SOCIAL MECHANISMS OF IRRIGATION SYSTEMS

MECANISMELE SOCIALE ALE SISTEMELOR DE IRIGAȚII

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Abstract: *The structure of the irrigation system specific to the area Terasa Brailei de Nord (North Braila Terrace) is defined by the zonal technical rationality and by the local social history. The evolution of local power relations, of the social and human capital, of the specific values, determined the access to the irrigation networks and generated practical modalities of water use for the irrigation of cultivated land areas. The limited access to the necessary irrigation water determined the diminution of the capacity of rural communities to fight against food insecurity, to decrease rural young people's unemployment, and a low involvement of women at different agricultural production levels.*

Key words: *social capital, social relations*

INTRODUCTION

The technical infrastructure of the irrigation system created an adequate economic and social system for the rural communities depending on agriculture, on agricultural innovation and modernization, on increased efficiency of agricultural land use. Because the local history was marked by building up the irrigation system (the system was created in the period 1969-1972, with a total area of 67500 hectares) and by its partial destruction (the process was initiated in the year 1989 and it continues at present), the social and economic relations/networks have changed, becoming both restrictive factors in the use of irrigation water and support factors that promote access to irrigation water. The ambivalence of the economic and social relations was generated by the mentality, values and habits specific to the rural area from Terasa Brailei de Nord.

The investigated rural communities were the place where a relational system was developed that was able to get emancipated by the opening to the exterior, by the adaptation to a fluid macroeconomic framework.

Although the relational pattern based on the rural household, on the significance of informal relations in the community life was maintained, the presence of integrating effects of the social networks was noticed, of a well-defined organizational behaviour. The content of the social networks was modified in accordance with the demographic and social changes on the rural household; the rural household experienced a demographic contraction process and the multiplication of social networks dominated by pragmatic values. The main attribute of rural networks, *trust*, as a precondition of social existence, has specific mechanisms because it is an *internalization process* by which the external data are analyzed and become internal data and represent the adaptation basis of an individual; in this way, at individual level, a process of incertitude diminution is taking place. As *learning process,* it is a special type of relations that are learnt being defined in accordance with the characteristics of situations/persons and not with their achievements. As a *symbolic projection process,* trust is a complex of symbols. In this large context of determinations, the personal trust is a set of structuring generalized expectations for the social relations. The mechanism of personal trust in the rural communities is influenced by the existence of situations that can be easily interpreted, subject to certain unwritten laws, and not to certain norms. The trust in the system or the institutional-based trust refers to the expectations targeting the performance of a system and of the persons that are part of the system implicitly. The emergence of new rural institutions – institutionalized mechanisms of the irrigation system determined the emergence of new forms of processual trust and at the same time induced an emancipation of trust due to the existence of depersonalized components. The social relations that are trust carriers also represented the source of the social capital specific to the investigated rural communities.

MATERIAL AND METHODS

The establishment of the intensity by which the social mechanisms determined the reporting irrigation system enabled the utilization of statistical and organizational methods of the investigated rural communities. The methods on which the study was based were the interview and the direct observation.

RESULTS AND DISCUSSION

The evolution of the demographic system specific to the investigated area – the rural communities Cazasu, Tudor Vladimirescu, Siliştea, Vădeni – is characteristic to a system that aimed at the modernization of the socio-economic structures; the specific demographic process was the diminution of the rural population, being determined by the demographic evolution of its rural localities and by the great political changes, accompanied by the specific policies and strategies.

The rural area from Terasa Brăilei consisting of the 4 investigated communities has 13 villages in total; the average number of villages per commune is 3.2; the population of this rural area totals 11169 inhabitants. The density specific to the region where this rural area is located has low values, ranging from 0.15 inhabitants/ha (commune Siliştea) to 1.2 inhabitants/ha (commune Cazasu.).

The demographic capital is defined by:

- a balanced structure of genders, the female population share being 50.2%;

Table 1. Structure by genders of the investigated rural area

%

Commune	Women's share in total population	Feminity ratio
Siliştea	50.4	101.4
Vădeni	50.2	101.6
Tudor Vladimirescu	51.7	107.2
Cazasu	49.4	97.5
Investigated rural area	50.2	101.1

Source: own calculations based on the data from the "Locality fiche", Statistical Directorate of the county Brăila, 2011

- critical demographic phenomena: the birth rate in the rural area is 8.5‰ and the death rate had a value of 13.9‰. The natural population increase was found only in the rural community Siliştea (+5.9‰) because the remaining communities had negative values, ranging from – 19.5‰, commune Tudor Vladimirescu to – 1.2‰, in the commune Cazasu.

Table 2. Main demographic phenomena

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Commune	Birth rate	Death rate	Natural population increase
Siliştea	12.3	11.8	5.9
Vădeni	9.3	13.8	-4.5
Tudor Vladimirescu	5.0	24.5	-19.5
Cazasu	7.8	9.0	-1.2
Investigated rural area	8.5	13.9	-5.3

Source: own calculations based on the data from the "Locality fiche", Statistical Directorate of the county Brăila, 2010

The particularity of the occupational pattern consists in the occupational disequilibrium generated by the prevalence of employment in the agricultural sector. The excessive contraction of the job supply supports this pattern, which became specific for the rural area from Brăila county.

