

COLLABORATIVE PLANNING VIA URBAN AGRICULTURE: THE CASE OF TEGUCIGALPA (HONDURAS)

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Keywords: Sustainable development, Urban agriculture, Collaborative planning, Bottom-up development

Abstrac.: The city of Tegucigalpa has been subject to an accelerated growth due to the country's rural-urban migration phenomenon triggered in the 1950's decade, which accompanied by the blueprint Northern models of urban development at the time, produced a city dominated by social disparity, urban violence, and environmental degradation. As the top-down planning system continues to be unresponsive to the situation, we question whether an alternative bottom-up strategy could present solutions to the complex social, environment, and political problems in this city. Thus, we explore the topic of urban agriculture (UA) in this paper as a multi-faceted lever that can provide with building blocks for an emerging bottom-up movement. Two case studies are presented: the first being representative of top-down programs, while the latter illustrates a case of collaborative bottom-up initiatives, followed by windows of opportunity and challenges in the integration of UA in the urban area. Noteworthy among our discoveries is the potential of school gardens as a channel for strategically achieving community goals. UA is undertaken through the people's need to overcome the issue of food insecurity and under-development in the city. Still, the topic of active citizenship or bottom-up development is not yet consolidated under the context set by Tegucigalpa. Moreover, the city poses challenges regarding the resources (land and water) needed for practicing UA and the diffusion of knowledge to the population. Nevertheless, effort must be placed considering that the social assets of UA may compensate for the unfavorable access to resources in the area.

1. Introduction

"Tegucigalpa keeps growing... but is there space for more people?" (La Tribuna, 2013)

"51.5% of Tegucigalpa's inhabitants are living under poverty conditions." (El Heraldo, 2015)

*"Tegucigalpa's topography is telling us something."
(Interview with an architect working on revitalization projects in Tegucigalpa)*

Tegucigalpa the capital of Honduras faces huge (poverty related) challenges such as a steady influx of poor peasants, income inequality, food insecurity, health problems, widespread criminal practices, scarcity of safe drinking water and environmental pollution (AMDC, 2008). Over the last fifty years conventional top-down urban planning strategies have failed to provide any comprehensive solutions to a web of ever-growing problems. The problems are thus complex, interrelated and widespread that some observers may simply shrug and look away, others may feel tempted to come up with all encompassing solutions which may eventually prove to be overly simplistic and not befitting the complexities and dynamism of the complex system of (un)sustainable development in Tegucigalpa. In this paper we try to avoid these traps by exploring the contours of a promising

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strategy of urban development via the advocacy of urban agriculture and education tailor-made to the special needs and constraints of Tegucigalpa.

The quotes on top point out risks and uncertainties that throw shadows over the future of Tegucigalpa. Like many cities of the global South, in Latin America and the Caribbean region, the Honduran capital has been subject to an *urban explosion*², due to the rural-urban migration process triggered in the 1950's decade. Shifts from agricultural to industrial bases across Honduras encouraged the rural-to-urban movement, along with the national trade policy reform and international business agreements, in the quest of modernizing the country's economy. The Honduran population employed in agricultural activities declined from 43% to 34% between 1983 and 2003, while the capital simultaneously received 32,179 immigrants from rural areas in the period from 1988 to 2001 (Angel et al., 2004; AMDC, 2014b).

Yet, even though this process was initiated in the mid-20th century, it was not until the 1970's decade when the larger migration flows and urban expansion affected the capital's area; for the latter, it means that the city grew in size from 2,360 ha to 6,020 ha in the period from 1975-1987 (Angel et al., 2004). The planning system at the time, driven by blueprint-Northern models of urban development, failed to adapt to this growth and was unable to provide the people with proper housing and basic services (Angel et al., 2004; Cáliz, 2008); a situation that along the social services crisis and the lack of employment during the 1980's aggravated the city's conditions. This in turn produced the informal economy phenomenon, an issue that is enhanced throughout the years by the constant migration and the absence of urban planning practices that respond to the use of the territory and the population's needs (Martín, 2010).

Between the years from 1974 to 2013, the city's population tripled from 302,483 to 1,094,720 inhabitants³, mainly composed of the already established inhabitants and newcomers seeking for better livelihoods in the urban area. Tegucigalpa has been subject to a process of urban-rural convergence, meaning that the rural society that has been so characteristic in the country is disappearing, while the urban society's consolidation remains to be seen (Martín, 2010). Today, the city is an area characterized by social inequality, driven by market forces and the predominant informal economy of the urban poor. The expansion of vulnerable areas and the increasing population has led to problems in informal settlements, public services, land ownership, public health, environmental management, and the most recent and pressing issue of urban violence. In terms of insecurity, the capital city presented in 2014 the second highest amount of homicide incidents in the country (987 homicides), after the city of San Pedro Sula in the North with 1084 incidents, an issue that is also represented in the following Figure 1 (UNAH-IUDPAS, 2015).

The authors of this paper, one of them a resident and student of Tegucigalpa, the other a professor in land use planning from the Netherlands, have questioned the adequacy of Tegucigalpa's recent top-down urban planning strategies and explored seeds of an alternative bottom-up strategy. The paper starts from the observation that the conventional blueprint approach has failed to provide any comprehensive solutions so far. In this respect, Tegucigalpa like so many other Latin American cities has applied planning models imported from the global North to no avail. So the question is on the table: What could be an alternative direction to make the planning system more responsive to the complex social, environmental and political problems addressed in the opening sentences? We feel that urban agriculture (UA) can provide building blocks for an emerging alternative bottom-up

² As labeled in UN-Habitat. (2012). Chapter 1, Population and urbanization. The State of Latin American and Caribbean Cities 2012: Towards a new urban transition.

³ National Statistics Institute (INE), Censuses 1974-2013. The statistics presented depict the population in the Central District municipality identified as 'urban population' according to the INE.

strategy of sustainable urban development (e.g. Redwood, 2012; Dubbeling, 2011; Mubvami et al., 2006; Quon, 1999).

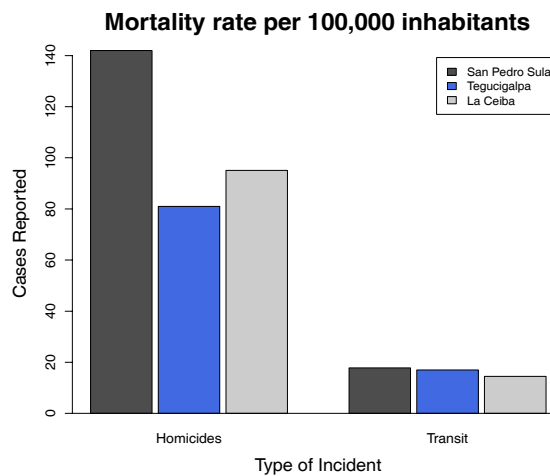


Figure 1. Mortality rates in three major cities of Honduras, represented by the two main motives for death in the country. Source: UNAH-IUDPAS.

