# URBAN AGRARIAN UTOPIAS

# RECONCEPTUALIZING THE ROLE OF AGRICULTURE IN THE URBAN LANDSCAPE

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This thesis focuses on how urban landscapes have been re-conceptualized socially and spatially to include agriculture across time and space. Recently, urban agriculture has gained great momentum as a catalyst for change and innovation within cityscapes. However, these present efforts remain bottom up initiatives led by individuals and organizational groups. To more holistically incorporate urban agriculture into the city, it must become a dimension of urban planning as well. This thesis explores how urban agriculture has been incorporated into utopian blueprints and visions for present and future cities – namely, urban agrarian utopias (UAU) – examining its social, economic and ecological viability. These UAUs have been harnessed by many people in advanced industrialized countries stemming from desires of urban imaginations in western culture. The urban agrarian utopias examined in this study include Dickson Despommier's model of vertical agriculture and the case of Agromere in the Netherlands. Furthermore, this thesis uses David Harvey's relational framework of dialectical utopianism between form and process, as well as creating a second evaluative dialectic between bottom-up and top down approaches for the incorporation of UA into the cityscape, to understand the realizability of each case study. Evaluating their idealized reconnection of town and country and the beneficial design elements of these visions, this study explores the definition of 'utopianism' as a stimulator of exploration and possibility. However, at the same time, this study thinks critically about the common interpretation of utopianism as 'unrealizable'. Although utopian visions are often associated with eventual downfall, I will illustrate the importance of utopian thought and aspirations in modern environmentalism.

## Introduction

There is a time and place in the ceaseless human endeavor to change the world, when alternative visions, no matter how fantastic, provide the grist for shaping powerful political forces for change. I believe we are precisely at such a moment. Utopian dreams in any case never entirely fade away. They are omnipresent as the hidden signifiers of our desires.

-David Harvey<sup>1</sup>

Imagine. Imagine a place where the separation between urban and rural is dissolved so that agriculture flourishes within the boundaries of the city; a place abounding with diversity and growth, including biodiversity and vegetative growth; a place full of life. Imagine a city that through an alternative food system reconnects consumers with farmers. Imagine a city where aesthetics, social wellbeing and ecological improvement meet a practical, efficient and economic design structure. Luckily, "[w]e are, at root, curious and transformative beings endowed with vivid imaginations and a certain repertoire of possibilities that we have learned to put together in different ways at different places and times."<sup>2</sup> We *can* imagine such a vivid landscape.

From glimmering, tall landscapes to invigorating, cultural hotspots, the city embodies our most consistent and successful attempt to remake the world we live in.<sup>3</sup> Cities are evolving entities that are continuously re-imagined, re-drawn and re-shaped by its inhabiting societies in hope for better futures. They are often associated with ideas of freedom, enlightenment and exploration, and thereby, cities serve as attractive destinations for diverse populations. However, at the same time cities have also long been linked to social and ecological problems, such as alienation and ill sanitation. As a result, an apocalyptic, or dystopian, perspective of cities depicts blighted scenes ridden with

<sup>&</sup>lt;sup>1</sup> David Harvey, *Spaces of Hope* (Berkeley: University of California Press, 2000), 191.

<sup>&</sup>lt;sup>2</sup> Harvey, *Spaces of Hope*, 208

<sup>&</sup>lt;sup>3</sup> Harvey, *Spaces of Hope*, 159.

despair and fear. "The tension between these two sides runs through urban imaginations in western culture."<sup>4</sup> Specifically, though, with desires for alternate worlds and social transformation, cities often serve as core subjects of utopian visions through which they are re-imagined, spatially and conceptually.

Utopia refers to both a good-place (eu-topos in Greek) and no-place (ou-topos), meaning that it stands between the ideal and the (un)realizable. "Utopianism is the nearest thing we have to a cross disciplinary tradition of thought about the problem of dwelling" and through its grand ideology, challenges narrow definitions of the possible and the impossible.<sup>5,6</sup> Through utopian visions the re-conceptualization of space (and the re-organization of the social relations contained in that space) offers valuable insight for exploring possibilities of what could be.<sup>7</sup> Whether driven by a creative impulse, a practical design solution or an idealistic vision, utopias reflect real human desires for alternative social and physical environments.

Presently, visionaries across disciplines are conceptualizing the spatial construction of urban landscapes both in terms of architectural design and social processes to include urban agriculture (UA). Urban agriculture involves the production of food, animal husbandry, and the processing and distribution of that food within the urban landscape.<sup>8</sup> This socio-spatial alternative has gained great momentum both in theory and in practice, in hopes of transforming cityscapes into alternative productive environments. Urban agriculture, as stated in literature, provides an unconventional food system as

<sup>&</sup>lt;sup>4</sup> David Pinder, Visions of the City: Utopianism, Power, and Politics in Twentieth-Century Urbanism (New York: Routledge, 2005), vii.

<sup>&</sup>lt;sup>5</sup> "Hungry City: How Food Shapes our Lives, Sitopia," Carolyn Steel, accessed February 3, 2011, http://www.hungrycitybook.co.uk/blog/?page\_id=17.

<sup>&</sup>lt;sup>6</sup> Pinder, Visions of the City, 7.

<sup>&</sup>lt;sup>7</sup> Pinder, Visions of the City, vii.

<sup>&</sup>lt;sup>8</sup> Nina Mukherij, "The Promise and Pitfalls of Municipal Policy for Urban Agriculture" (MS Thesis, University of Wisconsin-Madison, 2009). 2.

compared to the current industrial system and tends towards desires of ecological integrity, food security, self-sufficiency, producer/consumer reconnection, and community development. For these reasons, inspired individuals and communities along with advocacy organizations in cities in both the Global North and Global South have incorporated urban agriculture on rooftops, in empty lots and in peri-urban areas for both personal consumption or to supply local markets. In fact, in cities such as Portland, Tokyo and Toronto, urban agriculture has become a social and environmental movement, and in cities such as Havana, Gaborone and Hyderabad urban agriculture has increased food security and provided jobs for local residents. But the interest in urban agriculture as an integral part of city planning has grown beyond these bottom-up efforts; in fact, entire blueprints have been drawn based on the re-inclusion of farms and horticulture into urban settings.

This thesis explores two specific visions: vertical agriculture, envisioned by medical ecologist Dickson Despommier, and Agromere, a design for the future city of Almere-oost, the Netherlands. Vertical farming is an exportable vision for the reintegration of agriculture into the city, meaning that it is not designed for one specific location. These skyscraper designs advocate cyclical waste-energy flows, food provisioning and the generation of jobs in city centers. Agromere is a design by a Dutch initiative in which agriculture will be fully integrated into a new residential quarter in the city of Almere.<sup>9</sup> Encompassing the Dutch lifestyle into its design, Agromere embodies comprehensive and dynamic ecological and social dimensions. Given that both these visions are based on technological innovations and re-imagined urban infrastructure,

<sup>&</sup>lt;sup>9</sup> Ir. Jan Eelco Jansma et al. Agromere: how to integrate urban agriculture in the development of the Dutch city of Almere?, (2008), 1.

these proposals exemplify notions of ecological modernization, rather than a romanticized, 'back to the land' ideal.

Most importantly, however is that the stated intent (as described by Despommier's Vertical Farming book and the Agromere report) to offer practical design solutions for an alternative food system, as well as consumer/producer reconnection and urban environmental management systems, may not be the entire underlying objective. Rather, these visions harness urban agriculture as part of a larger ideal attending to desires of urban imaginations in western culture. For these reasons this thesis focuses on vertical agriculture and the Agromere design.

Attentive to the human desire for urban change and fueled with necessary images for possibility, I deem these visions utopian: namely *urban agrarian utopias (UAU)*. Urban agrarian utopias are re-conceptualized cityscapes that integrate agriculture into the city fabric, across spatial and temporal scales. By utopian I do not wish to evoke immediate notions of impossibility or downfall, or to follow the common critique that the infrastructural and social shifts needed for the realization of utopias are too radical and far-fetched. Rather, I argue that UAUs offer plausible directions for the coherent integration of agriculture into cityscapes. They force us to question current developments and become aware of the key agro-environmental problems we face. However, the tradeoffs between the ideal and practical qualities of these visions need to be critically examined, but *not disregarded*.

