

GROWTH

THE COMMERCIALISATION OF URBAN AGRICULTURE: THE VALUES, THE STORIES

The role of food is changing, giving rise to new practices within food production. This is a peek into the phenomenon of commercial urban agriculture in industrialised cities, told through stories from people within the urban agriculture community in New York City. In an abductive fashion we have been looking at the values attributable to such practices and how they today are starting to be commercialised. The value categories of product, process, emotion and location were explored, where the definition of location value was expanded and a fifth category of societal values introduced. It's evident that the phenomenon originates from a need of food security and safety, however in cities of industrialised countries the most important aspect is how such practices is a way of re-connecting the urban dweller to food. The positive impact it can have on society, as well as the product and process values which lies in placing food production close to consumption are other important points brought up. Who you are at the market impacts what and how you value certain aspects of the urban agriculture practice, thus a value does not have to be category exclusive. These values seems to reach the market through using judgement devices such as preconceived labels and categories as well as the telling of stories; stories of production, place, process and people. The following pages give market actors reasons to engage further with urban agriculture practices, tools and arguments to use in a commercialisation process, along with being an opening into further research.

#urban agriculture #urban farming #values #commercialisation #local #food
#emerging markets #sustainability

FOREWORD

This is a result of two life-times of managing relations to food, five years of business school, two years of obsession with urban agriculture, the love of eating a great meal, target audience strategy, a constant concern for our environment and our interest in trends. As marketing (and business) students we have been taught to adjust our communication to our target audience; who the consumer/receiver is - it's the central question in all communication. So when we sat down to start off this thesis we asked ourselves who our audience is and realised that, what we have spent almost two years geeking ourselves into is a subject that is up for discussion on the social agenda in general. Our hope is that this can be an inspirational source among food lovers and food-industry actors as well as university students and urban citizens, and through this start the discussion around, and help to increase the knowledge of the possibilities within future food production.

*Our big thanks to those helping out along the road,
Hans Kjellberg for inspiration, guidance and support
Ingrid Stigzelius for insights in the Urban Agriculture industry
Sara Rosengren for support and help in receiving funding our project
Jan Åman, Johan Jörgensen and Savinien Caracostea of Atelier Slice, for great input and valuable contacts
Emma Stenström for great advice and contacts
Mitchell Davis for providing us with contacts in New York
House of Radon for holding out and for letting us borrow your equipment
Bea Usmaa for great inspiration
The foundations; Kungl. Skogs- och Lantbruksakademien, Hans Dahlberg's foundation for environment and health and Gälöstiftelsen
Julia Ludvigsson and Flora Berglund for moral support and New York awesomeness
Catrine Isehed and Lasse Hellsten for great dinners and a calm working environment
Lovisa Hellsten and Robert Jallinder letting us camp out in our apartments*

and of course the people of our stories;

Dickson

Yoshimi

Melissa, Jane and Brandon

Andrew and Judi

Yossy

Caroline and Jon

Yemi

Marc

GOOD WORDS TO KNOW

Definitions

Aeroponics: The process of growing plants in an air or mist environment without the use of soil.¹

Aquaponics: A food production system that combines conventional aquaculture (raising aquatic animals e.g. fish in tanks) with hydroponics. This is done in a symbiotic environment where the plants get nourished from the fishes' stool and the fish get clean water from the plants.²

Backyard gardens: Backyard gardeners use land around homes or grow on rooftops and balconies, for own consumption.³

Commercial urban farm: Urban commercial farms are set up for profit businesses and may combine with commercial kitchens to create value-added food products and sell to farmers markets and restaurants.⁴

Community garden: Community gardeners use larger pieces of land or roofs that are subdivided among several households. Produce primarily used for consumption.⁵

CSA (Community Supported Agriculture): Community supported agriculture is a partnership between farmers and consumers in which the responsibilities, risks and rewards of farming are shared. It's a locally based economic model of agriculture and food distribution.⁶

Food desert: Area where there is lack of fresh fruit, vegetables, and other healthful whole foods, due to a lack of grocery stores, farmers' markets, and healthy food providers.⁷

Food safety: Food safety refers to the conditions and practices that preserve the quality of food to prevent contamination and foodborne illnesses.⁸

Food security: Food security means that all people at all times have physical and economic access to adequate amounts of nutritious, safe, and culturally appropriate foods, which are produced in an

¹ Tower Gardening, 'Aeroponics: the modern, clean, efficient way to better gardening', viewed April 24 2015

<http://www.towergarden.com/content/towergarden/en-us/what-is-tower-garden/how-it-works/aeroponics.html#.VTqGI63tmko>

² 'Aquaponics', Wikipedia, viewed April 24 2015 <http://en.wikipedia.org/wiki/Aquaponics>

³ Hui, S. C. M., 'Green roof urban farming for buildings in high-density urban cities', The University of Hong Kong, 2011 p. 1-9.

⁴ Ibid.

⁵ Ibid.

⁶ Soil Association, 'Community Supported Agriculture', viewed May 7 2015 <http://www.soilassociation.org/communitysupportedagriculture>

⁷ Nutrition Digest, 'USDA Defines Food Deserts', *Nutrition Digest*, Vol. 37, No. 2, viewed April 24 2015

<http://americanutritionassociation.org/newsletter/usda-defines-food-deserts>

⁸ University of Maryland Medical Center, 'Food Safety Definition', viewed April 24 2015 <http://umm.edu/health/medical/ency/articles/food-safety>

environmentally sustainable and socially just manner, and that people are able to make informed decisions about their food choices.⁹

High-tech urban agriculture: Modern ways to cultivate in urban areas, in e.g. green houses or vertical farms, with the aid of modern technology. For example using new methods such as aero- or hydroponics.

Hydroponics: A method of growing in a nutrient rich water solution instead of a traditional soil medium.¹⁰

Rooftop farming: Farming on the roof of buildings in a city, either with greenhouse or in the open.

Urban agriculture: “The growing of fruits, herbs, and vegetables and raising of animals in cities. A process that is accompanied by many other complementary activities such as processing and distributing food, collecting and reusing food waste and rainwater, and educating, organizing, and employing local residents. Urban agriculture is integrated in individual communities and neighbourhoods, as well as in the ways that cities function and are managed, including municipal policies, plans, and budgets”¹¹.

Urban farming vs. Urban agriculture: The terms urban agriculture and urban farming can be used interchangeably. We chose to use the term urban agriculture since we perceive the term agriculture has a broader definition including other forms of food production than crops and raising animals such as beekeeping.

Value: The perceived importance/benefit, worth, or usefulness of something.

Value network: Describes social and technical resources within and between businesses from a business analysis perspective. The nodes (i.e. people/roles) in a value network are connected by interactions that represent tangible and intangible deliverables.¹²

Vertical farming: A component of urban agriculture where plants grow vertically (e.g. on racks with several shelves) to be able to grow food in skyscrapers or in other vertical inclined surfaces.

⁹ Food Security Network of Newfoundland & Labrador, ‘What is Food Security?’, viewed April 22 2015 <http://www.foodsecuritynews.com/What-is-food-security.htm>

¹⁰ Instructables, ‘Hydroponics - at Home and for Beginners’, viewed April 24 2015 <http://www.instructables.com/id/Hydroponics---at-Home-and-for-Beginners/>

¹¹ Choen, Reynolds & Sanghvi, ‘Five Borough Farm - Seeding the future of Urban Farming in New York City’, p. 13.

