

ACADEMIA The countryside

# RURAL LIFE – NO

**W**e examine how the Polish countryside is changing, in conversation with **Prof. Monika Stanny** and **Prof. Andrzej Rosner** from the PAS Institute of Rural and Agricultural Development, authors of the *Report on Rural Development Monitoring*.

**ACADEMIA: You have spent years carefully observing Poland's countryside. For starters: can one call it modern?**

**ANDRZEJ ROSNER:** Unfortunately, attempts to bring the rural population into the modern age have proven difficult. Especially in the areas where there were collective state farms back in communist times. We may be pleased that Polish villages have introduced electricity and water supply systems, but not everyone is happy about that. I have seen villages in which EU funds were used to build water mains, but not a single farm connected to it, because you have to pay for it. Why do that when you can get water from a well for free?

**MONIKA STANNY:** Another example is waste management. In one village located in a former state farm area in central Pomerania, people began to outright revolt when trash containers were brought in. After all, it's easier to discard trash by throwing it out behind the barn or burying it. But it's quite a different story in suburban villages. Here, the modern age arrives together with new residents who move from the city to the countryside.

**Where does this attitude come from?**

**A.R.:** I believe it's the remnants of a life with natural resources. In the city we can't live without money, whereas in the countryside, where money appeared later, that's not a problem. You have to pay for certain things, but a significant amount of goods can be obtained in other ways, such as through bartering between neighbors.

**Does this mean that, in a sense, the modernization of villages is taking place over the heads of its inhabitants?**

**M.S.:** The reluctance to accept the civilization of the cities is weakening. In today's villages people dress the same way, have the same hairstyles, and drive cars

similar to their city counterparts. In a village shop you can buy exactly the same items as in the city.

**A.R.:** Except the older generation usually sees no reason why the reality in which they lived years ago should have to change. Change is coming faster than is possible for the village to absorb.

**What about the younger generation?**

**M.S.:** More and more people are attending university; one in three rural residents aged 20–24 is a college student. On the other hand, the gap between them and students from the city in areas such as knowledge of foreign languages, or participation in culture, is sometimes huge.

**How does education affect their situation?**

**A.R.:** If higher education were a still something as widely revered as it was in the past, the change in mentality might be significant. Today, however, it is just an element of labor market policy. The quality of education is declining, but if half of high school graduates, approx. 150,000 a year, go on to university, it means that they are kept out of the labor market for five more years, thus reducing unemployment. This is an idea which originated back in the Great Depression era. At that time, the World Labor Organization recommended to prolong the period of education, instead of allowing for early retirement. This way, the overall effect would be the same, on balance, and when the crisis ended the workforce would have better qualifications. This idea only works to a certain extent, but these days it's being utilized.

**Before World War I, 85% of the population were peasants, people actually living off the land.**

**What percentage are we talking about now?**

**M.S.:** Today, about 40% of Poles live in rural areas, of which one in four is engaged in traditional family farming. But when we look at the total number of

The project entitled "Rural Development Monitoring" is a long-term research project carried out by the European Fund for the Development of Polish Villages and the PAS Institute of Rural and Agricultural Development. The aim of the project is to conduct continual observation of socioeconomic changes taking place in rural areas in Poland. For more information, see: [www.irwirpan.waw.pl](http://www.irwirpan.waw.pl).



# LONGER IDYLIC

The older generation usually sees no reason why the reality in which they lived years ago should have to change.







### Prof. Monika Stanny

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farmers in relation to the working population of the entire country, this figure comes out to approximately 10%. That's still a large number compared to other EU countries.

A.R.: Estimating the numbers of those employed in the agricultural sector is very complex. First of all, you can own a family farm, but not produce anything from it, or produce only for your own use. Secondly, you can live on a family farm, but work outside the farm. But there are also wage-laborers, who do not own a land, but still work in agriculture. This group also existed before the war, as manor farm workers. There was a small population of rural residents holding non-farming occupations, such as innkeepers, shopkeepers, blacksmiths, teachers...

