



The Contribution of Seed to Sustainable Food Systems

Setting the Scene – the triple challenge

Global agriculture is expected to deliver on a formidable triple challenge. First, it must provide food security, by ensuring that healthy and nutritious food is available and affordable for the world population. This needs to be done sustainably, by protecting and conserving the planet's resources: producing more food on the same amount of land while using less water and other resources. It must also generate incomes and provide livelihoods to farmers worldwide, as well as others in the food chain.

Many countries reviewed, or in a process to review, their current agricultural policies with the aim to ensure food security but at the same time reduce environmental impact of agricultural production and provide sufficient incomes to farmers.

The development of new plant varieties that respond to the effects of climate change, with features such as disease resistance, drought, salt & flood tolerance combined with high yields and good eating quality need to be combined with farmer access to good quality seed. High quality seed of new varieties has the potential to improve the sustainability and resilience of farming while raising income for farmers. These benefits will be passed on to consumers in the form of improved food security, greater choice and affordability.

The OECD Seed Schemes at the service of sustainable and resilient food systems

The OECD Schemes' scope is to facilitate the movement of high quality agricultural seeds across borders by harmonising certification standards and procedures. This harmonisation helps to improve domestic production, develop export markets, and provides trust and reassurance to farmers, plant breeders and authorities through an inclusive and participatory standard setting process and a robust seed varietal certification system.

→ Food Security

Increases in food production continue to be crucial for the future as the world population and demand continue to grow. The seed sector directly influences three dimensions of food security and nutrition: food availability, access, and stability.

By ensuring access to consistently high quality seeds, the OECD Seed Schemes thus contribute to food security and nutrition through productivity growth, enhanced resilience and quality improvement, allowing a greater availability of nutritious food at affordable prices.

→ Livelihoods

Access to new high quality varieties can deliver important gains for farmers, boosting agricultural productivity, improving the quality of crops and reducing production risks thereby ameliorating rural livelihoods.

The OECD Seed Schemes facilitate access to consistently high quality seeds of new varieties and ensure that farmers can trust the seed they are buying. Apart from delivering new varieties, OECD certification maintains supplies of established varieties whilst there is a demand for them. The Schemes can provide access to new markets for breeders and seed producers leading to higher income and creation of more business nationally and internationally.



→ Environmental sustainability

By helping farmers achieve greater yields, high quality seeds may help reduce the need to increase the area of agricultural land. New varieties also offer important opportunities for reducing water, fertiliser and pesticide use by improving input efficiency and thus helps to mitigate the negative effects of climate change

The OECD Seed Schemes play a key role in the distribution of these plant-breeding innovations from the breeders to the farmers by facilitating the distribution of seed of these adapted varieties worldwide via the OECD seed varietal certification system.

Policy recommendations:

I. Ensure the integrity and robustness of the OECD seed varietal certification system

The Seed Schemes ensure the robustness of the system via maintaining traceability and reducing fraud. However, the current system can be further developed:

- **Support the digitalisation of the OECD Seed Schemes:** Digitalisation of the OECD seed varietal certification system can further improve the traceability of the seed lots and increase the robustness and reliability of the system. Digitalisation can also decrease fraud by making it more difficult to counterfeit seed lots. It can lead to a more transparent international seed trade and better data availability on ongoing seed production and availability of seed to match demand for the next planting season.
- **Measure the impact of certification:** The impact of varietal certification on the international seed sector could be measured by the use of OECD or equivalent standards at national and international level, and by the actual benefits for its members. Seed certification statistics could be further improved to that effect.
- **Measure the implementation of the Seed Schemes in participating countries.** The OECD seed varietal certification system should be implemented on the same high-level in all participating countries. Self-assessments and peer reviews should be undertaken more frequently on the implementation of the OECD certification system in participating countries. Non-implementation issues should be reported regularly and managed via the Seed Schemes' voluntary dispute setting process .
- **Support innovation in seed certification practices:** The seed certification techniques are continuously developing. Participating countries should support the evaluation and possible adaptation of new technologies in the current inspection practices to improve further the transparency and efficiency of the OECD seed certification system (e.g. use of biochemical and molecular techniques in seed certification or new labelling techniques).

II. Promote the development of international seed supply chains and the diversification of seed production

While self-sufficiency is important, many countries cannot supply their farmers with sufficient seed of their choice with their own national seed production. Thus, internationally interconnected seed supply chains have considerable benefits for the majority of countries in terms of economic stability and activity.

- **Support internationally interconnected seed supply chains:** The economic risks of nationalising seed production are higher than maintaining international seed supply chains and developing policies to mitigate the associated risks. Thus, supporting the seed



sector to diversify the seed production to different locations worldwide is beneficial for the stability of seed supply and the availability of a diverse variety choice for the local farmers. This diversification is supported by international trade facilitation, e.g. membership in the OECD Seed Schemes.

- **Support capacity building activities:** Developing countries should be supported to develop their national seed sector in line with the international regulatory framework e.g. via the OECD Seed Schemes capacity building activities or twinning programmes. This development could increase a country's potential to participate in the international seed supply chain as a seed producing country but also enables local farmers to access high quality seed of modern varieties, delivering both local and global benefits. This has positive implications for food security as well as for the incomes of seed producing farmers and breeders. It also helps spread good practice and expertise in seed growing more widely raising both quality and reliability of the seed produced

III. Promote international regulatory cooperation and active participation in the regulatory work of IOs involved in the seed sector

An enabling international regulatory framework for seed production and trade can support the resilience of international seed supply chains and the diversification of seed production. The regulatory framework ensures the genetic integrity and health of seed during the various seed production steps and the exchange of seed between countries by preventing non-tariff barriers. It also ensures the protection of plant breeders' rights in seed producing countries, which encourages breeders to allow multiplication of their varieties in multiple locations around the world.

- **Support and further develop the international regulatory framework for seed production and trade:** Government policies should focus on the support and further development of the international regulatory framework for seed production and trade. Governments are advised to actively participate in the regulatory work of international organisations (IO) such as OECD Seed Schemes, UPOV, FAO and ISTA.
- **Digitalisation of the international regulatory framework** for seed production and trade and possible integration of these digital systems would have benefits for the stakeholders via the integration of different IOs systems (OECD, ISTA, IPPC etc).

IV. Ensure farmers access to innovations

New technologies and innovation are essential to improve the productivity, sustainability and resilience of food and agricultural production, and innovations in plant breeding and testing technologies are particularly crucial in addressing the triple challenge.

- **Maintain state-of-the art certification system:** timely responses to innovations and challenges in the seed sector e.g. developing new certification processes to support new seed production techniques can facilitate the access to new plant breeding innovations for farmers.
- **Maintain a relevant variety registration system:** Taking into account SDGs in breeding programmes and supporting innovations in the acceptance of varieties into the Seed Schemes may lead to new varieties that support the sustainable development goals.

