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Integration of urban agriculture in public areas. The case of the ex-military camp “Karatassiou” in Thessaloniki

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Abstract. The increase in interest in urban cultivation of edible eco-products has been the principle of the creation of movements and various groups of initiatives with a focus on agriculture, public health and information. Their aim is to return to nature, address the nutritional economy, organic nutrition, social relationships, and acquire specialist knowledge. The claim for the creation of urban agriculture areas such as public gardens and more specifically in inactive camps is based on ecologically sustainable and socially equitable development, the use of available natural resources in a sustainable manner and the rehabilitation of the bioclimatic intervention site.

As a case study was selected, the inactive camp (area of 689.000 m²), where the self-managed venture of the group "Peri-urban Cultivators" was developed. The aim is, to acquire a triple role in the area: green vegetable garden, recreation area and leisure park, without disturbing the historicity. The proposal is based on the principle of simplicity, using native flora, recyclable and eco-friendly materials and the existing infrastructure. Particular gravity was given to preserve the existing balance of space, with the functions, which have developed over time.

The elements of originality of the present work are identified by the use of more methodological tools such as: recording and analysis of existing state of the site, processing of questionnaires distributed to the self-managing group of growers and lastly, the processing of results from the open consultation of the municipality with the society the future sustainable development of the site.

Questions were used with elements of landscape architecture design focusing on: approaching the view of the general ecological park design and expanding and shaping the vegetable gardens with social and sustainable criteria. The results of the survey were elaborated using the statistical program S.P.S.S. highlighting the bases for a balanced proposal to redevelop an inactive camp. The research has highlighted the mistakes of the past in many areas and has mobilized the world with the aim of surviving or improving its life, in terms of quality and not just quantity. It also highlighted the sensitivity of the world to the environment and its preference for the use of eco-products.

1. Introduction

The landscape is the mirror of society and, at the same time, architectural landscape projects are also social. Modern perception supports that the landscape is treated as a living organism, whose structure and character are the product of interaction between its organic and inorganic elements [1]. The



subject of this paper addresses issues such as the effects of urbanization, engagement with the earth, the coverage of essential species of survival due to a nutritional issue amidst the crisis, the integration of sustainability into everyday life, the interaction of society with the urban economy, the growth of green spaces, the role of the movements yesterday and today, etc. which use the science of Landscape Architecture as a field of action.

Health benefits from a green urban space have been investigated and presented in a study [16], which states that urban construction works (not in their mild form), and urban development projects may be costly and may have an impact on the health of residents, so it is considered necessary to re-approach urban planning, with appropriate documentation [18]. The sudden increase in interest in the cultivation of edible goods, within cities, was the beginning of the creation of movements and various groups of initiatives with a focus on agriculture, public health and information. The result of their activities is the return to nature, the treatment of the food economy, organic nutrition, new acquaintances and the acquisition of special knowledge. The public bodies which have undertaken to set up organized farming areas have offered these premises to residents who have a low income or do not have their own free space [9][14].

Urban Agriculture is among other things, a movement that can help solve problems which exist in modern societies. There are a number of prerequisites namely, the active participation of citizens who are characterized by environmental sensitivity, they must be aware of the seriousness of the issues which exist and they must also have the skills, but above all, the will, to promote changes in order to solve problems[3]. The need to create urban farming areas such as vegetable gardens in public places and more specifically in inactive Army Camps aims at sustainable development with the use of bioclimatic elements and renewable energy sources, as well as the use of special planting for the sanitation of the intervention area. These are factors that are imposed by the science of landscape architecture on any design.

Urban cultivation is usually carried out through various Community bodies. When the venture is successful, these community efforts are effective thus empowering the spirit and cohesion of the neighborhood. The neighborhoods which offer urban crops in general, have higher levels of social interaction and greater security, because in part, activity takes place in the streets rather than behind closed doors. Neighbors tend to share the success of the business and often the products they produce. [25]. Gardens and areas of urban cultivation are part of our history. New styles have appeared under different names: community gardens, guerrilla gardens, intercultural gardens, ecological gardening plots, etc. All of the aforementioned have had an impact on urban planning and have played a valuable role in urban development. Vegetable gardens combat the monotony of residential areas, reduce noise, filter the air, provide shelter for the flora and fauna in cities, bring nature closer to the human race and create relationships between neighbors. It is a 'natural medicine' for moral and physical health. It is a source of happiness and self-realization [6] [17].