#### Where does the non-farming population work these days?

A.R.: A portion of the rural population commutes to work in the cities. This happens mainly in the south-eastern part of Poland formerly known as Galicia, which once belonged to Austria-Hungary. In other regions – especially in the west – there is a large population that can be called functionally rural. These are administrators, teachers, shopkeepers, but also the owners of various small services, such as auto repair shops. Eastern Poland has the lowest number of non-farming entrepreneurs; there, almost half of the population not employed in agriculture works in public service.

#### What are the reasons for these differences?

M.S.: The amount of non-agricultural workplaces available in rural areas very much depends on the social and economic profile of the particular *gmina*

(lowest level administrative unit). In this case location plays a significant factor, whether we're close to or far from the city center. The trajectory of historical development is even more important. Areas in central and eastern Poland, which formerly belonged to the Russian empire, are more economically monofunctional, meaning that the employment opportunities in the *gmina* are overwhelmingly in agriculture.

A.R.: The best-developed areas are in the region previously belonging to the Prussian empire, which were part of Poland in the interwar period – from Kashubia, through Wielkopolska, to Silesia. In this area, multi-functionality and the accompanying labor market diversity have a longstanding tradition. Besides, this is where widespread rural education was first introduced. So the residents here have higher aspirations. There are villages where every house, or technically villa, has a sign advertising some sort of business.

M.S.: Agriculture is also very well organized there, and that's where they first established community loan funds, farmer's associations, etc. Even the problems reported by the residents at village meetings are different. In Wielkopolska they ask for roads, sewerage and housing, whereas in the Lublin region the problems presented are ones that can't be solved by local authorities, like unemployment or the low profitability of agriculture.

A.R.: The type of migration is also significant here. In the areas once under Russian rule it was definitive: when a young person finished school they left their village. In the west, however, migration was temporary: after receiving their education in the city people returned to the village, bringing with them certain patterns of behavior, different views on the organization of life and work, and new needs. A farmer thinks in terms of seasons, a "city person" in terms of working from 9 to 5. If someone wants to build a house in the country, a carpenter from the east will say he'll come in the spring. In the Małopolska, Wielkopolska or Podkarpackie regions, where they've had more contact with the "full-time" work regime, he'll say he'll start work on Friday evening.

#### After WWII, and also in the last 27 years, the Lublin and Podlasie regions have not engaged in building social capital. Has anything happened there mentally?

A.R.: Here again we have to mention the rural-to-city migration. In the Wielkopolska region it is still very weak, because business continues to grow in the countryside, so the demographic structure develops normally. In eastern Poland there is already a huge preponderance of elderly residents as a result of previous migration, and yet young people are still continuing to leave, taking social competence with them. The people who stay behind are not very entrepreneurial, those

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who are afraid of risks associated with migration. As a result, regional differences deepen.

Moreover, because women are more likely to migrate, the ratio of young women to young men is disrupted. Every so often journalists observe the returning concept of a “farmer seeking a wife.” Research shows that women from rural areas have a greater chance of finding a partner from the city, than a country boy finding an urban girl. This problem concerns mainly areas of migration outflow, such as eastern Poland.

### Is it because, stereotypically, those from the countryside are hardworking and resourceful?

M.S.: Perhaps, but one of Ravenstein’s laws of migration says that generally women are more likely to migrate than men. All studies conducted since the nineteenth century have confirmed this. The feminization map, the number of women aged 25-34 for every 100 men, reflects this: the Wielkopolska region is fairly balanced in this respect, while young women are scarce in eastern Poland and the peripheral areas of the Mazowsze region. In addition, young women are now better educated than their male counterparts. It is a factor that facilitates migration, especially in finding work and adapting to the urban environment. Based on our research I can conclude that demographic indicators are the litmus test of social and economic change.

### What’s unique about the West Pomerania region?

M.S.: Former state farm areas. High unemployment in such areas is slowly ceasing to be a nightmare – employment offices don’t have a problem finding a job for someone who wants one, because the population has aged, so a large share of people have already transitioned from productive age into retirement age. Others have embraced professional passivity, the pension or social assistance systems. This is an area of very low entrepreneurship, generating few jobs, so young people are escaping to the cities or abroad. What positively surprised us in our research is the big improvement in education there. But whether this will stop young people from migrating is a huge question mark.

