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SITUATION IN THE CZECH AGRICULTURE AFTER 9 YEARS OF EU ACCESSION – A RESEARCH POSITION TO STRATEGIC CHALLENGES FOR A FUTURE POLICY AFTER 2013

Introduction

The Czech politicians, state administration, non-government organisations, researchers and academicians have been preparing and discussing for a longer time a Czech position to the reform of the EU CAP after 2013. To have a broader and a long time framework for these activities, the Czech minister of agriculture decided to prepare the strategy for the Czech agricultural and food industry developments, overcrossing the 2020 horizon [10].

The strategy, after large discussions and assessments among all main stakeholders, shall be finished by June 2013. The document is based on detailed analyses of all decisive aspects of the Czech agriculture and food industry. Based on them and on other prepositions and expectations for the future, the long term goals and main policy measures to support them are defined.

The Institute of Agricultural Economics and Information (IAEI), together with some academicians, has played in the preparation of the strategy, particularly as regards the analyses, very important role. Nevertheless, the final version of the strategy, which also reflects the Czech official positions to the CAP 2014+, has been now in the hands of politicians with their own criteria. It means that some aspects of the strategy and the positions to the CAP 2014+ can be – even only slightly – different from research conclusions, or can be interpreted in public in a different way.

The presentation consists of the three parts. Part 1 presents the state of the art – the main information and conclusions from the analyses of the present Czech agriculture. Part 2 is oriented on the main long-term goals for the sector. Part 3 reflects questions related to the realisation of the strategy and to the Czech position on CAP after 2013, based on the research findings.

The main characteristics of the present Czech agriculture – a critical assessment from research point of view¹

Besides market and weather conditions, a decisive factor shaping the development of the Czech agriculture after EU accession in 2004 has been the Czech agricultural policy, the volume and the structure of its supports. The main figures on the supports from the side of taxpayers are shown in table 1.

Table 1

Supports	Supports for agriculture and food industry									
	2001-3 average		2004-7 average		2008-10 average		2011-12 average		Index	
	CZK mil.	%	CZK mil.	%	CZK mil.	%	CZK mil.	%	2011-12/2001-3	
Total	17 933	100.0	30 403	100.0	38 103	100.0	37 651	100.0	210.0	x
Farms	12 078	67.4	25 604	84.2	33 330	87.5	34 139	90.7	282.7	134.6
- <i>income supports (incl. LFA)</i>	8 654	71.7	20 354	79.5	24 688	74.1	24 869	72.8	287.4	101.7
- <i>investment supports</i>	2 138	17.7	2 078	8.1	3 911	11.7	4 158	12.2	194.5	68.8
- <i>agro-env. payments</i>	1 286	10.6	3 172	12.4	4 732	14.2	5 113	15.0	397.6	140.7
Processors	2 884	16.1	1 349	4.4	972	2.6	274	0.7	9.5	4.5
Other (including general services)	2 971	16.6	3 450	11.3	3 801	10.0	3 239	8.6	109.0	51.9

Source: Ministry of Agriculture, IAEI, 2004-2012.

Regardless the sources of the supports (EU, national payments), after EU accession the total supports for farms have increased almost three times, of which mainly income supports and agro-environmental payments. To the contrary, supports for food/processing industry have significantly decreased. However, the main part of these supports especially in the pre-accession period was oriented on the direct supports for biofuel production, which have been changed into supports from consumers and reduced during the next years.

Particularly an enormous growth of income supports for farms, substantially improving their economic situation, have had on the other hand some negative impacts on the performance of the sector.

Main characteristics of the Czech agriculture after 9 years of EU accession are as follows:

The share of the sector (including forestry and fishery) in the GDP has dropped (2011) to 2.05% from 3.37% before the accession. The similar figures relate to the share in the employment (2.62% compared with 4.17%). As a consequence of the higher reduction of employment and in spite of a lower production, the labour productivity in agriculture has been gradually approaching the national average (from the pre-accession 65% to nearly 70% in 2011). Nevertheless, measured by the sum of the production of private and public goods, the agriculture still belongs to the strategic sector of the national economy.

¹ This part, based also on [2], updates and broadens the analyses published e.g. in [4].

