



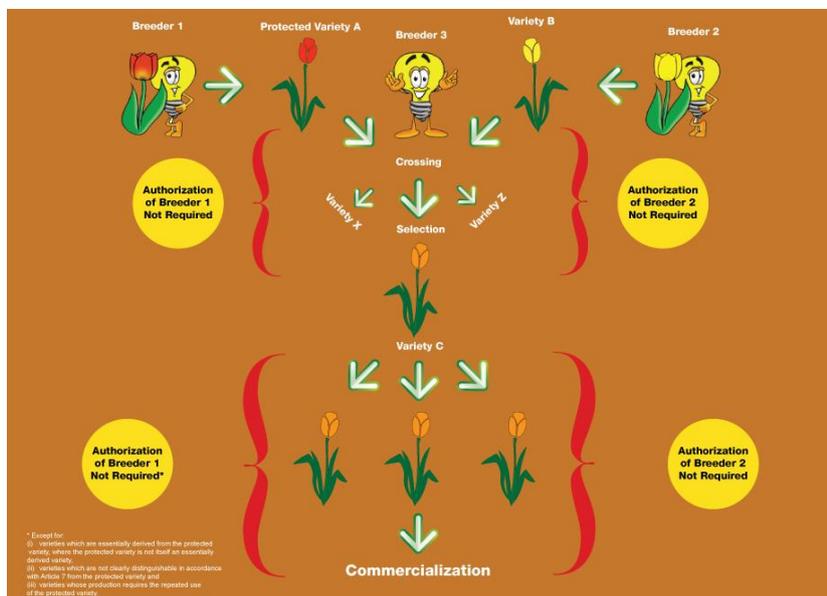
BENEFIT AND BENEFIT-SHARING VALUE OF THE BREEDING EXEMPTION

1. What are plant breeders' rights and the breeding exemption?

As the plant breeding sector became more professional in the early twentieth century, the need arose to protect newly developed plant varieties. Instead of using the already well-established patent rights for this purpose, a new form of intellectual property right was created and laid down in the international UPOV Convention of 1961, called plant breeder's rights. Plant breeders' rights give the developer of a new variety the possibility to prohibit others from producing or selling plant propagating material of that variety, thereby creating temporary exclusivity to obtain return on investment. At the same time, an important cornerstone of the UPOV-type plant breeder's rights system is the compulsory exception to the breeder's right which provides that all varieties protected by plant breeder's rights can be freely used for further breeding by anybody, be it (professional) breeders, farmers, public research institutes, gene banks, amateurs or others; the resulting variety can then be freely commercialized (the so-called "breeding exemption"; see Picture 1).

In this way, plant breeder's rights have found a balance between rewarding the breeder for his efforts in developing a new variety on the one hand; and, on the other hand, serving a social interest by safeguarding the customary possibility for continued improvement of plant varieties by others, leading to a wide choice of varieties with traits the market demands. This feature can be regarded as an "open source" system and has always been relied upon by breeders for further improvement on each other's varieties.

Picture 1: The breeding exemption (source: UPOV)



2. What is benefit-sharing?

A genetic resource accessed by a recipient may generate benefits to such recipient. Benefit-sharing is a fair way to ensure that in return for the access the benefits deriving therefrom are shared with the provider of the genetic resources.

According to Article 13 (entitled “Benefit-sharing in the Multilateral System”) of the International Treaty on Plant Genetic Resources for Food and Agriculture (“IT”) benefit-sharing can take several different forms. Article 13.2 identifies the following four benefit-sharing mechanisms:

- ✿ exchange of information;
- ✿ access to and transfer of technology;
- ✿ capacity-building;
- ✿ sharing of monetary and other benefits of commercialization.

3. The benefits and the benefit-sharing value of the breeding exemption

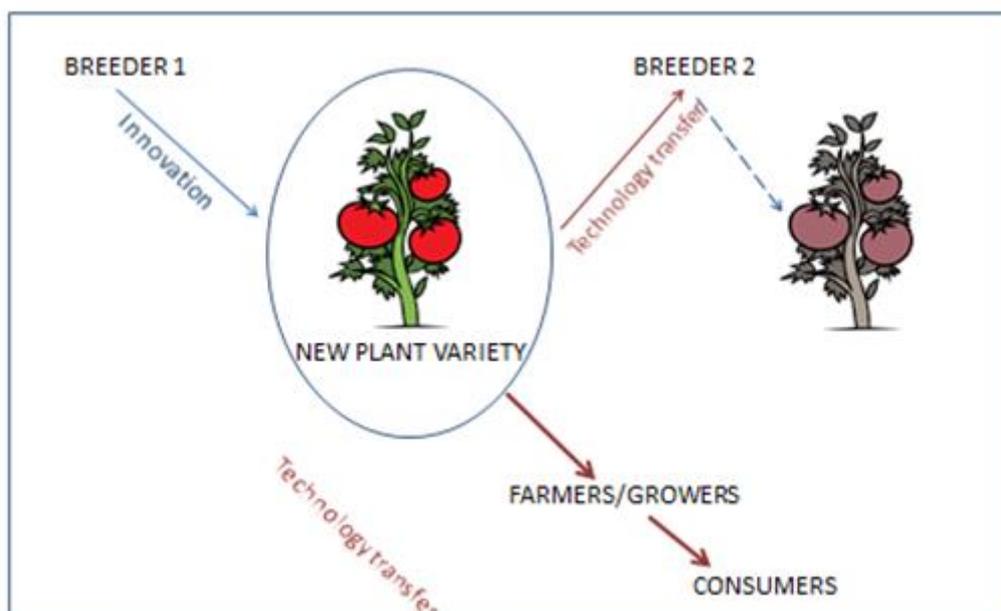
Innovative plant breeding is a time-consuming and costly endeavour that requires plant breeders to invest on average up to 20% of their turnover into the development of new varieties that are better adapted to environmental challenges and societal demands, have higher quality and better productivity. Time-wise using commercial varieties in breeding has an important advantage compared to using wild material even though wild material is an indispensable source of important traits. Developing a new variety from cultivated material takes on average 7 to 15 years from the first crossing, while incorporating a trait from wild material into a new, commercial variety, may take on average 20 years. Wild material, even when belonging to the same species as cultivated material, can have entirely different characteristics (different leaves, different colour, smaller fruits etc.). When crossing with wild material, not only the desired traits, but also a lot of undesired traits will transfer. The bigger the difference between the wild material and the cultivated variety, the more breeding cycles are needed and thus the longer it takes to develop a new commercial variety with the desired trait and without the undesired ones. Once an important trait is incorporated from wild material into a commercial variety it is therefore much more efficient if other breeders can introduce the trait also in their varieties without being forced to start from the wild material.

