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National system in professional training in sector Agriculture-animal breeding\swine breeding (Project Agritrans)

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Importance of the agriculture

The agriculture is traditionally one of the most important sectors in the Bulgarian economy. Apart from all the problems and controversies in its development after 1990 this sector remains one of the pillars in the Bulgarian economic and social life. The stable positive development of our country's economy during the last years minimized the relative weight of agriculture in the created from it Gross domestic product (GDP) and the level of employment, but despite this the agrarian sector in prospective will play an important role in the Bulgarian economy.

The Bulgarian agriculture experienced serious changes in the period after 1990. A cardinal land reform was carried out, total privatization and violent destruction of the old productive structures, absolute pull-out of the government from the sector and almost no support for the grower. The launched measures of support for the producers during the years of the transition are ginger, controversial and inconstant. This is the reason why until our admission in the EU the agricultural production within the state was one of the least supported agricultural sectors in the world, which gradually led to serious structural problems in the branch.

The total assessment of the support level until 2002 is negative or amounts to none and not until 2002 was it possible to observe some kind of increase in the support given (1% to 2%). **The government support for the agriculture is an obligatory condition for its prosperity. Bulgaria has the right to broaden and supplement the subsidy per area unit and if the budget does not financially secure those aids, the country will continue to be a phenomenon in the negative meaning of this term.**

Chart 1. The dynamic of the Gross Surplus Value (GSV) the agricultural sector during 2001-2007

Indexes	2002	2003	2004	2005	2006	2007
BSP der nationalen Gesamtwirtschaft, in Millionen BGN	28.526	30.227	32.942	42.797	49.091	56.520
GSV in the agriculture, million BGN	3.446	3.484	3.567	3.308	3.400	46.401
GSV in the agriculture in % from the National GSV	12,1	11,6	10,9	9,4	8,6	6,2
Working force in the agriculture in % from the working force in the Agriculture	25,8	25,5	25,0	24,6	20,6	20,2

The chart shows a serious decline of the importance of the agriculture for the national economy. The stabilization and development of the country's economy as a whole predestined the significant increase of the created in Bulgaria Gross Surplus Value (GSV), while the created in the agriculture gross surplus value stays almost at the one and the same level. This determines the relative decrease of its contribution to the development of the economy.

The economy of the Republic of Bulgaria in 2007- the first year of our membership in the EU , can be characterized with stability and growth of the basic macro-economic ratio.

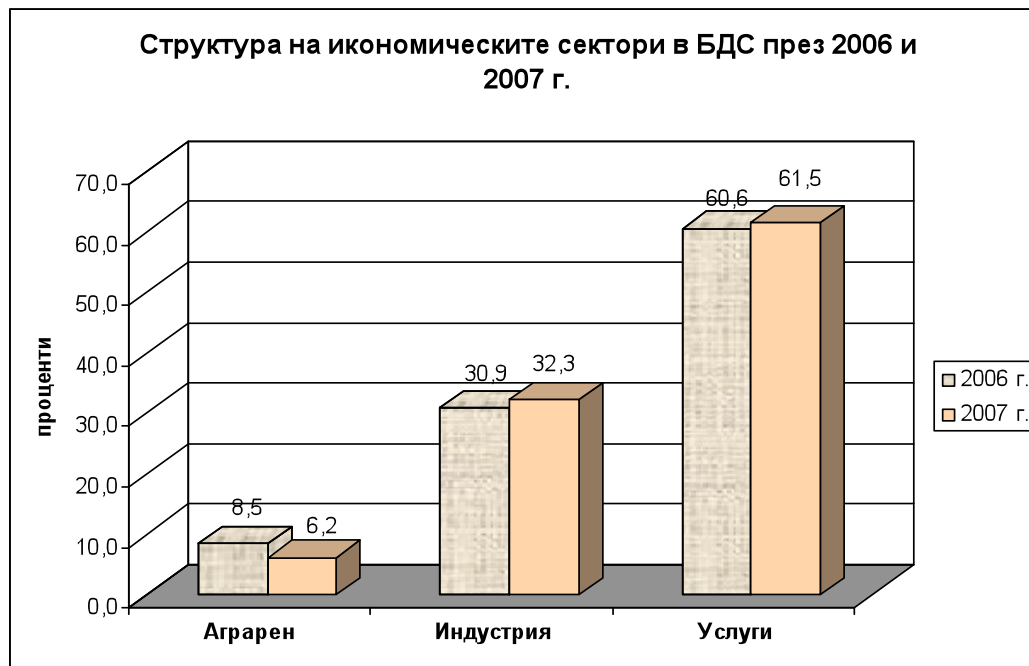
The created Gross Domestic Product in 2007 by market prices was in the size of 56520 million levs , compared to 49361 in 2006 and 42797 in 2005. For 2007 the real growth of the physical volume of the Gross domestic product was 6,2 % compared to the previous year.