Moreover, I will analyze the potential of UAUs in becoming, what social theorist and geographer David Harvey calls, a dialectical utopia. Dialectical utopianism emphasizes that a dynamic interplay between the spatial form and the social processes of a vision needs to exist. David Harvey stresses that only if the social processes are framed spatially, establishing a dialectical relationship, can these visions be tangibly realizable. In addition to Harvey's dialectic, I propose a second dialectic between individual, bottom-up initiatives and top-down planning initiatives for urban agriculture. As the benefits of UA are recognized, it is increasingly being placed on the municipal agenda of cities around the world. However, an appropriate balance needs to be found between these top-down initiatives and the bottom-up, grassroots movements that currently prevail in urban agriculture.

Agromere and vertical farming describe re-imagined spatial form, propose new architectural designs and layouts, and include technological breakthroughs. They envision, at varying degrees, the social processes and human dynamics necessary to maintain the infrastructural form and function of their vision. These urban agrarian visions offer inspiration for future conceptions of cities in confronting challenges and creating better futures.

The object of this thesis is to look at how vertical farming and Agromere have reconceptualized the role of agriculture in the urban landscape across time and space. Appropriating Harvey's concept of dialectical utopianism, I argue that visions for the integration of agriculture into the urban environment require a double dialectic, firstly, between form and process, and secondly, between top-down and bottom-up initiatives to prove incrementally realizable. Thereby, the social dynamics necessary to expand UA need to be framed spatially, while the municipal planning effort needs to be supportive of the grassroots urban agriculture movement. In this thesis I will begin by providing an overview of the development of urban agriculture. Next, I will briefly describe the two case studies that re-conceptualize cities to include agriculture, namely vertical farming and Agromere. I consider these visions utopian as they offer images of ideal structures and societies. Drawing on David Harvey's relational concept of dialectical utopianism, and an additional dialectics between topdown and bottom up initiatives for urban agriculture, I then evaluate the degree of dialecticism of the two case studies and will conclude this thesis with an analysis of how urban agrarian utopias can move dialectically across space and time. Lastly I will conclude this thesis by recognizing the value of urban agrarian utopias for inspiration for the future of urban agriculture.

# **Urban Agriculture: Seeds for Innovation**

As more and more people make cities their home, cities will be the arenas in which some of the world's biggest social, economic, environmental and political challenges will be addressed, and where solutions will be found

Kofi Annan<sup>10</sup>

Urban agriculture includes a complex and varied practice. Luc J.A. Mougeot,

Senior Program Specialist at the International Development Research Centre, defines UA

as:

An industry located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, (re-) using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area.<sup>11</sup>

<sup>&</sup>lt;sup>10</sup> Kofi, Annan, "Foreward by the Secretary-General of the United Nations Kofi Annan," United Nations Headquarters, (New York: 2001).

<sup>&</sup>lt;sup>11</sup> Luc J. A. Mougeot, Agropolis: the Social, Political, and Environmental Dimensions of Urban Agriculture (Ottawa, Canada: International Development Research Centre, 2005), 2.

This definition is rather broad, although successfully "links confined space production, related economic activity, location, destination markets (or home consumption) and the types of products produced in a dynamic interaction that can vary from one urban area to another."<sup>12</sup> By bringing farming within the urban landscape, urban agriculture challenges the conventional town-country dichotomy, as well as the definitions of agriculture and urbanization. In the past, urban agriculture has received, and in some parts of the world continues to receive, resistance. The criticized risks and impracticalities of the practice include health and safety precautions, olfactory and aesthetic nuances, and chemical exposure. UA currently faces other implemental barriers as well, for example zoning laws, a consequence of policies designed under the premise that agriculture is strictly a rural enterprise, disallows the production of food within the urban boundary. At first glance, placing agriculture within the cityscape seems economically illogical; financial barriers, such as high land value in urban centers, prevent urban farms from emerging or remaining financially self-sustaining.

UA has been carried out differently to suit varying needs and desires in cities across the world. The motivations and functions of urban agriculture vary within communities and even between individuals. In the Global South urban agriculture has assumed mostly a function of providing food security and incomes to an increasing urban population. These efforts are effective for poverty reduction and provide nutritional supplements. In the Global North the motivations that force UA include community development, reconnection between producers and consumers, food security/safety, urban management, and the establishment of local economies. Moreover, issues of health

<sup>&</sup>lt;sup>12</sup> Mark Redwood, *Agriculture in Urban Planning: Generating Livelihoods and Food Security* (London: Earthscan, 2009), 5.

have largely influenced individual desires to turn towards sources of reliable food. Advocates of urban agriculture in the Global North criticize the invisibility of the industrial food system which often causes urban citizens to lose track of the interdependent relationships that exist between the city and the land on which it depends.<sup>13</sup> Consequentially these citizens are often unaware of the ecological and social degradation to which their consumption habits contribute, including soil erosion, chemical run-off and deforestation, biodiversity loss and human-labor exploitation.<sup>14</sup> Urban agriculture has been identified by many as an alternative food movement that can contribute to the dissolution of these issues.

More recently, however, urban agriculture has become a tool for social and infrastructural innovation. UA is sprouting rapidly in post-industrial countries – on roof tops, in vacant lots, in backyard gardens and in school yards – marking a social movement led by bottom-up initiatives.<sup>15</sup> Projects including the Diggable City in Portland, OR, and Farming Concrete in New York are two examples of urban food initiatives, as well as the Transition Movement in the United Kingdom, originally based on Bill Mollison's permaculture town models. In these landscapes UA is founded upon desires to create "a more ecologically sound, resilient and productive landscape" as well as to bring the production of food into the hands of the urban dweller.<sup>16</sup> According to a one study conducted by the National Gardening Association, the reasons why households are growing their own food include "for better tasting food," "to save on food bills," "for

<sup>&</sup>lt;sup>13</sup> Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals* (New York: Penguin Press, 2006), 73.

<sup>&</sup>lt;sup>14</sup> Jeff Pratt, "Food Values: The Local and the Authentic," Critique of Anthropology, 27 (3) (2007): 286.

<sup>&</sup>lt;sup>15</sup> Nathan McClintock, "Why Farm the City? Theorizing Urban Agriculture Through a Lens of Metabolic Rift," (Cambridge Journal of Regions Economy and Society, 2010). 3 (2): 191.

<sup>&</sup>lt;sup>16</sup> McClintock, "Why Farm the City?," 192.

better quality food," and to grow food they know is safe."<sup>17</sup> Whether community gardens on the periphery of a city, or backyard gardens, initiatives within the UA movement reflect varying individual desires for an alternative relationship with food.

But the interest in urban agriculture has grown beyond these bottom-up efforts and rather, has become harnessed by city planners, architects and visionaries into blueprints and designs. At the scale of these plans, UA has become the foundation for imagining complete alternative urban systems and layouts including social and infrastructural transformations.

# Visions of the Urban Agrarian Ideal

*The visions that have always changed the world are those that meet the laugh test.* -Glen Heimstra<sup>18</sup>

Historically, particular architects, planners and designers have reincorporated agriculture into the city. Figures including Ebenezer Howard, Frank Lloyd Wright, Lewis Mumford, and Patrick Geddes had visions of alternative cityscapes. "Each of these projects proposed a profound re-conceptualization of the city – a radical decentralization and dissolution of the urban figure into a productive landscape."<sup>19</sup>

The most famous among these is Ebenezer Howard, a parliamentary stenographer in the 1890s, and his "Garden Cities." In his book, *Garden Cities of Tomorrow*, Howard elaborates a design proposal for a 'town country magnet' – a place that combines the benefits of the town and the country, while at the same time avoiding the disadvantages

<sup>&</sup>lt;sup>17</sup> B. Butterfield, "The Impact of Home and Community Gardening in America," Retrieved March 17,

<sup>2011, 2009, &</sup>lt;u>http://www.gardenresearch.com/files/2009-Impact-of-Gardening-in-America-White-Paper.pdf</u>. <sup>18</sup> Glen Heimstra "Futurist Keynote Speaker Glen Hiemstra 2007 Sample," retrieved March 3, 2011, (2008) http://www.youtube.com/watch?v=rcqbpsyYwVM

<sup>&</sup>lt;sup>19</sup> Charles Waldheim, "Notes Toward a History of Agrarian Urbanism", *The Design Observer Group*, 6.

of both. "Town and country *must be married*," reads his famous line, "and out of this joyous union will spring a new hope, a new life, a new civilization".<sup>20</sup>



Howard recognized the cultural benefits of city life including community engagement and cooperation, science and art, and religious centrality, while criticizing the crowded, unsanitary and cumbersome conditions of the city. Howard's sketches delineated a series of concentric, ecologically aware, self-sufficient city-states of no more than 1,000 acres and 32,000 people. Broad boulevards, recreational parks and urban farms were orderly placed within the geometric plans, while preserving the excitement and social opportunity inherent of city life. Circulation and scientific systems of flows within and between Garden Cities were at the nexus of Howard's design, addressing urban health concerns of the time. Most importantly Howard's Garden City "was meant to break up interests of property and capital, and to unite and inspire workers, bringing

<sup>&</sup>lt;sup>20</sup> Ebenezer Howard and Frederic J. Osborn, *Garden Cities of Tomorrow*, (London: Faber and Faber Ltd., 1946), 48.

