
Munich Personal RePEc Archive

# Agricultural policies in Bulgaria in post Second World War years

Bachev, Hrabrin

Institute of Agricultural Economics

March 2008

Online at https://mpra.ub.uni-muenchen.de/7789/
MPRA Paper No. 7789, posted 15 Mar 2008 18:30 UTC

# Agricultural policies in Bulgaria in post Second World War years

***Hrabrin Bachev***
***Institute of Agricultural Economics, Sofia, Bulgaria***

## Abstract

This paper analyzes evolution, implementation and impacts of state agricultural policies in Bulgaria during post Second World War years now. Firstly, it presents agricultural policies development during 1950s and 1960s (post war nationalization, cooperation of peasants, central planning and price control, support to agriculture) and its impacts on farming modernization and improvement of peasants welfare. Second, it analyzes reforms in 1970s and 1980s (concentration of farming in large agro-industrial complexes, experimentations with "economic" mechanisms of governance) and their effects on agriculture. Third, it evaluates policies during post-communist transition and EU integration, and their consequences for agricultural development.

**Key words:** State Agricultural Policies, impacts on agriculture, Post Second World War, Communist system, post-communist transition, Bulgaria

## Introduction

In post Second World War years there has been a remarkable evolution of state agricultural policies in Bulgaria. The communists took power in 1944 and introduced a state control over economy. The fastest collectivization of farmers in East Europe was completed in 1950s. A significant modernization of agriculture was achieved in 1960s. In 1970s farming activities was concentrated in world's largest agro-industrial complexes. Bulgaria became the world biggest producer and exporter of rose oil, the second largest exporter of cigarettes, and one of the major exporters of fresh fruits and vegetables, livestock products, tobacco, caned food and vines in Europe. In 1980s there were attempts to combine central planning with economic forms of governance to combat deficiency in production. After collapse of the system (end of 1989) a fundamental transformation toward a modern market economy was undertaken in 1990s. The later was accompanied with a significant change in farming structures, a rise in importance of agricultural production, and enormous decline in major outputs. Until middle of 2000s adaptation of Acquis Communitaire was successfully completed and Bulgaria joined EU and CAP on January 1, 2007.

There are a number of profound studies on agricultural development in Bulgaria during specific post war periods (Bachev, 2007; Glenn, 1992; OECD, 2000; Palagachev et al., 1974). However, there are no comprehensive publications on evolution of state agricultural policies for the entire post Second World War period. That complicates the understanding of "logic", driving factors, efficiency of implementation, and consequences of policies modernization throughout different stages of development. *The goal of this paper is to fill the gap and analyze evolution, implementation and impacts of state agricultural policies in Bulgaria during post Second World War years now.* The study is based on a great amount of statistical and other official data. In addition, expert assessments are extensively used to compensate shortages in quantity and reliability of information for evolution of Bulgarian agriculture.

# 1. Post war reforms and cooperation

## 1.1. Nationalization and collectivization

Post war Bulgarian agriculture was the principal sector of economy employing 82% of the workforce and consisting of 1,1 million small-scale farms with average size of 3,9 ha. Socialization of agriculture was a high priority for the Communist State and agrarian reform and peasants cooperation were undertaken. In 1946 farmland exceeding 20ha was nationalized and given to poor peasants (60%) or used to establish 86 State Farms (DZS). In 1948, sizeable agricultural machineries were forcefully taken and used to multiply the number of State Machinery Stations (MTS) to 71 (from 5 in 1945). In the end of the war there were merely 29 producer cooperatives. In 1945 the Law for Labor Cooperative Agricultural Farms (TKZS) was adapted to give a way for peasants collectivization. However, voluntary cooperation had modest results and only a fraction of farms were attracted (Table 1). After 1948 policy changed and a forceful cooperation of (all) farmers were completed in few years. After 1956 TKZSs accounted for the greatest share in farmland, most kinds of livestock, major productions and Gross Agricultural Product (Table 2). In the meantime, the nationalization of banks, industry and trade enterprises was accomplished (end of 1948) and the entire economy put under state control.

**Table 1: Evolution of TKZSs in Bulgaria**

| Year | Number | Average size (ha) | Cooperated peasants (000) | Cooperated land (%)* |
|---|---|---|---|---|
| 1944 | 110 | 240,9 | 7 | 0,6 |
| 1946 | 480 | 359,6 | 41 | 3,7 |
| 1948 | 1100 | 265,8 | 124 | 7,2 |
| 1950 | 2501 | 862,2 | 502 | 51,1 |
| 1956 | 3100 | 1034 | 911 | 77,4 |
| 1958 | 3290 | 1061,5 | 1244 | 93,2 |
| 1960 | 932 | 4266,2 | 1256 | 98,4 |
| 1970 | 744 | 4394,8 | na | 100 |

*Source: : National Statistical Institute* **personal plots of coop members included*

**Table 2: Share of different farms in total agricultural resources and GAP in 1960 (%)**

| Indicators | TKZS | DZS | Personal farms | Private farms |
|---|---|---|---|---|
| Gross Agricultural Product | 72,6 | 6,8 | 19,7 | 0,9 |
| Farmland - total | 79,9 | 6,6 | 8,0 | 5,4 |
| Arable land | 82,4 | 5,9 | 8,5 | 3,3 |
| Permanent crops | 74,4 | 4,8 | 18,9 | 1,9 |
| Natural meadows | 75,3 | 11,3 | 9,8 | 3,5 |
| Grassland and pastures | 70,6 | 10,2 | 0,2 | 19,0 |
| Cattle | 67,1 | 5,7 | 23,9 | 3,3 |
| Buffalos | 30,1 | 1,5 | 64,8 | 3,6 |
| Pigs | 54,5 | 7,7 | 35,2 | 2,7 |
| Sheep | 63,2 | 5,5 | 29,9 | 1,4 |
| Goats | 4,9 | 0,5 | 91,5 | 3,2 |
| Poultry | 38,9 | 2,5 | 55,6 | 3,0 |
| Bees | 17,4 | 1,6 | 77,2 | 3,8 |

*Source: National Statistical Institute*

Cooperative members (and later on industrial and public workers, and cooperated artisans) were allowed small "personal plots" and limited number of livestock and poultry. Nevertheless, these personal farms accounted for a good portion of total agricultural output. Meanwhile, land rent in TKZSs was gradually reduced and abandoned in 1958. Two size augmentations were also undertaken mergering neighboring TKZSs into United TKZSs (1959, 1969) and reducing significantly their number. Besides, machineries were transferred from MTSs to TKZSs and the amount of former diminished to 52 (from 218 in 1961). In 1960s the number of DZSs increased and reached 159 with an average size of 4070ha.

### 1.2. Central planning and price control

Central planning was a major instrument to govern activity of cooperative and state farms. Mandatory orders for quantities of products deliveries were given to every farm. Form 1947 a Two-yea Plan and the Fife-year Plans (with annual decomposition) were main modes of management. Gradually, areas for crops, numbers of animals, type of technologies, parameters like wage levels, norms for input use, renovation of assets, distribution of income etc., and organizational composition of farms (including personality of management), all they started to be determined by the authority. State was responsible for "national balances" and allocated capital investment for achieving Plan objectives. All efforts were directed to (over)fulfillment of Plan indicators since they were criteria for judging the performance at all levels. Farms had freedom to increase output above planed quotas and enlarge individual and collective income. However, producers and managers were reluctant to reveal the real production potential during planning process or over-accomplish plan indicators since they would either receive higher planning obligation or increased quotas in the next planning period.