For 2007 per capita of the population were dedicated 7379 levs from value volume of the gross domestic product, or 5162 dollars, when the average currency rate was 1,429 levs per dollar. In comparison, during 2006, GDP per capita of the population was 6411 levs, or 4111 dollars, with currency rate of 1,560 levs for dollar.

The created Gross Surplus Value for the economic activities in the country in 2007 comes to 46 401 million levs in current prices, which marks an increase of 6.3% in real, compared to the GSV, created in 2006 , as a result of the progress in the distinct sectors as follows:

- For the industrial sector - growth of 14.0%, as the industry creates 32.3% of the surplus value in the economy
- For the service sector - growth of 7.5 %, its share in the blanket surplus value is 61.5%
- **For the agrarian sector** - downturn of 29.7%, share in the surplus value is 6.2%

Figure 1 „Structure of the economic sectors in GSV during 2006 and 2007



Source: National Statistic Institute, The data for 2007 are preliminary

The gross surplus value, created in the “Rural farming and forestry” sector amounts to **2898 million levs**. The sector marks a decrease in the physical volume of the gross surplus value, compared to 2006 of 29.7 %. This downturn, in combination with the considerable pace of growth of GSV in the other economic sectors contributes to the reassertion of the outlined in the previous years tendency of decrease in the percentage of the agrarian sector in the GSV from the state economy-from 9.4% in 2005, 8.5 % in 2006 down to 6.2% in 2007.

In 2007 as a result of the stable economic development, **the tendency for increase of the activity rate and decrease in the level of unemployment in the country is being kept**. The average annual number of the registered unemployed in 2007 is 286 980, and this represents a decrease of 19.4% compared to 2006. According to data from the Agency of employment the level of unemployment in the country is 7.75% and marks a decrease of 1.9% compared to 2006.

In 2007 **the average annual working salary** of the employed reaches 5174 levs and it gradually grows in nominal mien with 19.6% and 7.1% in nominal mien compared to 2006.

The average annual inflation rate for 2007 is 8.4%, and the inflation at the end of the year is 12.5%.

Chart 2. Gross domestic product for 2008-express valuation

Ratios	Year 2008				
	Valued volume in current prices	Relative share		Index of the physical value – 2007=100	
		In GSV	in GDP		
	Mln.BGN.	%	%	%	
1	Gross surplus value in economic sectors(2+3+4)	54.303	100.0	82.2	106.2
2	Agrarian sector	3.980	7.3	6.0	123.4
3	Industrial sector	16.570	30.5	25.1	103.9
4	Sector of services	33.753	62.2	51.1	105.7
5	Correctives	11.793		17.8	105.2
6	GDP (1+5=7+10+13+16)	66.096		100.0	106.0

Source: National statistic institute, Sofia; the information was published on 16.02.2009

At the same time the number of the employed in the sector remains almost unchanged or diminishes with slower speed. This cannot mean anything else but that in that in the agriculture is not being observed an increase in the production efficiency.

Tracking the dynamic of the physical volume of GSV, created by the Bulgarian agriculture, (Chart 1 and Chart 2) we can see a strong extensive production, which on a larger scale from the more developed countries depends on the climate conditions.