<sup>&</sup>lt;sup>21</sup> John W. Reps, "E. Howard, Garden Cities of To-morrow," accessed April 29, 2011, http://www.library.cornell.edu/Reps/DOCS/howard.htm.

<sup>&</sup>lt;sup>20</sup> "Garden Cities of To-morrow"

them together as a group with the owners of capital and of agricultural land and thus creating a broad-based force for change."<sup>22</sup> Howard imagined that a new spatial form would lead to new social arrangements and social reform. He believed that, "by reordering the city was a means of re-ordering society".<sup>23</sup> However, Ebenezer Howard's design was quickly assimilated into capitalist relations as a mode of urban planning, and the original intentions of the Garden Cities as media for social reform was forgotten.

Howard's expansive, geometric design intended to offer a practical solution to urban congestion and land use through the re-inclusion of agriculture into the cityscape. However, this is not just a vision of the past. Urban agriculture is once again finding its place in architectural and planning designs.

Recent visions, especially for postindustrial urban landscapes, illustrate new infrastructural designs across spatial scales – both horizontally and vertically – to include agriculture into the city fabric. Most importantly though, these models no longer envision UA as merely a space-filler forced by bottom up initiatives, but rather, offer large scale, top-down constructions reaching new heights and magnitudes. Both vertical agriculture, a design for skyscraper greenhouses in the city, and Agromere, a project to bridge rural and urban life, are contemporary visions of the urban agrarian ideal. Through technological innovations and futuristic constructions, these visions reflect principles of ecological modernization – a theory that contends that a "suitably ecologically enlightened or rational evolution of modernization" is necessary to confront present and future environmental problems.<sup>24</sup> The basic premise, as described by environmental sociologist

<sup>&</sup>lt;sup>22</sup> Pinder, *Visions of the City*, 41.
<sup>23</sup> Pinder, *Visions of the City*, 40.

<sup>&</sup>lt;sup>24</sup> John Barry, "Ecological Modernisation" in Debating the Earth: the Environmental Politics Reader," ed. John S. Dryzek and David Schlosberg (Oxford, England: Oxford University Press, 1998), 304.

Michael Bell, is that "material conditions (environmental problems) shape ideas ([ecological] interests, ideas and considerations), which in turn shape material conditions (the constant ecological restructuring [of modern society])."<sup>25</sup> Applied to this study, visions for cities that include urban agriculture are material innovations that can reshape institutions and social practices. In theory, ecological modernization claims to offer a more practical way to imagine environmental improvement, and it is often interchanged with terms such as, "strategic environmental management, industrial ecology, ecorestructuring, and so on."<sup>26</sup>

Vertical agriculture and Agromere are contemporary visions of the 21<sup>st</sup> century that intend to bring the production of food into the cityscape. The following section will provide a brief overview of the visions, however they will be further analyzed later in this study.

#### Case Study 1: Vertical Agriculture

Vertical Agriculture, or vertical farming, is a technological innovation that places farms in stacked, "high-tech" greenhouses, within the urban landscape. Dickson Despommier, a medical ecologist and the visionary of this design, imagines turning "squalid urban blight [into revived sustainable landscapes] apply[ing] nature's grandest design to cities: the ecosystem, embedding food production and waste reuse in the city's systems."<sup>27</sup> The vertical farm is designed to be a closed-loop system that through efficient technological advancements and bio-mimicry could recycle and reuse urban wastes, and

<sup>&</sup>lt;sup>25</sup> Michael Bell, *An Invitation to Environmental Sociology*. (Thousand Oaks, California: Pine Forge Press, 2004), 175.

 <sup>&</sup>lt;sup>26</sup> F.H. Buttel, "Ecological Modernization as Social Theory," *Geoforum*. (Madison, Wisconsin: 2000), 59.
 <sup>27</sup> "Despommier: Vertical Farms Are Key to Eco-Urbanization," modified Nov. 10, 2010,

http://sustainablecitiescollective.com/dirt/17279/despommier-vertical-farms-are-key-eco-urbanization.

of course produce food. In Despommier's book, The Vertical Farm, he provides eleven described advantages of vertical farming including: "year-round crop production, no weather-related crop failures, no agricultural runoff, allowance for ecosystem restoration, no use of pesticides, herbicides, or fertilizers, use of 70-95 percent less water, greatly reduced food miles, more control of food safety and security, new employment opportunities, purification of grey water to drinking water, animal feed from post harvest plant material.<sup>28</sup> These attend to urban ecological improvement and aim to relieve the impacts of the industrial food system such as decreased water pollution and waste management.

Despommier provides expansive detail of the architectural structure of the vertical farm design. Urban grey water, routed from the city to the farm, would be purified and used for irrigation in the building. In addition, water converted by the plants through transpiration would be harvested (by means of condensation) and used for drinking water. Urban black water, or human fecal matter, would be incinerated to generate energy to power the building without tapping into the urban electricity grid. "For the first time in history, an entire city can choose to become the functional urban equivalent of a natural ecosystem," states Despommier.<sup>29</sup>

<sup>&</sup>lt;sup>28</sup> Despommier, Dickson. 2005. *The Vertical Farm: Feeding the World in the 21<sup>st</sup> Century*. (New York, N.Y.: Columbia University, 2005), 145.

<sup>&</sup>lt;sup>29</sup> Despommier. *The Vertical Farm*. 2-3.





Fig. 3 Vertical Farm by Oliver Foster<sup>30</sup>

Fig. 4 "The Living Skyscraper: Farming the Urban Skyline" by Blake Kurasek<sup>31</sup>

Soil would not be needed in the vertical farm. Hydroponics (a method of growing plants in a nutrient-rich water solution) and aeroponics (growing plants in nutrient mist), are the two methods proposed for growing crops inside these vertical farms.

The design is highly controlled. Inputs and outputs are carefully monitored, the pH levels of the water are measured, the temperature inside the building is set accordingly (eliminating seasons), and disease and pest control is closely managed. Workers enter the building completely sanitized and wearing clean uniforms, shoes and hairnets to avoid contamination. Despommier continues:

 <sup>&</sup>lt;sup>30</sup> Treehugger, "The Economist Looks At Vertical Farming and Asks: Does It Stack Up?," Last modified December 15, 2010, <u>http://www.treehugger.com/files/2010/12/does-vertical-farming-stack-up.php</u>.
 <sup>31</sup> Blake Kurasek. "The Living Sky Scraper," accessed February 25, 2011, http://blakekurasek.com/verticalfarming.html.

Designing double-lock-entry doorways will allow for an additional level of protection against insects and microbes. Requiring all personnel to change into sterilized, disposable safety uniforms, shoe, and hair coverings, and to shower before changing clothes, will minimize the risk of crop loss...<sup>32</sup>

The vertical farm is a completely controlled environment where seasons and unpredictable weather conditions have been eliminated. "[S]ustainble urban life is technologically achievable, and most important, highly desirable," writes Despommier in his book The *Vertical Farm*. <sup>33</sup>

Despommier, reflecting on these grand images, describes the vertical farm as, "a neighborhood concept couched in futuristic terms, but with a homespun intent."<sup>34</sup> Energy efficient and carbon neutral, the high-tech vertical farm design hopes to appeal to locavores (or people who focus on eating locally produced food), bringing food closer to where it is consumed. Not only that, but Despommier writes with optimism that bringing the cultivation of crops into the city boundaries will relieve the countryside of agriculture and allow it to return to its previous state, most likely a forest.

## Case Study 2: Agromere

Agromere began in 2002 at Wageningen University & Research (Wageningen UR), through a task appointed by the Ministry of Agriculture, Nature and Food Quality in search for a future model (for 2020) of sustainable agriculture. Together with a group of dedicated stakeholders, urban and peri-urban agriculture was defined as the future of sustainable agriculture. Soon after, Agromere became the design for this vision. Situated in the city of Almere, the Netherlands, the project of Agromere aims to "re-integrate

<sup>&</sup>lt;sup>32</sup> Despommier, The Vertical Farm, 170.

<sup>&</sup>lt;sup>33</sup> Despommier, *The Vertical Farm*, 2.

