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INVESTMENT SUPPORT AND PERFORMANCE OF ROMANIAN LARGE FARMS

1. STRUCTURAL CHALLENGES IN THE ROMANIAN AGRICULTURE

The complete adoption of the Common Agricultural Policy (CAP) after accession will enhance competition and force local agricultural producers to adapt themselves to the new efficiency standards, fostering the sector's catching-up. If GDP/capita (although increasing), still stands at levels lower than 40% of the EU-25 average and just above 30% of the EU-15 average, income disparities are much more acute in Romania's agricultural sector, where GDP/capita represents only some 9% of the EU-15 average. Unlike in most other EU countries, agriculture has been traditionally a major sector in Romania, in terms of area, contribution to GDP and share of employed population. It has been shown repeatedly that a special challenge the country's income convergence aspirations comes from the largely oversized, by EU standards, agricultural labor force.

The share of the population employed in agriculture and forestry in total active population stood at 32% (compared to 36.4% in 2002). Although going down, such a proportion is very high, indicative for significant disguised unemployment and modest productivity levels (of just about 30% of the EU-15 average). This can easily be attributed to the pronounced duality of the sector, with increasingly commercial farming paralleled by a roughly equal, in terms of utilized land, subsistence agriculture.

Commercial vs. subsistence farming

The results of the 2005 Farm Structure Survey permit analyses both in terms of physical size of the agricultural holdings, and their potential to generate income. At the end of 2005, 71% of Romania's farms were under the threshold of 1 European Size Unit (ESU). The 29% holdings above the subsistence threshold farmed about 10.3 million ha, or 74.4% of Romania's utilized agricultural land. By comparison, such units worked 99% of the agricultural area in the Czech Republic, almost 95% in Hungary, and 89% in Poland.

Moreover, even within the analyzed category (comprising 1.24 million farms), 74% of them worked less than 5 ha, which means that overall, the total number of agricultural holdings using less than 5 ha exceeded 3.7 million (on almost 40% of the total utilized area). Very indicative for the prevalence of subsistence farming in the Romanian agriculture is also the fact that 69% of the holdings over 1 ESU were producing mainly for self-consumption. This means that, overall, more than 90% of the farms in Romania are engaged in subsistence and semi-subsistence activities (as against about 20% in the EU15).

In terms of farming unit types, the land restitution and cooperatives and state farms' dismantlement resulted in a multitude of agricultural production units, which can be grouped into two main categories: individual holdings and informal associations of those (99.5% of the total number, working 65.5% of the utilized agricultural area) and legal entities, either formal associations or private joint stock companies (0.5% of the total, working 34.5 of the utilized area).

Some changes relative to the farming structure, although slow to emerge, may be highlighted when the 2005 Farm Survey data compared to the 2002 corresponding figures. The total number of agricultural holdings decreased by 5% to 4,256,152, from 4,484,893. The average size of the individual farm was 2.15 ha (versus 1.73 ha in 2002), while the average size of the farms registered as legal persons shrank from 274 ha in 2002 to 268 ha in 2005. In terms of land tenure, in 2005, 74.5 % of the total farmed area was owned by the agricultural holdings, 14% was leased, while the balance was made up of long-term concessions, free of charge arrangements etc.

Such a distribution characterized by the "missing middle" (with almost all agricultural land evenly divided between a few very large farms and a huge number of tiny holdings) is the main factor limiting agriculture competitiveness in Romania. The 3 million holdings under the limit of 1 ESU are the shelter of the rural poor, with scarce assets and low productivity of these assets, and whose production never reaches the market. They consequently have little demand for consumption and can generate almost no investment. The population subsisting on such little plots has a low educational level and is poorly qualified, which makes the task of shifting it to non-farm activities extremely difficult.

Rural demographics, constraint to family farm consolidation

The Romanian experience proved that the painful and costly land reform over more than one decade reestablished the private ownership on land, but to the extent to which it played a buffer role for the massive layoffs from the industrial sectors, it was a disincentive to market-type relationships in agriculture. The emerged entities (either private companies or individual farms) were expected to adapt more

rapidly to the new market conditions, but the policy mix, even in the late phase of the pre-accession period, hindered this process. Romania consistently used distorting subsidizing forms for both inputs and outputs and sheltered its agriculture from world markets competition through tariff protection.