A.R.: Especially since other studies indicate that inheritance of poverty and attitudes of helplessness prevail. So I would say that what is happening is the polarization of the younger generation, rather than any clear improvement. Another issue is that migrations from these areas are primarily foreign. We don’t have precise data on this, because the Polish statistics hides these types of migrations.

M.S.: These days the official Central Statistical Office (GUS) estimates indicate that more than 2 million Poles have migrated, a figure that should be regarded as a lower limit on the actual number of emigrants.

A.R.: That is why we emphasize that we have two kinds of reality in Poland: statistical and factual. In quali-

tative research we can unearth the factual reality, but we don’t know the scale of the phenomena so discovered. Quantitative research based on general statistics can show us a certain scale, but only as established by statistical conventions, rather than the actual scale. If we relied on statistical data alone, we would be talking about a completely fictional reality.

These days general statistics don’t provide very basic information such as the number of agricultural holdings (different sources provide different numbers), or non-agricultural employment in rural areas, etc. Although the GUS data provides information about the number of people employed outside the agricultural sector in a given *gmina*, it applies to those employed in companies with more than nine employees. But in the countryside, most businesses are very small.

M.S.: In the third stage of our monitoring study, we decided to expand the survey sent to all rural and semi-urban municipalities in the country, totaling 2,174 *gminas*, by adding a question about the population number as determined based on waste management fee declarations. This should give us an indication of the actual population number in a given *gmina*. Now we are using the population number based on domestic registration statistics, which are uncertain.

### Is there a shortage of available land in the rural areas? When you travel through the Przemyśl area, for example, you see house after house, and you can’t tell where one village ends and the next one begins.

A.R.: But on the other hand, we have about one million hectares of fallow land throughout the country. So there’s not enough, but there’s also a surplus. But in order to determine the extent of this ambiguity we have to look at things from a different angle. In our monitoring we talk about the degree of deagrarianization of rural areas. In Poland, 10% of national labor resources are directed to agriculture. Agriculture generates 3.7% of GDP. In highly developed countries like France and Germany, agriculture produces about 1% of GDP and accounts for 1.5-2% of overall employment. These are large exporters of food, but agriculture makes up a small part of their economic structure. We have 10% of our workforce in agriculture! This means that subsidies for agriculture go to 10% of the population. You can subsidize 1 or 2% of the population, but effectively subsidizing one-tenth of the population is an extreme burden.

### What’s the solution?

A.R.: One way would be to reduce agricultural employment. But this means finding jobs for those no longer needed in agriculture. Because now there is also hidden unemployment: a farmer’s child who loses his or her job in a non-agricultural industry, or who grad-

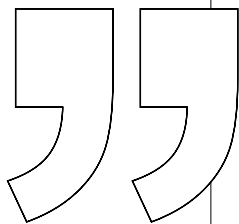
### Prof. Andrzej Rosner

is a philosopher and economist. He works in the Department of Rural Economy at the PAS Institute of Rural and Agricultural Development. From 1997 to 2008 he was the Institute’s Deputy Director for Research, and from 2008 to 2012 its Director. His research interests include employment and unemployment, rural and local labor markets, and internal migrations.

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# ACADEMIA Focus on The countryside

uates from school but has no job prospect, will always find employment on their parents' farm. They may paint a fence, for example, so technically not do much, but they don't appear in unemployment statistics. So what would save the village these days would be new jobs for those superfluous folk. But how do we create 2 million jobs in the countryside?



Eastern Poland already has a huge preponderance of elderly residents, and yet young people still continue to leave, taking social competence with them.

