

**MANAGEMENT STRATEGIES TO AID STRUCTURAL
CHANGE IN LIVESTOCK SYSTEMS. THE CASE OF POLAND****H. A. Jasiorowski****Summary**

The domination of small farms and overpopulation are old phenomena of the Polish agriculture. Political and economic sudden changes in 1989/90 by introducing free market and free competition, by removing subsidies and reducing employment in the industry put the Polish agriculture and rural population in a new and difficult position. Due to the transformation the standard of living of the population went down reducing food demand. Prices for agriculture production means went unproportionally up and majority of part time farmer lost their industrial employment. As a result the profitability of agriculture including animal production went seriously down. Real income of farmers was reduced between 1989 to 1992 by 64 percent. Consequently population of farm animals and the production of milk and meat has been reduced by 30 percent in average.

During the last two years some kind of economic stabilization has been observed but the future of Polish agriculture presents several problems. Concentration of land is generally recognised as desirable but without much hope for great change during the next decade. Therefore it is necessary to build such infrastructure in the rural areas to absorb the unemployed part of their population. Animal husbandry, special processing of animal products, agroturism should play important role in such planing. The concentration of farm animal population will undautably take place but for the long time farms with 3-5 dairy cows and few sows may predominate milk and pork production scene in Poland.

Which production systems should be elaborated to make such animal production profitable, how to organize the breeding work how to adopt research and education programes to the new situation and how to find a suitable place for the Polish agriculture in the future Europe are the main questions to be answered.

This paper was presented on 46th Annual Meeting of the European Association for Animal Production, Prague, Czech Republic, 4-7 September 1995

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Introduction

It is my fifth, international meeting, during which I take part in the presentation of the problems encountered since 1989/90 in agriculture and animal production during the process of political and economic transformation in Poland and Eastern Europe.

The scale, intensity and rate of these transformations do not have a precedent in the history. As a result of these processes, the world has been changed but the numerous social and vocational groups of the European societies, involved in the turmoils of these events, are to my mind not fully conscious of their consequences yet.

Therefore, I am the follower of discussing these problems during the international gatherings in spite of the fact that a lot has been already presented and discussed. In my opinion, the statistical data on the occurring transformations are relatively better known than their consequences. For this reason in the present statement I am going, to focus the attention on the strategy problems in the field of animal production development, which in my opinion are crucial for overcoming the crisis.

Costs of transformation

Table 1. - POLAND - GENERAL INFORMATIONS 1994

Total area -	323 th km ²
Population - total	38.5 mln.
- urban	61.9 %
- rural	38.1 %
- per 1 km ²	123
Population increase -	25‰
Rural population increase -	40‰
Average income/month -	182 USD
in agriculture -	151 USD
No of students in universities -	682th
No of students in agricultural universities -	53th
Unemployment -	13,9 %
GNP/person/year -	1.782 USD
Agric. part. in GNP -	6%

The enclosed table (2,3,4) supply the data on Polish agriculture, the basic features of which include: the enormous disintegration of land (the average farm having little more than 5 ha) (tab. 4), overpopulation of the countryside (27% of the total number of the employed persons are working in agriculture)

and lack of capital. In the past, such situation imposed rather extensive systems of production, based on the high outlays of human labour, but owing to the whole systems of the State subsidies, Polish agriculture ensured more than satisfactory food production for the whole society.

Table 2. - LAND* UTILIZATION (1994)

	Thousands ha	Percent
Total agricultural land	18.648	100
- arable land	14.300	76.7
- orchards	293	1.6
- meadows	2.425	13.0
- pastures	1.630	8.7

*) Agricultural land includes arable land, permanent crops and permanent meadows and pastures.

