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Natural and Climatic Factors and Peculiarities of Russian Historic Process

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Abstract: Natural and climatic factors had always a very large influence on the historical development of Russia. Soils of low fertility, low crop levels and extremely short agricultural work cycle made a big contribution to the differences between Russia and the Western Europe. From here come the specific historical differences between the Europe's West and East concerning *the* type of property, the form of economy and the type of state.

The historiography dealing with the problems of the Russian feudalism's socio-economic history has done much for the study of the agriculture and peasantry history. But little attention has been given to some significant features of this history. First of all these are the processes characteristic for the territories forming the historical nucleus of the Russian State, which became united at the end of the 15th and the beginning of the 16th century.

It is well known that all this territory had soils of low fertility, mainly turfy and podzol, podzol and podzol-morassic. Only here and there, in the valleys of floody rivers, comparatively small areas exist of alluvial soils, and to the South of the lake Beloye there is a small massive of turfy-humus soils.

As for the mechanic properties, most of the soil are mainly loams, aluminas difficult to cultivate, sometimes silty grounds alternating with sandy loams. Sandy soils exist,too. The vastest areas of them are in the Vladimir-Suzdal plains and in some other regions. To the south of the Oka, in its closest vicinity the grey forest soils, and, partially, the degraded and podzoled black earths were predominant.

All these types of soils were rapidly »ploughed out« during their use, i.e., they were losing their fertility and could not yield even a minimal harvest without manuring. The traditional support of fertility in Russia was done with the help of archaic methods of agriculture; slash-burn clearing and fallow. Beginning from the far off times a farmer, by removing the wood

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and burning it, used to get a possibility to obtain on the newly cleaned land at least a high enough return for his harvest (up to 10 times the sown amount, i.e., about 15 metric hundredweights per hectare or even more). But all this needed an immense labor input. A peasant was fully dependent on the help of his community, because such a labor was forcedly a collective one.

At the Middle Age, too, when the fallow three field system was predominant, the low fertility of the fields made the Russian peasant use, from time to time, as an additional mean, the slash and burn and fallow, i.e. the peasants practiced as before the collective cleaning of woods and ploughing of the fallow lands, creation of temporary ploughed fields, etc. This gave a possibility to the peasants to make ends meet.

Besides, the regularly ploughed land was also periodically renewed, because in a 20-30 years period it also used to lose its fertility. In particular, the instruction to Artemiy Volynski, a bailiff (1724) says, »...And the lands we have are old and all ploughed out, so the grain is bad...« (1).

All these measures, in the long run, only supported the fertility, though at a very low level.

Let us give a series of facts, that most reliably reflect the main trend in the crop productivity dynamics.

The first data of this kind are first seen sometimes in the collection of accountancy books of Novgorod at the end of the 14th century. Within the limits of the Vot, and Shelon, piatinas ('piatina' is a province of the Medieval Russian State. The Master Great Novgorod, or simply Novgorod Land.- Translator's note) only three examples of very low fertility (yield ratios) of rye are known (from 1:1.7 to 1:2.3) (2). The regional estimates of crop productivity of the Onega piatina reach the level 1:3, 1:2 and 1:3 in the Dereva piatina and 1:2, 1:3 in the Novgorod district, etc. (3). Of course these territories had the lands yielding the harvest of 1 : 4 and 1 : 5, but, as it is said, they were not the main factor.

The next existing stratum of data relates to the end of the 14th century, in particular, these are the data on the fields of the St. Joseph monastery in Volokolamsk. In some years its villages situated in the Vladimir, Suzdal, Tver,Staritsa, Ruza, Polotsk, and Dmitrov districts, from 1592 to 1604 the rye crops were within the range of 1:2.45 to 1:3.3, 1:1.8 of 1:2.56 for oats, 1:1.6 to 1:2.0 for wheat, 1:3.7 to 1:4.2 for barley, etc. (4).

In the most fertile region within the borders of the Black Earth teriitory, the region of Lake Beloye, in 1608-1609, the rye crop was between 1:2.3 and 1:4.5, 1:1.6 for 1:2.6 for oats, 1:4.0 to 1:4.3 for barley (5). And the same fields, one hundred and fifty years later (in 1743-1750) the average crop productivity was lower (1:2.7 to 1:3.7 for rye, 1:2.0 to 1:3.0 for oats, 1:3.0 to 1:4.25 for barley) (6). Due to the involvement of the new areas of the slashbutnr ploughed land the crop productivity could go higher for several years.

In the villages belonging to the St. Cyril monastery of Beloziorsk in 1670s-1680s the crops could be up to 1:10 for rye, 1:5 for oats, 1:6 for barley, and more (7). But during the same 17th century the predominant crop level was low (Yaroslavl district; 1:1.0 to 1:2.2 for rye, 1:1.0 to 1:2.7 for oats, 1:1.6 to 1:4.4 for barley; Kostroma district; 1:1.0 to 1:2.5 for rye, etc.) In the fertile subregions of the North the rye could yield the crop of 1:3.6 and oats could yield up to 1:2.7. In the Novgorod and Pskov Lands the rye crop varied from 1:2.4 to 1:5.3 the crop of oats from 1:1.8 to 1:8.2.etc(8).