### So, hidden unemployment is estimated at 2 million?

A.R.: This is a very difficult question, because GUS keeps changing definitions. In the mid-1990s Prof. Izaak Frenkel from our institute estimated that Poland had 1,200,000 superfluous workers employed on family farms, while the agricultural census of 1996 showed 880,000. Why this discrepancy? Prof. Frenkel assumed that 400,000 of these people would become redundant if all services, administration, etc., or the entire farm organization system were well-balanced. He also asked the following question: what would happen if we changed our farm structure to that which was present in western Germany in the early 1990s, which is an average farm size of approx. 30 hectares. It turned out that if we adopted the German model, the agricultural sector would have to get rid of a certain part of the labor force that is linked to its fragmentation, and in total we would end up with well over 2 million redundant workers. What would happen if these many people entered the labor market? No Balcerowicz-style reform would help here. We had 3 million registered unemployed, now we would have 6 million. To this day, the agricultural sector preserves redundant workforce.

### Why does this happen?

A.R.: In 1950, after the agricultural reform and the division of Germany into East and West, the average farm size in Poland and Germany's Western regions was identical, at 5 ha. In Poland, it very slowly increased to 10 ha. In Germany, however, the process of industrialization in the 1950s took the labor force out of agriculture, which underwent a process of concentration. Our problem today is that when the industrial sector develops it does so by adopting new technologies rather than boosting employment, thus it does not create enough jobs for the rural population.

M.S.: The fact that Poland did not see a complete collectivization of its agricultural sector in the communist era can be considered both a plus and a minus. On one hand, there are no problems with the restructuring of agriculture in the former state farm areas. On the other hand, in central, eastern and southern Poland, where family farms prevail, there are big problems with the concentration of land, capital, labor, and production.

A.R.: At the moment it is estimated that approx. 80% of commercial production is generated by about 20% of households. The big ones. This means that 80% of households do not participate in the market, producing mainly for their own use. We call them social farms.

M.S.: The number of people making their living from agriculture is decreasing. I actually would assess this as a positive phenomenon, if not for the fact that it is coming at the expense of the growth in non-commercial sources of income, such as social assistance. This confirms that deagrarianization is necessary, reducing the role of agriculture in the structure of work income sources to the proportions of those in highly developed European countries. But we are also aware that agriculture is a buffer, and if we were to accelerate the process of deagrarianization, and had no plan for the people, it would lead to social conflicts. We need to make full use of this population, and the most effective way to achieve that is to create local demand for labor.

### But isn't this state of affairs being deliberately maintained?

M.S.: Unfortunately, it partially is. Such an example is the lack of reform of the Agricultural Social Insurance Fund (KRUS), even though several measures were proposed to solve this problem. Some very interesting indeed, such as the 2014 proposal by the foundation of the European Agricultural Fund for the Rural Development of Poland, or even an earlier one, once proposed by former Deputy Prime Minister Hausner as part of his public finance reform. It doesn't pay for the farmer to leave this insurance system. But let's start with the fact, which is unique on a European scale, that in our country a farmer is not considered an entrepreneur and does not pay tax. There is no reliable source to give us information on the number of farms. For our research, we obtain data on the number of farmers from the Agency for Restructuring and Modernization of Agriculture, which gives us the number of farmers receiving direct payments. But does this include all farms? The GUS survey does not provide a definite answer, as Professor Rosner mentioned before. For example, we received information from the Ministry of Finance on the average income of a taxpayer, based on the income tax returns. It revealed that the situation is least favorable in the eastern part of the country. But these data do not include farmers, because they do not pay tax. And yet we know that the Podlasie region

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is a hub of the dairy industry, that there are wealthy farmers there with high production rates and family farms with a stronghold on the market, receiving EU subsidies.

A.R.: And the subsidies generally mean that people don't want to sell the land, because every year they get a bonus for owning it.

M.S.: Besides that, there is a stigma attached to large-scale farms, because we tend to prefer and support small family farms. And in addition we have a new element in the form of the 500+ subsidy for having children. While such help may be needed, it certainly should be addressed differently, so it doesn't lead to the professional deactivation of women. Otherwise, in 20 years we will have a 500+ syndrome similar to that of the post state-farm era. Women who have several children will disappear from the market for 20 years, and after this time they will no longer be able to become professionally active again. This may be human capital lost forever.