<sup>&</sup>lt;sup>34</sup> Despommier, *The Vertical Farm*, 167.

urban and rural [life] in a new residential quarter.<sup>35</sup> The region is situated on a polder landscape that was reclaimed from the sea 50 years ago. The city of Almere is growing fast – expected to increase to 350,000 inhabitants by 2030. To accommodate this urban sprawl, 15-40,000 houses are planned to move west into current farmland (for lack of other places to build), coming in conflict with the interests of farmers, conservationists, and cultural groups.

To manage competing claims on the development of the land, various stakeholders came together to negotiate these differences using a DEED framework, a repetitive cycle investigation that works through Descriptive, Explanatory, Exploratoy, and Design phases.<sup>36</sup> In 2005 the multi-stakeholder network included local farmers, the city council of Almere and Zeewolde, the province of Flevoland, nature conservation organizations and commercial city developers. Given the different interests of these stakeholders, the first major claims for the development of Almere were categorized by local/global and high-tech/ecological through which regional development scenarios were designed: Ecocity, Farmer's Village, Archipel, and Topspot.<sup>37</sup> The first three of these inspirational scenarios have been used in the vision for Agromere integrating living (5,000 inhabitants/2,300 houses) with urban agriculture– a total of 250 ha (70 ha for houses and social infrastructure and 180 ha for urban organic farms). The plan

<sup>&</sup>lt;sup>35</sup> J. E. Jansma, et al. *Agromere: Stadslandbouw in Almere, van toekomstbeelden naat het ontwerp*, 7. (Translated by Rosanne Wielemaker)

<sup>&</sup>lt;sup>36</sup> Andries J Visser, et al. "How to deal with competing claims in peri-urban design and development: the DEED framework in the Agromere project," in *Transitions: Towards Sustainable Agriculture and Food Chains in Peri-Urban Areas*, edited by K. J. Poppe, et al., (Wageningen: Wageningen Academic Publishers, 2009), 242.

<sup>&</sup>lt;sup>37</sup> **Ecocity** is composed of inhabitants interested in ecological sustainability, but do not want to give up their globally oriented, luxury life style.

**Topspot** is a highly technical scenario that is based on a global, 'expat-like' community.

**Farmer's Village** represents a strong social cohesion and local ecological production and consumption cycles. **Archipel** communities find common technical solutions for sustainable management of such activities as waste treatment and food production in locally closed cycles.

continuously attends to the important principles identified by the stakeholders including: social development, housing and infrastructure, food supply, the importance of agriculture and water management, laws and regulations, the participation of citizens and an ecologically designed city.



Fig. 5 Arial view of location for Agromere<sup>38</sup>

A closed-loop system (re)uses products, services, raw materials and waste, which is cycled between farms, restaurants, houses, dairy farms, schools, shops, offices and bakeries. In fact, four business models (business-systems) have been created based on closed-loop principles and an in-depth analysis of their ecological social and economic dimensions has been conducted, referring to these as three sustainability domains as: planet, people and profit.<sup>39</sup> For example a vegetable/fruit business cultivates grains between vegetable seasons and in addition houses lay chickens depending on the grain production. Energy calculations, mineral balance analyses, labor roles, and social program designs have also been included in the four business models.

 <sup>&</sup>lt;sup>38</sup> "Wageningen UR, Agromere," accessed March 14, 2011, http://www.agromere.wur.nl/UK/The\_project.
 <sup>39</sup> Jansma, *Agromere*, 43. (Translated by Margreet Postma)

Besides reducing foodmiles and the carbon footprint of the city, Agromere aims to reconnect urban dwellers and farmers by bringing people closer to their food. Education centers, bike paths, harvest programs, and animal farms would be open to the public to assist interaction between produces and consumers. By using surveys, conducting workshops, and holding meetings, Agromere has been open to dialogue between various interested parties. Simply put, Agromere is a vision for a coherent, efficient, and balanced dynamic between urban life and agriculture fostering a functional, socio-economic and ecological relationship.<sup>40</sup> As stated in the Agromere Report titled *Agromere: urban agriculture in Almere, from future scenario towards design,* "agriculture in the city, urban agriculture, is a system innovation."<sup>41</sup>

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The two envisioned contemporary landscapes just described re-conceptualize the role of agriculture in the city through technological infrastructural innovations. However, although these visions embody grand schemes for the inclusion of farms and horticulture into urban settings, their function does not appear to offer merely practical design solutions for an alternative food system. Rather, they hark toward a larger vision. In these visions, urban agriculture has become an icon for future eco-cities based real human desires in western culture specifically for a re-conceptualized urban environment. They are detailed manifestations of the human longing for an alternative ideal.

Like many urban planning schemes, Vertical Agriculture and Agromere are enticing to the eye and provide intriguing design schemes fueled by possibility, creativity and exploration. These visions can guide the possible future direction of urban agriculture

<sup>&</sup>lt;sup>40</sup> Jansma, *Agromere*, 10. (Translated by Rosanne Wielemaker)

<sup>&</sup>lt;sup>41</sup> Jansma, *Agromere*, 5. (Translated by Rosanne Wielemaker)

in planning and architecture. The ideas and innovations presented by both case studies include elements of inspiration and possible ways of executing their underlying intention. However at the same time, these visions appear difficult to secure across both temporal and spatial scales awakening our doubt about their feasibility. How practical are the designs and how are we going to achieve the ideal future they depict? How will urban farming deal with high land value prices and who is going to fund the initial investment of vertical farms? Will urban dwellers play an active role in their development? Critics skeptical of these designs regard them as naïve, abstract or far-fetched. Some believe that turning to technological innovation and modernization, as opposed to images of the traditional, back-to-the-land ideal, is ill suited for the future of urban agriculture. Others question the ability for these visions to accommodate complex social dynamics or gain popularity among common urban dwellers. How will these visions appropriately accommodate the diverse populations living in cities?

Bound between a good-place (eu-topos) and no-place (ou-topos) – between the envisioned ideal, society and the limited, inflexible and perhaps even (un)realizable design, I deem these visions utopian. Namely, I call these visions *urban agrarian utopias*. Urban agrarian utopias are not ubiquitous, nor are they likely going to shift cities' dependence on the industrial food system to an alternative one. Thereby, even though the intended function of these visions may not be realized (nor realizable), they remain powerful utopian visions among many people and resonate with personal utopian aspirations of individuals in advanced industrial countries who desire an alternative system. This underlying utopian quality of these visions is worth examining. Urban agrarian utopias offer inspiration and innovation, and thus, should not be disregarded, but we cannot follow them blindly. To weigh the significance of these grand visions in they will need to be carefully considered.

## The 'Utopian Tradition' in Urban Agrarian Utopias

Utopians? Yes, indeed, we are all utopians, so soon as we wish for something different... -Lefebvre<sup>42</sup>

Like all utopias, urban agrarian utopias describe alternate worlds. They question the current constructions of society and re-imagine a place unrestrained by the imposed social, political and economic configurations. Offering philosophical conceptualizations of what an ideal world would look like; utopias are appealing because they allow us to escape reality and attend to our hidden desires. Utopian visions reflect real human desires for an alternative society both in terms of spatial infrastructure and social reform and regardless of their imaginary nature, they stimulate curiosity and continue to draw people to them.

Themes including the reconnection of humans with nature, farming, sharing of labor, community building and spatial ordering, run through many visions of utopia. These themes are revealed through an agrarian component of utopian visions describing the recurring desire for an alternative food system and a more intimate relationship with one of our most essential needs. Through "…descriptions of social relationships, the organization of landscapes and cities, and the kinds of lives lived by people in their ideal society…[utopians are able to evoke] appropriate and meaningful images" of alternative worlds.<sup>43</sup> Thomas More, in his book '*Utopia*,' emphasizes the responsibility of every

<sup>&</sup>lt;sup>42</sup> Henri Lefebvre, *Everyday Life in the Modern World*, (New Brunswick, N.J., U.S.A.: Transaction Books, 1984), 75.

<sup>&</sup>lt;sup>43</sup> Marius De Geus, *Ecological Utopias: Envisioning the Sustainable Society*. (Utrecht, the Netherlands: International Books, 1999), 36.

citizen to work in the fields, while he highlights the desire of urban citizens to keep gardens. Other visionary literary writers including Tomasso Campanella, Francis Bacon and Ernest Callenbach, also give detailed accounts of the place of food production in their utopian society. Evidently, food has been given a significant place and space in the utopian realm.