As a case study, the inactive Karatasiou Army Camp was selected, as in the past few years the Peri-urban Cultivators project (PER.KA.) was developed as a "self-managed park" and therefore the study area has a dual role, the vegetable garden and the recreation of the park, while at the same time it maintains a balance between the two. With the support of the local Cultural Association, the group began cultivating in a small part of land out of a total area of 689 acres of inactive land in the Army Camp of Karatassos. This cultivation of land is non-profit, it covers part of the group's needs, supports vulnerable social groups and is based on the principles of biological, biodynamic or natural cultivation using traditional seeds and plants, while at the same time it helps people enjoy the benefits of engaging with the land and coming into contact with the earth. The food produced is clean, safe and beneficial for the human body, while at the same time there is respect for the flora and fauna that has developed, in the area, in recent years [29].

Initially, sources of pollution in the camp were lubricants and asbestos. In particular, the overburdened land was found at the places where the motor vehicle garages and buildings with broken

asbestos slabs existed. The competent Deputy Mayor and the President of the PER.KA confirm that, in the beginning, soil samples were collected from the garage spots and sent to a Canadian laboratory, to check the dangerousness and to evaluate the cultivation value of the land. The answer asserted that no harmful factors were detected but that the soil was extremely poor in nutrients. Subsequently, the Municipality proceeded with soil remediation, replacing the poor soil with a suitable one, at a depth of 30 cm. The project to remove asbestos slabs was launched in July 2016 in the 'Green Fund' financial program. Today, there is no other source of pollution, and soil control is planned in the vegetable garden at regular intervals.

An important and integral element of this research is the southern physical delimitation of the camp, the stream "Xiropotamos". It is one of the most important natural ecosystems that have remained in the city of Thessaloniki. Its dense and bushy vegetation is very important as it contributes to the continuous flow of water [7]. The proximity of the Army Camp with Xiropotamos allows for environmental intervention within its boundaries without violating its military character [10]. The area of the Byzantine watermills (located along Xiropotamos) could be united with the former Karatassios Army Camp and this could create a larger area of environmental protection and civilization. A similar proposal comes from Panos Theodorides in 1995 who proposed that the coexistence of a large part of the Byzantine watermills should be exploited in connection with the peripheral road of Thessaloniki, and that a path for hikers should be created which will show off all the historical monuments of the city, starting from Retziki [8].

2. Research Methodology

A questionnaire was constructed and distributed. It consisted of questions which dealt with basic elements of the landscape design, focusing on two points: the approach to the view of the general ecological park design and the extension and shaping of the vegetable gardens with social and sustainable criteria. Thus, this research was divided into three parts, i.e. reference is made to personal data, to the vegetable gardens and, in general, to the camp and the use of ecological materials [2] [4].

For the data-gathering process the following methods were used following specific steps as recorded in the flowchart:

1. Bibliography (review of the relevant literature from electronic libraries, bookstores and university libraries).
2. Archives (magazines and articles).
3. The Internet (dissertations, books, articles on websites, etc.).
4. Initially, personal discussions and then, distribution of questionnaires to people who participated in the cultivation of the aforementioned land (PER.KA).
5. A collection of proposals for the management of the study area by various organizations and scientists, in collaboration with the Municipality of Pavlos Melas.
6. A visit to the site to discuss upon the content of the questionnaires and to photograph and record the existing situation.
7. Geo-spatial data from google earth, as it was not possible to obtain a topographic map due to the particular status of the camp.

The first contact with Periurban Growers (PER.KA) took place in the General Assembly of the group, in 2017, in the area of Spores, which is operated by the PER.KA. Several visits followed on the site and the infrastructure of the area was analyzed, identifying its strengths and weaknesses, as well as, its short comes. Thereafter, the data which was gathered was analyzed thus drawing valuable conclusions as to what the region needs and what can be done. The valid answers to the questionnaires were entered in the Microsoft's Excel spreadsheet. The necessary corrections were made, the replicative responses were expressed numerically, and then the data was forwarded to the IBM's Statistical Package for Social Sciences (SPSS23) so that statistical analysis of the data could be performed.

By compiling a questionnaire and by processing the responses, the researcher, cannot guarantee the degree of validity, accuracy and reliability that is often unknown without proper Reliability Analysis [13].