The global North has adapted its planning discourses to the urban issues produced by modern society, yet, many developing countries continue to be driven by blueprint approaches; a type of planning characterized by inflexibility and unresponsiveness to societal issues (Mubvami et al., 2006). Planning systems are based on particular features from the time and place in which they are constructed, and thus, this “borrowing” of ideas results inappropriate (and even outdated) to the context in which they are imitated (Watson, 2009). In the case of Tegucigalpa, where North-American development practices were adopted, this meant a *zoning* or organization of spatial activities that did not correspond to a rural, poor, and uneducated population (Cálix, 2008).

Still, nowadays the need to evolve into a different scheme arises in the global South, and thus begins to take part in the bottom-up development trend that has grown in the developed world over the last decades, as seen in examples across Brazil, Peru, and Tanzania, among others (see Watson, 2009; Green, 2000). As urban planners and developers attempt to keep pace with the increasing problems produced by urbanization, individuals might start seeking their own solutions. Within this setting, urban agriculture comes into the picture as a historical survival strategy for urban dwellers and an integral part of urban systems (Quon, 1999; Mougeot, 1994). Apart from its food production component, UA is a topic that is being addressed in the literature as a medium that aids the transition into more collaborative forms of city-making. Moreover, it is a practice that pertains to societal issues (e.g. household economics, public health, and the urban environment), and that empowers citizens with the share of responsibilities between top-down actors and the public when it comes to urban development. Hence, UA may serve as a starting point to actively engage the problems of modern urban society and for vulnerable populations to come out of underdevelopment (FAO, 2014; Mubvami et al., 2006; Wekerle, 2004; Bryld, 2003).

Nonetheless, UA is a context-specific activity in terms of its progress and outcomes. Models and practices have to be created or adapted to the economic, social, and political circumstances each setting presents (Bryld, 2003). Therefore, this paper addresses conditions for the advancement of UA and its possible outcomes in urban development on the specific case of the city of Tegucigalpa by exploring its application around two main themes. First, its possible contribution for transitioning the city's planning system into a more collaborative-adaptive approach that works under sustainability

principles. And secondly, the identification of windows of opportunity for the integration and improvement of UA practices within the city.

The paper is divided into four sections. The first section provides a condensed description of the social and physical characteristics of Tegucigalpa. The second part is a description of an empirical research of ongoing practices in education-related urban agriculture projects in Tegucigalpa. In the third section, the outcomes of the case studies function as grips in an analysis of opportunities and constraints in the context of an envisioned novel-planning scenario featuring urban agriculture projects associated with education⁴. In the fourth section lessons are drawn and put in perspective of current practices in the domain of planning, urban agriculture and education.

2. THE CITY, sustainable development and planning

The country of Honduras has taken part in the world's urbanization trend with its urban inhabitants now ascending to 50.5% of its total 8,303,771 citizens (INE, 2014). In addition, it is among the poorest countries in the world, with an urban population under one of the highest poverty rates in Latin America and the Caribbean; by the year 2013, more than half (60.4%) were living under the national line of poverty (FAO, 2014; INE, 2014). Conclusively, the Honduran capital of Tegucigalpa is an emblematic representative of the development challenges the country is facing, being the home to nearly 1.2 million people (2013) of the nation's population (Figure 2).

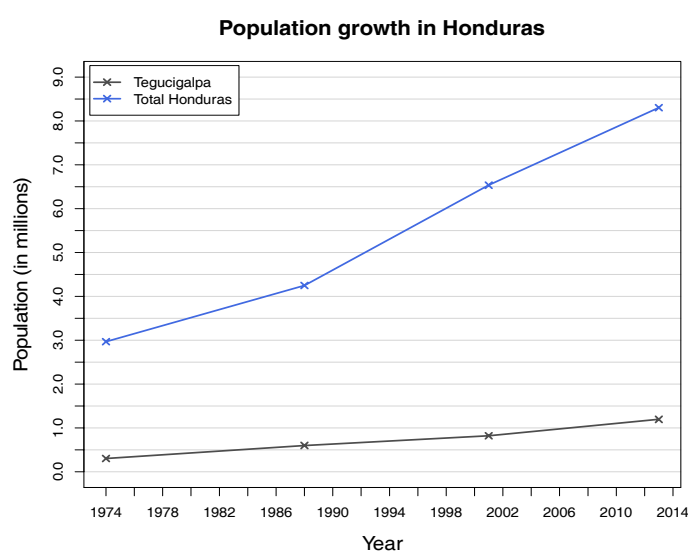


Figure 2. Tegucigalpa's population growth in relation to the national population growth.
Source: INE, Censo de Población y Vivienda 2013; INE, Anuario Estadístico SEN 2013.

Tegucigalpa's modern history begins in the 1950's decade, when an array of economic shifts throughout Honduras initiates a rural-urban migration phenomenon (Martín, 2010); among the

⁴ As a remark, this paper does not intend to critique past development discourses or build on a new planning domain, or question the actions that have led to the current situation in Tegucigalpa. Instead, it focuses on providing foundational information and initiate a dialogue on what are the alternatives when the planning system is no longer able to respond to the increasing problematic in the Honduran capital.

most recent evidence is the *Ley para la Modernización y Desarrollo del Sector Agrícola (LMDSA)*⁵ in 1992, which marked the end of the cooperative (*ejidal*) lands in the country (Angel et al., 2004). Even though the first initiatives for planned development are in place years later, the results are not as expected due to massive land occupations and the authorities' lack of capacity to provide basic needs (AMDC, 2014a). Later in the 1980's decade, a national revision of the last century's Liberal views takes place; an ideology under which the State, as the main driver, aimed to modernize the economy and place it in the global market. The result is a Neoliberal doctrine that establishes a need to revive the country's political and economic structure, by removing the State's position of leading developer, and opening opportunities for other initiatives. In addition, this economic adjustment is further influenced by the financial support from international organizations (e.g. The World Bank and the International Monetary Fund) and the private market (Cálix, 2008; Zelaya y Ferrera, 2012). The sum of the economic and political reforms over these last decades led to the privatization of agricultural land, with the transfer of State land to individuals, and its industrialization, which introduced new production technologies and techniques such as crop switching for an increased export-oriented production. Consequently, the rural environment was disrupted since less labor force was needed; it is in this last point where the greatest migration flow affected the country's main urban areas: Tegucigalpa in the central region and San Pedro Sula in the North, as shown in Figure 3 (Angel et al., 2004).



Figure 3. Location of major cities in Honduras.

In the timespan of decades, the city doubled in size with a series of poverty strips that now encircle the central city (AMDC, 2008; FAO, 2014). An estimated half of the population (52.9% of households⁶) lives in vulnerable *barrios* and slums, over inappropriate land for settlements such as steep hills and riverbanks where they become exposed to the natural hazards posed by the physical conditions of the region, and with no access to urban services (e.g. water or roads), as can be seen in the Figure 4 below (Martín, 2010); adding to other issues such as health, education, transportation, environmental degradation, food access, and insecurity.

Regarding the economic dimension, market forces continue to become stronger by a retreating local government from public investment, and with the privatization of public services. An example of this withdrawal is the capital's historical district, once the center for political, economic, and recreational

⁵ This law encourages land market liberalization, and privately owned lands to apply modern farming techniques, all with the purpose of competing in the international market.