The low relative share of the agrarian sector in the economy, characteristic for the developed countries is a positive phenomenon only if it is accompanied by an increase in the volume and increase in the quality of the farm production.

The role of the swine breeding in the sector

Number of the swine bred at present in Bulgaria.

The development of the swine breeding during 2007 was carried out under the conditions of our membership in the EU and the completion of the requirements and the mechanisms of the Common market organization in sector” Meat” coming from that. This was accompanied by the unfavorable weather conditions and the following low yields of grain and the high prices of concentrated forage.

Despite the difficulties, which the swine breeding experienced, the share of the pork in the total production of meat is increased from 62.4% in 2006 to 64.0% in 2007.

We can observe **a decrease in the total number of pigs** as well as in the number of the sows. The **number of the pigs as a whole is 888.600** and is 12.2% less than that in 2006, and the number of the sows has decreased with 7.5%.

During the last years some important changes in the number of swine and their productive qualities were developed. The swine breeding in Bulgaria experiences a crisis as the number of swine decreases significantly-from 81.000 sows in 2000 to only 70.000 in 2007. According to data from the “Agro statistic” direction the swine bred in may 2008 is 756.100. A decrease in the number of the animals is observable of 13.3% compared to their number in may 2007- 872.400 (Chart 3).The total number of the swine farms (for the same period) has decreased with 31.7% compared to may 2007, and the farms breeding sows has decreased with 41.7%. **The average number of the swine bred in a farm is increasing and in May 2008 is 5.8, and the number of the bred sows is increased with 66.6% to 8.1.**

Chart 3. Allocation of the swine in classes (in thousands)

Animal classes	Total for the country toward 01.05.2007 г.	Total for the country toward 01.05.2008 г.	Changes 2008/2007
Swine up to 50 kg	490.2	420,1	-14,3%
Sows for breeding purpose above 50 kg	291.5	255,9	-12,2%
Swine for fattening above 50 kg	4.6	2,6	-43,5%
This number includes basic sows above 50 kg	86.1	77,4	-10,1%
	62.0	60,2	-2,9%
Total number of swine	872.4	756,0	-13,3%

Source: Ministry of agriculture and food- “Agro statistics’ direction, may 2008

Necessary equipment and size of the farms

After 1989 part of the swine farms and the swine complexes were destroyed. The privatization started and at the moment round 88.5- 99% from the swine are in the private sector. The working swine complexes at the moment in the bigger part of their material equipment are reconstructed. New swine farms are being built with capacity up to 200-399 sows and rarely bigger. The number of the farms in which are being bred 1-2 swine has decreased significantly. These are generally in the yard spaces and are swine satisfying the needs of their owners. The number of the farms in which are being bred 50 and above sows is being preserved.

From the data in the charts, characterizing the size of the studs is obvious that before the reform as well as now in their bigger part some of the swine farms are with small sizes but as a number 454989, which is 51.2% from the total number of the swine are bred in 80 farms.

Chart 4 . Size of the studs/herds – November 2007 (MAF”Agrostatistic”)

Number of swine	Number of farms	Animals, number
1-9	175.973	268.068
10-49	4.033	75.959
50-99	267	18.400
100-199	242	29.331
200-399	49	11.611
400-999	52	30.251
1000-1999	24	31.324
2000-4999	31	98.921
5000 and more	25	324.744
Total:	180.696	888.609

Practically this means that over 50% of the swine in Bulgaria are being bred in modernized material equipment, which matches the tendencies in the countries of the EU and the other developed countries.

Productive pointers

At present **the large professional swine breeding farms are only 1.7% of the relative share** from the total number. In them are concentrated 38.6% from the sows, when for 2007 from them at average are bred 2.278 pigs per year when the death rate was 9.93%. Those pigs are fattened up to 106.2kg for 169 days and the expenses for forage of 3.09 kg per kg of increase and average daily living increase of 633g (based on the report of the Bulgarian Association of Swine producers for 2007 for 34 swine breeding manufactories). According to data from one of the most productive swine farms in the country the value/price of the pork is 2.20lv/kg when the buying price at the moment is 2.50lv with a tendency of decrease.

