

# Informal Development in Greece: New Legislation for Formalization, the Chances for Legalization and the Dead Capital<sup>1</sup>

Chryssy POTSIU and Ifigenie BOULAKA, Greece



Chryssy Potsiou



Ifigenie Boulaka

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## SUMMARY

This paper presents the new findings of a focused research made by the authors at the National Technical University of Athens on the problem of informal development in Greece, on the newly adopted legal tools used for formalization and on the existing loss of revenue due to the informal construction in the non-planned areas. More specifically, this paper presents the new legislation for formalization of those informal constructions, that are build on legally owned land in the planned and the non-planned areas; the existing informalities refer only to planning and building regulations. The legislation was adopted by the Greek Parliament, in 2010 and 2011. The legislation for the formalization project, the first statistics and the reactions of those involved is briefly described, analyzed and criticized. In addition, this paper presents the first results of a study focused on the rough estimation of the economic impact of the informal development in Greece; starting with the estimation of the capital that is locked in the informal constructions in the non-planned areas that by existing legislation is not taxed, and cannot be legally transferred, inherited, rented and mortgaged, which according to Hernando de Soto's theory is considered to be a "dead capital".

The methodology followed for this research includes literature research of previous publications on informal development in Greece and existing and new legislation; interviews

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<sup>1</sup> FIG-Vice President Chryssy Potsiou is beside other responsibilities leading the new Task Force (TF) on "Property and Housing" which is very relevant in these turbulent times. The TF will have two special sessions during the Working Week in Rome, May 2012. In this peer-reviewed paper the authors present the results of a recent scientific research on the problem of informal development in Greece and explain the new legislation for formalization of those informal constructions, that are built on legally owned land in the planned and the non-planned areas; the existing informalities refer only to planning and building regulations.

with property owners of informal constructions and the local authorities in the various municipalities and informal communities in Attika, the greater region of Athens, the local real estate agents, the local constructors involved in informal and/or semi-legal construction, the Greek experts (civil engineers, planners, surveyors, etc), and the potential buyers in the new situation established by the newly applied formalization project; and a case study for the estimation of the dead capital in an area with informal development in Attika, on-site visits, field and office work.

First a brief investigation of the current situation of the informal development in Greece is given; a summary of the recent government's activity in this field is made and the new legislation for formalization of informal properties for a 30-year period is reviewed. Then, the dead capital locked in informal development in a community in Keratea, a suburb in the greater region of Athens, is thoroughly investigated and a rough estimation of the total dead capital locked in informal development is attempted. Some thoughts and proposals for future improvements follow.

## **1. INFORMAL DEVELOPMENT IN GREECE**

Much of the research on informal development in Greece compiled until 2009 is already wrapped up in the 2010 FIG/UN HABITAT/GLTN/TEE publication on "Informal Development in Europe. Experiences from Albania and Greece" (Potsiou, 2010; Augustinus & Potsiou, 2011). An up-dated description of the state-of-the-art of informal development in Greece and the legal actions taken until now follows below.

For several years Greece has been dealing with poverty, immigration, inefficient land administration and planning, and has experienced several "generations" of informal or unplanned development. Emphasis has been given to providing education for land professionals and on raising awareness at all levels about the importance of securing and protecting public and state-owned land (Potsiou & Basiouka, 2010), safeguarding the environment and cultural heritage and acceptance of a tax system on real estate private property. Civil engineering standards are enforced in construction due to the high risk of earthquakes. Due to a continuous effort to provide social services to the poor (Potsiou & Dimopoulou, 2011) there are very few slums and the majority of buildings are safe and strong, built on legally owned land.

The major cause of informal development in Greece is the inefficiency of the planning system and the over regularization of land. Informalities in Greece are mainly related to an excess of zoning, planning and building regulations, or construction without permission, and not to squatting or a lack of ownership rights (Potsiou & Dimitriadi, 2008; Tsenkova et al, 2009). Informal development mainly includes construction of 1-2 storey single family houses, build without building permits, in unplanned areas (Potsiou & Ioannidis, 2006), or 1-2 room extensions beyond legal constructions. Approximately one fifth (or more than 1,000,000) of the constructions are informal build in small parcels without a building permit, not including those built with a permit but with slight informalities, like building-up in semi-open spaces, change of uses, extra rooms in excess of the building permit (Dimopoulou & Zentelis, 2007).

As detailed planning process is too expensive and slow, basic infrastructure such as fresh water, electricity, telecommunication and roads, have been provided in many areas without a detailed city plan because local authorities try to upgrade the neighbourhoods periodically. Greek people resort to informal construction when there is no other realistic and affordable choice available that satisfies their needs. A 2009 opinion pole, commissioned by the Technical Chamber of Greece for the purposes of the FIG/UN HABITAT/GLTN/TEE 2010 study on Informal Development in Europe-Experiences from Albania and Greece, shows that 40% of respondents have difficulties in paying their housing loans. About 50% of Greeks polled consider informal development on their legally owned land as the only solution to their housing needs. It should be noticed here that these figures refer mainly to the situation as it was before the current economic crisis in Greece, which had only started in October 2009.

Planning principles in Greece are not keeping up with national and international social and economic changes. The existing spatial and urban planning legislation is comprehensive but very complex (over 25,000 pages of legislation), focusing on the control of development and protection of the environment and the public lands. This is not easily interpreted either by professionals, or by citizens. Urban planning is centralised and expensive. Detailed city planning studies at an average take more than 15 years and cost higher than 6,000 € per hectare. In an effort to facilitate market demand for housing, construction was allowed in the non-planned areas, but obtaining building permits requires involvement of more than 25 land related agencies, may take several years, and in many cases requires court decisions (Potsiou & Dimitriadi, 2008). The planning process runs at a different speed to market needs and cannot accommodate short term needs when there are large demands. Planning criteria usually do not include local market interests. Certain parameters make planning a complicated, expensive and time-consuming task, such as the lack of necessary spatial data infrastructure (e.g. cadastral maps, forest maps) and the fact that the areas under planning already include formal or informal developments. Planned towns are constrained and have limited space for further development. For that reason real estate values are extremely high for condominiums in the planned areas (even within blue collar areas) while salaries remain low.