⁶ INE, Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM), 2014. Cuadros de Pobreza.

functions, is abandoned by the end of the 20th century. Private initiatives are left to recover such spaces with the construction of shopping centers and the more recent *malls* that serve the upper classes (Cálix, 2008). In addition, the socio-economic characteristics and lack of education in the urban poor has produced a predominant informal economy across the city. At the physical level, the constant demand for resources and productive activity guides the city's expansion along major transportation routes and natural corridors, endangering with a period of resources deprivation in the future. As can be seen in the Figure 5 below, Tegucigalpa is expanding towards the Guacerique watershed, one of its major water sources. Within this context, the following quote identifies the resulting situation:

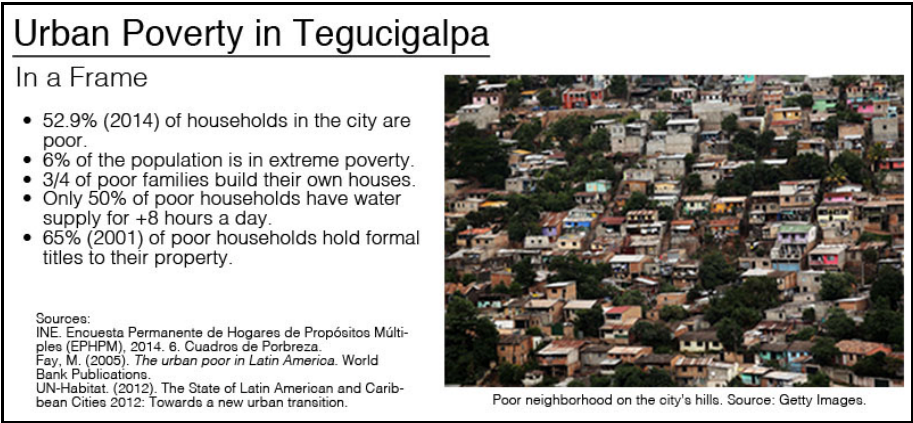


Figure 4. Numbers for urban poverty in Tegucigalpa.

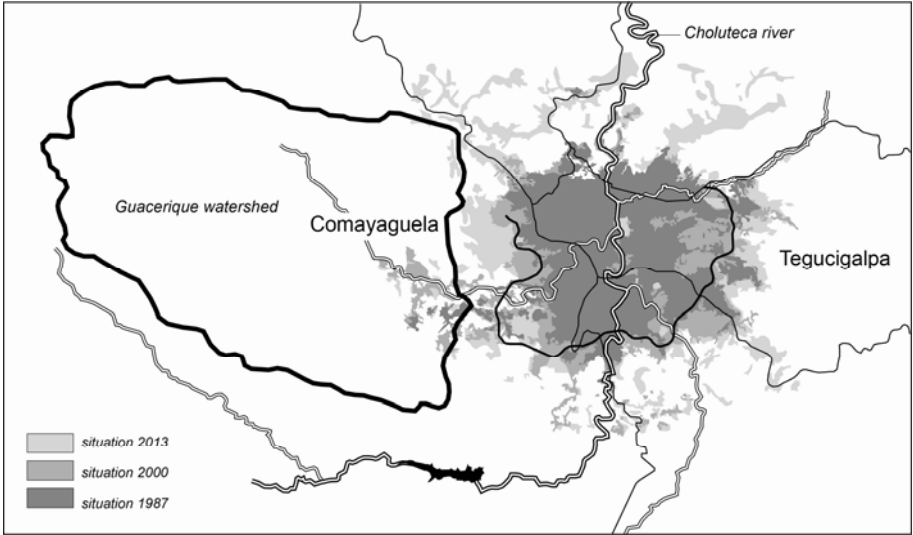


Figure 5. Tegucigalpa's urban growth over the years, and its expansion towards the Guacerique watershed. Sources: Angel et al., 2004; AMDC, 2014a.

“The problem lies not in the normative, but in the practice and the incapacity to enforce policies and standards. We could say that there are two cities: formal and informal, where the latter is governed by need and the search for its own solutions with no control over it, and the former is led by the private market, where public investment cannot keep pace and regulate growth to ensure the public’s interest.” (AMDC, 2011)

Today, Tegucigalpa's future is highly dependent on sustainable development, which can be understood under this setting as the simultaneous pursuit of a just society, economic growth and its fair distribution, and the promotion of a "green" city. Moreover, sustainable development should be thought of as a comprehensive path or strategy, which aims to overcome or avoid the problems presented in Tegucigalpa (e.g. urban poverty, inequality, food insecurity, lack of basic services, and substandard housing, to name a few) in the progression towards a better city. Within this backdrop, urban agriculture becomes a multi-faceted lever (Van Veenhuizen, 2006) that addresses the components and the overall problem itself. Still, whether or not sustainable development can be planned remains to be seen. The planning scene does not present the conditions for this scenario through its model of conventional-top down development. A rupture of the current system is needed in order to transition into a more innovative and collaborative approach in planning, and promote the sustainability of the area and its citizens.

3. The Research

In order to answer our questions on Tegucigalpa's spatial planning and development scene and the potential for UA in this setting, this research was carried out as the Master's thesis of one of the authors of this paper, inspired by the problematic in the city and the increasing importance of food movements worldwide (e.g. Amsterdam, New York, Havana, and Dar es Salaam, among others). An initial literature review provided the basis for understanding the concept of sustainable development and the role of urban agriculture in city-making, followed by a one-month visit to the city of Tegucigalpa to collect data through interviews, site visits, and documentation. The identified UA projects were later taken through a case study analysis, which consisted of a total of five formal UA initiatives and two cases of spontaneous UA activities in the urban area. The reflection phase of the research, in the end, allowed pinpointing major themes and topics that compose the UA scene in Tegucigalpa.

4. Urban Agriculture In Tegucigalpa

Urban agriculture is not a wide-spread practice in Tegucigalpa as yet. At least it is not visible from the public roads and it is not a popular theme in the local press and the dominant political discourse⁷. Nevertheless after careful and targeted inspection of websites, press releases and interviews with different professionals, our explorative search in Tegucigalpa revealed some interesting cases dispersed over various parts of the city. Their collaborators, participants, and methodologies vary in origin; however, they present common characteristics and goals for their development. This paper focuses on two of the selected case studies for the research, as the first is representative of the topic of conventional top-down programs while the latter illustrates a case of collaboration and bottom-up development in the city. Further on, two spontaneous UA initiatives are briefly presented in order to provide with an initial idea of the types of activities taking place in other neighborhoods of Tegucigalpa besides the projects stated beforehand.

Case 1. The Project: "Family agriculture for a better life"

This urban farming project is a household and school garden initiative proposed by the Honduran central government at the beginning of 2014, as part of their "Generation of Opportunities" Program. It aims at tackling food insecurity by improving the diets of children and adults in

⁷ According to the interviewees of this research and a review of local press and documentation.

vulnerable conditions, and who fall under the national and extreme poverty indicators. The target groups are families and public pre- and elementary schools across the country; who enter the program if they hold the prerequisite of water access, and land availability (50m² in the case of households, and 200m² for schools).

The program is responsible for selecting the participants, as well as delivering the inputs for the development of their corresponding garden model (a drip irrigation system, seeds, fertilizers, and tools). Simultaneous to the installation of the garden, government technicians are responsible for training the participants in the preparation, maintenance, and harvest of the allotment. The main produce obtained is carrots, radishes, beets, beans, and corn. In addition, nutritionists give workshops on how to efficiently prepare the harvested products and improve the dietary intake of the families and school attendees.