The Czech agricultural potential represents roughly 3.5 mil. ha of agricultural land (a.l., according to LPIS), with the share of arable land more than 70%. Compared with the Czech natural and climatic conditions, this share is still extremely high. About 50% of a.l. is located in LFA at present.

The changes in the balances for the main commodities between the actual and pre-accession periods are shown in table 2.

Table 2

		Balances by commodities														
Commodity	Unit	2001-2003 average					2008-20011/12 average					Index 2008-20011/12 to 2001-3				
		P	I	C	E	%	P	I	C	E	%	P	I	C	E	%
Cereals	mil. t	6.61	0.09	6.24	0.48	106.0	7.84	0.11	5.49	2.25	142.8	118.6	122.2	88.0	468.8	134.7
Rape seeds	th. t	690.2	12.8	495.0	206.1	139.4	1066.4	54.8	757.5	357.9	140.8	154.5	428.1	153.0	173.7	101.0
Sugar	th. t	521.4	148.1	493.5	198.7	105.7	461.0	256.6	399.2	313.9	115.5	88.4	173.3	80.9	158.0	109.3
Potatoe	th. t	1026.0	183.4	1086.9	24.9	94.4	917.5	115.0	1095.8	51.5	83.7	89.4	62.7	100.8	206.8	88.7
Vegetables	th. t	349.7	354.1	696.0	7.8	50.2	256.1	553.6	718.8	90.9	35.6	73.2	156.3	103.3	1165.4	70.9
Fruits	th. t	372.4	116.3	426.5	62.2	87.3	375.0	182.6	481.5	76.2	77.9	100.7	157.0	112.9	122.5	89.2
Wine	th. hl	533.3	1042.0	1595.3	23.7	33.4	637.5	1649.3	2159.5	240.5	29.5	119.5	158.3	135.4	1014.8	88.3
Milk	bln. l	2.69	0.24	2.06	0.70	130.7	2.68	0.84	2.20	0.94	122.0	99.6	350.0	106.8	134.3	93.3
Beef	th. t lwe	109.5	2.4	97.4	13.8	112.4	95.1	20.7	79.4	35.8	119.8	86.8	862.5	81.5	259.4	106.6
Pigs	th. t lwe	453.7	25.1	461.0	35.7	98.4	295.3	204.2	447.8	52.3	66.0	65.1	813.5	97.1	146.5	67.1
Poultry	th. t lwe	232.8	23.2	242.3	17.7	96.1	208.6	87.0	238.8	57.4	87.4	89.6	375.0	98.6	324.3	90.9
Eggs	th.t	171.7	4.7	168.0	8.4	102.2	145.8	33.9	164.5	15.2	88.6	84.9	721.3	97.9	181.0	86.7
Sheep and goats	th.t lwe	1.94	0.46	2.32	0.08	83.6	2.10	0.40	2.42	0.08	86.9	108.2	87.0	104.3	100.0	103.9

P = production; I = imports; C = domestic consumption; E = exports; % = level of self-sufficiency.

Source: Ministry of Agriculture, IAEI, 2004-2012.

The background of the changes in the commodity balances resides in the changes in the land use and in livestock headage (see table 3).

The large-scale farming as a heritage from the socialistic regime has been still prevailing. The land use concentration in hundreds of large farms is accompanied by thousands of small and medium size mostly family farms, forming a typical dual structure (see table 4).

The average size of Czech farms, regardless of the sources and methods of its calculation, exceeds highly the EU average. Nevertheless, some structural changes are visible after EU accession: a growing share of the smaller farms in the land use and a diminishing importance of cooperatives to the benefit of companies. Particularly during the last years extremely large farms

(20,000-100,000 ha) have been founded, regardless of their fragmentation into property joined smaller units.

