

GIUSEPPE FORINO (1), LUCA SALVATI (2), LUIGI PERINI (3)

## POPULATION TREND, LANDSCAPE AND LAND DEGRADATION IN THE SELE PLAIN: A GEO-ECONOMIC FRAMEWORK<sup>1</sup>

*Abstract.* – Land degradation is related to physical and biological variables and to anthropogenic factors acting as drivers of soil and landscape deterioration. The paper presents a preliminary analysis of long-term trends in selected socioeconomic variables that may have contributed to reduce soil quality in Destra Sele area (Salerno), one of the Italian regions that best represents the fragmentation of the complex mosaic of land-uses, from rural to industrial, from tourism to residential uses.

*Introduction.* – Land Degradation (LD) processes represent a relevant issue with impacts on ecosystems and human-environment relations. In Mediterranean environments, these processes are related to both bio-physical (drought, erosion, reduced vegetation cover, fires, climate change) and socioeconomic (agricultural intensification, urbanization, land abandonment, etc.) phenomena, of which a mixture can alter the fragile environmental equilibria (Salvati and Zitti, 2007). LD processes manifest themselves under different forms of erosion, salinization, soil compaction, overbuilding and landscape degradation, fragmentation of habitats and biodiversity loss (Salvati et al., 2013), impacting the socio-economic and demographic characteristics and being, at the same time, directly or indirectly influenced by them (Faggi, 1991; Kosmas et al., 1999; Gagliardo, 2004). Their analysis therefore requires a multi-disciplinary approach that integrates these cause/effect relations.

The paper aims to present a preliminary study on the evolution of the economic and socio-demographic characteristics that have contributed to the soil and landscape degradation in the Sele Plain (Salerno), a representative area with an increasing environmental complexity due to drastic, and often conflicting, land-use changes. The Sele plain is a paradigmatic area for understanding the

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dynamics of LD phenomena in peri-urban areas characterized by economic marginality and planning deregulation. Particularly, the study area may represent several Southern Italy areas in the transition from a traditional rural economy to more complex and multi-actor economic structures.

In this context, regional planning has developed fragmented strategies to combat LD. Citing for example the Rural Development Plan 2007-2013 produced by Campania region “there are no official data on the phenomenon, even if desertification is an integral part of river basin planning and, therefore, it is to be expected in the near future the preparation of a specific plans toward a systematic approach to the phenomenon” (p. 10, Forino, 2012). Therefore only general strategies are considered, such as “prevention (...) through the basin planning and civil protection plans” and actions such as “implementing planting trees or shrubs for purposes other than the production of wood” (Annex V, p. 4).

*Delimitation and classification of the study area.* – The Sele plain is a sensitive area to LD with a conflicting and complex mosaic of land uses (Diodato et al., 2011). It presents agricultural soils subject of intensive farming in greenhouses and open field, and highly specialized livestock husbandry (Carrino, 2005). The climate regime of the area, characterized by annual rainfall averaging between 700 and 800 mm and relatively mild temperatures in winter and hot in summer, suffers of prolonged periods of summer aridity and drought episodes, recorded with greater frequency in recent years. Although characterized by high fertility also due to the deep surface horizons and a moderate organic carbon content, the soil presents intermediate quality and sensitivity to salinization and compaction due to the intense processing of agricultural soils.

Researches about farm and crop structures (Migliorini, 1949; Barbero, 1956; Cataudella, 1974; Siniscalchi, 2012) and soil erosion (Diodato et al., 2009; 2011; Alberico, 2012a, 2012b) divide the Sele plain in two sub-systems called Right (*Destra*) and Left (*Sinistra*) Sele. Migliorini (1949) classified the towns of Pontecagnano, Battipaglia and Eboli as part of the *Destra* Sele, as well as Altavilla Silentina, Albanella and Capaccio of the *Sinistra* Sele. This paper specifically refers to the *Destra* Sele, that despite of its agricultural vocation is characterized by marked peri-urban tracts: sprawl settlements, industrial, commercial and productive areas, especially in the towns of Pontecagnano, Battipaglia and Eboli.

