**Cucumber as a national treasure and its thorny way to the dinner table**

A quarter of a century ago, in the early 1990s, OAO “Buyskiy Himicheskiy zavod” chose fertilizer manufacturing as the area of activity and dealt with the issue of its export. Italian company “Veneta Mineraria”, the co-founder of our enterprise, was interested in organo-mineral fertilizers that are made of sapric peat. In the process of learning about mineral nutrition of agricultural plants, in tandem with a respected Italian company, we decided to extend our scope of business. That’s when we started to manufacture water-soluble fertilizers which were already used extensively, especially under the conditions of hot weather and were already an essential part of a drip irrigation system. At that time, water-soluble fertilizers were at the base of mineral nutrition in the sheltered ground.

In the mid-90s, Russian greenhouse complex began to use water-soluble fertilizers. We were interested in the project and now, for more than 20 years, we are a part of this complex. Our company is bound up in problems of the Association “Greenhouses of Russia”. We do our best to provide greenhouse complex with fertilizers for mineral nutrition and we clearly succeed! At the same time, we understand that there’s no limit to perfection and try to improve our product without being dizzy with success. This year, on 5-6 of September, there was a panel with agrochemical agencies of the Association “Greenhouses of Russia”. We have shown our production facilities where we manufacture nitrate, sulfate and phosphate salts, chelated microelements, etc, and one of the best laboratories in Russia equipped with advanced analytical equipment. After this meeting, we have a mind to share our opinion on cucumber’s role in the Russian economy.

Currently, Russian greenhouse complex is constantly growing: heated greenhouses cover an area of 2376 ha, vegetables total output is 813, 7 thousand tonnes, the number of people employed is more than 50 thousand people. It is worth mentioning that hundreds of hectares were lost not because of people who work half-heartedly, but because of unlimited desire of some participants to be rich at the cost of trapped business-partners that excludes the possibility of partnering relationship. More detailed analysis of the situation shows that the boat with dictators of prices and conditions was rocked. As a result, a lot of greenhouses facilities that were holding on to the last fell victim to consequences, leaving twisted iron, a pile of broken glass and memories of witnesses behind. Though cynical as it sounds, but the destiny of people who work in greenhouses was getting clearer with the loss of these hectares. By cutting off the gas and electricity, they determined the fate of debtors during the season when only 4 mm glass is protecting plants from a cold of a minus thirty degrees Celsius. In many cases, the director of a greenhouse complex is only able to offer cucumber ovary as a mean of payment. As a result, highly-priced enterprises were put out of action without the possibility to be recovered.

The cost structure of this production branch shows its dependence on power-producing companies. It is worth mentioning that all greenhouse complexes that outstood the crisis and continue to evolve made it not by virtue of prevailing conditions, but in spite of them. These conditions are composing unexpected, simple and accepted expression “Sanctions- response measures”. The potential of this expression is presumably low, has its limits and can’t be a long-term growth vector of development that is why the effect will depend on these “response measures”. As a result, after losing its fundamental designation, greenhouse complexes had to take a secure stand, supported by the advanced economy which is able to resist an expansion of foreign goods in Russia. The final results and the effect of the expression are higher when economics is more balanced and complex on the macro level. We need to understand that only the analysis of the whole chain of economic relations will let us determinate our position and rolein the united economic space, taking into consideration external contacts.

We can use as an example the case of fertilizer manufacturers. To grow a cucumber you need fertilizers and to manufacture a fertilizer you need complex chemical processing equipment, however, there’s no chemical engineering in Russia. There are plants that produce this kind of equipment, but they are in possession of countries which turned a blind eye on us. Our task is to mobilize all the resources of fertilizer manufacturing and to give a boost to “response measures”. Our resource is a team of metalworkers, but it is not quite the level of the ministry of chemical engineering or any other organization that is able to solve engineering problems. From this perspective, with our anti-sanction measures we solved just a bit of a problem and now we going to face the production process in all its difficulty.

What do we have in reality? To what extent these undergoing processes are interrelated and can they be controlled on the macroeconomic level? Cucumber from Vologda is always going to lose in price to the cucumber that was grown in the etesian climate. Without going into details it is easy to decide that in the stores of Vologda one should supply cucumber from Turkey. One of the politicians disclosed an approach similar to this, by saying that there is no point in developing greenhouse business in Russia as well as wasting gas and electricity because we can bring the grass from the places where it grows on a year-round basis. Simple and understandable sentence!? What a man! Gas is power! And the cucumber is nothing but grass..in this context, we want to remind you that all the energy that living beings consume is produced by plants in the process of photosynthesis, rather by grass which is a first link in the food chain. That means that “grass” is a basis of life on Earth and the predecessor of gas occurrences that absorbed solar energy, which can be used in greenhouses for supplementary lighting through the use of modern technologies. Consequently, our existence is possible owing to the Sun, water, minerals and grass that they nurtured.