Furthermore, it is worth highlighting that the program has a strong educational component, as the gardens not only serve to improve the children's nutritional intake but also aim at the recovery of agricultural traditions in the country's youth (Figure 6). By the end of the first year, there were 55 schools involved in Tegucigalpa's municipality, and hundreds more throughout the country. An active involvement from the parents, teachers, and students has been key for managing, developing the gardens, and for the use of the crops. The produce is added to the School Meal Program⁸ of each institution, contributing with the provision of vegetables that are not yet included in this program's diet.



Figure 6. Harvesting in a school garden. Source: SEDIS.

Although this initiative has proven successful, there are socio-political limitations that constrain its development, and on a greater scale, the legal status of the program (a feature that determines its financial support and continuation in future administrations). Thus, sustainability practices are also encouraged within this program, as the government only holds the capacity to provide for the initial inputs, and the participants must provide for themselves afterwards. Moreover, the development of the program in urban areas has been limited by the participants' knowledge of agricultural practices. Even though a large portion of the population is a subject of rural-urban migration, techniques in

⁸ The School Meal (*Merienda Escolar*) is a central government plan that aims at improving children's health and academic performance, currently attending to 1.4 million children across the country. Rice, beans, eggs, milk, soy, and corn is delivered to schools with support from the World Food Programme, and parents and teachers must organize themselves to prepare the meals and distribute them to the children on a daily basis.

urban areas vary greatly from those in their places of origin; meaning that training must start from an elementary level, resulting in a longer implementation process.

Case 2. The Cerro Grande School

The Cerro Grande neighborhood school initiated a small academic entrepreneurship program in 2004, to which they added a small agricultural enterprise in 2010, aiming to educate the children in cultivation practices and their values. With a teacher's interest in a FAO household project⁹ in the city, a school gardening program was adopted with the support from this organization, who provided the infrastructure and technical assistance for the implementation of the farming project (FAO, 2013; Fletes Ramos, 2012).

In this case, teachers, who would later diffuse the knowledge among the students, were offered training. The garden was built on recycled materials such as tires, and developed through organic farming practices. Among the main products obtained are radishes, lettuce, spinach, onions, peppers, tomatoes, and a variety of herbs. The produce is later used in the preparation of the School Meal, and for food processing in another one of the school's enterprises where the children learn to prepare pickled goods, jams, and *tortillas mejoradas*, to name a few products.

Moreover, an important characteristic of this initiative is its particular irrigation system. Since the school receives water for only two days a week from the municipal drinking water system, irrigation could not be dependent on this service. The school had to become self-sustainable in this aspect; and with the support from private sector foundations, a rainwater collection system with a storage tank and its distribution infrastructure was developed.

Nowadays, the school has a vegetable garden, a water storage system, a greenhouse for producing aromatic herbs (Figure 7), and a small food processing enterprise. Therefore, such education center stands out for its entrepreneurship and sustainability, and for illustrating the value of integrating these types of activities in the children's curriculum. Likewise, the school is an example of the alliances these types of projects form to promote more sustainable development, due to the active involvement of NGOs, private sector, the school's teachers, and the parents.



Figure 7. School greenhouse and cultivation tires at the Cerro Grande School. Source: Fletes Ramos, 2012.

It is expected that this particular initiative can be later replicated in other educational institutions of the country. Agreements have been signed between NGOs and government representatives to promote the incorporation of school gardens in the educational system, with the goal of tackling hunger and unsustainable practices (FAO, 2013). In the meantime, it is forecasted that by teaching

⁹ UA Pilot Project in Tegucigalpa from the local municipality, in cooperation with FAO, for household gardening in three of the city's neighborhoods. See FAO, 2014.

the value of gardening to children, they can later diffuse it in their own households and motivate other family and community members into the practice, resulting in a "domino" effect across small communities of the urban population.

Case 3. Spontaneous UA in Tegucigalpa.

Apart from the formal projects mentioned before, a small number of informal UA initiatives were identified in Tegucigalpa. In order to discover other urban gardens in the city, a scouting of neighborhoods was done in accordance to the recommendations provided by the interviewees, and visual inspection throughout the fieldwork. These activities are labeled as "informal" as they receive no external support for their development and are solely implemented by their gardeners. Their spontaneous origin and purpose are among the main characteristics of these initiatives; however, their nature also affects their development and degree of resilience, and possibilities for future expansion.

The first enterprise consists of a few UA activities taking place in the small public Preschool Amilcar Rivera Calderón in the inner city. Due to the achievements accomplished by their successful School Meal program, the school is now focusing on improving its academic curriculum by integrating field activities during classes, and not limit themselves to the classroom. Hence, the development of a program composed of small UA initiatives where the students get in contact with domestic animals and exercise cultivation. Similar to their School Meal program, "this project is dependent on the collaboration between parents and teachers for its success", as expressed by the school's director.

As a result, an aviculture project is taking place in the school's backyard, where the parents and faculty collected the materials for the construction of a henhouse (Figure 8). Fruit trees and a corn garden also take part in this agricultural initiative, of which the produce is included in the School Meal and the surplus (if any) is sold to the community as well. The sum of the activities contributes to the School Meal's purpose of educating children on the importance of nutrition. In addition, it teaches the students the value and benefits of producing and using their own food. However, this initiative is limited by the space in the school grounds, narrowing its possibilities for expansion.



Figure 8. Left: henhouse built by the parents and teachers at the pre-school.
Right: corn cultivation in an empty lot.

The second set of informal UA activities is the temporary use of vacant land in the peri-urban zone around the city. Even though Tegucigalpa continues to expand its area, it is still common to find empty lots throughout the city, particularly in residential neighborhoods that are considered as "more recent" urban developments. The lots are private property that is still unoccupied by their owners. The gardeners involved are usually the neighborhood guards or laborers working nearby,

who start cultivating after permission to use the land is granted. The crops are mainly corn and beans, which are used in the gardener’s household or for commercialization in their own communities. Lastly, an important characteristic of these gardens is their temporary nature, since they are subject to the plot owners’ decisions and the gardener’s available time, resulting in dispersed cultivation sites across residential neighborhoods that tend to just last a few months.

4.1. What do the cases suggest?

Considering the statements provided by the interviewees, the collected data, and the discoveries from the fieldwork used in the analysis phase of the study, the following sections build upon the common elements, strengths, and limitations of the recorded UA activities, as perceived by the collaborators and authors of this research. Firstly, it can be observed that different types of UA activities are already taking place in Tegucigalpa; refer to Table 1 below. From these initiatives we can see models of urban farming that range from household gardens to school gardens, and in which a variety of stakeholders participate: families (parents and children), professionals, NGOs, the government, and private foundations. However, one common element stands out from these experiences: the participating schools. Even though it is not required from the academic curriculum, UA has been added to the educational activities to motivate children and their families to take part in this movement.

Table 1. Description of UA activities discussed in this paper.

