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Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro

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Abstract. The rapid urbanization policies that are re-crafting Rio de Janeiro as a world mega-event venue are dramatically altering the socio-economic and security landscape of the city, and in particular, its favela communities (informal settlements or slums). These changes focus on economic expansion, are driven by private investment partnerships, are supported through neoliberal governmental policy, and facilitated by a military pacification campaign. Many interventions result in the displacement and destabilization of favela residents. However, there are also some opportunities beginning to open up to create resilient and productive spaces inside these over-stressed communities, particularly in the area of food and nutrition security. This paper describes some of these key initiatives, and how they are impacting on the social landscape of favela residents.

Keywords. sustainable agriculture, land use restoration, poverty eradication, informal settlements, food security, employment and social policies

1. Introduction

Almost twelve million people live in the larger metropolitan area of Rio de Janeiro. More than six million people live inside the municipality. One in five (1.4 million) live in dense urban favelas (informal settlements or slums), and the numbers are increasing.[1] Decades of rapid urbanization, neglect, poverty, violence, displacement, and deficient public services and infrastructure has brought great hardship and insecurity to favela residents, many of whom have lived under the control of drug-trafficking gangs since the late 1970s.

With Rio's successful bid to host the 2014 World Cup and 2016 Olympics, key advisors to the State concluded that Rio needed to take military control of strategically located favelas—those in close proximity to wealthy neighborhoods, tourist areas, sports venues, and transportation routes.[2] As a consequence, the *Unidade de Polícia Pacificadora* (Police Pacification Unit or UPP) public security campaign was formed.[3] The 'pacification' has two goals—firstly to take control of favela territory, and secondly to reconstruct social order. To date, the UPP have established military units in 38 of Rio's inner-city favelas. Most others, those that are of little consequence to the city's urbanization plans, remain under the control of criminal militias and gangs.

Urban revitalization through sustainable economic development is foundational to the neoliberal goals the UPP facilitates. According to the municipality, these goals meet at the nexus of good governance ; public, private, and third sector partnerships (PPPs) ; and citizen participation.[4] Aligning with these goals, a series of micro-scale food security initiatives have been established in the favelas through a range of PPPs. Others have developed independently as a result of increased mobility that allows more fluid travel to, from and between pacified favelas and the *asfalto* (formal city).

With 96.7 % of the the state population living in urbanized areas and 3,764 family farmers active in the region[5], urban agriculture (UA) as a sustainable economic platform for the urban poor, is already a growing sector for investment, growth, and jobs.

Within the favelas, UA investments have been small, nevertheless, food security initiatives remain one of the few programs that have been facilitated in some way by the presence of the UPP. This paper aims to describe how these projects are manifesting under these circumstances. Specifically, it assesses the potential viability of UA, and if it is a practical means for enhancing the quality of life of favela residents.

2. Methodology

A range of intergenerational participants, representatives from Residents' Associations, civil society organizations, municipal-level stakeholders and project beneficiaries were interviewed during the course of gathering information for this paper. Research was conducted through *Green My Favela* (GMF), a not-for-profit environmental restoration project and action research network that engages with favela residents, as well as public, private and third sector collaborations to establish gardens and facilitate sustainability initiatives in the favelas of Rio. A great deal of time has been spent working in collaboration with Rio's Municipal Department for the Environment's *Hortas Cariocas* program, which spearheads two of the projects detailed in this report.

Fieldwork was undertaken in three favelas between November 2010 and March 2015. These favelas were chosen for this comparative study because of the relative field variances they offer. Each favela has been pacified for a different length of time, and each is markedly different in its geographical, socio-economic, and security context. The size and approach of the food security projects also varies in each case. The projects take place in three pacified favela complexes or clusters of more than one community :

(i) Babilônia/Chapéu Mangueira, two small higher-income earning favelas located in the affluent South Zone neighborhood of Leme (pacified in 2008/9).