The Greek Constitution gives priority to environmental and social issues, rather than economic development needs (Potsiou & Basiouka, 2010). More than 50% of the country is protected land without any compensation, ignoring the existing legal private property rights and the damage such regulations cause to the private properties. However, the state cannot respond well with its resources for management. This policy restricts serious investment and impacts the economic development of the country. The statutory environmental constraints are not clearly defined and not delineated on maps. There are current nation-wide projects to compile cadastral maps, forests and forest lands maps and define the public coastal zone. These are expected to uncover long existing problems in private properties and provide the tools for sound decisions about major necessary reforms. Upon completion of such maps, the state may claim property rights on “protected” areas, although private interests have claimed registered ownership for several years. Already, the first statistical data derived from the cadastral surveys show that approximately 45% of the properties in the unplanned areas recorded in the system is claimed by the state. Existing environmental legislation creates a huge overlap between private and state rights, as the state claims ownership over whatever parcel is characterized as forest. This is a major reason for delays on urbanization projects.

By Constitution, informal construction cannot be legalized in Greece if built in non-planned but protected areas (e.g. forest lands, coastal zones, archaeological sites), or if it violates existing planning or building regulations in the planned areas. Individual informal constructions in highly protected areas that create serious damage are demolished after court decisions. Strong laws and high penalties for environmental protection are applied. This has significantly reduced the environmental impact of informal development, especially in the coastal zones, archaeological sites and forests of today. However, there are still informal settlements with weak, disputed ownership rights within areas that are forests and many in areas that are not forests today but used to be forests some many decades ago; unfortunately there are no statistics on that.

Few forest maps in the Attika region (where the problem seems to be more significant) are already published and citizens are asked to submit their objections in case their legally owned parcel is characterized as “forest”; in such cases, according to the law the parts of the forest maps that will not be disputed by citizens will be ratified as forest areas meaning that according to existing legislation the state will then become the land-owner of these areas. However, citizens are asked to pay high fees in order to submit objections; unfortunately many Greek politicians have misled the Greek citizens by assuring them that there is no need to spend money and submit objections on the published forest maps assuring them that these maps will never be ratified.

All penalties derived from informal development are deposited to the Special Fund for Implementation of Zoning and Urban Plans. This fund is under the authority of the relevant Minister for the Environment, Energy and Climate Change to decide how these funds will be used. That way the revenue generated by penalties, which is considerable, is frequently channelled directly to central government and not to local government. This creates public mistrust. There would be more incentive for local government agencies to resolve informal developments through new urban plans if they benefited financially.

The only possibility for legalization of informal settlements in the non-planned areas is through an enforcement of a city plan, if permitted by the Constitution, improvement of infrastructure, and individual inspection regarding safety controls. During the last decade hardly any new plans were ratified though. Until legalization, such informal constructions cannot be mortgaged, inherited, sold or rented formally, even though owners have legal rights on the land parcels and they pay property taxes.

## **2. THE ODYSSEY OF FORMALIZATION**

This chapter investigates and comments on the new legal framework adopted since 2009, that aims to “*formalize planning informalities and exceeds of building permits in the planned and non-planned areas for a certain period of time*”. The interviews made for this research are also investigated here and have shown that unfortunately all people that have been interviewed believe that until today there is no clear will and concrete strategy or any published action plan on how the Greek politicians will solve the informal settlement problems that have accumulated and surface during the compilation of the Hellenic Cadastre

project and the forest maps threatening the success and sustainability of these projects. Instead, only ad hoc legislation is adopted according to the short-term specific political preferences each time and/or under the pressure of the current economic crisis and the need to collect money. Some examples, together with the results of the interviews with (a) owners or occupants of informal constructions, (b) local authorities, (c) involved experts, (d) local professionals like constructors and estate agents and (e) interested buyers are investigated and presented below.

## 2.1 New Legislation for formalization of planning and building informalities

In 2008 the government started investigating procedures to legalize planning and building violations that exist in the planned areas (like the build-up on semi-open areas of the buildings). In September 2009 a new law was adopted to serve this purpose which however aimed to legalize only the informalities that exist within the ratified legal outline of the volume of the building (Figure 1 right). This means that any exceeds in the height of the building (Figure 1 left) or constructions that exceed the legal horizontal coverage could not be legalized by this law. By this law, legalization act was considered to be permanent and was supposed to end up with a new property title in which the correct area size of the property would be written. By tradition, the political opposition claimed that this law is against the Greek Constitution, as by legalizing the extra built-up area there would be an increase of the area/floor ratio and thus an increase of the urban density of the city and according to the existing Greek case law any increase of urban density is supposed to have a negative impact on the environment and is not permitted according to the Greek Constitution.



Figure 1. Illegal room under the roof of the building (left); build-up semi-open areas within the ratified outline of the volume of the building (right). *Source: (Dimopoulou et al, 2007)*

However, this old fashioned approach in Greece is against the current global strategies for the adaptation and mitigation measures for climate change and environmental protection, which mainly encourage an increase of urban densities; e.g., “*we need to take immediate actions to make our cities more sustainable by revising our land-use plans, our transport modalities, and our building designs... to reduce traffic congestion, improve air and water quality, and reduce our ecological footprint. In that respect urban density is a key factor ... because less*

*energy is needed to heat, light, cool and fuel buildings in a compact city where most of the population commutes by public transit” (El Sioufi, 2010).*

In October 2009 after the national elections, simultaneously with the beginning of the economic crisis in Greece, Law 3843/2010 was prepared by the new government and adopted by the Greek parliament with the purpose to formalize only for a period of 40 years (not legalize), the violations that exist within the ratified outline of the volume of the building (Figure 1 right). By Law 3843/2010 the “Special Fund for Implementation of Zoning and Urban Plans” was renamed into “Green Fund” and the revenue of this fund was planned to be used for environmental and regeneration projects.