¹² ‘Value Network’, *Wikipedia*, viewed April 24 2015 http://en.wikipedia.org/wiki/Value_network

THE CONTENT

GOOD WORDS TO KNOW	2
ON EVERYBODY'S LIPS	7
WHAT IS IT ALL ABOUT?	8
THE STATE OF FOOD	9
THE PRESSING QUESTION	11
WHAT WE'RE REALLY LOOKING AT	12
OUR WISH	14
ON URBAN AGRICULTURE	14
THE ROOTS	14
SPROUTING	15
EXISTING IDEAS	17
FOR WHAT IT'S WORTH	17
VALUES AND CHOICE	19
VALUES AND FOOD	19
WHERE WE COME IN	21
THEN WHAT?	24
COMMERCIALISATION OF VALUES	24
SINGULARITY	24
WHO DECIDES THE VALUE OF A PRODUCT	25
THE COMMERCIALISATION OF VALUES	27
AMONG THE STREETS OF NEW YORK CITY	28
THE BEGINNING	28
THE NATURE OF OUR APPROACH	29
TALKING TO PEOPLE	29
THE APPLE AND THE EXPERTS	30
THE INTERVIEW	31
THE PROCESS	31
DIGESTING THE FINDINGS	32
PRESENTATION FORMAT	32
ACTORS PLAYING HARD TO GET	33
QUALITY CERTIFICATION	33
SUBJECTIVITY	33
TRANSFERABILITY	34

RELIABILITY	34
THE STORIES	34
<i>A FARM NEEDS ITS ARCHITECT</i>	35
A GREEN MOUNTAIN IN THE CITY	36
THE TOURIST ATTRACTION	38
<i>A GLIMPSE INTO THE FUTURE OF AGRICULTURE?</i>	38
BUILDING IT HIGH	38
WORD OF THE TASTING MOUTH	40
<i>SHIPPING THE FARM NOT THE PRODUCE</i>	41
FROM CONTAINER TO TABLE	42
THE CONTENT COUNTS	44
<i>SUGAR-COATING MANHATTAN</i>	45
A SWEETER LIFE	45
PASSING ON A STORY	46
<i>FISH AND GREENS</i>	47
WITH RESPECT FOR THE NATURE	47
BEING UNIQUE	48
<i>A HIDEOUT IN BUSHWICK</i>	49
NOT FOR PROFIT, FOR EXPERIENCE	50
THE FABRIC OF THE RESTAURANT	51
<i>COINING VERTICAL FARMING</i>	52
SAVING THE WORLD ONE SKYSCRAPER AT A TIME	53
EXPERIENCING THE FOOD	55
<i>THE INFLUENCER</i>	55
A TRENDY TOPIC	56
THE PERSONAL STORY	57
<i>THE OVERVIEW</i>	58
PRODUCT VALUES	58
PROCESS VALUES	59
EMOTION VALUES	59
PLACE (location) VALUES	60
SOCIETAL VALUES	60
<i>COMMERCIALISATION</i>	60
JUDGEMENT DEVICES	61
COMMUNICATION TOOLS AND DEVICES	62

FEEDING THE CITY. OR RATHER, EDUCATING ITS INHABITANTS.	62
WHO VALUES WHAT, AND WHAT VALUES COME FROM WHOM	64
(UN)EXPECTED VALUES	66
FILL 'EM GREENS WITH VALUES	66
<i>TO THE MARKET</i>	67
LABELLING	67
THE STORY	69
<i>GO GROW!</i>	71
<i>BEYOND NEW YORK</i>	72
<i>A FINAL WORD</i>	74
LITERATURE AND SOURCES	75
<i>ORAL SOURCES</i>	75
<i>PRINTED SOURCES/ARTICLES</i>	75
<i>ONLINE SOURCES</i>	78
SOCIAL MEDIA	83
<i>OTHER SOURCES</i>	84
APPENDICES	87
1. <i>INTERVIEWEE INDEX</i>	88
2. <i>INTERVIEW GUIDELINE</i>	91
3. <i>OVERVIEW: RESULT TABLES</i>	93
PRODUCT VALUES	93
PROCESS VALUES	93
EMOTION VALUES	94
EMOTION VALUES	95
PLACE VALUES	95
SOCIETAL VALUES	96
JUDGEMENT DEVICES	96
COMMUNICATION TOOLS AND DEVICES	97

ON EVERYBODY'S LIPS

Food is an inexhaustible topic for conversation. We've never spent as much time talking about food as we do today^{13,14}; on Instagram alone ~174 million pictures have been uploaded with the hashtag "food"¹⁵. Recent media and city trends are adding on to this with daily publishing of new cookbooks, restaurants popping up like never before and a steady stream of food bloggers and TV shows. Industrialised countries are increasingly interested in what to eat, how to eat it and where to source it. Concern with our own health as well as the health of our world is equally on the agenda. It's clear that the value of food has changed from being simply a means for survival into something else. One recent trend is the practice of cultivating food in urban areas, driven by the increased demand for local authenticity¹⁶. One answer to this demand is urban agriculture, a phenomenon which has gone from smaller community initiatives to growing into commercial businesses, with many companies experiencing success^{17,18}. In Tokyo offices grow tomatoes in meeting rooms¹⁹ and commuters on top of train stations²⁰, Singapore farms vertically²¹, in Bangkok rooftop farms produce edible algae²² and in New York City you can get hold of lettuce grown around the corner. Such practices are increasing their legitimacy; Goldman Sachs Urban Investment Group recently partnering with AeroFarms, financing the larger part of the 39 million dollar funding^{23,24} and

¹³ Siemens, 'Nyhet! Slow food, snabbt.', iQ700 folder, Siemens Home, p.3, viewed May 5 2015 http://www.siemens-home.se/Files/SiemensNew/Se/sv/Document/SIEM_iQ700_Folder_S14CO803BSE.pdf

¹⁴ af Klintberg, K., Landet Brunsås, Sverige: Thelma/Louise.

¹⁵ Instagram search: #food, viewed May 12 2015.

¹⁶ Fugere, L., 'Why the Going Local Trend Is Growing, and What It Means for Big Business', Radius, February 4 2014, viewed May 13 2015 <http://radius.com/2014/02/04/goinglocal/>

¹⁷ Halais, F., 'Five urban farms that are growing big', Citiscope, August 21 2014, viewed April 27 2015 <http://citiscope.org/story/2014/five-urban-farms-are-growing-big>

¹⁸ Levitt, T., 'Urban farming: how far can we go in feeding cities?', Chinadialogue, April 3 2013, viewed April 27 2015 <https://www.chinadialogue.net/article/show/single/en/5854-Urban-farming-how-far-can-we-go-in-feeding-cities->

¹⁹ Kono Designs, Urban Farm, viewed on February 11 2015, <http://konodesigns.com/portfolio/Urban-Farm/>

²⁰ de Boer, J., 'Japanese Commuters Grow Veggies On Train Station Rooftops', Pop Up City, 24 March 2014, viewed 2015-02-17 <http://popupcity.net/japanese-commuters-grow-veggies-on-train-station-rooftops/>

²¹ Geere, D., 'First Vertical Farm Opens in Singapore', Wired, 2012, viewed January 1 2015 <http://www.wired.com/2012/10/vertical-farm-in-singapore/>

²² Hupkes, S., 'Algae Farming On Bangkok Rooftops', Pop Up City, 12 October 2013, viewed February 17 2015 <http://popupcity.net/algae-farming-on-bangkok-rooftops/>

²³ Soury, L., 'New \$30 Million Deal To Develop World's Largest Indoor Vertical Farm In Newark', PR Newswire, March 9 2015, viewed May 3 2015 <http://www.prnewswire.com/news-releases/new-30-million-deal-to-develop-worlds-largest-indoor-vertical-farm-in-newark-300047493.html>

²⁴ Buncombe, A., 'AeroFarms: Work starts to build world's largest vertical urban farm in Newark', The Independent, April 28 2015, viewed May 3 2015 <http://www.independent.co.uk/environment/aerofarms-work-starts-to-build-worlds-largest-vertical-urban-farm-in-newark-10211245.html>

Freight Farms receiving 3.7 million dollar in venture funding from Spark Capital²⁵. Commercial urban agriculture can, as these examples tell of, be profitable - but it can also require large investments. Apart from the basic need for food what drives the birth of these new businesses? If the value of food is expanding then what underlying values is it that drives market preferences for urban agriculture?²⁶ Without knowing the value of a bunch of kale grown in the city, it's hard for the market to put a price and demand on it²⁷. It is thus crucial to be able to present compelling values to the market. Given the recency of commercial urban agriculture, the market workings are yet obscure and more knowledge is needed to convince stakeholders of the potential in this practice.

WHAT IS IT ALL ABOUT?

People have been growing food inside cities since way back, but over the past decade there has been a lot of talking (and doing) around urban agriculture. Why this recent fuzz around people starting to grow food in cities, among concrete and busy roads...?

