

## **Restructuring a centrally planned seed sector to a privately owned and market oriented sector in eastern europe, with particular reference to FSU: Policy, legal and institutional aspects**

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### **Introduction**

The seed sector in the former Sowjet Union (FSU) was organised according to the principles of a centrally planned economy consisting of monopolistic state organisations including scientific institutes having specific crop breeding and seed supply responsibilities. The ministry of agriculture (MOA) had the main control over production and agricultural supply systems and in the case of seeds, granted production licenses to selected farms linked to the breeding institutes which act in economic association<sup>3</sup>. With the begin of the economic reforms the relationship between these vertically integrated units have shifted to a commercial basis since they now have become often autonomous as Joint Stock Companies (JSC).

A major issue in the ongoing reform process of the seed sector towards a market economy is the adoption of an adequate policy, legal and institutional framework required to facilitate the adjustment process. The main objective of this paper is to outline the legal and institutional framework required for a privately owned and market oriented seed sector. It has been prepared for staff involved in the transformation process of seed sectors in Eastern Europe. Since the process of globalisation and internationalisation of seed is proceeding fast the transformation process of the seed sector has to be speeded up so that national seed sectors

remain competitive. The faster the adjustment process with regard to policies, institutions, structure and conduct of seed enterprises is implemented the better are the chances for growth of the national seed sector and chances of integration in the international seed market.

The paper will outline the legal and institutional framework of seed sectors operating in EU countries, listing relevant laws. It is hoped that the discussion of these principles will contribute to a better understanding of the functioning of seed sectors in market economies and will thus contribute to the formulation of adequate policies and structural adjustment strategies of the seed sector in FSU<sup>4</sup>.

### **Government Policy in Market Economies**

The overall objective of government policies in western market economies is to provide a policy and institutional framework which promotes a competitive, consumer-oriented<sup>5</sup> seed sector based on private ownership. In other words, the government sets the rules and regulations for the private sector in a market economy, but leaves the main decisions on organisation and development to the private sector. In the west, adequate market oriented policies have contributed to the growth and competitiveness of national seed enterprises. The policy framework is based on an active participation of the various groups involved, namely farmers, traders and breeders who have to come to a consensus<sup>6</sup>. Policies must be transparent and must reflect the interest of the parties involved as well as the society as a whole. Rules and regulations have to be clear to the parties concerned and provide incentives.

### **Legal framework<sup>7</sup>**

The plant breeding and seed marketing sector is legally governed by a complex legal framework, which has been developed over decades of experience. The objective of the legal framework is to promote an efficient, and market oriented and fair seed system which meets the legitimate interests of the market participants. In general, it consists of two parts. One part refers to the protection of plant breeders against abuse of their breeding efforts by competitors or farmers. Breeding and marketing of plant varieties of cultivated plants is promoted by ensuring legal protection of varieties, similar to the patent-law in industry.

The other part of the legal system refers to seed production and marketing and aims at a well functioning and progressive<sup>8</sup> seed marketing system. The main objective of the

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<sup>3</sup> Pospelowa, G. und Schinke, E. (1988): *Organisation der Pflanzenzüchtung und Saatgutproduktion in der Sowjetunion*, Zentrum für kontinentale Agrar- und Wirtschaftsforschung, Gießen; Mittendorf, H.-J. et al (Agrar Consulting GmbH Einbeck), 1993: *Der Saatgutsektor in den Gebieten Tjumen und Ivanovo der Republik Russland* (unpublished).

<sup>4</sup> The authors appreciate comments received on an earlier draft from Mr. Caviezel, Novartis, Vienna, Mr. Rücker, Bundesverband deutscher Pflanzenzüchter (BDP), Bonn, Dr. Bormuth, Bundessortenamt (BSA), Hannover.

<sup>5</sup> R. L. Kohls, Uhl, J. N. (1985): *Marketing of agricultural products*, 6th edition, London, p. 44.

<sup>6</sup> Johnson, S. R., (1988): *Institutional versus Policy Reform in Transition Economics*, Froberg, K., W.-R. Pogonietz (ed.), *The importance of institutions for the transition in Central and Eastern Europe*, Kiel, p. 25.