Table 3

Changes in the land use and livestock heads

Crops, livestock category	Unit	Ø 3-2001	Ø 11-2010	Index
Cereals	th. ha	1547.1	1471.0	95.1
- wheat	th. ha	808.1	848.0	104.9
- barley	th. ha	512.0	381.0	74.4
- maize	th. ha	67.6	112.0	165.6
Pulses	th. ha	34.7	26.8	77.3
Potatoe	th. ha	48.2	34.4	71.3
Sugar beet	th. ha	77.5	49.8	64.2
Feed crops on arable land	th. ha	571.3	408.2	71.5
Oil seeds	th. ha	422.5	477.4	113.0
Flax	th. ha	6.2	0.1	2.2
Vegetables	th. ha	20.4	13.8	67.8
Permanent crops	th. ha	46.9	55.0	117.2
Grassland	th. ha	895.0	924.5	103.3
Dairy cows	th. heads	497.0	373.5	75.2
Suckler cows	th. heads	102.0	177.9	174.4
Pigs	th. heads	3424.7	1664.0	48.6
Sheep and goats	th. heads	95.7	215.0	224.7
Poultry	th. heads	28561.7	20971.0	73.4

Source: Ministry of Agriculture, IAEI, 2004-2012.

Table 4

Structure of Czech farms (with more than 3 ha)

Legal form	Share in number			Share in agricultural land		
	1995	2005	2012	1995	2005	2012
Farms as physical entities	89.7	90.3	87.2	23.2	29.0	29.8
Farms as legal entities	10.3	9.7	12.8	76.8	71.0	70.2
- companies	5.2	7.2	10.2	28.1	46.1	49.0
- coops	4.8	2.2	2.0	47.0	24.0	20.4
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total: farms (ha)	23215	25855	25986	3544036	3543820	3503629

Source: Agrocensus, Czech Statistical Office.

As regards the economy of the farm sector (see table 5), two separate developments can be recognized: the economic situation of farms has been substantially improving (see changes in the operational surplus – “profit” – of the sector and in incomes from factors/AWU), to be almost three times higher compared with the pre-accession period. This corresponds with the increase of supports. On the other hand, the real efficiency of farms has been deterior-

rating (see e.g. the interim consumption/production indicator more than 70% compared with the EU average around 60%). The production/ha is very low (the EU average is almost double). The share of supports both in production and in incomes from factors/AWU is very high, significantly higher than the EU average (the increase in the latter indicator from about 30% in the pre-accession period to more than 70% in the last years, compared with 41% as the EU average). A harmful dependence of farms on support is visible, influencing behaviour of farms and suppressing a needed further growth in effectiveness and in restructuring in the sector.

Table 5

Economic indicators of the Czech agriculture

Specification	Unit	2001-3 average	2010-12 average	Index 2010-12/ 2001-3
Total supports from public sources ^a	mil. CZK	12078	34279	283.8
- operational supports	mil. CZK	9939	30135	303.2
- investment supports	mil. CZK	2139	4144	193.7
Production/ha	th. CZK	28.3	32.7	115.4
Operational surplus	mil. CZK	-696.2	13625.8	x
Incomes from factors/AWU ^b	th. CZK	151.5	401.3	264.9
Interim consumption/production	%	70.2	73.1	104.1
Share of operational supports in production	%	6.3	24.4	387.3
Share of operational supports in incomes from factors	%	26.7	65.1	243.7
Number of workers (AWU)	th. AWU	158.6	106.9	67.4

^a Without the so-called general services (research, education, extension services, etc.).

^b Net Value Added plus operational supports minus production taxes.

Source: Ministry of Agriculture, IAEI, 2004-2012; Economic Accounts for Agriculture (Czech Statistical Office).

The average and global values of the indicators mask a huge dispersion across the farm categories and among individual commodities (see also table 6 and [7]). From the point of view of the economic situation, the two categories and regions are real “winners”: (a) large farms in LFA with very extensive suckler cows breeding; (b) large farms in plains oriented prevalingly on a relatively simple production of cereals and rape seeds. On the contrary, there are plenty of less effective farms surviving due to high supports.

The differences in the economic situation on farms are mainly caused by the economically improper, unbalanced distribution of income supports (direct payments, LFA payments), ranging from CZK 6,000-18,000 per ha.

However, the prevailing farming systems together with a large (even though decreasing) share of leased land on farms (about 70% in average today), orientation of supports and their conditioning have been generating serious problems in relations between agriculture and environment.