#### That's a grim prospect. Can it be changed?

A.R.: Our current demographic development provides a glimmer of hope. Young people are entering the labor market in relatively small numbers (demographic decline), while baby boomers are nearing the retirement age. As a result, in the last five years the potential workforce resources in Poland have diminished with every year. According to the forecast, this situation will continue. Conditions are forming which are conducive to unemployment being reduced and all available labor resources being tapped by the labor market. This includes women after a break in employment. Moreover, in the longer term, this trend will favor structural changes in agriculture. They will be difficult

for the rural population and will necessitate changes in attitudes towards the land, traditionally viewed as a family inheritance, but they will be crucial. Agriculture in its current state will not generate income acceptable to the rural population. But you have to remember that changes in agriculture must be correlated with changes in its environment.

#### But is every good solution appropriate for every rural area?

M.S. Mechanisms of support should be adapted to various types of problems, and to different types of rural areas. Meanwhile, the *Strategy for Responsible Development*, currently being prepared by the government, talks about support for eastern Poland, for the Silesia region, for big and small cities, for the village, but not about how to offer support, and who this support should be directed to. What it lacks are priorities for the development of rural areas. They have also announced a change to take place in the role of the regions in the development program.

We do not believe that the regional programs should be centralized, but instead that the central programs should be adjusted to the specific needs of the territories. For example, if a person starting a self-employed business is exempt from paying full tax for the first two years, then the terms of the exemption should be different in suburban *gminas* such as Lesznowola or Konstancin-Jeziorna than in deeply rural Hajnówka in Podlasie, or Barwice near Szczecinek. The government should entice entrepreneurs in different ways.

INTERVIEW BY ANNA ZAWADZKA

AND KATARZYNA CZARNECKA

PHOTOGRAPHY BY JAKUB OSTAŁOWSKI

**W**hy Poland is struggling against African swine fever, and how an epidemic might affect the countryside, are explained to us by **Prof. Zygmunt Pejsak** from the National Veterinary Research Institute in Pulawy, an ordinary member of the Polish Academy of Sciences.

**ACADEMIA: African swine fever (ASF) appeared in Poland in February 2014. In September 2016, 23 outbreaks were detected. In addition, to date, 117 cases of the disease have been registered in wild boar. How big of a problem is African swine fever?**

**ZYGMUNT PEJSAK:** Unfortunately, it's a huge problem. The causative agent, the ASF virus (ASFV) from the family *Asfarviridae*, is pathogenic only for pigs and wild boar. Because it doesn't pose any risk to humans, in some countries, such as Russia and Ukraine, diseased animals are sometimes slaughtered and their



meat is used for human consumption. Because of such irresponsible actions, ASFV may be free to spread in certain circumstances, since smoking, salting, pickling, or freezing such meat does not kill the virus.

#### How exactly does the disease spread?

Each outbreak of the disease in pigs and subsequent spread of ASFV among the pig population was caused by a failure to comply with the basic principles of biosecurity, particularly bringing in ASFV-infected pigs purchased from an unknown source into pig holding, as well as the use of feeds contaminated with the virus. Humans can transmit ASFV to a herd of pigs through shoes, clothing, hair, or equipment contaminated with the virus. Animals can also contract the virus via other sources, such as sausages contaminated with microorganisms, or other products made from the meat of infected pigs or wild boar. On one occasion, the disease is known to have spread via straw that was contaminated with tissues of a wild boar that had succumbed to ASF.

and greatly hinder their production. This often raises strong opposition from breeders and producers of this species. One such regulation associated with the eradication of ASF in regions where the disease occurred involves allowing the slaughter of pigs to take place only in certain slaughterhouses, and allowing the meat of pigs which are healthy, but come from restricted zones, to be used only for canning. These canned preserves are 100% safe for both humans and animals.

#### Procedures to combat an epidemic are not only complicated but also expensive?

Yes, very much so. They usually cost more than the slaughter and processing of pigs in a slaughterhouse. For example, the occurrence of ASF on one small pig farm in the Podlasie region led to the culling of 49 pigs in five small backyard pig holdings. In order to pay for the slaughter of that many animals and finance the cleaning and disinfection of pig pens, the Treasury had to spend PLN 54,000.

