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EVALUATION OF MULTIFUNCTIONALITY OPPORTUNITIES ON THE INDIVIDUAL AGRICULTURAL HOLDINGS. A NEW METHODOLOGICAL APPROACH

ABSTRACT

Assuming the multifunctional character of the rural area implies the multiplication of roles that this territory has in the society. The new (ecological, socio-cultural etc.) roles are assumed as the rural society perceives their importance, as well as the benefits generated by this new vision, and is able to fructify the new opportunities (new occupations, funding sources and income sources) that it might benefit from. The openness to the multifunctional approach at the individual agricultural holding level is however conditioned by two main issues:

- the human capital characteristics of holdings (age, education, occupation) can act as catalysts or constraints to the non-agricultural initiatives
- the access to the funding sources both from the perspective of holding solvency in the face of potential creditors and of the lack of information on the funding opportunities of private initiatives from different national and/or European funds.

Keywords: agricultural holding system, multifunctional agriculture, human capital, occupational multiplication, investments.

JEL Classification: Q16, Q12, Q01, O15.

1. INTRODUCTION

In a Europe where the focus is increasingly laid on rural development, there is a multifunctional approach to agriculture, its roles in the economy and society being exponentially multiplied. From a simple food supplier, at present several other roles are attached to agriculture: environment protection and landscape preservation, rural labour employment and food safety; it is on these roles that the European farm system focuses, through the whole agricultural policy system of the European Union. The numerous and various externalities, both positive and negative, which agriculture produces, has been and remains a constant on the public agenda and a constant concern of politicians who have the difficult mission to orient, through concrete policies and measures, the maximization of positive externalities and the minimization of the negative ones (pollution, landscape degradation, unsafe food supply for the population's health).

The farm system in Romania has experienced great shocks in the last eighteen years, materialized into ample and long destructuring and restructuring processes imposed by the land reforms and the agricultural policies that have not always been coherent or convergent either. Romania reached the situation to be a net food importer, although one third of its area is represented by agricultural land.

In a Europe where the focus is laid on agriculture multifunctionality, in Romania we still focus on the establishment of a farm system that should satisfy the primary role of agriculture, i.e. to meet the population's food needs.

There is a string inter-conditionality relation between the structure of the Romanian system of agricultural holdings and their contribution to the job supply. Although in Romania more than 40% of the population is working in agriculture, this fact cannot be associated in reality to assuming the role of *job supplier in the rural area* by the segment of agricultural holdings. The existence of an extremely great number of small-sized subsistence or semi-subsistence farms results in a large number of the population being in the situation of *under-employment in agriculture*. The large number of the rural people and the lack of non-agricultural occupational alternatives provides a very large recruitment pool for the commercial farms, which does not force them into the effort to apply technological works in agriculture. Agriculture contribution to the rural labour employment has rather the effect to maintain the population in the situation of covering their basic needs of existence and less to improve the living of standard of the rural community members.

Starting from these premises, any development strategy on medium or long term of the farm system in Romania should have in view the convergence to a multifunctional agriculture, the transformation of the system of agricultural holdings into a true supplier of jobs in the rural area, being one of the key elements of these strategies.

The European Agricultural Fund for Rural Development (**EAFRD**) has as **objective** under Axis III ("**Quality of life in the rural areas and rural economy diversification**") the *Development of a multifunctional rural area by the support to non-agricultural activities on the agricultural holdings and, in general to the economic activities in the rural areas*, with the purpose to:

- Increase the additional incomes of the subsistence and semi-subsistence farms from non-agricultural activities;
- Create jobs in the rural area;
- Use the local potential for commercial purposes;
- Limit the rural area depopulation;
- Create services for the rural population;
- Best use the renewable energy production potential;
- Develop the rural tourism;
- Promote entrepreneurship.

All these will remain only "desiderata" in rural Romania if they are not supported by the human capital *by which and for which* they should be put into

practice. *The starting point of this study is that the driving force of these changes of vision is the human capital itself.* Its characteristics, from the demographic aspects, going through the educational and occupational aspects and ending up by the perception on the rural community future, may represent constraints or catalysts in assuming the multifunctionality of the rural area.

2. A NEW METHODOLOGICAL APPROACH IN THE IMPLEMENTATION OF THE MULTIFUNCTIONAL DEVELOPMENT PATTERNS

The strategic vision regarding the multifunctional development of the system of individual agricultural holdings in the rural area focuses on the idea of integrating the non-agricultural and agricultural activities on the respective holdings. This approach is even more necessary as a large part of the holdings from the pilot communes fall into the category of subsistence farms¹ that are not eligible for the financial support to agriculture through Measure 141 regarding the “Support to agricultural semi-subsistence farms” (i.e. the individual holdings in the category 2–8 ESU). Mainly in the case of rural household farms that fall into the category of subsistence farms, it is imperiously necessary to design strategies that should support the development of non-agricultural activities as an opportunity for improving the access of the members of these households to a decent living.

The chances of assuming the multifunctional character at the level of the categories of family agricultural holdings in the Romanian rural area directly depend on the answer to the following three **questions**:

A. What are the opportunities of each type of holding to develop non-agricultural activities and what are the constraints that these holdings have to face?

