

How PBRs coexist with other seed systems to the benefit of farmers – a practical example in vegetables

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UPOV Seminar “Bringing Innovation to Farmers: New Varieties, New Opportunities”

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Content



- **Business opportunities for vegetables in Africa – Growers are entrepreneurs**
- Why have PBRs?
- Seed choice for farmers

This is what I am going to talk about today.

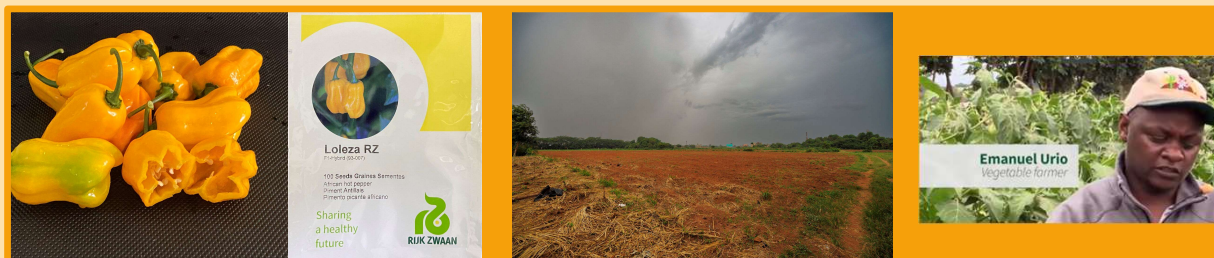
Video: Business Opportunities for Vegetables in Africa



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Video on Youtube: <https://www.youtube.com/watch?v=FSMdzc3GyVY>

Grower success = variety + environment + people



Breeders improve varieties to achieve more grower success



Breeders train farmers in how to make the most of a variety to achieve more grower success



As this example of hybrid eggplants grown in Tanzania shows, the right combination of improved varieties, the appropriate environment and well-trained people can lead to the seed cost of an entire crop being recovered with the return for 30% of the crop, leaving the rest 70% serving as profit for the farmer – as we just heard in the previous testimonial.

Growers are entrepreneurs

 <p>Emanuel Urio Vegetable farmer</p> <p>I planted the hybrids on one side and the local varieties on the other.</p>	 <p>Having the choice between varieties allows the grower to pick the variety that best suits his field, experience, and market</p>	 <p>In terms of investments in the seeds, there is no risk at all.</p>	 <p>Growers can make a choice to select more expensive varieties if the business case is solid</p>
 <p>Another difference is that the local ones produced very few fruits, around two bags.</p>	 <p>Variety performance can be measured on farm level...</p>	 <p>We call them early and let them know the quantity, and they pick everything up.</p>	 <p>Access to markets allows growers to convert knowledge and improved varieties into cash</p>
 <p>The hybrid varieties produced between six and eight bags.</p>	 <p>...using objective criteria important to the grower</p>	 <p>Knowledge sharing about growing practices, like fertiliser use, allows growers to extract value from variety</p>	



PBR – Variety value correlation

Risk of IP infringement

+

↑

Commercial varieties: hybrids & other breeder improved varieties

- Hybrid vigour improves variety performance
 - Higher investment for growers
- Varieties are developed by companies looking to recoup their costs

Commercial varieties protected by PBR

- PBR applied for in case of risk of illegal reproduction and taking into account commercial value

No risk of infringement = no PBR

Variety value/quality

+

→

Landraces & Traditional varieties

- Open pollinated
- Widely available
- Not protected, usually no risk of IP infringement
 - Quality can be high, can be low
 - Low investment for grower
- Many varieties for all vegetable crops exist in this category, everywhere in the world

Old varieties

- PBR is temporary. Every year, varieties lose protection and are succeeded by newer, improved varieties, protected by PBR.
- This increases the number of varieties available for growers, and growers might choose to work with formerly-protected hybrids if this fits their business case.

Video: Farmer's experience (4:28)



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Video on Youtube: https://www.youtube.com/watch?v=J0FYy_hedHY

African hot pepper

- Market access advice
- Growing advice:
 - Irrigation
 - Fertilizer use
 - Insect resistance
- Long shelf-life
- Predictable weight – important for retail commercialization