Various methods of finding the degree of reliability are reported in the international literature. Reliability is inextricably linked to validity. There is no validity without credibility. However, credibility does not depend on prestige [24]. It is true that the validity of a survey is as important as the content of validity, the criterion of validity and its conceptual construction [23]. In this case, the Cronbach's alpha reliability method was used. As was derived from the results, Cronbach's Alpha = 0.637 is greater than the acceptable reliability limit of 0.5 [13]. The chi square test of independence was then tested and its value result was $p = 0.178$, so the initial hypothesis was confirmed.

Finally, after combining all the data collected, a master plan based on the institution of urban agriculture and landscape architecture emerged, to improve the quality of life of the residents, to create places of interest for many categories of citizens, to use ecological materials, to create venues for various movements and groups, to contribute to the protection of the environment, to promote sustainable development and the dissemination of solidarity [5] [21].

3. Results

An important element deriving from the results of the analysis of the questionnaires is that the male sex (62%) prevails in the PER.KA group. In addition, the level of education showed that, to a greater extent, PER.KA cultivators of the aforementioned land have a higher education and that an overwhelming majority (83%) live permanently in the municipality area in which the vegetable gardens are established. Regarding their incentives to participate in the construction of urban vegetable gardens, at the level of priorities, self-production and contact with nature prevail. It is worth mentioning that the construction of the first vegetable farm "PER.KA1" (2011), consisted of two large pieces of land (100 and 200 square meters each) which were cultivated, and production was distributed to the Social Grocery of the Municipality of Pavlos Melas, the Immigration Hang Out Place and various churches [12] [20].

From the present research in the area of PER.KA it appears that: The majority of the people who responded (as aforementioned) were males (75%) and their age group was between 46-65 years of age (60%). People who cultivated the land and were also active in the work force were also those who responded to a higher degree (60%), and for most of them it was the first-time they engaged in urban agriculture (65%). An impressive result is that they do not grow crops for economic reasons (65%) but they are interested in quality food (95%). Those who responded also mentioned that they didn't see the cultivation of the specific land as a hobby nor did they do it to keep physically fit. They have been growing their vegetables for more than 3 years (60%) and also visit the site four times a week (65%). The respondents who cultivated the land, consider the existing infrastructure to be insufficient (50%), and would not want lighting (85%) but would like to have sanitary facilities (65%) and drinking water (60%). They believe that the area they cultivate is enough (65%), although some responded that they would like to expand their cultivation space a little more (45%). Those questioned were not interested in plant-fencing (65%) and corridor infrastructure (80%), while they are interested in organized compost production (95%). Most visit the Army Camp a few times a month (60%), not to do any kind of sport activities (60%) but to do some walking (70%). They also prefer to simply pay a visit to the recreational camp (60%) rather than to participate in organized activities (70%). They want mild interventions such as drinking water (85%), living rooms (65%), waste baskets (60%), recreation areas (90%), and a cycling track (55%). Most want the camp to undergo moderate interventions with the use of ecological materials (90%) and to include spots which will offer drinkable water (55%). Configuration matters show that, most participants chose to create spaces for environmental activities (75%), while a children's play area was not selected as an option (60%) as these already existed in a new playground which is situated at the main entrance of the site.

A study of the proposals placed forth by the Municipality, showed that some of these proposals touched common ground with those proposed by the people who cultivated the land. These common proposals were the ones which determined the final design proposal. Some of the basic common proposals are:

- the desire for minimum interventions with respect to the natural and residential environment.
- the need to attract visitors and activities to make the site "livelier" for most of the day, for reasons of preservation, protection and security.
- the use of natural materials such as wood and stones in place of plastic and building materials such as cement.
- the prohibition of permanent structures or temporary large structures.
- the handing over of Karatassos Park to the local Municipality of Pavlos Melas, in order for the Municipality to make use of it as an unstructured and free space of green, recreation, culture and sports.
- the evolution of the existing peri-urban crops area into a municipal peri-urban crops area using the functional model which already exists.
- the desire for: recreation areas, social services and activities, water bodies, sand paths, camping sites which will facilitate the local economy with the so-called alternative forms of tourism, as well as other tourists who may be visiting the city and who may want to visit the site, an amphitheater for events, refreshments, forests with evergreen trees and the removal of foreign vegetation, the redevelopment of Xiropotamos and other interventions that do not alter the historical and peri-urban character of the area.

