Informal Settlements within a Spatial Development Framework

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Key words: informal settlements (IS), land administration and cadastre.

SUMMARY

By the term “Informal Settlements” (“IS”) we mean, either residential areas where occupants have no legal claim on land, or, areas where housing is not in compliance with planning and building regulations, which is mostly the case in Greece. Furthermore, public works and infrastructures not conforming to the specifications should also be considered as IS. IS in Greece are the result of a complex and often confusing land administration institutional framework and an inadequate way, planning and building regulations are controlled by the state. Nowadays, it is rather difficult to clearly determine what is formal and informal and classify all types of illegalities, since most buildings in Greece have some degree of informality!

In this paper, housing policies in Greece and their impact on the evolution of IS over the last decades are reviewed. These policies are mainly regulated by the Greek General Building Construction Code (GOK) that establishes standards to constructions and specifies allowance ratios of built surface area to land area and by Laws and Ministerial Decisions that establish regulations about land administration and planning. Within this legal framework several attempts were made to address the problem of IS in Greece, accounting today more than 1000000 informal buildings [4]. These attempts aimed at legalizing and upgrading IS with their inclusion into formal urban plan, or, imposed financial penalties to the owners, thus providing the state with important economic profit. In specific cases of buildings illegally located e.g. within coastal zones or forestland, special measures were also announced, for the demolition of these constructions.

An effort to categorize IS follows, in regard to the main housing policy characteristics and the building regulations in Greece. IS in urban areas are characterized by a tendency to illegally enlarge vital space, either by changing the use of auxiliary areas into housing units or by increasing coverage limits, imposed by the building regulations. In rural areas IS are usually not provided with the requisite permit or legal title for use on land, or are located within coastal zone and forestland, consisting an important IS type with negative economic and environmental impacts. Another major group of IS, characterized by rapid unstructured and unplanned development, are those located within the urban zone but not within the urban plan. Each of the above IS types, is extensively examined by considering characteristic examples.
However, regardless the type of illegality, “IS” are a significant problem requiring a realistic approach as part of an integrated land administration strategy, relying on the establishment of good relations between the state and the society.

1. INTRODUCTION

Informally building is a challenge to citizens, since they skip complex bureaucratic procedures and legal restrictions as well as expenses and taxes imposed by the state. This is the practice so far in many countries, especially when the land administration and planning policies fail to address the demand for low-cost housing, or even for shelter to poor citizens. Moreover, these informalities of all kind are expanding rapidly when the housing control mechanisms are insufficiently applied by the public authorities or when these authorities are vulnerable to corruption.

In fact, the type and extend of IS vary from country to country and from place to place within the same country, according to local conditions and needs, with regard to the existing planning and land management legal framework. Many developed countries in order to improve control on territorial development they decentralize land management authority and responsibility to local government, thus improving effectiveness for land policy implementation and more systematic building inspection. Housing policy in developed countries is strongly supported by existing cadastral registration systems, land use plans and appraisal systems. The role of these land policy tools is very important for the elimination of informalities: the authorities provided with the appropriate documentation can easily monitor land distribution and illegal occupation of state land. They can also control illegalities in real estate transactions and constructions that are not in compliance with the existing planning and building regulations.

1.1. Informal Settlements (IS) – Terms and Definitions

It is rather difficult to clearly define the term “Informal Settlements” (IS) and to obtain reliable data on the number of informalities that occur worldwide. The UN Habitat defines informal settlements as:

i) Squatter settlements where land and/or buildings have been occupied illegally/ without the permission of the owner or

ii) Illegal land development - settlements where initial occupation is legal but where unauthorized land developments have occurred (e.g. change of land use, building extensions without building permits, subdivisions without regard to services and infrastructure). [7]

The definition of IS is context-specific, varying from country to country. In Greece, for example, by the term IS we mostly define illegal constructions, or building extensions, not conforming to the existing building regulations. IS do not comprising public works or network utilities. A broader term for IS could include, every illegal construction built by legal, physical person or public authority, not in compliance with the housing /building regulations, that structures or delineates (indoor) space. The definition can be further particularized by each country’s law, since legality varies among societies and no clear
category can be classified between countries [3]. Greece however, where the IS problems occurs in great extend, an unambiguous framework is required, defining what is formal or informal and how we should harmonize with the other European countries facing similar situations.