However, the paper will also refer to the entire Sele plain, integrated by the city of Salerno, whose development has influenced the dynamics of the whole area. The five most representative Municipalities of the area (Salerno, Battipaglia, Bellizzi, Eboli and Pontecagnano) will be analyzed to describe, through a quali/quantitative approach, some socioeconomic factors impacting LD. The paper

will also consider the “buffer zone” area composed by the municipalities of Capaccio, Agropoli, Giungano, Altavilla and Albanella, belonging to the *Sinistra Sele* region.

Salerno (about 130,000 inhabitants) is the capital of the province, the center of the complex socioeconomic, political and cultural dynamics of this area. Pontecagnano, Battipaglia, Eboli and Capaccio represent places in which significant socio-demographic and productive changes have been reported, potentially linked to LD phenomena. Agropoli, Albanella, Giungano and Altavilla are instead part of a buffer zone in which the economic dynamism of the Sele plain is mixed to a more typical economy of the hilly Cilento area.

In the Sele plain, socioeconomic processes changed farm structures and productive practices of agricultural spaces. The territorial changes following the fascist reclamation (Platzer, 1942; Migliorini, 1949; Siniscalchi, 2012), the Agrarian Reform (Barbero, 1956; Fuller, 1962) and the *Cassa del Mezzogiorno* subsidies (Cardarelli and De Sivo, 1964; Monti, 1974) have in fact led to the intensification and specialization of agricultural production, marking the birth of the first industrial activities.

In addition, during the Sixties, the early planning practices identified the Sele plain as one of the areas in charge of regional balancing, to overcome the monocentrism of Naples and the deep dichotomy between coastal and inland areas, targeting on new development axes along the highways and on new residential and commercial settlements (Viganoni, 2007).

Moreover, the earthquake of 23<sup>rd</sup> November 1980 was a breaking point for the Sele plain, of which reconstruction has been characterized by a massive urban sprawl, deriving from speculation and patronage between politics and crime (Becchi, 1989; 1993; Littlewood, 1985; Chubb, 1982). These practices continued during the early 1990s, altering the traditional landscapes and acting as driver of consumption and degradation of natural resources. Table 1 shows some socioeconomic factors that have potentially contributed to these processes in the Sele plain.

Table 1: Potential factors of LD in relation to the economic sectors in *Destra Sele*. Fonte: Own elaboration by Bonamici *et al.* (2011; 2013).

| <i>Agriculture</i>   | <i>Firm</i>  | <i>Services</i>  |
|--|--|--|
| Borboni and Fascist reclamation in <i>Destra</i> and <i>Sinistra</i> Sele  | <i>Cassa per il Mezzogiorno</i> policies (industrial areas along motorways)  | Urbanization at the South of Salerno; growth of major villages in <i>Destra</i> Sele; coastal tourism development by Sixties       |
| Agrarian Reform in Fifties: farms pulverization  | Competitive advantages of industrial localization along the motorways; Law 219/1981: ASI districts   | Entrepreneurial services in the hinterland (e.g., Battipaglia)   |
| Agricultural intensification: water resource exploitation  |  | Increasing in services demand due to internal migration and delocalization of industrial activities                                |
| Greenhouses agriculture  |  | Spatial impacts of tourism services: seasonal flows; water resource consumption; discontinuity in exploiting territorial resources |
| <i>Demographic evolution</i>   |  |  |
| Migration from hills areas of Cilento up to Sele plain   |  |  |
| <i>Exogenous and endogenous sectorial development policies</i>   |  |  |
| Industrial plants concentrated in productive districts (e.g., Eboli, Battipaglia): Law 853/1971 for ASI subsidies; Law 219/1981 for post-earthquake reconstruction   |  |  |
| <i>Infrastructures</i>   |  |  |
| Construction of the motorway Salerno - Reggio Calabria; enlargement of the commercial harbour of Salerno and provision for a further touristic one; root canal treatment of Sele and Asa rivers for agricultural goals |  |  |
| <i>Territorial diffusion and specialization of animal husbandry</i><br>Buffalo husbandry: Eboli, Capaccio, Altavilla Silentina   | <i>Growth of real estate sector in the Sele plain and in the hinterland</i><br>Real estate expansion in coastal areas and chaotic urbanization in Battipaglia and Eboli; Law 219/1981 for post-earthquake reconstruction |  |