Urban agrarian utopias re-conceptualize cityscapes across spatial and temporal scales to integrate agriculture into the city fabric. The designs vary conceptually, however, large or small, UAUs share fundamental similarities that resonate with utopian thought. Marius de Geus, a political theorist at the University of Leiden in the Netherlands, extensively describes the defining characteristics of utopian thought and visions. These are applied here to urban agrarian utopias.

Firstly, UAUs criticize and reject the status quo of present society. Ebenezer Howard's Garden Cities, condemned migration from the countryside to cities, alienation from nature as a result of industrial urban communities, and the congestion and pollution in the cityscape. Similarly, industrialization and modernization are the common culprits to which vertical agriculture and Agromere are a response. These visions specifically criticize the social and environmental implications of the global industrial food system – such as a producer-consumer disconnect and increasing waste accumulation – and the ills of an expanding urbanism. Therefore, visionaries design holistic alternative models – "blueprints of a completely new state," writes de Geus in his book *Ecological Utopias: Envisioning the Sustainable Society*. This leads to the second characteristic of urban agrarian utopias: they envision and describe with detail a complete and coherent different society, trusting that these visions will exist without problems.<sup>44</sup> The visions explore, with varying degrees, alternative social, economic, political and ecological systems; they "design a new, comprehensive order which is well organized" based on ideal values and a changed dynamics<sup>45</sup>. However, the third defining characteristic is that these coherent spaces are usually situated in a place distant from reality both physically and conceptually. Although Ebenezer Howard's Garden Cities design was not intended for some distant time or place, neither are the designs for vertical agriculture and Agromere. Nevertheless, all three of these urban agrarian utopias are removed from current constructions. Vertical agriculture demands systemic infrastructural shifts in the urban environment while Agromere is designed to be built on a clean slate (a place almost impossible to find on our trampled Earth). Moreover, the ideals and values embedded in these visions would require a shift in urban social processes and human behavior -acomplete "transformation of urban consciousness" as the French political theorist, Chtcheglov, suggests.<sup>46</sup>

Envisioning a society that departs greatly from our established arrangements and that imagines a radical and far-reaching ideal provokes skepticism and rejection among many politicians and contemporary theorists. Utopias are usually readily equated with an impossible or unattainable ideal, and often challenge the thin line that exists between utopia and dystopia. The notion of utopia has further been discredited due to a history of disappointing attempts to imagine and construct ideal societies throughout the twentieth century. Therefore, "many critics [are] bidding farewell to promises and projections of radical change from the perspective of an age that seems somehow 'after utopia'" rather

<sup>&</sup>lt;sup>44</sup> De Geus, Marius de. *Ecological Utopias*, 19.
<sup>45</sup> De Geus, *Ecological Utopias*. 33.

<sup>&</sup>lt;sup>46</sup> David Pinder. Visions of the City. 2.

advocating the abandonment of utopian perspectives.<sup>47</sup> Marius de Geus, describes the discrediting of utopian thinking entirely:

The notion of a utopia rarely receives any recognition in politics; instead it is more often seen as a daydream – a dangerous, romantic and unreachable fantasy. Utopias do not seem to suit a period which is characterized by pragmatism, postmodernism, and a lack of faith in all-encompassing ideologies and idealistic political visions.<sup>48</sup>

Reflecting these aforementioned notions of a daydream, elements of totalitarianism, control of nature, static ideal worlds, isolation and radical change are included in the common criticisms of utopias.

Philosopher Karl Popper claims that the utopian blueprint leads to dictatorship and chaos.<sup>49</sup> By creating absolute ideals – leaving no stone unturned – utopianism often leads to an authoritarian rule based on a single non-negotiable truth that ensures proper social construction of human behavior. Thereby utopian visions threaten the freedom and spontaneity of society. Popper's theory strongly resonates with the common idea that one man's utopia can have apocalyptic connotations for another. For example, for some advocates of urban agriculture, turning to technological innovation and modernization resembles the demise of society, overpowering images of the traditional, 'back-to-theland' ideal. And for others, urban agriculture of any form just seems illogical and out of place.

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Echoing what Harvey questions in his book, *Spaces of Hope*, should we just let the notion of utopianism die? "Or should we try to rekindle and reignite utopian passions

<sup>&</sup>lt;sup>47</sup> David Pinder, "In Defense of Utopian Urbanism: Imagining Cities After the End of Utopia," Geografiska Annaler Series, 84 (2002): 229.

<sup>&</sup>lt;sup>48</sup> De Geus, *Ecological Utopias*, 19.

<sup>&</sup>lt;sup>49</sup> Russell Jacoby. *Picture imperfect: Utopian thought for an anti-Utopian age.* (New York: Columbia University Press, 2005), 56.

once more as a means to galvanize socio-ecological change?"<sup>50</sup> Social theorists Harvey, Pinder and Lefebvre, would agree that it is necessary to revive utopianism as "it is indispensable to stimulate change."<sup>51</sup> De Geus views the discrediting of utopias as a dilemma because the evocative images inherent in utopian thinking are valuable.<sup>52</sup> Utopias reveal people's creative capacities and imagination for new possibility. "[T]heir significance extends in many other ways," writes Pinder in Visions of the City, "in questioning reality, in influencing conceptions of space, in expressing desires for alternatives, [and] in harboring the seeds for other inventions."<sup>53</sup> Moreover, utopianism needs to be considered for its potential function in developing critical approaches to urban questions, specifically those concerning the future role of agriculture in the urban landscape.

However, to develop notions of utopia that are constructive or conceivable, they need to further evolve. Utopiansim needs to become open and dynamic, interrupt space and time and develop flexible notions of what could be, thereby becoming critical and transformative. Considering the common critiques of utopias, in conjunction to their potential for inspiration and change, how can urban agrarian utopias evolve to secure the trust of more people? Are there differences within utopian thought that are more convincing than others? How can we tip the scale so that utopias can become increasingly realizable? Harvey saves the notion of utopia from its criticism, offering an alternative relational conception of space and time of utopianism: to create a utopianism that is comprehensively spatiotemporal, or 'dialectic'.

 <sup>&</sup>lt;sup>50</sup> Harvey, *Spaces of Hope*, 191.
 <sup>51</sup> Pinder, *Visions of the City*, 1.

<sup>&</sup>lt;sup>52</sup> De Geus, *Ecological Utopias*, 19.

<sup>&</sup>lt;sup>53</sup> David Pinder. Visions of the City, viii.

## **Double Dialectical Utopianism**

When it comes to building communities, there is no perfect formula; no instant 'good city mix' that works just by adding people. -Steel<sup>54</sup>

Harvey's analysis on utopian thought critiques the tendency of utopian visions to present space and time as two separate dimensions. He claims that utopias of *spatial form* - or an imagined geography – depict isolated places fixed in space, and are often primarily defined in terms of their architecture, layout, and orientation. Although utopias of spatial form are attractive for their (seemingly) known certainties and definitive function, they precisely confront problems of closure. "Closure...contains its own authority because to materialize any one design... is to foreclose, in some cases temporarily but in other instances relatively permanently, on the possibility of materializing others,"55 writes Harvey. In addition, utopias of spatiality exhibit the tendency to become authoritarian hoping to engineer the social dynamics contained within their designed physical constructions.<sup>56</sup> On the other hand, utopias of *social* process - or imagined societal dynamics - present open-ended expressions not bound to a single place or space. These visions are expressed entirely in temporal terms and are not grounded geographically within a space where they could function. Despite Harvey's criticism of the separation between form and process, he stresses that utopian thought should not be dismissed because, he writes, "without a vision of Utopia there is no way to define that port to which we might want to sail."<sup>57</sup> These utopias of spatial form and

<sup>&</sup>lt;sup>54</sup> Steel, *Hungry City*, 302.

<sup>&</sup>lt;sup>55</sup> Harvey, *Spaces of Hope*, 196.

<sup>&</sup>lt;sup>56</sup> Castree, Noel, and Derek Gregory, *David Harvey: A Critical Reader*, (Malden, MA: Blackwell Pub, 2006), 131.

<sup>&</sup>lt;sup>57</sup> Harvey, *Spaces of Hope*, 189.

social process offer valuable insights for spatial and temporal potentialities that deserve close consideration.