Table 6

Dispersion of profitability on the Czech farms by commodities and in total^a

Commodity	Best 1/3	Average 1/3	Worst 1/3	CR average
Wheat	74.9	39.4	17.3	42.3
Barley	119.1	55.0	24.2	68.4
Rape seed	49.3	18.7	1.0	21.7
Sugar beet	61.0	42.1	15.4	41.2
Potatoe	33.9	-6.8	-14.1	-3.3
Apples	-23.3	-26.7	-42.2	-29.5
Milk	27.3	9.1	-8.3	14.3
Beef	-1.9	-11.6	-24.2	-13.0
Suckler cows	70.3	5.7	-24.3	20.2
Pigs	-15.6	-23.4	-32.8	-13.3
Poultry	0.6	-9.8	-22.7	-3.0
Income from factors/AWU (000 CZK)	668	354	142	383

^aProfitability: [(revenues + supports)/costs] – 100. The survey results distributed to the one thirds.

Source: IAEI survey on costs 2008-10; FADN-CZ 2010.

The impact of agriculture on the environment is mostly negative and it has been for a long time deteriorating [6]:

1. One of the main problems is the degradation of the soil quality, especially due to water and wind erosion, soil compression and loss of humus (also as a consequence of the large livestock reduction). The every-year damages owing to losses of top-soil, decrease of yields, siltation of water flows, property damages, etc. are estimated to about CZK 4-10 billion.
2. Prevailing farming practices negatively influence the water regime in the landscape and water quality. A significant share of surface and underground water is still contaminated by nutrients and chemicals. Water very quickly flows off the Czech region and due to a large reduction of landscape “green elements” the agricultural area does not fill its functions in the water retention. A higher risks and damages related to more frequent periods of droughts and floods, increased even by climate change, are “every year story”.
3. Farm and land use practices on very large fields negatively influence biodiversity, especially as regards invertebrates, birds and other kinds of small animals (e.g. the number of partridges was reduced by 82% since 1982).
4. Greenhouse gas emissions are relatively high compared with other EU countries; the fixation of CO₂ has not by far reached its potential.

On the other hand, the agricultural area especially during the last years is intensively linked with the production of renewable energies. About one third of the rape seed production and a share of sugar beet and cereals production is used for biofuel. On farms, about 300 biogas stations are producing electricity. However, the present way of the production of renewable energies, supported by the policy, heavily contributes to negative impacts of agriculture to environment

and landscape. Nevertheless, the potential of agriculture in this field is still high and should be in different ways utilised. Caused also by still low effectiveness of the Czech food industry (particularly in the primary processing), there is a permanent tendency in the increasing exports of agricultural raw materials and in the increasing imports of processed products (sometimes even though produced from the Czech exported products). These facts are documented in table 7.

Table 7

Commodity structure of the Czech agricultural trade balance (bil. CZK)

Selected commodity aggregates	KN	2001-3 average	2010-12 average	Index
Live animals	01	1.08	3.78	350.0
Meat and fish, including processed products	02, 03, 16	-2.56	-16.61	648.8
Milk, dairy products, eggs	04	3.11	3.01	96.8
Fruits and vegetables, including processed products	07, 08, 20	-14.08	-21.34	151.6
Cereals	10	0.38	8.82	2321.1
Mill products, malt, starches	11	1.58	1.82	115.2
Oil seeds	12	2.13	2.29	107.5
Oils nad fats	15	-2.05	-0.12	5.9
Sugars and sweets	17	1.23	2.07	168.3
Feed	23	-5.06	-2.81	55.5

Source: Czech Statistical Office – Database of trade.

In summary, general characteristics of the present Czech agriculture can be expressed as “prevaingly costly extensive farming”, oriented mainly on commodities with a lower demand on quantity and quality of labour and management. The competitiveness of these commodities (cereals, rape seeds, sugar beet) on the EU single market is relatively high. Mainly due to high coupled direct payments, the economy of dairy and suckler cows breeding is also sufficient to produce surpluses. To the contrary, the economy of poultry and particularly pigs is poor, leading to a large reduction in their production. As a consequence of more factors, there is a rapid and stable decrease especially in livestock, vegetable and fruit production. This development has not only negative impact on rural employment and trade, but also on the land use, soil quality and water regimes.