<sup>7</sup> See A. F., Kelly, George, A. T., (1998): 'Encyclopaedia of Seed Production of World Crops' and Robert Tripp (Ed.), *Overseas Development Institute (1977): New Seed and Old Laws, Regulatory reform and the diversification of national seed systems*, for an excellent and comprehensive overview about the legal framework regarding plant breeding and seed production and marketing and various additional examples of national legislation.

<sup>8</sup> "Demonstrated performance is the basis for decisions on the release of new varieties. The general standard of performance is: "No new variety should be released unless it is distinctly superior to existing commercial varieties in some one or more characteristics important for the crop, and is at least satisfactory in other major requirements.", R. D. Lewis, Quisenberry, K. S., (1961): *Policies on the Release of Seeds*, USDA, *The Yearbook of Agriculture*, p. 365.

seed marketing law is to create market transparency, particularly with regard to the promised but for farmers not visible characteristics of the seed variety, and to safeguard seed quality. It should protect the participants of the seed system such as farmers, traders as well as plant breeders against fraud due to unobservable quality shortages relative to the seed variety. The law aims at promoting a process of supplying steadily improved agricultural plant varieties to farmers<sup>9</sup>.

### Law on Variety Protection and Plant Breeders Rights

The *International Union for the Protection of New Varieties of Plants (UPOV)* is an intergovernmental organisation based on the International Convention for the Protection of New Varieties of Plants, adopted in 1962, revised in 1978 and in 1991<sup>10</sup>. The main aim of the Convention is to promote the protection of rights of breeders regarding new plant varieties. UPOV has produced a Model Law on Plant Variety Protection, which is widely accepted and represents the international standard for plant variety protection systems<sup>11</sup>.

The *EU Plant Variety Protection Act*, namely the Council Regulation (EC) No 2100/94 of 27 July 1994 regarding Community plant variety rights<sup>12</sup>, (as well as the Plant Variety Protection Acts of member countries) protects plant breeders' rights related to their varieties and corresponds largely with the UPOV model law. The national Offices of Plant Varieties grant variety protection, if the variety is new, distinct from other varieties, homogenous, stable and designated by adequate denomination.

Variety protection is granted regularly for 25 years for seed grain and for 30 years for a few species like for potatoes. After successful tests the plant breeder can choose whether he likes to get protection in an individual state or

for the entire European Union; usually he decides for the latter.

The plant breeder cannot preclude farmers from re-using farm saved seed of protected varieties, but can collect a fee from them. Also he cannot preclude competitors from using his protected varieties in their varietal development programs. But if a variety 'B' of a competing seed enterprise originates from a variety 'A' with only a minor distinction from 'A' the plant breeder of variety 'A' can collect a fee from the competitor. Thus, this regulation allows that all plant breeders have access to newest improved genetic resources, thus enhancing progress in plant breeding.

### Law on Seed Production and Marketing

The *Organisation for Economic Co-operation and Development (OECD)* has introduced OECD Schemes for the Varietal Certification of Seed Moving in International Trade<sup>13</sup>, which are also recognised and used by non-member countries. These Schemes are defining standards for seed certification (field inspection, seed testing etc.) in order to facilitate international trade of high quality seed between countries. With OECD-label there is no need of re-testing of imported seed. Thus, seed trade has become simplified. Furthermore, the scheme contributes to an international dissemination of current appropriate certification rules and directives.

The *International Seed Testing Association (ISTA)* is a worldwide organisation which develops, adopts and establishes rules for sampling and testing seeds. ISTA established an Accreditation Scheme. Laboratories have to comply with the rules and issue international certificates for seeds moving in international trade, which guarantee that all tests have been produced according to the prescribed rules. Accredited laboratories benefit of the obligatory quality management system as well as of training programmes and the integration into an international network of seed experts. Consequently ISTA membership is important for the national seed certification system because it helps to achieve and maintain international competitiveness in this domain.

The *EU-Seed Legislation* consists of various Directives (see Annex 2). First, there are special Directives on marketing for seed of the main groups of agricultural/horticultural species<sup>14</sup>. Second, there is the Council Directive 70/457/EEC of 29 September 1970 on the common catalogue of varieties of agricultural plant species<sup>15</sup>.