However, Harvey proceeds that the tangible realization of utopias of form and process require the integration of both, or rather require process to be framed spatially. This is what Harvey calls a dialectical utopia.<sup>58</sup> Dialectical utopianism lies at the crux of space and time and considers the importance of an engaged, spatiotemporal dimension. Dialectics refers to the dialogue or interplay between two separate entities or ideas in order to transcend opposites and form a synthesis. It aims to understand the parts in relation to a whole system and recognize it's evolving quality. Thus, to change urban spaces dialectically, conceptualizations have to go beyond aspects of design, architecture and planning, and rather need to engage with urban culture, and human behavior and desires. As Harvey describes:

"Free-flowing processes become instantiated in structures, in institutional, social, cultural, and physical realities that acquire a relative permanence, fixity, and immovability. Materialized Utopias of process cannot escape the question of closure or the encrusted accumulations of traditions, institutional inertias, and the like, which they themselves produce."<sup>59</sup>

Consequently, utopias that describe and imagine the interplay between form and process are incrementally more realizable. Therefore, Harvey's description of dialectical utopianism of form and process is valuable for the assessment of urban agrarian utopias. If UAUs are desirable future models, then their tangibility will be heavily dependent on this dialectic.

The dialectics of utopian thought, however, does not stop here. Dialectical utopianism is flexible and open to change. It does not encounter static moments nor reach

<sup>&</sup>lt;sup>58</sup> Harvey, *Spaces of Hope*, 177.

<sup>&</sup>lt;sup>59</sup> Harvey, *Spaces of Hope*, 185.

a concluded state; rather it is a continuous dialogue adaptive to change. Since both ecological processes and social processes are inherently evolutionary, a dialectical utopianism requires the accommodation of shifts in these processes. As Harvey writes:

"There is a level at which, no matter how hard we try, we simply cannot know with certainty what kind of outcomes will emerge. Both the social and the ecological orders, particularly when taken together, are open and heterogeneous to the point where their totality can never quite be grasped let alone manipulated into predictable or stable states."<sup>60</sup>

Uncertainty still lingers in these dynamic utopian constructions, after all, there is only so far that we can 'see' into the future to predict or design our desired outcomes. The desires of future generations will most likely depart greatly from the desires that motivate utopias today. In short, dialectical utopias are set in motion, meaning that they are evolving ideals, malleable to uncertainties.

However, the flexibility of dialectical utopianism depends on another necessary dialectic: between top-down and bottom-up approaches to the implementation of urban agriculture. Top-down approaches can be defined as structural and political measures for problem solving or implementation schemes. In fact urban planning is often equated with top-down practices in which an overarching structure designed by "experts" is "imposed" on a community. Bottom-up approaches, on the other hand, include local grassroots initiatives lead by individuals or groups that are driven by community desires. Many times, bottom-up community involvement results from past failed approaches of top down involvement."<sup>61</sup> As mentioned before, UA has currently sprouted in many countries through grassroots initiatives in response to the industrial food system, reflecting the

<sup>&</sup>lt;sup>60</sup> Harvey, Spaces of Hope, 254.

<sup>&</sup>lt;sup>61</sup> ED, Fraser, et al. "Bottom Up and Top Down: Analysis of Participatory Processes for Sustainability Indicator Identification as a Pathway to Community Empowerment and Sustainable Environmental Management." Journal of Environmental Management, 78 (2) (2006): 114.

importance of the individual in forcing UA. Whether community gardens on the periphery of a city, or backyard gardens, these initiatives reflect the individual desires, perhaps even personal utopian visions, of urban dwellers.

The benefits and drawbacks of both top-down and bottom-up approaches have been discussed in literature however, finding a middle ground between the two approaches has proven challenging. For the materialization of urban agrarian utopias, a dialogue between both enterprises would be highly necessary for two reasons. First, urban agriculture as solely a political and structural activity would not succeed because these visions do not provide an appropriate role for urban citizens in their design. After all, the visions would benefit from detailed local knowledge. If a top-down scheme such as vertical farming is going to work, and if UA is going to influence citizens' lifestyles, citizens need to be designated roles as active participants in executing the process behind the vision. Second, a dialogue between top down and bottom up approaches to urban agriculture is necessary because a more holistic approach to the effective implementation of UA can be reached this way. From grassroots movements, top-down enterprises can learn what urban dwellers are interested in and how citizens would most likely get involved. And likewise, grassroots movements can learn strategies – policies, laws and structures – to effectively and successfully move UA into the urban environment. Urban agriculture as merely a bottom-up initiative would not succeed in accomplishing its goals at a larger scale since "it is difficult to create meaningful infrastructure for urban agriculture without funding, land and a favorable regulatory regime."<sup>62</sup>

The dialectics of utopian thought, however, does not stop here. Dialectical utopianism is flexible and open to change. It does not encounter static moments nor reach

<sup>&</sup>lt;sup>62</sup> Nina Mukherij, "The Promise and Pitfalls," 12.

a concluded state; rather it is a continuous dialogue adaptive to change. Since both ecological processes and social processes are inherently evolutionary, a dialectical utopianism requires the accommodation of shifts in these processes. As Harvey writes:

"There is a level at which, no matter how hard we try, we simply cannot know with certainty what kind of outcomes will emerge. Both the social and the ecological orders, particularly when taken together, are open and heterogeneous to the point where their totality can never quite be grasped let alone manipulated into predictable or stable states."<sup>63</sup>

A double dialectic between form and process, as well as between top-down and bottom-up initiatives will allow urban agrarian utopias to become progressively tangible. The following diagram (Fig. 6) visually depicts the double dialectic framework. The two axes represent the scales of dialectical utopianism previously described. Using this framework, I will continue to evaluate how dialectical the visions of Vertical Farming and Agromere are.



Fig. 6 Double Dialectical Utopianism

<sup>&</sup>lt;sup>63</sup> Harvey, *Spaces of Hope*, 254.

# **Degrees of Dialecticism**

Urban agrarian utopias suggest radical transformations: technological innovation, economic investment and complete restructuring of social processes. They "require that we be conscious of redrawing the map of possible and desirable forms of human association...and designing new practical arrangements to embody them."<sup>64</sup> Evaluating various proposals of ideal urban agrarian societies sheds light on how urban agriculture can function within the institutional, cultural, historical and geographic context of the cityscape. Vertical Farming and Agromere offer differing approaches in executing this goal and most notably, do so with differing degrees of dialecticism. A dialectic is necessary to facilitate citizens' embrace of urban agriculture, because without a comprehensible vision of UA and an understanding of how it is going to work, citizens may be skeptical of such a transition. This is especially true of a transformation that will likely challenge the "comfortable" urban-rural divide. A scholarly inquisition of the dialectical utopianism in these case studies allows for a more holistic and realistic interpretation of what the future of urban agriculture might look like. What are evident flaws of the design and do they reflect an absence of dialectical utopianism? What dialectical programs are (exportable) role models for the development of other urban agrarian visions?

# Vertical Agriculture

Dickson Despommier's Vertical Agriculture blueprint has enlightened many visioners. Independent architects across the globe have designed sketches of tall glass

<sup>&</sup>lt;sup>64</sup> Roberto Unger cited in Ruth Levitas, "On Dialectical Utopianism," History of the Human Sciences. 16 (1), (2003): 143.

buildings that include Despommier's technological innovations such as hydroponics tables for a variety of crops, intricate ventilation and waste systems and even the iconic windmills on the roof. Visually attractive, and rather, fantastical and futuristic, these designs display an obsession with form, function and design. Problematically, the current blueprint for vertical farming does not outline the pragmatic steps needed to achieve its desired form, and in addition, fails to describe the social processes necessary to get from the status quo to its stipulated transformation. Vertical farming is far from being a dialectical utopia and is thus not readily feasible. Vertical farming needs to pull away from a one-sided description of form and instead needs to engage its designs with politicians, investors, sociologists and most importantly urban citizens to acquire a holistic vision for the transformation of urban infrastructure and social dynamics.

Despommier's blueprint assumes that social reform will follow from physical form, similar to the unsuccessful idea behind Ebenezer Howard's Garden cities. "Establishing vertical farming on a large scale would be the start to a complete remake of urban behavior centered around the concept of doing no harm to the environment," writes Despommier. "Ultimately, it is about creating a healthier lifestyle for anyone living anywhere in the city, making the built environment an ideal place to raise children, and about improving the overall environment of the planet."<sup>65</sup> This statement alone shows the superficial assumption that urban dwellers would experience a complete transformation in lifestyle with the mere inclusion of vertical farms within the cityscape. This statement is especially naïve because vertical farming, as articulated in Despommier's book, does not provide a role for urban dwellers except for as tourists or spectators these technological 'ecosytem-like' buildings. And to make it worse, those who do work in the

<sup>&</sup>lt;sup>65</sup> Despommier, *The Vertical Farm*, 215-216.

vertical farm are people who wear lab coats, sterilized and stripped before entrance. The vertical farm does not provide a place for those entrepreneurs of the urban agriculture social movement in its scheme. Vertical farming suits those who want to consume local food and perhaps care about the ecological benefits of the farm, but who don't necessarily want to be a part of the production. In that case, the vertical farm does not facilitate "a complete remake of urban behavior". There is no guarantee as to how urban dwellers will interact with the space and whether or not they desire to be a part of it. The vertical farm needs to be opened for dialogue.