107 UPP officers oversee 3,740 residents—one for every 37 residents.[6]

Previously under control of the *Terceiro Comando* (TC) drug trafficking gang.

Projects : *Favela Organica*—an independent food reuse enterprise launched by a favela resident ; and

Rio's Sustainable City project—a short-term public/private partnership (PPP) initiative that trained resident volunteers in domestic-scale food production and micro-entrepreneurship.

(ii) Borel/Formiga, a middle-income North Zone cluster of favelas located in the middle-class neighborhood of Tijuca (pacified in in 2010).

500 UPP officers oversee 12,815 residents—one for every 33 inhabitants.[7]

Previously under control of the *Comando Vermelho* (CV) and the *Amigos dos Amigos* (ADA) drug trafficking gangs.

Project : *Hortas Cariocas*—a mid-size food garden supported by the Municipal Department for the Environment.

(iii) Manguinhos, a large, poor North Zone cluster of ten to fifteen favela neighborhoods (pacified in 2012).

588 UPP officers oversee 32,000 residents—one for every 60 residents.[8]

Previously under control of the CV drug trafficking gang.

Project : *Hortas Cariocas*—a large-scale food farm developed as a PPP.

Though this paper recognizes that Rio's urbanization and public security policies facilitate and advance a very specific economic development agenda that impacts tremendously on favelas, it is beyond the scope of this paper to scrutinize these policies. As it analyses only three of 38 pacified areas, the study is also limited in its ability to generalize about the impact of UA on favelas as a whole. Rather, its intent is to provide an overview of how food security initiatives are being established within a pacification landscape, and to assess the viability of, and challenges associated with establishing various types of food security initiatives within three specific contexts.

3. Case studies

3.1 Babilônia/Chapéu Mangueira

The Babilônia and Chapéu favelas are wedged into the steep mountainsides at the back of the wealthy neighborhood of Leme, located at the far end of Copacabana beach, one of the most popular tourist destinations in Rio. These favelas have historically been the proving grounds for State interventions because of their small scale, their relatively low levels of conflict, and their spatial and social proximity to many of those who draft the public policies implemented in them. These favelas have the best socio-economic indicators among the three areas analyzed in this paper. 75 % of residents are homeowners who live with a well-developed infrastructure, including almost complete access to water, sewage and garbage collection. The neighborhoods rate high on the city's overall Social Development Index[9], yet despite such high indicators, school enrolments are dropping and illiteracy remains a problem, particularly in Babilônia, where 15.9 % of the population older than fifteen is illiterate.[10] These neighborhoods have had one of the most harmonious relations between a trafficking-dominated favela and the surrounding *asfalto*. Until the mid-2000s, drug-related conflicts were rare, however by 2005 exchanges of gunfire between enemy gang factions had become frequent.

The pacification of Chapéu and Babilônia took place in mid-2009. Shortly after the installation of the UPP in this neighborhood, a Babilônia resident by the name of Regina Tchelly founded the *Favela Organica* project. *Favela Organica* encourages the creation of community gardens and generates revenues from the reuse of the food produced in them. After attending a UPP-sponsored workshop, Tchelly sought government micro-funding to establish her venture. After being rejected, she launched it independently with startup funds of R$ 140 (US$ 45). *Favela Organica* became a remarkable success and is now replicated in several cities throughout Brazil. In Rio, it employs eleven women in total, all residents of Babilônia. The women work part-time to teach favela residents how to prepare meals by utilizing the rinds, peels, seeds, and stems of food items that are normally

discarded. *Favela Organica* offers more than 450 organic recipes based on the reuse of foods. In addition, Tchelly prepares buffets for up to 200 people at a single event, and has traveled to Italy at the invitation of Slow Food International to present recipes to large audiences.