In the 17th century the picture stays practically the same. In the Vologda North rye yielded from 1:2.0 to 1:2.7, sometimes up to 1:4.2, 1:1.5 to 1:2.8 for oats, 1:1.3 to 1:6 fot barley, sometimes up to 1:10.0(9).

From the second half of the 18th century the summary data appear on the crop productivity in large territories; on a province scale. Thus, the Tver,province has seen in 1788-1791 the crops varying within the range of 1:1.9 to 1:2.8 for rye and oats, and 1:1.9 to 1:2.7 for wheat. In the same years rya and oats yielded 1:2.1 to 1:3.2 and barley and wheat from 1:2.4 to 1:3.1 in the Novgorod province. In the Moscow province the crop productivity was in 1782 and 1795 on the level of 1:2.0 to 1:2.5 for rye and oats, about 1:2.3 for barley, from 1:1.8 to 1:2.6 for wheat. In the Yaroslavl region the year of 1796 yielded a low crop (rye; 1:1.4, oats; 1:2.2). In the Kostroma region in 1788 rye yielded 1:2.3, and oats, barley and wheat yielded 1:2.1. At last, in the Nizhniy Novgorod region in 1792-1794 rye had the crop from 1:2.1 to 1:3.1, oats: 1:2.3 to 1:4.6, barley 1:1.9 to 1:3.1. In the regions to the South of the Oka, where the degraded and podzol black earths were predominant, (Kaluga, Ryazan, partly Oriol, Tambov and other regions) the 1780s-1790 s yielded crops a little higher that in the non-black earth zone (1:1.9 to 1:4.4 for rye, 1:0.9 to 1:5.4 for pats, 1:1.5 to 1:5.3 for barley, etc.) (10).

Little changed in the 19th century. In 1802-1811 the cereals crop productivity reached 1:3.4 in the Northern region, 1:2.7 in the North-Western region, 1:3.6 in the Western region, 1:2.6 in the Smolensk province, 1:2.6 in the Central No-Black Earth region, 1:3.0 in the Middle Volga region, 1:3.0 in the Urals region. In 50 years the crop productivity of these cereals stayed practically the same. In 1851-1860 it made 1:3.4 in the Northern region, 1:2.7 in the North-Western region, 1:2.7 in the Western region, 1:2.3 in the Smolensk province, 1:2.7 in the Central Non-Black Earth region, 1:3.6 in the Middle Volga region, 1:3.4 in thew Urals region (11). At the end of the 19th century in 13 provinces of the No-Black Earth region the net crop per person made only 14 poods (224 kg) (1 pood, an old Russian weight measure, equals 36 lbs avoirdupois). - Translator's note) (12).

Thus, the data indicate that the historical center of the Russian state had, during at least four hundred years, an extremely low crop level.

Though one must not forget that this level, too, needed immense labor inputs. As it has been already said, the first cause of such a stably low crop productivity in the main Russian regions, was, undoubtedly, the bad fertility of the soils. But the bad fertility does not yet explain everything. Many European countries had soils that were not the best, but the thorough cultivation and abundant manuring resulted in a higher crop productivity there, in particular in the Modern Time.

But why it is different in Russia?! Why was the higher fertility there linked only with the renewal of ploughed land at the expense of fallows and cleared lands, without using abundant manuring?

One of the reasons of such a situation, particularly for the second half of the 17th century and for the later time, could have been the growing population density, the lack of arable land and ploughing of meadows: all these processes resulted in a reduction of stock breeding and, in the long run, the shortage of manure. But there must have been another reason. The crop productivity had been low before, too. Besides, in the second half of the 18th century the central regions of Russia had yet spaces with a good base for cattle breeding. Nevertheless the crop productivity there, too, was on the level of 1:3. So, the reason must befound in something else.

We believe that the main reason is the specificity of the natural and climatic conditions of Russia's historic center. The matter is that here, with all the climatic variations, the agricultural works cycle was extremely short, of about 125-130 working days (from about mid-April to mid-September by the Julian calendar). This very circumstance had a fundamental character and influenced decisively the development of the Russian State. During at least four centuries the Russian peasant was in a situation when the soils of bad fertility required a thorough cultivation, and the peasant just didn't have time for both this cultivation and for laying in of fodder for cattle.

To confirm this statement, let's use the unique data of the so called »officers« inventories of the 1750s. Their material gives us a notion, close to real, of the level of labor input in the agriculture of a large scale (monastery) type. As the monastery corvee wasn't great at that time, the good provision with labor force created here the conditions for a more or less thorough cultivation of land, for accomplishing the minimally necessary requirements of agriculture.