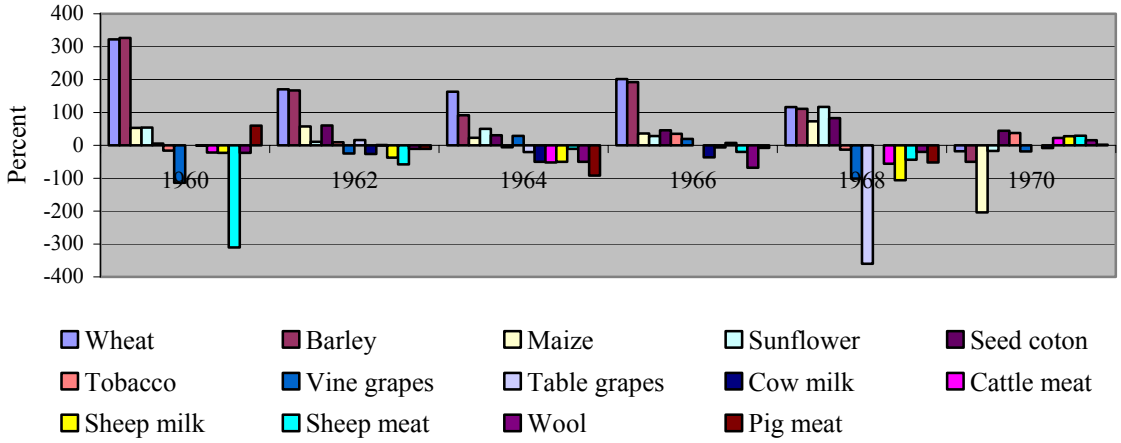
Central planning allowed a rapid accomplishment of strategic national goals (such as industrialization, electrification, mechanizations) centralizing and reallocating overall resources. However, very often unrealistic goals were set, promised investments not delivered, and under-accomplishment of plans prevailed. For instance, the First Five-year Plan (1949-1953) envisaged 59% growth of agricultural output while 0,9% was achieved instead (Glenn, 1992). Similarly, the Third Five-year Plan (1958-1961) set up 3 folds growth in agricultural output while merely 25% was attained.

Furthermore, all markets and prices (inputs, wholesale, retail) were strictly controlled by the State authorities. In first years, there was a policy to keep low purchase prices of farm produce in order to fund development of infant industry. After that, there was a "social policy" to suppress the increase in farm-gate prices in order to maintain low the agro-food retail prices. Price levels were decided in a centralized manner and not connected with demand, product quality, variations in climate and production conditions etc. In addition, state subsidies were used to compensate significant costs differences (e.g. in mountainous and semi- mountainous regions) or low purchase prices (e.g. sheep outputs). Prices were kept stable for a long period of time (5 and more years) as only small variation for vegetables and fruits were allowed at "cooperative markets". Foreign trade was also strictly regulated and executed by state monopolies with restricting system of import quotas, duties, and fees.

All these policies led to ineffective use of existing production potential, weak incentives for producers to increase productivity and quality, and huge disproportions (regular over-supply or undersupply of farm products). Farms often were facing a situation when the more they produce more losses they occur, and vice versa. Consequently, there was a significant variation in efficiency of divers sectors, individual productions and farms in different years (Figure 1). That necessitated complicated redistribution of income within farms and sector-wide, and thus increasing the portion of centralized income of farms. For instance, in 1959 the centralized portion of Net Income of TKZSs was 10,5% which by 1969 enlarged to 23,7%

(Annual Reports of TKZS). What is more, very often it was necessary to balance huge losses from the national budget as forgiving cooperatives debt was widely practiced. All these further distanced farmers incentives from improving production and productivity.

**Figure 1: Profitabilty of individual productions in TKZS Uzunjovo**




*Source: Erdey and Ganev, 1972, p.146*

### 1.3. State support policies

A significant public support was given to modernize the primitive post-war agriculture. Annually 13-18% of the total capital investment was devoted to farming. Comparing to 1948 the material assets in the sector acuminated 7 folds by 1960 and almost doubled during 1960s. As a result, the number of tractors increased more than 11 folds (21 folds in "15 horse power" equivalent) and combines 5 times. Consequently, a significant portion of crop production activity was mechanized by 1960 and nearly entirely mechanized in 1960s (NSI). Furthermore, irrigated area increased 10 times until 1956 covering a quarter of the total arable land by 1970. Substantial renovation and expansion of orchards and vineyards took place seeing their area doubled until 1970. And livestock and poultry productions had their material active significantly expended and modernized. For instance, by 1970 as much as 81% of milking in cow farms, 60,9% of manure cleaning, 54,3% of watering, and 34% of forage distribution were mechanized (Palagachev et all, 1974).

Along with that, public farms were equipped with highly qualified labor of different type – economists, agronomists, engineers, veterinarians, livestock specialists etc. Until 1970 the number of labor with university and high specialized education augmented more than 4 times comparing to 1957 (NSI).

In addition, the system of agrarian research institutes extended considerably to 30 with 34 experimental stations and more than 1200 researchers in 1960s (comparing to 10 with 168 researchers in 1944), and their qualified staff supported adaptation and dissemination of new technologies and varieties at farm level. There were also undertaken a large scale development of system of agrarian services (veterinary, plant protection, artificial insemination of livestock, irrigation, hail prevention), related industries (feed, fertilizer, and farm equipment productions; food, vine and tobacco processing), and rural infrastructure. For instance, due to development of agro-chemical industry the application of fertilizers and pesticides rose 36 times until 1960 and 143 times by 1970 (NSI). Additionally, cheap farming equipments, chemicals, and energy were imported from the Council for Mutual Economic Assistance (CMEA) including USSR and communist countries from East Europe. In CMEA Bulgaria traded greatly fresh and

processed farm products which further boosted state support to agriculture to meet increasing international obligations.

### 1.3. Impact on farming and peasants

Restructuring of farms, central planning system, and state support policies led to a rapid modernization of farms, change in composition of production, growth in output and productivity, and progression of farmers income and welfare.

Creation and evolution of TKZSs accelerated concentration of agrarian resources, centralized decision-making, promoted internal division and specialization of labor, allowed large-scale introduction of machineries (and exploration economies of scale and scope), let quick dissemination of new technologies and varieties, assured individuals against various risks etc. Besides, guaranteed purchase of output and support by state, collective decision-making, team production, and distribution of income "according to labor input" created opportunities (coordination, incentives) for increasing productivity in new collective farms.

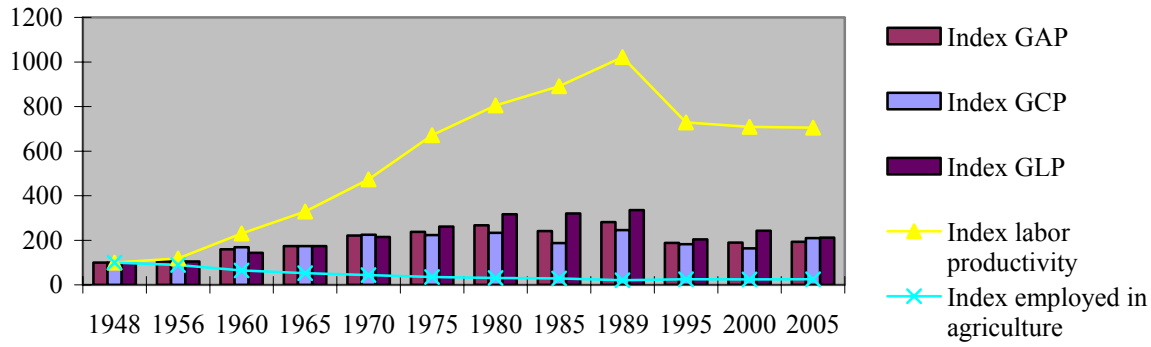
The large scale mechanization of agriculture was responsible for an immense growth in labor productivity. On the other hand, chemical fertilization and crop protection were key factors for increasing land productivity and crops yields. Chemicalization of agriculture also contributed significantly for extension of crop structure, and expansion of livestock and poultry. Irrigation helped overcome severe shortages of water in summer periods affecting badly most crops. Irrigation was greatly responsible for decreasing areas for maize, and expansion of some industrial crops (sugar beat, cotton), vegetables, and fodder (and thus livestock and poultry) productions. Furthermore, new productions such as Alfalfa hay and sugar beat emerged and/or expanded. All these led to expansion of entire crop sectors (grain, oils seeds, vine grapes, vegetables, and fruits), livestock production, and related industries (vine; food and oil processing etc.).

Consequently, for a short period of time an immense growth across productions and overall progress in productivity was achieved. By 1960 the value of Gross Agricultural Product (GAP) mounted 49% comparing to 1948 while in 1960s it grew more 39% (Figure 2). The growth rate of Gross Crop Product (GCP) was higher than GAP during the first period while Gross Livestock Product (GLP) augmented faster during 1960s. During 1948-1960 all major crop productions but rye experienced a significant growth: tomatoes 7,4 folds, sugar beat and potatoes 5 folds, cotton 4 times, burley, sunflower and Alfalfa hay 3 folds, oriental tobacco, apples, maize and wheat 2 folds, and grapes with 55% (NSI). Eggs and meat productions also augmented with 93% and 29% accordingly. In 1960s production of Alfalfa hay and table grapes expended around 140%, burley 82%, maize and sunflower 65%, apples 52%, oriental tobacco, sugar bear and tomatoes 40%, and wheat 22%. During the same period meat, eggs and milk productions rose with 63%, 32% and 14% accordingly.