Social problems are caused, for instance, by the fact that a farmer whose holding was infected by ASF is allowed to take up pig farming again only 40 days after the liquidation of the herd, at the earliest. For many reasons, such as subsequent outbreaks, this time may be extended by up to several months.

#### One may naively think that since humans are not in any danger from ASFV, then there is no need to worry so much?

We worry for a number of reasons, primarily because the disease is not easily overcome. First, as I mentioned, there is no effective vaccine, and second, historically, ASF has never been present in Poland and in the wild boar population.

We should assume that the eradication of the virus from the wild boar population will take a long time for many reasons. Mainly due to the behavior of these animals, and also because culling them is virtually impossible in some areas, such as in the Białowieża National Park. Meanwhile, the persistence of ASFV in the wild boar population could lead to a situation in which the disease evolves from an acute version into a chronic form, where some of the infected animals live through the infection and become long-term spreaders of the virus, which will substantially complicate the eradication process.

#### That's not good?

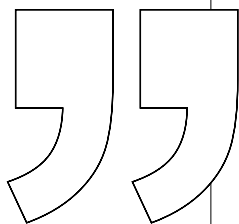
It's not good because over the years we could have a source of the virus "in the forest." In such a situation, irresponsible human behavior can at any time lead to the transmission of the disease from the forest to pigs, for example via the meat from culled – more likely "poached" – ASFV-infected boars. Another way to transfer the virus from "the forest" into the ani-

A lack of common sense on the part of small farmers can cause huge problems for professional – medium- and large-scale – producers of pigs.

#### How do we combat ASF?

Despite great efforts, we still do not have good, efficient, and safe vaccine. This is due to the biological characteristics of the etiological agent of the disease, including its high genotypic variability (23 genotypes), and the inability to induce the formation of specific neutralizing antibodies. Which is why, in all of the world, the only way to combat ASF is through the administrative depopulation and disposal of animals from farms infected by ASFV. Additionally, it is recommended to slaughter all pigs in what is known as the infected zone – in a radius of 3 km from the outbreak. In most countries, including in Poland, the animal owner receives full compensation for the culled herd.

An outbreak of ASF causes many rigid administrative regulations to be imposed within a radius of 7 km of the outbreak – known as the protective zone – which significantly restrict the movement of pigs





mal pens may be via people, such as those out picking mushrooms, for example. They can carry the etiological agent of the disease from the forest into the pig farm via their shoes. Our most recent defeat in the battle against ASF, in July, August and September of this year, was a consequence of the actions of a farmer whose pigs began to fall ill. He sold off his infected animals cheaply, which caused ASFV to spread to several other backyard pig holdings .

#### **How is that possible? Animal farm inspections are not sufficient?**

In Poland, there are very clear regulations: every breeder and producer must inform the Agricultural Market Agency of the fact that they own pigs, which should be permanently marked. Unfortunately, some farmers ignore this responsibility, resulting in distributing pigs from unregistered farms on the market. Obviously, farmers should not purchase such animals. Unfortunately, in practice that's not always the case.

#### **Why is that?**

First of all, it's due to the low awareness among a some proportion of animal owners. This is particularly true of those "small" farmers, whose holdings consist of 2-3 pigs. The consequences of an ASF outbreak in such holdings cause much less trouble for the owner than when the disease occurs on a large farm. Unfortunately, the lack of common sense on the part of many small farmers causes huge problems for professional – medium- and large-scale – producers of pigs. In an extreme case, the problem may spread to all pig pro-

ducers throughout Poland. For this reason, I believe that pig holders who do not respect the basic principles of herd biosecurity should be forced to cease pig farming. Failure to implement this regulation carries huge risks for the entire industry related to the production of pigs and pork.

#### **Your views are probably not popular with farmers?**

That's true, especially with small-scale pig producers. Professionals have views similar to mine – they realize the dangers of ASF occurring at a small neighboring farm with only several pigs. Unfortunately, the measures to restrict the production of pig farms which do not comply with the basic principles of biosecurity are, for social reasons, insufficiently severe. This is partially why this disease, although at a relatively slow pace, is consistently spreading through the country.