1. **Urbanisation and population growth** is causing the demand for food in the world to increase faster than supply can cope with²⁸. This implies that the produce on our plates often has to travel unnecessary distances from rural areas into the cities, affecting both human health and environment negatively. This requires people to shift to a more sustainable lifestyle in general and make changes in the food we consume, including both how we consume it and produce it.
2. The world is coping with water scarcity issues and agriculture accounts for 70% of global freshwater withdrawals and more than 90% of its consumptive use.²⁹ We don't only lack water but we will also lack land to cultivate as a result of the growing populations in urban

²⁵ Keohane, D., 'Freight Farms cultivates \$3.7 million from Spark Capital', BetaBoston December 17 2014, viewed May 4 2015 <http://www.betaboston.com/news/2014/12/17/freight-farms-cultivates-3-7-million-from-spark-capital/>

²⁶ Lusk, J. L. & Briggeman, B. C., 'Food values', *American Journal of Agricultural Economics*, Vol. 91 No.1, Agricultural and Applied Economics Association, Blackwell Publ. Ltd., 2009, p. 184.

²⁷ Callon, M., Méadel, C. & Rabeharisoa, V., 'The Economy of Qualities', *Economy and Society*, Vol. 31, No. 2, Taylor & Francis Ltd, 2002, p. 197.

²⁸ The Food and Agriculture Organization of the United Nations, 'Global Agriculture towards 2050', viewed February 10 2015 http://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Global_Agriculture.pdf

²⁹ The Food and Agriculture Organization of the United Nations, 'Coping with water scarcity An action framework for agriculture and food security', *FAO Water Reports*, No. 38, 2012, viewed February 10 2015 <http://www.fao.org/docrep/016/i3015e/i3015e.pdf>

areas³⁰. This together with the high pollution rate associated with traditional agriculture³¹ makes us question why we are using such old methods in a new world. **We need to look out for the environment.**

3. Technological means for making urban agriculture a reality is already put into use around the world and great **innovative, technological competencies and solutions** to be applied in an urban environment are being continuously developed all around the world.^{32,33}
4. As a response to this, urban agriculture, the growing of plants and the raising of animals within and around cities has recently started to evolve in a **commercial manner in modern cities**³⁴.

THE STATE OF FOOD

How valuation of food is transforming

A summer when Sofia was five years old she together with her sisters and neighbours of the same age started a small pop up business; selling homemade rhubarb pie outside their house. The first pie was soon sold out and they ran back into the kitchen asking their parents to bake another one. People driving by would even stop their cars in order to buy themselves a piece. The offering held some kind of value to them. *“A person’s individual needs somehow become cognitively represented as values, and so also do societal goals and demands. Thus, we may come to view the value system that each person internalises to be just as much a reflection of individual needs as of societal goals and demands - a resultant of internal psychological and external sociological forces acting upon the person.”*³⁵ The need to buy a piece of pie came out of the value pass-byers saw in the offering, based on the personal and societal circumstances. This simple notion is the core of all marketing; by knowing the values that your product or service brings, in itself and in relation to others on the market, you can satisfy a

³⁰ Secretariat of the Convention on Biological Diversity, ‘Cities and Biodiversity Outlook’, Montreal, 2012, 64 pages.

³¹ WWF Global, ‘Farming: Pollution’, viewed February 24 2015 http://wwf.panda.org/what_we_do/footprint/agriculture/impacts/pollution/

³² Plantagon, ‘Vertical Greenhouse’, viewed February 10 2015 <http://plantagon.com/urban-agriculture/vertical-greenhouse>

³³ Dorsey, S., ‘Entrepreneurs Transform Urban Farming with High-Tech Solutions’, Triple Pundit, July 23 2014, viewed February 24 2015 <http://www.triplepundit.com/2014/07/entrepreneurs-transform-urban-farming-high-tech-solutions/>

³⁴ Smith, A., ‘Commercial urban farming – what is it and why does it matter?’, Sustainable Business Toolkit, December 4 2012, viewed February 24 2015 <http://www.sustainablebusinesstoolkit.com/commercial-urban-farming-what-is-it-and-why-does-it-matter/>

³⁵ Rokeach, M., ‘Introduction’, *Understanding Human Values: Individual and Societal*, New York, NY: The Free Press, 1979, p. 3.

need. In the case of the rhubarb pie these values could have ranged from convenience, the cheap price and good taste to the emotional reactions you'd have upon seeing five cute kids selling pie and lemonade a warm summer day... Who knows. Though in order to be able to leverage and make a business or product appealing it can be a good thing to know of these values, and to put them forward.

Food is a basic need that can be found at the bottom of Maslow's hierarchy, we need it to survive. However, in the modern industrialised world we have the benefit of living in cities where the plethora of food can be even overwhelming. Still new restaurants keep popping up and the variety of tomatoes to choose from can be confusing to anyone. Since the urban citizen is moving towards self-actualisation food has, as many other commodities, gone through a transformation to become something more than a source for energy. The values attributed to food have as a consequence expanded, and is still doing so. They function as a basis for our preferences, which in turn determine the choices we make in what to devour.³⁶ The value of food has expanded beyond economic-, nutritional- and taste values and now need to satisfy more than one craving:

1. Green eating, clean eating, raw food, ecological, organic, vegetarian, Paelo, local... The food trends that have been growing for the past couple of years are not big news. So it's not only the two of us, but a lot of people seem to be concerned with what they put on their plate and in their bodies. **Food is in focus** so to speak.³⁷
2. There is a growing demand of knowing how the food we consume **affects the environment and climate**³⁸, for us to be able to feel good about ourselves by eating sustainably; that we exert as little negative impact in the world as possible.³⁹
3. It's not only the rest of the world that is our concern, maybe more so we are concerned with our own bodies, and to make sure that we **maximize all health aspects of our**

³⁶ Lusk & Briggeman, 'Food values', p. 184–196.

³⁷ Food & Friends, 'Matrapporten 2014', *Food & Friends*, March 11 2014, viewed May 14 2015 http://www.foodfriends.se/files/5613/9453/2953/PRM_Matrapporten_2014.pdf

³⁸ Hansson, E., 'Vi vill veta vad vi äter', *Prat*, September 18 2013, viewed February 16 2015 <http://www.prat.se/trend/vi-vill-veta-vad-vi-ater/>

³⁹ Frank, J., 'Sustainability – Consumer Demand & Challenges in the Food Industry', *Prospector*, October 10 2014, viewed February 24 2015 <http://knowledge.ulprospector.com/1011/fb-sustainability-in-food/>

food intake⁴⁰. However, not to forget, a growing number of people suffer medical conditions caused by **unhealthy food consumption patterns**⁴¹.

4. **Locally sourced food** has been the one of the major, and growing, food trends past years⁴². Increasing popularity of CSA's⁴³, restaurants niching on food from the vicinity. One can wonder if soon menus will state the name of the animal whose meat you're ordering... and is it *really* local?⁴⁴
5. **Vegetables** are gaining increased status on our tabletops⁴⁵. And rightfully so. In Japan Kobe beef and Melons can already have similar price tags.
6. It's all about the attention the food has been given. **The story behind** the cilantro in the summer roll. Menus specifying the history of cow that you're eating, where it's been bred and what it's been eating. Coffee roasting in the city is suddenly a thing, and celebrities starting to produce their own wine.⁴⁶

THE PRESSING QUESTION

As we can see the interest in food and the values connected to it has increased over the years. As many other industries, food has gone from product-centric to consumer-centric giving rise to new production processes and an increased need to understand what is demanded on the market, and why. Commercial urban agriculture is one part of this changing market, but what values does the demand for urban agriculture derive from?