2. INFORMAL SETTLEMENTS (IS) IN GREECE

The IS phenomenon occurring in many countries all over the world at various levels, depends on different factors such as, ineffectiveness of land administration systems, failure of land policy measures, complicated procedures, enlarged bureaucracy, corruption, poverty, ignorance. In Greece, the IS problem occurs in great extend, rapidly expanding the last decades.

2.1 Key Factors in IS

The IS problem in Greece mainly relies on an inefficiently organized housing and building regulations framework, on inadequately applied housing policy measures and on social factors, formulating a reluctant citizens’ attitude. As a result:

- Housing needs didn’t cover early enough to prevent a later uncontrolled expansion of the IS phenomenon.

2.2 Key Actors in IS

Citizens in general, do not act illegally, when the authorities are liable and responsible in their duties and the state provides a secure land administration framework. The analysis following shows that the key actor in the IS phenomenon in Greece is the state in its broader sense, including public authorities, state agencies, local governments, and so on.

2.3 Consequences Resulting from IS

The consequences derived from the IS situation can be summarized as follows:

- The citizens form two groups: those who take “advantage” of the existing legislative gaps and opportunities and those acting legally, which seems a rather unfair situation.
- The state loses important incomes when the citizens don’t follow the required procedures. Moreover an important economic impact to the state results from an afterwards creation of infrastructures in an already illegally built environment.
- Illegal constructions, not in compliance with building regulations (e.g. not in compliance with the existing seismic code, especially for high risk areas) are more vulnerable to disaster damages.
3. IS TYPES IN GREECE

A more clear view of the IS problem is provided by a further presentation of characteristic cases illegally created by individuals or the by the state, on privately or publicly-owned land.

3.1 Private or Public IS on Privately Owned Land

This is a broad category including several IS types, such as:

3.1.1. IS in Relation to the Existing Legal Framework

This category comprises constructions legally built, according to the existing at that time legislative framework, which was later invalidated, judged by the Conseil d’Etat, as not being in compliance with constitutional regulations. As a result, a great number of “legally” built settlements, in respect to laws later invalidated, are now considered as informal. Two characteristic cases are presented as follows:

- Building regulations (building permits recalled, invalidated laws, revocation of formal plans) that changed while buildings were legally under construction. In figure 1 an incomplete building (missing floor) is shown, as a result of altering the possibility of transferring remaining Building Coefficient (BCT) (fig 1).

- Office blocks, department stores or other buildings, requiring specific license, were later characterized as IS, because the area land use changed into e.g. residential, not allowing any commercial land use. In figure 2 a building being located on a heavy traffic avenue, was completed under L.3212/2003 (the Conseil d’Etat, cancelled it in 2007) and was later characterized as IS, since this specific part of the road was changed into “unmixed” residential area.

![Fig 1 Incomplete construction from BCT](image1)
![Fig.2 Formerly legal commercial building](image2)
Conclusion: The above IS type could be completely avoided, if the legal framework was not invalidate by retroactive effect, which is the state’s responsibility.

3.1.2. IS Resulting from Building Regulations Modification

Thirty years ago, buildings with building permit, located within or outside the formal urban plan had very few informalities: the building regulation, was clearly defining the building’s outline, not permitting the creation of informalities (figure 3). After 1985, buildings’ informalities had significantly increased due to a new concept, the semi-open air spaces, officially established by law. These spaces, are within the building’s outline, in the form of a balcony, with one open side (comprising stone sill and bind beam), in a room’s size, in which they can be easily transformed to. Since 1985, this type of informality accounts more than 10 000 000 sq.m. Both individuals and the state are sharing responsibility for these IS.

**Fig.3** Buildings without semi-open air space option (1\textsuperscript{st} row), and with semi-open air space (2\textsuperscript{nd} row), in relation to the corresponding regulation.