It can be concluded that **one third of the pigs in the country are bred in modern necessary equipment**. The reached farm and economic results and the produced quality of the pork meat are a guaranty for a good ability for competition.

To 01.11.2007 the number of the farms breeding swine has decreased with 13.8% in comparison with the same period of 2006. The decrease in the number during 2007 is due entirely to the unfavorable economic milieu for development of the swine breeding, which are:

1. bad weather conditions
2. low yields of grain cultures ,leading to increase in their prices and in the price of the forage
3. low buying prices of the fatten pigs;
4. lack of financial support for the swine breeding in EU and respectively in Bulgaria.

Chart 4. Allocation of the sows for breeding purpose above 50kg according to the bred animals in a farm till 01.11.2007

Number of animals in a farm	Farms		Sows for breeding purpose above 50 kg	
	Number	Change 2007/2006	Number in Thousands	Change 2007/2006
1-2	8.661	-45,6%	10,9	-45,5%
3-9	1.639	-38,8%	7,5	-35,9%
10-49	536	-29,9%	9,0	-30,8%
50-199	100	40,8%	9,0	45,2%
200 и повече	55	7,8%	49,0	7,5%
Total:	10.991	-43,6%	85,4	-11,5%

Source: MAF, "Agrostatistics"

During 2007 the number of the farms in which are bred sows for breeding purpose has decreased with 43.6% compared to 2006. A decrease of 11.5% is observed in the number of the animals bred in them. This decrease concerns mainly the farms with capacity from 1 to 9 swine, in which are being bred 238 000 swine. Farms with capacity above 50 have multiplied with 27%, and the number of the animal bred in them with 12.0%.The sows for breeding purposes are bred generally in farms with above 100 animals. 90 farms are bred 53.5 thousand animals or 62.7% of their total number. This proves that in the swine breeding the professional farms with industrial character and effective production are being recognized.

During the 2006-2007 period basing on the data of the "agrostatistic" agency, the production of pork is 76302.9 tons and is with 1.8% less than that in 2006. It takes 64% of the total production and 73.2% of the industrial production of read meat in the country.

1 015 thousand swine have been realized, which is with 5.6% less than of 2006.

Working resources

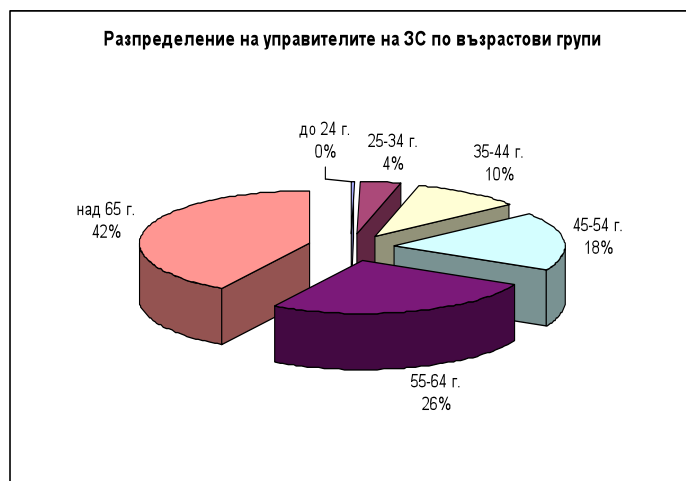
The **tendency for employing people in the agriculture is going downwards**. From 1 075 900 people working in farms during 2005, in 2007 they are 14% less to 923 000. This number equals to 459 000 annual working unit (AWU).

The bigger part of the working force in the agriculture is occupied in smaller farms –75% work in farms under 1ha and 93% work in farms smaller than 5ha. This defines the large proportion of the working force of the family workers.