The connection between values and food has been done long time ago. In the 90's a California trio looked into consumption values⁴⁷. A while after that an interest in values connected

⁴⁰ Vegoeco, 'Trendigt med hälsosam mat', February 22 2014, viewed May 10 2015 <http://vegoeco.se/2014/02/22/trendigt-med-halsosam-mat/>

⁴¹ Science Daily, 'Unhealthy eating habits outpacing healthy eating patterns in most world regions', *Science Daily*, February 18 2015, viewed May 10 2015 <http://www.sciencedaily.com/releases/2015/02/150218191719.htm>

⁴² National Restaurant Association, 'What's Hot Culinary Forecast', viewed January 23 2015 <http://www.restaurant.org/News-Research/Research/What-s-Hot>

⁴³ Community Supported Agriculture

⁴⁴ Portlandia, 'In the restaurant', viewed January 23 2015 <https://www.youtube.com/watch?v=WAIWrT5P2VI>

⁴⁵ Horowitz, B., 'Vegetables shift to center of the plate', *USA Today*, November 11 2013, viewed January 23 2015 <http://www.usatoday.com/story/money/business/2013/11/09/vegetables-culinary-trends-restaurant-menus/3417879/>

⁴⁶ Solazzi, G., 'Storytelling in food writing', *Medium*, December 6 2013, viewed May 2 2015 <https://medium.com/what-we-talk-about-when-we-talk-about-food/storytelling-in-food-writing-347425c66500>

⁴⁷ Sheth, J. N., Newman, B. I. & Gross, B. L., 'Why we buy what we buy: A theory of consumption values', *Journal of Business Research* 22, Elsevier Science Publishing Co. Inc., 1991, p. 159-170.

to the process of choosing food⁴⁸ as well as qualitative research on the valuation process of goods (or a tomato to be totally honest)⁴⁹ emerged. However urban agriculture has not clearly been linked to value research. The context we are investigating is a rather recent phenomenon that took off in early 21st century. Whilst urban agriculture from a third world perspective has been explored in terms of policies⁵⁰, environment, food security⁵¹ and poverty⁵², commercial urban agriculture initiatives in industrialised countries and on a more technologically advanced level is yet to be investigated. If this industry is really to sprout, and impact food consumption and production, knowledge of how to take urban agriculture to the market is needed. Since commercial urban agriculture is an emerging market this means that it's subject to an uncertainty, deriving from the difficulty of judging the value of the offering.⁵³ The value attributed to urban agriculture is the essence of demand; not only for the consumer buying a product but also as judgment devices for the actors' willingness to supply that product. These values need to be uncovered and made visible in order to reduce market uncertainty⁵⁴. What are these values and how should we let people know of them? So we asked ourselves; *What values are attributable to commercial urban agriculture? How are these values being commercialised?*

WHAT WE'RE REALLY LOOKING AT

The scope

1. **Non-animal, raw produce:** A bakery or a juicery around the corner is no big news in a city - but having the wheat and fruit grown between a barber and your favourite coffee shop would be. Or is it? Examples of commercial vegetable farms have kept popping up in

⁴⁸ Furst, T., Connors, M., Bisogni, C.A., Sobal, J. & Winter Falk, L., 'Food Choice: A Conceptual Model of the Process', *Apetite* 1996 26, Academic Press Limited, USA, 1996, p. 247-266.

⁴⁹ Heuts, F. & Mol, A., 'What is a good tomato? A case of valuing in practice', *Valuation Studies* 1(2) 2013, LiU Electronic Press, 2013, p. 125-146.

⁵⁰ Bryld, E., 'Potentials, problems, and policy implications for urban agriculture in developing countries', *Agriculture and Human Values pp Volume 20, Issue 1*, Kluwer Academic Publishers, 2003, p. 79-86.

⁵¹ Altieri, M. A., et al, 'The greening of the "barrios": Urban agriculture for food security in Cuba', *Agriculture and Human Values Volume 16, Issue 2*, Kluwer Academic Publishers, 1999, p. 131-140.

⁵² Zezza, A. & Tasciotti, L., 'Urban agriculture, poverty, and food security: Empirical evidence from a sample of developing countries', *Food Policy Volume 35, Issue 4*, Elsevier Ltd, 2010, p. 265-273.

⁵³ Aspert, P. & Beckert, J., 'Introduction: Value in markets', *The worth of goods - Valuation and Pricing in the Economy*, Oxford University Press, UK, 2011, p. 5.

⁵⁴ Ibid.

modern cities. The cultivation and commercialisation of raw produce within the borders of large cities caught our attention and is what will be explored further.

2. **Industrialised countries:** In places far away from fields of barley there is still an excess of produce. Our own neighbourhood grocery store has a seemingly limitless supply of arugula. And we pick and choose the most appealing or cheapest leaves. In such places, where food is over-abundant, additional supply of local produce is not necessary from a survival perspective, but the reason for its existence goes beyond this. And rightfully so - there must be a more sustainable solution than making a pesto from basil grown miles and miles away?
3. **Commercial initiatives:** We imagine the future urban areas to be filled with green - both in the city environment and on the plates of citizens. In order for urban agriculture, and similar initiatives to have impact on environment and sustainable food practices they need to be both scalable and profitable. This can only happen through the help of business - through urbanely grown food being commercialised.
4. **The Metropolis:** Most commercial initiatives within urban agriculture has their home in larger cities, given that those are places where there is a substantial market for the produce. But there is also a demand for fresh produce from urbanites who do not have this around the corner, which might be the case in rural areas. Of course large cities are the homes of already successful urban farms, making it relevant given the focus of our study. New York is one such place.
5. **The production and distribution network:** Due to the recency of commercial urban agriculture the consumer side is yet to catch up on the phenomenon - in general the end consumer has little awareness of the concept given that the assortment of urban produce offered on the market is yet very limited, if not non-existent. So the people with the most insights are those working with getting urban produce to the market in some sense; trying to drive the market forward using new methods. Meaning those on the production and distribution side of things. They know the inherent workings of the practice that can provide holistic perspective on the set of values brought to different stakeholders.

OUR WISH

Is the cultivation of food within cities the future? Some claim it is but no one really knows the pushes and pulls of commercial urban agriculture in industrialised countries. We want to increase the understanding of what values commercial urban agriculture holds. This in order to find arguments that contributes to the expansion and development of this phenomenon. We want to give commercial actors, people and cities arguments to keep developing urban food production across world cities. Our wish is to present knowledge that can initiate and spur an interest for the topic among academia, the food industry, as well as the general public.

ON URBAN AGRICULTURE

If you are new to the whole urban agriculture thing we suggest you go back to page 2 and look through "Good words to know" again, before going forward.

THE ROOTS

Urban agriculture has a long tradition all over the world. It has been practiced mainly because it brought the product close to the consumer at a time when transport was slow and communication poor. Today it is the other way around. It has now come to play as a potential solution to go around these long transports and the disadvantages connected to it, but also to solve food security and safety problems. Agriculture in urban areas is growing, well-needed now that 50% of the world's population live in urban areas⁵⁵.

Cities in developing countries face a larger population growth than industrialised countries; this combined with increased rates of urban poverty is a threat to the continued access of quality food.⁵⁶ Urban agriculture has become one answer to this. As a consequence most research in this field is connected to food security, job creation and sustainable cities in developing countries where the importance of actively including urban agriculture into the city planning as well as providing

⁵⁵ Kinver, M., 'Global importance of urban agriculture 'underestimated'', *BBC News*, November 25 2014, viewed April 24 2015
<http://www.bbc.com/news/science-environment-30182326>

⁵⁶ Koscica, M., 'Agropolis: The role of urban agriculture in addressing food insecurity in developing cities', *Journal of International Affairs*, Vol. 67, No. 2, New York, 2014, p. 177-186.

institutional support is crucial^{57,58,59}. Besides providing food security, urban agriculture can become an important income source for poorer households by selling the produce, or becoming more self-sufficient, hence improving local economies⁶⁰. Urban agriculture is thus becoming important in terms of global food security⁶¹ but also from an environmental perspective. Cities are facing a future shortage of not only food but also resources and energy.⁶² Urban agriculture might not make a city self-sufficient overnight, but can definitely be a supplement to the imported supply of food, travelling long distances, impacting the environment negatively. Further more this can be one way of greening the city and start a dialogue around food production and origins of food^{63,64}.