Considering the results of the full survey, it is proposed to separate the Army Camp into detached mild functional spaces without any interference in the initial facet of the camp. A positive element is the soil morphology which helps to design the new uses of the site, as it has a slight sloping surface and scattered small hillsides. The building equipment, which will be maintained and restored, is sufficient for the uses proposed. The physical properties of the surfaces and the building materials which will be used will be environmentally friendly, and very economical in their maintenance, and the infrastructure and some additions which will be required will not have the characteristics of a heavy and permanent construction.

In particular, for the inactive camp of Karatassiou some interventions are suggested rather than a general regeneration. The area is strongly connected to modern history for national purposes and has recorded modern national struggles including the struggle to claim the land so as to turn it into a free green space, as well as for survival purposes which derived from the economic deficits caused by globalization. These types of areas should not go through radical intervention but should be kept alive contrary to any form of oblivion. Also, due to a lack of resources, redesigns in the form of radical interventions have been proposed from time to time, these interventions would alter the physical and historical elements of the camp, thus they remained on paper because the site would be degraded as these interventions would have a negative impact on the local community.

In detail, the interventions proposed, as shown in Figure 1, are:

- The promotion and expansion of the cultivated area of PER.KA., as a minimal recognition of the significance of the enterprise which contains elements of the modern Greek society which is going through an economic crisis. Some interventions proposed which will go beyond growing arable land are related to recycling, organic fertilizer production, recreational sites and an amphitheater for events using ecological materials. The playground near the main entrance of the camp is relatively new and with a very minimal maintenance it can provide important recreational activities for children. Its location, which is basically next to the

activities provided by PER.KA., can help develop the imagination and knowledge of the children using it.

- The establishment of a refreshment center, in the central part of the park, can serve peri-urban growers and visitors of the site, camping guests, employees and service visitors and of course the athletes who will use the football stadium, the sprinters/runners, hikers, etc.
- The creation of a camp with high vegetation, near the entrance of the Park, with access to the main road and public transport, near a residential area, with buildings which are in a good condition and which will receive the appropriate internal and external arrangements with a view to their conversion into accommodation. The surrounding area of the camp will include kiosks, lounges, a fountain with tap water, trash cans, wooden information boards.
- The creation of spaces with fruit trees in a cannabis. An area around the church area will be referred to as a "meadow with fruit trees" that will pleasantly surprise the visitor in the spring and autumn.
- A forest of oak trees and other local trees will be created in the northwestern part of the park. In the south, an area of low herbaceous vegetation will be formed which will have a view of the green stream of "Xiropotamos" and of the water element which will be added.
- Another important intervention on the western side adjacent to the Ring Road, will be the planting of a combination of trees and shrubs to achieve noise reduction. To achieve the effect of sound protection there should be compact vegetation from the ground level without gaps, using planting species of different types. The tree-lined clusters will be strengthened around the Park as a natural enclosure that will create an acoustic wall along the length of the river of Xiropotamos.
- Recreation areas will be created in places where there is a need to enhance the field of view and increase area for events with low planting that will include fragrant plants that do not require any particular maintenance.
- A lake-surface water will be created in the forest area by calculating the possibility of restoration of the surface waters of the wider region and their exploitation. In this way there will be a better storage and drainage of rainwater. At the same time, this intervention will help develop new habitats, delineate an oasis of absolute calm, and regulate the microclimate by reducing temperatures throughout the area.
- As concerning Xiropotamos, it is proposed that the wider area of the stream of Xiropotamos, in the southern zone of the former Army Camp of Karatassios, will be reconstructed by creating an artificial lake and suitable planting with aquatic species which will be derived from the local flora, which at the same time function as sanitizers, in connection with the restoration of the natural operation of the stream [22]. This means that more pine trees, as well as other indigenous tree species of the area, such as oak trees (with a particular emphasis on the historical spiny oak), aliases, half-timbers, elms, walnuts, almonds and hems, will be planted. Some sites may be preserved as grassland ecosystems, but a dense oak tree planting should also be attempted in the center of the area [8].
- A bicycle runway that will cross the park and follow the course of the stream to connect points of interest will be a target for young people and a challenge for the grown-ups.
- It is proposed to accommodate organizations, which have a social, environmental, and solidarity character such as social clinics, 'without intermediaries', as well as cultural associations, voluntary groups, environmental clubs, etc., in already existing buildings.
- As concerning the basic infrastructure, it is proposed that we install an extended wi-fi network for young people who want to 'surf' in nature.
- Water management systems and water bodies should operate in many places, water collection systems for irrigation such as rainwater collection cisterns should be placed at designated

points, especially in areas where there is a high-water supply and adequate ground inclination.