The EU membership itself adds to an already complicated task of finding ways to speeding up land consolidation. Demand for land (and, consequently, prices) will continue the ascendant trend from the pre-accession period, both because of the anticipated push in the agricultural commercial pole, but also because of non-farming competition and the interest of domestic and foreign investors in this asset. Moreover, direct payments will introduce some distortions in the land and lease markets, because they can serve as a safety net for eligible farmers, providing them with a certain guaranteed income.

There is no comprehensive statistical information about the levels of external migration, but recent studies indicate that it reached significant levels over the last couple of years (2 million people, that is, about 10% of the total population, work abroad, in countries like Spain, Italy, Greece, Ireland, Germany). The main pool for these migrants is the young adults, especially men, while, by development region, the highest rates are in the central one and in North-East, providing, respectively, (19.8%) and 17% of the total emigrants. Most workers opt for temporary employment. Policy makers have thus a difficult task in finding the appropriate solutions, corroborating CAP with other policy instruments, to provide incentives for maintaining rural populations, especially young people, as well attracting some of the migrant workers to return at home.

The Common Agricultural Policy, through its large transfers from the EU budget (potentially exceeding 2 billion EUR annually – leaving market measures aside – over 2007–13), raises hopes for a strong momentum in the farm sector. While most rules are set in Brussels, domestic decision makers are offered flexibility in choosing certain mechanisms related to direct payments' implementation, and full discretion in prioritizing and blending rural development measures at national level, within the pre-established framework.

Pre-accession support measures

In the last years Romania increased its effort to provide agricultural support as membership was getting closer, anticipating CAP support volumes and schemes (OECD, 2007). Total agricultural support in 2003–05 stood at 6% of Romania's GDP, exceeding by far the OECD average (1.14%). From 5% in 1995–97, producer support (PSE, producer subsidy estimate) jumped to 29% in 2005 (27% on average for 2003–05), as against the OECD average of 30%. Still, numerous support measures continued to be coupled with production (accounting for 88% in the PSE), while input subsidies (the most distorting) contributed by another 6%.

Area based payments accounted for some 4% of the total support at farm level. Domestic farm gate prices were 54% above the levels prevailing in the international markets (except for some commodities like oilseeds and sheep meat, which registered bids below their border equivalents). Further into 2006–07, Romania maximized the possibility to provide subsidies as “state aids”, under transitory waivers. To these, like in most recent years, various compensations were agreed with the Commission, in response to difficult circumstances created by animal disease outbreaks (classical swine fever, avian influenza) or weather conditions (e.g., the 2007 exceptional drought). The different support measures provided by the government to domestic producers in the very years preceding country’s European membership are grouped into four main categories (making possible, though not fully, comparisons with the CAP-type support and partly consistent also with the OECD taxonomy): market-type, decoupled support, input purchase subsidization and support to investments. The three-year period features a large share held by market measures, with a negative impact from the perspective of the liberalization trend worldwide. Nevertheless, this shrank from 42% in 2006 to 32% in 2007. A positive development is the large share of the decoupled payments (per area unit or animal head) in total (46% in 2007), in an anticipation of the direct payment scheme introduction. Yet, due to the delays leading to the effective payment of the amounts received from the EU budget only beginning with March 2008, the specificity of the national budget for 2007 for agriculture is given by large-scale national support, mostly assimilated to the state aids. The level of support, in fact, went up significantly (almost doubled compared to the 2006 total allocation), reflecting large amounts disbursed as such compensations in a particularly difficult year, with extreme weather conditions. Another positive piece is the rise (both in absolute and relative figures) of the support devoted to investments (able to trigger structural adjustment) and to mountain area development (which may become an important asset in the long run and was targeted through several forms of support).

2. THE COMMON AGRICULTURAL POLICY, DRIVER TO CONVERGENCE

The result of continuous adjustments in response to the world market evolution as well as to the EU enlargement eastwards, the current support under the Common Agricultural Policy is the result of a deep reform initiated in 2003 and envisages both agricultural and rural development, through two different sets of measures (“Pillars”). The declared priority of this reform was to create an agricultural sector adapted to the market economy, based upon the principle of increasing environmental protection and animal welfare standards. It also made important (although incomplete) steps in decoupling the direct payments from production for a series of important products. This was meant to give an impetus to

the European agricultural competitiveness and increase its capability to react to market signals, but also to increase the importance of rural development by introducing new measures and transferring significant resources from Pillar 1 to Pillar 2.