The increasing human pressure has contributed to altering the balance of socio-ecological conditions (Alberico *et al.*, 2012b). This pressure is directly correlated to the risk of coastal and soil erosion (Diodato *et al.*, 2009; ISPRA, 2009; Alberico *et al.*, 2012a; 2012b). Regarding the primary sector, phenomena directly related to LD are: (i) pumping from the surface water table with the consequent increase of the salt wedge; (ii) soil compaction due to excessive mechanization and intensive farming; (iii) the increase of soil sealing due to greenhouse cultivation.

*The Sele plain within the complex regional development.* – After World War II, the socioeconomic processes in the Sele plain aimed to create an axis of regional development as alternative to the urban development in Naples' metropolitan area. As a matter of fact, Campania urban system resulted still immature and based on the mono-centric model of a “cancer capital (Naples), and a network of anemic, agricultural or bureaucratic centers” (Coppola, 1977, p. 13-14). Imbalance factors were found in the persisting rural/urban dualism and in the dichotomy between coastal and inland areas (ibid., 1977; Ruocco, 1970; Viganoni, 2007).

With the regional plan developed in 1964, the District Plan of Naples (*Piano del Comprensorio*) was extended to 96 Municipalities in the provinces of Naples, Caserta and Salerno. It provided for the functional rehabilitation of the coastal strip, and the development of the “balancing poles” of Mondragone and Battipaglia (Mazzeo, 2010). In 1968, the Ministry of Economic Planning instead proposed the Project 80 as a polycentric alternative (Vallega, 1971), targeting urban development along the highways and the construction of housing and industrial plants, towards a “balancing system” aimed at decongesting Naples. The new axis in Campania would have therefore targeted to the south-east of Salerno, to Capaccio and Eboli, decompressing the overcrowded coastal area of Salerno and favoring internal migration by *Alta Irpinia* and the foothills of Cilento (Tortorelli, 1973). The “intensive sub-region” proposed by Filangieri (1975) as an homogeneous subsystem of Campania included instead the province of Naples and Caserta, and the plain of the Sarno valley and Sele - Tusciano. For the latter an incentive to development was not considered, promoting instead a “territorial coordination” that avoids “internal viscosity”.

In 1981, with the adoption of the *Indirizzi di Assetto Territoriale* to support the reconstruction and development of the inland areas after the 1980 earthquake, the Campania region was divided into three homogeneous groups and the Sele plain was associated to the metropolitan area of Naples (Mazzeo, 2010). To reduce the development pressure on Naples, the 1986 Spatial Plan proposed the strengthening of the connection between provinces through eight “programs areas”. The Sele plain had the same goals of *Basso Volturno* and Aurunci areas in terms of spatial reorganization and reduction of imbalances between coastal and inland areas. The 2008 Regional Territorial Plan (*Piano Territoriale Regionale*) was presented as a strategic plan acting to “territorial systems of development” and “complex territorial fields”, through multi-scalar interventions led by local actors (ibid., 2010).

Finally, the Regional Operational Programme 2007-2013 (*Programma Operativo Regionale*) aimed to use large-scale projects as drivers for investments. For the Sele plain the modernization of the harbor and airport has been scheduled. Currently, Salerno and its urban ring belong to an *area vasta* embedded within the Naples' area (ibid., 2010), which integrates Salerno and Pontecagnano into a relational system

and strengthens Battipaglia - Eboli node in a sub-center connecting the “urban cluster” of Picentini hills and the middle basin of Sele and Tanagro (PTCP, 2011).