Case Study	Model/Scale	Initiator	Participants/ Beneficiaries	Other stakeholders involved	Products	Specific features
"Agricultura Familiar por una Vida Mejor" (National-level initiative)	Household gardens & school gardens	National government	Household gardens: families and community members. School gardens: School staff, students, and parents	World Food Programme	Lettuce, tomatoes, carrots, radishes, onions, herbs, beets, beans, and corn.	Taken alongside the School Meal program, for the addition of vegetables not included in the provisions.
Cerro Grande School (Basic Level school)	School garden	School staff	More than 40 members of school staff, 900 students, and parents association	FAO, Organización de Estados Iberoamericanos, and private sector (Larach & Cia. and IDEal)	Radishes, lettuce, spinach, onions, peppers, beets, tomatoes, and herbs.	Irrigation technologies: composed of a rainwater collection and distribution system.
Escuela Amílcar Rivera Calderón (Pre-school)	School garden	School staff	Staff, students, and parents association	School Meal representatives	Corn, eggs, mangos, and bananas.	Aviculture project (henhouse and chickens)
Spontaneous UA activities (informal gardens)	Individual plots	Individuals	Farmers and their families	Plot owners	Corn and beans	Temporary character of the gardens, and dispersed locations in residential areas.

For the concerns expressed at the beginning of this paper, the value of school gardens relies on their potential for community building and development in the city. Throughout the research, schools were represented as a medium to achieve common goals and encourage interaction between different stakeholders. In the process of developing the gardens, which in these cases are taken alongside the existing School Meal program, school teachers and families in the community come together with the goal of improving the children’s personal development, and consequently, their family’s situation. The focus on working for the children is stated by a representative of the School Meal program as: “Children are the future, it is an investment. Even though the parents do not have the ideal opportunities, investing on such activities improves their children’s chance for a better future.” Moreover, this should be thought of as investing in the city’s forthcoming society, meaning a long-term effect in the path towards the improvement of the urban area.

For planners, the strong presence of schools in the city (1,089 centers in the Central District Municipality¹⁰) represents a starting point for the integration of UA activities in Tegucigalpa, as all public schools participate in the School Meal program and hold the potential for the development of a school garden. Similarly, as UA initiatives become visible in the city, other neighborhoods or citizens start adopting these practices in their respective area; such was the case of the Cerro Grande School. As expressed by the interviewees, the increasing network of UA activities spread throughout the capital should be viewed as a “ripple effect” or “domino effect” system (Figure 9), in which the school becomes the focus point of a community and later influences its surroundings to become involved in UA for the neighborhood’s social, economical, and environmental improvement. Given the socio-political context in the city under the predominance of urban individualism and lack of communal space (refer to Section 4.5), schools in this case would hold the potential of becoming the entrance point to a community from the perspective of planners and developers, and a meeting point for its respective members.

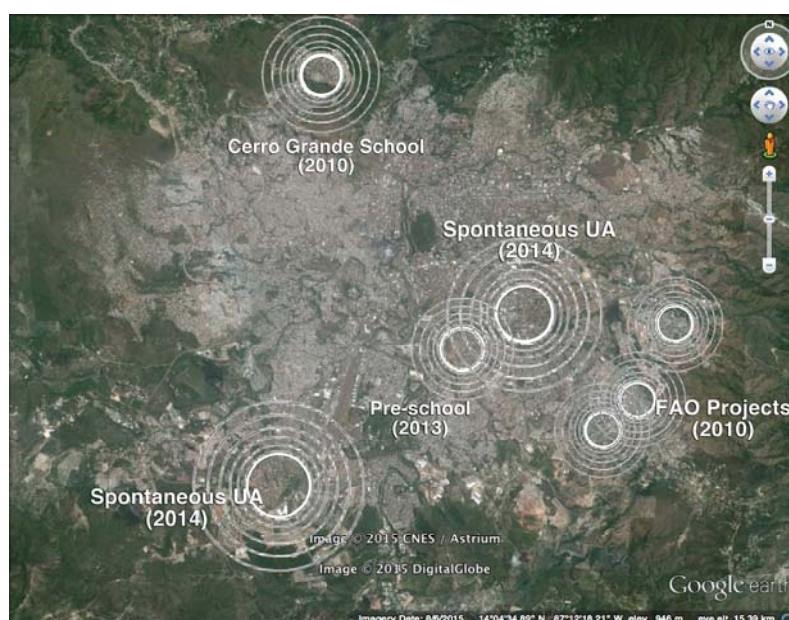


Figure 9. Location of the recorded UA initiatives and their starting dates, including a representation of a ripple effect over Tegucigalpa. Image: Google Earth.

4.2. *Windows of opportunity for UA*

Based on the idea that the city’s schools serve as a starting point for the integration of UA in Tegucigalpa, the following paragraphs describe the conditions and aspects that planners and developers (or even citizens) could take advantage of in the quest of implementing UA as a strategy for sustainable and participatory development in the city:

A multi-stakeholder process. The first aspect to observe, and one of the most repetitive points throughout the research, is the need for inter-institutional collaboration and alliances among the stakeholders of UA in Tegucigalpa. UA is best achieved through a multi-stakeholder mechanism that

¹⁰ Secretaría de Educación. Data includes public schools and educational centers under a private administration.

adds a comprehensive and dynamic character to the planning process (Dubbeling & Merzthal, 2006), and which may include government agencies, municipalities, international and local NGOs, the private sector, educational centers, and the citizens themselves. Within the case studies presented, UA was successful through good community organization (schools-families-neighbors) and institutional collaboration (public and private sector) for its socialization process and application. Furthermore, an active participation from stakeholders improves the quality of decision-making, raises the level of trust among them, and increases the credibility of projects. Cooperation also enables the coordination of different mechanisms towards an effective use of human, financial, and environmental capital. A strong example of such alliances was the work between the Cerro Grande School, FAO, and the private sector in the acquisition of resources for the development of the school garden. Thus, within this framework, institutions or other fellow stakeholders become facilitators of the practice and empower the population towards city-making.

The existing initiatives. Existing initiatives serve as a starting point for UA in Tegucigalpa. The socio-political context in the city limits the application of new programs without a previous exploration of the issue at hand; therefore, the case studies represent pilot projects of which best practices can be extracted from and adapted to improve strategy-building in the city. Likewise, the school initiatives can also be expanded (e.g. taking the school gardens to private schools) and their best practices can be adapted to other UA models (household or community gardens) to increase their reach and effects on the urban population. The School Meal venture especially demonstrates the potential of using an existing initiative for the implementation of UA: as the garden produce is added to the meals to improve the children's daily nutritional intake, the community increases their interest in adopting a gardening program, and thus, a faster development of school gardens by the public and the gain of its benefits.

Motivation from the participants. The case studies display there is strong motivation and interest from the participants in becoming involved in UA activities, meaning there is a general positive acceptance towards the practice to take advantage of. An example of such interest is the teachers who played the role as initiators of UA in their respective institutions, such as the case of the Cerro Grande School and the pre-school, and their respective community members and institutions. However, such interest is triggered when UA becomes visible and accessible to other citizens through knowledge. The documentation illustrates how UA is an activity that can be undertaken by anyone who holds the prerequisite of knowledge (becoming aware of the practice and its techniques), and thus can be targeted at different groups. In the case of children, they show an eagerness to learn that can prove beneficial to UA's implementation.