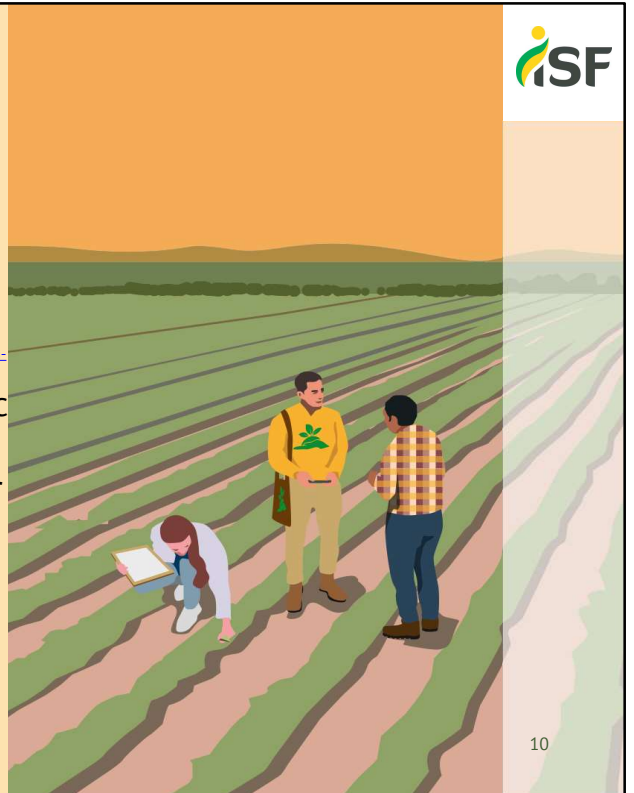
Public-private partnership

- African hot pepper variety developed during a public-private partnership (the SEVIA Project - Dutch government and national agronomic institute)

Source: <https://www.seednl.nl/blog/seeing-is-believing-sevias-approach-of-knowledge-transfer-through-experiential-learning>

- Some of the rights over the resulting genetic material were vested upon Rijk Zwaan who decided to continue breeding with it as their private investment
- Crops/varieties (hybrids) developed in Africa, with African breeders, for the African market

=> When public funds stop, the program stops unless there is a business case for investment.



Takeaways

- Worthwhile investing in crops when the variety adds value in the value chain.
- There is no quick profit in breeding.
- Long-run expectations from investment justify the minimum 20-year term of PBRs.



Content



- Business opportunities for vegetables in Africa – Growers are entrepreneurs
- **Why have PBRs?**
- Seed choice for farmers

Why have PBRs?

UPOV mission statement:

*“Provide and promote an effective system of plant variety protection with the aim of **encouraging** the development of **new varieties of plants**, for the benefit of **society**.”*



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UPOV is the framework for innovation.

How do we create a system that leads to better products – in this case, better plant varieties?



Importantly to point out two things:

1st – **only innovative varieties resulting from true research and development, therefore from true investments, will receive PBR.**

2nd – **only successful varieties will make a return on investment.**

(Farmers are very smart and they do not switch from one variety to another unless, after they have grown in parallel the variety they already use and the one newly proposed, they see an improvement provided by the new one and they conclude that they can derive a benefit from cultivating the new variety.)

(PBR → incentivizes breeding and development → new varieties satisfying NDUS → quality seed brought to market → greater choice of varieties for farmers → farmers select varieties offering characteristics that respond to their needs → returns to breeders → reinvestment in R&D.)

A: PBRs = a tool to recover investments

Content

- Business opportunities for vegetables in Africa – Growers are entrepreneurs
- Why have PBRs?
- **Seed choice for farmers**

PBR: seed choice for farmers



- Breed / discovered & developed
- Distinct
- Novel



New combination(s) of characteristics on the market

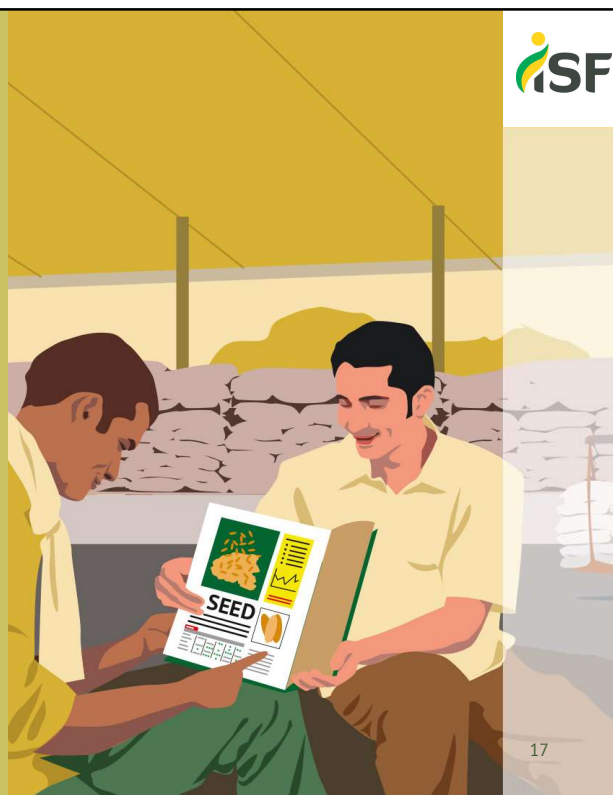


Seed choice for farmers



Market performance depends on how good the novel variety is.