In response to political superficiality mentioned above, let’s examine the situation of cucumber in more details. The price of cucumber from Vologda is comprised of a contribution of Russian science and education, work of selection breeders, seed growers, people who built and equipped the greenhouse as well as people who work there now, deliver fertilizers, water, heat and electricity. What an amount of taxes each participant of the process paid to government budget even before cucumber makes it to the counter! This price is basically an indicator of integrated work performance of hundreds of companies in Russia. What did the cucumber from Turkey give us? It arrived, the money went. Subsequently, the science, manufacturing department and the economy itself develops in Turkey. On the other hand, it is obvious that citrus cultures won’t fruit in Vologda so the fact that along with our cucumber we have citrus fruit from Turkey is not surprising. We need to accept this and develop our economy.

It is necessary to stop importing products that give a boost to the production sector in Russia itself and this will be not the element of trade war or protection, but the core of the economic. Expression, mentioned before, after all, will cease to serve as “response measures” even though sanctions won’t be lifted. Striking back in response to sanctions is a short-term occurrence that incentivizes us to plough up not only our field but also to work on the “field” of Russian production sector. We should start with the development and improvement of the internal market and the response measures should remain in force on the field of countries that imposed sanctions against Russia. The main countermeasure is properly organized economics with forecasted future, simple rules, and employment of the resources, availability of which always made Russia a leader. But existent production facilities should not be credited for natural resources that we are proud of as they were given us by God. These resources were supposed to mobilize us, but the other way round made us more eased off. It is worth noting that the way we use natural resources is similar to a banquet where the table is groaning with food. In every meal they have placed a spoon that was already been put in the neighbouring dish, the problem is that the contents are different. Guests are full, the table lost its good look, there are a lot of leftovers, all you want is to clean the dishes and change the table, but there is no other one. You can leave the banquet, but where we can go from our planet? The rational use of natural resources will lead to great results and in the cycle of a matter it will lead to the growth in the number that we can reach only in agriculture. Along with that one should know how the system of “soil-plant” works and learn to abide by its laws.

The development of material resources is possible due to the management resources on deliberateness of which depends stability and development of economics. The invisible hand of the market supports only visible and wise managerial decisions, but if the decision doesn’t correspond to the problem and doesn’t consider all the particularities, this hand turns into the beating one and bruises the whole body of the economics. We hardly need give examples, together we can provide thousands!

The main tool that helps to make a managerial decision is the cash flow management in the multifactorial and interdependent production process. We need to know if the added ruble is going to strengthen the cash flow or disappear and dry it out. To exercise these honourable and delicate functions we have 2 ministries: Ministry of Finance and Ministry of Economic Development in conjunction with the Ministry of Industry and Trade. That means that we have resources to control the flow, the key is to choose the right direction. The invisible hand always responses with visible impact on reasonable price calculations of the final product, including monopolistic constituents. By contributing to the price formation for energy sources which are used in power-consuming industries, for example, greenhouse cropping, state economic institutions should consider a lot of factors that are undistinguished and don’t contribute to the process, but their indirect participation is so important that without this consideration the order of the process will be disturbed. Regardless of the fact that these factors can be described as the second-order ones, they should be taken into account. Let’s refer to the example that is more suitable for our topic: we conduct a battle for the harvest by utilizing fertilizers, but if they are unclaimed we will decline the services of dozens of other participants of the process who in turn will pass on a stop signal to other hundreds, and we say: “Grass…”.

Any economy, including the developed one, is strong only because of targeted solutions and their perfect execution. The responsibility and importance of managerial resources against the backdrop of market intricacies are helping to come to the managerial decision. The market is not a self-regulating system, it can only send red, yellow or green signals, but everything else is on the man at the wheel. The whole marketing process is the chain of strategic decisions, of short-term corrective decisions, and of awareness of your own place and position within the framework of the enterprise or within the system of the global economy.

We, manufacturers, are bowled over by what was said that our economy doesn’t develop and keep sinking because it didn’t hit the bottom. The economic navigators of the national level have thought about hitting the bottom on purpose. A new concept “lie low at the bottom” was introduced in the global economy and we protest against sanctions? They impose sanctions against those, who decided to settle at the bottom. The bottom can be very oozy so there is a high possibility to get caught in the bottom settlings. Also, we don’t know how deep the hollow above which the submarine of our economy froze is. It is possible that it won’t withstand the weight of economic problems in case of sinking lower and will be crashed. That means we have to emerge immediately and take today as the bottom so we can set ourselves to the rise.