4.3. What to expect?

Even though the impact of UA practices is expected over aspects that range from the ecological to social dimensions (Deelstra & Girardet, 2000; Smit & Nasr, 1992), we continue to focus on UA's impact over Tegucigalpa's particular features, and more specifically, on the effects of integrating UA in the urban area through the schools perspective. In the Honduran capital, UA practices would influence the city's social and environmental setting, while raising awareness in the population on the value of UA over these aspects. And so, the following themes are showcased as perceived by the socio-political context in the city, and as the immediate expectations of implementing a UA program in the area.

Community building & citizen empowerment. First is the topic of empowering the population, in which citizens practicing UA appropriate their urban environment to improve their situation. This issue concerns more to lower-income households, and more specifically women, who are generally

the household managers and providers. As could be seen in the schools (and household gardens as well), women have an important role to play. UA practices become a form of occupation for them, besides being a medium to provide nourishment and reduce household expenses. Likewise, UA has shown to have an effect on improving a community's social relations throughout the examples. Cooperation has been key for the development of urban farms, produce harvesting, improving the School Meal (Figure 10), and commercializing any surplus.

Within this context, UA is becoming a strategy that initiates *social change*, as it targets vulnerable groups and has a range of benefits on the long-term. By improving livelihoods, and specifically children's development, citizens may also become less exposed to the present issue of poverty and its consequent violence in the city, which has been rapidly increasing over the last years. Therefore, a transition into an improved quality of life for the city's inhabitants may be encouraged with the social, economic, and environmental benefits of UA.



Figure 10. Mothers preparing and distributing the School Meal to the children. Source: SEDIS.

Food security & nutrition. Most importantly, UA activities in the city tackle food insecurity and malnutrition, being the main driver for this practice in schools. In the area of Tegucigalpa, the main problem with food is the access (purchasing power), and not necessarily the food supply, especially for the urban poor. The application of UA in the examples shows food security as the priority, with the goal of producing for self-consumption and sustainability. The result is an improvement of consumption habits and the level of nutrition of the beneficiaries through the diversification of their diets. In addition, involving children in UA “makes them value and understand the importance of producing their own food, and additionally, make an efficient use of water, considering it is the most valuable resource for food production”, as expressed by a government agent.

4.4. Impacts over the urban area

Apart from small-scale impacts mentioned before, the sum of the UA initiatives can generate substantial economic and environmental impacts at the city scale.

Economic impact. On a general level, UA brings the recovery of agricultural practices and traditions that have been lost in the country, considering that Honduras is still a place where 37.8% of the economically active population is involved in agriculture and food chains (Consejo Económico y Social, 2005). At the smallest scale, UA can become a form of subsistence for vulnerable groups,

where its contribution can be seen in household savings by reducing food purchases and the commercialization of surplus. Still, the economic impact of UA is dependent on the size of the garden, type of production, household members and income, among others. To provide a base idea of this impact, a study by the FAO (2012) in three vulnerable neighborhoods of Tegucigalpa shows a household garden's impact may be an estimated USD 20.00 per month, a 13-25% of the amount families assign to food expenses, meaning that low-income households can now allocate the savings to healthcare, education, or housing improvements.

Moreover, the economical impact of UA is translated into the healthcare and productivity sector, through the phenomenon labeled as "the cost of hunger". Improving people's nutrition and personal development makes them build the capacities needed for education and employment opportunities, becoming a productive asset for the economical sector. Also, they become less prone to illness, which besides from benefiting their personal development, aids the country's public healthcare system. For example, an average of 201 thousand cases in Honduras (2004) were in need of healthcare due to the exposure to malnutrition, resulting in a cost of USD 47.6 M for the country (Martínez & Fernández, 2007).

Environmental impact. Firstly, vulnerable populations are the most affected by the impacts of climate change on agricultural yields and the subsequent food price fluctuations. In addition, climate influences natural phenomena such as water availability and quality, and increases the exposure to hazards and sanitation problems in the most vulnerable settlements. Thus, UA may serve as a strategy for climate change adaptation for inhabitants of the urban environment. Secondly, although urban agriculture makes use of resources (land and water) for its development, it can be deemed as an opportunity for the conservation and efficient use of such capital through strategic programs and practices for land, water, and waste management in urban areas, as could be seen in the case of the Cerro Grande School where rainwater is collected to irrigate the crops and solid waste is recycled for the construction of the vegetable garden.

4.5. Challenges for UA in Tegucigalpa

Asides from the effects of implementing a UA initiative, it is important for city-makers to also consider the limitations, in order to identify lessons-to-be-learned and improve its future progress. Regarding the discipline of spatial planning, addressing these obstacles would mean to identify the conditions of the urban context that could constrain the application of such practice.

Political context. The absence of UA from the national and municipal agenda limits the allocation of resources for its support and the channels for its promotion. Support from NGOs and private foundations becomes challenging without a solid demand or development scheme from the government, and for achieving inter-institutional collaboration. In the case of the schools, UA cannot be guaranteed without the involvement of the Ministry of Education, and is therefore subject to a continuous interest from the teachers and parents. Furthermore, the issue of continuation affects its development, since there is little interest and political will to reinforce existing initiatives or commence new ones; thus, projects are interrupted every administration (four years), without gaining the benefits of a long-term operation.

Cultural context. Tegucigalpa's culture is shaped by different factors that include political ideologies, religion, and social status, among others. These points of view should be taken into account as they determine the acceptance and interest in UA across different society groups. An example is the government program in the first case study, where several school teachers have difficulties in adopting the initiative as their political perspectives contrast the current administration. Thus, the implementation of UA is attached to overcoming ideologies for its success.

Similarly, urban culture tends to be less sensible to collective problems in comparison to rural communities. Individualist thinking challenges community building and empowerment, which adds to the issue of urban insecurity in the city, and consequently limiting UA as well. Insecurity affects people's reception towards outdoor activities. Moreover, society's response to insecurity has been the reinforcement of the privatization of property (e.g. enclosures and gated communities), reducing the interest in community interaction and intensifying urban individualism (Figure 11).



Figure 11. Children playing inside a gated community. Source: hondudiario.

Knowledge & diffusion. It is worth highlighting the topic of knowledge as the strongest limitation for the development of a UA movement in Tegucigalpa. As expressed by one interviewee: “people cannot practice it if they don’t know it”, and so the training phase within the case studies depicts the importance of knowledge for target groups to start practicing UA. Understanding the potential of the practice for changing their livelihoods will empower people to exercise it, regardless of their social group and context. Likewise, the type and level of knowledge determines the type of UA practices, regarding farming techniques (e.g. organic-inorganic) and management of inputs, as well as the commercialization of products. In addition, knowledge defines the consumer culture, through which the demands that shape the urban environment are established. However, social stratum determines the opportunities for acquiring such knowledge, for which it is therefore important to address the issue of diffusion among the city’s diverse population.