The development of non-agricultural activities should be regarded as a complementary aspect of the current activities of the holdings; this complementarity will permit a higher tolerance to the proposed solutions. The multifunctional development directions are different from one rural area to another, and from one category of holding to another. As the main activity of the rural households is agriculture, the typology of the rural households can be established taking into consideration the *economic size of the agricultural holdings* expressed in ESU. We propose that the multifunctional development premises and the design of concrete strategies for the economic activity diversification should be analyzed for each category of holdings. The study of the activity diversification opportunities at the level of individual holdings can be made by three holding types, defined by their

¹ According to Annex I from the Applicant’s Guide for Measure 121 “Modernization of agricultural holdings”, regarding the Establishment of Farm Category – Cropping Structure and ESU calculation.

importance in the present structure of rural households, classified by the economic size of the individual agricultural holding:

- a) subsistence holdings type A – whose agricultural output is under 1 ESU;
- b) subsistence holdings type B – for which the value of the agricultural output ranges from 1 to 2 ESU;
- c) semi-subsistence holdings – for which the agricultural output ranges from 2 to 8 ESU;
- d) commercial holdings – with an agricultural output larger than 8 ESU.

B. Are there necessary demo-economic premises that enable an individual agricultural holding to follow a multifunctional path in its economic activities to support the development of non-agricultural activities generating income increase at household level?

The real capacity of households from the rural communities to assume the proposed models concerning the development of non-agricultural activities on the agricultural holding, which generate additional incomes on the households, depends on those aspects of the human resources that condition the occupational, aptitudinal mobility and the openness to innovation:

The average age of population represents a significant predicting factor of openness to the occupational diversification of each category of households and of overall rural community, given that a younger population has a higher openness to innovation and a greater occupational mobility and openness to requalification.

Share of population younger than 15 years – indicator that reflects the demographic regeneration potential, and by this, the continuity opportunity at the level of each household category

Population ageing index – calculated as ratio of the number of people over 65 years to the number of people from 0 to 14 years, it reflects the demographic regeneration potential at the level of households from a certain category. The values larger than one of the index generate significant risks of decline in the volume of population in the commune, which is similar to a contraction of demand on the local markets of goods and services, making the respective micro-regions less attractive for investments.

Labour force renewal index – calculated as ratio of the population from the category 15–29 years to the population from the category 30–44 years. Comparing the volume of young labour force, at the beginning of active life, and the volume of adult labour force, this index highlights the trend of the available labour force evolution in the future. *The labour renewal index* reveals to what extent the population of working age has the capacity to reproduce itself, on the short term, under the same quantitative parameters, and to provide active labour force, able to respond to the requirements of non-agricultural activity development on the rural households.

Average number of schooling years – reflects the population's training level by types of households and it is an important predictor of the chances to adopt certain non-agricultural activities that imply a higher qualification level. The fact

that the labour force available on a certain category of households benefits from a higher educational level increases the possibility of the respective category to follow the economic activity diversification path. The graduation of higher education forms increases the chance of professional requalification and conversion.

The educational structure of the members of different categories of holdings becomes very important as it reflects the distribution by the different educational levels of the population and provides valuable signals with regard to the possibility of households to internalize the modernizing values of non-agricultural activity development. When the persons with a higher educational level prevail on the household, the risks of being reluctant to the behavioural innovations decrease, while for the households characterized by deficient educational structures (with high shares of persons with lower educational level) the risk of non-adopting non-agricultural economic activities increases, as the technical abilities acquired by education are low or even non-existent.

The occupational structure – revealed by the share of the main economic activities – agriculture, agro-processing, industry-constructions and services – in the employed population. Indicates the diversification degree of economic activities by types of households. This indicator (partially) reveals the measure in which all the types of rural households follow or not a multifunctional development path. Thus, a high share of labour employed in the primary sector of the economy can be associated to a poor internalization of multifunctional development principles. As the importance of employment in the secondary and tertiary sectors increases at the level of local rural economy, assuming the multifunctionality of rural areas is easier, as the communities already follow this trajectory. *In this second case, in the households with members carrying out an off-farm economic activity, these can become development factors of non-agricultural activities on the household, as they already have the necessary experience. For example, on the households with people employed in the sector of services, the rural tourism development premises already exist, as these people have the necessary expertise for public relations. In the case of households with members employed in industry, and mainly in constructions, lucrative activities can be developed by which the by-products from agriculture can be transformed into commodities that can be sold (handicraft).*

C. What are the funding directions (through structural and/or national regional funds, etc.) in which each type of households is interested, which the households perceive as investment opportunities, and on which the information programs should focus?

Any development strategy that targets the adoption of non-agricultural occupational and investment behaviours on the individual agricultural holdings should take into consideration the development perspectives of the non-agricultural initiatives that the households themselves perceive as business opportunities on which they would concentrate their financial efforts.

The investment profile of households is revealed by two types of information:

Desire to invest reflecting the interest in the development of different business initiatives at household level in a larger time horizon; intention to invest reflecting the chances of households to develop an agricultural business in the next two years or to set on the multifunctional development path. This indicator has rather an aspirational aspect and reflects what would be the destination of investments that the households would make if they had a large sum of money. We can overlap this opinion on the structure of structural funds devoted to rural development and mainly to multifunctional agriculture on the holdings (semi-subsistence holdings in particular) and to sum up on the *potential capacity to absorb these funds by categories of households*.

The intention to invest has a much more concrete character and reveals *the pragmatic evaluation* made by the households themselves with regard to *their own capacity to invest in agricultural and/or non-agricultural business on the short term*.