The main purpose of the EU-Seed Legislation is the harmonisation as well as standardisation of the national seed legislation of the EU member countries, so that no longer differences and barriers exist with reference to 'Acceptance of a variety for certification and marketing' (see Council Directive 70/457/EEC), and with reference to 'seed certification' (see Council Directives 66/400/EEC - 66/403/EEC) between member countries.

The EU Council Directives on marketing of seed jointly with the Council Directive on the common catalogue of

<sup>9</sup> This objective normally is reflected in seed registration rules as part of seed trade legislation with the phrase Value for cultivation and use.

<sup>10</sup> International Union for the Protection of New Varieties of Plants (UPOV), (1991): International Convention for the Protection of New Varieties of Plants, Geneva.

<sup>11</sup> A. F. Kelly, George, A.T. (1998): Encyclopaedia of Seed Production of World Crops, p. 22.

<sup>12</sup> Council Regulation (EC) No 2100/94 of 27 July 1994 on Community plant variety rights Official journal NO. L 227, 01/09/1994 P. 1-30, see also: [http://europa.eu.int/eur-lex/en/lif/dat/en\\_394R2100.html](http://europa.eu.int/eur-lex/en/lif/dat/en_394R2100.html).

<sup>13</sup> OECD, 1996a, OECD Scheme for the Varietal Certification of Herbage and Oil Seed Moving in International Trade, OECD, Paris, OECD, 1996b, OECD Scheme for the Varietal Certification of Cereal Seed Moving in International Trade, OECD, Paris, OECD, 1996c, OECD Scheme for the Varietal Certification of Sugar Beet and Fodder Beet Seed Moving in International Trade, OECD, Paris, OECD, 1996d, OECD Scheme for the Varietal Certification of Vegetable Seed Moving in International Trade, OECD, Paris, OECD, 1996e, OECD Scheme for the Varietal Certification of Seed of Subterranean Clover and Similar Species Moving in International Trade, OECD, Paris, OECD, 1996f, OECD Scheme for the Varietal Certification of Maize and Sorghum Seed Moving in International Trade, OECD, Paris; for further information see: <http://www.oecd.org/agr/code/>.

<sup>14</sup> The following Directives referring to all groups of agricultural and horticultural plant species: Council Directive 66/400/EEC - 66/403/EEC, Council Directive 69/208/EEC, Council Directive 70/458/EEC, Council Directive 92/33/EEC, for more details see: Internet web-pages of EU-Legislation or ANNEX II.

<sup>15</sup> Council Directive 70/458/EEC, for more details see: [http://europa.eu.int/eur-lex/en/lif/dat/en\\_370L0457.html](http://europa.eu.int/eur-lex/en/lif/dat/en_370L0457.html) or ANNEX II.

varieties of agricultural plant species, (Seed Trade Act, directive no 66/40/ - 66EEC and directive No. 70/457/EEC) (as well as the same objectives as in the seed trade Acts legislation of member countries), have three main objectives: (1) to promote market transparency through, e.g. definition of seed categories, quality standards and other terms related to the seed market and (2) to protect consumers (farmers) by regulating seed production and marketing through, e.g. determination of minimum requirements and examination procedures and (3) to encourage supply of improved varieties.

These EEC Directives mentioned above provide for two different procedures of licensing: (a) the award of a general 'Acceptance of a variety for certification and marketing', and (b) award of a the yearly 'seed certification' for the produced seed.

The applicant obtains the Acceptance of a variety for certification and marketing, if it is distinct, stable and sufficiently uniform. In addition a variety of agricultural species must have a 'value for cultivation and use'. This means that the variety must have an advantage of at least one important attribute over other varieties of the same species. Thus, the newly bred variety guarantees a better economic return. In fact this is the most difficult hurdle of the procedure<sup>16</sup>. A result of this condition of the variety protection is that it has little or no value, if the variety would not pass the examination according to the Seed Trade Act.

The Acceptance of a variety for certification and marketing in one EU member country usually allows the use of this variety in other EU member countries. In Germany, for example, the Acceptance license of the national Institute of Plant Varieties corresponds to a superior quality label since the national tests of 'value for cultivation and use' recognises the typical climatic and soil conditions.