Table 3. - AGRICULTURE LAND PROPERTY (IN PERCENT)

Year	State farms	Agric. cooperatives	Individual properties
1990	18.7	3.3	76.3
1994	10.0	3.1	80.3

Table 4. - LAND TENURE (IN PERCENT)

Total agricultural land	- 100
Individual property of agriculture land	- 83
Individual farm - land property (above 1 ha)	- 73
out of it:	
1.01 - 4.99 ha	- 20.4
5.00 - 9.99 ha	- 28.5
10.00 - 14.99 ha	- 20.0
15.00 - 19.99 ha	- 11.2
20.00 - 49.99 ha	- 12.2
above 50 ha	- 7.7

Introduction of free market, privatization of state sector in agriculture and liquidation of subsidies since 1990 caused a deep crisis. Consumption of the products of animal origin and their export (tab. 9, 10) have significantly come down. Rise of prices of production means caused the animal production in many cases unprofitable. In such situation, the problem arose: how to counteract the progressing crisis and in what direction and range should be the animal production developed in the future?

I will discuss some of these problems in the present statement but allow me to omit the detailed discussion of statistical data, contained in the attached tables which are readable and self-explanatory.

Scale of production

We may hear sometimes that the decline of agricultural and animal production in the Central and Eastern Europe (data for Poland in tab. 5 and 8) is not any tragedy, as there are surpluses of food produced in Western Europe and other highly developed countries. We are also frequently advised against export orientation as it will be difficult to compete on the international markets.

Table 5. - AGRICULTURE PRODUCTION AND YIELDS

	Total production th.t.		Yield 100 kg/ha	
	1986/90	1994	1986/90	1994
Grain total	26.114	21.763	31.1	25.7
Potatos	36.140	23.058	190	136
Sugar Beets	14.674	11.676	346	292
Oil seeds	1.306	777	25.0	19.5
Fodder root crops	9.991	7.062	461	360
Hay	14.739	11.015	60.2	42.5
Straw	26.598	19.878	37.4	28.1

There is undoubtedly much truth in this suggestions specially from the viewpoint of the countries with food surpluses but in this case, our interests are not convergent with the Western countries at least at present. However, due to the fact of our irresistible wish to become the EU member in the possibly shortest period of time this matter may look differently in the future.

On the other hand, 27% of Poland's working population is employed in agriculture and the fact that for majority of them we won't find quickly the alternative places of work, imposes the obligation of developing the labour-intensive systems of production, and animal production belongs to them. We are not highly industrialized country and we will be unable to pay for import of food for a longer time; we do not have also a chance for export of other products on a greater scale except for agriculture.

We expect, however, the rise of the level of living standard of our society and by this, the increase of demand of the products of animal origin, and in spite of all, we count on certain export possibilities; it is generally considered, therefore, that the steps for a quick recovery of animal production to the level of at least being equal to that one before the crisis, should be undertaken.

Livestock population

As far as the cattle number is concerned (tab. 6), it dropped in the five years by 30 percent and we have now only 40 heads per 100 ha of agricultural land.

However it is generally considered that the today's number of dairy cows (3,6 mln) should be sufficient with the assumption that their average milk yield will reach 4.000 kg of milk a year. Therefore more emphasis will be put to increase beef production. The measures are currently undertaken to increase the number of beef cattle, by purebreeding as well as by commercial crossbreeding with dairy cows. The programme of intensification of beef production, approved recently by the Government, provides subsidies and grants the preferential credits for development of this direction of breeding. The target is one million beef cattle.

Table 6. - NUMBER OF ANIMALS IN THOUSANDS

Year	Cattle		Pigs		Sheep	Horses	Poultry
	Total	Cows	Total	Sows			
1986-90	10.509	4.972	19.080	1.921	4.535	1.076	57.100
1991	8.844	4.577	21.868	2.096	3.234	939	50.200
1992	8.221	4.257	22.086	2.142	1.870	900	45.600
1993	7.643	3.983	18.860	1.558	1.268	841	44.300
1994	7.696	3.863	19.466	1.971	870	622	46.400

Source: Statistical Yearbook - 1995

Table 7. - LIVESTOCK PERFORMANCE (KG/ANIMAL/YEAR)

Year	Milk	Eggs (pcs)	Wool
1986/1990	3.115	153	3.7
1991	3.082	157	3.4
1992	3.015	157	3.5
1993	3.075	154	3.4
1994	3.092	151	3.5

Source: Statistical Yearbook 1995

The beef production should develop in Northern and South-West part of Poland, where large state own farms dominated in the past, but the question arises: how to make the keeping of beef cattle profitable in small agricultural farms in Central and Southern parts of the country.