Rain gardens will also be created to filter and clean the rainwater naturally.

With this proposal, no concrete will be added, no green vegetation will be removed, and the message for "only peaceful uses of military landscapes" will be reinforced.



Figure 1. Proposal for new uses, according to the results of research.

4. Concluding Remarks

The main prerequisite for the sustainable development of Greek cities is the preservation of all unstructured public spaces. One of the key factors in implementing this policy is the 'handing over' of all inactive Army Camps to society and more specifically to the Local Government. Urban agriculture is the cultivation of edible species within the urban fabric of the city. The idea of growing in public places is an old activity that has been based on important issues such as fighting a financial crisis and access to healthy food. The interest in urban crops is constantly increasing, while in many European and non-urban cities [27], people concerned with vegetable growing and scientists are now at the implementation stage of new methods of urban agriculture such as crops on vertical surfaces, shelters, water irrigation, etc. [26]

As mentioned earlier, the master plan was based on the proposals of the citizens, the proposals which came from PER.KA., the administration of the Municipality and the principles of sustainable design formulated for public spaces / camps [19]. Besides being an ecological treasure, an Army Camp (active or inactive) can accommodate other compatible activities such as edible gardens. It is well known that a consequence of the war is the creation of refugees and immigrants. They are those people with an unknown destination, an uncertain future and with little hope of returning home, they are transported to camps and housed in tents or improvised shelters. Under strange and harsh conditions, some of these refugees are now turning to the cultivation of edible food types.

The crisis of recent years has promoted the business of urban agriculture and has forced the State to listen to people's needs and changes in lifestyle. The present study gave residents of the area the opportunity to voice their opinion and to put forth to the public their sensitivities and concerns about the camp site.

The most important conclusions which were drawn from the results of this research are:

- That the main reason why people occupy themselves with urban cultivation is the production of edible products and contact with nature. This highlights the 'violent' return of man to nature.
- Also, the fact that there is an impressive percentage of people who cultivate the soil because they are interested in the production of edible products of high quality, hence they place emphasis mainly on high quality, not high quantity.
- The largest percentage of inhabitants want the mild redevelopment of the inactive Army Camp, so green must not be removed and cement must not be added, but environmentally friendly materials used be used.
- That there is need and desire for the coexistence of many social groups and solidarity support.

In addition, the main features of the master plan are the organic integration of Xiropotamos, the balanced spatial performance of both urban cultivation and urban forests and the creation of a small lake that regulates the ecosystem of the site.

Finally, some proposals for further study could be mentioned:

- The proposal to Investigate the effect of cultivated land on different public spaces (parks, islets, terraces of public buildings, etc.) in an attempt to deal with the urban thermal island.
- The proposal to study the cost-benefit relation of urban use as a green urban infrastructure development and propose legislation to promote the institution with contributory incentives.
- The proposal to study the possibility of creating similar projects, both at a local and at a national level, by studying the areas (public and private) that meet the requirements of urban agriculture in the city which has been selected.
- The proposal to separately study the regeneration of Xiropotamos with a view to preserve the ecosystem and to show the historicity of the area which it crosses.