Conclusion: The citizens and the state, share a degree of responsibility for this IS type that could be easily avoided. The state could proceed to a more effective Building Coefficient Transfer (BCT), facilitating the citizens to legalize their extra square meters, by buying the
analogue building coefficient. If the state wants to response to the IS, a more realistic approach is required, along with a harmonization of the existing building and planning regulations.

3.1.3. IS Related to Numerical Building Coefficients (BC)

According to former building regulations, the surface areas that can be built were indirectly calculated by the building coefficient in relation to the maximum building height and the percentage of the land parcel that could be built (% of land parcel’s coverage). This resulted in the creation of legally constructed surfaces (e.g. in slopes or downhill parts). Today, that the building coefficient is numerically defined by the Greek General Building Construction Code (GOK), any additionally built surface, not included in the maximum allowed surface, is characterized as illegal (figure 4).

![Fig. 4 Surfaces exceeding the BC created on downhill parts are considered as IS.](image)

**Conclusion:** This IS type is caused by the BC definition change. Similar cases are differently judged. In a more realistic approach, the IS owners should have the option of buying extra BC, when required.
3.1.4. IS within Roof Slopes

All space included within the legally constructed building outline should (but in fact they are not) consider as legal. This is the case, since 1985, for lofts under the slope of a roof, characterized by the Greek regulations as IS (figure 5).

Fig. 5 IS within the roof of newly constructed buildings.

**Conclusion:** Using these spaces within the building’s vital space should be allowed and not considered as IS.

3.1.5. IS Caused by Altering the Use of Basements and Parking Places

Basements within individual houses (e.g. villas) are characterized as auxiliary and cannot be used e.g. residentially. The same with the indoor parking places, which cannot be legally transformed into residential areas. On the other hand, in many Public Buildings or Offices (Banks, Insurance Companies e.t.c.) the basements share the same use with the rest of the building, which is rather unfair (figure 6).

Fig 6 IS basement of an administration building, changed into office use.

**Conclusion:** Basements (either in the form of warehouses or parking places) should be used without restraint, if the correct safety measures are taken. Spaces considered as IS could be easily regularized by buying the required BC, if necessary. Parking places suspended should also be replaced or paid, as mentioned in 3.1.2.
3.1.6. Illegal Constructions on Frontage or Common Use Areas of Land Parcel

Building indoor spaces on frontage or common use areas of a land parcel creates a new type of IS, frequently met in front of stores, such as restaurants, café, and so on. Using furniture or other mobile equipment doesn’t change the final outcome (as shown in figure 7). Although many indoor spaces have license, they form another IS category.

Fig. 7 Constructions on commonly used parts of the land parcel

Conclusion: In this case, the indoor areas could be easily legalized, if they were constructed with license, under building specifications, thus bringing extra profit to the state.

3.1.7. IS that Cannot Be Declassified

These IS cases fall into two general groups: the existing ones (that can be repaired) and the future ones (need to be prevented):

- Extra constructions on the buildings’ flat roof.
- Coverage of outdoor spaces (figure 8).
- Constructions without building permit in areas outside the formal urban plan.
- Building up balconies.

Nowadays, this phenomenon has significantly reduced, owing to the prohibition of land fragmentation and the legal limitations imposed to land transactions. An important source of information can derive from satellite images, which are very helpful in identifying these IS cases.

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Fig. 8. IS Construction on top roofs (1st row). Built up balconies (2nd row).

**Conclusion:** We must repair what is wrong and prevent what will be characterized as IS, by applying effective mechanisms and by monitoring the real estate transaction cycle.

3.1.8. **IS that Can Be Legalized, by Integration to the Formal Plan**

From 1968 to 1982, it was allowed to raise prefabrication houses on small rural land parcels, produced by legal subdivision procedures. This easy way of changing rural land to residential, was rapidly expanded and mistreated by the owners, who were building without permit, in excess of what was legal. A new category of IS of main or second (vacation) houses was created in areas not included into the formal plan (figure 9). It is estimated that more than 120 000 ha of land are illegally built by this process. An attempt is made to legalize this IS type, by gradually integrating these settlements into the formal plan.