We have the selected data available on 109 monastery estates situated in the zones of Non-Black Earth and of degraded black earths (13).

At the condition of normal statistic distribution of our samples (and the analyte materials are, from a statistician's point of view, a random recurrenceless sample)[1], the data may undergo the interval estimation of the parameter »n« using the Student's distribution:

[1] The measures of asymmetry and excess in our samples have the following parameters: a) for the non-black earth provinces: A = 0.66, 0.58; E= -0.9, -0.1 (the first index in all the cpefficients is given by the

$$\bar{x} - t_{\alpha}(f)\, S/\sqrt{n} < \mu < \bar{x} + t_{\alpha}(f)\, S/\sqrt{n}$$

where $\bar{x}$ the arithmetic mean of the sample, n is the number of variants (area of ploughed land in hectares), S is the corrected mean square deviation, $t_{\alpha}(f)$ is the Student's distribution critical value taken with the confidence level 1-a (a = 0.10)[2]. In the end of the calculation me can state that the mean of our samples vary (with a probability of 90%) around the general aggregate mean in the following way:

1. Non-Black Earth provinces (except the plains region) **72.6 man-days** < μ < 73.6 man-days 33.0 horse-days < μ < 34.4 horse-days
2. Vladimir-Suzdal plains **45.3 man-days < μ < 46.7 man-days** 18.9 horse-days < μ < 20.7 horse-days
3. Black-Earth regions **41.3 man-days < μ < 43.2 m**an-days 21.9 horse-days < μ < 22.5 horse-days Leaving the data on the Black-Earth region beyond our attention, note that the interval estimates of labor expenditures we give, single out clearly the small region of the Vladimir-Suzdal plains, with plenty of sandy and sandy loam soils that yielded acceptable crops with manuring. But all the rest of the giant area of the non-black earth lands was mach less favorable, with higher labor expenditures.

To simplify the further calculations, let's take, as a base for the Non-Black-Earth region, the common mean: it will make about 60 man-days at 26.7 horse-days per a hectare at two fields. Repeat, that this was the labor expenditures level in a landlord's economy, where a real possibility existed to concentrate a large amount of workers on the fields, where the winter crops were »doubled«, and some of the spring crops were »tripled«, where multiple harrowing was used, etc.

And for the estimation of an individual peasant's homestead, with the minimum of working hands (a 4 persons family of two adults and two children), a calculation of potential time for agricultural works is necessary. About 30 working days out of 130 go for haymaking. Thus, a peasant had only 100 working days from sowing to harvesting included.

According to the data of the General land surveyance and the governors' reports of the second half of the 18th century, the average provision with ploughed land in the Non-Black-Earth region reached 3-3.5 hectares per males registered (a family of four had two such persons) (14). Thus, an »impost« (an adult man and an adult woman) had 6-7 hectares of arable

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man-days, the second one by the horse-days dispersion, respectively); b) for the Vladimir-Suzdal plains region: A= -0.05, -0.82; E= -0.52, - 1.11; c) for the black earth provinces A= -0.58, -0.45; E= -0.96, -1.51.

[2] JJanko. Mathematical-statistic tables. (In Russian, translated from Czech). Moscow, 1960, p.30.

land. 4-4.7 hectares of them were sown. In practice, one person in a family of four ploughed. Having 100 working days he could spent 21.3-25 days per one hectare (without reaping and thrashing). As for the similar, but real expenditures in the landlord's (monastery's) economy, at the total labor expenditure of 59.5 man-days per hectare without thrashing (a minimum of 12 days) and reaping (a minimum of 8 days) this makes 39.5 man-days. The difference with the possibilities of a peasant is, as we see it, immense (1.58-1.85 times).

With such a tough lack of time, using the primitive enough tools, a peasant could yield only a minimal cultivation of his arable land, and here his life was directly dependent on the soil fertility and weather caprices. But, actually, with such a budget of working time, a peasant could hardly get back even the seeds.

The way out of such a really dramatic situation was the only one. A Russian peasant was to contribute, in 21-25 working days, the real labor that would have taken about 40 working days in the more or less normal conditions of the corvee for a landlord. In practice, this meant for a peasant the inevitable tough labor, literarly without sleep and rest, day and night, using all the reserves of the family (children's labor, old people's labor, using women for masculine works, etc.). And a West European peasant didnt't of course need such a strain either in the Middle Age, or in the Modern Time, because the agricultural work season was there much longer.

And here is the fundamental difference between Russia and the West, followed across several centuries. Back in 18th century the Russian agronomer I.I.Komov wrote, »We have... a short summer, and all the field work is done in summer... In the Southern countries of Europe, for example, England, they can plough for the spring crops in winter, and the winter crops may be sown in October and in November«. »Hence, we have to hurry up with the work more than in other places«.(15). This brief, reserved appraisal indicates a grat difference with the West regarding the possibilities of agriculture, in the peasants' way of life, in their culture, etc.