The authorities of the country undertake the efforts aimed at the inhibition of the decline of the sheep population and its reconstruction. The meat direction is preferred here and the increase of the sheep fertility is supported by the special governmental programme.

Table 8. - PRODUCTION OF ANIMAL PRODUCTS (THOUSAND TONS)

	1989	1991	1994
Meat total	2.488	2.593	2.252
- beef	573	589	362
- pork	1.498	1.573	1.422
- poultry	340	326	401
Milk (mln liters)	15.900	14.000	11.800
Eggs mln pcs	8.000	6.500	5.800
Wool (row)	16.5	10.7	3.1

Source: Statistical Yearbook 1995

Table 9. - PER CAPUT FOOD CONSUMPTION IN POLAND (KG/YEAR)

	1980	1990	1993
Grain and its products	127.0	115.0	122.0
Potatos	158.0	144.0	147.0
Vegetables	101.0	119.0	122.0
Fruits	37.7	28.9	45.2
Meat	74.0	68.6	67.5
- pork	37.2	37.6	40.6
- beef	18.5	16.4	11.4
- poultry	11.2	7.6	9.4
Fish	8.1	5.4	6.7
Fats	28.4	23.6	24.7
- animal	8.1	8.2	8.4
- plant	7.8	7.6	11.8
- butter	8.9	7.8	4.5
Milk and milk products			
in milk equivalents	262.0	241.0	209.0
Eggs (pcs)	223.0	190.0	157.0
Sugar	41.4	44.1	41.3

(Source: Plewa J. - FDPA International Symposium Warsaw 1995)

Table 10. - POLISH INTERNATIONAL TRADE OF ANIMAL PRODUCTS (MLN USD)

	Import		Export		Balance	
	1992	1994	1992	1994	1992	1994
Live animals	229.8	179.3	41.3	58.0	188.5	121.3
Meat	156.5	125.0	125.8	202.8	30.7	-77.8
Fish	61.3	60.5	90.1	133.0	-28.9	-72.4
Milk and dairy products	209.0	209.3	122.0	50.3	87.0	159.0
Others of animal origin	38.4	35.2	49.8	58.3	-11.3	23.2

(Source: PHARE Warsaw 1995.)

In sector of pigs, there is a programme for improvement of quality of pigs and especially, of their meat values, being also supported by the Government.

Although we meet various opinions in Poland concerning the purposefulness of increasing the livestock population above the present (crisis) level, the opinion however, prevails that the numbers from the end of the eighties should be restored. In the new plans, the special attention will be paid to the population of these species, the production of which is complementary in relation to the agriculture of the European Union, such as horses for meat, geese, ducks, rabbits etc.

Unfortunately, the development of animal production complementary to the EU, may have in Poland only a marginal importance.

Breeding work

The opinion of home specialists is consistent that animal production of such dimension as it is in Poland must have national programmes for genetic improvement. It is realized however that everywhere, the national breeding programmes include utilization of the results of selection work of other countries via import of semen, embryos, or animals. Just the scale of import of genetic material from abroad and its role in home breeding programmes is the subject of dispute in our country. It is specially in the light of the fact that during the last years we have lost a great part of genetically active part of livestock population, and that the productivity recording and AI activity have been substantially reduced (tab. 11 and 12)

Table 11 - PERFORMANCE OF MILK RECORDED COWS (1990 - 1994)

Year	Number of cows	Average yield				
		milk kg	fat kg	%	protein kg	%
1990	620048	4131	167	4.04	-	-
1991	484845	4082	164	4.03	131	3.20
1992	400626	3927	158	4.01	121	3.07
1993	371980	3935	157	3.99	124	3.15
1994	351813	4200	169	4.02	136	3.23