In Tchelly's case, as is the case generally in Brazil, micro-financing is rarely available to the informal sector. Though microfinance institutions have proliferated in recent years, primarily through *Bancos do Povo* (People's Banks) and Community Development Banks,[11] they tend to focus on short-term profitability and financial results over the creation of social ties and social capital (the criteria typically associated with solidarity financing). Thus they are limited in their ability to extend or respond to the informal economy.[12] Tchelly's project exposes a serious deficiency in Brazil's microfinancing system. It is also an example of how little capital is needed for the Base of the Pyramid (BoP) sector (those earning US$ 8 a day or less) to secure positive results given a good plan with low risks and costs.

Figure 1. Sprouting starts on concrete laje, 2010.

In contrast to Tchelly's independent project, a PPP domestic-scale gardening program was launched in Babilônia in 2011. This was a corporate-sponsored, social entrepreneurship project developed as part of the *Rio's Sustainable City* program, executed by the Brazilian Business Council for Sustainable Development and financed by the Souza Cruz tobacco company. Altogether, around $ 3.5 million in sustainability funding was injected into favela communities through private investment partnerships under this program over a two-year period.

The heavily publicized project coincided with the United Nations 2012 Rio+20 Sustainable Development Summit. Its stated goal was to bolster social entrepreneurship by training sixteen residents who volunteered for a five-month period to learn agroecology techniques by establishing small food gardens on their home terraces and *lajes* (concrete slab roofs). The trainees have since gone on to replicate the project in similar favela communities where built density is prohibitive to creating larger gardens. These training initiatives tend to come parceled into small, short-term packages that satellite around mega-events and market the city in a particular light. However, together with the other sustainability projects implemented in this neighborhood, the project claims to have reached 40 % of households, or about 1,200 homes in total.[13]

Though limited in their reach, both *Rio's Sustainable City* project and *Favela Organica* offer diverse approaches for developing food security initiatives inside favelas. Both demonstrate the self-replicating potential of food security initiatives, and both interface with many aspects of the favela ecosystem. Beyond the possibilities of fortifying food and nutrition security, residents claim they possess an ability to catalyse peer-to-peer dynamics, contribute to a culture of purpose-oriented community life, promote environmental education, build useable skills, support capacity building, and aid in raising individual self-esteem.

3.2 Tijuca

The Tijuca favelas are a cluster of seven communities located in the North Zone of Rio de Janeiro. In terms of socio-economics, they occupy the middle ground between Babilônia and Manguinhos. Complexo do Borel comprises of three communities. Formiga is another part of the favela cluster, located in a neighborhood close by. It is one of the smallest, oldest, steepest, and most populated favelas in the area.

For the twenty years preceding pacification, armed conflict between the Tijuca favelas became so commonplace that it developed a scheduling arrangement where shootouts took place at agreed upon times. Because of the gang wars, the community ties that had historically linked the favelas to each other were critically injured. Faction disputes restricted residents' mobility through enemy gang territories and spilled out to destabilize the surrounding *asfalto* neighborhoods.

In mid-2010, military units entered Borel and Formiga and installed UPP officers throughout seven Tijuca favelas. Due to the built density, the steep terrain, and the complex social geography, the UPP struggle to remain in control of this area as a whole. Because of its small size and relatively low levels of conflict, Formiga is considered to be the most successfully pacified of these communities.

A UA project run by the Municipal Department for the Environment's *Hortas Cariocas* program has established five food gardens throughout the Tijuca favelas—including one in Formiga.[14] The program works to build organic gardens with favela residents inside favelas and public schools.

Figure 2. Gardener Orlando Ribeiro (left) with Julio Barros, Director of Hortas Cariocas, 2012.

The Formiga garden was established in 2008 on a steep, terraced plot of land located under high voltage transmission lines. Socio-economic development, poverty alleviation, food and nutrition security, and the mitigation of erosion and

pollution, are just some of the benefits the garden brings to the community. It has also reduced informal housing development and the dumping of trash on unoccupied land. Gardeners include the unemployed, retirees, ex-offenders, and individuals who have had previous involvement with drug trafficking. By their own assessment, their levels of health and well-being have improved greatly since they began working on the allotment.