There was 2,3 folds growth in aggregate labor productivity[1] during 1948-1960 and above 2 folds in 1960s (NSI). Meanwhile, there was a parallel process of sharp reduction of employed persons in agriculture which amount dropped with 35% by 1960. It is estimated that cooperation of peasants shifted 678000 into labor force of growing industry (Glenn, 1992). In 1960s agricultural employment diminished further 33%. The growth in labor productivity exceeds considerably the growth in GAP which means that the entire enlargement of production comes from the boost in labor productivity.

[1] Labor productivity is calculated by dividing GAP to the average number of employed in agriculture (NSI).

**Figure 2: Evolution of agricultural production and productivity**




*Source: National Statistical Institute*

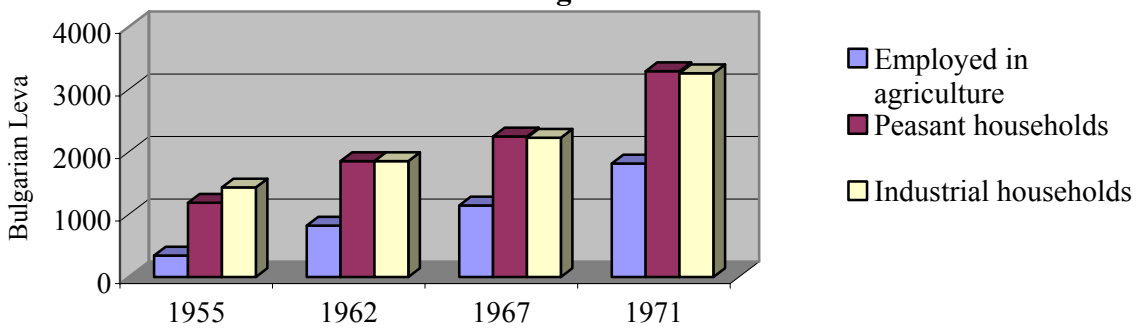
There was also a considerable increase in productivity of land and animals during 1948-1960 as yields per cow augmented with 250%, and harvest from ha of potatoes increase with 195%, maize 158%, sugar beat 135%, burley 115%, cotton 108%, wheat 83%, tomatoes 74%, apples and grapes 60%, sunflower 53%, and oriental tobacco 26%. In 1960s further improvement of yields was achieved - for maize with 96%, wheat and sugar beat with 58%, cow milk with 53%, Alfalfa hay with 48%, cotton with 41%, sunflower and oriental tobacco with 35%, potatoes and burley with 25%, and grapes and sheep milk with 12%.

Until 1970 for most crops growth rates of productions are higher than the (positive, negative) rate of progression in planted areas (some vegetables are exceptions in 1960s). Thus the dynamics of output is achieved with an increase in average yields. Moreover, for wheat, maize and sugar beat the expansion of productions is accomplished with decreasing the planted areas. For burley, sunflower and vegetables both yields rise and extension of utilized area contributed to augmentation of production. Until 1970 the growth in production of cow milk was due to increase in number of milking cows and to a highest extend due to the rise in animals productivity. Dramatic decline in buffalo milk production was caused predominately by the drop of buffalo-cows. On the other hand, dynamics in sheep and goat milks in different years was affected both by (positive and negative) changes in ewes and she-goats and their productivity.

Cereals were the largest contributor to the value of GAP having their post-war segment increased from 21% to 24% by 1960. Meanwhile, industrial crops extended to the second most important production crops enlarging its contribution from 7,7% to 12%. Livestock and poultry productions comprised around the third of GAP during that period (with increasing importance of poultry and decreasing of pigs contribution). On the other hand, share of permanent crops shrunk from more than 14% to 9% by 1960 with a slight recovery in 1960s.

All that was associated with a considerable growth in farmers and peasants households incomes (Figure 3). Comparing to 1951-1955 income of employed in agriculture enlarged 140% by 1962 when incomes of peasant households become equal to the industrial workers (NSI). In addition, cooperative members started benefiting more from “public funds for consumption” which doubled for 1956-1960 and multiplied 6 times until 1970 almost reaching the level for white and blue culler workers. In 1957 TKZS workers got the first agricultural pension and health care system in East Europe. Besides, cooperatives were providing services and infrastructural, schools, hospital etc. support bringing about improvement of villages and overall welfare of peasants during that period.

**Figure 3: Evolution of farmers and farm households incomes in Bulgaria**




*Source: National Statistical Institute*

Centralized command management had significant success until the end of 1950s when productivity was low, production structure and technologies simple, and demand for basic farm products rising. For a short period of time, there was achieved a remarkable progress in modernization of production, augmentation of output, growth in productivity, and improvement of peasants income and welfare. However, this model started to show serious deficiency when production developed, technologies become complicated, and demand for product quality and variety extended. Since late 1960s the growth rate was behind the projected by the Plans and not proportional to the overall investment in agrarian sector. Enlargements of TKZSs extended possibilities for product and functional specialization of internal divisions. However, it also took decision-making further away from farmers and the specific problems of villages damaging cooperative incentive system (income redistribution, equal remuneration etc.). What is more, restructuring of farms did not bring about release of sufficient agricultural labor to meet needs of growing industry.

## 2. Reforms in 1970s and 1980s

### 2.1. Restructuring of farms

After 1970 huge Agro-Industrial Complexes (APK) were set up as regional associations integrating all TKZSs, DZSs and MTSs (Table 3). The later, initially were "independent members" while APK functions were to coordinate their activity through united plan, facilitate introduction of technological innovations, support equalization of wages and social welfare, and promote integration of agriculture and food-processing. However, in 1975 APKs were turned into basic production organizations while members transferred into specialized internal divisions without economic and organizational freedom.

Most APKs involved food processing, agricultural services and marketing, and even non-agricultural activities (Table 3). They had a great potential (land, labor, equipment, capital) to increase efficiency through centralized coordination, heavy investments and modernization, internal specialization, vertical integration, exploration of economies of scale and scope, and risk sharing and mitigation. Consequently, they achieved some progress in capital (mechanization, chemical) intensive productions and high-tech areas such as cereals, sunflower, greenhouses, modern irrigation and spread of pesticides etc.

**Table 3: Evolution of APKs and other agrarian organizations in Bulgaria**

| | 1972 | 1975 | 1977 | 1979 | 1982 | 1985 | 1988 |
|---|---|---|---|---|---|---|---|
| APK | 170 | 152 | 143 | 268 | 296 | 298 | 303 |
| TKZS | 679 | 281* | 78* | | | | |
| DZS | 156 | 91* | 50* | | | | |
| Specialized enterprises | 154 | 702* | 1862* | | | | |
| Brigades of New Type | | | | | | 3750 | 1535** |
| Average size (ha) | 30062,5 | 30800,0 | 32833,1 | 18084,3 | 16256,1 | 15718,1 | 2423,1*** |
| Employed persons | 6635 | 5855 | 5552 | 3019 | 2654 | 2396 | 359*** |
| Share in Gross Product: | | | | | | | *** |
| Agriculture (%) | 79,2 | 76,1 | 75,0 | 77,5 | 74,9 | 71,8 | 67,2 |
| Industry (%) | 14,5 | 16,7 | 16,9 | 16,5 | 17,3 | 17,5 | 16,7 |
| Construction (%) | 2,4 | 2,7 | 3,6 | 3,9 | 3,6 | 5,0 | 3,9 |
| Others (%) | 3,9 | 4,5 | 4,6 | 4,2 | 4,2 | 5,6 | 11,0 |
| Agrarian organizations | na | 358 | 352 | 477 | 532 | 536 | 2101 |

**sub-units of APK; **with status of basic economic organization; ***for Agrarian organizations*
*Source: National Statistical Institute; Trifonov et al., 1989, p.37 and p.40.*

After 1972 a number of large vertically integrated regional or national complexes were established in sugar, viticulture-vine, fruits-vegetable, high quality seeds, pig, cattle and sheep, and poultry - Industrial-Agro Complexes (PAK), Science and Production Organizations (NPK, LVK, NPO), Economics Associations (DSO). They were bigger than APK (often included one or more APKs) and integrated farming with strong research and processing capacities. These organizations were able to address better problems with coordination of vertical links (single management of technological development-farming-processing) and were responsible for the big expansion of some productions (pig, poultry) during 1970s and 1980s.