This review invites to reflect on the efficiency of the rebalancing goals, often translated into further imbalance between coastal and inland areas. In fact, the “coastal congestion and internal desertification” (Leone, 2001, p. 458) within Campania region is demonstrated, with a high concentration of population and economic development along the coast, and high rates of migration and backwardness from inland areas. This “congestion without development” (Abignente et al., 1978) has resulted in a mere expansion of built-up areas and a chaotic densification of population in the triangle cornered by Naples, Caserta and Salerno (Leone, 2001). Urban areas, therefore, have catalyzed economic resources and infrastructure at the expense of the inland areas (Amato, 2007). In other words, regional planning, at least until the 1980s, was based on “growth channeled along economically depressed axes, resulting in inconsistent densification processes” (ibid., p. 175) and increasing the marginalization of depressed areas.

The afore-reported experiences of planning have certainly led to LD phenomena in the Sele plain, for example by encouraging new residential areas in the villages within the first urban ring of Salerno (e.g., Battipaglia, Pontecagnano) causing the rise of human pressure along the coast. Additionally, the post-war urbanization has affected mainly the axis Battipaglia - Eboli (Aversa, 1976; Petsimeris, 2002), often resulting in informal settlements (Talia, 2001). Final result is a region in which the peri-urban rural landscape is characterized by fragmentation and greenhouse farming, chaotically linked to a rapidly changing residential, manufacturing and tourism land-use matrix (Forino, 2012).

*Insight population dynamics.* – The economic boom of the 1960s, the agricultural and industrial poles in support of Southern Italy development and the occurrence of disasters including dramatic earthquakes have affected the spatial distribution of the population, often chaotic and disorganized. Figure 1 shows the increase in population from 1971 up to now in the entire area, excepting Salerno. The population growth of Battipaglia, Eboli and Pontecagnano reflects a compact urbanization followed by urban sprawl, of which trend slows since the early 1990s.