Data sources for this strategic model implementation

The necessary information for this analysis is partly available at the level of local authorities, of the agricultural directorates, of the decentralized structures responsible of the management of funds for agriculture and rural development and/or is public data, available under electronic format. The available data at town hall level are the following:

- *Necessary information for the economic size calculation at holding level;*
- *Demographic information on the household members (age);*
- Information on the type of projects accessible from non-refundable funds.*

The information available at the local authority level is completed with data obtained during a field survey conducted at the level of representative samples of agricultural holdings, which will focus on revealing the quantitative and qualitative aspects of each type of holding in part. The data on the following aspects will be collected during the field surveys:

- *Demo-occupational structures of the individual agricultural holdings included in the sample (age, education, occupation of household members)*
- *Present and future aspirations and investment intentions of the household' members.*

The present study is based on the quantitative and qualitative analysis, on the basis of the above-proposed methodology, of the data collected during the field survey, on the basis of questionnaires applied to representative samples from three pilot communes; each commune is representative for a geographic area of the country. The field surveys were conducted in 2007 in collaboration between the teams from the Institute of Agricultural Economics, ASAS and USAMBV, the balanced geographic distribution being motivated by the parity between the main relief units on Romania's territory.

3. MULTIFUNCTIONAL DEVELOPMENT OPPORTUNITIES ON THE INDIVIDUAL AGRICULTURAL HOLDINGS – DEMOGRAPHIC AND SOCIAL SUBSTANTIATION

The comparative analysis of the human capital characteristics for the three pilot communes reveals the existence of significant disparities depending on their geographic location as well as between the categories of individual agricultural holdings. Thus, the multifunctionality assuming premises at the level of each type of household are also different.

3.1. The pilot commune located in the geographic area – plain The demographic structure reveals the following:

- The innovating capacity of each household type – when the average age of members is low, the demographic ageing risk is lower
- The existence of business continuity opportunities as long as the household labour force has greater opportunities to reproduce (the labour renewal index is larger than one or equal to one).

Table 1

Demographic structure of individual agricultural holdings in the plain zone, by types of holdings (case study)

Household type/Agricultural land use modality	Average age (years)	Population under 15 years old (%)	Demographic ageing index (‰)	Labour renewal index
Subsistence holdings type A	48.2	10.7	2555.6	0.56
Subsistence holdings type B	43.2	2.2	5000.0	0.44
Semi-subsistence holdings	47.3	5.2	5333.3	1.09

Source: own calculations based upon the analysis of field survey data.

All the categories of households in the pilot commune from the plain area have an old average age and the depopulation risk is high as the demographic ageing index has values over 1000 for each of them in part (Table 1). Due to the old age, the innovating capacity of households is presumed to be relatively low.

The only indicator with **short term** positive profile is the labour renewal index with values larger than one for the *semi-subsistence holdings*, which reveals that these are the only ones that *can support a constant labour force supply on short term that can ensure the maintenance and development of a non-agricultural initiative*. For all the other categories of households, the labour force supply features a strong decline.

On the long term, the subsistence holdings type A are likely to assume non-agricultural initiatives, because, although the available labour force will diminish by half, they will have young members into their composition (10.7% of their members who are under 15 years old at present) whose aversion to risk is lower and whose mentality will be less traditionalistic.

Educational structure. The educational structures of the households in the three categories reveal the following:

The subsistence holdings type A have the lowest educational level, with the highest share of members with no schooling or who graduated only the primary school, which *negatively impacts the cognitive power and by this their possibility to accept and understand the new trends, concepts, etc.* (Table 2). These will experience difficulties in their adaptation to the requirements of information packages and in filling in the necessary application forms for obtaining finance from any funds, be they national or European.

The subsistence holdings type B have members whose higher educational level is associated to *increased opportunities to internalize the multifunctional development values*. The average number of schooling years is the highest in the case of these households and the share of high-school graduates exceeds 30%.

The semi-subsistence holdings have members who are also characterized by a high educational level; due to the high share of higher education graduates (16.1%), these households have true opportunities to fast internalize the new multifunctional development concepts and can understand much more easily the specialized terminology and the necessary formalities for obtaining finance from the Community funds.

Table 2

Educational structure of households from the plain zone, holding types (case study)

(% in total sample)

Holding type / Agricultural land use modality	No school	Primary school	Secondary school	Vocational school	Agric. high school	High school	Post high school -faculty	Average number of school years
Subsistence holdings type A	8.5	24.4	18.3	17.1	2.4	22.0	7.3	8.2
Subsistence holdings type B	2.2	11.1	22.2	24.4	0.0	31.1	8.9	9.8
Semi-subsistence holdings	5.4	17.9	14.3	19.6	10.7	16.1	16.1	9.6

Source: own calculations based upon the analysis of the field survey data.

From the perspective of the educational level, the subsistence holdings type B and the semi-subsistence holdings are better positioned, having greater opportunities to adopt non-agricultural activities that need higher professional training levels;

on the basis of the higher educational level, these benefit from higher opportunities to accede to non-refundable funding sources.

The occupational structure reveals:

– On one hand, the stringency of developing non-agricultural initiatives that is even more pressing as the dependency on agriculture – revealed by high shares of the household members working in agriculture – is higher.

– On the other hand, it reflects the development opportunities of certain non-agricultural activities on the household when the household members are already involved in off-farm activities, which gives them the necessary experience to develop similar non-agricultural initiatives on their own household.

Table 3

Occupational structure of holdings from the plain zone, by holding types (case study)

(% in total sample)

Holding type / Agricultural land use modality	Agriculture	Agro-processing	Industry & Constructions	Services	Housewife	Other	Unemployed	Student & pupil	Pensioner
Subsistence holdings type A	11.8	1.3	9.2	18.4	6.6	5.3	2.6	13.2	31.6
Subsistence holdings type B	22.7	0.0	2.3	22.7	15.9	4.5	0.0	9.1	22.7
Semi-subsistence holdings	9.4	0.0	3.8	41.5	5.7	1.9	0.0	7.5	30.2

Source: own calculations based upon the analysis of the field survey data.