Public farming organizations were giant enterprises averaging tens of thousands of ha (33000ha for APKs and 55000ha for PAKs) and several thousands of employers (6600 for APKs and 11400 for PAKs). They practically turned farmers into wage workers distancing producers motivation from improvement of production and productivity. Moreover, the internal management of these multilevel and multi-structural organizations was difficult commanding considerable transaction costs (asymmetry of information, conflicting interests, opportunistic behavior, private use of resources and yields etc). Public enterprises had weak incentives structure (equal remuneration, redistribution, mismanagement), little adaptability to diversified needs of consumers, deficiency for innovation, bad economic performance, and generated serious environmental problems ("over-intensification" of crops, over-concentration of livestock). What is more, public farming sector was overpopulated with excessive bureaucratic staff at farm, APK, regional, and national levels ranging 23-30% from the agricultural employment (comparing to 13-15% during the cooperative period) (NSI). Despite that a substantial underutilization and mismanagement of resources were typical while deficiency in quantity and quality of farm goods frequent.

In 1970s and 1980s personal farms were further promoted aiming to deal with stagnation in productivity and shortages of quantities and varieties of agricultural products. In mid 1970s the size limits for personal farms were removed, leasing assets of public farms allowed, and requirements for renting plots to urban population relaxed. Private farms possessed insignificant share in total resources but strong incentives (private ownership on entire product) contributing considerably to major productions (Table 4). Generally, private farming was closely linked to public sector in terms of cheap inputs supply, services, marketing etc. After 1970 it increasing contributed not only for meeting household demands but also supplying urban markets with agro-food products. In the end of 1980s the private farms accounted for

27,3% of GAP, 36% of GLP and 22,4% of GCP.

**Table 4: Share of private farms in agricultural land and major products in Bulgaria**

| Indicators | 1972 | 1980 | 1989 | Indicators | 1972 | 1980 | 1989 |
|---|---|---|---|---|---|---|---|
| Farmland | 10,1 | 9,7 | 10,1 | Cattle meat | 18,3 | 26,1 | 35,8 |
| Cereals | 11,6 | 12,3 | 13,2 | Sheep & goat meat | 51,1 | 47,4 | 64,8 |
| Vegetables | 12,5 | 27,4 | 41,6 | Pig meat | 31,9 | 42,6 | 44,8 |
| Potatoes | 41,9 | 53,3 | 53,6 | Poultry meat | 41,0 | 35,4 | 58,3 |
| Melons | 29,2 | 55,5 | 80,5 | Cow milk | 14,5 | 19,8 | 18,6 |
| Tuberous fodder | 12,8 | 30,5 | 42,4 | Sheep milk | 40,5 | 44,4 | 43,6 |
| Meadow hay | 21,2 | 34,5 | 46,9 | Goat milk | 98,9 | 98,8 | 99,6 |
| Fruits | 36,9 | 38,8 | 44,3 | Buffalo milk | 85,5 | 81,9 | 75,6 |
| Grapes | 35,1 | 36,9 | 48,8 | Eggs | 50,3 | 54,7 | 48,5 |
| Strawberries | 10,1 | 26,2 | 45,8 | Honey | 74,6 | 81,1 | 85,8 |

*Source: National Statistical Institute*

There were many reorganization of agrarian structures as their number, size, and internal composition changed almost every year. Initially concentration of APKs increased while their number reduced to just over 140. However, after 1978 the number of APKs significantly increased and their size reduced. All these "organizational" and management instability additionally enhanced deficiency of public structures.

In 1987 a new policy was launched to transfer APKs into economic associations and turn their internal divisions Brigades of New Types (BNT) into basic economic organizations (Predptiyatie). By 1988 out of 1870 APK's BNT 1535 (82%) got a status of Predpriyatie. "APK system" was practically destroyed in 1989 when APKs and other complexes disappeared and about 2100 "self-managing" collective organizations (farms) were carrying out the entire agricultural activity. The new agrarian organizations were (re)established in location and size very similar to the "village based" TKZSs and DZSs in the middle of 1950s.

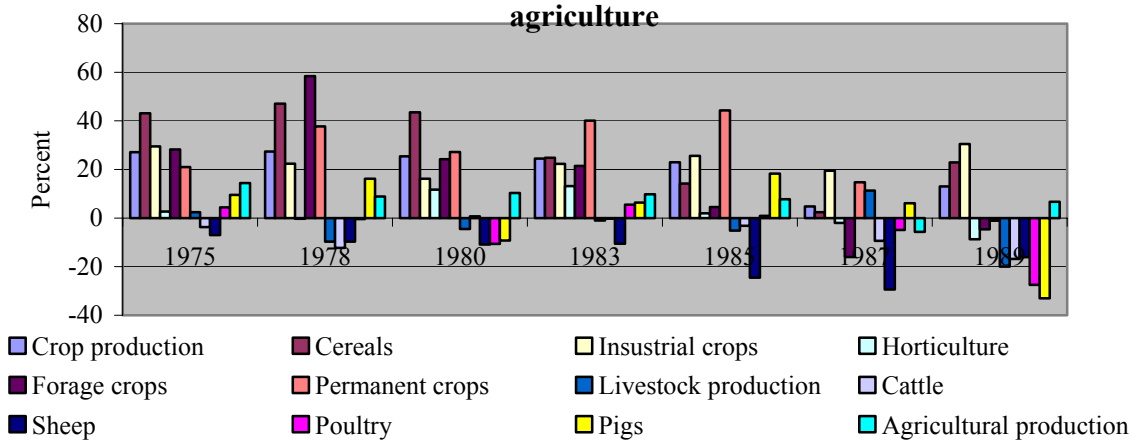
### 2.2. Mechanisms of governance and support

All agrarian organizations were managed like state companies and their production and technological structures, allocation of resources, and relations with upstream and downstream industries strictly controlled by the State. Since 1970s a number of "new economic mechanisms" for governing the economy were experimented aiming at enhancing self-financing and motivation of production organizations[2]. Furthermore, 3 consecutive Five-year Plans put as chief objectives the fight against major bottlenecks of the command economy - "efficiency and quality", "overall intensification", and "scientific and technical progress". A range of measures used included improvement of central planning by involving producers in "counter (bottom up) planning", simplifying procedures and reducing mandatory annual indicators as well as focus on "economic" incentives and giving partial freedom to choose product mix, use bank loans, bear risk, form and distribute profit, select counterparts and export surpluses. However, binding central indicators covered more than 90% of farms resources while administrative and political pressure (from central, regional and local authorities) stressed on accomplishment of "natural" indicators to secure product deliveries for national and local needs.

[2] One of the basic elements of new policy was the extension of old TKZS principle for "residual character of workers salaries" to the entire economy.

Several increases of purchase prices for farm produces were made (1974, 1980, 1987) to adjust to progressing level of production costs, stimulate growth in production, and make feasible financial independency. Moreover, price differentiation "according to product quality" was introduced for some vegetables and fruits to stimulate improvement of quality. Although these changes temporarily improved financial situation in some productions they brought little for sustainable amelioration of financial performance of agriculture and its sub-sectors (Figure 4). The later created conflicts between "natural" and "economic" indicators for performance significantly undermining implementation of policy of "economic management" of agriculture and "self-governance" of farms.

**Figure 4: Profitability of major productions in Bulgarian agriculture**




*Source: Annual Summary Reports of Agricultural Organizations*

Since the beginning of 1980s the internal hierarchy of agrarian organizations was simplified (to 2 levels) and more management rights given to basic production units (BNT) in order to enhance team incentives. The later included collective rights to govern public property, form and distribute profit, posses bank account etc. having some positive impact on efficiency. Nevertheless, all "economic" and organizational measures were not comprehensive while frequent changes in the "rule of the game" were causing further destruction of the incentive and production system. For instance, in late 1980s only specialized in cereals and industrial crops "independent" collective farms were able to break even while livestock, horticulture, permanent crops and some mix farms were not financially viable (Trifovov et al., 1989). Besides, there were uncertainty associated with the "extend" of real economic freedom, problems with unspecified (disputed) property rights and greatly depreciated assets, and insufficiently modernized institutional environment (keeping price control, monopolies, supremacy of state and party bureaucracy etc.). Until the collapse of the socialist model the deficiency in incentives for high productivity prevailed while most farms resources and production structure rested under strict state control.