Strategic goals for the Czech agriculture

Based on the analyses of the development of the Czech agriculture after the EU accession and its functioning on the EU single market, the following long term strategic goals from the research position can be derived²:

- to substantially improve the quality of the agricultural soil, water regimes and other environmental aspects related to agriculture as the decisive condition to maintain long-term production potential and in this way to contribute

² The strategic goals, based on the research findings and presented in the official document of the Czech Ministry of Agriculture, are defined slightly differently, particularly as regards their priorities.

to the national, European and global food security and smoothing risks in agriculture as well;

- to increase effectiveness and competitiveness of the Czech farms *via* and through their reasonable modernisation and all aspects of innovations, based also on a better transfer of research and knowledge to farms;
- to eliminate the differences in the economy of farms issuing from an unbalanced allocation of income supports;
- to increase the role of agriculture in production of renewable energy and in this way to contribute to “energy self-sufficiency” of the Czech Republic;
- to improve relations between the agricultural and rural developments, particularly with new job opportunities in rural areas through orientation of farms on more labour demanding activities and their diversification.

Research position to the CAP reform after 2013 respecting the strategic goals

Regardless up to now unsettled final appearance and parameters of the CAP reform after 2013 on the European level, discussions about the CAP changes and the preparations of the required documents (e.g. for the RDP) have been continuing in the Czech Republic. It must be respected that a final Czech position would be a real political decision, based also on the position of many non-governmental organisations as stakeholders.

Nevertheless, the role of the economic research is irreplaceable in this process. The following part presents the research positions to the main aspects of the CAP reform, which need not necessarily be in full compliance with final official governmental positions, of course, but being in compliance with the presented analyses of the present situation of the Czech agriculture and the long-term strategic goals.

With regards to the individual strategic goals, the Czech position from the research point of view should support the following measures in the future CAP and in the future Czech agricultural policy.

Improvement of relations of agriculture to environment

Application of stricter Good Agricultural and Environmental Conditions (GAEC) in the cross compliance, especially with respect to problems in the soil erosion³.

Full application of the greening components in direct payments, but respecting the Czech farm structure and the size of farms. It means e.g. the application of the greening only on farms exceeding 20 ha. It is approved by the supposition that the main environmental damages are generated on bigger farms and the “greening barriers” for them can produce a decisive mass of the positive environmental externalities.

The implementation of all proper agro-environmental measures in the RDP with a higher level of their stimulation (payments), but with stricter and mea-

³ The Ministry of Environment suggests also the reduction of the acreage of fields to about 50 ha at maximum.

surable conditions above the GAEC and the greening conditions for direct payments. In this way to avoid a “double-funding” of the environmental measures under the RDP. In spite of possible higher administrative requirements, the environmental measures shall be more targeted and even tailored to individual farm conditions. Those measures shall be applied e.g. in the watersheds areas, where the agriculture still produces many negative externalities to the detriment of the quality of drinking water (typical and very politically sensitive is the water supply for the Prague region).

The reservation of about 10-12% of the direct payments for coupled payments and the largest part of these payments invest on support to all categories of ruminants. The payments should be delivered per livestock unit (LU), with preferences for breeding on grassland (and LFA), but not per unit of production. By this, a needed growth in the number of heads of ruminants can be expected, with positive effects on the soil quality, but without any state guaranty for the sale of production and farms its market prices.

The continuation of supports for land consolidation, which is very important measure to settle discrepancies between the land use and the land ownership, inherited from the socialistic era. Under this process, priorities to environmental issues should also be given.

Any supports related to risk management and even for larger natural disasters should be conditioned by the realisation of preventive measures on farms, including building up landscape “green elements” such as green zones, balks between fields, etc. On the other hand, investment supports for these purposes can be applied under the RDP.

To apply direct or indirect supports for the increase of the share of own land to the detriment of leased land on farms, to stimulate the internalisation of farm systems in a proper and sustainable care for their own land.

Increase of effectiveness and competitiveness of farms

As it was mentioned, increase in the effectiveness in the long-time horizon is principally supported by measures related to environment. It can issue in a reduction of the direct payments (Pillar I) to the benefit of supports under the RDP (Pillar II). The reduction could also stimulate a higher orientation of farms on their effectiveness and restructuring, overwhelming their present “sleeping period” under huge income supports.

However, it is generally expected, that a decisive role shall play investment supports for modernisation, restructuring, etc. under the RDP. This expectation should be treated very cautiously.

The investment supports, based also on the Czech analyses, have ambiguous effects: they really improve the economy of supported farms, but some supported farms could anyway invest even without supports. This fact indicates some deadweight losses of the supports. One of the solutions could be to limit the supports only for small and medium size farms, together with a lower total limit of the supports per farm and the budgetary period.