Only if the innovation is good enough, will the breeder recoup its investments.



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- 1, 2
- What happens after breeders launched new varieties on the market is **outside their control** because the laws of offer and demand in a market economy will determine the outcome.

Therefore, breeders hope that PBRs will serve as tool to recover their investment, but they cannot control the outcome.

- 3. Breeders can only create seed choice for farmers.
- Whether or not breeders recover their investment in bringing new plant characteristics on the market depends on the market performance of that variety, which in turn depends on farmers' choice.
- 4. As the slide reads...



Distinct/new:
legal threshold for PBR



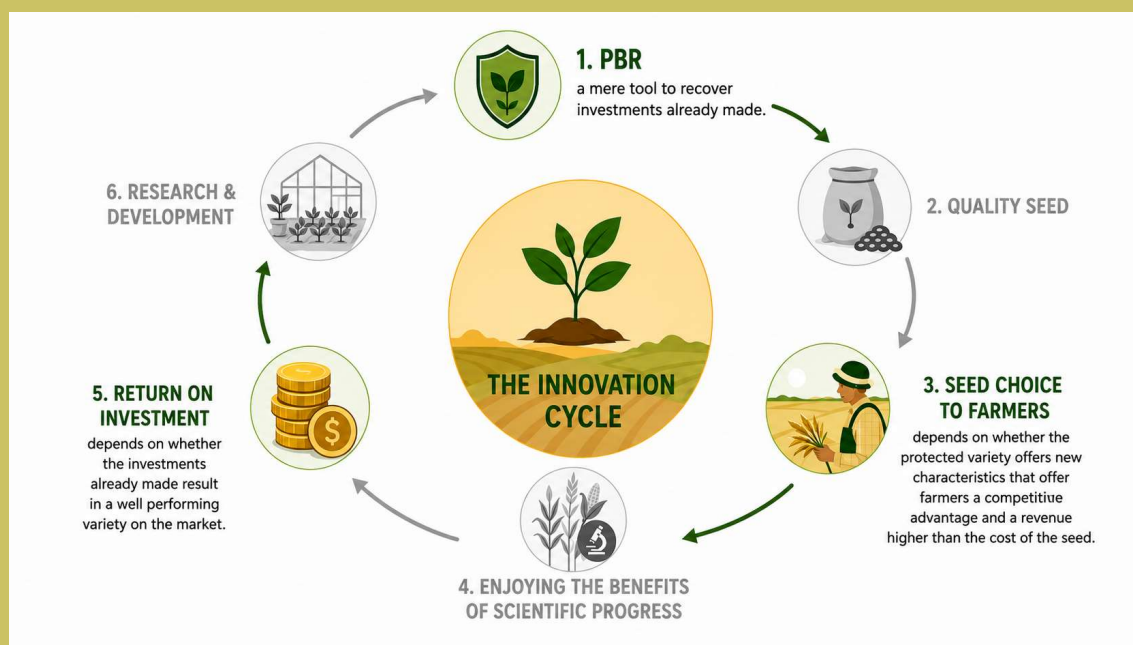
Improved/valuable:
the outcome ultimately
assessed by farmers
and the market.



In summary...

What is required of breeders for PBR

What happens with the protected variety once on the market



A variety placed on the market and protected by PBR is not automatically successful and does not restrict farmers' access to seed. They can choose or not.



KEY MESSAGE:

PBRs are based on NDUS (Novelty, Distinctness, Uniformity, Stability).

PBRs encourages innovation, by rewarding breeders for successful innovation

Farmers and markets determine which innovations are truly valuable.



Farmers choose the varieties that best meet their needs:



Yield & productivity



Resilience



Quality & nutrition



Access & affordability



The market rewards the innovations that deliver real value.

Innovation can never be imposed to farmers.

Breeders can only offer **seed choice**.

The limits of PBR's role are defined by farmers and the market themselves. Farmers are very smart and they do not switch from one variety to another unless, after they have grown in parallel the new variety and the variety they already use, they see an improvement provided by the new one and they conclude they can derive a benefit from cultivating the new variety.



Seed is Life



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