Of course, the abovementioned mean for increasing the labor expenditures in a limited period of time was real not for all the peasants. Only knowing this make comprehensable, why, at vast lands with a low density of population, the provision with arable lands in the Non-Black-Earth region and in the trans-Oka region in the 18th century reached only 3 hactares per man; and actually a Russian peasant cultivated even less. As far back as forwards the end of the 1950s N.L.Rubinstein found out, on the base of the General land surveyance and governors' reports, that in the second half of the 18th century, at an average allotment of 3-3.5 hectares of arable land per one man in the Non-Black Earth region, the actual area under crop made only 53.1% of this not very large allotment. The remai-

ning land just was not used. This means that the real area under crop in two fields was 1.24 hectares per man, or 2.48 hectares per a family of four.

This generalized indication reflecting the production possiblities of a peasant family, may be confirmed by a particular observation. Thus, the author of the topographic description of the Tver'province, characterizing the peasant economy of the Torzhok district, gives a typical grain budget of a peasant's homestead, where the economy is driven by two families, composing a »share« or two »roes« (i.e. 4 workers of each sex, making 8 persons of both sexes altogether). The usual amount of seeds to be sown in such an economy was 10 quarters (about 11 metric hundredweights), or 5 quarters per row (or impost). A structure of such a crop, very close to the reality, may be the following: rye: 1.8 quarters or 1.2 hectares; oats: 2.8 quarters or 0.9 hectares; barley and wheat: 0.4 quarter or 0.3 hectares. Thus, an example of area under crop in two fields will make about 2.4 hectares, or 1.2 hectares per man. This corresponds completely with the data given by N.L.Rubinstein.

From here the main conclusion is justified: the peasant economy on the Russian territory had very limited possibilities for the production of the agricultural products, these limitations being conditioned just by the unfavorable natural and climatic conditions.

As it has already been said, the stable low crop productivity was directly correlated with the fields manuring quality. If the fertilization of one hectare with about 1,500 poods (24 metric tons) of manure is taken as a norm, we will find out that in practice such an amount of manure has never been put onto the fields. In the Central production regions in the middle of the 18th century only half this norm used to be put onto the fields in 60% of cases, i.e. the land used to be fully fertilized only once per six years (18). According to the information given by A. T. Bolotov, in the Kashira district of the Tula province the fertilization was realized even less often: once every 9 or even 12 years (19). According to the computations of V.I.Krutikov, in the first half of the 19th century the ploughed area used to be fertilized once every 15 years (20).

The practice of the 18th century and of the first half of the 19th century was a longtime tradition. For example, the monasteries' fields at the end of the 16th and beginning of the 17th century used to be fertilized very poorly, too. Thus, according to the data given by N. A. Gorskaya, the ploughed land of the St. Joseph monastery of Volokolamsk was to be fertilized about once every 24 years (data of the 1592 and 1594), and once every 9 years for the lands of the St.Cyril monastery of Belozersk (data of 1604-1605) (21).

The acute lack of fertilizers on the peasants' fields and even on the landlords' ones, is explained in the following way. At an extremely longtime stall keeping of livestock, making about 200 days, and hardened by the tough conditions of winter, the period of laying in of fodder in the

Non-Black-Earth region was very limited. Usually the haymaking lasted 20-30 days, and an immense amount of fodder was to be stored during this time.

In the 1760s Ivan Yelagin, a well-known historian and author of the project of the land transfer into property of the peasants belonging to the Court, considered the following norms of the cattle feeding with fodder: for 7 months of keeping in stall: 160 poods of hay for a horse, about 107 poods for a cow, about 54 poods for a sheep (22). Hence, 2.25 heads of cattle (a horse, a cow and a sheep) needed about 323 poods of hay. And an average one-impost homestead having, on the average, 2 horses, 2 cows, and 2-4 sheep (23) used to make about 300 poods of hay (24). The matter was that a man, haymaker, had about 18-20 days for net haymaking, each day working about 0.2 hectares of meadow (at the grass harvest of about 80-100 poods per hectare). In the 19th century he used already to make more (about 0.3 hectares per day), but at this time the meadows were already lacking (25). At the end of the 18th century such provinces as Moscow, Tver', Yaroslavl, Vladimir, Kostroma, Nizhniy Novgorod, and Kaluga, had only about 0.4-0.7 hectares of meadows per man, making about 0.8-1.5 hectares per one-impost homestead (4 persons of both sexes) (26). Even at the harvest of 100 poods this yields only 100-150 poods of hay, and even at the »hunger norm« of 60-70 poods per head of livestock, 4.5-5 animals need 280-350 poods of hay. Hence, it must be either made in addition, up to September, in woods, gullies, etc., or other fodders must be provided for. The abundant meadows yielding 200-300 poods per hectare were rare.