Table 3. Occupational structure indices

%

Commune	Share of employed population in total rural population	Share of population employed in agriculture in total employed population
Siliştea	33.0	76.0
Vădeni	38.0	62.0
Tudor Vladimirescu	35.0	63.0
Cazasu	38.0	62.0
Investigated rural area	35.7	58.0

Source: own calculations based on the data from the "Locality fiche", Statistical Directorate of the county Brăila, 2010

The excessive high shares of the population employed in agriculture reveal the excessive economic and social dependence on agriculture, also indicating the high risk to which the respective rural communities are subject to. A mono-ocupational structure is materialized into the high vulnerability to any natural, social and economic risk.

The unemployment phenomenon affects the employed population of the investigated area, the most vulnerable group being the male population.

Table 4. Unemployment indices

%

Commune	Share of unemployed people in employed population	Share of male unemployed people in total unemployed people
Siliştea	4.4	85.2
Vădeni	3.1	68.1
Tudor Vladimirescu	5.2	83.8
Cazasu	4.0	74.6
Investigated rural area	4.0	76.5

Source: The commune fiches applied in the period June 2011, March 2012.

While at the level of the statistical analysis one can identify problems that emerged as a result of the lack of jobs, the supply is not diversified and multiple, at the social analysis level much more complex problems were established. In the formal leaders' opinion, the vulnerability is based on the lack of funds, poverty, incorrect application of agricultural policies.

Table 5. Problems of the investigated rural communities

Commune	Community problems
Siliştea	Temporal gaps of subsidies – lack of concordance between the periods when these are necessary and the terms when these are allocated
Vădeni	Lack of funds for commune modernization
Tudor Vladimirescu	Lack of jobs
Cazasu	Rural poverty

Source: The commune fiches applied in the period June 2011, March 2012.

The identification of problems is tributary to the socio-economic history of the area; the collective mentality, generated several decades ago, according to which the problems are generated only by factors exterior to the community and must be solved by the exogenous factors are materialized into problems identified by the leaders.

The defining ***social capital*** for the investigated rural communities is characterized by:

-social relations with positive effects (information dissemination, knowledge and information exchange, internalization of the interests of the group the rural actors are part of) and negative effects (their sticking to the traditionality matrix results in the emergence of an „anti-novatory" behaviour and the low internalization of values referring to natural environment preservation).

The first category of social relations is based on the organization of water users into formalized entities (there are 6 irrigation water users organizations) and on the establishment of producers' associations ("Association of sheep and cattle raisers" from the locality Siliştea).

Table 6. The water users' organizations as perceived by the formal leaders of rural communities

Commune	The water users' organization is beneficial because:
Siliştea	-it respects the members' rights -it settles down the intra-organizational conflicts -it settles down the inter-organizational conflicts
Vădeni*	
Tudor Vladimirescu	-it respects the members' rights
Cazasu	-it respects the members' rights -it provides help to members -it settles down the intra-organizational conflicts -it meets the members' needs/desires

**missing data*

Source:The commune fiches applied in the period June 2011, March 2012.

The irrigation water users' organizations are a relational "core" benefiting the entire rural community.

The organizational cohesion is a characteristic because: *"We get on well together, we are like a family, we have no problems."* (IWUO president Petroiu); „ *There are no problems, it is the farmer with 440 hectares who pays, then he gets his money back."* (IWUO member APT Comăneasca, commune Tudor Vladimirescu).

The organizational solidarity was based on the respect of members' rights and on helping the members; the legal norms ensured the emergence and developemnt of this type of association and succeeded in implementing a modern economic behaviour: "*The rights are ensured by law"* (IWUO president Siliştea)..... *"Farmers get help, water is paid for the small farmers who became members because they grow vegetables."(*IWUO member APT Comăneasca, commune Tudor Vladimirescu).

The relational system with the institutions, exterior organizations is functional: *"We have very good relations with the Agricultural Directorate, they keep us informed about the modification, each month, help us to draw the documentation and now we also appealed to them."* (IWUO President Siliştea). *"The relations existed, because there were years when they provided subsidies and had to report to National Association for land irrigation."* (IWUO member APT Comăneasca, commune Tudor Vladimirescu).

The social relations with negative effects are determined by:

- poverty: "*...people are aware of being dependent on water but they are too poor to irrigate, although they are the small private farmers who do not have any other source of money."*(IWUO member APT Comăneasca, commune Tudor Vladimirescu).
- minimum rural cohesion generated by a specific participatory pattern. The involvement in the community life is ambivalent; a non-involvement in the public works exists: "*Lazy people, if the townhall has something left, why can't we get it as a gift" …are lazy, to make Town Hall"*(employee, Cazasu town hall), *"No, the great majority are old people."(*vice-mayor, commune Tudor Vladimirescu). There is also a manifest participatory pattern: *"They are eager to do things, 50 people came up to shovel off the snow."*(town hall secretary Siliştea).

The producers' professional organizations are early nuclei of the institutionalized capitalism, being created in the rural communities where entrepreneurs exist and in which life quality is high. The farmers' organizations farmers are characterized by rupture of formal structures and effective functioning, real functioning.

- "the confidence radius"- assessing the contribution of social relations to the development sustainability enabling the opening of the rural community to the exterior in parallel with the stability of relations. In general, the association forms have formalized relations, for instance, the irrigation

water users organizations had an essential contribution in the opening of rural communities to the extra-rural institutions.

CONCLUSIONS

The demographic capital is a restricting factor in the irrigation system functionality; the decrease in number of the population and population's ageing result in an increase of rural passivity and a very low involvement in the innovation process and modernization of agricultural activities.

The social capital has positive implications, being one of the beneficial factors of the irrigation system. The socio-economic history of the irrigation system utilization modality proves the possibilities of the rural communities to adapt to agricultural modernization through the intermediary of social capital.

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