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Key Messages

- Introduce a new Seed Law for Mongolia to facilitate crop production
- Introduce a Plant Variety Protection Law to promote breeding of adapted and suitable varieties
- Consider international Plant Variety Protection Systems (UPOV) and Seed quality standards (OECD Seed Schemes)
- Encourage private breeding and seed production

Authors

Trautwein, Friedhilde
Bundessortenamt, Referat P1
Friedhilde.Trautwein@bundessortenamt.de

Dr. Kather, Alfred
Projektleiter
Deutsch – Mongolisches
Kooperationsprojekt Nachhaltige
Landwirtschaft (DMKNL)
a.kather@iakleipzig.de

Development of the Mongolian seed sector - a precondition for successful crop production

The quality of seed is of strategic importance, because it is a key element for the success of agricultural and horticultural production. It is indeed essential that farmers have access to high quality seed of high performing varieties in order to supply a sufficient amount of agricultural produce of staple food, vegetables and fruits for the population of Mongolia. High yielding varieties with good quality characteristics that are adapted to the environmental conditions and are resistant to pests and diseases will ensure a steady supply of food at reasonable prices to the Mongolian people and thus reduce the risk of food shortages

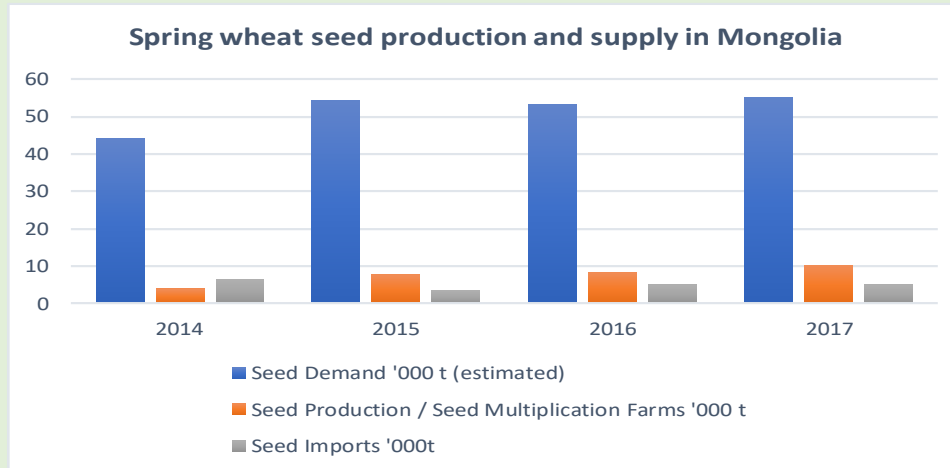
Seed sector strongly influenced by governmental organizations

The seed sector in Mongolia is widely influenced by the Ministry of Food, Agriculture and Light Industry (MoFALI) as well as other governmental organizations. The Crop Support Fund buys domestically produced and imported seeds and sells it to farmers at favorable repayment terms, the National Emergency Management Agency (NEMA) stores and provides large amounts of seed in case of emergency and the General Agency for Specialized Inspection (GASI) is responsible for seed quality control and field inspection.

Variety breeding is mainly carried out by the Institute of Plant and Agricultural Sciences (IPAS), which belongs to



the Mongolian University of Life Sciences. Most seed and planting material is multiplied by a limited number of private agricultural enterprises.



Shortage of high quality seed of adapted varieties for Mongolian demands

However, in many years, the domestic seed supply does not meet the seed demand. Seed on the market is scarce, with the effect that farmers use part of their harvest as seed over several generations (or reproductive cycles). This inevitably leads to a decrease in quality and yield over time.

Imported seed from other countries often does not meet the standards necessary for efficient agricultural production. As no legal requirements for seed have been established, seed buyers, i.e. the farmers cannot rely upon important criteria such as varietal identity, germination capacity, purity and other properties of seed are adhered to.

The way forward: new Mongolian seed legislation

The current Mongolian “State Policy on Food and Agriculture” as well as the “Strategy on Sustainable Development of Mongolia – 2030” emphasizes the importance of the seed sector by encouraging variety breeding, seed production and agrobiodiversity to initiate development in Mongolian agriculture and to support its progress.

The existing legal framework, which is based on the 1999 adopted seed law, does neither meet the current demands of the Mongolian seed sector nor does it comply with international regulations concerning plant variety protection and seed certification for the marketing of seed.



Setting up an efficient system of variety registration and seed certification contributes to sustainable agricultural and horticultural production and, indirectly, to the reduction of food loss and wastage.

Appropriate seed legislation at the national level is essential to create an enabling environment for the development of the seed sector and agriculture, with the instruments of variety registration, plant variety protection, seed production, seed certification, packaging and labelling for marketing.

A new Seed Law: Support farmers in getting access to seed of good quality

Improved varieties and high-quality seeds are basic requirements for productive agriculture. It is imperative that farmers have access to sufficient seed of good quality and are able to choose within a range of suitable varieties.

As the identity of the variety and the seed quality criteria cannot be assessed visually by the farmer when purchasing the seed, it is essential to introduce a certification system based on legal regulations, i.e. a Seed Law. The main objective of adopting a Seed Law is to protect farmers from fraudulent sales of low quality seeds by regulating seed production and seed marketing.

It will ensure **varietal identity and purity of the seed** through appropriate requirements and controls throughout the crop growing for seed production, seed processing, packaging and labelling procedures.

Variety registration based on variety testing aims at generating information on the identity of the variety. According to international standards, e.g. the International Union for the Protection of New Varieties of Plants (UPOV) Convention, it must be distinct, uniform and stable (DUS). In addition, the performance of a variety can be a prerequisite for economically important agricultural plant species. Their value for cultivation and use (VCU) would be tested at different trial sites to show their ability to perform under different agro-ecological conditions.