One of the main problems of the Bulgarian agriculture is the **aging of the working force**. During 2005 9.4% of the occupied in the agriculture are aged up to 35 years. In 2007 this number decreases to 7.9% while the relative number of the people working in farms over 55 years is increasing from 56% in 2005 to 58.7% in 2007. The special features of the agricultural production, the low incomes and the adverse working conditions, as well as the living conditions in the rural areas do not encourage young people to occupy themselves with farm activities.

During 2005 the distribution of the managers of farms according to their age, shows that little more than 4% are the managers of farms under 35 years and 68% are over 55 years (Graphics 1).

Graphics 1. Distribution of the farm managers according to their age



The comparison with some countries from the EU shows that the share of the young farmers is different in most countries. In countries like Portugal-3%, Netherlands-5.3%, Denmark-7.1% it is lower than that in Bulgaria, while in countries like the Check Republic-12%, Slovakia-9%, German-9% it is higher.

The share of the people putting efforts in the agriculture over 55 years in most EU countries is lower than the one marked in Bulgaria (the Check Republic-41.1%, Hungary-45.4%, Slovakia-39.2%, Holand-43%, Denmark-42.1%, Germany-20%)

Chart 5. Number and share of the managers of farms depending on their education

Type of education	2003	2005
With practical experience only, number of managers	649.436	506.285
Share in the total number of farm managers, %	97	95
Secondary special education, number of managers	11.741	22.861
Share in the total number of farm managers, %	2	4
Semi-higher, higher ,post-graduate qualification in the sphere of agriculture, number of the managers	4.371	5.467
Share in the total number of the managers, %	1	1

The majority of people, occupied in the agriculture, do not have specialized qualification/education in the farm sphere and in the managing. During 2003 only 3% of the farm managers have secondary or high education in the agricultural sphere, although the tendency is this share to be increased and in 2005 it already is with 2% more (Chart 5)

A support for the entering of young and educated people in the agriculture is needed in order to provide exchange for the big number of old farmers and to speed up the increase of the productivity in the sector.

(Source: Priorities in the development of the Bulgarian agriculture program-for 2009-2013-project).

System for the vocational training in the Republic of Bulgaria

Legislative frame

3. Labour code, Professional qualification
4. Vocational training act 1999
5. Act on the higher education
6. Act on skilled crafts
7. Act on the encouragement of the employment

Institutional frame

-National level

Council of ministers
Ministry of labor and social policy
Ministry of education and science
National employment agency
National agency in vocational education and training
Nationally represented employers and employees organizations

-Regional level

Regional offices of the Employment agency
Regional education offices
Regional administration

-Local level

Municipality/City hall
Labor exchange offices

Social partnership in the professional education

The social partnership is an important factor for vindication of the quality of professional education and training as well as for the quality of the human resource in consideration with the labor market. It is being realized through the social dialogue between the institutions at different levels and the social partners. Expert committees in NAVET are structured through the tripartite principle. Other triple party structures which influence the vocational education and training policy are the National council for trilateral partnership, the national initiative “Social solidarity”, National council for promotion of employment.

National Agency for Vocational education and training –NAVET

NAVET was established with the Vocational education and training act in 1999. Its primary responsibilities are giving licenses to the vocational training centers, maintaining a register of the licensed centers, to observe, control and maintain the quality system; develop educational standards and requirements, list of the professions adequate for the Labor market. (www.navet.government.bg)

System of the vocational training in the sphere of swine breeding in Bulgaria

The vocational training in the swine breeding sphere is organized in some directions and degrees:

1. In the agricultural colleges with common profile animal breeding graduate specialists with Secondary education who can work in the swine farms. Part of their training at school is dedicated to acquiring knowledge and skills in the swine breeding, but they are not strictly profiled. The average endurance is 3-4 years.

2. In university/college with agricultural profile - the Agrarian departments of the Thracian University – Stara Zagora and Plovdiv University, is being taught “Swine breeding” in 60 classes lectures and 60 classes practical exercises as part of the vocational training in animal breeding.