Seed certification means that minimum requirements of the most important seed quality characteristics are fulfilled and that the seed lots be officially sealed and labelled with an official label. The certification procedure is divided into the field inspection and the laboratory test of the seed. In field inspection the identity and varietal purity, the health status, the minimum distance from specific neighbouring crops etc. and a lot of special requirements regarding the different species are checked. In the seed testing laboratory an officially drawn sample (usually 500-gramme sample) from the seed lot will be checked in accordance with ISTA rules, whether the seed sample meets the prescribed minimum standards such as analytical purity, germination capa-

city, number of specified weed and other crop seeds, and in case of doubt varietal identity and genetic purity and in certain species the fulfilment of special requirements. As a result the produced seed, prepared for marketing, is checked through official specialists (e.g. in Germany) or private authorised inspectors who are officially supervised (e.g. in Denmark).

When the seed is certified the seed in commerce has to be checked a second time on at least a random sampling basis, through officially appointed seed-controllers, whether the seed corresponds to the prescribed minimum requirements (in Germany, for example more or less 35% of the seed-lots (max. 25t)). There are different practices between EU countries. The practice in Denmark and Germany may serve as example for different interpretations of this part of the seed trade legislation. In Germany, the main interest lays in the certification of seeds, which means a complete and detailed examination of seed production/multiplication process. The supervision of the seed trade focuses on criteria like correct labelling and advertising and less on quality of seed in trade as also shown by the fact that Germany uses modest fines as sanctions. The Danish system pays, apart from an adequate certification procedure, more attention to quality of seed in the market. In addition, this is closely connected with the sanctioning system which affects marketing permission. Thus, in Denmark traders or multipliers who have distributed unsatisfactory seed will be responsible for recourse and set on an annually published black list. The latter is an effective education method with good results, because no wholesaler or seed producer can stay in the market for a long period, if he often appears on the 'black list' due to bad publicity.

Apart from the laws passed by parliaments there are bylaws issued by governments which regulate the seed sector (e.g. guidelines for seed certification, seed controllers, actual testing procedure at the Central Office of Plant Varieties, application of fees and deadlines, criteria for the examination of the value of cultivation and use etc.). For example, in Denmark seed traders can sell seed even when the official seed certification (laboratory tests, results of the control plots) has not yet been completed, so that they save time in the hectic marketing period (small grain: Sept./Oct.). This is possible if the seed trader participates in the voluntary compensation regulation which exists in the Danish seed legislation<sup>17</sup>. Furthermore, the private seed sector has developed model contracts which facilitate cooperation and coordination of seed activities between the enterprises involved.

### Government Institutions to Facilitate Implementing of Policies

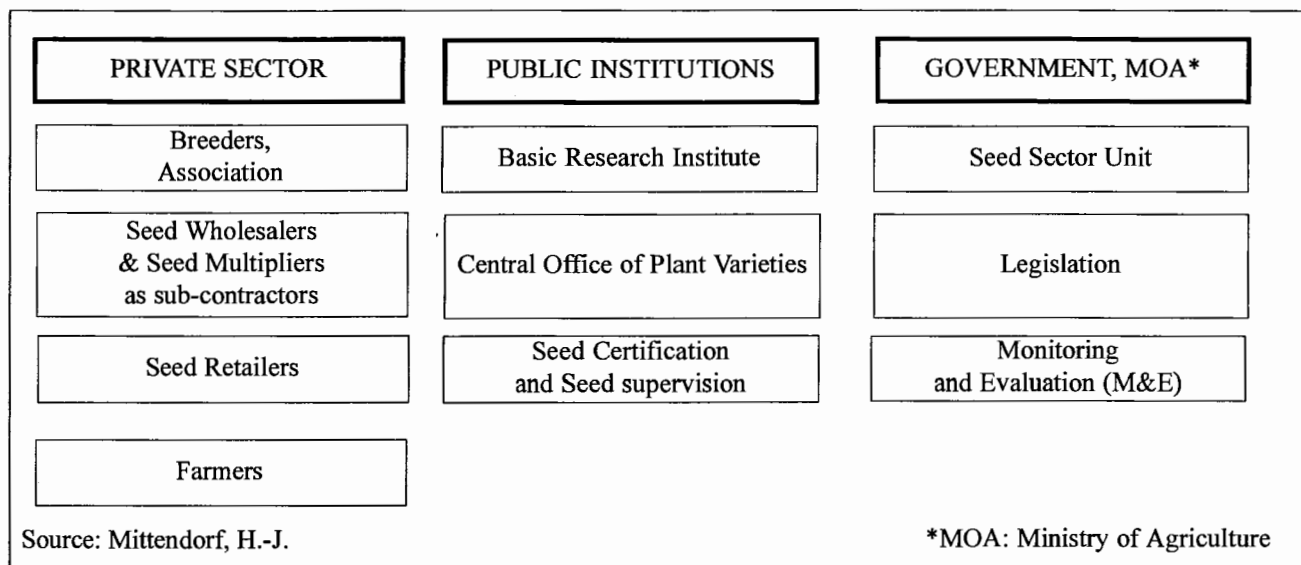
In order to facilitate the implementation of government seed policy including legislation the following government controlled institutions have been established (see graph).