SPROUTING

The growing of plants and raising of animals in urban areas⁶⁵ come in different shapes. Citizens turn private backyards into food growing gardens for mainly a personal benefit and consumption. Vacant lots in cities like New York have been turning into community gardens, i.e. cared for by a group of people; usually a non-profit organization, schools or volunteers from the community⁶⁶. New York alone has more than 400 community gardens⁶⁷, and developing countries have been producing food in cities to secure food supply over the last decades.

Lately, commercial urban agriculture has emerged⁶⁸, in different shapes and with different business models. In early 2010's commercial farms such as rental rooftop farm Soradofarm Lumine

⁵⁷ Deelstra, T. & Girardet, H., Urban Agriculture and Sustainable Cities Proc. of the International Workshop Growing Cities Growing Food, Havana, Cuba 1999, Thematic Paper 2, p. 43-65.

⁵⁸ Gupta, R. & Gangopadhyay, S. G., 'Urban Food Security through Urban Agriculture and Waste Recycling: Some Lessons for India', *Vikalpa*, Vol 38, No. 3, India, 2013, p. 13-22.

⁵⁹ Thornton, A., Nel, E. & Hampwaye, G., 'Cultivating Kaunda's plan for self-sufficiency: Is urban agriculture finally beginning to receive support in Zambia?', *Development Southern Africa*, Vol. 27, No. 4, Routledge, 2010 p. 613-625.

⁶⁰ Koscica, 'Agropolis: The role of urban agriculture in addressing food insecurity in developing cities', p. 177-186.

⁶¹ Kinver, M., 'Global importance of urban agriculture 'underestimated'.

⁶² Sjöström, M., 'I framtiden måste vi odla i städerna', *SVD*, June 26, 2012, viewed April 23 2015 http://www.svd.se/nyheter/idagsidan/i-framtiden-maste-vi-odla-i-staderna_7304115.svd

⁶³ Ibid.

⁶⁴ Howard, B. C., 'Urban Farming Is Growing a Green Future', *National Geographic*, viewed April 23 2015 http://environment.nationalgeographic.com/environment/photos/urban-farming/#/earth-day-urban-farming-new-york-rooftop_51631_600x450.jpg

⁶⁵ RUAF Foundation, 'Urban agriculture: what and why?', viewed May 2 2015 <http://www.ruaf.org/urban-agriculture-what-and-why>

⁶⁶ Choen, Reynolds, & Sanghvi, 'Five Borough Farm - Seeding the future of Urban Farming in New York City', p. 14.

⁶⁷ Ibid., p. 50.

⁶⁸ Halais, F., 'Can urban agriculture work on a commercial scale?', August 21 2014, viewed May 2 2015, <http://citiscope.org/story/2014/can-urban-agriculture-work-commercial-scale>

in Tokyo and Lufa Farms in Montreal saw daylight^{69,70}. Yet another example is urban beekeeping that has become popular in large cities around the world, such as The London Honey Company that started with one hive 14 years ago and today keeps hives all over London and other cities in the UK⁷¹. New York City today hosts several commercial farms supplying supermarkets as well as restaurants with greens. Brooklyn Grange is one of the leading examples; being the world's largest rooftop soil farm producing over 22000 kilos of organically-cultivated produce per year.⁷² Another example is hydroponic farm Gotham Greens with rooftop greenhouses in Queens and Brooklyn⁷³. This is the first commercial urban farm which has integrated with a retail grocery store, now cultivating on top of Whole Foods in Park Slope⁷⁴ and selling their greens all around New York City.

In the western world urban agriculture has been discussed in relation to lifestyle. The modern urban citizens want to get away from the stressful city pulse and the constant connectivity.⁷⁵ Many live in the city, but want to embrace a more rural lifestyle, a trend referred to as rurbanism⁷⁶. This idea of erasing the lines between city and rurality has spread over the world.

Essentially a plant only needs light, CO₂, water and nutrients in order to grow. With these ingredients you can cultivate anywhere, even in artificial environments, such as on rooftops and in containers. However these new growing environments demand new techniques. New technologies for cultivation and new business models are emerging and developing - answering to the new conditions of growing. With these new techniques one way can be expanding upwards instead of sideways, in vertical farming systems like in Singapore. Their first vertical farm Sky Greens was built as a prototype in 2009 and later on commercialised in 2012⁷⁷. In New Jersey AeroFarms is now developing what will be the world's largest indoor vertical farm, with plans to open to the

⁶⁹ Celsius, 'Japan Railway Opens Tokyo's Largest Rooftop Rental Farm', *Celsius*, May 30 2011, viewed May 2 2015 <http://www.celsius.com/article/japan-railway-opens-tokyos-largest-rooftop-rental-f/>

⁷⁰ Halais, F., 'Can urban agriculture work on a commercial scale?'

⁷¹ The London Honey Company, 'About us', viewed May 3 2015 <http://www.thelondonhoneycompany.co.uk/about-us>

⁷² Brooklyn Grange, 'About', viewed May 1 2015 <http://brooklyngrangefarm.com/about/>

⁷³ Gotham Greens, viewed May 1 2015 <http://gothamgreens.com/our-farm/>

⁷⁴ Whole Foods Market, 'Greenhouse Brooklyn', viewed May 1 2015 <http://www.wholefoodsmarket.com/service/greenhouse-brooklyn>

⁷⁵ Hedlund, A., 'Bönder i storstadens djungel', *DN.se*, February 28 2012, viewed April 23 2015 <http://www.dn.se/livsstil/reportage/bonder-i-storstadens-djungel/>

⁷⁶ Veckans Affärer, 'Gröna vågen har flyttat in till stan', *Veckans Affärer*, March 4 2011, viewed April 23 2015 <http://www.va.se/nyheter/2011/03/04/grona-vagen-har-flyttat-in-till-stan/>

⁷⁷ Sky Greens, viewed May 3 2015 <http://www.skygreens.com/>

public in late 2015⁷⁸. Even Swedish company Plantagon develops vertical farms in urban areas, and has plans to build a vertical farm with integrated office space outside Linköping⁷⁹. Another example of urban agriculture incorporated in an office environment is the Japanese HR company Pasona's office in Tokyo, where 20% of the office space is dedicated to farming, making it the largest urban farm in Japan⁸⁰. Also Japanese company Toshiba, known for their floppy disks in the 80's and 90's, has turned to urban agriculture. Their old factories have been transformed into growing areas for thousands of heads of lettuce⁸¹. And they are not alone being an electronics manufacturer embracing greens. Fujitsu has also taken the path of urban agriculture⁸² and Sharp is growing strawberries in the Middle East⁸³. Enough about farms in cities, let's talk some about values and commercialisation.

EXISTING IDEAS

What has been said on the values of food and the commercialisation of such values?

FOR WHAT IT'S WORTH

When valuing food the rational economic woman (or man) may start thinking of this in terms of monetary value. The price of the product. The constant search for value of money. However, being totally honest, when trying to pick out a tomato is the price tag really all you think about?

You probably consider the shape and colour of that tomato, maybe the vitamins and calories it contains, how it feels and maybe even where it's from? Does the *red sphere* in your hand taste good? Was the *process* of growing it fair and good to the environment?^{84,85} Spinach for example

⁷⁸ AeroFarms, viewed May 3 2015 <http://aerofarms.com/>

⁷⁹ Sievers, J., 'Färdig plan för Plantagons växthus', *Corren.se*, June 17 2014, viewed May 3 2015 <http://www.corren.se/nyheter/linkoping/fardig-plan-for-plantagons-vaxthus-7067514.aspx>

⁸⁰ Allen, K., 'In Tokyo, A Vertical Farm Inside and Out', *Arch Daily*, September 29 2013, viewed May 2 2015 <http://www.archdaily.com/428868/in-tokyo-a-vertical-farm-inside-and-out/>

⁸¹ Frommer, D., 'Toshiba's high-tech grow rooms are churning out lettuce that never needs washing', *Quartz*, November 13 2014, viewed April 23 2015 <http://qz.com/295936/toshibas-high-tech-grow-rooms-are-churning-out-lettuce-that-never-needs-washing/>

⁸² Hongo, J., 'Fujitsu Hoping to Turn Lettuce into Cash', *The Wall Street Journal*, May 14 2014, viewed April 23 2015 <http://blogs.wsj.com/japanrealtime/2014/05/14/fujitsu-hoping-to-turn-lettuce-into-cash/>

⁸³ Sharp, 'Sharp Starts Lab Tests for Plant-Growing Facility in Middle East', September 20 2103, viewed April 23 2015 <http://sharp-world.com/corporate/news/130920.html>

⁸⁴ Dagevos, H. & Van Ophem, J., 'Food consumption value - Developing a consumer-centred concept of value in the field of food', *British Food Journal*, Vol. 115, Issue 10, Emerald Group Publishing Limited, 2013 p. 1473 - 1486.

might bring forth all kinds of memories and associations⁸⁶. Like the simple but delicious spinach dish Sofia's Japanese host mum often would make for her lunch box... or the more obvious one - Popeye.