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References

- [1] Ananiadou - Tzimopoulou M 1992 *Landscape Architecture - Urban Design* vol A, Ed Ziti (Thessaloniki) (translated from Greek)
- [2] Anthopoulou Th, Partalidou M, Mosesidis A, Nikolaidou S and Kolokouris O 2012 Urban agriculture and a viable city. Study of two urban agrarians (Thermi and Alexandroupolis) (Panteion University). (translated from Greek)
- [3] Babou D and Fologitis E 2015 Urban agriculture as a tool and subject of education for sustainable development. *Proceedings of the 7th Panhellenic Conference of the National Center for Peace and Security*. (translated from Greek)
- [4] Baveli Z and Michailidis A 2013 *Urban and peri-urban agriculture. A case study on the farm of the Agricultural School of Aristotle University of Thessaloniki*. (Thessaloniki) (translated from Greek).
- [5] Belavillas N 2017 *Tritsis Park: Assessment of the Current Situation, Strategic Directions-Proposals*. Speech in the framework of the Scientific and Environmental Triennial at the Antonis Tritsis Metropolitan Park, 9-11 June 2017. Available at: [www.parkotritsis.gr / draseis-kaiekdilwseis /](http://www.parkotritsis.gr/draseis-kaiekdilwseis/) (translated from Greek)
- [6] Bell S, Kamper R.F, Voigt A, Keshavrz N, Benson M, Caputo S and Noori S 2016 *Urban allotment gardens in Europe* European COST Action project (London)
- [7] Blionis G 1996 The streams of Thessaloniki. (Thessaloniki: Association of Local Authorities of Greater Thessaloniki). (translated from Greek)
- [8] Blionis G and Tremopoulos M 2017 *Thessaloniki of the Waters* (Thessaloniki). (translated from Greek)
- [9] Calvet-Mir L and Hug M 2017 Crisis and post-crisis urban gardening initiatives from a Southern European perspective: The case of Barcelona *European Urban and Regional Studies* **26**(1) 97–112
- [10] Christodoulou H 2006 Exploitation of the camps in the residential environment of northwestern Thessaloniki. *TEE Workshop Campaigns in Thessaloniki: Promotion and Exploitation Thessaloniki*. (translated from Greek)
- [11] Crouch D and Ward C 1997 *The Allotment. Its landscape and culture* (Nottingham)
- [12] Giatsidou B 2016 Creation and diffusion of agronomic and collective knowledge in urban vegetable gardens in Thessaloniki. *Diploma thesis* (Thessaloniki) pp 114. (translated from Greek)
- [13] Gliem, J and Gliem R 2003 Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *Midwest Research to Practice Conference in Adult, Continuing, and Community Education* pp 83
- [14] Gorgolewski M, Kommisar J and Nasr J 2011 *Creating places for urban agriculture, Carrot city* (Singapore)
- [15] Lett J 2012 The role of designers in urban agriculture *ASLA 2012-Urban Agriculture as a way to educate*. [http://lda.ucdavis.edu/ people / 2012 / JLett.pdf](http://lda.ucdavis.edu/people/2012/JLett.pdf).
- [16] Maheswaran R 2011 *Journal of Public Health* **33**(2)
- [17] Matos R S and Batista D S 2013 Urban Agriculture: The Allotment Gardens 2 as Structures of Urban Sustainability. *Advances in Landscape Architecture* ed Murat Ozyavuz (InTech) Chapter XX

- [18] Mikkelsen BE and Jorgensen SH 2015 WG11 grass-root initiative and community gardens. *Agriculture in urbanizing societies* (Rome)
- [19] Fuentes A 2015 Urban agriculture in the context of sustainable urbanism. *ELISAVA Temes de Disseny* **31**
- [20] Partalidou M 2015 Society and Food. Urban garden allotments. (Aristotle University of Thessaloniki, Thessaloniki). (translated from Greek)
- [21] Philips A 2013 *Designing urban agriculture. A complete guide to planning, design, construction, maintenance and management of edible landscape* Ed Wiley (New Jersey)
- [22] Seira E 2017 Dendropotamos, the river of northwest Thessaloniki. *Postgraduate dissertation on Urban Waterscape Landscape Architecture* (Thessaloniki) (translated from Greek)
- [23] Sekaran U 2003 *Research Methods for Business: A skill building approach*. 4th Edition Wiley & Sons (New York)
- [24] Tawakol M, Dennick P 2011 Making sense of Cronbach's alpha. *International Journal of Medical Education* pp. 53
- [25] Tsagalidou O and Tsagrasoulis A 2013 Urban agriculture: Prospects for urban sustainability (Department of Architectural Engineering, University of Thessaly), pp. 37. (translated from Greek)
- [26] Tzortzi N and Eleftheriadis N 2002 Forestry and Landscape Architecture (Technological Educational Institute of Kavala, Drama). (translated from Greek)
- [27] Tzortzi-Georgi, Vissilia A M 2014 Edible landscaping as an environmental policy tool for urban cities under crisis: Cases studies from Greece *Urbanistica Informationi* pp 36-37
- [28] <https://www.scribd.com/read/234817573/The-Allotment-Book#>
- [29] <http://perka.org/>, 2018, <http://www.pavlosmelas.gr>, 2018