Table 12 - ARTIFICIAL INSEMINATION (A.I.) RESULTS

Year	Number of cows	A.I. serviced cows	
		number	%
1977	6000000	5379235	89.7
1980	5955600	5208244	87.5
1985	5528087	4038204	73.0
1989	4993804	3846318	77.0
1990	4919098	2987298	60.7
1991	4577330	2665031	58.2
1992	4256763	2465201	58.0
1993	3982839	2249361	56.5
1994	3822994	2173018	57.0

The situation in this respect is as follows:

- Instead of contributing to the improvement of average genetic quality of animals, the reduction of livestock population has often eliminated the best individuals (those ones, being found in state farms which especially suffered from the crisis),
- The active part of population in all animal species has been considerably reduced (tab. 11),
- Great disintegration of farms and small herds (average farm in Poland has 2,6 dairy cows) make production recording and selection of animals very difficult, and there is no chance for quick improvement of farm structure.
- The level of feeding and management in the great part of farms is not sufficiently good.

How to organize the effective selection under these conditions?

There are many ideas, presented in this respect in Poland. It is suggested:

- To increase rapidly the number of animals under performance recording by the increased state subsidia
- To introduce of simplified methods of milk production recording
- To concentrate selection in (still remaining) state farms which traditionally specialized in animal breeding and which possess the best material in the country (at present, 30.000 cows are found in such "elite" herds)
- To utilize the method of open nucleus breeding herds, with the application of MOET technique.

The opinion also exists that under the present conditions, at least for a certain period of time, it will be impossible to apply our own fully effective selection programmes and therefore, we should, at least temporarily, base our breeding programmes on import of genetic material from abroad to a larger degree.

At present it seems that the opinion prevails that we should make use of the import possibilities but at the same time we should rebuilt our own selection programmes.

Management of breeding work

During the previous political system, the management of breeding work was centralized at the Ministry of Agriculture, the limb of which was Central Animal Breeding Office, dealing with production recording, estimation of breeding values, selection, and artificial insemination in relation to all animal species. The state subsidized all these activities. The associations of breeders, if existed, played as a rule, only a "decorative" role.

At present, the discussion goes on how to change this situation in order to gain maximum and to lose minimum.

The independent associations of the breeders have been established and the Ministry of Agriculture undertook the decision on decentralization of breeding management; Central Animal Breeding Office will in the future retain only the organization of performance recording and data base for estimation of breeding values.

Insemination centres, the activity of which is subsidized by the state in 50%, would be privatized. Thus, the role of the breeders' associations would be increased and they would play a similar role as in the Western Europe. The problem, however, lies in the fact that certain new associations want a very-far reaching decentralization, e.g. establishment of regional, completely independent associations within the same species. The urgent problem to be solved (by the authorities, but also by the breeders) is how far to perform the decentralization of breeding management so as not to waste the effectiveness of the work, and simultaneously, to utilize fully the existing human and material resources.

Research

In Poland, relatively large base for research support for development of animal production has been built. There are two Institutes of Polish Academy of Sciences (the first one - in the field of genetics, the second - dealing with physiology and animal nutrition) and large Zootechnical Institute, belonging to the Ministry of Agriculture. The potential of animal science faculties in 9 agricultural universities should be added.

All the scientific activity is based on the financial support of the State. Private sector is not financing the agricultural studies in any scale.

In the future, we cannot, alas, expect that Polish capitalistic state would give such generous financial support to research activities as the previous system did. Already now, financial difficulties, relatively low salaries and possibilities of better careers of the most clever individuals outside the scientific sector, do not constitute good promises for the future. All this, together with the ageing of the so far staff, do not create a favourable situation for restructurization and adaptation processes in animal science.

On the other hand, opening of the country to the West has created a new situation: we may more widely utilize the scientific achievements of other countries but at the same time, we will be subjected to more effective verification in relation to purposefulness and effectiveness of the conducted studies. Therefore, the necessity arises to make a quick reorientation of our research programmes in respect of their effectiveness and usability for the country. And this process runs, unfortunately, very slowly.

Higher education in animal science

In the past, Polish teaching programmes in agricultural academic centres were oriented to narrow specializations. For example, each of nine agricultural universities has independent zootechnical faculty to which the students are recruited from the beginning of their studies. Links of these faculties with the agricultural (agronomic) faculties are very weak, or none. Within the faculties, there are also narrow specialized chairs for the particular animal species, e.g. breeding of cattle, horses, the sheep, etc.

