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# **URBAN AGRICULTURE IN BENIN**

**HOW CAN POLICY SUPPORT GARDENERS?**

*Report on a survey conducted among experienced urban gardeners  
in Cotonou and Porto-Novo, Benin*

January 2019



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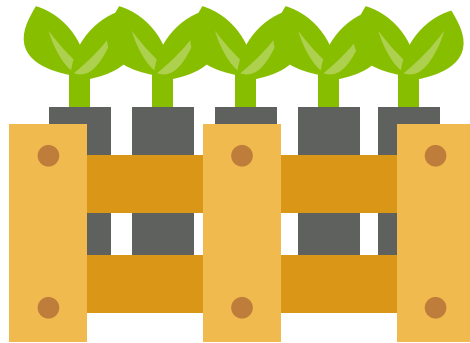
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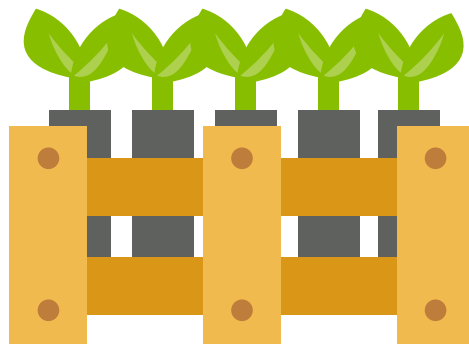
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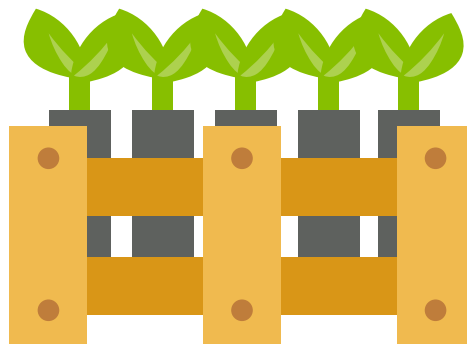
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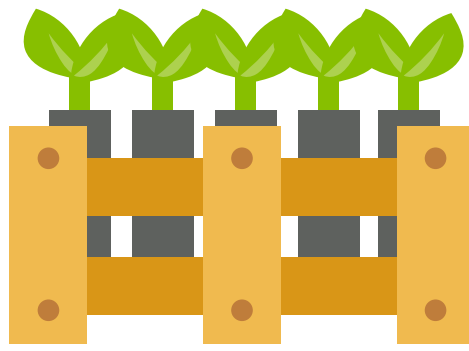
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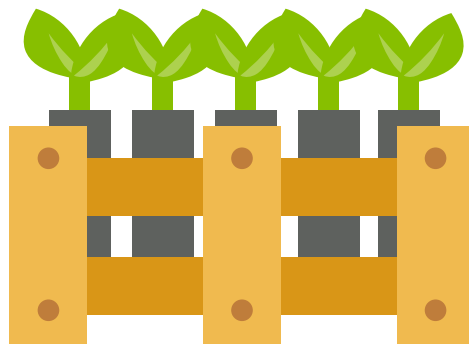
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# Acronyms

<b>ACED</b>	Centre d'Actions pour l'Environnement et le Développement Durable
<b>ACWFS</b>	Amsterdam Centre for World Food Studies
<b>ASECNA</b>	Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar
<b>CFA</b>	Communauté Financière Africaine
<b>FSA</b>	Faculty of Agricultural Sciences
<b>GCP</b>	Food & Business Global Challenges Programme
<b>NWO-WOTRO</b>	Netherlands Organization for Scientific Research
<b>UA</b>	Urban Agriculture
<b>UAC</b>	University of Abomey-Calavi





# Abstract

**U**rban agriculture is a widespread activity that could contribute to realize various Sustainable Development Goals that are set by the United Nations. Calls for expanding the urban agricultural activities are, therefore, justified and merit a high priority on the political agenda. Yet, especially the organization and management of urban agriculture is much under-researched and targeted policies would benefit from more knowledge about the social structures in the allotment gardens. Urban agriculture in Benin is no exception and this study aims to address the knowledge gap with a special focus on organization and management. The study reports on findings of a survey among 261 experienced urban gardeners visited at 29 sites distributed over the cities of Cotonou and Porto Novo. The study elicited information on household characteristics, gardening activity and incomes, food and nutrition security, garden organization and management, benefits for women and socio-economic development and identified constraints on the development of urban gardens. The survey showed that urban gardening in the study is a male-dominated activity that provides income to cover the basic needs of households (housing, transport) and improves diet diversity. Although food quality improved for gardeners, education might further contribute to a better diet. Gardeners are true entrepreneurs who generate income from both gardening and side jobs throughout the year. They are mostly well organized in cooperatives with a good management system (election of a board, regular membership fee and responsibility for common tasks). However, gardeners still have to improve rules relating to ownership and revise their financing incentives to leverage their bargaining power to decrease transaction costs. The study concludes that capacity-building programs may raise awareness among gardeners on the necessity of improving their current organizational frameworks, leading to a sustainable way that capitalizes on the benefits of cooperatives, for example, to secure enough credit for a group. In addition, to address the constraints beyond the control of cooperatives (land access, tenure security, credits, high input costs and market functioning), there is a clear need for support by public institutions for urban garden development.