The *Seed Sector Unit in the Ministry of Agriculture (MOA)* drafts policies for approval by government and sub-

<sup>16</sup> Value for cultivation and use is not obligatory in every country, e. g. the USA: "Unlike most other countries, the US does not have national lists or even state lists of approved varieties. Universities usually conduct tests to determine which varieties are best both in terms of agronomic performance and quality but there is no approved list. Individual states often have release criteria which require that a new variety have benefits over existing varieties, but there is no similar requirement for the private varieties in the market place other than what a company self imposes." - R. Karow, Department of Crop and Soil Science, Oregon State University, personal information by e-mail.

<sup>17</sup> Rietzel, P., F. Tohtz (1997): *Zertifizierung von Getreidesaatgut in Dänemark und Frankreich* (Certification practice for small grain seed in Denmark and France), p. 16 f.

**Graph: Organisation of seed sector in a market economy**



sequently parliament, monitors and evaluates the implementation of policies. It keeps contact with international public and private organisations. The MOA seed sector unit works closely with national associations of the professional groups involved (farmers, breeders, marketing associations), who make proposals for policies, and may be supported by specialised research and advisory institutions including university institutes. MOA supports an independent market information service for seeds (production, market supplies, market demand, market prices). The Central Office of Plant Varieties, the seed certification offices, and the private associations closely cooperate in collecting up-to-date market information on varieties approved, certified seed produced, quality situation of the certified seed in commerce, prices obtained, reports about possible agronomic improvement of new registered varieties. As collected information is distributed to the public, this helps to make the seed market transparent and efficient.

At national level a *Central Office of Plant Varieties* (in Germany "Bundessortenamt", in the former Sowjet Union "Sortsemprom"), an autonomous government institution, carries out all work relating to plant variety protection and variety registration. It examines the newly proposed variety simultaneously in laboratory and in field with regard to the criteria of plant variety protection (distinct, uniform, stable and new, in Germany, for example, called 'Register-tests') and Variety Registration (additional value for cultivation and use, in Germany, for example, called 'Value-tests'). The Central Office of Plant Varieties tests the varieties under different local conditions, after successful approval registers the new variety, publishes the approval as well the detailed results of the official tests in its own official bulletin and disseminates it in the country. The testing and registration process, lasting three years, leads to a quality-oriented competition in privately owned plant breeding companies. In Germany, for instance, only 10% of the applied breeding lines pass the examination successfully. On the

other hand, a new variety wins quickly a high market share, if the Central Office of Plant Varieties and the agricultural advisory boards rate the value of this variety high and includes it in the recommended list. The evaluation work is carried out on the basis of objective criteria fixed by government and in an independent manner<sup>18</sup>. The Central Office of Plant Varieties needs adequate support (personnel, technical equipment like laboratories and computer, agricultural area for field tests) not only concerning its analytical work, but also concerning scientific work and international cooperation, so that the market participants attribute to the Office competence and up-to-date scientific knowledge. The latter one is often organised in cooperation with specialised university institutes.