Seed quality standards will be laid down in the seed regulations. A seed quality assurance infrastructure with respect to field inspection and seed testing will be established for official seed certification.

When purchasing officially certified seed, farmers have the guarantee that the multiplication sites were inspected and the seed was laboratory tested, e.g. for germination capacity and analytical purity, and that the seed complies with the legal requirements. An adequate supply of certified seed at reasonable prices will enhance crop productivity and availability of food on the market.

Market control of seed will ensure the implementation of the Seed Law and strengthen the interests of the farmers.



Harmonized certification procedures will facilitate seed trade with neighboring countries or even worldwide. Experience shows that the implementation of harmonized international seed schemes, such as the OECD Seed Schemes, helps to facilitate the import and export of high quality seed. Using international standards as a basis for the national Seed Law will in addition increase its acceptance by the stakeholders.

Knowledge transfer concerning information on the importance of seed quality will become a crucial part in the training of farmers, which is a precondition to improve farmers' productivity.

A new Plant Variety Protection Law¹: How it benefits breeders, farmers and society

Climate and soil conditions in Mongolia pose quite a challenge to agriculture, particularly to plant production. Short growing seasons due to long and cold winters, arid climate and degraded soils require the cultivation of varieties that are able to perform well under such difficult environmental conditions.



Photo: DMKNL 2016

Plant breeding can provide an enormous contribution to agriculture as breeders aim to develop varieties with

- higher yield
- resistance to pests and diseases
- tolerance to abiotic stresses
- better quality traits, such as nutritional value, baking quality, shelf life, etc.
- new traits for different usage of plants, e.g. energy production

thus, increasing harvest security for the farmers and food security for the population.

¹ also known as *Plant Breeders' Rights (PBR)*



Breeders need Intellectual Property Protection

Breeding varieties is an expensive and long-term process, taking 12 to 15 years on average, whereby intensive research and development work is needed. As plant varieties usually can be easily and quickly reproduced, breeders need protection for their intellectual property in order to re-finance their investments in breeding.

Plant Variety Protection allows them to recover their investments by collecting royalties and hence is crucial for a continued supply of high quality varieties.

Granting Plant Breeders' Rights for varieties means that only the breeder (or title holder) is authorized to multiply and market seed of the protected variety. This allows for the reimbursement of the long time and the high costs invested for the breeding process and can be seen as a strong incentive for breeding.

The Plant Variety Protection Law guarantees two decisive exemptions for the benefit of breeders and farmers:

- Breeder's exemption

Unlike patents, protected varieties may be used by any breeder for further breeding. This "open source" system promotes further breeding progress.

- Farmer's exemptions

Farmers are authorized to use their own harvest of protected varieties for cultivation purposes. This safeguards agriculture by ensuring that farmers may multiply the seed and use it on their own farm.

In addition, Plant breeders' rights usually expire after 25 years, allowing free multiplication and marketing of the seed afterwards.

Plant Variety Protection Law: Impact assessments

Reports of impact assessments after the introduction of a plant variety protection system in several countries have shown an increase in breeding activities, leading to an increase in the number of new varieties (*UPOV, 2005 and HFFA, 2017*).

With a Plant Breeders Rights Law in force, new and in particular private breeders are encouraged to engage in plant breeding; the competition leading to the marketing of improved varieties for farmers and growers, in addition providing improvements along the marketing chain and better meeting of consumers' needs.



More foreign varieties will be introduced, offering a wider range of suitable varieties for the farmers. In addition, foreign varieties can be used by local breeders for further breeding (breeder's exemption) and thus promote also domestic breeding.

Hence, strengthening the seed sector by PBR will bring progress in agricultural production to the rural areas and advantages to the urban population.

The effects of Plant Variety Protection show that the introduction of Plant Breeders' Rights by a Plant Variety Protection Law will result in overall economic benefits for the society.

Conclusions

- The role of new seed legislation is to facilitate a conducive environment for the development of the seed sector. This will directly benefit farmers and seed producers and indirectly the Mongolian economy and consumers of agricultural products.
- National seed legislation should follow the international principles of UPOV, so that Mongolia eventually may access UPOV membership, if so desired.
- Following international standards (OECD Seed Schemes) will improve the quality of seeds delivered to the farmers and enhance options for export.
- As the seed sector develops, the government should focus on specific tasks, such as variety registration, field inspection and seed quality control.
- Government seed policy should encourage and support private sector growth in order to spur innovation and maximize access to productive genetic resources.
- Just as important as a supportive policy environment is the need for effective implementation of these policies. Support is needed to build domestic capabilities for field inspection, laboratory services, and administrative / certification procedures.

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Disclaimer: Views and assessments articulated in this Policy Brief are those of the authors. They do not necessarily represent the views of the German Federal Ministry of Food and Agriculture (BMEL) with whose support the German-Mongolian Cooperation Project Sustainable Agriculture is running.



The Federal Plant Variety Office (Bundessortenamt) with its headquarters in Hannover, Germany, is responsible for national listing of Plant Varieties and granting of Plant Breeders' Rights. Each year, around 800 to 1000 new candidate varieties are applied for National Listing. They are tested according to international test guidelines (UPOV, CPVO) for Distinctness, Uniformity and Stability (DUS). In addition, varieties of agricultural species must show Value for Cultivation and Use (VCU). DUS testing for Plant Breeders' Rights is mainly carried out for EU-wide Plant Variety Protection, granted by CPVO. The Federal Plant Variety Office has 7 testing sites and 300 – 350 employees.



The DMKNL project is implemented by a consortium of well experienced consulting companies - IAK Agrar Consulting, AFC Consulting International and DLG International as well as the agricultural training center DEULA Nienburg.

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