In many Western European countries, radical actions are taken in this case. Established law is consistently adhered to and implemented for the benefit of all. Unfortunately, we are not so demanding and strict when it comes to what's most important at this point – ensuring that pig breeders and producers comply with biosecurity rules.

We performed a simulation study on how much of the national budget would need to be spent in the event of an outbreak in an area with large pig farms and high pig density. If, for example, an emergency zone were to be established in one local commune in the Wolsztyn region, which includes 146 farms with 25,000 pigs, their slaughter would cost PLN 15 million.

"Caution! African Swine Fever – Endangered Area."





### Prof. Zygmunt Pejsak

is one of the world's leading specialists in epizootiology and hyopathology. He has worked at the National Veterinary Research Institute in Pulawy for 30 years, where he leads the Department of Swine Diseases. One of the founders of the European College of Porcine Health Management – ECPHM). An Ordinary Member of the Polish Academy of Sciences.

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#### **So, there is no chance of the virus spreading to a farm which is well protected by biosecurity?**

Virtually, no. Unfortunately, in Poland only a small percent of pig farms are well protected by biosecurity, and these are mainly the most modern ones.

#### **What about wild boar?**

Wild boar are currently the main source of the virus. I hope that the vast majority of those interested in eradicating ASF are already aware of this. Unfortunately, not all experts share this view. More importantly, a wild boar that succumbs to ASF is actually more dangerous than one infected with the virus but still alive.

A living boar can spread the virus for a maximum of 8-10 days. A dead infected boar may be the source of the virus for months. So, in my opinion, we should actively seek dead boar in the regions affected by the disease to collect and dispose of them. That way we will substantially limit the prevalence of the virus and its sources in the country. In my opinion, this is one of the most important tasks in the fight against ASF. It has been shown that paid search for dead boar increases the number of animals found six-fold.

#### **So it was the boar that brought the illness to our country?**

Yes. The first cases were found in February 2014. A few hundred meters from the border with Belarus. That's where we found two dead wild boar infected with ASF, within 10 km of each other – such distance between animals who succumbed to ASF was surprising. Except that the spread of ASF in our wild boar population happened relatively slowly – in the first two years the virus traveled “only” 35 km from the eastern

border. Later it was humans who played a significant role in the spread of ASF.

#### **We could do with better education on the subject?**

Yes. The awareness of farmers is the most important element in effectively fighting ASF, not only in our country but everywhere else. Unfortunately, as most of us are probably aware, raising people's awareness is a difficult and time-consuming task, and we have very little time. Almost all ASF outbreaks stemmed from basic mistakes made by people involved in the rearing of pigs, including disregard for well-known rules of conduct in this business.

#### **Tracing the infection route involves massive detective work.**

You could say that. However, thanks to the methods at our disposal at the Institute in Pulawy, including molecular epidemiology techniques, we know that the virus traveled to us from Belarus and it corresponds to the virus which was found in Russia. Epidemiological inquiry is highly important. In virtually all outbreaks we have identified the path of the virus and how it spread to the herd. We know that we are still dealing with the same strain, which is slowly undergoing point mutations and belongs to the genotype II of ASFV.

I would add that the National Reference Laboratory for the detection of ASF located at the National Veterinary Research Institute in Pulawy is currently the only institution in Poland that conducts research and routine diagnostics on ASF. This is, among other reasons, due to the fact that our CL3 laboratories prevent the virus “escaping” from the laboratory.

In accordance with EU law, each positive result is verified by the EU Reference Laboratory located in Spain. Not once has our diagnosis differed from the one observed in their laboratory.

#### **How many agricultural holdings in Poland include pigs?**

About 190,000. And there are about 10.5 million pigs.

#### **And prior to slaughter every one of them must be tested, with all samples sent to the Institute in Pulawy?**

No. We only perform clinical and laboratory tests for ASF on pigs living in the area of Zone III (restricted zone). We conduct laboratory tests on all wild boar in the area of zone III and II (surveillance zone), and all dead boar throughout the country. At the height of the epizootic we test approximately 2,000 samples daily. Each sample is evaluated by at least two assays (ELISA and PCR). The results are sent to the appropriate veterinary inspectorate within 24 hours. Since the outbreak of ASF in Poland, our laboratory staff works in two shifts. We have adopted and developed

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many diagnostic methods that are reliable, fast and – more importantly – cheap.