During 2010 and until September 2011 declaration submission of the above informalities was in fact optional and practically meaningless for the owners, as transactions and mortgages of properties in the planned areas with such minor informalities have been always permitted as there was no specific relevant legal binding instrument in place.



Figure 2. Informalities in the planned areas that do not exist within the ratified outline of the volume of the building, but can be formalized by Law 4014/2011

In September 2011, under the pressure of the economic crisis, Law 4014/2011 was adopted by the Greek parliament. The Law was supported by the majority of the members of the parliament of the two largest political parties. By this law, in an effort to make the submission of declaration of informalities within the planned areas obligatory government has decided that for any future property transaction (formal or informal) a declaration of the owner and a recent certificate signed by a private engineer after a recent on site inspection is required certifying that there is no informality in the real estate at the time of transaction (before any transaction the property owner must hire a private engineer to check the real situation of the construction with the permit in case of informalities and certify compliance. This on-site control must be done each the real property is transferred).

This measure is well accepted by the engineers however it means that transaction costs for any property are increased significantly regardless whether the property is legal or not, as the certificate is necessary anyway before any transaction, and generally the transaction procedure is becoming even more bureaucratic. This is against the global strategies for the economy and the real estate markets that require a reduction of the required time and costs for

the property transactions (World Bank, 2011). Recently, the relevant Minister has clarified that this certificate is not required in case of mortgages.

Law 4014/2011 also allows the formalization of planning and building informalities, only for a period of 30 years, of constructions which exist either within the planned areas (but are not within the volume of the building (Figure 1 left, Figure 2) or within the non-planned areas and lie on legally owned parcels (Figure 3) that are not within the “protected areas”. Within the 30 year period that those properties will be formalized in the non-planned areas, local authorities are expected to proceed with the compilation and implementation of the necessary city plans, otherwise owners of such properties will be asked to pay extremely high penalties in order to “buy” the necessary land and formalize again. For the region of Attika, for example, in order to build legally in the non-planned areas one needs a parcel of area size at least 2 ha, while the average parcel where such informal properties are build is 300-500 m<sup>2</sup>.

According to this law, for the next 30 years owners of these properties will not be asked to pay any additional formalization penalties for the illegalities that will declare now; connections with utilities will be provided (to those few that are still denied); and transactions will be permitted when the owner will pay all legalization fees in advance and receive the relevant certificate of formalization. Formalization fees are high but scalable depending on the year of construction, the zone value, and whether the property serves as first residence or not, and can be paid in instalments within the next 2.5 years. However, owners must hire engineers for the preparation of the necessary plans and documents (surveyors should prepare high accuracy surveying plans and civil engineers should inspect the construction’s stability and submit a standardized form).



Figure 3. Informal settlements in the non-planned areas in Keratea, Greece

Due to the crisis, by a revision of the draft law, 95% of the revenue of the “Green Fund” (such as the revenue derived from the formalization fees of build-up on semi-open areas, the informal buildings, the trade of emission rights and the environmental penalties) will be directed to the regular national budget.

Within the next 30 years if the municipalities will prepare detailed city plans these informal settlements will be finally legalized. The unfortunate situation in Greece is that this new

legislation is not accompanied with a reform of the planning system and procedures. Thus, both Law 3843/2010 and Law 4014/2011 have inherited the weaknesses of the Greek planning system (in terms e.g., complexity, confusion, bureaucracy) and instead of solving the problem in the informal areas new costs, mistrust and bureaucracy are added, the problem is simply postponed for 30 years with an uncertain future.

In addition formalization procedure is insecure, costly and long and with the current economic situation the success of this formalization project is questionable.

## **2.2. First statistics, public opinion and concerns**

Investigation of the first statistics and the opinions of those involved in the project is of significant interest. There are approximately 1.5 million small informalities in total within the planned areas; until recently only 655,000 declarations have been submitted for formalization according to Law 3843/2010. According to the Ministry, most declarations have been submitted in Athens, Eastern Attika, Thessaloniki, Creta, Evia, islands of Dodecanese, and Cyclades. The formalization fees for this project are estimated to be 5-11% of the tax value. The revenue until today is approximately 190 million €, while the originally expected revenue from formalization of the build-up on semi-open areas of the buildings was 800 million €.

Interviewed owners of properties that belong to the above category feel that they are forced to pay large amounts of money for formalization fees on top of all the other taxes the government enforces on real properties; they are willing to participate but unable to pay; the situation becomes absolutely unrealistic especially when existing housing loans, all new taxes and formalization fees must be paid simultaneously, within the same year.

The government extended the deadline for declaration submissions for one more month hoping to collect more declarations and formalization fees.

Formalization by Law 4014/2011 has started in September 2011 and is supposed to finish by the end of November 2011. This law refers to more than one million buildings mainly located in the non-planned areas all over Greece. However, by the end of October 2011 only 30,000 declarations have been submitted, which so far has brought revenue of only 6 million €. Greek government had announced a very optimistic estimation that this formalization project would bring about 600-700 million € revenue by the end of 2011. A rough analysis of the declared informal buildings shows that the majority of those declared are commercial constructions and a few expensive informal residences. This proves that so far only the wealthy owners declare their informal properties. However, the majority of the Greek owners of informal buildings cannot afford to pay fees due to severe salary reductions, increased prices, and increased income and property taxes. Many wonder what will then happen to the middle and low income owners of such informal houses who cannot afford to pay? What will happen to those informal settlements that exist on land claimed by the state? What will happen to the vulnerable groups, like some Roma (Potsiou et al, 2011), and to some minority who do not even have formal legal rights on land? This legislation does not have an inclusive character.