Given this advantage of using already improved varieties, being unique combinations of genetic building blocks, the breeding exemption provides a huge benefit to others wanting to develop a new variety with a similar trait, but in a different combination. The time and money that they save can instead be invested in the development of varieties with even newer and better traits. This allows plant breeders to respond more quickly to the current and future societal, environmental and other challenges and to the wishes and demands of their customers and in, the end, of the consumers such as a need for a variety with a higher production rate in given specific conditions across the world, with a resistance to a certain disease or with a better taste. The advantages of the breeding exemption thus contribute to **speeding up the innovation process**.

In this way, the breeding exemption provides for the same benefit as the Multilateral System, being **facilitated access** to genetic resources. As explained above, in order to use a variety protected by plant breeder's rights for further breeding there is no need to ask permission from the right holder neither are there any other constraints attached as a result of the protection by plant breeder's rights (such as licensing requirements or exclusivity periods). At the establishment of the IT the unrestricted release of varieties was regarded as an optimal form of benefit-sharing which has been recognized in the provisions of the IT and the SMTA according to which for products accessible for further breeding without any restrictions no monetary benefit-sharing is required.

As to its benefit-sharing value, further to the above, the breeding exemption goes beyond the mere **exchange of information**. In the field of plant breeding the use of a plant genetic resource has a benefit in case the plant genetic resource contains an interesting trait and the breeder can introduce this trait in commercial varieties. The breeding exemption is exactly about sharing this benefit as others may use the commercial varieties with the specific trait for breeding new varieties. Exchange of information as such does not amount to the same level of benefit-sharing as the breeding exemption since it is a matter of fact that a new plant variety is always developed by using existing plants; by just exchanging information other breeders do not share the real benefit as a new variety cannot be developed from information alone. Breeders can develop new varieties from the commercial varieties with the specific trait. The breeding exemption is therefore not only exchange of information but much more than that. It is the optimal form of benefit-sharing in the field of plant breeding.

As mentioned before, via the breeding exemption the plant breeder's rights regime provides for an "open source" system which is an important tool that makes the sharing of R&D results possible as well. Since the free use of the improved varieties is given by the breeding exemption this exemption indirectly also provides **access to the technology** used to develop the improved plant variety.



The fact that – via the breeding exemption – plant breeder’s rights creates an open innovation system allows plant breeders to ***continuously increase diversity in plant genetic resources*** via the continuous creation of new plant varieties. In the EU, for example, every year approximately 3500 new varieties of agricultural and vegetable plant species are made available on the market¹ providing a huge pool to choose from, which is essential to avoid a narrowing of the genetic base. When breeding is done using the same, limited number of resources every time, eventually the genetic base of a variety will be narrowed, making it more difficult to respond to new diseases and to develop a strong and healthy variety.

As via the breeding exemption free access to genetic diversity - constituting the bottleneck to the industry - is ensured, this specific feature has also helped to ***preserve and promote a diversified breeding industry*** consisting of big as well as many small and medium-sized, but competitive and high-performing breeding companies. Thus, the breeding exemption also ensures that farmers and growers have a wide range of varieties to choose from. Varieties which – as a result of the breeding exemption – will all have the most essential traits, necessary for a successful harvest. This is ***key to food security***.

4. Who benefits from the breeding exemption?

- ✿ Everybody who crosses and selects plants. These can be breeders, farmers, public research institutes, gene banks, amateurs etc. Since the idea of the breeding exemption is to allow further improvement on each other’s varieties it provides that the genetics of all varieties are freely available to anybody to create new varieties and thereby increase the diversity in plant genetics.
- ✿ Farmers and growers. They are the first ones to directly benefit from the value of the breeding exemption via the rich choice from a wide range of new and improved varieties made available to them.
- ✿ Consumers / Society. The greatest benefits from the breeding exemption go to the whole society via the continuous provision of improved, safer, healthier and less expensive food, less environmental harms and better choice of products.

¹ The EU Common Catalogue of agricultural and vegetable species is accessible here:
<http://ec.europa.eu/food/plant/propagation/catalogues/database/public/index.cfm?event=homepage&CFID=3184338&CFTOKEN=6c80bb1330b03feb-6114016C-D138-FCD5-F1AE520B23801D25&jsessionId=93076ed7b6e22514f5f9385e14b400485b54TR>

The breeding exemption is thus more than:

- Information exchange
- Technology transfer

It is:

- Facilitated access to plant genetic resources
- The key to speedy innovation in plant breeding
- A catalyst of continuous increase in diversity in plant genetic resources
- A key element in the maintenance and promotion of a diversified breeding industry

It is thus key to sustainable use of plant genetic resources and with that to ensuring food security.