Thus, the analysis of the distribution by main occupations of household members from the three categories (Table 3) determines us to come to the following conclusion.

The stringency of measures for the development of non-agricultural initiatives is high in the case of *subsistence holdings type B* as these have the highest shares of members employed in agriculture as well as high shares of housewives.

The subsistence holdings type A have the greatest opportunities to develop non-agricultural initiatives as they have modest land resources and their orientation to non-agricultural occupations generating additional incomes is already obvious. More than 1/3 of the members of this type of households have non-agricultural occupations and hence they have useful professional experiences, which can be used for an eventual development of non-agricultural initiatives on the household. The fact that 13.2% of the members of this type of households are enrolled in an education form increases the pressure for generating incomes on the household that should support their educational development, which can represent a significant incentive for the non-agricultural initiatives.

3.2. The pilot commune located in the geographic area – hill

Demographic structure. From the perspective of demographic characteristics, the households in the commune located in the hilly area are relatively young, with different development perspectives (Table 4).

The subsistence holdings type A have the highest average age due to the high share of elderly persons in their structure. Usually, these elderly persons are also the household heads, and from this reason we can expect a conservative attitude from the part of this household type. The high share of the elderly population contributes to a higher Demographic Ageing Index. However, the above-mentioned index reveals that there is still demographic regeneration capacity on the households (the ratio of the population over 65 years old to the young persons under 15 years is 685.7/1000). There is no risk either of losing the present capacity from the perspective of the current available labour force on the short term (the young labour volume – 15–29 years old – is a little under the adult labour of working age – 30–44 years old –, which ensures the simple reproduction of labour on the short term).

In conclusion, the subsistence holdings type A have the capacity to maintain the demographic capital on the short term under the current parameters. Yet, the multifunctional development strategy is negatively affected by the relative conservatism of these households resulting from the old age of some of their members.

Table 4

Demographic structure of households from the hilly zone, by holding types (case study)

Household type/Agricultural land use modality	Average age (years)	Population under 15 years old (%)	Demographic ageing index (%)	Labour renewal index
Subsistence holdings type A	36.2	20.0	685.7	0.95
Subsistence holdings type B	34.3	25.6	727.3	2.00
Semi-subsistence holdings	27.9	33.3	428.6	7.00

Source: own calculations based upon the analysis of the field survey data.

The subsistence holdings type B have a lower average age, with younger populations, yet the demographic renewal opportunities are quite similar to those from the households in the first category, the demographic ageing risk having a negative impact upon the openness to innovation on these holdings. *The active age component of the population has great rejuvenation opportunities reflecting the increased capacity of getting integrated into the non-agricultural activities development pattern (each active member of households aged 30–44 years will be replaced by other 2 members aged 15–29 years).*

The semi-subsistence holdings are the youngest, with the greatest number of children under 15 years old and with the best demographic perspectives to internalize the multifunctional development patterns, as their young age is associated to a greater openness to innovation. The young labour force is an important asset in their case, as for each person aged 30–44 years there are other 7 persons aged 15–29 years.

Furthermore, it can be stated that in the case of these households, it is absolutely necessary to develop non-agricultural economic activities in order to absorb the labour force surplus.

Educational structure. The educational structures of the households in the three categories (Table 5) reveal the following:

The subsistence holdings type A have members with a higher educational level to which greater opportunities to internalize the multifunctional development values are related. The average number of schooling years is nine, which corresponds to a post-secondary school education of vocational and apprenticeship type. It is worth mentioning the high share (over 25%) of the high-school graduates, which provides positive educational perspectives.

The subsistence holdings type B have the lowest educational level, which negatively impacts their cognitive power and by this their possibility to accept and understand the new trends, concepts, etc. These will face difficulties in adapting to the requirements of information packages and filling in the necessary forms in order to get finance from any funds, be they national or European.

The semi-subsistence holdings – their members are also characterized by a high educational level, the average number of schooling years being 9.4 years; the high-school graduates prevail in the educational structure. It is worth mentioning here the relatively significant share of post-high school and university graduates (5.6%), which increases the opportunities to develop non-agricultural activities, as the household members have adequate specialized knowledge and information.

From the educational level perspective, the semi-subsistence holdings have the best position, these having great opportunities to improve their economic performance and to develop profitable non-agricultural activities, as they have the highest educational level, specialized knowledge and information and on this basis, increased possibilities to seize the local business opportunities and to accede to the non-refundable funding sources for their initiatives.

Table 5

Educational structure of individual agricultural holdings from the hilly zone, by types of holdings (case study)

Holding type / Agricultural land use modality	(% in total sample)							
	No school	Primary school	Secondary school	Vocational school	Agric. high school	High school	Post high school - faculty	Average number of school years
Subsistence holdings type A	3.8	15.3	25.5	21.7	2.5	28.7	2.5	9.0
Subsistence holdings type B	5.6	27.8	27.8	22.2	0.0	16.7	0.0	7.5
Semi-subsistence holdings	5.6	16.7	16.7	5.6	5.6	44.4	5.6	9.4

Source: own calculations based upon the analysis of the field survey data.

Occupational structure. The analysis of the distribution by the main occupations of the household members from the three categories (Table 6) enables us to reach the following conclusion:

In the case of *subsistence holdings type A*, the high shares of the persons employed in the primary sector (15.6%) and of housewives (20.6%), together with the low value of agricultural outputs make it imperiously necessary to develop certain non-agricultural activities on the household, which should ensure the multiplication of income sources and provide alternative occupations for the member of this category of agricultural households.