Agricultural market and income support is provided from the European Agricultural Guarantee Fund (EAGF) through Pillar 1 measures, under two forms: (i) direct (area) payments and (ii) market measures: the quota system, public interventions, price support and refunds. Pillar 2 envisages a wide set of measures addressing the rural community at large (including structural adjustment) and being financed from the European Agricultural Fund for Rural Development (EAFRD). Acknowledging the lack of uniformity in the production patterns of the 27 Member States, the CAP, though prescribing a number of mandatory requirements, leaves significant flexibility at national level with respect to implementation mechanisms. Moreover, the new member states have, for a three-year post-accession transition period, the option of a flexible, but limited, reallocation between Pillar 2 and Pillar 1 (see below).

Agricultural income support

The central piece of the CAP, introduced in the process of the 2003 reform as a new method to distribute direct income support to the European farmers, is the Single Payment Scheme (SPS). Decoupled from production and thus introducing less trade distortions, these subsidies were designed to compensate farmers in EU-15 for reductions in price support. For the New Member States it was agreed in the accession talks that the program would be gradually introduced over the first decade of membership. Because they did not handle CAP-type direct payments prior to accession, as well as for avoiding the requirements of a quite sophisticated administration, the NMS were offered the option of a simplified version, named Single Area Payment Scheme (SAPS). SAPS provide for an annual flat rate, per hectare payment to farmers, irrespective of the crops produced—or even whether crops are not produced at all (as long as the land is maintained in good agricultural condition, see below). Romania will apply SAPS for a period of 3 years, with the possibility of a 2-year extension. Meanwhile, the country is required to improve its administrative capacity, including its Integrated Administration and Control System (IACS), so as to be able to handle more complex schemes in the future.

The total financial envelope for SAPS was established in the case of each NMS taking into account a number of considerations, like yield levels from the reference period (2000–02) and historical production of commodities eligible for subsidies (arable crops, milk and dairy products, beef and veal). The direct payment financial envelope corresponding to Romania's first membership year

stands at 443 million EUR (disbursable in 2008, see Annex 2) which, divided by the total eligible utilized area, gives roughly 50 EUR/ha (for comparison, the Hungarian farmers receive 70 EUR/ha, the Bulgarians about 51, while Latvians just about 20). The minimum threshold for farm eligibility was set up at the highest level of 1 ha, like in all other NMS, both for farm efficiency considerations as well as for avoiding additional administrative burdens. An important observation is that only direct payments to farmers will be phased in. By comparison, market support and rural development payments are available at 100 percent of the EU level from the first year of accession, but depend on the absorption capacity of the country.

To compensate for the gradual implementation of direct payments, the NMS were allowed to complement this funding from the EAGF with “top-ups” (national complementary direct payments, NCDP) from the national budget, up to 30% of the EU-15 level or up to the pre-accession support level plus 10%, but without exceeding the EU-15 direct payment level. Exceptionally, in the first three years of membership, the top-ups can be partly (up to 20%) funded by diverting money from rural development (Pillar 2) allocation of the new Member State. The matching funds are to be covered from the national budget. From 2010 Romania would have to finance the CNDP entirely with national funds.

In the crop sector, CNDPs will be provided from the national budget (80%), with 20% co-financing from the Rural Development allocation. Top-ups for the animal sector should be financed entirely from the national budget. Legislation passed at the end of 2007 sets the CNDP values corresponding to the first accession year 47.5 EUR/ha for most crops, which means that eligible recipients will be given total direct payments (decoupled from production) in the amount of 98 EUR/ha. Energy crops (corn, soybeans, rapeseed and sunflower), are granted, in addition, “energy premia” (45 EUR/ha), also decoupled from production. Top-ups depending on output levels will be granted for just few “specialty” crops like flax linseed and hemp, hops and tobacco, sectors that would be practically abandoned in the absence of such incentives. A special program is designed for sugar beet, for encouraging raw material production to fulfill Romania’s sugar quota.

For livestock production, support measures for 2007 reportedly aimed sector’s restructuring as well as encouraging market liberalization for animal products and abort state intervention; hence, subsidies (“premia”) have been partly decoupled from production. Such aid was provided to bovine growers, as well as to sheep and goat growers, as flat rates/animal head, as depicted in Table 1. In 2007, over 1 million heads of bovines and 4.3 million heads of sheep and goats were found eligible for direct aid in the livestock sector.