The industrial development had a high priority during 1970a and 1980s receiving the lion share of the overall investment (up to 80%). That deterred modernization of agriculture hampering satisfaction of increasing internal demand for farm products and international obligations for agro-food export. In 1970s the growth of agrarian material assets was 67% while in 1980s just 25% (NSI). Nevertheless, by 1975 irrigation areas extended with 27% and irrigation techniques was significantly advanced (e.g. spraying was used on 60% of irrigated areas comparing to just 2% in 1960). However, in 1980s irrigated lands augmented merely 6% (after 1985). The amount of combines enlarged the most in the first part of 1970s (with 18%) while tractors increased faster in the second part of the period (with 15%).

Moreover, the old generation tractors and combines were replaced by new models of powerful and more efficient suitable for large scale operations. Consequently, by 1985 the number of tractors and combines diminished by 12% and 27% accordingly. In the second part of 1980s tractors slightly increase (2%) while combines were further reduced.

### 2.3. Impact on farming and peasants

Policy evolution (experimentations) and large-scale restructuring affected significantly farming development. In 1970s there was none or a slight growth in GCP while GLP experienced a steady enlargement of 4% a year (Figure 2). However, in first half of 1980s GAP declined by a tenth due to one-fifth reduction of GCP and no growth in GLP. In 1989 level of GCP was 30% and GLP 5% above the relevant 1985 levels. There was a substantial change in the importance of different sub-sectors due to expansion and domination (since the end of 1970s) of livestock production in GAP. During that period cattle and pigs productions doubled their shares, sheep and goat slightly extended it while poultry kept it constant. All crop productions saw their weights reduced with exception of vegetables preserving its segment unchanged. In 1980s cattle production accounted for a fifth of GAP, followed by cereals (11-14%) and pig production (11-13%).

Until 1975 there was only a growth in physical volumes of wheat, burley, maize, oriental tobacco, tomatoes and Alfalfa hay while wheat, tomatoes, Alfalfa hay and apples registered some augmentation during 1975-1980 (NSI). In the first half of 1980s there was reduction of burley, sugar beat, tomatoes and Alfalfa hay while production of maize, cotton, tobacco, sugar beat, Alfalfa hay and grapes fallen by 1989. Due to the sharp slow-down and/or negative growth of major productions like cotton, table grape and rye during 1970s and 1980s they got to a level inferior than in 1948.

In 1970s there was further increase in application of chemicals (2-3% a year) as pesticides use raised almost 4 folds (NSI). In the first part of 1980s input of Nitrogenous enlarged 21% while during the second part treatment with chemicals declined with 15%. The enormous application of chemicals was associated with increasing chemical contamination of soils, waters, and farm produce, and expansion of lands affected by acidification and salinity. Furthermore, enlargement of farms was responsible for considerable destruction of natural landscape and wild habitat. In the meantime, intensification of irrigation contributed significantly to erosion and salinisation of great parts of farmlands.

Until 1985 there was a considerable increase in production of meat of all kind and cow milk, honey, and eggs. Conversely, a number of traditional productions like sheep, goat and buffalos milks, wools, cocoons experienced low growth and/or a general decline during the period. Moreover, huge concentration and expansion of livestock production created significant environmental (water, soil, air) pollution associated with the big manure production and poor waste management.

Augmentation of labor productivity continued until 1989 with a particularly high rate until 1975 (8,5% annually) and a slower expansion (2-4%) afterwards (Figure 2). Diminution of employed persons in agriculture went on at a slower rate - 18% in the first part and 12% in the second part of 1970s. By 1985 reduction of agricultural employment was just 8% following by 25% fall due to deportation of thousands of ethnic Turks during 1988-89.

Since the beginning of 1970s public farms started experiencing considerable shortages of manual labor for some critical operations (e.g. harvesting of yields) in labor intensive productions like vegetables, tobacco, fruits, grape, corn, hops. Consequently, mandatory “brigades” of off-farm labor (students, blue and white collar workers from other sectors) were extensively used to supply needed seasonal labor. Public farms benefited from such massive and cheap assistance but also had to face the negative effect on productivity (yields

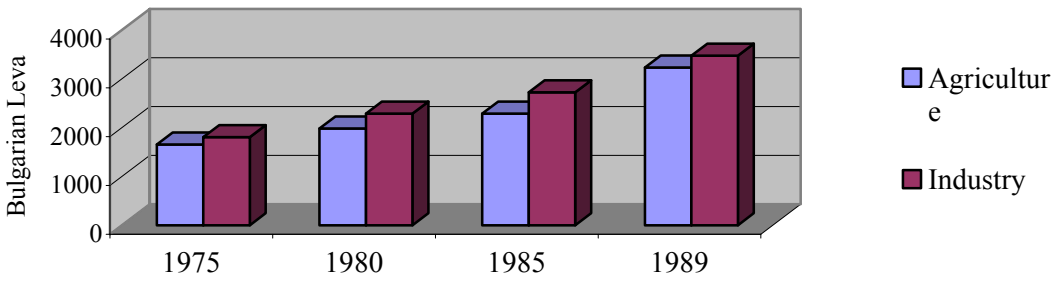
and quality losses) from extensive use of not-qualified and unmotivated labor. Furthermore, there was a tendency for ageing of employed persons in farms (especially field workers) due to less-attractive working conditions and wages comparing to non-farm sectors. Above and beyond, more than 300000 ethnic Turks were deported from the country, which affected particularly badly agriculture and some major sub-sectors such as tobacco and livestock productions.

Yields of most crops improved during 1970s and 1980s. Furthermore, areas devoted to wheat and maize shrunk while burley, sunflower, vegetables and Alfalfa hay extended considerably until 1989. Expansion of productions of wheat and maize was accomplished with decreasing planted areas while for burley, sunflower and vegetables both yields rise and enlargement of area contributed to augmentation. On the other hand, major industrial crops (cotton, sugar beat, tobacco) gradually lost their importance after 1970 sugar beat and cotton nearly disappeared. Until 1975 fruits and vineyards reached a great expansion but diminished afterwards.

Quantity of sheep was kept almost unchanged until 1975 and had some growth in first part of 1980s. Cattle were billow the 1948 level until returning back to initial number during 1980-1985. Buffaloes were decreasing throughout the period. Amount of poultry and pigs increased substantially until 1989. Sheep accounts for the biggest portion in total livestock but lost its lion share (71%) along with all other animals but pigs (NSI). The later took over the second place from cattle and enlarged up to 28% of all animals. Until 1980 the growth in production of cow milk was due to increase in number of milking cows and to a highest extend due to the rise in cows productivity. In 1980s augmentation of milk production is attained with decreasing heads of cows (entirely through improvement of productivity). Dramatic decline in buffalo milk production was caused predominately by the drop in number of buffalo-cows coupled with the lost in productivity in second part of 1980s. Dynamics in sheep milk production was affected both by controversial changes in ewes and their productivity while variation of goat milk was result of changes in she-goats coupled with constant growth in productivity.

Salaries in agricultural sector continued to progress throughout the period (Figure 5). Until 1985 the growth rate of farming income was slower than in industry. In the second half of 1980s agricultural salaries increased faster than industrial but never reached to a parity. Lower income and pension levels as well as inferior work conditions and overall benefits lead to a significant deterioration of quality and age structure of agricultural labor in 1980s.

**Figure 5: Salaries in agriculture and industry in Bulgaria**




*Source: National Statistical Institute*

# 3. Post-communist transformation

## 3.1. Restitution and privatization

After 1990 a large-scale restitution of collectivized or nationalized farmland was undertaken affecting more than 85% of agricultural land and turning a three-quarter of Bulgarian households into owners of farmlands (Bachev, 2007). It took almost 10 years to complete and was associated with big technical difficulties (identification of ownership, allocation of land in real borders), great number of disputes between claimants, under funding, incompetence and corruption of implementing authorities. Until 2000 agrarian agents were not able to trade land on sell or long-lease markets or to use land ownership for joint ventures, collateral against bank credit etc. Consequently, small-scale (subsistence, part-time) farming, short-term (one season) lease, and cooperation were the only possible forms for land use. Besides, a significant part of the agrarian assets (irrigation facilities, wine yards, orchards etc.) were abundant or destroyed, and almost one third of cultivated land left unused for a long period of time.