*Official regional seed certification offices*, equipped with the necessary laboratories (contracting to private/public laboratories is possible), are responsible for certifying the multiplied seed by field inspection and seed examination. The field work is carried out by officially recognised and skilled farmers, teachers of agricultural schools or university staff. Although certifying offices have been mainly public institutions a recent initiative by EU allows countries to subcontract certification activities to private independent companies (or laboratories) under government control. Official regional seed certification offices are also responsible for supervising the seed trade.

As part of the national agricultural extension service there are *regional seed testing stations* of government or semi-government nature (e.g. operated by chambers of agriculture, semi-government farmer organisations) which test the new varieties approved by the Central Office of

<sup>18</sup> At the same time with the cultivable value a normative adjustment of the affected plant breeding is brought about through their objectives and judgement via the Central Office of Plant Varieties. Consequently it has a substantial influence on the national as well as international performance of the affected private plant breeding. Principally thereby competition takes place between the various national Offices of Plant Varieties or the formulation of conditions for the 'Value for cultivation and use'.

Plant varieties under 'on-farm' conditions including common production practice (low/high fertiliser and pesticides use) and disseminate the results to farmers. In Germany, after a trial period of three years (of which the first year is the last year of the tests carried out by the Central Office of Plant Varieties) the testing stations recommend the best performing varieties. Thus, 5 years after the breeder has made an application for approval of his variety a final recommendation can be made. To shorten the period it should be possible to carry out the official variety examination for Plant Protection and Variety acceptance under Seed law simultaneously with the 'on-farm'-variety tests in order to make the best performing and recommended varieties available to farmers as soon as possible.

Apart of the institutions mentioned above *universities, research centres and other agricultural extension services* play an important role in the national seed system. The main objective is that plant breeding research and development is a very costly and risky activity which needs public support at least concerning basic research but usually also concerning applied plant breeding research because it produces genetic material private plant breeders can use in their own breeding program so that it is lowering their risks and costs<sup>19</sup>. Another objective of public supported plant breeding research is the intensive international cooperation connected with research activities.

### The Private Seed System

The private market oriented seed system consists of the following main private actors: plant breeders, specialised wholesalers with seed departments subcontracted by breeders for organising seed multiplication and seed marketing, subcontracted farmers who multiply seed, seed retailers and farmers using certified seed (see graph).

The privately organised system is designed in such a way that there is free access to the market at each level, there is full competition, and supply and demand determines prices of products and services rendered. There is a close coordination of activities by the actors involved which is facilitated through contractual arrangements. Module contracts have been developed by the *associations* concerned and are based on practical experience and are continuously updated. All groups are represented at government level through their respective associations who participate actively in the formulation and implementation of government seed policies including legislation.

The *private breeder* creates the new variety and, after approval by the Central Office of Plant Varieties, subcontracts the multiplication of the basic seed to specialised seed wholesaling firms which are responsible for developing a market for the new variety. The private breeder

receives a fixed royalty according to quantity of certified seed sold by the specialised seed wholesaler.

The specialised seed wholesaler, who may be a private agricultural trader, a farmer marketing cooperative, or a breeder seed marketing company, is responsible for organising the multiplication of the basic seed through subcontracting to qualified farmers, arranging for seed certification and organising the marketing of the certified seed. Seed wholesalers have the necessary transport, storage, cleaning, processing, packaging facilities. They operate their seed business often along other agricultural trading businesses in order to reduce seed marketing costs (including transport, cleaning, dressing, packaging, storage, advice and selling costs to farmers directly or through seed retailers).

*The farmer* decides (a) if he wants to buy certified seed and which variety or (b) if he wants to use farm saved seed. The seed change rate, namely the proportion of certified seed used in percent of total demand for seed, varies widely according to country and local condition. In Germany, for instance, the seed change rate is 50% for grains while in the Netherlands 75% and in Denmark 95%. A major argument of farmers using only every 2 years certified seed is the high price of certified seed, connected with insufficient quality advantages of the certified seed offered. Consequently the private participants along with public institutions should focus their attention on a quality as well as efficiency-oriented seed marketing system in order that certified seed is offered, which is of significant better quality than farm saved seed and at a price which can compete with the additional costs every farmer has, when he produces farm saved seed<sup>20</sup>.