Planning context. Tegucigalpa's spatial development scene continues to be driven by past Neo-liberal discourses and thus continues to be unresponsive to the urban problematic in the area. UA does not take part in urban development activities, meaning it is not a permitted land use in the area. Taking into account that land is the first resource on which UA depends on, the allocation of plots and other space possibilities (e.g. vertical surfaces for gardening) must take place to enable the population to practice UA. Additionally, land tenure is a common problem in the city due to the illegal occupations and ownership insecurity, where only an estimated 65% (2001) of poor household hold formal titles to their land or property (Fay & Wellenstein, 2005). Hence, a clarification of land property and enabling the availability of space could encourage the rise in UA initiatives across the urban area. Yet, achieving this stage of formalization of UA requires time and effort from the local government. In the meantime, planners can contribute as the "enablers" or "mediators" in the process (Mubvami et al., 2006), by guiding UA's consolidation in the form of small initiatives, such as the schools cases, in which the citizens drive the activity along with the support from fellow stakeholders.

Inputs of UA. An additional observation derived from the case studies is the participants' dependence on state agencies and NGOs for the provision of UA inputs (e.g. seeds, tools, or water) and instruction. Sustainability of the practice must be achieved to develop it independently from

institutions or charities, and ensure the resilience of projects when external support becomes unavailable or the urban conditions change. Furthermore, the limited availability and the situation of resources in the area produces a need to adapt technologies that efficiently use land and water resources; for the latter, it involves addressing one of the biggest problems of Tegucigalpa (see The World Bank, 2012; Brand & Bradford, 1991; UNICEF, 1990). Planning then, must facilitate and manage the use of such resources, in order to ensure a sustainable development of UA and the revitalization of the city's urban environment.

4.6. Complementary strategies promoting healthy urban lifestyles

Although UA opens a window on a viable strategy towards sustainable development and solution of the intricate web of problems in Tegucigalpa by means of a grassroots movement, it's not the only one. In addition, the following points do not only represent different alternatives to a UA phenomenon in the area, but also powerful allies for the improvement and up-scaling of UA into a network that extends across the capital city.

Emerging health movements in the city. Emerging health movements throughout the city are inculcating the importance of good nutrition and physical activity in Tegucigalpa's population. Until recently, the city's society has been generally characterized by unhealthy habits, caused by the globalization of food chains and branding throughout the country (Schortman, 2010), and the population's discouragement towards outdoor activities due to the insecurity problem. With the rise in events regarding health campaigns, recreational fairs, and marathons as seen in Figure 12 (e.g. the *Recreovías*, *Honduras Actívate*, and several fundraisers), people are being stimulated to improve their lifestyles and consumption habits, serving as another opportunity to encourage the urban culture to adopt UA practices for its health and recreational values.



Figure 12. Fundraising race in a major boulevard of Tegucigalpa.

Investments in urban development. More importantly, recent investments in development point towards addressing the social problematic of the urban and peri-urban area through the revitalization of public space, with the aim of improving community building and urban security. Among the ongoing projects, it is worth highlighting the intervention by the “Emerging and Sustainable Cities Initiative” from the Inter-American Development Bank (IDB), which points towards the recovery of the Choluteca River's basin and the historical center of Tegucigalpa through a process of urban revitalization and densification. Another project that is gaining visibility is the development

of parks and communal space by the Fundación Convive Mejor, who aims at constructing a park network throughout several municipalities affected by crime and poverty; among which the first area to intervene is the capital city (Figure 13). Consequently, public space is becoming a medium for communities to converge, interact, and appropriate their urban environment in the search for community development. Hence, public or communal space is a potential mechanism for UA to take part in such initiatives that focus on the renewal of the urban area as well, and that will make it a more visible practice within and across the different communities.



Figure 13. Left: IDB proposal for the Choluteca area. Source: ESCI.
Right: Completed park in San José de la Vega. Source: El Heraldo.

5. Reflections & Conclusions

In the city of Tegucigalpa, UA has developed under a very specific context due to the socio-political conditions and the overall urban development of the capital over the years. As the planning scene is not able to cope with the increasing urban problems, alternative solutions focused on social cohesion and urban security are now in the making. Likewise, international agencies (seen in the examples of the IDB and FAO) are setting the framework for achieving the population's sustainability, among which UA can be included as a development strategy. Therefore, a rupture of the more traditional top-down approach has commenced with the increasing participation of numerous stakeholders and multi-party collaboration in the transition towards a better capital.

However, the topic of active citizenship or bottom-up development is not yet consolidated under this context, as the general population is not in a position to manifest their needs due to the limitations posed by the issue of knowledge. The case studies outlined a type of UA movement in Tegucigalpa where most examples showcase a willingness from "top-downers" to improve the conditions of the urban area with the development of programs based on food production aimed at improving the inhabitants' livelihoods. Thus, the population has a certain level of dependence on support from external actors, leading to a passive demand from the population, instead of the expected spatial appropriation illustrated by other cases around the world (see Miazzo & Kee, 2014).

Nevertheless, UA holds the potential for contributing to a citizen's quality of life. Although it is not expected to become a medium for absolute self-sustainability, it has provided the target groups with more benefits than setbacks, such as improved nutritional intake, skill building and empowerment, monetary savings, and social cohesion, among others. The food gardens have also demonstrated to have an impact on the topic of equity, as women are the outstanding participants in the cases, even though the gender issue does not necessarily hold the strongest stance among the examples. In addition, there is strong interest in the instruction to children as it is viewed as the qualification and development of the city's upcoming society, aiming at the long-term benefits of these actions and securing a positive social change in the future of the urban area.

UA is not and cannot become the ultimate solution to the myriad of urban problems in Tegucigalpa. Tegucigalpa's conditions present multiple challenges regarding the availability of inputs (land and water) for practicing agriculture in the urban area. Effort must be placed on this issue, considering the social assets of UA may compensate for the unfavorable access to resources in the city. Therefore, it must be complemented by other initiatives that focus on managing the resources needed for developing urban gardens, considering there are several windows of opportunity for its strategic development and inclusion.

Nonetheless, a different challenge for UA stakeholders arises. As the historical evolution of the city and its planning system shows, Tegucigalpa does not present the ideal scenario for continuing a top-down development of UA programs. In order to achieve a degree of self-sustainability in the population and establish a bottom-up demand of UA, it appears that the first issue to address is the topic of knowledge and diffusion, considering knowledge is a driver for empowerment and social exchange. Further on, collective action may strengthen the people's identity, and their sense of self-determination in the face of hardship (Smit et al., 1996). Hence, UA represents both an end (food production) and a channel for strategically achieving community goals.

Lastly, the application of UA is not a matter of tackling the increasing urbanization, but improving the quality of life of the people that have been affected by this phenomenon throughout the years. Like so many other exploding urban agglomerations in developing countries, the city of Tegucigalpa is in need of a comprehensive urban strategy which may eventually create a resilient physical and socio-economic environment. Urban agriculture can provide with building blocks for an adaptive bottom-up strategy, conceived and carried out by its populace in the face of constantly changing conditions.