What stages our company went through to make a contribution to the preservation and development of greenhouse complexes? Fertilizers make 3-5 % of vegetable cost value which is to say that we don’t have an influence over the process of crop cultivation. In the meantime, you can’t grow a cucumber without mineral nutrition.

In the mid-90-th, our plant produced first 500 tons of magnesium sulfate that we supplied to greenhouse facilities for drip irrigation of plants. The product was highly valued by consumers. People say: “The first robin does not make a spring”, but our robin showed itself as a predecessor of the whole production process of products for the sheltered ground. A quarter of a century ago, when they started to use low volume technologies in greenhouses, the requirement of fertilizers was met by means of the import. We needed domestically produced alternative for the complex of mineral nutrition that would support the domestic market inclusive of the unexpected price increase.

To handle the problem we had to broaden the range of water-soluble fertilizers by a factor of 20, and the volume of production by about a factor of 100. By now the problem is solved and 50-70 thousand tons per year is a standard volume of output. Only by maintaining similar results and conforming quality, we could count on the competitive edge in the fight against transnational companies on the Russian market. The expression “Import substitution” didn’t exist at that time, nevertheless, it was clear that being dependent on the import is a deadlock situation when it comes to greenhouse vegetable cultivation. We needed to be proactive and prevent this dependence. Needless to say that it would have been helpful to have a supporter in the government. This cooperation could be expressed in the government orders which would help us to acquire an advantage over the competitors. This would mean that we have been noticed, and gave us much needed organizational and moral support that would worth a lot, even without money.

Ipso facto, we had to break down barriers that are similar to the sanctions, but inside the country. International sanctions cause the feeling of excitement, anger, and competitiveness. When it comes to building relationships within the country, it is complicated because evident facts are not accepted while the meaningless ones are enforced. The state registration of fertilizers complies with the rules of pesticides registration. Why the nutrition of plants, mineral elements that were created by nature itself, and iatrochemistry are combined together into one registration process?

As chemists, in the process of fertilizers preparation, we intend to increase its concentration by extracting ballast compounds from natural raw materials and by making active ingredients more soluble and accessible for plants. Naturally, plants accomplish it themselves without human intervention. With our technologies and with the high yield as a target, we tend to use chemical reactors and agrotechnologies in order to increase nutrient availability. It looks like people who drafted and adopted a law didn’t take into account all the particularities of natural phenomena and its correlation with the industrial alternative, so they made equal the iatrochemistry and mineral nutrition based on the assumption that there is chemistry in both. Within this context, it is worth noting that the human, purest air and spring water is chemistry. It happens that some of us are lacking calcium, potassium, magnesium or other elements, same with the cucumber, but people who drafted the law on the organization of work on the market of fertilizers were clearly lacking phosphorus at that moment.

The system of the state registration despite being strict and bureaucratic is organized in a way that company can register and introduce to the market any product even without having production facilities, laboratory (in chemistry it is a non-sense to work without assays) and specialists. Pay money for registration and you’ll find people who will contribute to the process with an interest to make money on this deal. This method is commonly used by so-called manufacturers of fertilizers for amateur gardening and horticulture. Gardeners believe the label approved by the registrant that’s why we have fertilizers for onion, garlic, turnip, horseradish and so on. I should admit that we also got drowned into this process by the system and we must obey the rules, otherwise the sales will drop.

Adopted law and stated order of registration of fertilizers do not address mentioned issues. However, just the prolongation of actual permissions and registration of calcium nitrate in the period of anti-sanctions measures has cost us 15 million rubles. That is a lot of money which can be described as sanctions within Russia. It is reasonable to suppose that the registration itself is a profitable business for someone, for this reason, the operating system is so solid, and the question if it addresses fundamental problems is a secondary issue. First of all, the company itself should be certified and under the condition of having the license, it can send a request for the registration of an agrochemical product. Without this approach, we, wishing or not, would pave the way for sanitary and health services, and for EMERCOM if the situation is critical. But it is essential to get to the root of a problem and the best control is self-control under created for the growth conditions. The actual control procedure and control procedure for control procedure itself makes the system inflexible, unable to react to imperatives of our time, and, as a result, uncontrollable.

If only it was an exceptional example. The way for the home-produced cucumber we beat by supplying fertilizers and potting compost to Russian gardeners which make the army of millions of people.

Now we understand that every dispatched wagon or a bag of potting compost should be accompanied with a phytosanitary certificate. This demand is reasonable, we understand and support it- the contagion, if there is one, should be localized. Therefore, it is hard to escape the conclusion that detailed diagnostics is much needed for the whole manufacturing sequence that turf goes through in the process of compost production, including its source. An annual output of potting soil is ready to be packaged- just analyze it and approve the product or put it on hold. But there’s nothing could be further from the truth…A phytosanitary certificate is needed for every dispatch, for every buyer in the administrative centre and in order to get the certificate company has to provide samples on examination. To use this working pattern we need a car to drive to the certification center, which is placed in 100 km from the plant, and back. Statistics show that we got more than 3000 authorization documents for one product! Such a wasteful work is beyond common sense. A car that delivers the documents covered a distance of about millions of kilometers. It is the illusion of work and the illusion of law execution. The work morphs into everyday routine and no one thinks about tests and phytoawareness. Along with that, money for the certification is the engine for the process.