In addition, the governmental decision that directs 95% of the revenue of the “Green Fund” to the regular national budget instead of using this revenue to fund environmental improvements introduced a new high risk to the formalization project. According to the Greek case law this could be against the Greek Constitution and the whole project maybe locked at the Greek courts. Owners are aware of that risk; they understand that even if they declare the informality and even if they pay the formalization fees they may still be unable to formalize the property. It is obvious that even if everything goes well they will be scared to invest and improve these properties for the next 30 years. However, the responsible Minister of Environment, Energy and Climate Change has tried to comfort people by ensuring them that “*the Council of the State (Highest Court) understands the priorities of the country*”.

Interviews with local authorities in areas with informal development gave positive results; local authorities have long been struggling to upgrade the informal settlements and integrate them into the city plans; however, it is unclear how they will manage to find the necessary funds for the necessary future planning. Planning procedures need to be revised and property taxation revenue should be directed to local authorities to enable them to meet the needs.

Involved experts like engineers are supportive as this project creates new jobs for them. Much of the responsibility for the implementation of planning rules and regulations is now transferred to the private engineers. Engineers are asked to make a visual quality evaluation of the construction and to fill out and sign a standardized form about the stability of the building. The educational centre of the Technical Chamber of Greece has organized e-training courses to improve the engineers’ professional capacity in this field and to emphasize the importance of the professional ethics. The Ethic Code for engineers is reminded to those involved in this project; as the Ethic Code now replaces the state supervision and operates like a social contract between the individual professionals, the professional unions, the clients and the society the TCG is currently working on the Code’s revision. Engineers are asked to avoid unethical or unfair competition; they are reminded that any abuse of a dominant position is prohibited; they must inform the owners in a simple and understandable language; and they should also publish and share their knowledge and experience in order to improve the general capacity of the professional body.

Other local professionals like constructors and real estate agents have been interviewed, too. Most of the local constructors have been informally acting as real estate agents as well; the majority of them are against the formalization law; they are anxious to sell the semi-legal constructions they have under construction as fast as possible fearing a price decrease. As construction is long restricted in the non-planned areas and informal houses can not be legally transferred, so far the semi-legal constructions they manage to build are not too many and they are very expensive and profitable. Probably, through formalization a great number of properties are expected to be available in the formal market, which will increase the supply and the prices are expected to fall.

In general real estate market is heavily affected by the economic crisis in Greece. Local real estate agents informed that the market in informal areas is practically frozen since 30 years ago and in cases there was a sporadic transaction owners were in need and were always prepared to sell less than half of the “real value”. With Greeks facing the economic crisis

today only foreigners may be possible buyers in the Greek real estate market; this is happening in the areas close to the sea.

Finally, it was interesting to hear the view of some foreigners, potential buyers interested in buying single houses in the suburban coastal areas in Greece. In such areas a number of informal vacation houses exist, which by the formalization will be available for sale. The high formalization fees and the 30 years formalization duration is considered to be a great weakness though.

Their views can be summarized in the following statement made by a well informed foreigner for the purposes of this research: *“The sale of “protection” services has a long history in the major cities in the United States. A store or restaurant owner is approached by the neighbourhood boss of thugs and advised that without his protection the security of the enterprise cannot be guaranteed. Doubt on the part of the store-owner is dissuaded when his windows are blown out the next day. Protection will cost the proprietor a percentage of his gross (not net) income. It is extortion in its simplest form. Accordingly, I was astonished to read of the proposal of the Greek government to charge certain homeowners a fee (tax? penalty?) for protection against the demolishment of their houses for the next 30 years. It is extortion of a higher order.*

*The condition of “informal development”, i.e., the construction of buildings without building permits, or construction in otherwise banned areas such as a forest or coastal zone, is a recognized problem in Greece, the Balkans, Eastern Europe and in fact everywhere, in virtually every country (including Western Europe or U.S ). People circumvent bureaucracy and inconvenient public policy by taking the issue into their own hands to create their own housing. Much of this construction is of good quality, acceptable as to sanitation and safety requirements. It is also unrecorded in the local cadaster and is off the property tax rolls, cannot be mortgaged and carries the threat of public prosecution. The UN and the EU, as well as other organizations continue to study the problem; solutions include everything from demolishment of substandard or environmentally inappropriate construction to penalties and fees for final recognition and legalization. The Greek proposal is an example of this latter approach - except that what is offered to the homeowner, at significant cost, is protection for only a limited period. Telling a family that their home is safe for now, but may be reconsidered for demolishment 30 years hence - or for a new round of fees - is clear extortion-by-government.”*

### **3. ESTIMATION OF THE DEAD CAPITAL**

In 2009, inspired by Hernando de Soto’s theory (de Soto, 2000) the authors of this paper have initiated a research at the National Technical University of Athens in order to estimate the “dead capital” which is locked in the informal constructions in the non planned areas in Greece, in an effort to emphasize the need for an inclusive legalization project. The methodology followed includes a case study in an area with informal development, on site inspections and field work, interviews with local experts, professionals and local authorities and office work.