Moreover, the vertical farm design is an isolated vision, meaning its design stands independently from other systems and dynamics. Vertical farming is a succinct, high-tech bubble that is designed to function as a living organism within the cityscape, isolated in design like most utopias. What is interesting about the designs is that they use the grey water from the city but fail to describe the financial investment and the political support necessary to reroute the city's grey water system to the vertical farm. Similarly, Despommier speaks highly of hydroponics and aeroponics methods of cultivation, but fails to address where the nutrient solutions will come from and how they will be fabricated. Vertical farming is a high-tech, highly artificial environment. Given our common nostalgia for a back to the land ideal, some people may have a hard time accepting that their food has been grown without soil, or within a glass building tower under stringent sterile conditions. This might require psychological acceptance of a new kind of food production.

In addition, Despommier does not address how produce from these urban vertical farms will be distributed and marketed within cities. If these farms are supposed to

restructure our food system, then they need to re-imagine an entire food system. The ideal of producing food within the city exists, however, a description of how the farm is connected to the lives of urban citizens and other community processes is missing. Roberta Sonnino, Senior Lecturer of Environmental Policy and Planning at Cardiff University describes in her article *Feeding the City* that food systems are linked to other community systems including land use, housing and transport, and other economic development. To fully integrate UA a comprehensive analysis is needed of other elements of a city's design and functioning including fundamental processes of the production and distribution of food.<sup>66</sup> These include adequate road infrastructure and the provision of markets, both of which Despommier fails to include, among others.

Clearly, the blueprint for vertical farming has not been developed extensively and does not project dialecticism. The vision thus far presents a 'one man ideal,' rather than a dynamic and well-considered concept. Perhaps with more time and enthusiasm from patrons or designers, the vertical farm will develop dialectically and become progressively more tangible. As a dialectical utopia, the vertical farm could then offer a more coherent exportable model based on a dialogue or framework between form and process and top-down and bottom-up initiatives. This would allow designers and planners to manipulate the architectural designs of the farm to match place-specific needs holistically while still adhering to the fundamental characteristics described by Despommier. In addition, a dialecticism between top-down and bottom-up approaches would significantly change the functioning of the form. It would likely require the inclusion of citizens into the design, but if this is true, a sterilized environment will most

<sup>&</sup>lt;sup>66</sup> Roberta Sonnino, "Feeding the City: Towards a New Research and Planning Agenda," International Planning Studies, 14 (4), (2009): 433.

likely, not work. For now, the vertical farm offers key inspirational elements and presents possibilities of what a future agrarian city could embody.

# Agromere

Agromere more appropriately describes an interplay between spatial form and social process. In fact, this vision is laced with dialectical utopian thought, significantly blurring the line between physical design and social dynamics. The main question forcing the vision is: "how could urban agriculture in Almere manifest itself in the imagined neighborhood of Agromere so that (future) occupants would be willing to contribute to the efforts?"<sup>67</sup> This question alone draws in a necessary dialogue between the designers and planners materializing the vision of UA in Agromere and the potential urban dwellers of the area. Using the DEED framework, stakeholders and potential inhabitants are able to contribute to focus discussions concerning the development of the project.



Fig. 6 DEED Framework<sup>68</sup>

<sup>&</sup>lt;sup>67</sup> Jansma, *Agromere*, 26. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>68</sup> Visser, *Transitions*, 242.

An important assumption behind the use of the DEED framework is that stakeholders have different worldviews and are driven by different values leading to different perceptions of their environment and of potential future visions for it. This assumes that there is not one objective reality but that there is rather a negotiated 'reality'. This plays a role in all phases.<sup>69</sup>

A series of surveys, meetings and workshops have been conducted aiming to establish a coherent idea about what the future dwellers of Agromere desire, the degree of involvement they wish to have in agriculture and which benefits of urban agriculture they would take advantage of. Agromere has thus evolved from an imaginary ideal to a well-studied and designed – and rather dialectical – utopia. As shown throughout the Agromere Report: *Agromere: urban agriculture in Almere, from future scenario towards design*, the vision keeps form and process nearly inseparable recognizing that the design is dependent on human desires and use, and the process is dependent on how form can facilitate social dynamics.

One example of this dialogue concerns the design layout of Agromere. The layout to which stakeholders were initially drawn was the regional development scenario, 'Farm Farmer's Village'. However, the stakeholders noticed that "the envisioned self-sufficiency of the project would be difficult to realize, and that a strongly localized social-economical lifestyle might not appeal to many people at this time."<sup>70</sup> Instead of ignoring this truth, the stakeholders stepped forward to first describe the kind of people who would be willing to live in the area and the second conceptualize the kind of physical design that would best suit their wishes. Through a survey, the SmartAgent Company was able to identify the inhabitants as cosmopolitan and upwardly mobile.<sup>71</sup>

<sup>&</sup>lt;sup>69</sup> Visser, *Transitions*, 242.

<sup>&</sup>lt;sup>70</sup> Jansma, *Agromere*, 33. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>71</sup> Jansma, *Agromere*, 36. (Translated by Margreet Postma)

The cosmopolitan individual is defined as an open and critical world citizen who integrates postmodern values of development and experience with modern values of societal success, materialism, and enjoyment. The upwardly mobile profile suits careeroriented individuals with an outspoken fascination with social status, new technology, risk and excitement.<sup>72</sup> Thus, elements from the 'Ecocity' and 'Archipel' development scenarios were taken in conjunction to the 'Farmer's Village' scenario to give the vision an overarching form. As a result the vision of Agromere is "future oriented, technological, self assured, lively, goal oriented, mobile, open-minded, individualistic, entrepreneurial and ambitious." The lifestyle of Agromere is neither traditional nor designed for the collective.<sup>73</sup>

The Agromere Report states that with appropriate land values, proactive business models and enough room for development, Agromere is technologically and economically achievable. <sup>74</sup> However, the report continues to include certain themes of process that are necessary in addition to the technological and business-oriented plans for the city to avoid obstacles for its implementation. These are not necessarily easy to carry forward. First, Agromere requires the involvement of all the stakeholders:

"To realize an actual change the interested parties, the stakeholders, will have to make the idea their own. They'll have to carry it forward and apply it according to their own needs. To make that possible the design of the project will have to address the various positions and interests of the parties concerned in the city planning and development of Almere."<sup>75</sup>

Further, the establishment of a juridical and organizational base, the development of laws and regulation, a cost-benefit analysis, and an evaluation of scale, are also necessary to

 <sup>&</sup>lt;sup>72</sup> Jansma, *Agromere*, 35. (Translated by Rosanne Wielemaker)
 <sup>73</sup> Jansma, *Agromere*, 36. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>74</sup> Jansma, *Agromere*, 83. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>75</sup> Jansma, *Agromere*, 22. (Translated by Margreet Postma)

further the realizability of Agromere. The last theme of process is the achievability of a unique 'culture' within an urban agrarian community. For the transition to this vision to be successful, many existing patterns and traditions will have to be changed or discarded.<sup>76</sup> "Conditions can be designed to facilitate this," states the report, "but a culture cannot be imposed."<sup>77</sup> In the search for a unique culture Agromere questions: How can a unique 'culture' be stimulated to grow successfully without resulting in authoritarian pressure to do so?<sup>78</sup> Agromere appropriately recognizes the inherent dynamism of social processes, those difficult to constrain in space.