The garden supervisor, Orlando Ribeiro, is one example of a former gang member transitioning to community gardener. Ribeiro cultivates a steady supply of vegetables, medicinal herbs, and eggs that are available at low cost to residents. Produce is fresher and more affordable than at the supermarket, and as well as providing food at discount prices, the garden donates to approximately twenty at-risk families, a public school, and a local daycare center. The garden helps alleviate vulnerability to food and nutrition insecurity which is prevalent because of the combination of two interrelated factors : the difficulty to access to fresh, affordable food due to low family income levels ; and the trend toward homogenous eating habits which are generally low in nutritional value.

Hortas Cariocas gardeners are trained in agroecology and paid a stipend of R$ 480 (approximately US$ 130) per month to work full-time in the gardens. The program's guidelines stipulate that half of all food produced must be donated to neighborhood schools and families with high social vulnerability—as identified by the local Residents' Association. All other produce is either taken home or sold by gardners. Profits are divided or reinvested back into the garden. Gardeners also visit neighborhood day care centers and schools to teach children about growing food, and give seeds and seedlings to children to grow food in their homes.

Hortas Cariocas is one of the few municipal-led, social development programs that aims to bring poverty alleviation to the people of these communities. Even so, the Social Development Index for this area remains disturbingly low (0.468).[15] Though UA plays only a minor role in social development in Tijuca, it is critical to the sustainable development landscape because it affects conflict dynamics and directly impacts on the success and quality of urbanization and public security overall.

3.3 Manguinhos

The Manguinhos Complex is a cluster of fifteen North Zone favelas inhabited by approximately 32,000 people. Enmeshed in a derelict fabric of government housing projects and abandoned factories that have been turned into 'occupations,' Manguinhos is geographically confined within a labrynth of congested highways, railway lines, and chronically polluted rivers that function as open sewers. Live, high voltage transmission lines cut through its center. It is plagued by floods, urban waste and environmental toxins that afflict residents, and in particular youth, who are 500 times more likely to develop cancer and neurological disorders because of exposure to high levels of lead that pollute the area.[16]

The demographics and poverty indicators of Manguinhos are dismal. The Human Development Index is 0.65 %, among the five lowest of Rio. 15 % of girls between the ages of fifteen and seventeen have children. The monthly per capita income is R$ 188.00 (US$ 60). 20 % of residents survive on less than minimum wage, and unemployment rates languish between 30 %-50 %.[17]

Referred to as Rio's 'Gaza Strip,' Manguinhos was until recently the site of the city's largest *crackolândia* (crackland) and one of its most violent drug trafficking centers.

For decades, traffickers in conflict with rival factions and State military forces trapped civilians in a state of perpetual violence. All activities relating to the drug trade—sales, armed trafficking, the consumption of crack cocaine, prostitution, gang executions, and shootouts with Special Operations troops, took place openly and visibly in public space. Manguinhos was the definitive example of an internal armed conflict and representative of Rio's most chronic urban warfare issues.

In October 2012, State military forces invaded the favela with 1,300 troops, helicopters and tanks. Pacification has been brutal—characterized by disappearing infrastructure funds, forced relocations, violent protests, and a series of extra-judicial murders at the hands of the UPP. The ultimate goal of this pacification, as it is laid out in redevelopment plans, is to execute a series of public/private investment partnerships that aim to reshape the entire area leading up to Rio's Maracanã sports stadium four kilometers away.

Following pacification, the city immediately bulldozed the kilometer-long strip of dilapidated land under the transmission lines where the *crackolândia* had been. R$ 500,000 (US$ 165,000) was budgeted through federal and municipal funding to redevelop the area as a large-scale food garden. *Hortas Cariocas* spearheaded the project, which advanced in partnership with the private electric utility *Light* (which granted the legal right to use the land under the transmission lines) and the Manguinhos Residents' Association (who negotiated between all stakeholders, including the CV gang, who still maintain influence in the favela).