The state can give some preferences for the investment supports, e.g. for live-stock production, fruits and vegetable production, etc. But there are signals from more research findings on the risks of state failures, on moral hazard problems in the investment supports. From the latest experience supported farms increase production and if there are problems on markets, they ask for higher market price or operational supports.

Generally higher priorities in the investment supports should be given to all aspects of innovations (including the quality of production) and investments in animal welfare, energy savings, wastage treatment, etc.

The economic position of selected commodities with a higher labour inputs (fruits, vegetables, etc.) should not be provided by a higher (coupled) income supports, but with supports on various forms of producer organisations. These supports can be applied on other commodities, of course.

Under the climatic change and expected volatility of markets the risk management will be a serious problem in future. The strategy promotes a holistic approach in this field, more based on the own preventive activities on farms, supported by the effects of direct payments and diversification on farms, and by special (even though) limited policy measures (e.g. by supports of insurance payments).

Nevertheless, much higher stress should be given to the research and technological development, accompanied by improved channels for the transfer of research into practice. The Czech Republic should create an effective Agricultural Knowledge and Innovation System (AKIS) and do its best in the utilisation of the room under the European Innovation Partnership (EIP) and specific forms of co-operations.

Balanced approach to distribution of supports

The problem is more linked with the distribution of the direct payments and the LFA payments as the decisive parts of income supports. It should be pointed out, that income supports themselves shall not generate the differences in the farm economy among farm categories, like it has been up to now.

First, the income and other supports for small and young farms shall be promoted, improving the age structure on farms and bringing into the sector some “new blood”, more flexible in the reaction on policy and market stimuli. It is also one of the ways of increasing the effectiveness on farms.

It is true that the largest part of the income supports is received by a limited number of very large farms, in majority with extensive systems, very low employment and weak links to rural communities. The ceilings and modulations of the supports according to size of farms, but respecting the employment on farms can be accepted.

For the LFA payments any reasonable decrease of the payments should be realised. Above it, the LFA payments (for the new defined Natural Handicapped Areas – NHA) shall respect the new scheme for the payments (on all agricultural land, up to now only on grassland), the present situation in the restructuring of

LFA farms and the solution in coupled direct payments for ruminants. Special degressive scheme should be prepared for the farms up to now ranged in the LFA, but excluded from the NHA by its new definition.

Agriculture and renewable energy

It is a politically sensitive goal, whose fulfilment is globally influenced by the competition between food and non-food use of agricultural production and by the care of governments on the level of consumer prices for food. In the Czech Republic it is strengthened by the care of the government on the level of energy prices, which heavily increased after the recent enormous supports for the solar energy. Nevertheless, the Czech agricultural area has huge potential for (even sustainable) increase in the production of the biomass for food and non-food use.

Under supposed EU and domestic future general conditions in the supports on renewable energy (e.g. the reduction of the EU goals in the share of the first generation biofuel to 5%, the announced reduction or even abolition of domestic supports for bio-electricity after 2014, etc.), the development in this field can be to a large extent (even though temporarily) suppressed.

However, some investment and operational supports e.g. for biogas stations on farms and for local use should be preserved, but under stricter conditions (utilisation of waste, slurry from pig breeding, etc.; a higher utilisation of produced heat). Nevertheless, many open questions in this field remain for the future.

Agriculture and rural development

Agriculture has many links to rural areas: job opportunities, the quality of human and social capital, rural infrastructure, etc. Almost all above mentioned policy measures are related to these aspects, particularly:

- specific supports for livestock, fruits and vegetable productions, with the aim to increase job opportunities in rural areas;
- the same applies for supports for diversification of farm activities as a part of the risk management on farms;
- specific supports for small farms and young farmers, which could stimulate more positive externalities in development of the human and social capital in rural areas.

Conclusions

The presented approach to the strategy for the Czech agriculture, based on the objective analyses of its development after EU accession and under the present CAP, represents the research position for the discussions with the government and with non-governmental organisations. Particularly it concerns the implementation of the strategic goals into policy measures for the CAP after 2013. The research approach can be utilised in the assessment of any real EU and domestic positions for the future CAP, based on political decisions and compromises.

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