In 1991 non-land assets of ancient TKZSs and all organizations established on their basis started to be divided between members and workers of cooperatives. In 1992 policy went further and all these organizations were to be liquidated while their assets transferred to eligible shareholders. Most divisible assets (livestock, fruit trees, vineyards) were physically distributed among qualified individuals. Some of the machinery, buildings etc. were sold out on internal auctions organized among shareholders. The rest of the individual shares were transferred to emerging new cooperative farms. Liquidation process took more than 2 years and was associated with large direct costs, enormous physical distortion of the cooperative actives, poor management of production process, and unfair allocation of individual shares (Bachev, 2007).

Since 1992 a privatization of state farms and agro-companies was also undertaken. Most agrarian assets were sold to “managerial-workers” teams or private entrepreneurs. Furthermore, after 2000 a significant part of assets of irrigation companies were transferred to water-users associations. Privatization of some state agrarian assets has been slow because of the problems with identification and separation of state property, excessive debt of some agri-firms, low profitability of some activities (e.g. maintenance of pastures), and existing opposition of interested parties.

As a result of privatization of agricultural lands and assets a new farming structure emerged dominating by numerous small-scale farms and few large cooperatives and agri-firms (Table 5). Moreover, in few years almost entire agricultural production came from the private sector (Table 6).

In time of hardship the employment in farming increased since many used acquired resources to produce food for consumption and get additional income. More than three-quarters of farms are less than 1 ha, averaging 0.5 ha and cultivating 9.5% of Utilized Agricultural Area (UAA). Most livestock holdings are “unprofessional” (97% of total) with few heads but breading 96% of goats, 86% of sheep, 78% of cattle, and 60% of pigs in the country. Less than 40% of all farms sell products, and in more than 50% of cases those are surpluses not consumed by households (MAF). The share of later farms is quite big for major products like eggs (86%), grapes (60,5%), potatoes (58,1%), fruits (46,5%), milk (42,2%) and vegetables (33,6%). What is more, market adjustment and intensifying competition has been associated with a significant decrease in number of unregistered farms (by 71%) since 1995.

**Table 5: Evolution of number, size and importance of different type farms in Bulgaria**

| Indicators | Year | Unregistered | Cooperatives | Agro-firms | Total |
|---|---|---|---|---|---|
| Number | 1995 | 1772000 | 2623 | 2200 | 1777000 |
| | 2000 | 755300 | 3125 | 2275 | 760700 |
| | 2005 | 515300 | 1525 | 3704 | 520529 |
| Share in number (%) | 1995 | 99.7 | 0.1 | 0.1 | 100 |
| | 2000 | 99.3 | 0.4 | 0.3 | 100 |
| | 2005 | 99.0 | 0.3 | 0.7 | 100 |
| Share in farmland (%) | 1995 | 46.5 | 40.7 | 12.8 | 100 |
| | 2000 | 19.7 | 61.6 | 18.7 | 100 |
| | 2005 | 33.5 | 32.6 | 33.8 | 100 |
| Average size (ha) | 1995 | 1.3 | 800.0 | 300.0 | 2.8 |
| | 2000 | 0.9 | 709.9 | 296.7 | 4.7 |
| | 2005 | 1.8 | 584.1 | 249.4 | 5.2 |

*Source: Ministry of Agriculture and Forestry*

**Table 6: Share of private farms in major agricultural products in Bulgaria**

| Products | 1991 | 1993 | 1995 | 1997 | Products | 1991 | 1993 | 1995 | 1997 |
|---|---|---|---|---|---|---|---|---|---|
| Wheat | 11,6 | 29,5 | 92,6 | 97,1 | Grapes | 51,7 | 60,4 | 96,8 | 99,4 |
| Maize | 62,2 | 83,3 | 97 | 98,2 | Cattle meat | 49,9 | 80 | 96,3 | 98,6 |
| Tomatoes | 55,9 | 85,8 | 97,4 | 97,4 | Sheep & goat meat | 73,1 | 92,4 | 99,2 | 99,6 |
| Potatoes | 81,2 | 98 | 99 | 99,1 | Pig meat | 55,2 | 70,3 | 80 | 96,6 |
| Peppers | 48,8 | 80,3 | 97,9 | 99,8 | Poultry meat | 60,8 | 80,7 | 91 | 97,8 |
| Apples | 46,5 | 47,1 | 96,9 | 98,9 | Milk | 38,7 | 73,2 | 97,4 | 98,9 |
| Peaches | 31,3 | 63,8 | 98,1 | 99,6 | Eggs | 53,5 | 57,8 | 69,9 | 92,6 |
| Plumes | 57,8 | 56,7 | 97,2 | 98,8 | Honey | 85,2 | 99,4 | 99,8 | 99,7 |
| Cherries | 69,2 | 73,9 | 98,8 | 99,6 | Wool | 40,9 | 78,2 | 97,6 | 98,6 |

*Source: National Statistical Institute*

High interdependency of agrarian agents skills (previous specialization, team working tradition) and portions in acquired resources (farmlands, indivisible assets) as well as member orientation and easy entrance-exit policy were key factors for a rapid development of new production cooperatives (Bachev, 2007). The cooperatives were efficient during first years of transition concentrating on few profitable crops, supplying members with important products and services (food, forage for private animal, mechanization, processing), providing employment for members, exploring economies of scale/scope on production and transaction activities. However, most coops were badly managed, had lower productivity than non-cooperative farms, failed to adapt to evolving members needs and market demand, and experienced significant funding problems (due to unlike investment preferences of diverse members). All that led to reduction of cooperative activity and massive failures as almost 40% of cooperatives ceased to exist since 2000.

Special experiences, social positions and ties, and access to resources as well as unspecified or "ideal" character of ownership rights let rapid consolidation of farmland and other resources under management of few large entrepreneurs. The later set up and developed highly specialized and efficient agri-firms or partnerships. Currently, the enterprises bigger than 100 European Size Units[3] are merely 0,3% of all farms in permanent crops, 1,6% in field crops, 0,2% in pigs and poultry, 0,4% in horticulture, and 0,25 in mix cropping but they

[3] 1 ESU = 1200 Euro.

account for 62,8%, 54,1%, 54,2%, 26,5% and 28,3% of Standard Gross Margin in relevant groups. Besides, these farms are responsible for degradation of farmland and environment not-respecting crop rotation, non-compensating N, K and P intakes, distracting biodiversity, and practicing poor manure management.

### 3.2. Market liberalization and regulations

After 1990 there was a fundamental liberalization of markets and prices in Bulgaria. Nevertheless, until 1995 there were various systems (projected and ceiling prices) for controlling retail prices of basic food goods like bread, meat, dairy products etc. They aimed at protecting consumers from dominating monopolies in food processing but also kept farm-gate prices low. In 1995-1997 guaranteed minimum prices for main agricultural products were applied having no real impact on producers due to the high inflation during that period.

Transitional market adjustment was characterized with a high discrepancy between rises in prices of farm products and farm inputs and inflation rate (Table 7). The growth in crop and livestock products prices were much behind the price index of industrial inputs for agriculture - fertilizes, herbicides, combined fodder, machineries. The later caused a considerable reduction of farm inputs utilization. For instance, by 1995 the number of tractors and combines dropped with 55% and merely 2-5% of existing irrigation network has been practically used during transition now. The application of chemicals in 1992 was just a third of 1989 level and further declined to 18% in 1997. Chemical use tend to recover since 1998 but a negative rate of compensation of N, P and K intakes dominates (being 90% for N, 34% for P, and 11% for K since 1990) causing severely degradation of agricultural lands. All these are responsible for a considerable fall in agricultural production and productivity after 1990.