#### **Have you received grants for developing research methods?**

Just recently we got one grant. Although we have sent many proposals. I noticed, however, that quite substantial funding has recently been allocated for projects related to sewage management... But we don't despair and continue to send new proposals to the NCN and NCBiR. I hope that their experts understand that scientific research sometimes means becoming better able to respond to the country's needs resulting from an epidemiological situation.

#### **If we know how to fight the disease, why can't we win that fight in Poland?**

Just like Russia, Angola, Malta, and Cuba haven't won, whereas it was possible in Belgium, France, or the Netherlands? First of all, so far no other country has reported ASF presence in their wild boar population. Secondly, our agricultural structure, including pig farming, differs substantially from the one present in other European countries. Ours are mainly small-scale holdings. There are more of them than there are large pig farms throughout the "old" European Union, and there is a difference in the level of awareness and responsibility of "small" pig producers. In the end, I don't think we were determined enough when it came to the substantial culling of the very large wild boar population in our country, and in closing down pig farms not observing the basic principles of biosecurity. I have noticed that in recent months this situation has clearly improved.

But the density of wild boar in the eastern area of Poland is fairly high – a few hundred animals per forest district. Searching through the forests for dead boar is a Sisyphean task.

Not so Sisyphean. In Estonia they find 1,500 wild boar infected by ASFV in one year, in Latvia – 1,200. And in Poland, in the ASF zone, we find a few dozen. It's worth noting that in all these countries, including Poland, ASFV is detected in about half of the dead boar found in regions in which ASFV is circulating.

#### **So it's because no one is searching for them?**

Unfortunately, also due to this. Because if you're not searching, you don't see a problem. As I mentioned before, I think the situation is changing, and I hope that soon the effectiveness of eliminating the virus from the wild boar population by actively seeking the dead wild boar will significantly improve. We are already making strong efforts to reduce the density of the wild boar population, so that it doesn't exceed 0.5 wild boar per square kilometer in each hunting circuit. Research shows that when the density of the wild boar population is lower than this figure, the spread of ASF is much more difficult.

#### **Does this mean active searching?**

The European Union pays subsidies for each dead wild boar found. Even in Belarus they pay a few dozen euros for every dead boar. The same in Latvia, Lithuania, and Estonia.

#### **At the moment, the virus has stayed east of the Vistula. If it appears to the west, Poland will be under embargo.**

But we are already under embargo. Russia, China, Japan, and several other countries, acting in accordance with international law, simply introduced a ban on the import of our pigs and pork. The European Union treats us in accordance with EU law and allows the export of pigs and meat from the entire country – outside the zones III and II – to the territory of the Community. This can go on as long as we do everything we are told to do by the EU Veterinary Commission. Under EU law they cannot prohibit us from sending meat to Germany, Spain, or Denmark. The trouble is, they don't want to buy it from us.

#### **What is our worst case scenario? We'll have no pigs left?**

Well, in Malta and Cuba they slaughtered all of them. In Poland, I don't see this happening. I only stress that it is a disease that must be fought by everyone, not just the veterinary service, because they are not able to cope with the problem on their own. The veterinary inspectorate, on which most tasks have been imposed, has limited resources. This war must include hunters, the military, police, and many other services. At the borders this is a job for the customs service and the border veterinary inspectorate.

The fight to eradicate this disease should be fought not only by the Ministry of Agriculture, but also the Ministry of Internal Affairs and Administration, Ministry of Defense, and the Ministry of Environmental Protection. The necessary legal regulations, which have often been a problem in the past, are now in place. We just have to enforce them.

#### **How do you like the idea of building a fence 40 cm deep along the border to stop the boars from digging through? Could this help, or would we become the laughing stock of Europe?**

Although there are many supporters of such a solution in Poland, I personally think that this idea is not acceptable in the current situation. What will we do with the fence if, traveling with the boars or via people (which is more likely), ASF moves closer to the river? Besides, there are many other reasons why such actions could not be taken.

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