All this, was perhaps justified in the previous political-economic system where the zootechnicians could find numerous working places on various levels of state administration, in state farms and in developed advisory services. Today, the most of these working places has disappeared and the greater demand of the people, with wide horizons, being comprehensively prepared to their job, has been started.

For the time being, agricultural universities in Poland change their programmes and structures too slowly. We educate still 600-800 graduates of zootechnical faculties although the prevailing majority of them must seek the employment outside the acquired profession. The question remains to be answered to what degree it may be expected that the academic society alone will change the situation and what arguments should be used to encourage them doing it?

State interventionism

After dramatic and much unexpected political changes, the natural reaction to the so far omnipotent role of the state, was the turn towards the liberalization of the economy. For example, the unilateral principles of free market were violently introduced in 1990 with the fervour of neophyte. We have paid a high price for it.

Now, having accepted in general the principle of free market economy in Poland, we are considering already what degree of the State's interventions in the economy should be recognized as optimal.

In the sector of animal production, the situation is now as follows. The regulatory role of the State in the range of animal products' market consists only in the establishment of minimal prices of milk, and interventionist purchase of butter and milk powder surpluses. As far as meat is concerned, the State Agency buys or releases to the market - depending on the situation - the defined quantities of pork. On the other hand, any intervention in the field of beef and poultry meat does not exist. The market regulatory operations of the State include also the establishment of tariffs (customs fees) and import quotas.

The State supports the development of breeding via the so called fund for biological progress which gives money for, inter alia, performance recording, insemination, estimation of breeding value, extension, shows, herdbooks, etc.

Two special programmes: the first one, concerning milk production and processing, the second programme - in the field of development of beef cattle breeding, are financially supported by the State via special preferential credits where the interest rate is four times lower than the usual one. The difference is covered to the banks by the State.

The intervention of the State in management of breeding and restriction of the breeders' role is now being decreased very quickly.

International assistance

What my country needs most of all in a foreign of aid, or effects of international cooperation, is the inflow of capital and the possibilities of enjoying the principles of free market in the international trade. We are aware of the difficulties in both these domains.

The inflow of foreign capital may occur only when it will give a guarantee of obtaining the suitable profits. Agriculture, including animal production is not attractive for such investments, and not only in our country. Hence, it would be difficult to show, till now, the examples of meaningful foreign investments in animal production in Poland.

The situation in dairy and meat processing industries is somewhat different. Here, in few cases, the greater plants (factories) have been bought by foreign capital but till now, it has been difficult to notice, in cosequence, the new investments, or at least greater modernization inputs which would develop production and create new working places. It must be, however, objectively admitted that due to the fact of decline of animal production and consumption, the existing potential of our dairy and meat industry is not fully utilized. On the other hand, the equipment of these both industries is out-of-date to a great degree and requires modernization.

Our public opinion begins to understand that investments and international trade are the domains which are governed by economy and business; they have their rules of play and we must learn them. Poland receives, however the aid within the frames of international (bilateral and multilateral) programmes. Below we indicate few examples.

Thus, in the field of agriculture, Poland receives for example, PHARE assistance. In the sector of animal production, the aid of PHARE concerned mainly adaptation of production and trade to the principles of free market and the perspectives of integration with the EU. The improvement of milk and beef quality and introduction of EU standards occupies important places in these programmes.

Canada and the Netherlands have organized the model villages in respect of milk production, Denmark helps to improve milk quality, USAID assists in inseminatin matters, Italy and France help to develop high-quality beef production. From many activities of non government international organization

the assistance of Heifer Project International with projects in cattle, goats and rabbits development should be mentioned here. The above mentioned assistance has a technical character and its dimensions are, naturally, limited; however its contribution to the processes of structural transformations is significant. We should mention also the role of visits of our specialists and farmers in the Western countries which were usually paid within the frames of technical assistance. These contacts bring many new initiatives.