The degrees acquired after graduation are “bachelor” and “master” as the last is more specific. In these universities are being written graduation treatise and scholarly essays in the sphere of swine breeding.

3. In the vocational training centers is being performed training of specialists with the following degrees and qualifications:

- “worker in animal breeding”(assistant swine breeder) with specialty “swine breeding”-first qualification degree;
- “animal breeder” (major swine breeder) specialized in “swine breeding”-second qualification degree;
- “animal breeder- technician”, specialized in “swine breeding”-third qualification degree.

The centers licensed for training in this specialty/subjects are the following:

- Agricultural academy
- “Academic BG”-fellowship
- “Balkanika travel and consulting service” Ltd
- “Veda consult” Ltd
- “National agency for business development”-fellowship
- “Vocational training, knowledge and progress center”- fellowship with nongovernmental goal etc.

The characteristics of the basic activities, professional skills, which the trained gain, the knowledge, which they should acquire and the objects and means of labor, with which they should work, are showed in charts 1, 2 and 3.

Some examples of good practice for the continuing training in “Swine breeding”.

According to Measure 111 from the Program for development of the rural areas in the sphere of the swine breeding in 150 classes (24 days) lecturing and practical course and 30 classes(short course- 5 days) will be carried from the Agricultural institute - Shumen in the Training and transfer center, under the leadership and the training certificate of the Agricultural Academy-Sofia. The goal of the training is increasing of the theoretical and practical preparation of the farmers., the managers and the working force in swine breeding farm in order to adapt the swine breeding

to the standards in this sphere. The task of the training is to gain theoretical and practical knowledge from the farmers in the swine breeding sphere in the following directions:

- Genetics and selection of the swine
- Swine breeding
- Feeding of different classes of swine from cultivated and autochthonous races
- Veterinary and sanitary conditions breeding of swine
- Management of the farm and environmentalism

Two groups of 15 students will be trained and such courses will be organized periodically, depending on the needs of the farmers. To the graduated from the course will be given a certificate for completed course in swine breeding , which will give them the opportunity to apply for subsidies , supporting the other points of the Program for development of the rural areas in the swine breeding sphere(agro-ecologic payments, aids for young farmers ,etc.)

The increase of the quality of the training in these courses is guaranteed by the highly specialized lecturers -scientific workers in the sphere of swine breeding, who have an access to newest theoretical and practical developments in the branch, in the country as well as abroad and do have the necessary lecturing skills (part of the teaching staff are lecturers in the universities).

The Executive agency of selection and reproduction in the animal breeding-Sofia and the regional Direction of selection and reproduction in the animal breeding-Sliven carry out basic course for training of technician –inseminators of swine, matching the needs of the farms and for increase of the quality of the work in the swine breeding, as the length of the courses is 10 classes theory and 11 classes practical exercises. The financial conditions for the vocational training (the price of these courses) are performed by private firms, most usually the owners of the advanced swine farms. They send their workers to train, who already basic qualification, acquired in some of the above-mentioned institutions. Practically that is how the continuation of the professional training is being realized as well as through training according to point 111 from Program for development of the rural areas.

The employment in the swine breeding farms is quite relative. It depends on the degree of organization and modernization of the farm, as well as from the professional experience of the leading team (organization manager of the production, technologist, vet) and of course on the number of the bred animals.

It is accepted that during the dry periods and the pregnancy of the sows a swine breeder should attend 300 swine, and if the sows are breastfeeding one breeder should look after 60,1200 young pigs and 2000 fattening pigs.

According to data from the Industrial swine breeding association in Bulgaria , taking into consideration 10 swine breeding enterprises,8 of which breed sows in motherhood, and 2-only swine no fattening regime, with total 12 000 pigs, the distribution of the workers in the farms is as follows:

1. 15-20 occupied - 2 farms
2. 30-40 occupied - 2 farms

3. 80 occupied - 4 farms
4. 100 occupied- 2 farms.