Not only does the Agromere Report discuss the steps required to achieve this vision, but also, it recognizes the evolutionary quality of the vision. The future development of Agromere will still be subject to the inherent instability of social and ecological dynamics since there is only so far that we can 'see' into the future to predict or design our desired outcomes. "Future developments and wishes cannot be anticipated at this point. The set-up, including the regulations, should therefore exhibit a flexible character that allows for the accommodation of the wishes and demands of future generations," acknowledges the Agromere Report.<sup>79</sup> The advantage of a dialectical utopia is that it is more flexible and open towards change. In addition, dialectical utopias are able to look at various dimensions of physical and social scale, including its spatial form and influence, and its impact and inclusion. If the task for a dialectical utopia is "to pull together a spatial temporal utopianism – that is rooted in our present possibilities at the

 <sup>&</sup>lt;sup>76</sup> Jansma, *Agromere*, 14. (Translated by Margreet Postma)
 <sup>77</sup> Jansma, *Agromere*, 85. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>78</sup> Jansma, Agromere, 86. (Translated by Margreet Postma)

<sup>&</sup>lt;sup>79</sup> Jansma, *Agromere*, 84 (Translated by Margreet Postma)

same time as it points towards different trajectories for human uneven geographical developments," then Agromere is well on its way to achieving it.<sup>80</sup>

However, there are a few things that can be said about Agromere's non-dialectical aspects. Agromere remains a top-down initiative. Although it has been designed through an open dialogue between urban dwellers, governmental figures and institutions, designers, researchers and students, it will ultimately depend on policies, laws and regulations to which citizens need to adhere if choosing to live there. The vision is designed for a specific scale and has the advantage of constructing its vision upon a clean slate, an area of fertile land claimed from the sea. It is easier to realize a utopia – or the urban agrarian ideal – when you can start from scratch. In addition, the inhabitants of the area also represent a clean slate, meaning, Agromere has been designed to suit and look attractive to a specific kind of person, an ideal dweller. It is this kind of person who will eventually move to the area if it were ever implemented. Thereby, Agromere does not accommodate the common citizen. To some degree Agromere will always be artificial.

To be truly dialectical Agromere needs to be set in motion, it needs to offer a utopia that is not confined to place, but rather, a model that is laterally adaptable and flexible. Its urban agrarian ideal is not transferable on a global scale but is very local in form and process. However, the vision of Agromere may never reach this scale or provide this kind of dialecticism. Fortunately, Agromere recognizes that " a combined process of 'continuing development and redesign' is necessary to find the answers to the many questions that still exist.<sup>81</sup> With that said, Agromere serves as a prime example of a utopia that is well on its way to realization.

<sup>&</sup>lt;sup>80</sup> Harvey, *Spaces of Hope*, 196.
<sup>81</sup> Jansma, *Agromere*, 190.

# **Conclusion: Inspirational Visions and Possible Futures**

Feeding the city in a sustainable way – that is to say, in a way that is economically efficient, socially just and ecologically sound – is one of the quintessential challenges of the twenty-first century and it will not be met without a greater political commitment to urban food planning and a bolder vision for the city.

-Kevin Morgan<sup>82</sup>

Dialectical utopianism makes it harder to dismiss utopian thought as impractical and radical, and instead it places future possibility within tangible reach. The dialectics between form and process, and top-down and bottom-up initiatives make urban agrarian utopias more palpable – better illustrating the transformations necessary to achieve and maintain their ideal urban landscape. The two case studies provide one example in which a dialectic is obviously missing: vertical agriculture, and an example where a dialectic is widely included in the vision: Agromere. Vertical agriculture has inspired many people, while others shrug it off as impossible, but what it needs to move forward and receive credibility is an increased dialogue between its parts. It needs to move beyond its obsession with form, and consider the spatio-temporal processes necessary to realize the vision. Agromere, as previously discussed, has been malleable and open to discussion since early on in its design stage. However, Agromere remains a design that at this point will only suit the city and people of Almere.

While urban agrarian utopias do not offer package solutions to our urban environmental problems, they do supply valuable elements of worthy consideration by planners for the implementation of agriculture into the cityscape. By asking critical questions, UAUs can present both inspirational and possible alternatives to the current status quo. They call upon scholarly inquisition "to assess utopian thought, to look for

<sup>&</sup>lt;sup>82</sup> Kevin Morgan. "Challenge of Urban Food Planning,. 348.

useful elements in the utopian genre, seeking the relevance of the utopia.<sup>\*\*83</sup> What insight and practical knowledge can be gained from these urban agrarian utopias? Can these UAUs help us define the future of UA? How do these UAUs inspire us and enable us to more clearly reflect on environmental issues and solutions? Through this process a more holistic and pragmatic conclusion can be reached about the flaws in our current constructions and the useful ways in which urban agriculture and its many benefits can be incorporated into cities.

The future of urban agriculture requires appropriate infrastructural changes and social developments. Thereby, utopian visions that offer a more comprehensible dialectics would facilitate urban planners in better integrating UA into the cityscape. Although urban planning has not historically paid attention to the functional sector of the food system, it does, along with architecture and landscape architecture, exhibit great potential to move urban agriculture efforts beyond their current scale. Architects and planners can harness the innovative capacity in urban planning projects to contribute to larger schemes for urban environmental management. Dialectical utopianism in urban agrarian utopias would allow for the development of such a cohesive planning scheme. *Urban Agriculture: Food Jobs and Sustainable Cities*, published by The United Nations Development Programme, includes the following on this regard:

"Urban agriculture does not exist in isolation but takes place in the context of other urban activities and systems, particularly the local economic, land use, ecological and urban management systems. It is also integrally related to the local, national and global food systems. Any plans for managing, expanding or transforming urban agriculture must take into account the interaction between the urban agriculture industry and these systems."<sup>84</sup>

<sup>&</sup>lt;sup>83</sup> De Geus, *Ecological Utopias*, 56.

<sup>&</sup>lt;sup>84</sup> Cheema, G. Shabbir, et al., *Urban Agriculture: Food, Jobs and Sustainable Cities*, (New York, N.Y.: United Nations Development Programme, 1996), 12.

To bridge this vast array of activities and systems, urban planning through a dialectics and inspired by the possibilities embedded in utopian visions can increasingly realize alternate worlds. The challenge is up to architects and planners to include 'green' and agricultural features into the design process, concludes urban and environmental planner Mark Redwood in his book Agriculture in Urban Planning.<sup>85</sup> However. integrating UA into urban planning is not a simple task. It requires political and economic support, suitably designed laws, and public support of such initiatives. Governments and municipalities, planners and architects need to be considerate of the needs and desires of urban citizens. Social scientists will play a crucial role in offering practical and theoretical insights into the meaning of re-localized food systems and their implications for urban dwellers.<sup>86</sup> This is especially true given the "diversity of communities and individual citizens in any city. The interest that one group has in urban agriculture may not always accord with the interests of other groups in the city."<sup>87</sup> Through a dialectics, these tensions can find compromise.

Fortunately, urban planners have been inspired by these visions of urban agrarian utopias, and throughout history utopian frameworks have filtered into the design sector. For example, Ebenezer Howard's Garden Cities has influenced many developments throughout Europe including Telford in the UK and Tapiola in Finland. "[T]he ideas Howard had expounded [became] the common property of planners all over the world and were to influence the planning of Hilversum in the Netherlands, Ernst May's satellite communities in Frankfort-am-Main, and Wright and Stein's Radburn," commends Lewis

<sup>&</sup>lt;sup>85</sup> Redwood, *Agriculture in Urban Planning*, 242.
<sup>86</sup> Roberta Sonnino, "Towards a New Research and Planning Agenda," 432.
<sup>87</sup> Nina Mukherij, The Promise and Pitfalls of Municipal Policy for Urban Agriculture, p 4

Mumford in the introduction to *Garden Cities of To-morrow*.<sup>88</sup> Similarly, Vertical Agriculture and the design of Agromere are currently inspiring urban planners across international borders. The Brabantse Millieu Frederatie (BMF) and the municipality of Tilburg in the Netherlands are looking to the Agromere design to include elements of the project into already existing cities. In addition, London has been inspired to adopt Agromere's broad stakeholder participation and its focus on UA for further urban development.<sup>89</sup> Vertical farming has also become popular among urban planners and architects and although many of these projects remain in the design stage, Growing Power Inc. will build the first vertical farm in Milwaukee. This is going to be a five story vertical farm is estimated to cost between \$8 million and \$10 million and the goal is to complete the construction by 2012. The success of this project will mark significant transformations in the urban agriculture movement.

Urban agrarian utopias and their enlightening images, offer optimistic and possible directions for the future; "utopias keep ideals alive and can offer inspiration for futuristic vision."<sup>90</sup> However, uncertainty still lingers in these dynamic utopian constructions; after all, there is only so far that we can 'see' into the future to predict or design our desired outcomes. The desires of future generations will most likely depart greatly from the desires that motivate utopias today and our human imaginations will continue to search for "greener" pastures. Utopianism is thereby not static but rather, an evolving ideal malleable to uncertainties. Perhaps then, utopias can never be fully realized and instead serve uniquely as a guide to carry us forward in time embracing possibility and change.

<sup>&</sup>lt;sup>88</sup> Howard, Garden Cities of To-morrow, 36.

<sup>&</sup>lt;sup>89</sup> Jansma, Agromere, 90.

<sup>&</sup>lt;sup>90</sup> De Geus, *Ecological Utopias* 36.

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