Nevertheless, for a number of reasons, it is important that Romania is permitted to continue some coupled support schemes in the sensitive sectors, as already underlined by the Romanian authorities in the CAP Health Check debates. In the

first place, being covered entirely from national resources, livestock payments will diminish over time, in tandem with the shrinking of CNDPs as EU direct payments are phased in. Consequently, it is important to have the option of a flexible allocation of the available resources, which, in the cattle sector, aims both at achieving production volumes to cover the milk quota and ensuring and improving beef and veal and production. Also, specific payments for livestock production may be an important incentive to growers in the hilly and mountainous areas to maintain traditional animal breeding activities.

Expected income shifts as a result of direct payments

The 2008 IACS information reveals that the number of farmers who submitted an application form for direct payments is 1,230,000, while actual recipients would be slightly less, since some were found ineligible. Total area considered entitled to payments currently stands at roughly 9,400,000 ha.

Table 1
Direct payments recipients in Romania

<i>Farm structure</i>	<i>Total number (Farm survey, 2005)</i>	<i>Total utilized area</i>	<i>Total eligible farms (IACS data, 2008)</i>	<i>Total eligible area</i>
0.1 – 1 ha	1,851,835	694,511	0	0
1 – 5 ha	1,883,983	4,407,600	1,001,409	2,436,816
5 – 10 ha	289,575	1,926,391	159,428	1,058,554
10 – 50 ha	82,024	1,319,957	52,273	982,022
50 – 100 ha	4,939	336,183	5,436	384,073
Over 100 ha	8,891	5,222,058	10,819	4,624,540
TOTAL	4,121,247	13,096,701	1,229,365	9,486,005

Source: Ministry of Agriculture and Rural Development

According to its commitments in the accession talks, in 2007 Romania can put 528 million EUR into CNDPs. The Ministry of Agriculture actually budgeted, for this purpose, 474.6 million EUR. Together with EUR 440.6 million from EAGF, the amount to be disbursed in 2008 as direct payments corresponding to the first membership year reaches EUR 915 million. The bold manner Romania pursued elevated CNDP rates is typical for the NMS with high level of protection in the pre-accession years. It came naturally to the new entrants to make use in the first place of CAP Pillar 1 tools for bridging income gaps between themselves and the old Member States. Total direct aid (including CNDPs), was thus designed not only to compensate farmers for the removal of national subsidies, but in fact to push farm incomes beyond the levels registered prior to 2007. This, nonetheless, implicitly has an adverse effect, benefiting more the very large operators, as shown when considering farm size classes.

Based on the IACS data depicted in Table 1, the value of the support to be received by 80% of the eligible crop farms (roughly 1 million units) in respect of the year 2007 vary between 98 and 490 EUR altogether (EU and national support). Based on their land eligible for subsidies, this translates into some 240 million EUR, that is, roughly 26% of total direct aids. At the other end, less than 1% of all recipients (some 11,000 farmers) with farms operating over 100 ha, could receive minimum 9800 EUR/farm corresponding to the year 2007 (taking into consideration only their crop production). Operators in this pole are already highly competitive, made substantial investments and have thus increased their relative efficiency. They meet all conditions to receive Pillar 1 support and are the most equipped (also in terms of access to knowledge) to benefit from Pillar 2 incentive programs. In this very category, roughly 10,000 farms working between 100 and 1000 ha will be the beneficiaries of an estimated direct aid amounting to 300 million EUR (corresponding to an area of over 3 million ha).

The gaps grow wider as we analyze the funding absorption capacity of the very large farms: 790 of the total registered farming operations work over 1000 ha each, or, in total, 1.6 million ha). This is equivalent to say that they may receive for 2007 direct payments totaling 158 million EUR, that is, 17% of the total allocation (from EAGF and national budget). Calculations based on data published by the Ministry of Agriculture and Rural Development about the very large farms, operating 5000 ha and above (38 units on 383 thousand hectares) indicate that these can enjoy as direct support, only for their land, amounts varying between 0.5 and 3 million EUR, depending on the farm size. Overall, this cluster will receive 37.5 million EUR at the 2007 baseline support, to which various other payments can add substantial amounts (energy crop premia, cattle premia, ovine premia etc.).

Given the large amounts budgeted by Romania as CNDPs for the livestock sector (231 million EUR), farmers that concentrate sizeable animal numbers especially will enjoy substantial income growth in the first year of accession. However, this will be altered as the proportion between SAPS and CNDPs will change over time in the total direct payment allocation. The more SAPS share will grow as a result of the phasing-in schedule, the more livestock growers will be penalized, since direct payments will be shifting to agricultural land only (as mentioned above, direct payments for livestock can be granted only from the national budget).