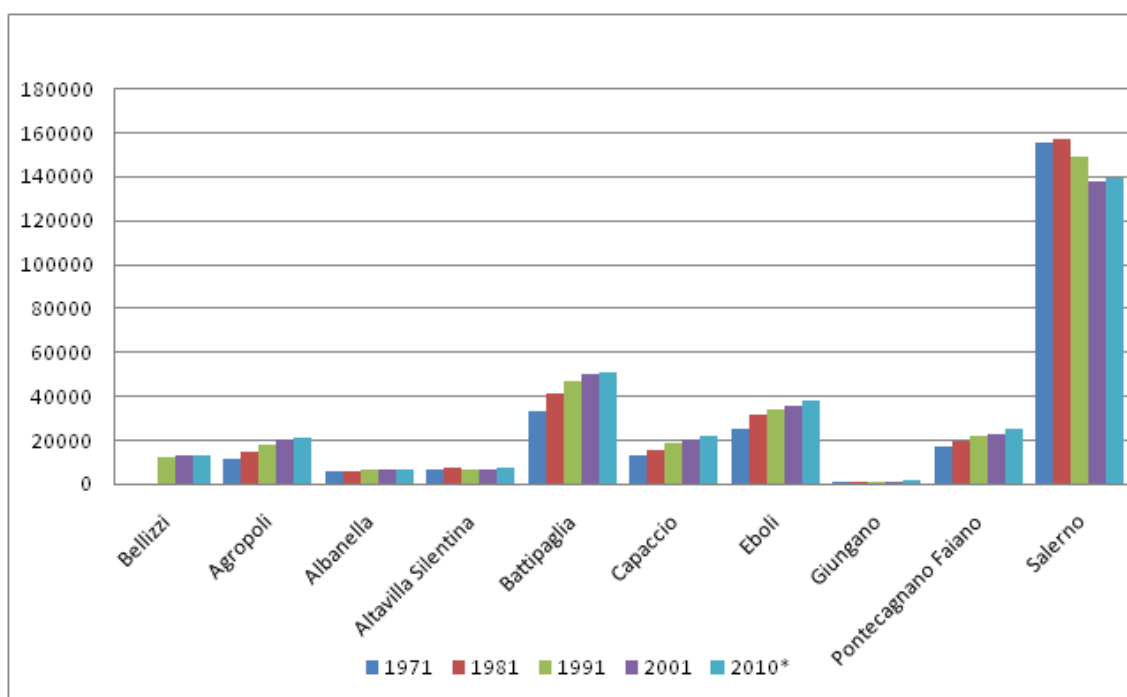


Figure 1 - Residents within the selected municipalities during the period 1971-2010. Source: own elaboration on ISTAT data.

*Salerno: the progressive abandonment of the historical center and peri-urbanization.* – In Salerno, the post-war reconstruction and the following economic well-being have been the preliminary step for the intense urbanization observed afterwards (Iovino, 2002). The flood of 25<sup>th</sup> October 1954 and the earthquake of 23<sup>rd</sup> November 1980 contributed to move the urban centrality from the historical center to new peripheral areas.

The 1954 floods of mountain brooks on the Amalfi Coast severely damaged the weak post-war urban fabric of the historical center of Salerno, accelerating the depletion of its urban functioning (Sciaudone, 2002; Esposito *et al.*, 2004). Since the 1960s, the run-down buildings of the historical center would have hosted just immigrants from inland areas, while residential areas arose on the eastern hills and south-eastern plains. The earthquake of 23<sup>rd</sup> November 1980 further exacerbated the degradation and marginalization of the area. Until the 1990s, recovery strategies would have not been implemented, conversely opting for new suburban areas. Therefore, in the period 1951-1991 the number of residents in the historical center decreases significantly from 23,918 to 7,357 (Sciaudone, 2002).

During the 1990s, a process of urban transformation, through the redevelopment of the historical center, and of the brownfield sites along the river Irno, on the northeast, and in the industrial

area ASI (*Aree a Sviluppo Industriale*) of Pontecagnano on the south, took place, so further expanding the city toward the Sele plain (Mazzetti, 2006).

An additional factor of change is represented by the harbor of Salerno, that has been built despite difficulties due to the geographical position and geomorphological conditions (Iovino, 2002). Since the late 1980s, the expansion of the maritime interchange and the internationalization of markets have given strong inputs for enlarging the harbor. The city has therefore played a strategic role through the development of cruise traffic (*ibidem*, 2002). This infrastructure has not only changed the territorial organization of the fragile area nearby the Amalfi Coast, but it could have repercussions on the hydro-morphology of the coast line up to the Sele mouth (D'Argenio *et al.*, 2011).

*Agricultural Policies for 'Mezzogiorno': an overview on the Sele plain.* – Until the early 1900s, the Sele plain was a marshy area within there were just micro-farms generating negligible incomes (Migliorini, 1949; Tino, 1983). The first reclamation involved the *Destra Sele* in 1829, with the leveling of the Sele river along the plain of Eboli by the Borbone. The reclamation lasted until 1914, starting again under the fascist regime in the basins of Sele, Asa and Tusciano, and also involving the *Sinistra Sele* (Migliorini, 1949; Barbero, 1956). These reclamations led to the early social changes of post-war modernity due to the population growth, at least since 1951 in Pontecagnano, Battipaglia and Eboli (the latter passing from 11,476 to 46,045 residents between 1861 and 1947).

The traditional agricultural structure was radically altered by the creation of irrigated areas, the transformation of arable land and tree crops, the reduction of meadows and pastures and deep change in the agricultural landscape. Also the number of workers in agriculture grew. In *Sinistra Sele*, however, the reclaimed area was smaller, principally targeting the coastal areas and the Sele mouth (Spagnoli, 1938; Migliorini, 1949). In 1931, the construction of the dam of Persano regimented the water flows on the hilly and mountainous Sele basin.