Thus, in the 18th, in the 19th centuries, and earlier, too, hay was an acutely lacking fodder. One horse received no more than 80 poods, a cow about 50 poods or more, i.e. twice less the norm given by Yelagin, and this is a half-starvation for the livestock (27). This is one of the greatest paradoxes for the country with such vast spaces.

As a consequence of the acute lack of hay resulted in that the main fodders of a peasant's homestead (and of a landlord's economy, too) was the socalled »thrashing floor fodder«, i.e. winter and spring crops straw, the empty ears, the flour made of the »chaffy« seed, i.e., bad, light grain, etc. For example, in the Olonets province, hay and small straw, chopped straw was given to cows only for the »taste«, the main fodder being straw. In the district of Pereyaslavl-Zalessk, the livestock used to get only spring straw, small animals and horses used to get a mix of straw and hay. In the Kashin district of the Tver'province cows were fed with spring straw, partly hay, barley shaff, treated with boiling water. In the Kaluga district cows got barley straw treated with boiling water, rye chaff with flour treated with boiling water. Sheep received hay and straw, and horses received hay, barley and oats straw. Horses received oats only before the road. In the

Kashira district the main fodder for cows consisted of spring straw. They used hay only in strong frost periods (28). And that was practically the situation everywhere.

The examples of this kind may be given in abundance. Everywhere in both the Black Earth and Non-Black Earth regions of Russia the picture was the same. The basic fodder was straw. But with all the improvements of the coarse straw smoked in barn (adding small and smallest chaff, treating with boiled water, adding flour, etc.), it was a coarse, low nutritious ness fodder, with almost no vitamins. As a result, the peasants had, during centuries, small,weak, low productivity cattle. The murrain level was very high. In spring, at such a level of the feeding base, »it was impossible to look at cattle without tears«, as A. T. Bolotov wrote, »here the animals are dying»(29).

The fodder shortage was especially serious for the state of draught animals. The Russian horses were, in essence, deprived of such a fodder as oats. If, according to M.Livanov, who had studied agriculture and cattle breeding in England, there a working horse used to get between 22 and 25 quarters of oats a year (about 120-130 poods or 19-21 metric hundred-weights), (30) the horses fodder ratio even in the Russian landlords' economies could not be compared with this. Thus, in the estate of the Chancellor Bestuzhev-Riumin in Poshekhonye (1733) a working (»field«) horse, during the stall period used to get 2.66 kg of oats a day; this could make only 35.2 poods or 5.6 metric hundredweights in 212 days (31). In the estate of P.P.Lvov in Kashin (1754-1757) the working horses received the same in stalls (32). According to the detailed instruction of the count P.A.Rumiantsev (1751) the working horses were to get in stalls the same 35.2 poods (33). But this norm is conventional, too, because calculated for the continuous working conditions. In practice, horses had only 3 months of work when kept in the stable. For the rest of the time the feeding conditions were different. They are revealed in the instruction made by P. P. Lvov: oats was given every two days, 1.3 kg, i.e. only 8.2 poods (or 1.3 metric hundredweights) in 198 days (34). A series of works gives a notion of the oats allowance for the peasants' horses. For example, according to the data given by T. I. Osminski a working horse of a peasant used to get in the average no more than 15-20 poods (or 2.4-3.2 metric hundredweights) of oats (35).

The above described fodder allowance for horses (and of productive livestock, too) was traditional. Anyway facts of these kind are known from the end of the 16th century (36).

As a result, the peasants' horses were small, weak, falling literarly down in spring because of the fodder shortage. The landlords' instructions of the 18th century reflect this directly (the horses »in spring are thin and weak because of lack of fodder«) (37).

For a Russian peasant the early spring sowing was always a tragic moment: one must plough and the horse almost can not stand on its legs. Only after having been on grass the animals could plough. And the time was over: the late sowing threatened the harvest (in particular of oats) with early autumn frosts. Besides, a sharp transition to the green fodder often caused illnesses of the horses. The good expert of the agriculture of that time, the well-known Russian agronomist Andrey Bolotov wrote that many peasants »with one or two unfit horses can hardly plough their lands«.(38). The reason was the same: the half-starvation fodder allowance, the illnesses of livestock, etc. A similar situation prevailed both at the end of the 19th century and at the beginning of the 20th century. It is not for nothing that at the time of an already rapid development of capitalism in Russia, in 1912, 50 provinces of the country counted up to 31% of peasants' homesteads without horses (39).

Due to the same circumstances, the Russia's Black Earth region had practically no commodity cattle breeding for about four centuries. The cattle breeding was a »manure« one (the term from the Russian agrarian literature), its main purpose being to manure the fields. As one of the landlord's instructions to the bailiff says, »we rather need no butter, but the livestock itself«.(40).

The situation with cattle breeding stayed the same for literarly centuries. Even at the beginning of the 20th century A.V.Chayanov, a Russian scientist, wrote, characterizing the rural economy of his time, »in most of the provinces we see... the fodder dearth, sometimes only the necessary number of cattle needed only for traction and for manure can not be provided with the fodder resources of the homestead«.(41).

