

WHAT DO YOU THINK ARE THE RESPECTIVE ROLES OF PUBLICLY FUNDED RESEARCH PROJECTS LIKE G2P-SOL AND OF BREEDING FROM THE PRIVATE SECTOR IN OVERCOMING THESE CHALLENGES?



Dr Kent Nnadozie

Secretary of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)/Food and Agriculture Organization of the United Nations (FAO)

“ Respect, share, conserve

It is essential that publicly-funded research projects always keep in mind the overall good of all, not just a few. Publicly-funded projects do so and must always focus on the public good, especially on those crops and aspects of research that are vital to the global food system but not immediately or directly commercially attractive. To that end, projects like G2P-SOL play a fundamental role in ensuring that global food and nutrition security are not compromised by unbalanced research agenda. Continued research that supports the conservation of our crop biodiversity and the equitable sharing of the benefits arising from our natural resources will help ensure this, and is-quite frankly- critical to ensuring funding for projects focusing on finding ways to support the world's farmers' efforts to continue to feed us all.

While the private sector is more focused on profit margins than larger social good, the fact that virtually all private enterprises in the 21st century now have “corporate social responsibility” as part of their objectives and activities is a positive sign. As long as corporate social responsibility remains on the private sector agenda, there is at least some support for the overall public good, rather than just increased profit for private entities. Smallholder farmers need support to adopt new, sustainable agricultural methods to increase nutrition, productivity and income.

Ensuring the resilience of our natural resources also means that we must be mindful of our natural habitats while leveraging the power of technological innovations. We must also respect our natural resources, including plant genetic diversity, as we share the responsibility of conserving and sustainably using them. In doing so, we will ensure food security now and in the future.

World Food Day 2018 (16 October 2018) marks the 73rd anniversary of the founding of the FAO. The International Treaty on Plant Genetic Resources for Food and Agriculture is important for every nation in the world, and it is important to have everybody join our global community. We all benefit by sharing and working together to conserve the natural agricultural heritage and rich agricultural biodiversity we have been entrusted with for current and future generations.

The ultimate goal of publicly funded projects like G2P-SOL should be to promote the efficient use of plant genetic resources. The importance of the documentation of genetic resources has been frequently underestimated. Efforts have been directed towards collecting activities and the regeneration of accession in order to recover and maintain the germplasm. However, an accession without available documentation is an accession lost in a gene bank. In that sense, the G2P-SOL project aims at developing the most complete database on Solanaceous crops, including passport, characterization and genotyping data. This will provide knowledge about the extent of unduplicated accessions, their phenotypic characteristics and their genotypes. The combination of all this information will increase the use of these sets of germplasm. Additionally, the connection with other databases, now possible thanks to bioinformatics, creates the possibility to complement the information on the accessions with new data obtained in other projects. This opens new possibilities for the utilization of these resources.

The private sector should contribute to increasing the use of genetic resources. The flow of information and materials normally works from gene banks to breeders and other users. However, the system would be much more efficient if all the actors contributed to the documentation and maintenance of the stored germplasm. The private sector can regenerate and characterize accessions, provide seeds and data to the gene banks and also evaluate more complex traits such as resistance to diseases or tolerance to abiotic stresses. All recipients of germplasm should contribute data/seeds to the gene banks. Breeding populations can also be developed by breeders, conserved in gene banks and shared among the breeder community. A new world of possible collaborations between gene banks and breeders is already being explored and implemented in some gene banks. The challenge is to extend the knowledge about these collaborations to the national gene bank networks which have not yet started to do so.

The efficient use of germplasm cannot be promoted by gene banks only and in this scenario, publicly funded projects and the private sector have to interact to get a significant increase in the use of the genetic resources.



Prof. Maria José Díez

Universitat Politècnica de València, Project Partner in G2P-SOL

“ G2P-SOL is a great example of a publicly funded project that is a multinational effort to combine genetic resources scattered across nations and even continents. G2P-SOL provides resources for researchers and breeders alike for generations to come, and as such fulfils a role that neither individual companies nor universities or institutes could achieve independently.

Dr Gert-Jan de Boer

Manager Molecular Biology at Enza Zaden, Member of the G2P-SOL Advisory Board

There is definitely an overlap in interests and roles between research in public institutes and private companies. Within public institutes research is often focused on understanding and unlocking nature's potential, whereas private companies apply and test this potential in product models that are designed to bring its full benefit to growers and consumers.

As such, both public and private research are key to secure food security and production in the future.

Publicly funded research such as the EU Programme Horizon 2020 are crucial to preserve GenRes, notably through the development of conservation methods or the characterisation and evaluation of these resources. G2P-SOL is a good example of an ambitious research programme, improving the quality and quantity of information on GenRes from tomato, eggplant, pepper and potato).

More and more, attention is turning into pre-breeding as a means to use interesting characteristics from less adapted genetic resources for the development of new varieties. Pre-breeding is a prime area for collaboration between research, conservation communities and the private breeding sector. These public-private partnerships are very effective in bringing together expertise and resources from different sectors to work together in a “pre-competitive arena”. They allow for example to work on GenRes of minor crops for which there is not yet sufficient commercial potential. Under the last call of the Horizon 2020 research programme, the European Commission will promote public private partnerships for pre-breeding as part of a wider portfolio of activities to safeguard genetic resources.



Annette Schneegans

Senior Expert at the Research and Innovation Unit of DG Agriculture and Rural Development, European Commission

The views expressed in this interview are strictly personal and do not represent the views of the European Commission.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement Number 677379.