Even though we are moving away from cash in the traditional way of metal and pieces of paper, valuation is still needed. The issues of values and price are rooted in the uncertainty existing on a market; *"this uncertainty stems from the contingency of the value of products and from the difficulties in judging the qualities of the products offered in the market"*⁸⁷. This means that by knowing the value of a product, uncertainty can be reduced. *"Valuing something means measuring and comparing it according to a scale"*⁸⁸. Different scales of values exist simultaneously and help us to value anything from people around us to a product, such as moral value, aesthetic value, and economic value acting as different value scales⁸⁹. The simultaneity means that an object can be more or less ethical, more or less beautiful and more or less expensive, all at the same time.

Goods can be economically valuable to the consumer in different ways. Aspert and Beckert present three distinctions that help us understand the sources of value;

- 1) The distinction between use value and investment value
- 2) The distinction between individualistic value and relational value
- 3) The distinction between functional and symbolic value⁹⁰

The concept of values has also been discussed by Karababa & Kjelgaard who argue that the crucial thing is to conceptualise how the notions of value can be brought into interaction to improve understanding of market values. Their viewpoint is that the notion of value is subjective, context dependent, complex and interrelated. They also emphasise that even though values often are separated into categories they are interrelated.⁹¹

Some predominant uses of value in marketing are: exchange value, perceived value, social values & value systems, experiential value, identity & linking value, value as co-created, and value

⁸⁵ Lusk & Briggeman, 'Food values', p. 184-196.

⁸⁶ Sheth, Newman & Gross, 'Why we buy what we buy: A theory of consumption values', p. 159-170.

⁸⁷ Aspert & Beckert, *The worth of goods*, p. 5.

⁸⁸ Aspert & Beckert, *The worth of goods*, p. 6.

⁸⁹ Ibid. p. 6.

⁹⁰ Ibid. p. 11-13.

⁹¹ Karababa, E. & Kjelgaard, D., 'Value in marketing: Toward sociocultural perspectives', *Marketing Theory*, Vol. 14 (1), Sage Publications, 2014, p. 119-127.

as the co-creation of meaning. These uses have been discussed in relation to three abstract value types; economic, social and semiotic value. The economic value has a clear focus on the exchange. This is often the kind of value we think of when we purchase something; we are looking for value for money. The social value refers to something that is considered good and valuable in a human life, either determined individually based on ethical sense of goodness or based on an external, cultural perception of goodness. The third abstract value type, semiotic value, refers to sign value or meaning.⁹²

VALUES AND CHOICE

So values can be put into categories, compared and interrelated, but why do we as consumers make the choices we do? We make consumption choices, deliberately or not, almost everyday. A coffee to go, or yoghurt for tomorrow's breakfast. Sheth et al have identified five values acting as influencers on consumer choice behaviour. These are independent, but can be related and contribute incrementally to choices being made:

- 1) *Functional value* - the utility of the product, i.e. its utilitarian, functional or physical performance. Reliability, durability and price are also connected to this value.
- 2) *Social value* - the perceived utility associated with one or more specific social groups, also connected to image and how you want others to perceive you.
- 3) *Emotional value* - how we are affected by the product in terms of arouse feelings or affective states. For example, you buy an insurance to feel secure.
- 4) *Epistemic value* - how the product can arouse curiosity, provides novelty, and/or satisfies a desire for knowledge. You might be curious of a new, hip coffee brand or nightclub.
- 5) *Conditional value* - a situation based value - either connected to specific situation or the set of circumstances the choice maker is facing. E.g. the seasonal value of a Christmas tree.⁹³

VALUES AND FOOD

How then are values connected to food and food consumption? As discussed earlier one might assume that a tomato is all about colour and taste, but Heuts and Mol present five registers of

⁹² Ibid. p. 119-127.

⁹³ Sheth, Newman & Gross, 'Why we buy what we buy: A theory of consumption values', p. 159-170.

valuing a tomato; monetary value, how the tomatoes have been handled, the value of personal historical associations to tomatoes, naturalness, and sensuality i.e. how the tomato appeals to the senses. The benefit of each register depends on who you are in relation to tomatoes, and in what situation you are. One product can thus be attributed many more values than we first might think of, and these values depend on which actor you are, i.e. your role in the value network.⁹⁴ Another researcher pair claim that the most important values to consumers are; safety, nutrition, taste and price. They compiled the following list of values important specifically to food.⁹⁵

Food values and descriptions⁹⁶

Naturalness - extent to which food is produced without modern technologies

Taste - extent to which consumption of the food is appealing to the senses

Price - the price that is paid for the food

Safety - extent to which consumption of food will not cause illness

Convenience - ease at which food is cooked/consumed

Health/Nutrition - amount and type of fat, protein, vitamins etc.

Tradition - preserving traditional consumption patterns

Origin - where the agricultural commodities were grown

Fairness - extent to which all parties involved in the production of the food equally benefit

Appearance - extent to which food looks appealing

Environmental Impact - effect of food production on the environment

Another study found that the values people most often refer to when making food choices are; sensory perceptions, monetary considerations, convenience, health/nutrition, managing relationships and quality. The sensory perceptions are often the most dominant values and are driven by taste and flavour. Monetary consideration refers primarily to price and value-for-money. Time is a thing we lack in our modern society so it no surprise convenience made it to the top. Health/nutrition as value consists of factors relating to control, disease avoidance and physical

⁹⁴ Heuts & Mol, 'What is a good tomato? A case of valuing in practice', p. 125–146.

⁹⁵ Lusk & Briggeman, 'Food values', p. 184–196.

⁹⁶ Lusk & Briggeman, 'Food values', p. 184–196.

wellbeing. Managing relationships is the value in making food choices that helps avoid conflicts. Lastly, quality is something that has different meanings to different individuals.⁹⁷

Food has traditionally been defined as a product-centric concept. There has been an argument against this which puts forward a more consumer-centric approach where food has more values than the obvious ones. In this approach food values are connected to consumers' food choices, and suggests that it is the dynamic interaction between four different value groups that creates value to the consumer. These value groups have been connected in a framework called the *Food Consumption Value (FCV)* framework.⁹⁸ The FCV framework is an interplay between the following four elements:

- 1) *Product value* - physical product attributes, price-quality relation of foods, nutritional value, sensory properties, attractiveness and acceptability of food products
- 2) *Process value* - practices and characteristics of food production processes, includes consumers' ethical concerns regarding food production methods
- 3) *Location value* - accessibility and availability, based upon characteristics of the setting in which food is purchased or consumed, physical setting and experience characteristics
- 4) *Emotional value* - emerges through symbolic and moral meanings of food products, on pros and cons of food production processes, on the reputation of firms and brands

WHERE WE COME IN

As a starting point for our study we take stance in the categorisation provided by the FCV framework, as it is one of the more recent studies that clearly links food and values in a consumer-centric perspective. This framework offers a perspective on food values beyond the tangible attributes of a food product; such as location, process and emotion. The categories are also broad enough to include a large range of different more specific values, which is beneficiary since this keeps us open to unexpected values that can be connected to commercial urban agriculture. These are also inclusive of the values perceived by different actors within the network, despite the focus on consumption values the categories allows for inclusion of values applicable to actors beyond the consumer. However since we are moving from product-centric to consumer-centric markets the

⁹⁷ Furst et al, 'Food Choice: A Conceptual Model of the Process', p. 247-266.