So, the extremely low crop productivity, the limited size of the peasants' allotments, the feeble cattle breeding base in the main historic territory of Russia, created the conditions for the existence of the Russian society as the one with a relatively low volume of the aggregate surplus product.

The latter had an immense significance for the formation of a certain type of state in the territory of the historic nucleus of today's Russia; it leade the dominant class to create rigid instruments of the state mechanism to absorb the surplus product needed for the development of the state itself, of the dominant class and of the society as a whole. It is from here where the centuries old tradition of the Russian autocrate despotic power, orginated the sources of the savage regime in Russia, whose cruelty has not had any analognes in the world.

The savage regime was formed together with the evolution of the landlords agricultural corvee-based economy. Under the condition that the Russian peasant hardly had time to provide for his own family, it was almost impossible to make him work in the landlord's field, too. This problem was solved by introducing the regime of strict personal de-

pendence, by the eternal attachment of the peasant to the land, by the creation of the forced compulsion machine. The surplus product was literacy »torn out« of the Russian peasant. And the expansion of the ploughed area by adding the corvee field resulted in the inevitable reduction of the land cultivation quality.

The sharp growth of the land works volume creating the unbearable conditions of life for a peasant caused, at the same time, the reinforcement of the activity of the community being a protective mechanism acting in the peasants' interests. Beginning at about the end of the 16th century the community becomes more democratic, the leveling trends intensify directed firstly at the protection of the poor, at the help to the poor at the expense of the richer peasants. The Russian society evoluting as a purely agricultural one at a low development of cities and industry was extremely interested in supporting the activity of literarly any peasant's homestead, because the ruin of a peasant didn't transfer him into another sphere of the social life, but made him a burden to the society.

The many centuries' experience of the communal life of peasants, land cultivators, developed, besides the purely productive functions, a whole system of measures for restoring the homesteads ruined by one or the other reason. The land reallotments and levelings, the peasants' »assistances« of different kinds, stayed in Russia up to 1917. And they stayed despite that the peassant economy was being strongly drawn into the capitalist relationship system, beginning from the second half of the 19th century. The communal leveling traditions continued to exist in the 1920s, up to the collectivization; and the reason for this were not only the socio-psychologigal stereotypes formed during centuries, though they had played a very important role in the formation of the bases of our civilization, of our national character, etc.

The community's existence in Russia during more than a thousand years is the factor which radically differentiates the agriculture methods from the Western tradition. And the decisive condition determining the extreme vitality of this archaic institute in Russia was the shortage of time that a peasant had known for years. For example, in the Baltic territories, where the agricultural work season is longer than in Russia by only 4-5 weeks, the communal factor had lost its importance long ago.

The existence of the peasants' community in Russia did not of course make the production a collective one, but this production was collective at the critical moments of it. And there had been a lot of them.

The instable existence of the Russian individual peasant's economy was well understood in the country by the landlords, too; the latter helped periodically the peasants with loans and stimulated in many ways the leveling democratic traditions of the community. Artemi Wolynski, an important politician of the times of the reign of the Emperess Anna Ioan-

novna ordered his bailiffs (1735) to hamper in any ways the process of the peasants stratification (»so that everybody could have arable land, both mine and their own, and so that imposts and incomes could be paid from them equally, to prevent the ruin of some of them due to inequality«)(42). Another well known politician, this one of the epoch of the Emperess Elisabeth, count I.I.Shuvalov, orders the bailiff of his estate, village Myt near Vladimir (1795) to »allot the land equally so that no village has more than another»(43). At the beginning of the 18th century prince A.M.Cherkasskiy orders the peasants of his villages to help their neighbors in need, having lost the cattle and horses (»it is ordered... to all the peasants to plough and harvest... the seeds and seed them in these poor lands«) (44). His successor as the owner of the estates, count P. B. Sheremetiev, practiced the same in the second half of the 18th century (45). Count P. A. Ruminatsev prescribes a collective assistance to the peasants having lost their goods in a fire, explaining that »such an assistance must be mutual« (46).

It's important to emphasize that the landlords always wanted to amalgamate, enlarge the peasants' homesteads, by making the number of homesteads with little families in them minimal. In the 18th century the landlords' instructions, orders, etc. are full of bans on the families' homesteads splits (»the peasants must not split between the father and son, between the brothers«, »the splits often ruin the peasants«, etc.) (47). »A peasant with no working hands in the family couldn't sow his land in due time, hence had always a bad harvest«, »a poor peasant never had time to plough his field«, so spoke the contemporary authors on the peasants in the 18th century (48). At the same time, Andrey Bolotov wrote, describing the possibilities of the peasant economy in whole, »The peasants had hardly the time to correct both their own works and the works for their landlords, they could hardly provision themselves.»(49)

Some landlords even controlled constantly the peasants' nourishment. Their bailiffs saw that the light-hearted peasants(»gourmands,« »wastrels« and »cheats«) do not eat the seeds in winter (and they »permitted their wives to take everything and cook promiscuously«) (50). At the generally accepted and stabilized norm of consumption of grain of 3 quarters (24 poods) per person, with the calories content not exceeding 3,000 kcal. a day, the peasants often used to cut their allowance down to 1, 500 kcal, i.e. to a half-starvation under the conditions of a hard physical labor.