Such considerations strengthen the idea that indeed, the big operators will be the main beneficiaries of the direct aid. Flat rates provided to large-sized farms, which anyhow enjoy high income levels (some of them operating thousands of hectares of land under concession arrangements with the state or leased in from small individual owners) are obviously regressive. The distributional aspect of the direct subsidies has become lately, in fact, one of the key points of discussion under the CAP Health Check. Current proposals are for a limitation of the amounts received by the large farming operations.

In EU-15, in 2005, 50% of beneficiaries received only 3% of direct payments, while 2% of beneficiaries received 30% of total direct aids. In Romania, the disparity is far more extreme after the first year of the CAP exercise, with 80% of the beneficiaries being eligible for some 26% of the direct aid, as against 1% of the beneficiaries receiving 50% of the total allocation. Providing direct payments to the large-sized farms cannot contribute to reaching the objective of supporting farmers' incomes.

3. TECHNICAL EFFICIENCY OF FIELD CROP FARMS

It is known that the diffusion of technology is an important ingredient of the convergence process. Since in agriculture the primary beneficiaries of the technology transfer are the large farms, registered as legal persons, in this part we are using a non-parameter method (Data Envelopment Analysis), to assess the performance of the commercial farming pole. The final objective of the analysis is to check, in the case of the Romanian field crop farms (for which the necessary data were available) the connection between technical efficiency and the volume of received subsidies. In theory, highly subsidized farmers are worse performers than farmers receiving less subsidies, due to a lower effort and thus a waste of inputs. However, subsidies can help technological progress by relaxing credit constraints.

Methodology and data used

The analysis of performance of farms specialized in field crops, which is next presented, was based upon a computer program using Data Envelopment Analysis (DEA). DEA is a non-parametrical method on the basis of which the production efficiency is calculated by means of an efficiency frontier, determined for a data set corresponding to certain holdings. The necessary data for the application of this method are those referring to inputs and outputs, detailed at each farm level, such as those collected under FADN (Farm Accountancy Data Network). The distance from the frontier estimated by DEA is interpreted as inefficiency of a certain agricultural holding.

The technical efficiency was measured on the basis of a model that used the output-orientation option, the only output that was taken into consideration being the crop production value. Four inputs were analyzed, namely: land, measured by the utilized agricultural area (UAA), expressed in ha; labor, measured by the number of the annual working units (AWU); capital, estimated by depreciation, expressed in RON; intermediary consumption, represented by specific costs for each crop (seeds, fertilizers, pesticides), expressed in RON.

For use under DEA program, in order to ensure data accuracy, those items were removed from the sample that contained data suspected as being misleading, a corrected sample covering 321 holdings remaining to be investigated. The characteristics of this sub-sample are presented in Table 2.

Table 2
Characteristics of inputs and outputs used in the model

	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
Output value (thou. Euro)	254	1.3	2,919
UAA (ha)	764	5	5,908
Labour (AWU)	17.5	0.4	226.2
Depreciation (thou. Euro)	29	0.005	587
Intermediary consumption (thou. Euro)	103	0.45	1,548

Technical efficiency and scale efficiency

The synthetic result of farm efficiency measurement in the sub-sample taken into consideration, by means of DEA method, is represented by total efficiency estimate. This indicator can take values ranging from 0 to 1, the maximum value (1) being attributed to farms on the efficiency frontier; this frontier is determined by linear programming methods. The farms with efficiency less than unit lie at a distance from the efficiency frontier that is greater as efficiency estimation is less than one.

With regard to the most performing technologies and managerial practices used at a given moment (by the frontier farms), the mean of efficiency estimations is an indicator of the performance of the sub-sector as a whole (Table 3). In the present investigated case, the low average efficiency is an indicator on the heterogeneity of the performance of crop farms in the commercial sector.

