





## In just one year ...

**Project objective I:** Establishment of germplasm working collection and preparation of plant materials.

The project has:

- ◆ established a collection of 110 varieties of *S. tuberosum* and other species of the *Solanum* genus,
- ◆ multiplied all of the material for use in field trials and bioassays,
- ◆ extracted DNA from each accession.

**Project objective II:** Evaluate accessions of *Solanum* wild species from Costa Rica for resistance or tolerance to biotic and abiotic stresses related to global climate change. The project has:

- ◆ evaluated resistance of accessions to pathogens, fungi, nematodes and viruses,
- ◆ evaluated 86 accessions for their efficient use of water and 30–44 accessions for cold and heat tolerance,
- ◆ identified 7 varieties tolerant to drought, 7 tolerant to cold and 4 tolerant to heat.

**Project objective III:** Detect useful candidate genes for abiotic stresses applying different molecular tools.

The project has:

- ◆ identified 9 candidate genes with drought resistance for tolerance to drought, cold and heat.

**Project objective IV:** Develop molecular markers and molecular characterization of the plant materials with these markers. The project has:

- ◆ advanced development of molecular markers with identification of four candidate genes.

**Project objective V:** Pre-breeding activates to combine favourable characteristics and to improve adaptation to climate change applying the developed markers. The project has:

- ◆ crossed for different sources of resistance with favourable characteristics identified,
- ◆ made 393 crosses and obtained progenies in 46 families, creating 6 600 seeds.

**Project objective VI:** Disseminate and transfer project results and products (breeding clones).

The project has:

- ◆ held open-door sessions with farmers and representative of a Spanish potato production company,
- ◆ held conferences and sponsored visits to field trials to transmit information to more than 100 farmers plus guests from the private sector and cooperatives,
- ◆ shared outcomes and methodologies developed by the project among beneficiary farmers, local authorities and communities in the project area,
- ◆ made all identified molecular markers available for researchers who wish to use them.

## Still to come...

◆ Further testing will be done to identify resistance to fungus and viruses in the accessions and progenies, which will also help identify those that have resistance to multiple threats of extreme environmental conditions and pests.

◆ Workshops will be held to update farmers on new materials obtained and the advantage of the new crosses.

### FOR MORE INFORMATION CONTACT:

International Treaty on Plant Genetic Resources for Food and Agriculture  
Food and Agriculture Organization of the United Nations  
Viale delle Terme di Caracalla • 00153 Rome • Italy  
Tel: +39 0657053554 • Fax: +39 0657053057 - E-mail: [pgrfa-treaty@fao.org](mailto:pgrfa-treaty@fao.org)

[www.planttreaty.org](http://www.planttreaty.org)