The first step was to excavate 700 truckloads (450 tons) of accumulated trash and debris from the site. A half-meter layer of contaminated surface soil was removed and replaced with gravel to increase drainage and prevent weeds. 300 garden beds were subsequently built and filled with fresh topsoil. Eleven water tanks were installed and connected to the city's water supply.

The Residents' Association worked with *Hortas Cariocas* to hire more than 20 gardeners, some of whom were recovering addicts. They were supplied with agroecology training, seeds, tools, and basic equipment, and have been growing enough food to take home two to three bags of produce a week to offset their monthly stipend since early 2014. In accordance with *Hortas Cariocas* guidelines, they must also distribute a percentage of produce to more at-risk members of the community, as well as local school lunch programs. Despite the improvements brought about by the garden, Manguinhos remains a difficult social space to navigate. *Hortas Cariocas* must negotiate with all stakeholders—including traffickers and recovering addicts. This makes it a very ambitious program to manage.

Figure 3. Volunteer gardener in GMF section of Hortas Cariocas garden, Manguinhos.

A separate section of the garden was developed in collaboration with the urban restoration project *Green My Favela*, who worked with residents to establish a community space with retirees, the underemployed, children, and families. A handful of volunteer residents cultivate and maintain 48, ten-meter long garden beds. They receive no financial renumeration for their efforts, however, they set their own work hours, make all decisions about what is grown and how produce is distributed, help each other maintain their plots, and resolve their own interpersonal conflicts. They appreciate the garden as an aestheticised, productive, and therapeutic social space. The garden is open to the public and provides food for about 100 favela residents free of charge.

A range of fruits, vegetables, medicinal herbs, and seasonings are grown year round. The produce has increased the amount of vegetables, and by extension, the nutrition intake consumed by its beneficiaries. The garden fulfills an important role in diversifying food habits and providing nutrients, especially vitamins and mineral salts, in which diets of favela residents are generally poor. Another benefit is that food is produced organically and thus is free from pesticides. Manguinhos can now boast that it is the site of the largest food garden (physically) in all of South America—a place where people gather on weekends to stroll through the space with their friends and families and collect free vegetables along the way.

What the garden in Manginhos demonstrates is that the social culture of favela living can change quickly if given enough support. Children and families are now able to walk out of their homes and into a garden instead of a *crackolândia*. They congregate, work, play and socialize in clean, productive, and safer public space. All this demonstrates the enormous potential that social infrastructure, and in particular UA, can have in the lives of favela residents.

4. Challenges

With more than half of Brazil's population still living on a monthly family income of less than US$ 150,[18] the need for poverty alleviation remains critical. Though Brazil has made tremendous strides in reducing food insecurity over the last several years,[19] almost 44 % of those receiving a quarter of the minimum wage or less still experience moderate to severe food insecurity. Those in this income bracket spend 29.8 % on food.[20] Diets consist almost exclusively of coffee, milk, bread, margarine, rice and beans, with half of all households going for approximately three weeks at a time without consuming vegetables or meats.[21]

With 22 % of Rio's residents living in overcrowded urban favelas under threat of eviction in substandard housing without access to sewage,[22] and with public security and violence still critical problems, developing UA as a sustainable venture presents core challenges. Key issues that must be addressed by the municipality in order for it to advance effectively include:

(i) implementation of adequate solid and liquid waste management systems (including recycling options) that meet demographic capacity;

(ii) formal designation of UA areas in Rio's Municipal Master Plan;

(iii) political recognition that UA is an integral to favela development and an effective tool for developing a participatory and inclusive urban management structure;

(iv) political recognition that UA is an essential component to fighting poverty, creating self-reliant local food systems and chains, and cultivating a robust urban food supply;

(v) support for bottom-up integration over top-down intervention;

(vi) installation of social infrastructure which bridges the inequality of resource access;

(vii) a shift in pacification policy that funds social investment, not only military intervention;

(viii) the recognition that good and transparent governance is fundamental to all of the above.