A case study area named Ag. Marina - Mikrolimano, in the municipality of Keratea was selected (Figure 3 left and Figure 4). The area of interest is a typical informally developed area without detailed plans. All parcels are legally owned but due to their small size it is not possible to obtain building permit. However, also due to their small size it is not possible to be used for farming. However, subdivision of rural land was permitted in the past. As this area is close to the capital city and by the seaside, in the General Urban Plan it is planned to be a vacation area appropriate for second –vacation residences. As the planning process is too slow the only pragmatic solution for land owners is the informal housing. The total area size of this community is 170 ha and the registered permanent population is 142 inhabitants; however in the summer time the population is up to 2000 inhabitants. The area is mainly used for vacation purposes but gradually it becomes a permanent-residence area. The majority of the buildings are informal constructions.

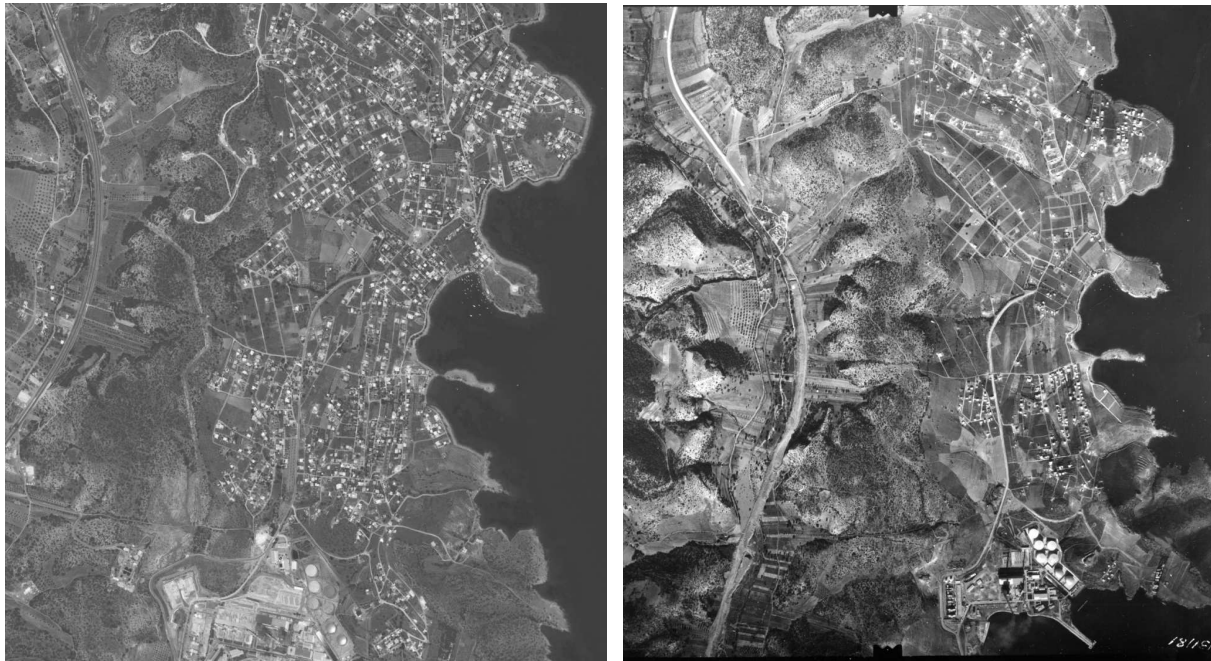


Figure 4. Satellite image (WorldView 1) of the case study area of 2009 (left) and aerial photo of 1980 (right)

The area is still non-planned; however the municipality in 2006 has managed to finish the necessary cadastral map in order to proceed with the compilation of a detailed city plan.

The majority of informal settlements in Greece are similar constructions with similar problems, in sub-urban and coastal areas without detailed plans. Some of them are in areas where a General Urban Plan is already ratified, some others not. If the General Urban Plan is missing then this has to be finished first and the detailed plan follows. This procedure may last more than 30 years.

The case of Keratea is a good sample area for this kind of research and results derived from this research can be easily applied to the rest of the cases. Unfortunately there are no general maps showing the areas that are already covered by General Urban Plans and detailed city

plans in Greece. Some of the plans are in analog form, some other in digital form all scattered in the various municipalities. Currently the responsible Ministry is making an effort to collect all these plans and overlap those with the recently compiled forest maps; this is a very cumbersome task. It is roughly estimated that over 1,000,000 informal constructions all over Greece belong to this category.

The local authority has provided the digital cadastral map in CAD format (Figure 5 left) to facilitate this research. Additional data used are airphotos of the area of 1980, a recent orthophoto derived from KTIMATOLOGIO SA and a satellite image of 2009. The cadastral map was edited in a GIS environment.

The total number of parcels in the area under study is 2,433; 62% of them are not developed and 38% have a building. The total area size of the parcels is 123.5 ha. Figure 5 (right) shows the percentage of parcels according to their area size in m<sup>2</sup>. It is shown that 99% of the parcels are less than 0.4 ha (the minimum required parcel size in order to acquire a building permit); while 71% of the parcels are smaller than 500m<sup>2</sup>. This is a typical pattern in the greater Attika region.

The number of buildings in the study area is 1736. Of them 83.8% are one-storey constructions, 15.6% two-storey and 0.6% three-storey. The majority of the buildings are smaller than 200m<sup>2</sup> (95.7%). The total build up area size is 106,229m<sup>2</sup>.

A data base was created in order first to calculate the total “non-taxed” tax value in the area under study. The data base was structured according to the standardized procedure used by the tax office for the calculation of the tax value of land in the non-planned areas or for settlements where no specific building regulations exist. It should be clarified here that according to existing legislation in Greece only the developed rural parcels (those that have buildings) must be taxed; other rural parcels are not supposed to be declared and taxed.