Table 3
Descriptive results of efficiency estimations

	<i>Mean</i>	<i>Minimum</i>	<i>Standard deviation</i>
Total technical efficiency	0.31	0.025	0.19
Pure technical efficiency	0.41	0.027	0.25
Scale efficiency	0.80	0.089	0.19

Total efficiency (that assumes constant returns to scale, CRS) can be decomposed into other two efficiency indicators, namely, pure technical efficiency and scale efficiency. The pure technical efficiency is supposed to be the result of the farm head's managerial behaviour, while the residual value of the scale efficiency can be used for the identification of the optimum farm size, by the indication offered by assigning increasing returns to scale (IRS) or decreasing returns to scale (DRS). The distribution of farms in the sample into the three categories of returns to scale reveals that most farms have a too large size, with decreasing returns to scale (77.6%), while only 5% of farms can be considered as having an optimum size (those in the category with constant returns to scale). At the same time, farms with increasing returns to scale, IRS (almost one fifth of the sample), have still to enlarge their utilized area in order to reach the optimum size, under the given technology.

In order to identify the determinants of farm efficiency, two methods have been used, cluster analysis and econometric regression. The cluster analysis divides the investigated sub-sample into two homogeneous groups of agricultural holdings, having in view the characteristics of farms. Cluster 1 has a larger size, consisting of 281 holdings, while cluster 2 consists only of 40 holdings. The average utilized agricultural area is larger in the case of cluster 2, but the largest difference is represented by the level of subsidies per hectare, which are about 12 times higher in the case of cluster 2. The subsidies cover both operational subsidies/direct aids (procurement premia for the crop production sold on the market and input vouchers) and investment grants (for agricultural machinery and equipment through exclusive national funding or under the SAPARD Program). The efficiency differences between the two clusters are statistically significant, farms from cluster 1 having a lower technical efficiency, but higher scale efficiency, while the ones from cluster have better managerial practices.

The econometric regression used for the identification of the technical efficiency determinants of farms took the following explicative variables into consideration: share of rented land; share of hired labor; subsidies received per hectare; location in a certain socio-historical milieu (a dummy variable for the farms in the old regions of Moldavia and Wallachia); farm organization form (a dummy variable for the farms organized on corporative basis, as commercial company or legal agricultural association). The estimation of the regression equation reveals that only the coefficient calculated for the subsidies per hectare is significant and as a result it can be considered as a determinant of the technical efficiency of crop farms with field crops. The determination coefficient (R-square) of equation is 0.088, which reveals that there are also other variables (for instance, weather conditions and soil quality) that can influence the technical efficiency of agricultural holdings, besides those for which coefficients have been calculated.

The results presented above indicate that in the case of farms with field crops in Romania, granting subsidies has a positive impact, unlike the situation in other countries for which similar studies were produced (*i.e.*, France and Hungary), where the effect of subsidies was negative from the efficiency point of view, generating a certain waste in input use. Yet, taking into consideration the fact that in the case of Romania the subsidies included direct aid and input subsidies, as well as subsidies for investments, it is likely that it is investment subsidies (covered either from national or EU programs) that have a positive contribution upon efficiency.

4. RURAL DEVELOPMENT IN SUPPORT OF COMPETITIVE FARMING

As mentioned above, 90% of the total agricultural holdings in Romania cluster in the *subsistence and semi-subsistence* farming pole, lacking assets and thus real potential to reach the market and turn into competitive entities. Such units

are quite isolated, produce for their own consumption very marginally enter commercial circuits; consequently, they are highly unlikely to have by themselves the financial capacity to invest in technology and increase their productivity and incomes. Such units do not contribute to an optimal resource use. Rural poverty and missing or failing markets enhance one another, in the sense that, on the one hand, low per capita income, low population density, and spatially scattered production units which characterize the rural poor regions prevent development of markets, which, consequently, will result in high transaction costs, reducing households' real income. After 1997, the rural population subsisting on agriculture was targeted by farm subsidization programs, which took various forms (e.g., input voucher schemes, payments for units under 5 ha, etc.). Beyond constructive aspects related to providing a safety net to this part of the population, such practices have had the adverse effect of perpetuating fragmented farms structures rather than promoting land consolidation.

Addressing rural community's needs through Pillar 2 measures

While the duality of the Romanian farming sector cannot be addressed through CAP Pillar 1 (agricultural market and income support) measures, there are still high expectations that structural adjustment will be enhanced through a coherent set of Pillar 2 (rural development) type of measures, in combination with non-farm domestic policies (welfare programs). In this vein, CAP undertakes a holistic approach to rural development (from an economic, social, educational, health, and cultural standpoint), setting the policy framework under Pillar 2, while Member States' governments have the flexibility to use this toolbox for addressing their national priorities. EAFRD is an instrument that complements the national, regional and local measures and should be compatible with the economic and social cohesion objectives and with the measures financed by the European Agricultural Guarantee Fund. According to C.R. 1698/2005, each Member State has to submit a national strategic plan considering the strategic orientation of the Community, the priorities of the EFARD and of the Member State itself, as well as their specific objectives and the financial planning (EFARD contribution and the other financial resources).