### Lessons Learnt in Transforming the Centrally Planned Seed Sector in East Germany to a Market Oriented one at beginning of 90ies

After reunification of Germany in 1989, the transformation process of the centrally planned seed sector in East Germany was initiated. The legal framework of West Germany was introduced and the seed sector institutions and enterprises in East Germany were restructured. The privatisation process of the breeding and seed multiplication enterprises was initiated. Since the large seed combines inherited from the communist period were not viable restructuring of seed enterprises was essential to become nationally and internationally viable and competitive. While the quality standard of breeding in East Germany was in general reasonable the most serious problem faced was to change the conceptional framework, the mentality of staff, of institutions and enterprises to the principles of a market economy, where there are clear private property rights and obligations, a clear legal framework, spirit of self-responsibility, of private entrepreneurship and market and profit oriented behaviour of entrepreneurs. Marketing and financial management skills had to be developed. This required transfer of technical know-how from the west and training of staff in East Germany. It was achieved in a rela-

<sup>19</sup> World Bank (1992): Seed Development, The Appropriate Roles of the private and Public Sectors, Discussion paper prepared by Steven Jaffee and Jitendra Srivastava; pp 60.

<sup>20</sup> Kelly, A. F. (1989): Seed planning and policy for agricultural production, London, pp. 115.

tively short period of time due to close cooperation between professional staff of west and east Germany as well as investments by western and foreign seed firms in East Germany. The latter facts and developments experienced during German reunification show the lesson to learn from it: the commitment of external (in this case mainly from western part of Germany) actors leads not only to a transfer of capital, equipment, know how, etc and has resulted not only in profits of enterprises and adequate salaries of staff, but also to an improvement of the national situation and strengthening competitiveness at international markets.

Meanwhile, seed enterprises in East Germany have considerably increased their productivity and effectiveness, have become market oriented, profitable and internationally competitive. They maintain close professional and commercial contacts with institutions and enterprises in Eastern Europe and are looking for closer cooperation with Eastern European seed institutions and enterprises.

### Performance of the Seed System including Pricing

The performance of the seed system depends upon a number of factors including structure and conduct of participants of the system. Market behaviour includes a number of skills such as management including cost effectiveness, financial management, innovativeness, adoption of improved marketing techniques and organisation, degree of coordination of the system as a whole, degree of competitiveness including pricing process and costs and margins of the services rendered. Voluntarily provided guarantees and quality standards by the private sector are often stronger than official minimum quality norms, because only if seed lots of different qualities simultaneously exist in the market and are recognisable due to consumer friendly labelling rules, adequate seed trade supervision and an actual seed market information service, farmers can decide according to their preferences. Under these conditions apart from plant breeding additional competition develops at wholesale and seed production level, which is of the same importance as competition at the plant breeding stage. It is important to provide adequate incentives at all levels of the system in order to achieve optimum performance. MOA has to provide adequate market information so that the seed market is transparent to the groups of actors involved. Sanctions and rewards are essential elements for the performance of the system as a whole, but the main superior characteristic of a high-performing market system is without doubt reliability, credibility and confidence between the market participants. Particular important is efficient work of government officials at all levels of the system.

It is useful to provide for regular monitoring and evaluation of the seed sector by independent specialists in order to see where and what action is needed to adjust the sector to new market requirements. The Tacis Project in Moldova Amplify Quality Seed Supply to Farming (FDMOL 9502) may, as referred later, serve as example for such a detailed review and the recommendations made.

Adequate attention has to be given to marketing costs and margins. The following example provides information on major cost items to be regularly reviewed:

- Sales price of seed to farmers must be in line with market conditions
- Major Cost Items:
- processing, cleaning including waste, chemical treatment and packaging costs;
  - marketing including transport, storage, finance, wholesale and retail margin, and market promotion costs;
  - payment to farmer multiplying seed;
  - seed certification;
  - breeder's royalty.