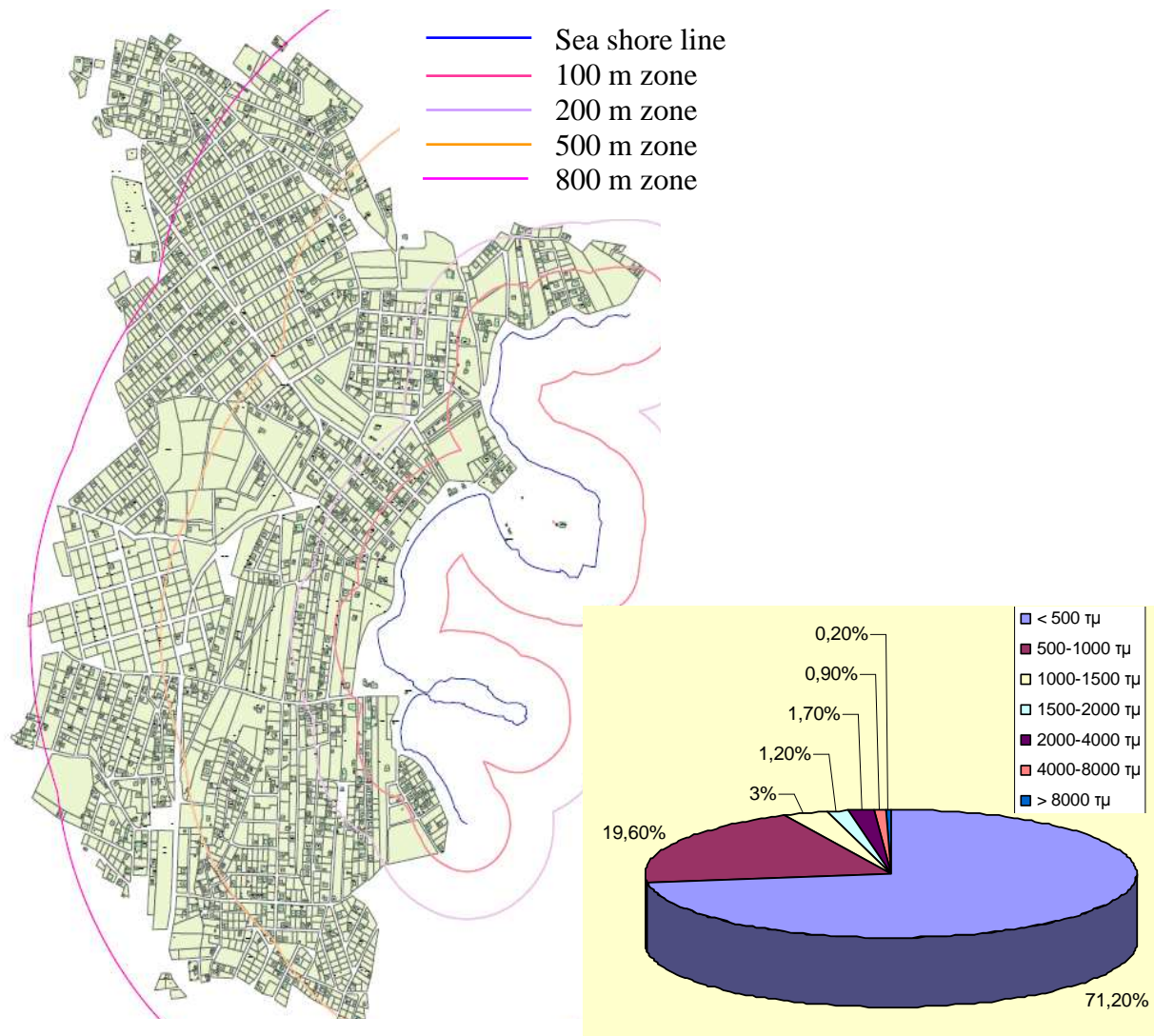


Figure 5. Left: Cadastral map with buffer zones according to the distance from the sea. Right: Distribution of buildings according to their size

### 3.1 Total tax value in the area under study

According to the tax office the tax value of land is the sum of the following three parts:

a) the Basic Land Value (BLV), which is determined by multiplying the area size of the parcel by the initial basic value (IBV), and by the land-use coefficient. The initial basic value is the tax value per m<sup>2</sup> determined by the tax office, which depends on the location, distance from the sea (with a scalable value) and access to a specific national or regional road. The land-use coefficient depends on the land-use category, e.g., agricultural land, trees or annual cultivations, irrigated or not; pastures; rocks; forests; mines; and other special commercial uses. The land-use coefficient value varies from 1.0-1.8. In the study area the IBV varies as following:

- 15.50 € for a distance up to 100m from the sea
- 13.00 € for a distance between 100m -200m
- 13.00 € for a distance between 200m-500m
- 11.00 € for a distance between 500m -800m
- 6.00 € for a distance more than 800m

Zones (buffers) of a distance of 100, 200, 500 and 800 m from the sea shore were created (Figure 5 left). All parcels in the study area are considered to be not irrigated (according to regulations as they are served by a network of drinking water), agricultural land with annual cultivation; so the land-use coefficient is 1.0.

$$BLV = \text{Parcel Area Size } m^2 \times IBV \times \text{land-use coefficient} \quad (1)$$

b) the Plot Land Value (PLV), which is determined only if the parcel is developed and only if the area size of the building is larger than 15m<sup>2</sup>. The PLV is calculated by multiplying the initial plot value (IPV) (determined by the tax office and depending on the location), by the building area size, by the use of the building coefficient (UCB) (which varies between 0.40 (for agricultural use) and 1.20 (for commercial use) and for houses it gets the value 1.0), and by the specific coefficients (SC). The specific coefficients are applied on the following specific cases: for building older than 30 years (0.50), for rough construction made of mud-bricks and/ or roof made by plates or other cheap material (0.50), for buildings that are not connected to electricity (0.90) or water utilities (0.95), for buildings half-damaged by natural hazards (0.80).