**Conclusion:** The legalization process for integrating the IS into formal plan must be accelerated and less complicated.
3.2 Private or Public IS on Publicly-Owned or Common Use Land

This IS type refers to:

- Private or Public IS on Publicly-Owned or Common Use Land.
- IS on a broader scale of higher value than the IS examined before.
- IS created by skipping or violating legal procedures and regulations.
- IS adding value or producing extra personal profit, acting as a strong motive for their creation.

Characteristic cases of IS on Publicly-Owned or Common Use Land is following:

3.2.1 IS Violating the Housing Law

This IS type includes constructions at a large scale, created on land outside the formal plan, skipping the legal procedures required, to be integrated into the formal plan (not contributing financially or by land offer) (figure 10).

Fig. 9 IS of high density located on Salamina Island [6].
3.2.2 IS from Land Use Change not in Compliance with the Approved Plans

This type of IS includes publicly owned buildings (of e.g. local authorities) that illegally changed their use not in compliance with the approved ones (figure 11).

3.2.3 IS Located within the Coastal Zone

Constructions on the coastal zone can never considered as legal (figure 12), since they violate the existing regulations for protecting this zone for public use.

Fig. 10 Olympic Village, constructed not in accordance to regulations and “the mall”, Department Store (1st row) Commercial development in the area of El.Venizelos national Airport (2nd row)

Fig. 11 the ground floor is changed to recreation and amenity center.
3.2.4 IS in Common Use Areas

This IS type includes constructions on squares, parks, or other common use areas, not in compliance with the existing urban regulations (figure 13).

Fig. 13 The luxury restaurant Aegli located at Zappeion Park and a municipal building located at a Square within the formal urban plan.

Fig. 12 IS examples in the coastal zone
3.2.5 Publicly Owned Buildings Rented to Individuals

Privileged located publicly owned buildings rented to individuals, are very often subjected to informalities. Illegalities, built in excess of the existing rented building, due to personal interest for profit, are overlooked by the state authorities (figure 14).

![Illegal extensions or creations of amenity centers on the coastal zone from Glyfada to Voula.](image)

Fig. 14 Illegal extensions or creations of amenity centers on the coastal zone from Glyfada to Voula.

3.2. Classification of IS in a 3-axis System

The above mentioned IS cases are broadly classified and shown on figure 15:

- IS within the formal urban plan (level yz)
- IS outside the formal urban plan, but within the broad urban plan zone (level zx)
- IS outside the formal urban plan (level xy),

On the 3-axis schema, the relations between the IS cases and the private or public sector responsible for them is represented, according to the relative chapters describing each IS type, earlier presented.

![Classification of IS types in a 3-axis system.](diagram)

Fig. 15 Classification of IS types in a 3-axis system.
The few remaining cases not included in the system, need further analysis and documentation (figure 16).

Fig. 16 Remaining IS cases on the 3-axis system.

4. GREEK LAND POLICY AND IS

Land policy in Greece is mainly aiming at punishing private illegal activity, without taking precautionous measures to prevent further expansion of the IS problem (presented by blue color in figure 15). This attitude comprises:

- Financial penalties imposed on IS, after their completion.
- Legal restraints applied to the transaction process.
- Restrictive regulations for the connection of utility services (such as water and electricity supply) to IS [6]

4.1. Punishment Measures for IS

The IS categories subjected to financial punishment can be classified as follows, along with an analysis on the related legal procedure for each case.

4.1.1. IS Classification

The IS cases built before 31.12.2003 that are by law subjected to financial penalty are the following four:

- Tourist settlements, public use areas, recreation centers and amenity centers, medical care units, e.t.c.
- Residential buildings, administration offices, commercial and social welfare centers, cultural and educational installations, athletic facilities and other similar uses.
- Industrial installations, agricultural and farming units, warehouses, and analogous uses.
- Rural warehouses, stockrooms, e.t.c.