In the first half of the 19th century, due to updated agricultural practice, the labor expenditures for agricultural works were being reduced (by 25-30% in the Russian North, to 20-25%in the Center, etc.)(51). The spare time was used at once. If, for example, at the end of the 19th century in the Tula province the winter, the spring crops and the fallow made up 47% of all the arable land, to the end of the first quarter of the 19th century this

share grew to 77%, and till the 1860s to 99% of all the arable land (52). In other words, at the moment of the 1861 agrarian reform, a peasant could deal, at the traditional agricultural level, with about 3 hectares of arable land per man on the average (about 6 hectares per a family of four). But no more. Thus the volume of commodity product still was not so great in the territory of Russia's historical nucleus. If in the 1850s the estimated need in food grain reached 138 million quarters (15.456 thousand tons), the actual harvest made on the average in these ten years amounted to about 141 million quarters (15.792 thousand tons). And this estimate is based on an underestimated norm of grain and cereals (about 17.4 poods or 278,4 kg. per an adult mouth), making about 2,000 kcal. And this bread balance never included the consumption for the alcohol destination and the grain export. Taking into account these expenditures, the balance had a great deficit (53).

Of course, this did not mean that the country had not the grain for alcohol destination or for export (45). It had both, but... due to the further reduction of the food norm. E.g., in the 1780s the commodity character of a typical peasant homestead of the Tver region was estimated on the base of a yearly consumption of an adult person of 12 poods, i.e. 1,500 kcal a day (55). A peasant used to cut down the food allowance to go to the market. This also was the case in the second half ot the 19th and the beginning of the 20th century.

The calculations made by S.T.Strumilin show that even at the end of the 19th and the beginning of the 20th century the labor expenditures per hectare of winter crop reached about 30 to 44 days (without reaping and thrashing) in the Northern, Lake and Central Industrial regions. This means that with about 100 working days per season for the agricultural work, a peasant could cultivate 2-3.5 hectares (56). But the technical progress permitted to do it on a higher level, and the crop productivity began growing, though little, due to the labor intensification. This resulted in a certain growth of the grain production volume, though with no cardinal changes yet. The grain harvests a peasant from the 1870s to the 1890s rose as follows:

1. Northern region: from 9.5 poods (152 kg) to 13 poods (208 kg);
2. North-Western region: from 13 poods (208 kg) to 14 poods (224 kg);
3. Central Industrial region: from 13 poods (208 kg) to 15 poods (240 kg);
4. Urals: from 21 poods (336 kg) to 28 poods (448 kg);
5. Total in the Non-Black Earth region: from 16 poods (256 kg) to 18 poods (288 kg).

The harvests did not grow only in the Western region. But taking into account the incomes obtained from potatoes (counted in srain) the harvest

per person grew in the Non-Black Earth region from 17 poods (272 kg) to 20.4 poods (326.4 kg), and in the whole area of European Russia from 21 poods (336 kg) to 25 poods (400 kg). The harvest per person of the whole population of European Russia grew from 19 poods (304 kg) to 21.5 poods (344 kg) (57).

But even with such crop rates Russia held the commodity grain within the country or exported only at the expense of the grain saved for consumption. A peasant went to the market driven by the need. The Governmental Commission of 1888 registered that both the small scale and large scale homesteads »had to sell their products on the market in the artificially great volumes, driven by neither the prices nor their own needs« (58).

This was the general trend of the agricultural production development in the Non-Black Earth Russia. The lack of the grain production can be seen in some regions beginning from the end of the 18th century. At this time only one district of the Vladimir province (the Pokrovskiy district) yielded grain surplus (if compared with accounting for the own needs). In four districts grain lasted for only 6-8 months (59). In the Yaroslavl province only three districts could do with their »own« grain and could have a certain surplus in case of a rich crop (60). An average peasant's homestead gave, in case of a good crop, from about one to three quarters (8-24 poods) of grain to the market. The income from such a sale could not even cover the homestead's expenditures. Thus, in the Tver province, in the 1780s, at the minimum expenditures of 25-27 rubles a year per one middle scale peasant's homestead, the homestead itself could yield from 5 to 10 rubles, including sale of not only grain, but cattle, fabric, butter, mushrooms, beries, etc., too (61).

The same picture is characteristic for the 1870s. The Tver province had a lack of own bread for 7 months and 2 days, the Moscow province for 9 months and 16 days, the Vladimir province for 5 months and 7 days (62).