At the level of *subsistence holdings type B*, the stringency of the development measures of the non-agricultural activities is also high, as it is on these households that the largest number of persons employed in agriculture can be found, i.e. 23.7%. On the other hand, the households from this category also have increased opportunities to develop non-agricultural activities due to their members' occupational orientation towards the non-agricultural sectors: 21.1% of the members of these households are already involved in off-farm activities. The possibility to adopt investment behaviours increases in the case of these holdings, also because more than one quarter of their members are enrolled into an educational form which obviously exercise pressures for the multiplication of income sources.

Table 6

Occupational structure of households from the hilly area, by holding types (case study)

(% in total sample)

Holding type / Agricultural land use modality	Agriculture	Agro-processing	Industry & Constructions	Services	Housewife	Other	Unemployed	Student & pupil	Pensioner
Subsistence holdings type A	15.6	0.7	7.1	11.3	20.6	4.3	1.4	19.1	19.9
Subsistence holdings type B	23.7	0.0	5.3	10.5	7.9	5.3	0.0	26.3	21.1
Semi-subsistence holdings	10.5	0.0	0.0	10.5	15.8	5.26	0.0	47.4	10.5

Source: own calculations based upon the analysis of the field survey data.

On the long term, the *semi-subsistence holdings* have great opportunities to develop non-agricultural initiatives, as 47.4% of the members of this type of households are enrolled into an education form, which means that in the future a new young and well-trained labour force will emerge, able to surmount the inertia and traditionalism in the rural areas and to assume the risks of non-agricultural business initiation.

3.3. The pilot commune in the mountainous geographic area

Demographic structure. From the perspective of demographic characteristics, the households in the commune located in the mountain zone are relatively young, featuring different development perspectives (Table7).

The subsistence holdings type A have the highest average age due to the high share of elderly people in their structure. Usually, these elderly people are also the household heads, and from this reason we can expect a conservative attitude from the part of this household type. The high share of the elderly population contributes to a higher Demographic Ageing Index. However, the above-mentioned index reveals that there is still demographic regeneration capacity on the households (the ratio of the population over 65 years old to the young persons under 15 years is 866.7/1000).

Table 7

Demographic structure of households from the commune in the mountain zone, by holding types (case study)

Household type/Agricultural land use modality	Average age (years)	Population under 15 years old (%)	Demographic ageing index (‰)	Labour renewal index
Subsistence holdings type A	38.1	18.3	866.7	1.06
Subsistence holdings type B	34.9	9.7	666.7	1.43
Semi-subsistence holdings	30.3	33.3	na	na

na – not applied

Source: own calculations based upon the analysis of the field survey data.

There is no risk either of losing the present capacity from the perspective of the current available labour force on the short term (the young labour force volume, i.e. 15–29 years is identical to that of the adult population of working age, i.e. 30–44 years, which ensures the simple reproduction of labour on the short term). *In conclusion, the subsistence holdings type A have the capacity to maintain the demographic capital on the short term under the current parameters. Yet, the multifunctional development strategy is negatively affected by the relative conservatism of these households resulting from the old age of some of their members.*

The subsistence holdings type B have a lower average age, with younger populations with demographic regeneration opportunities due to a positive Demographic Ageing Index. *The active age component of the population has great rejuvenation opportunities reflecting the increased capacity of getting integrated into the multifunctional development pattern of lucrative activities.*

The semi-subsistence holdings – are the youngest, with the largest number of children and with the best demographic perspectives to internalize the multifunctional development patterns, as their youth is associated with a large openness to innovation.

Educational structure. The analysis of the possible implications of the educational structures of the households from the three categories upon their capacity to develop non-agricultural economic activities (Table 8) reveal the following:

The subsistence holdings type A have the lowest educational level which negatively impacts the cognitive power and by this their opportunities to accept and understand the new trends, concepts, etc. These will encounter difficulties in adapting to the requirements of certain information packages and in filling in the necessary application forms for getting finance, either from national or European funds.

Table 8

Educational structure of households from the commune in the mountain zone, by holding types (case study)

Holding type / Agricultural land use modality	(% in total sample)							
	No school	Primary school	Secondary school	Vocational school	Agric. high school	High school	Post high school - faculty	Average number of school years
Subsistence holdings type A	2.6	17.6	28.1	22.2	3.9	20.3	5.2	8.4
Subsistence holdings type B	0.0	6.9	24.1	31.0	0.0	27.6	10.3	9.2
Semi-subsistence holdings	0.0	0.0	50.0	50.0	0.0	0.0	0.0	9.0

Source: own calculations based upon the analysis of the field survey data.

The subsistence holdings type B have members with a higher educational level to which increased opportunities to internalize the multifunctional development values are associated. The average number of school years is the highest in the case of these holdings, i.e. 9.2 years. The educational structure is dominated by the graduates from vocational schools, i.e. 31% and from high schools, 27.6%, which creates favourable premises for adopting pro-active behaviours in the direction of economic activities diversification, as the household members already start from a medium level of specialized knowledge. Furthermore, over 10% of these households members graduated the short or long-term tertiary education forms, further increasing the opportunities for non-agricultural activities development.

The semi-subsistence holdings have members characterized by a high educational level that offers them the same opportunities as those from the previous category.

From the educational level perspective, the subsistence holdings type B have the best position, which have great opportunities to develop non-agricultural activities as they have the highest educational level and on this basis, increased opportunities to accede to non-refundable funding sources.

Occupational structure. The occupational structure is oriented to the non-agricultural sectors, as the pilot commune is a locality in the mountains (Table 9).