After the 01.01.2004, the following three IS cases were subjected to pay penalties:
- Urban IS: buildings without building license or in violation of the existing regulations, which define, where the construction should be situate within the land parcel, the building’s coefficient factor, the parcel’s coverage percentage, the maximum height of the building and its use.
- Constructional IS: constructions or parts of the constructions, in excess of the building rules.
- IS with significant environmental burden: these include urban IS constructed in ecologically sensitive areas, such reserves, streams, archeological sites, forest or areas under reforestation.

4.1.2. Analytical Approach

The financial punishment process includes several steps:
- Officially statement concerning the illegality verified and characterized by the responsible town planning office.
- Appraise of the real estate value $V_{IS}$ as follows:
  - For IS created before 31.12.2003 $V_{IS}$ is calculated in relation to the building’s classification (see 4.1.1), to its use and to its total surface $E_{IS}$ in sq.m. The prices rate from 15 to 90 euros per sq.m. accordingly.
  - For IS created after 01.01.2004, $V_{IS}$ is calculated according to the surface $E_{IS}$ and by unit cost price $V_{tax}$ defined by the the Ministry of Finance for taxation purposes (ranging from 600 to 8.800 euros/sq.m), corresponding to the market price, periodically escalating. By using the $V_{tax}$ which comprises both land and building’s value, the penalty is also imposed to the land equivalent. More specifically:
    - For urban IS, $V_{IS} = V_{tax} \cdot E_{IS}$
    - For constructional IS, $V_{IS} = 0.20 \cdot E_{IS}$
    - For IS with environmental burden, $V_{IS} = 2 \cdot V_{tax} \cdot E_{IS}$
- Calculation and imposition of penalty $P_{IS}$, becoming definite after the objection’ procedure. The penalty to pay is estimated by using the $C_{IS}$ coefficient related to each specific case:
  $$P_{IS} = C_{IS} \cdot V_{IS}$$
  - For IS before 31.12.2003, $P_{IS}$ is calculated with $C_{IS}$ ranging from 0.50 to 3.80 in relation to the above mentioned classes (see 4.1.1) and the surface $E_{IS}$
  - For IS created after 01.01.2004, $P_{IS}$ is calculated as follows:
    - For urban IS $C_{IS} = 1$, so $P_{IS} = V_{IS}$
    - For constructional IS, $C_{IS} = 0.20$, so $P_{IS} = 0.20 \cdot V_{IS}$
    - For IS with environmental burden, $C_{IS} = 2$, so $P_{IS} = 2 \cdot V_{IS}$
- Calculation of penalty $P_{IS}$, for conserving the IS. The penalty is annually applied while the IS is in the process of being demolished or legalized and:
For IS before 31.12.2003, \( P_{IS} = 0.10 \cdot V_{IS} \)
For IS created after 01.01.2004, \( P_{IS} = 0.50 \cdot P_{IS} \) with an annual increase of 2%.

- Immediate demolish of the IS, when detected under construction.
- Demolish by the prefecture in cooperation with the town planning office and the competent police station. In reality, this penalty is exceptionally applied (only in specific cases of IS located within the coastal or forest zone), because of the public reaction.
- It is envisaged by the state, to proceed to an increase of the above mentioned financial penalties at a percentage of 30%, in order to provide the local authorities with extra funds to use for the localization of IS.

### 4.2. Legal Restraints Applied in Real Property Transactions

Legal restraints referring to IS transactions are presented as follows:

- If, according to the legal title of a land parcel, its creation is before the 14.03.1983 and an illegal building is comprised also constructed before that date, then the land parcel can be legally transferred (e.g. can be sold). The building’s completion date should be either mentioned on the land parcel’s creation title or certified by the owner’s legal declaration.
- If according to its title, a land parcel is created before the 14.03.1983 and the illegal building comprised is completed after that date, then the land parcel cannot be legally transferred. The completion date of the IS is not officially certified by any authority.
- If, according to its title, a land parcel is created after the 14.03.1983 and an informal building is comprised, then the land parcel cannot be legally transferred.
- In all the above cases, where transactions are considered as illegal, if the owner dies, then the required inheritance taxes are declared and paid, but the inheritance acceptance deed cannot be compiled. The property is therefore not transmittable to the heir at law, thus creating a serious social trouble.
- The possibility of dating the constructions through the cadastral registration is not a solution to the problem any more, since nowadays; cadastral extracts provided for deed transactions do not include the buildings.