In the case study area the IPV is 150.00€; all buildings in the study area are connected with electricity and water utilities. Buildings older than 30 years in the study area have been located by comparing the airphotos of 1980 with the recent ones.

$$PLV = IPV \times \text{Building Area Size } m^2 \times UCB \times SC \quad (2)$$

c) the Value of Further Development (VFD), which is determined only for those parcels that can be further developed according to existing zoning and planning regulations. In the study area anyway no development is permitted as 99% of the buildings are constructed in parcels smaller than 0,4ha, so VFD=0.

For the estimation of the tax value of each parcel the sum of the above values may need to be multiplied by specific coefficients in the following cases:

- Existence of “co-ownership” rights (coefficient value 0.9). Due to lack of relevant data for this study it was considered that owners of all parcels had “100% ownership” (there is no co-owner).
- Access to national, regional, rural or private road. This coefficient varies from 1.3 up to 0.9. The existing road network in the study area is a municipal network and in such case for all parcels that have access to this network the relevant coefficient gets the value 1.1 (except of some specific cases that are parcels without access to a road; in such cases the relevant co-efficient gets the value 0.9)
- Minimum distance of the parcel from the sea smaller than 800m. This coefficient varies from 1.8 up to 1.0.

- If the parcel is under expropriation; this coefficient is 0.5. No parcel in the study area belongs to this category.

$$V_{\text{tax land}} = (\text{BLV} + \text{PLV} + \text{VFD}) \times \text{Specific coefficients} \quad (3)$$

According to the above analysis the calculated total tax value of all individual land parcels in the study area is calculated:  $V_{\text{tax land}} = 44$  million €

This asset should theoretically be taxed but as the constructions are illegal, undeclared and invisible until today it is not.

### 3.2. The real “dead capital” locked in informal developments in the non planned areas

In the following an attempt is made to estimate the dead capital that is locked in the study area. According to information derived from the local real estate agents the market value of the parcels in the greater area is approximately 100 €/m<sup>2</sup>. So, the total market value of the land under study is 123,500,000 €.

Construction costs for the illegal constructions are higher due to the risk undertaken by the constructor (if arrested on site he will be imprisoned). For example while the regular costs for the concrete parts of the constructions is 240 €/m<sup>3</sup>, informal concrete construction costs are double (480 €/m<sup>3</sup>). The cost is doubled due to corruption. However, this is limited only to the concrete parts of the construction and not to all other material costs. So, the total construction cost of an informal building is estimated to be 1.5 times higher than the regular costs. Through the field work the buildings in the area have been classified into three categories according to their construction quality. The total construction cost for each category is estimated as following:

- Good quality: 1,100 €/m<sup>2</sup>
- Medium quality: 900 €/m<sup>2</sup>
- Bad quality: 700 €/m<sup>2</sup>

A classification of all the buildings in the area of interest according to their construction time was attempted by interpretation of aerial photos of various years. It is noticed that a classification of all buildings in three categories according to their age shows that there is much overlap with the classification according to the building quality. An explanation could be that owners of informal buildings hesitate to invest on construction improvements due to the risk of demolition. Few exceptions were noticed. For the purposes of this research it was then decided to merge these two classifications into one (Table 1). So, buildings of good quality will have age co-efficient 0.80; buildings of medium quality 0.70; and buildings of bad quality 0.60. For this study informal constructions build before 1983 are not demolished and can be transferred so they are not included in the estimation of the total dead capital (however according to law 4014/2011 these building must be formalized, too).

An example of the estimation of the dead capital locked in the individual property shown in Figure 6 is given below. The parcel size is 304.3 m<sup>2</sup> and the build up area size (2-storey building) is 183.8 m<sup>2</sup>.



Figure 6. Informal building in the study area

It is considered that the “dead” capital is the potential market value of the real estate if legalized. This is the sum of the market value of land (according to the available market data in the greater area) plus the construction costs (as there is no market data available).

“Dead” Capital = Market value of land + Construction costs

where: Market value of land = Parcel size x Value of land/m<sup>2</sup>  
 $= 304.3 \text{ m}^2 \times 100 \text{ €/m}^2 = 30,430 \text{ €}$

Construction costs = Build up area size x Construction cost/m<sup>2</sup> x Coefficient of age  
 $= 183.8 \text{ m}^2 \times 1,100 \text{ €/m}^2 \times 0.80 \text{ (coefficient of age)} = 202,180 \text{ €}$

So: “Dead” capital = 232,610 €; the amount of money the owner has invested in the property  
 Real property tax value = 49,608 €; estimated according to the tax procedure.

This procedure was followed in order to estimate the dead capital locked in all individual buildings in the area under study. The estimate of the total dead capital in the study area is given below.

On site inspections for the classification of the constructions in the area under study have shown that:

Good quality buildings:	25.1% of the total number of buildings
Medium quality buildings:	46.3%
Bad quality buildings:	28.6%

The total cost of construction is 67,610 million € (Table 1). The total market value of land of the developed parcels in the study area is:  $100 \text{ €/m}^2 \times (123.5 \text{ ha} \times 0.38) = 40 \text{ million €}$

The “Dead” Capital for the study area is:

“Dead” Capital = Market value of land + Construction costs = 67,61 + 40 = 107,67 million €



Building quality	Construction cost €/m <sup>2</sup>	Building age coefficient	Building area m <sup>2</sup>	Market value of construction
Good	1,100	0.80	26,663	23,463 M€
Medium	900	0.70	49,821	31,387 M€
Bad	700	0.60	30,381	12,760 M€
Total Market value of Constructions				67,610 M€

Table 1. Estimate of the total market value of the constructions in the study area

For the whole Greece, a rough estimation gives:

- The estimated “Dead” Capital for approximate 1 million informal constructions in the non planned areas is ~ 72 billion €. This asset is not mortgaged, not taxed and cannot be transferred until today.
- If government decides an increase of the tax values in such areas so that the tax value will be ½ of the market value, the tax value will be 36 billion €
- With a legalization fee ~7% of tax value (proposed by the authors) the expected revenue could be up to ~2.5 billion €. To this sum all other loss of revenue should be added due to loss of annual property taxes, loss of transaction fees, loss of investment for further environmental improvements (green real estate), loss of job positions, etc.