Our suggestion is to make a more thorough analysis because one report for the lot is not acceptable. Derogation from the rules is followed by penal fines, the reference to the law is a watertight argument, so you have to make 2 rides a day if it is needed. With the hope of changes, I will confess that by the moment of this writing, we probably were understood after all this long-term hardship thanks to the governor intervention.

To be granted the right to manufacture fertilizers we spent not only a great amount of money but also time, during the period of which dozens of thousands of tons of agrochemicals were imported into Russia. The time that was lost at the hearings, press publications and so on, we will never get it back.

You can’t baselessly counter import and it would be wrong to get euphoric because of increasing export. It all depends on what is exporting and what is importing. As defined, both should benefit the government in the form of taxes and customs duties when exporting or staying on the domestic market. However, it just a fiscal part of interexchange of goods, the economics of charges and taxes that will not create new dynamics of production, it is only enough to close gaps in the budget.

Let’s consider the example of Buyskiy Himicheskiy zavod: more than a few times we received offers to work under the scheme of only 12 billing documents a year. What does it mean? The point is that the commercial firm makes an advance payment every month for all of the products that we produce and the whole stock is exported, particularly but not exceptionally to Morocco. This offer, in the context of the established exchange rate for the rouble against the dollar, is quite appealing under a condition of 100 % pre-payment. From a business perspective we should have accepted it, however, we refused. Why? Only because when we thought what should to answer we were guided by a sense of corporate responsibility for the Russian greenhouse complex, which we can’t betray. Regardless that financially it wasn’t the best decision for us, we preferred the strategic partner over immediate one hoping that it will benefit us in the future.

How can be the government involved in this? It is obvious. For the example, the application of our mineral nutrition technologies on different crops in different soil and climate conditions gives a profit of up to 100 rubles for every ruble spent. That has been confirmed by official tests and manufacturing practice.

Is the government interested in these “chickens and eggs”? I suppose, yes! The aim of doubling the gross domestic product is, probably, still relevant therefore these products are demanded on the domestic market. To put a barrier gate for the exported products would be fundamentally wrong so we had to find new economic incentives. As the basis of calculations we should take two figures: first- how much we acquire exporting and second- how much we lose receiving fewer yields.

By means of these calculations, we will be able to define the resources that are not being used but can potentially produce a profit to all the participants of the manufacturing process and to the federal budget. If we accomplish this goal, the economics of closing gaps in the budget by the means of export will start to benefit from the import.

A competent partnership between enterprises and the government can stimulate the dynamic growth of our economy.

At the current level of the domestic engineering industry, import importance for the chemical industry is impossible to overestimate. Only through the import from Germany and Italy of before the sanctions period and thanks to the partnership with China we achieved available results. Therefore, not renouncing, but selectivity and individual attention in the process of import phase-out are the main conditions of successful cooperation with foreign companies and consequently of the development in general.

Needless to say that cucumber from this article is taken as a symbol of Russian horticulture. At this point, horticulture is responsible for the protection of the Russian foodstuff market. Therewith, the export of food products expressed in monetary terms is comparable with the export of arms. That means that from defensive anti-sanction measures agriculture is proceeding to higher order goals meaning objectives of offensive nature. The Ministry of Agriculture will probably become the Ministry of offensive strategies. That makes sense to consider the future of the greenhouse complexes by using the image of a plate with fresh vegetables- more often and fuller will 150 million plates fill up the better future will be. Investors are not those who build greenhouses, but ones who will buy grown vegetables and their activity will depend on the level of purchasing power. The plate with vegetables can be an unbiased indicator of the economic level in Russia and can be perceived as a national treasure that is more important than they say on television. Let there be an augmentation in the number of national treasures! Time will tell if we will reach a goal of one plate of a sour cream salad every day. What could be easier?

In all of the work we only concerned about one thing: all the burning questions, for example, allocation of apartments for the people who are homeless due to the natural disasters, ensuring that ill people have access to medication, repairing of communal entrance hall, purchasing of wheelchairs, construction of children playgrounds and so on, can be dealt with only through conference connection with the President. We would love to grow cucumber and all of its congeners in photosynthesis using the resources of all the participants of the manufacturing process so the President will learn about this from the report of subordinate units- “The country is having a salad for breakfast!”.