There remain other barriers to developing food security and UA initiatives in Rio's favelas. These include zoning restrictions, a lack of micro-funding, and the inability of the state to work effectively with informal communities.

On a micro-level, there is an array of unevaluated health risks associated with cultivating food. In Manguinhos, for example, bioaccumulators and other toxins generated from flooding, the migration of chemicals from a nearby oil refinery, garbage encroachment, and air release pollution from heavy traffic, leave the garden vulnerable to contamination. Recycled soil supplied by Comlurb (Rio's garbage collection agency) used to replenish the beds contains large amounts of cut glass, and some smells so bad that gardeners will not use it. To date, there has been no testing undertaken to ascertain the dangers relating to any of these issues.

Gardens are also under threat of being built over, unwittingly destroyed by other municipal departments, at risk from land tenure insecurity, subject to fluxes in public security, and being abandoned by residents who are disillusioned by some or all of the above. Gardeners may also leave a project to accept better paying work, or for reasons associated with ill-health. As well, social dynamics are susceptible to interpersonal, trafficking, and police conflicts, which can result in

intimidation, a lack of social cohesion, and diminished productivity.

Rio claims it has structured the goals of its current Municipal Plan around the outcome document of the 2012 United Nations Conference on Sustainable Development.[23] If this is indeed the case, it must place poverty eradication as one of its most important objectives.[24] In this regard, UA can provide a multi-dimensional means with which to make improvements in social development by stimulating local economic growth and developing safe and productive public space. Thus far, however, there are no commitments to engage in institutional reform whereby the poor have a voice in development decision-making, whereby the legal rights for citizens are provided for, whereby law enforcement is just (or will even continue in favelas after the 2016 Olympics), or whereby the processes of government are transparent.

Another complex challenge that is yet to be addressed within the social development paradigm, in general, is cognitive depletion. Money can go a long way toward altering the dynamic that leads to willpower depletion among the poor. The impact of cash transfer programs and subsidies on beneficiaries' wellness has been found to go beyond income support, to produce higher school enrollment rates, longer school progressions, and lower grade repetition. In the area of health, low birth weight, infant mortality, malnutrition and diarrhea has also been reduced,[25] along with the vulnerability of women, who are among the most at risk of poverty.[26]

Despite these successes however, studies suggest that attaching conditions to income subsidies—such as requiring beneficiaries to go through a bureaucratic process in order to receive a monthly stipend—may further exhaust the already stressed decision-making capabilities of people living in poverty. Individual agency constrained by social influences has also been shown to affect an individual's capacity to become an active agent of social change.[27] This may be one reason why government stipends do not necessarily lead to increased productivity, or why, in the right circumstances, gardeners can work productively without financial renumeration.

Behavioral scientist Eldar Shafir asserts that living in poverty produces a psychology of "tradeoff thinking"[28] that leads to behaviors of "depletion and error."[29] This is backed up by at least one economic study that suggests decision-making in poverty is expensive at a cognitive level and can produce mental fatigue.[30] Therefore, it can be concluded that development approaches toward reducing poverty are more complex than efforts that just focus on access to health, education, agriculture, and finances, and that certain cognitive functions must also be considered potentially depletable.

5. Potential benefits

The price of food in Brazilian cities continues to rise steadily, including in Rio, where in April 2015 alone, food staples rose by 4.51 %.[31] Programs with green socio-economic potential, such as organic agriculture, are particularly important for creating the enabling conditions to promote the BoP sector.

By 2010, almost $ 20 million of federal funds benefiting 74,000 BoP recipients had been invested in the urban and peri-UA sector of Brazil.[32] Agroecology and organic agriculture is a growing subset of this sector, with 90,000 organic producers[33] active throughout the country—those not using pesticides, chemical feedstock or genetically modified seeds or organisms. This whole-systems approach to local food production was bolstered by a three-year National Organic Production and Agroecology Plan (PLANAPO) that invested $ 4 billion into the agroecology sector through 2014.[34] Though this figure represents less than one-tenth of federal agribusiness subsidies, and though very little of this reached the favelas, it is nevertheless a substantial step toward strengthening the sector overall.

