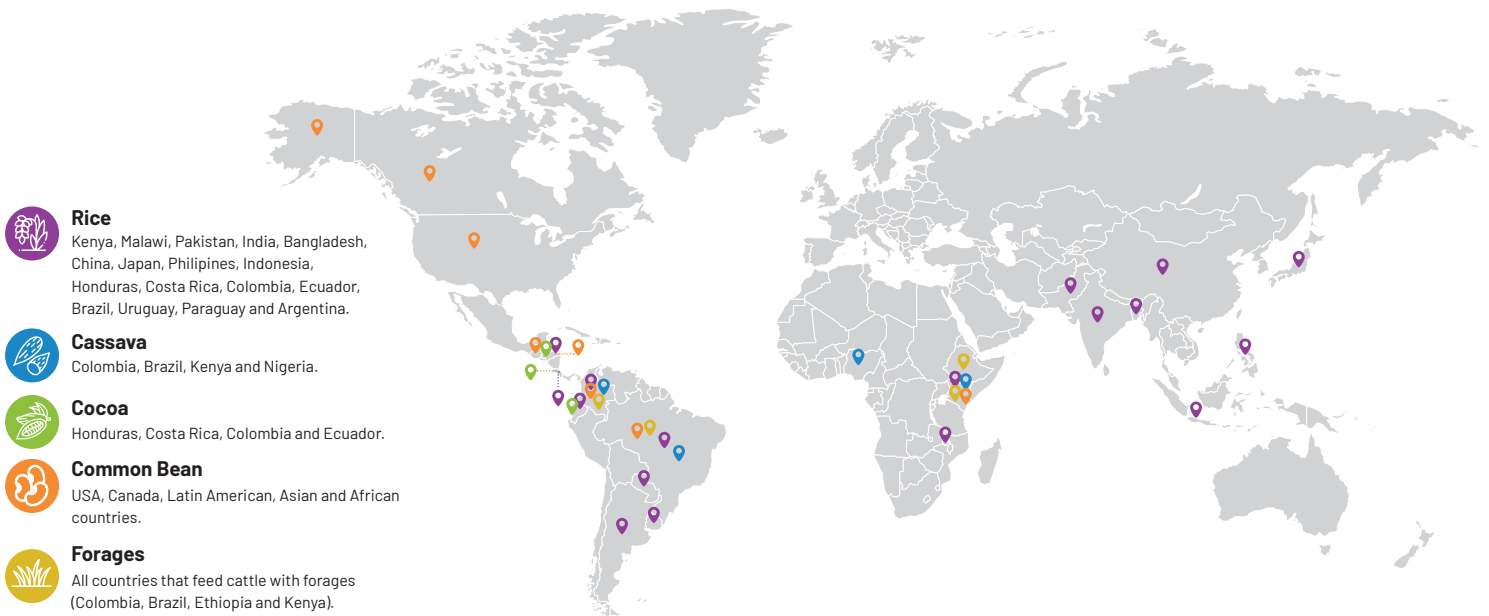


## Goal

Make gene editing tools like CRISPR an essential component of crop improvement for a more productive, nutritious agriculture, that protects biodiversity and the environment, and guarantees a constant food/feed supply.

## Potential target countries

Target countries with regulatory framework for gene edited crops.



## SUCCESS STORIES



Gene edited, Xoo-Resistant rice vars. IR64 and Ciherang-Sub1, were declared conventional varieties in Colombia since 2020.



Llanura 11 (Control)

Gene Edited Llanura 11

The deletion of two nucleotides in the gn1a gene of rice cultivar Llanura 11 doubled the number of grains per plant in the edited variety when planted in the field.

“Adoption of product stewardship programs and quality management systems for the full life cycle of agricultural biotechnology products.”



**Engaging the Research Community:** An open dialogue with society. Meeting of Regulators of the Americas to discuss genome editing regulations (April 4-5, 2018), five training courses (2016-2023), webinar by CIAT Staff (2017), Seminars for regulators, students, professors from Latin America including Mexico, Ecuador and Peru (since 2016).

# Using Gene Editing for Breeding .....

Crop	Trait (Genes)	Relevance				
		Healthier Crops	Environment Protection	Climate Change	Gene Validation	Breeding
Rice	<i>Xanthomonas</i> Resistance (SWEET)					
	Resistance to Rice Hoja Blanca Virus-RHBV (AGO4)					
	Pyricularia (Blast) Resistance					
	Enhanced Recombination					
	Waxy Starch (GBSS)					
	Male Sterility (TDF1)					
	Grain Number (GN1A)					
	Reduce Cadmium Uptake (OsNRamp5)					
	Reduce Arsenic Uptake (Lsi1, Lsi2, OsPT8)					
	Photosynthetic Efficiency (OsHXK1)					
	Root Architecture/Angle (AUX1)					
	Thermotolerance (undisclosed)					
	Drought Tolerance (WEEP)					
	Herbicide Tolerance (undisclosed)					
Cassava	Waxy Starch (GBSS)					
	<i>Xanthomonas</i> Resistance (SWEET)(SWEET10a)					
	Thermotolerance (knockout mutants)					
	Haploid Induction (NLF/PLP2)					
	Herbicide Tolerance (PPT)					
Cocoa	Reduce Cadmium Uptake (TcNRamp5)					
Common Bean	Reduced Antinutrients (Sachyose/Raffinose Synthases)					
Forages	Anti-Methanogenic Compounds					

## Our collaborators .....



**Contact:** Francisco Sánchez - f.sanchez@cgiar.org      Sandra P. Valdés - s.p.valdes@cgiar.org  
 Paul Chavarriaga - p.chavarriaga@cgiar.org