**Keywords:** Allotment gardens, cities, food and nutrition security, women, cooperatives, Benin.



# Introduction

**T**his section contextualizes the potential benefits of allotment gardens in Benin, presents the study purpose and the structure of this report.

## **BENEFITS OF URBAN AGRICULTURE**

The definition of urban agriculture (UA) has evolved over the years and can be defined as the utilization of small areas within and around cities for growing crops, raising small livestock and processing food-related products, alone or in combination, for own-consumption or sale (FAO, 1999; Veenhuizen, 2006; Game and Primus, 2015). Urban agriculture is practiced by 800 million people worldwide and helps low-income urban residents save money on food purchases (FAO, accessed 2018). Many of these people are among the poorest in their nations (Karanja and Njenga, 2011). Roughly 15–20 percent of the world's food is grown in urban areas, a figure that is likely to increase as cities grow (Karanja and Njenga, 2011). Urban agriculture can contribute to food security and economic opportunity in low-income communities in cities worldwide. For example, it can make an important contribution to household food security, especially in times of crisis or food shortages and, provides employment and income for poor women and other disadvantaged groups (FAO, accessed 2018). This can be substantiated by numerous studies that demonstrate that urban agriculture can enhance food security and alleviate poverty in urban areas in Sub-Saharan African (SSA) countries (Ruel et al. 1998; Saldivar-Tanaka and Krasny, 2004; Wakefield et al. 2007; Teig et al. 2009; Draper and Freedman, 2010; Poulsen et al. 2015; Warren et al. 2015).

In addition, some authors emphasized the multi-functionality of urban agriculture by demonstrating that UA can provide socio-cultural and environmental benefits to local communities (Teig et al., 2009; Draper and Freedman, 2010; Lovell, 2010; Gerster-Bentaya, 2013;). They showed that UA can serve as an instrument for parents to educate their children and to preserve their cultural knowledge, such as how to sow. They demonstrate that UA can also enhance the social cohesion in neighborhoods because cultivating open-areas within cities can discourage squatting and reduce crime. Additionally, the authors show that UA can help beautify the areas and provide healthy food to communities. This shows that UA can have an array of tangible and intangible benefits for urban farmers and the community in general.

Further, recent studies have attempted to tease out the different roles UA can play in creating a livelihood for women in low-income countries (Mkwambisi et al., 2011; Ngome and Foeken, 2012). These studies revealed that UA can provide women with a source of income that can improve their social status within households and communities. UA might enable women to contribute to household food security by supplying or buying additional food. It might also allow women to better carry out their childcare responsibilities, which represents an economic and social advancement in the society. However, these benefits can vary depending on location-specific contexts, which requires additional and more rigorous research into the benefits of UA for women to inform gender-specific policies (Poulsen et al., 2015).

UA has been practiced for decades in Benin (FAO, 2012). Although UA takes various forms, allotment gardens are empirically the main practiced form of UA in Benin. An allotment garden is defined as a plot of land made available for individuals or families for growing food (Irvine et al., 1999; Stephan et al., 2010). Such plots are formed by subdividing a piece of land into a few or up to several hundreds of land parcels that are assigned to individuals or families. However, little is known about how these gardens affect the food security and income of their participants and which constraints hinder the development of such gardens in the country. Likewise, the establishment of allotment gardens re-

quires good organization and management to ensure their long-term functioning. While these issues are still unclear in the literature, they are important to inform policies and practitioners for the successful development of the sector and similar initiatives. For instance, the Republic of Benin in 2015 validated its National Strategic Development Plan of Peri-urban and Urban Agriculture to recognize and provide a legal framework for the development of UA. This political will constitutes an urgent call from policy makers to researchers to explore and recommend conditions for a successful mainstreaming and implementation of UA in Benin. This study aims to address these calls by focusing on the benefits, organization and constraints for the development of allotment gardens.