There is a wealth of evidence that suggests that UA is an effective means not only for helping to alleviate poverty,[35] but for bringing social stability and therapeutic relief[36] to the residents of favela communities.[37] Other benefits of UA is that it can be delivered at a relatively low cost, while at the same time mitigating environmental risk and ecological scarcity, all without expanding a development footprint. Gardens also can provide safer, cleaner, and more productive social space that can diminish feelings of lack, anxiety and stress.

In favelas, UA has the potential to play an important role in changing the conventions that govern human interaction. As social institutions, these initiatives, if instituted properly, can function as devices for building social cohesion and bridging the gap between the formal and informal sectors. Cultivating therapeutic and safe space can also shift social norms away from feelings of deficiency and insecurity and toward civic involvement and the stewardship of public space. In addition, gardens are critically important for their ability to introduce youth to an alternative other than drug culture. UA also has the capacity to emerge as an important, yet restricted means with which to repair depleted ecosystem services, develop better food and nutrition security, stimulate job creation, and establish local, informal production and distribution chains.

Non-clinical interventions such as gardening play a big part in helping to reduce the symptoms of anxiety, and restoring drained willpower, through contact with nature.[38] In the favelas, gardeners claim that it is the therapeutic and stress relief benefits that are the most rewarding for them. Other residents claim that because these urban spaces grow out of remediating abused lands, it is access to clean, aestheticized, safe and peaceful space that is important, especially for the children and families. In the case of Manguinhos, the garden also provides a social alternative for youth, where once there was extraordinary violence.

Above all, favela gardens have the potential to point toward how to build participatory and inclusive networks, advance cooperation and respect between societal tiers, create a level of trust and confidence between individuals and organizations that are unfamiliar to each other, and combat the likelihood of criminal violence and other forms of trust violation within the harshest of circumstances.

6. Conclusion

Despite the limits of UA as it currently exists in the favelas, these practices are suggestive of a municipal paradigm shift that at least partially recognises the benefits of agroecology

as a means for advancing social development, cultivating sustainability, realizing the right to food, and promoting inclusive citizenship. Though UA may not have the production capacity to fully meet the food security needs of favela residents, it does point a way to a better future for favela residents, one that offers an integrated way to build local, citizen-centered, socio-economic platforms. It is an interface that brings together divergent actors, skills and experience, cultural backgrounds, levels of education, objectives, social capital, and economic investment to cultivate more sustainable and ethical land use practices.

UA is a cost-effective poverty alleviation tool that provides a framework for capacity building that connects to the areas of education, health, resource management, natural disaster mitigation, environmental recovery, and economic vitality. It is a replicable and scalable model that can be catalyzed independently or exist in any number of PPP configurations; that is suitable for integrating into the Municipal Master Plan to support existing sustainability and poverty eradication goals; and that is participatory in nature.

Though it has tremendous potential, UA can also easily fail. Its informal roots and meager institutional support, framed in already tense and violent resource scarce environments, make it a precarious enterprise at best. For every garden successfully established in the favelas, one becomes imperilled or fails. However, within smaller, less stressed favela contexts, with lower levels of conflict and higher levels of public security, success is more easily achievable.

The UA programs discussed in this paper provide adaptable blueprints for working inside fragile communities, for reutilizing abandoned lands, for remediating degraded space, for increasing food and nutrition security, for generating income, and for cultivating co-governance and citizen-management. Moreover, it demonstrates how being able to freely visit, cultivate, or play in a garden is one of the most profound and therapeutic experiences to be had living in a dense, urban favela. The ability to congregate in aestheticized, productive public space, or stroll through a garden and pick produce to take home, is testimony to the enormous difference that food security programs are making in the daily lives of at least some residents living under pacification in Rio de Janeiro's inner-city favelas.

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