**Table 7: Price indexes during post-communist transition in Bulgaria (1990=100)**

| Price index of: | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|
| Farm products | 276 | 322 | 486 | 861 | 1509 | 3380 | 39227 | 41777 | 37307 |
| Crops | 267 | 293 | 451 | 820 | 1257 | 3807 | 35559 | 36768 | 35113 |
| Livestock products | 267 | 359 | 529 | 912 | 1823 | 2847 | 43806 | 49501 | 36878 |
| Nitrate fertilizers | 1193 | 1721 | 1727 | 3750 | 5321 | 14396 | 183545 | 275873 | 612121 |
| Phosphate fertilizers | 1127 | 1658 | 1877 | 3542 | 5077 | 12962 | 165260 | 211285 | 187384 |
| Herbicides | 1308 | 2118 | 4284 | 8621 | 13909 | 14913 | 190138 | 215035 | 205965 |
| Combined fodder | 271 | 422 | 779 | 1207 | 1648 | 5238 | 40539 | 39907 | n.a. |
| Tractors | 816 | 1574 | 2858 | 3847 | 7496 | 31942 | 415399 | 449075 | 422005 |
| Retail food | 476 | 812 | 1263 | 2415 | 3835 | 8487 | 103927 | 124920 | 115551 |
| Consumer Price Index | 439 | 787 | 1228 | 2296 | 3722 | 8300 | 98132 | 120008 | 123095 |

*Source: National Statistical Institute*

Moreover, during transitional high uncertainty and instability many agrarian markets (labor, services, outputs) commanded high costs or did not evolve at all (e.g. market for long-term agrarian credit, agrarian extension etc.). Besides, restructuring of major state monopolies in food processing, inputs supply, irrigation etc. was delayed or still incomplete (e.g. irrigation, Tobacco Holding), or has been associated with establishment of new private monopolies (food processing, irrigation). These additionally deteriorated farmers situation and restricted farms development.

What is more, after 1990 there was a dramatic decline in demand for farm products due to a fall in consumption of all major agro-food products and a sizeable reduction of population (with 10%). For instance, by 1997 consumption per capita dropped by half of the 1990 level reaching particularly low for milk (26%), sugar (30%), vegetables (41%) meat and eggs (46%),

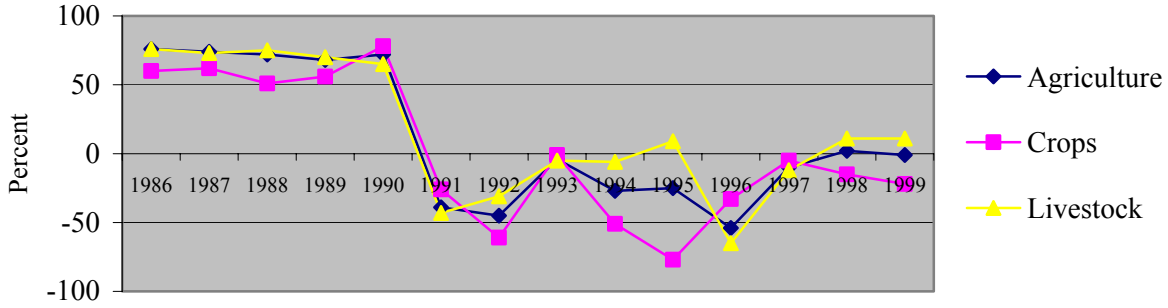
cheese (54%) and fruits (60%) (NSI). Since 1998 there has been improvement of consumption of agro-food products but its level is still bellow 1990.

Furthermore, traditional markets for Bulgarian agro-food products collapsed in 1991 as export to major trading partners in CMEA reduced more than twice until 1992 (OECD). Meanwhile, there were a number of quantity (quotas, licensing), qualitative (quality and food-safety standards), and structural (specific products, quality, processing etc. requirements) restrictions for redirecting extort to EU. Above and beyond, until 1997 Governments imposed various export restrictions (bans, quotas, licensing, taxes) aiming to keep agro-food prices low and restraining further farm production and productivity.

### 3.3. Support policies

There has been a little public support to Bulgarian agriculture during transition now. Tax on agricultural income, farmland, and cooperative transactions with members were removed in 1990. Besides, a limited public aid in the form of preferential short-term credit for grain producers and some support to capital investments was in place in 1990s. However, the Aggregate Support to Agriculture was in negative territories until 1998 (Figure 6). Consequently, farms efficiency was low while new capital investment insignificant (until 1995 material assets grew merely 2%). That practically stopped renovation of out-of-dated and amortized machineries, building, irrigation facilities, orchards and vineyards while manual labor and animal power widespread in small-scale farming. All these had a direct negative effect on crop yields, size and structure of production, and labor productivity.

**Figure 6: Agragate Producer Support Estimate in Bulgarian Agriculture**




*Source: OECD, 2000*

There has been a considerable progress in public support to agrarian sector since 2000 in various directions - subsidies, preferential credits, investment subsidies, price guarantee etc. As a result there has been some improvement in technological factors – e.g. application of chemicals expanded with 68%, irrigation 126% and introduction of new machineries 42%. Most public aid in recent years affected cereals and tobacco producers. Principally, until EU accession the overall support to farms rests very little and much below the level in EU and other countries in the region. For 2001-2005 the share of the Special Assistance Programme for Agricultural and Rural Development (SAPARD) investments and subsidies in Gross Value Added (GVA) were 3,6% and 1,8% accordingly. At the same time, portions of the State Fund Agriculture's investment credit in the GVA were 0,4%, and short-term (credits and subsidies) support in the GAP 0,8% (Bachev 2007). Besides, only a small proportion of the farms benefits from some form of public assistance most of them being large (and highly productive) enterprises. For instance, SAPARD supported merely 7,7% of agro-firms, 2,3% of cooperatives, and 0,1% of unregistered farms. Consequently, technological and income

disparity between farms of different type, sub-sectors and regions has broadened as a result of public intervention.

Moreover, modern public institutions and infrastructure crucial for farming development were/have not been built in the country: public system for enforcement of laws, regulations, and private contracts does not work well; essential property rights (on environmental resources, special and organic products) are not well defined or enforced; public support programs are not governed effectively and in the best interest of the legitimate beneficiaries; badly needed agricultural advisory system was not established until 2000 and it does not serve the majority of farms; urgently needed public system for agrarian insurance has not been introduced; crucial agrarian and rural infrastructure (wholesale markets, irrigation, roads, communication) has not been modernized; public support for initiating and developing farming associations has not been given; multifunctional role of agriculture was not recognized and supported (Bachev, 2007). All these additionally deteriorated farms situation being particularly bad for dairy holdings and grape and vegetable producers where small and badly organized farms dominate.

Newly evolving farming structures were left unassisted to compete on internal and international markets with heavily subsidized farm products from EU and neighboring countries. The later deters effective modernization and adaptation of weak local farms in major sub-sectors (horticulture, fruits, and livestock) to increasing market and institutional requirements, diminishes their competitiveness and sustainability, and leads to a significant decline in production. The negative effect has been particularly great for livestock farms unable to adapt to tough EU (quality, safety, environmental animal welfare etc.) standards and leading to further reduction of market activity in recent years.

### 3.4. Impact on farming and peasants

Post-communist transformation was characterized with high uncertainty and instability, undeveloped or missing markets, badly specified and enforced rights, decreasing internal and international demand, and little public support to farming. All these coupled with the specific mode and pace of privatization (distribution of resources to farmers and non-farmers, restitution of land in original real borders, physical distribution of material assets and livestock, lack of full ownership titles for a long time, practical difficulties and mismanagement) have had significant negative impact on agricultural production and productivity.

In transitional conditions the small-scale subsistence, semi-market, and part-time farming happened to be an effective mode for productive use of available farmland and labor, cheap and safe food supply for households, and secure additional income. Since 1991 small holdings accounts for the majority of agricultural employment, most of the livestock, and a good part of total farmland and overall output. Even now 75% of employed in farming are engaged on part-time bases and almost 1 million use agriculture as “supplementary income source” (MAF). Consequently, the household farms comprise a good part of the Gross Income of households rising up to almost 28% in 1995 and staying in 13-19% range since 2000.

Small-scale farms use primitive (labor intensive, mechanization and chemical free) technologies, productivity is low, and production capacity is insignificant (restricted resources, no entrepreneurial capital, low household demand, large diversification, advanced age of farmers). These farms are greatly responsible for the backward “technological development”, sharp fall in productivity and major productions (horticulture, permanent crops, livestock), and some environmental problems (over or under-grazing of pastures, destruction of biodiversity, contamination of soils, water and air).