### Recommendations of the Tacis Project Amplify Quality Seed Supply to Farming, Moldova

On request of the government of Moldova the Tacis Project "Amplify Quality Seed Supply to Farming" (FDMOL 9502) reviewed the seed industry during the period 15.8.96 to 15.12.97 and made a number of recommendations which are summarized in the Final Report of the project of November 1997 which include the following:

- *seed legislation.* A final draft of the new Seed Legislation was submitted to MOA, as well as translation of EU and UK legislation. General advice on Variety Testing was given and DUS (Distinctness, Uniformity, Stability) field work was carried out by the Variety Testing Commission. General advice on certification and standards was given and control plots were set up at an Institute used to demonstrate field procedures to staff of the Seed Testing Commission. It was recommended that Moldova becomes a member of UPOV (International Union for the Protection of Plant Variety Rights) as well as of ISTA (International Seed Testing Association) and of OECD certification schemes.
- *Seed Trade Association.* A Seed Trade Association Office and Information Centre was set up. Statutes for the Association have been presented to members and MOA. Details and Catalogues of European companies have been made available to the Seed Trade Association. A secretary, assigned to work part time by the institute in the Association office had received computer and English language training. A manual was started to be made available by the Association.

As a precondition to the development of a private sector seed industry the team leader<sup>21</sup> of the above mentioned project considered the creation of the necessary legal framework and standards and the effective operation of regulatory institutions essential which includes the following:

- membership of International/European bodies and signature to conventions,

<sup>21</sup> The authors express their appreciation for the information provided on the project by Mr. G. Mumby, teamleader of the former Tacis seed project in Moldova.

- independent variety testing and registration,
- legislation granting the right to a breeder or agent to control the production and sale of registered varieties,
- certification service covering field inspection, lab. testing and the issue of labels,
- in a developing market truthful labelling has to be recognised as a generation beyond official certification,
- quarantine arrangements and international plant health certificates,
- removal of barriers to trade and unfair competition for the private sector,
- maintenance of records and publishing information.

## Conclusions

Although the process of transformation of the seed sector in Eastern European countries has been initiated and is in many countries still ongoing speeding up the transformation process of transformation of the seed sector seems to be necessary in many countries. The action to be considered must be country specific and may include the following:

- establishment of a working party to formulate an action programme which includes the following:
  - formulating a policy, strategy and action programme to promote an effective privately owned and market oriented seed sector, which includes
  - defining government and private sector functions,
  - introducing a legal framework taking into account the legal framework of western market economies,
  - adjusting the government institutional framework to the principles of a market economy, including establishment of market oriented MOA policy unit and a market information system for seeds,
  - decide on privatisation of those assets not any more needed by government,
  - promote the establishment of a private breeder association
  - setting up an information system and M&E,
  - organising training and advisory services to facilitate adjustment of the seed sector; this includes not only transfer of knowledge as to how the seed system will function under market conditions but also transfer of knowledge regarding the organisation and management of privately organised breeding and seed marketing enterprises, the promotion of improved seed use by farmers. For more details see, for instance, G. Mumby (1994): Seed Marketing, FAO technical papers No. 114 and other available advisory information,
- promotion of private investments into the seed sector including foreign cooperation, investments, joint ventures
- promoting exports of improved seed.

## Transformation eines planwirtschaftlich organisierten Saatgutsektors in ein privatwirtschaftliches und marktorientiertes sautgutssystem in Osteuropa, speziell in den Staaten der ehemaligen Sowjetunion: politische, rechtliche und institutionelle Aspekte

In der ehemaligen Sowjetunion unterlag der Saatgutsektor wie auch die anderen Wirtschaftsbereiche einer zentralen Planung und Organisation. Der durch den Reformprozess eingeleitete Wechsel von planwirtschaftlicher Koordination zu privater eigenständiger Wirtschaftstätigkeit erfordert zugleich eine Anpassung bzw. die Einführung rechtlicher und institutioneller Rahmenbedingungen. Für die Bereiche Pflanzenzüchtung und Saatguterzeugung sowie -vermarktung sind dies einerseits Regelungen des Sortenschutzes wodurch private Züchter ein Eigentumsrecht für ihre Sorten erhalten und andererseits Regelungen des Saatgutverkehrs, die vor allem dem Schutz des Verbrauchers dienen.

In einem privatwirtschaftlich organisierten Saatgutmarkt bestehen mehrere Erzeugungs- und Absatzstufen, die verschiedene Funktionen erfüllen und durch eine enge Zusammenarbeit eigenständiger Unternehmen gekennzeichnet sind.

## A n n e x

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