### 4.3. Restriction in Water and Electricity Supply

Since 1985 (L.1512/85), water and electricity supply was a restrictive measure, not consistently and equally applied. Some residents of IS were able to obtain infrastructure and services, especially in the period prior to elections. [1]

### 4.4. Conclusions on the Government’s Response

- The Greek state’s response is mainly based on punishment measures. Financial penalties, imposed on private IS, are difficulty certified and more difficulty paid.
- These measures are encouraging the IS to be localized through complaints lodged (e.g. by the neighbors) or legally motivate lodging official complaints.
As a result, the IS localized, are a small percentage of the total IS number, and the penalties $P_{IS}$ and $P_{IS}'$ imposed are equally reduced.

Within this concept, the measures didn’t remedy so far IS problem. Besides the significant increase of money to pay, the expansion of IS didn’t stop, since citizens hope that the penalties will not finally affect them.

The IS cases finally demolished, represent a very small percentage of those that were characterized to be demolished.

5. CASE STUDY – MUNICIPALITY OF VOULA, ATTlKA

In this part of the paper, a case study is examined in Voula municipality, a residential area in the greater Attica region. The study investigated the IS cases reported to the competent town planning office from 2000 to 2006. The study resulted in the following:

- The spatial distribution of IS is shown on the map of Voula (figure 17).
- The corresponding annual flow of IS is displayed on the relative graph (figure 18).
- The IS examined, represent residents as 92% and office blocks or store departments, as the rest 8%.
- The informalities investigated include:
  - Land use change (parking places, basements, e.t.c.) as 60%
  - Semi-open air spaces turned into indoor spaces as 80%
  - Illegal use of terrace and roofs as 10%.

The above total percentage exceeds 100% because of overlapping cases, as many building have more than one informalities.

![Fig. 17 Spatial distribution of IS cases in Voula Municipality](image-url)
Fig. 18 Annual flow of IS cases (2000-2006)

A sum of the incomes collected from the financial penalties from 2003 to 2006 is presented in figure 19.

<table>
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<th>YEAR</th>
<th>INITIAL CHARGE</th>
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<td></td>
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<td>1536</td>
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Fig. 19 Total amount of the IS penalties between 2003 and 2006.

The cases examined showed that:

- The confirmed money collected is less that the initially imposed, at a range from 3% to 13%.
- The procedure of collecting imposed penalties is not always easy, especially after 2004. The annual residuals penalties represent the 50% to 95%.
- The financial penalties after 2004 have significantly increased as 900%.
6. GENERAL CONCLUSIONS

The paper investigated the current situation of the IS problem in Greece along with the land response tools, that are used by the state to eliminate the problem. A case study was further examined with its components, portraying the IS situation in a residential area close to Athens. In this final part of the paper, the findings are summarized as follows:

- The state has a direct or indirect part of responsibility in the IS expansion.
- The legal framework applied so far in Greece changes continually and is, as proved so far, inefficient.
- The IS expansion must urgently solved since it is furthermore an obstruction to the ongoing cadastral project.
- Public building activity should in priority be in compliance with the planning and building regulations.
- In order to solve the IS problem, the state should follow a more realistic approach in a new, less conservative decision-making political framework.
- Harmonization at a European level in the direction of finding common IS definitions and common land administration tools to coordinately respond to the IS problem.

Greece, as member of the European community should gradually harmonize with the European and the UN strategies on Sustainable Development of Settlements and Housing, aiming at a general improvement of housing and environmental quality and infrastructures. A prerequisite to such improvement is of course up-to-date spatial information and “good governance” which as UN defines, is the sum of ways through which individuals and institutions, both public and private, plan and manage their common affairs [8, 2].

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BIOGRAPHICAL NOTES

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