Unlike market and income support (Pillar 1), rural development is financed fully from the first year of memberships and is managed on decentralized basis. The instruments of the toolbox are grouped into four types of policy measures, labeled "axes". In order to access the EAFRD allocations, national resources (either public or private) should be mobilized as matching funds. The rural development aid specificity is that projects can only partly be financed under Pillar 2, financial contributions from the beneficiary being required (from the national budget, and the private or public investor), in various proportions, depending on the region, the axis, or the measure. Another particularity is that the beneficiary

should be able to advance the money, being reimbursed at a further stage. In general, for income-generating projects, 50% of the costs involved are covered from public funds (55% in the case of the environmental measures) and 50% are private contributions. Out of the former, EU is providing 75 or 80 percent. For public (non-revenue generating) projects, the EU finances 75 or 80 percent of the total cost, whilst the national budget should provide counterparts for the balance. If the actions are implemented in the “convergence” regions, the share of the EU finance goes up 80%, as regional income disparities are also addressed through Pillar 2.

For the period 2007–2013, Romania’s rural development allocation stands at over 8.022 billion EUR, able to cover 80% of the total rural development public expenditures, with the matching 20% to be financed from the national budget.

National priorities, as reflected in NRDP

Productivity gains in the current stage are largely attributable to the reallocation of resources. Not surprisingly, given the gaps between Romania and the other new entrants in terms of productivity, under its recently approved National Rural Development Plan (NRDP), the Ministry of Agriculture set up as top priorities for absorbing funding under the CAP Pillar 2 measures from Axis 1 “Competitiveness” (40% of the total EAFRD allocation, including investments in rural infrastructure: transport and telecommunication, water supply, etc.). Overall, this axis envisages restructuring and developing the physical potential of rural areas (through investment grants in farms, incentives to subsistence and semi-subsistence producers for getting involved into commercial activities, etc.) as well as promoting knowledge and improving the human potential (vocational training, set up of young farmers, early retirement schemes).

Axis 3, “Diversification”, is also given a strong emphasis (25% of the allocation). Measures to diversify the rural economy include development of non-agricultural activities, support to micro enterprises for entrepreneurship promotion, integrated measures to improve the quality of life in the rural areas, to generate alternative employment and increase living conditions for maintaining rural populations, especially young people, while in parallel releasing the agricultural land for farm consolidation.

Axis 2, “Environment”, will concentrate some 23% of the total EU funding to rural development into measures targeting the sustainable use of agricultural land through: natural handicap payments to farmers in mountain areas and other areas with handicap, agri-environment payments, animal welfare payments. Another important set here are the measures targeting the sustainable use of forestry land through afforestation, etc.

Balancing infrastructure funding with production capacity investments

Under the conditions of a large-scale (semi-)subsistence agriculture, the general development of rural areas cannot be considered in the absence of ample investment programs, both at farm level (large-sized, small-sized and, in particular, medium-sized) and at the (public or even private) infrastructure level. From this perspective, strengthening CAP Pillar 2, through the allocation of additional financial resources, is the only modality for Romania to reduce the gaps compared to the EU Old Member States. Fears that a generous allocation of financial support to Pillar 2 might lead to an incomplete absorption of this support can be of certain relevance only on the short-term and rather suggests a lack of courage to simplify the bureaucratic mechanisms in providing the support. For the current development stage of the Romanian agriculture, it is obvious that a good implementation of the transitory measures is essential, and so is the balance among the Axes for guiding rural players in the medium and long run.

As already pointed out, in the rural development strategy that lies at the basis of the National Program (NPRD), the authorities proposed the allocation of the most significant part of the funds from Pillar 2 under Axis 1 with the scope of boosting competitiveness and triggering structural changes. It is obvious that the decision-makers take into consideration agriculture's capacity to induce development in the rural areas. Considering the current situation, the option comes naturally, as in the menu of measures under Axis 1, those measures specially introduced for the NMS are also identifiable: *e.g.*, measure 1.4.1. (support to subsistence farms), with 15% from the allocation for Axis 1, and measure 1.4.2. (setting up producer groups), with 5%.