## **PURPOSE OF THE STUDY**

The objectives of this study are threefold. First, we aim to understand to what extent allotment gardens contribute to food and nutrition security among urban households. Second, the study investigates the functioning of allotment garden systems, including organization, management and decision-making processes that prevail in the allotment gardens and third, the study investigates potential barriers to the sustainable development of allotment garden systems, considering internal and external factors and interlinkages. The study is conducted within the framework of the project “Enhancing urban food security through development of allotment gardens in and around the cities of Benin”, funded by the Netherlands Organization for Scientific Research (NWO-WOTRO) through the Global Challenges Program (GCP). The project focuses on improving food security among the urban poor, especially women and children, through the development of allotment gardens in the urban and peri-urban areas of Benin. The project aims to create an operational integrated framework for the selection and management of allotment gardens in urban areas of Benin. The project, therefore, focuses on solutions that can be integrated into national policy agendas to create an enabling environment for the expansion of allotment gardens.

## **STRUCTURE OF THE REPORT**

The report is organized as follows: section 2 presents the methodology of the study and section 3 reports on the results on the survey by category: general and socio-economic information of the gardeners, garden characteristics, food and nutrition security, garden organization and management, gender-related issues, constraints for gardening and mitigation and validation. Section 4 synthesizes and formulates policy recommendations.



# Methodology

This section presents the methodology of the study through the sampling, design and implementation of the survey and processing of the data.

## STUDY AREA

The study was conducted in two cities in southern Benin: Cotonou and Porto-Novo. Benin is a West African nation that is bordered by Togo, Nigeria, Burkina Faso and Niger. Cotonou is the biggest city and seat of government of Benin while Porto-Novo is the second biggest city and capital of the country<sup>1</sup>. Cotonou is Benin's most populous city and the country's economic center. The city is located between the Atlantic Ocean and Lake Nokoué in the south-eastern part of the country. The city also hosts a free trade zone in the interior that allows the landlocked Saharan states to exchange goods. Porto-Novo is the capital city and the seat of the national legislature of Benin. The city is located in an inlet on the Gulf of Guinea and is also a thriving center of commerce, especially with Nigeria.

## SAMPLING

The survey was conducted in 29 gardens where local agencies of the Ministry of Agriculture provide their extension services. The number of people involved in these gardens was aggregated and revealed 828 gardeners. Hence, the study chose to survey 30 percent of these gardeners and applied a stratified sampling based on two criteria: number of gardeners per city and number of participants per allotment garden that were randomly selected from their corresponding population. The study also ensured that at least three respondents were interviewed per allotment garden during the survey; thus, the survey sample was determined.

**Table 1: Sample of gardeners for the survey**

CITY	NUMBER OF GARDENS	POPULATION OF GARDENERS	SAMPLE OF GARDENERS	
			COUNT	PERCENT
Cotonou	9	619	189	72.41
Porto-Novo	20	209	72	27.59
Total	29	828	261	100.00

## SURVEY IMPLEMENTATION

The survey was designed in spreadsheet format with validated lists in scroll-down menus as a standard response with dedicated fields for open answers. Inserted data was stored in a vector format that facilitated further processing. Data collected encompasses general and socio-economic information, garden characteristics, food and nutrition security, garden organization and management, benefits for women, multi-functional benefits, and constraints and mitigation. The selection of gardeners for inclusion in this study was conducted at random with replacements, if required i.e. in case a participant was not available, another person was randomly chosen. Survey instructions were given to interviewers to guide them in: i) using the hard copy of the survey in the field, ii) using the digital

<sup>1</sup> <https://www.worldatlas.com/articles/the-major-cities-of-benin.html>

questionnaire to store data, iii) using sampling schemes for gardeners and d) approaching the gardeners; gaining trust and dealing with controversial answers. A storyline was written to introduce the purpose of the survey, its processing and translation into policy measures and the follow-up of the project through active participation of the gardeners.

## **DATA PROCESSING**

The survey was processed in Minitab 14. The collated output was read as a vector and labelled according to the question codes. Answers were standardized where needed. Categorical answers were harmonized in standard formats and presented as frequencies. Numerical answers were processed and presented as mean and quartiles.

## **FINDINGS VALIDATION**

After the data was analyzed, the study organized a focus group discussion with twenty-two (22) participants: twenty (20) urban gardeners (men and women) and two (2) experts from the local agencies of the Ministry of Agriculture of Cotonou and Porto-Novo. The aim was to discuss the main findings of the study with the participants – gardening profitability, food security, organization and management, joint regimes and lack of credit for gardening. The discussions were summarized in the results section and recommendations were added in the synthesis section.