Adaptations towards integration with EU

In spite of the fact that Polish society has a consistent opinion only in relation to few political and economic problems (similarly as almost each society in the world), its attitude as it concerns the integration with EU is almost unanimous. Probably, the people expect too much from this fact but at present, there is a complete social support for all efforts which would prepare our country for quicker positive decision in this respect.

The grounds for our relations with the European Union is the Treaty on Association, concluded on December 16, 1991 (together with Czechoslovakia and Hungary) and valid in Poland since 1 February, 1994. This Treaty provides, inter alia, the gradual creation of conditions for free trade, except for agricultural and fish products.

Unlike the industrial products, UE has not adopted any commitments concerning the changes in export subventions, import quotas or tariffs obligatory in CAP, even after the transition period (10 years). In other words, the process of creating the zone of free trade between Poland and EU, as provided by the Treaty, does not cover agriculture. It places our agriculture in a very difficult situation today and perhaps, in the future.

The integration processes of Polish food economy with the European Union run in four spheres: trade, institutions, regulations and realities. Adaptation in trade consists in dialogue and concluding of contracts, better utilizing the possibilities of liberalization of access to the markets. The recent processes in this respect have been not favourable for us because from the positive balance in trade of agricultural product with the UE, we have been found in the negative one, amounting to 300 mln USD.

In the field of institutions, the main adaptive processes concern the reform in management of breeding, including the greater authority, given to the Breeders' Associations.

The adaptive regulatory processes concern the system of supporting the agriculture, legal aspects, standards and norms etc. For example, the work on introduction of classification of beef carcasses acc. to the "EUROP" system and standards for quality of milk, corresponding to the respective regulations in EU, are already advanced.

In the so called real sphere, concerning the structure of agricultural equipment and productivity in agriculture, the adaptive processes will be probably most difficult and will require longer period of time. They will be, however, decisive for competitiveness of our agriculture in relation to farmers of the Union.

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STRATEGIJE UPRAVLJANJA ZA POMOĆ U STRUKTURALNOJ PROMJENI U STOČARSKIM SISTEMIMA - SLUČAJ POLJSKE

Sažetak

Dominacija malih gospodarstava i prenapučenost stare su značajke poljoprivrede u Poljskoj. Nagle političke i ekonomske promjene 1989/90. uvođenjem slobodnog tržišta i slobodne konkurencije, prestankom subvencioniranja i smanjenjem broja zaposlenih u industriji dovele su poljoprivredu i seljačko stanovništvo u Poljskoj u nov i težak položaj. Zbog tih promjena životni standard stanovništva je pao a potrošnja hrane se smanjila.

Cijene sredstava za poljoprivrednu proizvodnju nesrazmjerno su se povećale a većina seljaka (farmera) zaposlenih u industriji izgubila je posao. Realni prihod farmera smanjio se između 1989. i 1992. za 64%. Tako su se i populacija životinja na gospodarstvu i proizvodnja mlijeka i mesa u prosjeku smanjili za 30%.

Zadnje dvije godine primijećena je određena ekonomska stabilizacija, ali budućnost poljske poljoprivrede ima nekoliko problema. Koncentracija zemlje općenito se smatra poželjnom ali bez mnogo nade za velike promjene u sljedećem desetljeću. Stoga je potrebno graditi takvu infrastrukturu u seoskim područjima koja će apsorbirati njezino nezaposleno pučanstvo. Gospodarstva za uzgoj životinja, posebna prerada životinjskih proizvoda, seoski turizam morali bi igrati važnu ulogu u takvom planiranju. Vjerojatno će u Poljskoj doći do koncentracije životinja na gospodarstvu, ali još će dugo prevladavati gospodarstva s 3-5 mliječnih krava i nekoliko krmača za proizvodnju mlijeka i svinjetine.

Koje bi sisteme proizvodnje trebalo razraditi da bi ta proizvodnja donosila dobit, kako organizirati rad na uzgoju, kako prilagoditi istraživačke i obrazovne programe novoj situaciji i kako naći poljoprivredi u Poljskoj prikladno mjesto u budućoj Evropi, glavna su pitanja na koja treba odgovoriti.

Primljeno: 12.4.1996.