It is true that the measures with the largest allocations are those directly linked to investments in the primary production or in the processing sector: measure 1.2.1. (modernization of agricultural holdings), with 17% of allocation and measure 1.2.3. (increasing the value added of agricultural products), with 27% of the allocation. Although the preference for these two classical agricultural support measures can be subject to debates, it is possible that this option is an adequate one, and the results of this orientation towards production remain to be seen by the end of the programming period (2013). Obviously, this option was also determined by the achievements of the similar measures from the SAPARD Program, and the period of structural changes expected to occur post-accession will increase the demand for this type of support. The fact that now the investments in processing and production, according to the program, will be directed to smaller-sized farms and processors, represents a challenge to the success of the respective measures, taking into consideration the low financial power of the targeted operators, which might generate delays. Programs facilitating access to credit collaterals and even to credits (as was the case in 2005–2006) may facilitate the absorption of these funds.

With reference to the measures under Axis 2, it is worth mentioning that although Romania might provide more than the minimum amount imposed by the regulations, it opted for this level (23%), divided almost equally (around 30%) for three main measures (payments for mountain areas, payments for the areas with handicap and agri-environmental payments). While the payments for handicap areas or mountain areas can be relatively straightforwardly directed towards eligible beneficiaries (on the condition of proper functioning of the relevant institutions, especially the Paying Agency), the attraction of as many farmers as possible to organic farming, through land re-conversion payments, represent, to some extent, an opportunity for the Romanian agriculture, where certain similar initiatives have already been successful.

As regards Axis 3 (with 25% of the funds from the programming period), measure 3.2.2 (village rehabilitation) takes the largest part of funds (62% total Axis 3), which partly discounts the low development level of the rural areas. In the long run, this Axis is likely to absorb the largest part of rural development funds allocated to Romania, once the country gets in line with the EU rural development trends.

5. CONCLUSION: FARM PERFORMANCE CAN BE BOOSTED THROUGH INVESTMENT INCENTIVES

Corroborated, the results of the different analysis techniques are able to put together a sketch of the field crop commercial farm sector. Overall, from the perspective of the main input use, this sector is characterized by a poor efficiency and often oversized farming operations, but responds positively to subsidy programs. Nevertheless, the depressed efficiency, on the average, in the considered sector rather points out that there are wide technical efficiency disparities within the commercial farming pole. In fact, this proves once more the prevalence of the obsolete technologies and managerial skills at the level of the generic commercial cereal and oilseed crop farm in Romania, most of these operations being in a stage of assimilating advanced technologies. The encouraging side of the same picture is that many farms have already made investments with the purpose of increasing efficiency. Although DEA is not able to measure the financial effect of the identified inefficiency, normally, in a fully functional market economy, this should be negative (which may not necessarily be the case in Romania). For example, the oversized area operated by the farms in the sample may be the result of a too low lease rent, under the given circumstances confronting the land market, with owners either old or residing in cities, and for whom the only choice is to lease out their land, (or, in the case of the farms that operate state owned land under concession arrangements, it suggests that the level of the royalties is too depressed). Another

possible explanation for the farm oversize is that the operators had purchased land over the self-estimated optimum level, with the intention to make future investments, which would require an enlarged agricultural area (based on the expectations created by SAPARD at that moment (2005) or by the current National Plan for Rural Development, NPRD). These development strategies for farms should be investigated through other methods.

As regards the positive impact of subsidies, identified both in the cluster analysis and in the regression analysis, it should be mentioned that the pure technical efficiency difference between the two clusters has a direct correspondent in the gap between the average subsidy in each group: while in the less efficient cluster the aid volume stood at 54 EUR/farm, in the less numerous (representing only 12% of the sample) but more efficient cluster, farms received 638 EUR on the average, also as a result of benefiting from investment incentive programs (under SAPARD or national funding).

In conclusion, the results presented here indicate that investment subsidizing programs may lead to farm technical efficiency increases, while the high share of rented land in the areas operated by commercial farms makes relatively easily possible size adjustments, depending on the technology used and the managerial practices. At the same time, the heterogeneity of performances in the investigated sample reveals that many farms are under full restructuring process, and providing support to their investments seems to be the way to improve technical efficiency, rather than increasing the level of direct payments. This has direct implications when considering flexible allocations between the two CAP pillars in Romania.

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