Moreover, for a long period of time a significant portion of agrarian resources were governed by ineffective “temporary” structures such as Privatization Boards, Liquidation Councils, Land Commissions etc. The later had no interests in safeguarding resources and

increasing productivity, and contributed considerably for destruction of agrarian capital and productions (mismanagement, corruption).

On the other hand, liberalization of markets and restoration of private property rights gave strong incentives for private entrepreneurship in farming. However, in 1990s most farmland of large commercial and cooperative farms was supplied through provisional lease-in contracts deterring long-term investment for improving land productivity and giving preferences for one-season crops (expansion of sunflower and wheat). The later led to changing of production structure, diminishing long-term productivity, and some serious environmental problems (land and biodiversity degradation, over-exhaustion, pollution etc.).

As a result of all these development there was a vast decline in crop and livestock productions after 1989. By 1995 GAP shrunk by one third staying stable since then (Figure 2). In the first part of 1990s GLP dropped by almost 40%, slightly recovered in the second part, and plummeted again after 2000. By 1995 GCP declined by more than a quarter which followed by another 10% reduction by 2000. In last years there has been some good progress in GCP.

Final decade of the last century saw a sharp decline in all crop productions (but sunflower) ranging from a third for potatoes, a half for wheat, to 60% for corn and burley, three quarters for tomatoes, Alfalfa hay and table grape, and up to 94% for apples (NSI). Certain important productions were reduced to a tiny fraction of their 1948 level – grapes (57%), apples (20%), sugar beat and cotton (9%), and rye (8%). There has been a reverse trend for some growth in wheat, maize and tobacco productions after 2000.

After 1989 there has been a dramatic fall in all livestock outputs but goat milk – production of pig, cattle, sheep and goat meats declined by 82%, 77% and 72% accordingly; poultry meat by 51%; cow, sheep and buffalo milks by 45%, 66% and 59%; wool by 85%; eggs by 45%; honey by 57%; and cocoons disappeared. In recent years there is a slight recovery of sheep milk, honey and eggs productions. However, current output for major products like pig meat and goat milk is just above 1948 level. Other productions are still far bellow the 1948 level – cattle meat (61%), sheep and goat meat (52%), sheep milk (37%), wool (31%), and buffalo milk (11%).

There has been a significant change in importance of different sub-sectors. Livestock kept its parity share until 1995 but gradually melted up to 26% of GAP in 2005 (NSI). Poultry maintains 7% share while cattle portion dropped to 5%, sheep and goat to 7,5% and pigs to 6%. Vegetables have seen its share augmented since 1989 now having the largest portion in GAP in past decade (26-29%). Cereals extended its segment up to 22% being the second most important production after 1995. Industrial crops had some step backs in 1990s (down to 5-7%) but returned their importance since 2000 (15% of GAP).

After 1989 there has been an immense fall in labor productivity (with 29% by 1995, and a minor rate afterwards) along with an 18% rise in number of employed in agriculture (Figure 2). The later could not compensate the lost in labor productivity by 1995 while tiny growth in GAP since then fully comes from an employment of additional workforce (after 2000). While GAP level varies around 1999 amount the generated Net Value Added (NVA) and Entrepreneurial Income (EI) have been decreasing. Since 2002 there has been a step-back in the labor productivity measured as NVA per employed in agriculture which has fallen 9% bellow 1999 level. Both rise in agricultural employment and shrink in NVA are responsible for that regression.

Yields of most crops significantly diminished after 1989. Yields of every crop but rye have grown after 2000 but they are still below 1989 level. Maize and potatoes recovered after 1989 regression achieving the top rates in recent years. Oriental tobacco is the only exception keeping upward trend until present. A negative rate in productions dominates sine 1990 and that is caused both by decrease in crop surface and fall in yields (reduction of areas is less that

in output). Boost in some productions in different years come through intensive (e.g. maize), extensive (e.g. sunflower, oriental tobacco) or mix ways (e.g. wheat, sunflower, oriental tobacco) while farmland for vegetables and Alfalfa hay take a good portion of UAA until 2000.

For sheep and goats the real yield rise continued as hike is particularly big for goat milk in 1990s and sheep milk most lately. After 1989 there has been a huge decline in numbers of poultry and livestock but goats. Now all kind of animals are bellow their 1948 level. Sheep dominates in total livestock quantity (42%) followed by pigs (25%), cattle and goats (16% each) (NSI). Dramatic decline in buffalo milk production has been caused predominately by the drop in number of buffalo-cows coupled after 2000 with lost in productivity. Dynamics in sheep milk production has been affected both by changes in ewes and their productivity while major factor for variation of goat milk production are changes in the she-goats.

Since 1990 there has been a significant change in quality of agricultural labor. A part of former specialists of public farms set up own holdings, agri-firms or cooperatives while others (younger and more educated) left the sector. On the other hand, there were a great number of new comers consisting of people who lost employment in other sectors, retired persons, and individuals facing income insecurity and/or shortages. Consequently, number of employed in agriculture augmented (up to 26% of total in 2000) while quality of labor deteriorated significantly. Furthermore, practically all managers of newly evolved private structures had no skills and knowledge for managing a private farm in market conditions. Even now most farmers have “only practical experience in agriculture” and very few secondary vocational education (2%) and high education (1%) (MAF). Moreover, more than 40% of farm managers are older than 65 and more than a half of employed are in pre-retired or retired age. All these put serious restrictions on effective farm adjustment and enlargement, and growth in productivity (low investment activity and entrepreneurships, limited training or learning by doing capability, no alternative employment opportunities).

## Conclusions

There have been a number of principle forms of state intervention in Bulgarian agriculture in post Second World War years.

During the Communist period (1944-1989) peasants were collectivized in large public farms, and the entire activity of farms governed through a central plan. A significant progress in modernization of agriculture and improvement of peasant welfare were achieved and Bulgarian model widely studied in communist and developing countries around the world. Unlike other countries in East Europe “socialist” development of Bulgarian agriculture was characterized with over-centralization of decision-making, domination of administrative methods, forceful cooperation of all peasants, enormous concentration of agricultural activity in large public farms, high integration of farming with technological development and processing, strict state control on prices, unsuccessful experimentations with various “economic” (market like) mechanisms. On the other hand, distinct from the soviet model private property on agricultural land were formally preserved, basic production organizations were given more economic freedom, and private farms (personal plots) played a significant role in satisfying households and market demands of basic farm produces.

During post-communist transition (1990-2005) another extreme mode of agrarian governance was applied. Markets and prices were liberalized while few or no support to farms given by the state. Moreover, unlike East Europe ancient farms were liquidated by law, non-land assets physically distributed between former cooperative members, and agricultural land restituted to previous owners in real borders. All that resulted in evolution of a specific farming structure characterizes by numerous subsistence, semi-market and part-time farms and few thousands large firms and cooperatives dominating commercial sector. Furthermore,

transition was associated with sizable reduction of major productions, increasing importance of agriculture in households economy, backward technological development and destruction of material assets and environment, low sustainability of a great number of farms and entire sub-sectors (e.g. dairy).

Finally, EU *Common* Agricultural Policy started to be implementing in Bulgaria from 2007 on. However, it would likely have dissimilar results comparing to Old and other New Member States since there are not well working public enforcement and support institutions and many farms are inadaptable to new market and institutional environment.

## References:


Bachev H. (2007): Post-communist Transition in Bulgaria – Implications for Development of Agricultural Specialization and Farming Structures, Proceedings, EU COST A35 Programme for the Study of European Rural Societies Workshop "The management of rural land, Agricultural specialization and rural patterns of development", Rennes University, Rennes.

Erdey F. and A. Ganev (1972): From Experiences of Labor Cooperative Farms in Hungary and Bulgaria, BAN, Sofia.

Glenn E. Curtis, ed. (1992): Bulgaria: A Country Study. Washington: GPO for the Library of Congress.

OECD (2000): Review of Agricultural Policies in Bulgaria, OECD, Paris.

Palagachev N., N.Platikanov and T.Penev, eds (1974): Upswing of Bulgarian Agriculture, Zemizdat, Sofia.

Trifovov P., R.Aykova, G.Georgiev, D.Shtonov, I.Sirakov, H.Hristov, and S.Donev (1989): Organization and Efficiency of Management in Agriculture, Zemizdat, Sofia.