6. REFERENCES

- AMDC 2008. Capital 450, La Ciudad Que Queremos. Tegucigalpa M.D.C.: Alcaldía Municipal del Distrito Central.
- AMDC 2011. ¡Arriba Capital! Plan Municipal de Ordenamiento territorial 2011-2028. Tegucigalpa M.D.C.: AMDC, PNUD, CAH.
- AMDC 2014a. Diagnóstico Integral Multidimensional. *Borrador - Plan de Desarrollo Municipal con Enfoque en Ordenamiento Territorial*. Municipio del Distrito Central, Tegucigalpa M.D.C.
- AMDC 2014b. Subsistema Social. *Borrador - Plan de Desarrollo Municipal con Enfoque en Ordenamiento Territorial*. Municipio del Distrito Central, Tegucigalpa M.D.C.
- ANGEL, S., BARTLEY, K., DERR, M., MALUR, A., MEJIA, J., NUKA, P., PERLIN, M., SAHAI, S., TORRENS, M. & VARGAS, M. 2004. Rapid Urbanization in Tegucigalpa, Honduras. *Preparing for the doubling of the city's population in the next twenty-five years. Report from Woodrow Wilson School of Public and International Affairs, Princeton University*.
- BRAND, A. & BRADFORD, B. 1991. *Rainwater harvesting and water use in the barrios of Tegucigalpa*, UNICEF/Honduras' Water Supply and Environmental Sanitation Program.
- BRYLD, E. 2003. Potentials, problems, and policy implications for urban agriculture in developing countries. *Agriculture and human values*, 20, 79-86.
- CÁLIX, D. N. 2008. Tegucigalpa, espejismo de la modernidad: el impacto de los discursos liberal y neoliberal sobre la capital de Honduras (siglos XIX y XX). *Amérique Latine Histoire et Mémoire. Les Cahiers ALHIM. Les Cahiers ALHIM*.
- CONSEJO ECONÓMICO Y SOCIAL. 2005. *Diagnóstico: Producción y Empleo de Rubros de Exportación No Tradicionales (Sandía, Melón, Marañón y Camarón)* [Online]. Available: <http://www.trabajo.gob.hn/organizacion/dgt-1/direccion-general-de-empleo/oml/diagnosticoproduccionyempleo.pdf> [Accessed February 16, 2015].
- DEELSTRA, T. & GIRARDET, H. 2000. Urban agriculture and sustainable cities. *Bakker N., Dubbeling M., Gündel S., Sabel-Koshella U., de Zeeuw H. Growing cities, growing food. Urban agriculture on the policy agenda. Feldafing, Germany: Zentralstelle für Ernährung und Landwirtschaft (ZEL)*, 43-66.
- DUBBELING, M. & MERZTHAL, G. 2006. 2. Sustaining Urban Agriculture Requires the Involvement of Multiple Stakeholders. *Cities farming for the future: Urban agriculture for green and productive cities*, IDRC.

- DUBBELING, M. 2011. Integrating urban agriculture in the urban landscape. *Urban Agriculture Magazine*, 25, 43-46.
- FAO 2012. Sistematización del Proyecto Piloto AUP en Honduras. *La agricultura urbana y su contribución a la seguridad alimentaria*. Tegucigalpa M.D.C.
- FAO. 2013. *Huertos se utilizarán como herramientas pedagógicas en los centros escolares* [Online]. Available: <http://fao.org/hn/l/noticias/73-huertos-se-utilizar%C3%A1n-como-herramientas-pedag%C3%B3gicas-en-los-centros-escolares.html> [Accessed February 04, 2015].
- FAO 2014. Ciudades más verdes en América Latina y el Caribe. Roma: Food and Agriculture Organization of the United Nations.
- FAY, M. & WELLENSTEIN, A. 2005. 3. Keeping a Roof over One's Head: Improving Access to Safe and Decent Shelter. *The urban poor in Latin America*. World Bank Publications.
- FLETES RAMOS, Y. 2012. Sistematización de Cosecha de Agua para Riego de Huerto Escolar, Sistematización de Buenas Prácticas: Diplomado en Cambio Climático UNAH-IHCIT.
- GREEN, M. 2000. Participatory development and the appropriation of agency in southern Tanzania. *Critique of anthropology*, 20, 67-89.
- INE. 2014. *Población y Empleo, Inicio* [Online]. Available: <http://www.ine.gob.hn/> [Accessed January 21, 2015].
- LA TRIBUNA. 2013. Tegucigalpa crece... Pero, ¿hay espacio para más gente? La Tribuna. [Online]. Available: <http://www.latribuna.hn/2013/12/09/tegucigalpa-crece-pero-hay-espacio-para-mas-gente/> [Accessed August 30, 2015]
- MARTÍN, M. 2010. La Complejidad Urbana y Ambiental de Tegucigalpa. Proyecto "Tegucigalpa 2010", Capítulo 1. Tegucigalpa M.D.C.: Comité de Desarrollo Sostenible de la Capital, CCIT.
- MARTÍNEZ, R. & FERNÁNDEZ, A. 2007. El costo del hambre: impacto social y económico de la desnutrición infantil en Centroamérica y República Dominicana.
- MIAZZO, F. & KEE, T. 2014. Introduction. *We Own The City: Enabling Community Practice in Architecture and Urban Planning*. The Netherlands: Trancity.
- MOUGEOT, L. J. 1994. CFP Report 8: Urban Food Production: Evolution, Official Support and Significance.
- MUBVAMI, T., MUSHAMBA, S. & DE ZEEUW, H. 2006. Integration of agriculture in urban land use planning. *Cities Farming for the Future: Urban Agriculture for Green and Productive Cities*. RUAF, IIRR and IDRC, Silang, the Philippines, 54-74.
- QUON, S. 1999. Planning for urban agriculture: A review of tools and strategies for urban planners. *Cities Feeding People Report*, 28.
- REDWOOD, M. 2012. Introduction. *Agriculture in urban planning: generating livelihoods and food security*. Routledge.
- SCHORTMAN, A. 2010. "The Children Cry for Burger King": Modernity, Development, and Fast Food Consumption in Northern Honduras. *Environmental Communication*, 4, 318-337.
- SMIT, J. & NASR, J. 1992. Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources. *Environment and urbanization*, 4, 141-152.
- SMIT, J., NASR, J. & RATTI, A. 1996. Urban agriculture: food, jobs and sustainable cities. *New York, USA*.
- THE WORLD BANK 2012. Integrated Urban Water Management. Case Study: Tegucigalpa. *Blue water, green cities*. Washington DC: The World Bank
- UNAH-IUDPAS 2015. Boletín Nacional Enero-Diciembre 2014. Mortalidad y Otros. Edición No. 36. *Observatorio de la Violencia*.
- UNICEF 1990. Urban example prospective for the future: water supply and sanitation to urban marginal areas of Tegucigalpa, Honduras. *Urban example prospective for the future: water supply and sanitation to urban marginal areas of Tegucigalpa, Honduras*. UNICEF.
- VAN VEENHUIZEN, R. 2006. 1. Introduction, Cities Farming for the Future. *Cities farming for the future: Urban agriculture for green and productive cities*, IDRC.
- WATSON, V. 2009. 'The planned city sweeps the poor away...': Urban planning and 21st century urbanisation. *Progress in planning*, 72, 151-193.
- WEKERLE, G. R. 2004. Food justice movements policy, planning, and networks. *Journal of Planning Education and Research*, 23, 378-386.
- ZELAYA Y FERRERA. 2012. *La Reforma Liberal* [Online]. Available: <http://historiadehondurasenlinea.blogspot.nl/2012/06/la-reforma-liberal.html> [Accessed September 15, 2015].