The analysis of the distribution by main occupations of the members of households from the three categories enables us to reach the following conclusions:

In the case of *subsistence holdings type A*, the high shares of the persons with housewife status (20.6%) together with the low value of agricultural outputs makes it necessary to develop non-agricultural activities at household level that should ensure the multiplication of income sources and provide alternative jobs to the household members. The occupational strategies of the members of this household type are already oriented to the non-agricultural sectors, 16.6% of them being employed in the secondary sector and 10 % in the tertiary sector. The opportunities to adopt investment behaviours increase in the case of these holdings also because more than one-fifth of their members are enrolled in an education form, which inevitably exercise pressures for the multiplication of income sources. Yet the high share of pensioners can hinder the non-agricultural business development, due to the conservatism associated with old age.

Table 9

Occupational structure of households from the commune in the mountain zone, by holding types (case study)

(% in total sample)

Holding type / Agricultural land use modality	Agriculture	Agro-processing	Industry & Constructions	Services	Housewife	Other	Unemployed	Student & pupil	Pensioner
Subsistence holdings type A	2.1	0.0	16.6	9.7	13.8	10.3	0.7	20.0	26.9
Subsistence holdings type B	7.4	0.0	7.4	25.9	7.4	18.5	0.0	18.5	14.8
Semi-subsistence holdings	0.0	0.0	25.0	0.0	25.0	25.0	0.0	0.0	25.0

Source: own calculations based upon the analysis of the field survey data.

The *subsistence holdings type B* have increased opportunities to develop non-agricultural activities due to the occupational orientation of their members to the non-agricultural sectors – 51.8% of the members of these households are already involved in off-farm activities. The opportunities to adopt investment behaviours in the case of these households also increase because the share of pensioners in their structure is lower and hence resistance to change and innovating behaviours is lower.

There are also non-agricultural occupational orientations of the members of the *semi-subsistence holdings* and in their case favourable premises emerge for the development of non-agricultural activities, such as handicraft, agro-processing, preparation of parboiled foodstuffs, also involving the housewives in these activities, which currently account for 25% of the household members.

Given the distributions by main occupations of the members of households from the three categories, it can be noticed that the subsistence holdings type B have the greatest opportunities for the development of non-agricultural activities,

as they have the largest number of persons working in agriculture that potentially could become a labour recruitment pool for non-agricultural activities. Furthermore, it is on this type of holdings that the highest share of persons working in services can be found; given their experience in working with the public, these can become good managers and workers in the rural tourism activities.

4. MULTIFUNCTIONAL DEVELOPMENT OPPORTUNITIES ON THE INDIVIDUAL AGRICULTURAL HOLDINGS – ECONOMIC/INVESTMENT SUBSTANTIATION –

4.1. The pilot commune located in the plain zone

Investment profile. *Aspirationally*, the desire to invest increases with the household economic power growth in the pilot commune from the plain zone; as the economic output value in agriculture increases, the share of households willing to invest also increases. The same trend can be also noticed in the desire to invest in non-agricultural activities (Table 10).

The subsistence holdings type A have the highest diversity of options to invest in non-agricultural sectors and focus upon those activities that provide potential jobs to a larger number of persons and in time generate higher incomes (as a first option, 13% of households are willing to invest in rural tourism boarding houses, 4.3% in agro-processing, 8.7% in trade).

Table 10

Willingness to invest of households from the commune in the plain zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	First option							
	Total households willing to invest, out of which	in agriculture	in non-agricultural sectors					Households NOT willing to invest
			TOTAL out of which	Trade	Agro-processing	Boarding house	Other	
Subsistence holdings type A	78.3	47.8	30.4	8.7	4.3	13.0	4.3	21.7
Subsistence holdings type B	83.3	41.7	41.7	33.3	8.3	0.0	0.0	16.7
Semi-subsistence holdings	92.9	35.7	57.1	42.9	0.0	0.0	14.3	7.1
Second option								
Subsistence holdings type A	47.8	26.1	21.7	8.7	4.3	0.0	8.7	52.2
Subsistence holdings type B	50.0	16.7	33.3	25.0	0.0	8.3	0.0	50.0
Semi-subsistence holdings	42.9	7.1	35.7	21.4	7.1	7.1	0.0	57.1

Source: own calculations based upon the analysis of the field survey data.

The subsistence holdings type B and the *semi-subsistence* holdings are willing to invest mainly in trade activities, both as a first and second investment option.

As regards the second option, the desire to invest can be noticed in a smaller number of households, the subsistence holdings type A being also mainly oriented to agriculture, while most of the subsistence holdings type B and of the semi-subsistence holdings have a secondary option for non-agricultural investments. The structure of the desire to invest gets more diversified in the case of semi-subsistence holdings, 7.1 % of them opting for agro-processing activities or for investments in a tourism boarding house.

Intentionally, the largest number of holdings, which will effectively make investments in the next year, allocate their investment funds for agriculture (Table 11).

Table 11

Intention to invest of households from the pilot commune in the plain zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	Economic sector in which the household will effectively invest in the next year				
	Crop production	Livestock production	Mixed	Agro-processing	Non-agricultural business
Subsistence holdings type A	4.8	9.5			4.8
Subsistence holdings type B	27.3				9.1
Semi-subsistence holdings	7.7			7.7	7.7

Source: own calculations based upon the analysis of the field survey data.

The subsistence holdings type A intend to develop a non-agricultural business (4.8%), while three times more households intend to invest in agriculture (4.8% in the crop production sector and 9.5% in the livestock sector).

In the case of *subsistence holdings type B*, the intention to invest is present in more than 35% of households, only a quarter of them intending to allocate their investment funds to non-agricultural business.