⁹⁸ Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1473 - 1486.

dimensions beyond tangible product attributes such as emotional and social, has gained importance. It has been pointed out that FCV lacks a social dimension - how are the values of food affected by how we believe others perceive us?⁹⁹ Had this study been focusing only on the consumer side of commercial urban agriculture this would have been a relevant dimension to study but as we are focusing on the production/distribution network we have decided not to pursue studies in how social comparison among consumers affect values.

However what food we consume and how we produce it is affecting the society at large¹⁰⁰. Earlier studies of urban agriculture have shown proof of such initiatives contributing with value to the local society¹⁰¹. As urban agriculture can be of value we have decided to add a fifth category for investigation - that of societal values.

Since the FCV category definitions are not all-comprising we have mapped out a summary on earlier food value perspectives and sorted them into the four value categories; product, process, emotion and location. Following is an overview and a discussion around how we've chosen to define these four different categories and well as the category of societal values. This framework will be used as a tool for sorting the data that we collect; however the interpretation and analysis will go beyond this.

⁹⁹ Ibid.

¹⁰⁰ Smith, J. & Nasr, J, 'Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources', *Environment and Urbanization*, Vol. 4, No. 2, USA, 1992, p. 141-152.

¹⁰¹ Choen, Reynolds & Sanghvi, 'Five Borough Farm - Seeding the future of Urban Farming in New York City', p. 1.

	PRODUCT VALUE	PROCESS VALUE	EMOTIONAL VALUE	LOCATION VALUE
Sheth et al. (1991)	Functional, utilitarian or physical performance; such as reliability, durability and price (Functional value)	The capacity to arouse curiosity, provide novelty and/or satisfy a desire for knowledge (Epistemic value)	The capacity to arouse feelings or affective states by e.g. association with specific feelings such as comfort, fear or romance	The capacity to arouse curiosity, provide novelty and/or satisfy a desire for knowledge (Epistemic value), The utility as a result of the specific situation/ circumstances facing the choice maker (Conditional Value)
Furst et al. (1996)	Sensory perceptions, Monetary considerations, Convenience (preparation), Health and nutrition, Quality			Convenience (access)
Lusk & Briggeman (2009)	Safety, Nutrition, Taste, Price, Convenience, Appearance	Naturalness, Tradition, Environmental Impact, fairness, Origin		
Heuts & Mol (2013)	Monetary value, Sensuality	Handling of produce, Naturalness	Personal historical associations	
Dagevos & Van Ophem (2013)	Physical product attributes, price-quality relation of foods, nutritional value, sensory properties, attractiveness and acceptability of food products	Practices and characteristics of food production processes, includes consumers' ethical concerns regarding food production methods	Emerges through symbolic and moral meanings of food products, on pros and cons of food production processes, on the reputation of firms and brands	Accessibility and availability, based upon characteristics of the setting in which food is purchased or consumed, physical setting and experience characteristics

An overview of values, classified according to the Food Consumption Value structure. This structure, including the values discussed by different authors works as a basis for our study.

Product Value: This includes value connected to the more tangible product attributes such as price-quality relation of foods, nutritional value, sensory properties, reliability, health and safety as well as other physical attributes like attractiveness and quality. *Process Value:* These are values connected to practices and characteristics of food production processes. Including consumers' ethical concerns regarding food production methods, environmental impact, origin as well as epistemic value. *Emotional Value:* Such values that emerge through symbolic and moral meanings of food products, on pros and cons of food production processes, on the reputation of firms and brands. It also includes values brought up by personal historical associations, or other emotional associations. *Location Value:* Includes values connected to accessibility and availability (convenience), characteristics of the setting in which food is purchased or consumed, physical setting and experience characteristics but also the situation-based values. *Societal Value:* The values brought to, and experienced by the society, the local community as a whole, in which commercial urban agriculture is placed.

THEN WHAT?

When having discussed all these values, what are they good for and how can they be used? First and foremost they are, as discussed, a basis for the choices consumers make. The values of urban agriculture can thus be used for promotional purposes, may it be directed towards a young guy picking up ingredients for a Friday night dinner or a grocery store thinking of a brand extension. But in order to be able to communicate effectively to a certain target group one needs to know how these values are ascribed at the market. How does the market decide what values are attributable to a certain product? How does one know the value of a product? How is it decided, and by whom?

COMMERCIALISATION OF VALUES

We consume more than ever, but yet, we seldom reflect specifically on the underlying values that motivate our purchases. Why would you buy urbanely grown lettuce, which might look very similar to the shipped in lettuce from California? How will you know the difference? The urban produce has to have some kind of value or diverging characteristic from the shipped in one that is made visible. Otherwise, why would you bother? These values must be presented to us consumers in some way, in order for us demand the product at hand. We need to know, at least subconsciously, what it is good for.

SINGULARITY

Products are on-going processes, which are qualified for the purpose of exchange. This qualification depends upon the circumstantial forces acting upon an actor at that given point in time. Consumers make judgement of a product's¹⁰² quality, ascribe it values, that later can be used when making consumption choices; a qualification process. The leaves of an urbanely farmed lettuce have a set of values, or defining characteristics, set by the agents, the actors, within the network. The combination of these characteristics establishes the lettuce's singularity; what makes it stand out from other products on the market, and work as a decisive tool for consumer choices.¹⁰³

¹⁰² Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', refers to a moment in a products ongoing process as a "good"

¹⁰³ Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 194-217.

WHO DECIDES THE VALUE OF A PRODUCT

Product markets are social constructs i.e. dynamic socio-cognitive phenomena where value is exchanged through transactional relationship, based on mutual understanding, between market actors. Consumers' demands are rooted in usage conditions and the choices available, thus consumers and producers determine the substitutability of products and services on the basis of context-driven demands. The market actors are bound together in equivocal transactions that are stabilised by their shared assumptions and frames of reference, where their behaviour exert influence on the conceptual system of others. Both producers and consumers are thus part of creating the value of a product by defining the product meaning through their behaviour at the market.¹⁰⁴

One such behaviour can be expressed as *revealing* properties of products in the interaction between actors. By first measuring the chemical additives to a jar of honey and these results can then be made visible to other actors through some sort of label or information. Values can also be ascribed through the mutual adaptation between what a firm proposes and what consumers want. The honey is classified, ascribed attributes that makes it distinguished from other goods. This singularisation leads to the positioning of a good; makes it comparable to other existing goods or offerings.¹⁰⁵ Stabilising a product in terms of category is important for consumers, since categories become tacit knowledge that is used in order to easily navigate among products¹⁰⁶. The attributes behind the categorisation derive from market actors' interaction and communication around a product; either in a formal or informal, conscious or unconscious way.¹⁰⁷

In order to assess the qualities of 'singular goods' a set of tools are needed. *"Judgement devices are used to dissipate the opacity of the market. They offer buyers the knowledge that should enable them to make reasonable choices... Without judgement devices, the market of singularities could not function."*¹⁰⁸

The aid we as consumers expect to get from judgement devices is a combination of information, persuasion and seduction. The function of the devices is to act as representatives of producers and/or consumers, to provide knowledge and to act as competing forces striving to be

¹⁰⁴ Rosa et al, 'Sociocognitive Dynamics in Product Market', p. 64.

¹⁰⁵ Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 201.

¹⁰⁶ Rosa et al, 'Sociocognitive Dynamics in Product Market', p. 64-77.

¹⁰⁷ Ibid., p. 64.