The Agrarian Reform in 1950 modified the obsolete structures of feudal and bourgeois estates in Campania, tied to large estates (*latifondi*) and extensive agriculture. The State intervention expropriated large properties, redistributing land to farmers and small landowners (Sereni, 1979). However, it represented only a translation of the property rights, which did not allow to medium size farms to have full access to the agricultural market (Carillo, 2005). The results was the fragmentation of agricultural land, often far from the villages, poorly accessible and characterized by low crop productivity. It was missed the opportunity to shape the agricultural space in a democratic and rational sense (Coppola, 1977).



In the Sele plain the original proposal was to expropriate 8,365 hectares, including 1,676 in Eboli. However, the expropriation interested only 6,781 hectares, while for others 1,550 hectares the system of the “residual soil” was implemented, forcing the owners to make the land productive within three years, otherwise the Institute of the Reform (*Ente di Riforma*) would have acquired the land to be allocated to other farmers. Through the expropriation, the land were divided by 1,772 smallholders (Frosolone, 2009). Moreover, the old agricultural structure was radically overturned, so that in the early 1960s 40% of Utilised Agricultural Area (UAA) belonged to larger farms, and just 5% of UAA was distributed among the remaining 66% of farms.

In such a scenario the medium size farms , for the first time, contributed to UAA with a share of 24%. These medium size farms flanked the big farms specialized in fruit and vegetables. The reform therefore appeared as contradictory: on the one hand, it promoted the pulverization of lands; on the other hand, it was not able to generate small business and autonomous structures. Medium and large farms in fact were born just as the micro-parcels joint farms, of which average size was 2.2 hectares, compared to e.g. 5 hectares in the province of Caserta. This paradox marked the failure of the proposed settlement patterns; spirals of inequality increased rather than diminishing, partially because of population grew in urban centers at the expense of rural villages, affected by depopulation. For example, the increase of population in Eboli stopped just in the 1960s, with a slight decrease in the period 1956-1968, while simultaneously Pontecagnano and Battipaglia grew (*ibidem*, 2009).

Conversely, a decrease of 5,432 hectares of UAA has been recorded for the 10 selected municipalities in the period 1982-2010, with a marked variation in the period 1990-2000 (-2731 hectare), less pronounced in the period 2000-2010 (-383 hectares). This phenomenon appeared as emblematic in peri-urban areas such as Battipaglia and Capaccio, that in the period 1982-2010 lost respectively 2,561 and 958 hectares of UAA. This contraction led to land fragmentation. Within the same period, in fact, both the UAA for micro size < 1 hectare, particularly in Battipaglia and Capaccio, and the total number of companies (+984) increased. The range in the farm size instead followed the reverse trend: on the one hand, farms ranging from 1 to 10 hectares had constant values, while those >10 hectares decreased of just 50 units; on the other side, micro-farms increased of more than 1,100 units. Even in this case Battipaglia and Eboli emerged, with farms < 1 hectare almost tripled in the period 1982-2000, passing respectively from 92 to 282 and from 399 to 1,190 hectares. Along the same period, the average UAA of the farms within Sele Plain (excluding Bellizzi, that have been declared as Municipality only in 1990) also decreased from 4.1 to 3.4 hectares, with significant variations in Battipaglia, Eboli and Capaccio (ISTAT, 2010).

In the period 2000-2010 the decrease of the total UAA was found less marked (-383 hectares), while a decrease of 679 hectares of UAA was observed for farms < 1 hectare. For the first time, total

farms decreased (-2583), mainly due to the reduction of the micro-farms (-1300). Finally, the first significant decrease of the farms sized 1-10 hectares (-1370) was recorded, while both farms >10 ha (+87) and the average UAA (from 3.4 to 4.1 hectares) increased (Table 2).