In the branch is observable a **surplus** of low qualified working force-Attending personnel for animals (swine breeders), due to the decrease of the number of swine and a sheer need for qualified workers(specialists with higher education- managers of the enterprises and breeders , as well as inseminating technicians).

8% to 10 % from the people working in a farm are not directly engaged in the production process, and they are just administration. Here come the accountants, engineers, vets, suppliers, etc. while the technologists are part of the directly occupied in the farm work.

Other opportunities for employment in the swine breeding sphere exist because of the Executive agency of selection and reproduction in animal breeding (EASRA). It strictly watches for the completion of the selection programs and the defining of the breeding value from the breeding associations, carries out a control over the productive qualities of the animals , produces deep frozen sperm, ova, embryos from elite brood animals, coordinates the creation and helps the Minister in his activity for acknowledging of new breeds and cross-bred animals.

At present the functions of the EASRA due to a change of the national policy in this sphere, are being transferred to breeding associations, and EASRA keeps only its controlling functions over the associations activities. In the Bulgarian swine breeding right for selection activity with a certificate (in order to control some pig breeds) have 4 associations:

1. Swinebreeding association in Bulgaria, Sofia;
2. Industrial swine breeding association in Bulgaria;
3. Special breeds of swine breeders association in Bulgaria, Silistra;
4. Breeding and preservation of the EAST Balkan swine association, Shumen.

What is more, in the country there are some exploring institutes, where work specialists in different branches in the swine breeding (genetics, selection, reproduction, feeding, breeding technology, behavior, ecology, exploration of local breeds-the East Balkan swine) , who are not directly occupied in the production, but work for the solving of different issues of theoretical and practical character.

The research showed a misbalance between the qualifications of the working force and the qualifications sought by the employers. Data from a consultant of the best leading swine farms in Bulgaria, which have met all the European requirements, in our country there is a great need for managers (production organizers),in the swine breeding, as well as a need for specialists in artificial insemination of the swine. In many of the farms due to the lack of the old qualified staff, real zoo technical reports are missing (swine killed on purpose, reasons for discarded pigs, etc.). In some of the companies already exists high fecundity of the sow-mothers (because of the good genetic material and the productivity of some breeds and hybrids), but they cannot realize their potential completely due to lack of good organization of the production. A necessity for educa-

tional system, which is of good quality and modern is being experienced, in order to improve the work and to increase the production levels and results in the swine breeding as a whole.

What are the working conditions?

In most of the swine breeding farms is being practiced a normal working month from 22 days, consisting of 8-hour workday, as the necessary breaks and vacancies considered in the Labor code are being respected. The payment of the workers (pig-tenders) is between 400-450 BGN per month. In the new and reconstructed farms (where are being bred 51.2% of the total number of swine- 80 farms) in Bulgaria, where a modernized necessary equipment exists, answering the tendencies in the European countries and the other developed ones, are provided healthy and safety working conditions and it is being watched for them. In most of them free food is available, refreshing drinks, meat on prime costs and even TV in the free time. On the other side, the high level of mechanization in the production processes in the modern farms, requires higher qualification and training of the attending personnel. In many of the old smaller farms, the hygienic conditions of animal breeding do not answer the requirements (high content of harmful gasses, not satisfying winter temperatures, high humidity, content of mould and mildew in the forage); which puts at risk the health of those working under these conditions. The high rate of the activities done by hand in the old and not-modernized farms (sometimes reaching up to 100%) defines the much higher level of the physical overloading of the workers in those farms.

Part of those working in the sphere of swine breeding are trade-union members- round 15% , and their interests are being protected in front of the Independent trade-unions in the agriculture federation, FNSZ. The trade unions are directly engaged in the process of negotiating at the branch and at regional level on the working conditions, payment and social services. Periodically are being organized visits and meetings together with the Labor inspectorate on different swine breeding farms/enterprises for control over the labor legislature. The vocational qualification and the continuing education are part of the labor legislature, after the latest changes, the employer is obliged to provide conditions for keeping and increasing of the professional qualification of the workers and employees, in order to carry out efficiently their duties, as well as to provide finance for these activities.