For the *subsistence holdings*, the intention to invest is present in only one-fifth of households, yet most of them orient their investment funds for off-farm activities, i.e. 7.7%, intending to invest in agro-processing equipment and other 7.7% in a non-agricultural business. Having a higher economic power, the investments of semi-subsistence holdings in the processing of their own agricultural products will add value to their products and thus will considerably improve their incomes inputs.

4.2. The pilot commune located in the hilly geographic area

Investment profile of households. **Aspirationally**, the desire to invest increases as the household economic power increases in the commune located in the hilly zone. As the economic output value in agriculture increases, the share of households willing to invest if they have a large amount of money also increases. The options regarding the destination of eventual investment funds go into the same direction, most households opting for a single sector in which they would like

to make investments. While the semi-subsistence holdings also consider a second option for potential investments, only one-third of the subsistence holdings opt for a second variant of investments.

In general, the households with lower values of agricultural outputs are willing to invest in non-agricultural activities (Table 12).

The subsistence holdings type A are mainly willing to invest in non-agricultural activities if they have a large amount of money – 43.9% of these holdings declare that they would devote a consistent amount to the off-farm investments. *The subsistence holdings type B* opt for potential investments in agriculture only on a 50% basis, and only 37.5% of these holdings would direct their investment funds to the development of non-agricultural business. *The semi-subsistence holdings* are willing to invest only in agriculture, as a first option.

As regards the second option, the desire to invest can be noticed on a smaller number of households, with a reversed distribution by agricultural or non-agricultural activities compared to the first option. Thus, out of the very few *subsistence holdings type A* that also have a second option for the desire to invest, 2.4% are willing to invest in agriculture and 2.4% are willing to invest in non-agricultural sectors. *The subsistence holdings type B* have a second option for investments in non-agricultural activities (25%) and for investments in agriculture (only 12.5%). Most *semi-subsistence holdings* have a secondary option for investments in non-agricultural activities (66.7%). The structure of the desire to invest is diversified on these holdings, 33.3% of them having an aspirational orientation to agro-processing and 33.3% to commercial activities.

Intentionally, most households that will effectively make investments in the next year would dedicate their investment funds to agriculture (Table 13).

Table 12

Desire to invest of households from the pilot commune in the hilly zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	First option							Households NOT willing to invest
	Total households willing to invest, out of which	in agriculture	in non-agricultural sectors					
			TOTAL out of which	Trade	Agro-processing	Boarding house	Other	
Subsistence holdings type A	80.5	36.6	43.9	14.6	0.0	0.0	31.7	19.5
Subsistence holdings type B	87.5	50.0	37.5	12.5	0.0	0.0	25.0	12.5
Semi-subsistence holdings	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Second option								
Subsistence holdings type A	4.9	2.4	2.4	2.4	0.0	0.0	0.0	95.1
Subsistence holdings type B	37.5	12.5	25.0	12.5	0.0	0.0	12.5	62.5
Semi-subsistence holdings	100.0	33.3	66.7	33.3	33.3	0.0	0.0	0.0

Source: own calculations based upon the analysis of the field survey data.

Table 13

Intention to invest of households from the pilot commune in the hilly zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	Economic sector in which the household will effectively invest in the next year				
	Crop production	Livestock production	Mixed	Agro- processing	Non- agricultural business
Subsistence holdings type A	10.0	15.0	7.5	2.5	2.5
Subsistence holdings type B	12.5		12.5		
Semi-subsistence holdings			33.3	33.3	

Source: own calculations based upon the analysis of the field survey data.

The *subsistence holdings type A* intend to develop a non-agricultural activity (5%), out of which 2.5% opt for buying agro-processing equipment and other 2.5% will initiate a non-agricultural business. Among the *subsistence holdings type B*, the intention to invest is present only in 25% of holdings, none of these holdings willing to devote the investment funds to non-agricultural business. For the *semi-subsistence holdings*, the intention to invest is present on two-thirds of these holdings. The investment strategies of holdings are oriented in equal shares to the development of agriculture and to the procurement of necessary equipment for the processing of agricultural products. As they have a higher economic power, the investments of semi-subsistence holdings in the processing of their own agricultural products will bring them a much higher value-added and thus will significantly improve their economic output.

4.3. The pilot commune belonging to the mountaineous geographic area

Investment valences of households. Aspirationally, the desire to invest increases as the economic output value from agriculture increases. The incidence of the desire to invest a large amount of money is higher as the economic size of households resulting from agriculture increases. The diversity of options regarding the destination of eventual investment funds is inversely correlated with the agricultural output value of the holding (Table 14). Thus, the subsistence holdings type A have the largest variety of business in which they would invest a potential amount of money, while the first investment option for the semi-subsistence holdings remains agriculture. While overall the semi-subsistence holdings also consider a second option of potential investments, only one-third of subsistence holdings also opt for a second investment variant.

Table 14

Desire to invest of households from the pilot commune in the mountain zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	First option							
	Total households willing to invest, out of which	in agriculture	in non-agricultural sectors					Households NOT willing to invest
			TOTAL out of which	Trade	Agro- processing	Boarding house	Other	
Subsistence holdings type A	71.4	21.4	50.0	7.1	4.8	14.3	23.8	28.6
Subsistence holdings type B	85.7	28.6	57.1	28.6	0.0	0.0	28.6	14.3
Semi-subsistence holdings	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Second option								
Subsistence holdings type A	23.8	7.1	16.7	7.1	2.4	2.4	4.8	76.2
Subsistence holdings type B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Semi-subsistence holdings	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0

Source: own calculations based upon the analysis of the field survey data.