Table 2: Utilized Agricultural Area, farm average, in hectares (1982-2010). *Source:* own elaboration on data collected by ISTAT (2010).

| <i>Municipality</i> | <i>Average UAA per farm</i> |             |             |             |
|---------------------|-----------------------------|-------------|-------------|-------------|
|                     | <i>1982</i>                 | <i>1990</i> | <i>2000</i> | <i>2010</i> |
| Agropoli            | 2,71                        | 2,12        | 1,67        | 2,66        |
| Albanella           | 3,47                        | 3,28        | 2,91        | 2,99        |
| Altavilla Silentina | 2,74                        | 2,68        | 2,70        | 3,42        |
| Battipaglia         | 8,83                        | 5,52        | 4,45        | 5,74        |
| Bellizzi            | ...                         | 5,24        | 5,99        | 5,68        |
| Capaccio            | 5,66                        | 4,24        | 2,75        | 4,39        |
| Eboli               | 5,03                        | 4,16        | 3,46        | 5,16        |
| Giungano            | 2,50                        | 2,24        | 2,15        | 3,95        |
| Pontecagnano F.     | 3,29                        | 3,35        | 3,31        | 3,93        |
| Salerno             | 1,44                        | 1,66        | 2,69        | 2,78        |
| Total               | 4,06                        | 3,45        | 3,21        | 4,07        |

Further potential factor of LD is the development of the buffalo husbandry sector, with implications on the quality of agricultural soils. In the period 1982-2010 the number of buffalo farms increased, in particular for Capaccio and Altavilla (from 25 to 77 and 23 to 111), while the number of total farms with livestock decreased. While in 1982 the buffalo farms represented 3.4% of the total farms of Altavilla, this value was 42.8% in 2010, the respective percentages being 6.3% and 60.7% in Capaccio. The average number of animals per farm also pointed out the increase in livestock pressure as a factor of potential LD contributing to soil nitrate pollution (Table 3).

Table 3: Size of buffalo livestock in the area (1982-2010). *Source:* own elaboration on data collected by ISTAT (2010).

| <i>Municipalities</i> | <i>Total livestock units</i> |             |             |             | <i>Livestock units per farm</i> |             |             |             |
|-----------------------|------------------------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|
|                       | <i>1982</i>                  | <i>1990</i> | <i>2000</i> | <i>2010</i> | <i>1982</i>                     | <i>1990</i> | <i>2000</i> | <i>2010</i> |
| Agropoli              | 364                          | 555         | 536         | 3.520       | 61                              | 62          | 77          | 293         |
| Albanella             | 2.113                        | 2.406       | 7.158       | 10.365      | 66                              | 73          | 123         | 221         |
| Altavilla Silentina   | 525                          | 2.021       | 6.966       | 14.880      | 21                              | 42          | 87          | 193         |
| Battipaglia           | 1.428                        | 854         | 530         | 1.181       | 159                             | 107         | 88          | 295         |
| Bellizzi              | ..                           | 35          | 155         | 230         | ..                              | 35          | 77          | 115         |
| Capaccio              | 1.169                        | 4.440       | 7.062       | 22.284      | 51                              | 91          | 104         | 201         |
| Eboli                 | 1.954                        | 3.398       | 5.248       | 11.984      | 81                              | 212         | 181         | 324         |
| Giungano              | 297                          | 413         | 940         | 1.079       | 42                              | 46          | 72          | 108         |
| Pontecagnano F.       | 320                          | 38          | 729         | 1.407       | 107                             | 13          | 146         | 234         |
| Salerno               | ..                           | ..          | ..          | 371         | ..                              | ..          | ..          | 124         |
| Total                 | 8.170                        | 14.160      | 29.324      | 67.301      | 63                              | 80          | 109         | 218         |

Until 2000 there was an increase of livestock micro-farms. Successively, this trend has been attenuated, probably due to the land reorganization following the expulsion of elder farmers and the regain of the activity by younger groups. On the one hand, return to the agricultural activity can be interpreted as a positive signal related to a growing territorial maintenance; on the other hand, it could put further pressure on water and soil, mainly due to the intensification of irrigation practices, greenhouses agriculture, mechanization and soil pollution.