Hence, the Russian society had been developing, during many centuries, mainly as an agricultural one. The pauperization was perilous for such a society. At the same time the grain production, even at the worst lands, was socially necessary. The aggregate surplus product was growing almost exclusively due to a greater number of workers, i.e. a growing rural population, due to the development of new lands at the extensive character of this agriculture. From here comes the colonization process, forced by a tough necessity, of new and new lands, the migration to the country's South, East and South-East. There the fertile black earths ensured a simpler agricultural procedure, reduced labor expenditures, and thus a larger arable land cultivated by one person. And the crop productivity could be much higher than in the Non-Black Earth region. But all the newly developed regions had often tough draughts, thus creating sharp variations of the

commodity grain volume. This resulted in a modest average crop productivity and modest volume of commodity grain in many years. The All-Russian grain market had been developing very long, for about two centuries (63).

The sharp lack of time, needed for the three field system resulted in a complete decay of such a thing as the market gardening. Its production outcome was hardly enough for a peasant to feed his family. Hence, these were the cities and towns that provided for this product in the Non-Black Earth region and in the Trans-Oka region. Beginning from the second half of the 18th century these regions had already a powerful enough commodity market gardening, with its roots deep in the centuries (64). Such a strange development of the Russian city pumped the labor resources off the industrial specialization, thus dragging in the long run on the urbanization processes in Russia.

And, at last, the comparatively low volume of the aggregate surplus product influenced the character and the ways of evolution of the Russian capitalism. Let us note only one circumstance. The necessity to participate constantly in the agricultural production conditioned the narrow labor force market beginning from the times of Peter the Great, conditioned the seasonal character of activity of many industrial establishments. Many manufactures were founded in the rural areas, closer to the labor force resources. The narrow market of labor force conditioned the existence, during more than 150 years, of the servant in the industry. The seasonal, short term hire created the extremely unfavorable conditions for the capitalist accumulation (65). This determined, in its turn, the unprecedented strength of the trade capital in Russia, as the trade profit had been higher than the industrial profit for a very long time. So, in Russia, an industrialist and a tradesman were the same person more often than anywhere else. The historic cultural aspect of Russia's development must not be forgotten, either. The low volume of the aggregate surplus product determined the simplified structure of not only the State mechanism. It also conditioned the low numerical strength and the late genesis of the so called class of the »servants of society« (A. Smith, K. Marx), living at the expense of the society (in particular artists, actors, scientists, etc.). During many centuries their functions had been fulfilled by the Church, because in the societies with a low level of the aggregate surplus product the Church was always characterized by the syncretism of the socio-cultural, religious and even ideological functions. And only at the time when the state, at a higher stage, overcame the hypertrophied ecclesiastic landownership, the powerful influence of the Church began to fall (beginning from the times of Peter the Great), and the secular aspect of the culture began its more intensive development. But the sharp contrast between the Russian and the Western cultural levels stayed. There the first universities appeared in

the 12—13th centuries, and the first Russian one was founded in the 18th century.

The fundamental properties of the Russian peasant economy communicated inevitably features to the Russian national character, too. First of all, this is the capability of a Russian to strain critically all the forces, to concentrate, for a long enough period of time, all the physical and spiritual potential. At the same time the eternal lack of time, the absense of correlation between the quality of agricultural work and the crop productivity never worked out a habit of thoroughness, accurate work, etc. The extensive character of agriculture played a significant role in the fact that a Russian is always eager to go somewhere, is always dreaming of a »promised land«, etc. The vast territories of Russia played their role in this. At the same time the extensive character of agriculture, its riskiness, intensified the thirst for the traditionalism, for deeply rooted habits (»a peasant is a slave of habits«). For the other hand the strength of the communal traditions, the inner feeling of the pauperization danger threaten the community, too, are the soil on which a Russian has grown the exceptional feelings of democracy, of collectivism, of eagerness to help, up to a self sacrifice. This very situation favored the formation in the enviroment of the so called »servants of society« of the intellectual type known as the »Russian intelligentsias

Here is the brief characteristic of the Russian history's paradoxes. The natural and climatic factor had a great influence on the formation of the society. And the difference in this factors manifestations may be revealed not only for the clearest natural differences (e.g., the conditions of the Mediterranean and of the Western Europe), but for the not so well expressed, too (Europe's Center and East).

Due to the different natural conditions the same amount of labor satisfies in the Western and the Eastern Europe quite different amounts of the so called »natural needs«. In the Eastern Europe the combination of these »natural needs« had for many centuries been significantly larger than in the West, and the conditions for their satisfaction were much worse. Hence, the lower labor surplus that could satisfy the needs of the »other« individuals, compared with the labor needed for the »own« requirements. In other words, the aggregate surplus product volume of the East European societies was significantly lower, and the possibilities of its creation were much worse than in Western Europe.

From here come the specific historical differences between the Europe's West and East concerning the type of property, the form of economy, the type of state, the character of capitalism. But the sharpest contrast is seen in the political structures of the West and the East of Europe.

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