#### 4. CONCLUSIONS-PROPOSALS

The municipality of Keratea and all other municipalities all over the country that cannot afford to provide detailed plans in their neighborhoods according to market needs have a significant economic impact as the real estate market is blocked. Greek citizens are expected to pay high fees for a formalization project that has an unknown future. Moreover expected results are questionable due to the current economic crisis. The formalization project should be accompanied with a revision of the planning procedures and zoning regulations and construction permitting in Greece. Legalization should be coordinated with other major projects, too, like the cadastre and the compilation of the forest maps. Building permit requirements need to be simplified to prevent duplication of surveying activities.

By this research authors wish to emphasize the need for an integrated strategy aiming to a clear and inclusive legalization of informal development in Greece which requires a legal reform, too. Legalization should be permanent and affordable to all. Attention should be paid to eliminate the broader economic impacts of informal development, to implement a more fair property taxation, and to acquiring the public trust.

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## REFERENCES

- Augustinus, C., Potsiou, C., 2011. Informal Urban Development in Europe. In: *Proceedings of the FIG Working Week 2011*, Marrakech, Morocco,  
[http://www.fig.net/pub/fig2011/ppt/ts07g/ts07g\\_augustinus\\_potsiou\\_5192\\_ppt.pdf](http://www.fig.net/pub/fig2011/ppt/ts07g/ts07g_augustinus_potsiou_5192_ppt.pdf)
- De Soto, H, 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. Basic Books, 2000. ISBN 0-465-01614-6.
- Dimopoulou, E., Zentelis, P., 2007. Informal settlements within a spatial development framework. In: *Proceedings of Joint FIG Commission 3, UN/ECE Working Party on Land Administration and UN/ECE Committee on Housing and Land Management Workshop*, Sounio, Greece (unpaginated CD-ROM).
- El Sioufi, M., 2010. Climate Change and Sustainable Cities: Major Challenges Facing Cities and Urban Settlements in the Coming Decades. In: *Proceedings of the XXIV FIG International Conference 2010*, Sydney, Australia,  
[http://www.fig.net/pub/fig2010/papers/ps03/ps03\\_elsioufi\\_4658.pdf](http://www.fig.net/pub/fig2010/papers/ps03/ps03_elsioufi_4658.pdf)
- Potsiou, C., 2010. *Informal Urban Development in Europe. Experiences from Albania and Greece*, Full Version, FIG, UN HABITAT, GLTN, Technical Chamber of Greece, p.116.
- Potsiou, C., Basiouka, S., 2010. Land expropriation in Greece - A case study for Road Networks. In: *Proceedings of the Joint FIG Commission 3 and Commission 7 Workshop*, Sofia, Bulgaria.
- Potsiou, C., Dimitriadi, 2008. Tools for Legal Integration and Regeneration of Informal Development in Greece: A Research Study in the Municipality of Keratea. *Surveying and Land Information Science (SaLIS)*, vol. 68 (2), pp. 103-118.
- Potsiou, C., Dimopoulou, E., 2011. Access to Land and Legal Rights on Land and Housing Aspects of Greek Roma. In: *Proceedings of the FIG Commission 3 Workshop 2011*, Paris.
- Potsiou, C., Ioannidis, C., 2006. Informal settlements in Greece: The mystery of missing information and the difficulty of their integration into a legal framework. In: *Proceedings of the 5<sup>th</sup> FIG Regional Conference*, Accra, Ghana,  
[http://www.fig.net/pub/accra/papers/ts03/ts03\\_04\\_potsiou\\_ioannidis.pdf](http://www.fig.net/pub/accra/papers/ts03/ts03_04_potsiou_ioannidis.pdf)
- Tsenkova, S., Potsiou, C., Badyina, A., 2009. *Self-Made Cities*. United Nations Publications. ISBN 978-92-1-117005-4., p. 113.
- World Bank, 2011. *Doing Business 2011 - Making a difference for entrepreneurs*. p. 267,  
<http://www.doingbusiness.org/~media/FPDKM/Doing%20Business/Documents/Annual-Reports/English/DB11-FullReport.pdf>

## **BIOGRAPHICAL NOTES**

### **Chryssy POTSIOU**

Dr Surveyor Engineer, Ass. Professor, School of Rural & Surveying Engineering, National Technical University of Athens, in the field of Cadastre and Spatial Information Management. FIG Commission 3 chair (2007-2010). FIG Vice President (2011-2014). Elected bureau member of the UN ECE Working Party for Land Administration (2001-2013), member of the management board of KTIMATOLOGIO SA; elected bureau member of HellasGIs and the Hellenic Photogrammetric and Remote Sensing Society.

### **Ifigenie BOULAKA**

Surveying Engineer, graduated from National Technical University of Athens in 2010, working in the private sector.

## **CONTACTS**

Ass. Professor Dr Chryssy POTSIOU  
School of Rural & Surveying Engineering, National Technical University of Athens  
9 Iroon Polytechniou St.  
Athens  
GREECE  
Tel. +302107722688  
Fax +302107722677  
Email: chryssyp@survey.ntua.gr