These trends lead to strengthening LD process, such as: the excessive groundwater pumping, that causes salinization of arable land; the soil sealing resulting in fragmentation of semi-natural areas due to urbanization and greenhouse cultivation; the alteration of the hydrological cycle due to low permeability of the soil; soil compaction due to the intensification of agriculture. The spatial complexity is therefore not attributable to individual processes of land fragmentation or productive intensification. Rather, it acts in synergy with the degradation processes related to urban sprawl, affecting the integrity of the landscape and the fragility of the local agricultural system. The increasing LD vulnerability shows the interconnection between the different phenomena on a local scale, that are currently difficult to be seen in similar areas of reduced size. The *Destra Sele* is therefore a “laboratory” reflecting different degradation processes, of which the potential risk has not yet been fully recognized and identified.

*Conclusions.* – This paper represents a preliminary study for analyzing the complexity of the changes in the spatial organization of the Sele plain in terms of alteration of ecosystems and of the relationships between social, natural systems and landscape. The reclamations between XIX-XX centuries, the allocation of properties for the Agrarian Reform after World War II, the rapid growth of residential and productive areas and of the industrial and services sectors since the early 1950s, have changed the structure of settlements and the local production. The nodal position in the South Tyrrhenian, the proximity to the urban center of Salerno and the economic diversification have also represented an attractive force to drive territorial processes along the coastline and the Sele plain.

The new spatial organization of Sele plain insists on a urban system that has strengthened the functional role of Battipaglia and Eboli, initially grown as rural villages but currently fully integrated into the hinterland of Salerno and a complex peri-urban area, in a mixture of agricultural practices, advanced industrial sector in decline and tertiary sector. The intensification and specialization of agricultural and livestock in fact have potential impacts on soils (Rossi-Doria, 2003). The increased demand for water, the compaction of soils due to the excessive mechanization, soil sealing due to greenhouses, the erosion on the first hilly fringes and overgrazing are just examples of LD processes. The sprawled and chaotic increase of residential areas also affected these factors: on the one hand, it restricts the agricultural production base, forcing the industry to further intensification processes; on the other hand, it makes even more chaotic the mosaic of land-uses towards a no more rural area, with poor urban functions. Urbanization increases the vulnerability of land and groundwater, as well as the intensification of agricultural and animal husbandry practices may increase the risk of soil fertility loss (Mautone and Ronza, 2005).

By considering the Sele plain as a “carrefour” of the urban *area vasta* between Salerno and Cilento, or as the economic, demographic, and infrastructure “escape valve” of Salerno, planning should consider jointly the multi- scale socio-economic goals with the environmental targets, avoiding to replicate terms such as “decongestion”, “polycentric” and “development” for concealing an unchangeable *status quo*, perpetrating conditions of environmental vulnerability, reducing the quality of life and trivializing the traditional rural and agricultural landscapes. A study of the continuous evolution of the human-environment relations and of the relationships between landscapes and productive functions is essential to build effective policies in mitigating the LD and desertification risk, especially in areas that are already ecologically fragile as the Sele plain.

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- (1) Ph.D. Economic Geography, MEMOTEF School, Sapienza-University of Rome, Via del Castro Laurenziano 9, 00161, Rome, [g.forino@gmail.com](mailto:g.forino@gmail.com).
  - (2) Researcher, Consiglio per la Ricerca e la sperimentazione in Agricoltura, Centro per lo studio delle Relazioni tra Pianta e Suolo (CRA-RPS), Via della Navicella 2-4, 00184, Rome, [bayes00@yahoo.it](mailto:bayes00@yahoo.it).
  - (3) Researcher, Consiglio per la Ricerca e la sperimentazione in Agricoltura, Unità di Ricerca per la Climatologia e la Meteorologia applicata all'Agricoltura (CRA-CMA), Via del Caravita 7a, I- 00186, Roma, [luigi.perini@entecra.it](mailto:luigi.perini@entecra.it).
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