In general, the households with lower agricultural output values are willing to invest in non-agricultural activities. 50% of the *subsistence holdings type A* are willing to invest in non-agricultural activities if they have a large amount of money. Among these households, the highest diversity of options to invest in non-agricultural activities can be noticed. The desire to invest focus upon those activities that potentially provide jobs to a larger number of persons and generate more significant incomes in time (as a first option, 14.3% of households are willing to invest in rural tourism boarding house, 4.8% in agro-processing, and 7.1% in trade).

At the level of *subsistence holdings type B* the incidence of the desire to invest in non-agricultural activities is the highest – 51.7% of these households willing to devote an eventual large amount of money to non-agricultural activities. Their intentions focus upon business development in the trade sector and in the category “other activities” that imply the use of other resources than agricultural resources, e.g. forestry resources, etc. *The semi-subsistence holdings* are willing to invest only in agriculture, as a first option.

Intentionally, the pragmatic evaluation of the capacity to invest on the short term is correlated with the real opportunities to develop agricultural and/or non-agricultural initiatives in the next year (Table 15).

The subsistence holdings type A are not willing to make investments in farm development as they do not consider themselves in the financial position to support these investments. Only 4.7% of holdings will invest in the development of livestock farm. The orientation of investment funds mainly regards the development of non-agricultural business, in which 7% of these holdings are willing to invest.

Table 15

Intention to invest of households from the pilot commune in the mountain zone,
by holding types (case study)

(% in total households)

Holding type / Agricultural land use modality	Economic sector in which the household will effectively invest in the next year				
	Crop production	Livestock production	Mixed	Agro- processing	Non- agricultural business
Subsistence holdings type A	na	4.7	na	na	7.0
Subsistence holdings type B	28.6	na	na	na	na
Semi-subsistence holdings	na	100.0	na	na	na

Source: own calculations based upon the analysis of the field survey data.

As the economic power of the agricultural holding increases, the intention to invest exclusively focuses upon farm development, 28.6% of the *subsistence holdings type B* and all the *semi-subsistence holdings* devoting their investment funds for the next year exclusively to the development of agricultural activities.

5. CONCLUSIONS – DEVELOPMENT OPPORTUNITIES OF NON-AGRICULTURAL ACTIVITIES BY TYPES OF HOLDINGS

5.1. The pilot commune located in the plain area

The analysis of development opportunities of non-agricultural activities by holding types in the pilot commune from the plain zone leads us to the following conclusions.

The greatest opportunities for the development of non-agricultural activities are noticed in the case of semi-subsistence holdings that have the most favourable demographic and aspirational premises:

- High labour renewal potential on short term;
- High educational level and share of higher education graduates;
- Concrete intention to invest in non-agricultural sectors.

These are followed by *the subsistence holdings type A* that have increased opportunities to develop non-agricultural activities, because:

- They will have young members into their composition on long term, whose aversion to risk is lower;
- They have great possibilities to develop non-agricultural initiatives, as one-third of their members are already occupationally oriented to non-agricultural activities;
- They have the highest diversity of options to invest in non-agricultural activities and focus on these activities that potentially provide jobs to a larger number of people and generate higher incomes in time.

5.2. The pilot commune located in the hilly geographic area

The greatest opportunities for the development of non-agricultural activities are found in the case of semi-subsistence holdings that have the most favourable demographic and aspirational premises:

- *They are the youngest households, with the larger number of children under 15 years old and with the best demographic perspectives to internalize the multifunctional development patterns;*

- *They have the highest educational level, specialized knowledge and on this basis, increased possibilities to seize the local business opportunities and to accede to the non-refundable funding sources in order to finance their initiatives;*

- *Two-thirds of holdings have well-defined investment strategies for the next year, half of them intending to invest in non-agricultural activities, namely in the processing of agricultural products.*

These are followed by the subsistence holdings type A that have increased opportunities for the development of non-agricultural activities, because:

- Their members have a high educational level, the share of high school graduates being over 25%;

- The high shares of persons employed in the primary sector and of housewives, together with the low value of agricultural outputs make it necessary to develop certain non-agricultural activities at household level that should ensure the multiplication of income sources;

- They are mostly willing to invest in non-agricultural activities if they have a large amount of money at their disposal (43.9%);

- They take concrete steps for the development of non-agricultural activities, as part of these households intends to initiate non-agricultural activities.

In the case of these households, the fructification of the demographic and economic potential can take place by concrete actions on short time, as the multifunctional development strategy can be negatively affected by the relative conservatism of these households resulting from the old age of some of their members.

5.3. The pilot commune in the mountains

The greatest development opportunities of the non-agricultural activities appear in the case of subsistence holdings type B that have the most favourable demo-aspirational premises:

- The active age segment of the population has great rejuvenation opportunities reflecting the increased integration capacity in the multifunctional development pattern of lucrative activities;

- Great opportunities to develop non-agricultural activities as they have the highest educational level and on this basis, increased access possibilities to non-refundable finance sources;

– The desire to invest in non-agricultural activities is higher – 57.1% of these holdings willing to devote an eventual large amount of money to non-agricultural activities;

– Intention to invest on the agricultural holding.

These are followed by subsistence holdings type A, because:

– They have the capacity to maintain the demographic capital under the current parameters on the short term;

– The high shares of people with housewife status (20.6%) together with the low value of agricultural outputs impose the development of non-agricultural activities, which should ensure the multiplication of income sources and a high educational level;

– They have the most various business activities in which they would eventually invest their money;

– The intention to make investments mainly focuses upon the development of non-agricultural business.

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