¹⁰⁸ Karpik, L., 'Judgement Devices', *Valuing the Unique: The Economics of Singularities*, Princeton University Press, Princeton, 2010 p. 44.

more visible and desirable than their competitors. Judgement devices are provided by different kinds of actors in the network; producers, sellers, marketers, mass media, influencers and public authorities. A categorisation of such devices follows¹⁰⁹;

- 1) *Networks* - for example the personal network consisting of interpersonal relations with family, friends, colleagues etc. The personal network provides its users with recommendations and information about products; this is for example when we ask for advice from close friends.
- 2) *Appellations* - names associated with attribute and meanings that either defines a product or a family of products. Examples of appellations are labels indicating for example origin of a product, certifications, brands, and professional titles.
- 3) *Cicerones* - refers to critics, specialist or guidebooks for examples, which offer a specific evaluation of a product. They embody some sort of authority. This can today be a food blogger or restaurant critic.
- 4) *Rankings* - hierarchical arrangements according to criteria. This is for example bestseller list, top lists, online rankings.
- 5) *Confluences* - techniques used by firms to channel consumers. Example being by using displays, spatial organisation such as pre-decided paths in a store. E.g. IKEA where the consumer walks a pre-designed path.¹¹⁰

Another navigation tool in social systems that is critical for sensemaking the world around us (and thus also products) is the story. Market stories specifically help explaining and establishing connections among products, their benefits and how they can and should be used. In short; when you hold a bunch of radishes in your hand their value is a result of several influencing factors. These factors derive from consumers' and producers' behaviour¹¹¹ as well as the combination of characteristics making those specific radishes stand out from the crowd¹¹². The stories told around those pink bulbs are what help the market make sense of the product, or the product category. These stories evolve over time through the market discourse, and with the changing stories the

¹⁰⁹ Ibid., p. 45.

¹¹⁰ Karpik, *Valuing the Unique*, p. 45.

¹¹¹ Rosa, J. A. et al, 'Sociocognitive Dynamics in Product Market', *Journal of Marketing*, Vol. 63, ABI/INFORM Global, 1999, p. 64-77.

¹¹² Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 194-217.

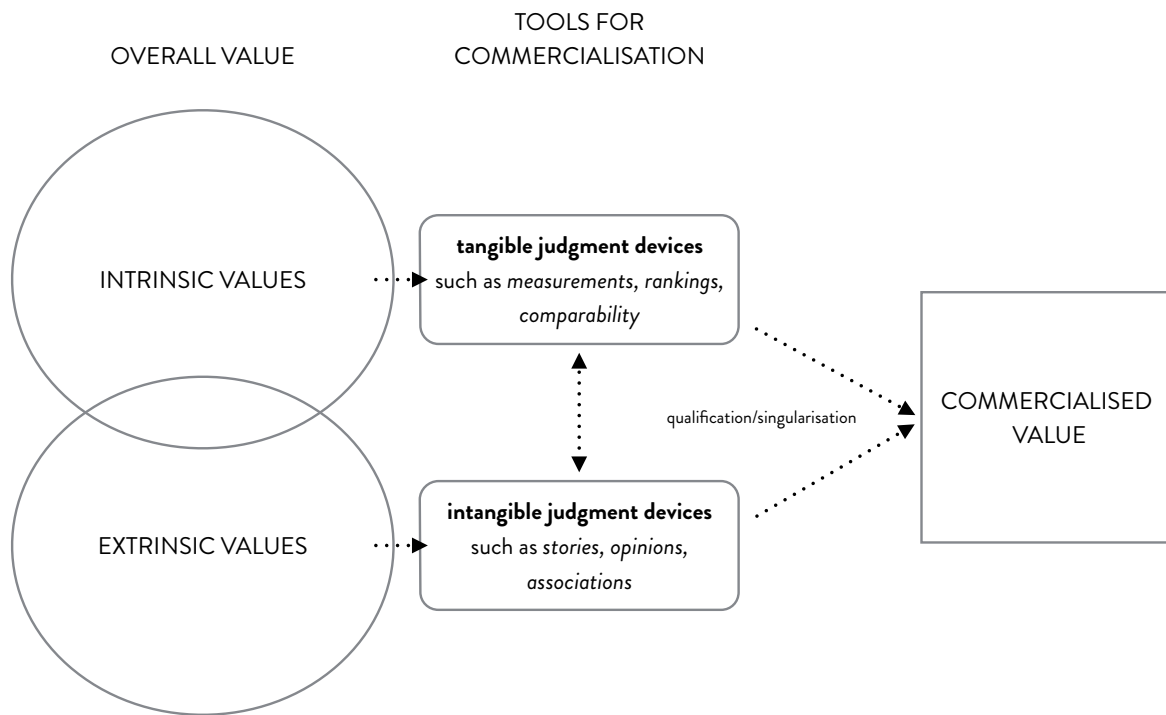
identity of those radishes is maintained or transformed, limiting the durability and stability in a product's conceptual system. But the stories are also windows into the minds of producers and consumers and can as a consequence be used to understand or uncover core attributes in emerging product markets, such as commercial urban agriculture. So those particular radishes, with a certain background can be made sense of and be ascribed value not only by the label put on the package but through e.g. a magazine review talking about their flavour or a friend describing the restaurant experience which those same radishes were part of.¹¹³

THE COMMERCIALISATION OF VALUES

There is a complexity to values which impact the challenges connected to the commercialisation of urban agriculture; within the world of values category borders are overlapping, many times a characteristic or classification can belong in many value categories which in turn has effect on the methods of communicating those values to the market. In order to make sense of how different values are being commercialised, depending upon their characteristics, one can argue for sorting them into intrinsic or extrinsic values. This implies there is a twofoldness to values. Intrinsic values being the straight forward, tangible product values, the more inherent characteristics of a product. These values are measurable and explicitly comparable which can make them subject for more tangible judgement devices - commercialisation methods such as e.g. rankings, the *revealing* of properties. The extrinsic values are then the values deriving from the experiences or associations connected to a product, the perceived value rather than an inherent function, thus vary depending on who evaluates and judges the value.¹¹⁴ To a large extent the emotion, process, location and societal values are values that can be made visible using more intangible judgment devices such as the telling of a story or opinion. The notion of *cicerones* and *networks* falls under this category. However, both the intrinsic and extrinsic values affect the commercialisation process, and one specific value can belong to both sides depending upon how it is framed. For example the environmental impact of a process can both be measured in actual CO₂ footprint but the practices giving rise to this low emission can be part of a story of the origin of the product. Following is a conceptual model mapping this:

¹¹³ Rosa et al, 'Sociocognitive Dynamics in Product Market', p. 69.

¹¹⁴ Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 199.



The dual, interrelated commercialisation process of values

AMONG THE STREETS OF NEW YORK CITY

How we went about answering our question

THE BEGINNING

Two years back we came across an article in *Forskning & Framsteg* telling the story of new technologies making it possible to farm greens in urban environments, both in vertical greenhouses as well as on rooftops¹¹⁵. Something so seemingly futuristic was actually happening all over the world. From that point onward we read and collected any bits of information on the subject we could come across. Still we felt there were more stories out there to tell, insights to be collected.

¹¹⁵ Nyström, J., 'Stadsbornas mat blir närodlat i extrema växthus', *Forskning och Framsteg*, 3, 2013, p. 36-40.

THE NATURE OF OUR APPROACH

The commercialisation of urban agriculture is not a static phenomenon, nor is the people who work with or meet such businesses. For our findings to be relevant we needed to study it in its context as it is today. In order to uncover how urban agriculture is reaching the market and the drivers behind this we need to understand this phenomenon through examining how participants in this social context interpret it¹¹⁶. As consequence a qualitative approach was chosen since this allows us to tap into people's reasoning, which in turn can help us understand the individual and social workings of the phenomenon in its holistic context. This allowed us to study the thoughts and behaviours of a number of actors within this field and helped us explore how urban agriculture is communicated to the market and more importantly, why it's done in this way.

As we are trying to infer an explanation¹¹⁷ to a phenomenon yet not subject to extensive marketing research, we have in an abductive fashion moved between theory and observation. By using existing theories from connected fields and through collecting our own stories from people and businesses operating within this particular industry we have explored the environment of the phenomenon; created a rich description of the situation, gathered thick data and gained insights and explanations.¹¹⁸

TALKING TO PEOPLE

As previously discussed, there is a complexity to values connected to what a person needs¹¹⁹. Thus we needed to interact in a way that allowed probing, this in order to detect values and to uncover meanings that would not be uncovered through indirect interactions. So we decided to *talk* to people who somehow are part of, or take part in this industry - what we could call experts on the topic. Rather than investigating just one or two specific cases we wanted to study different examples of the same phenomenon, to get a sense of the general value perception of urban agriculture within this society and look into how such values are communicated. The practical difficulties in gathering several different actors made us rule out focus groups. Instead in-depth interviews allowed us to

¹¹⁶ Bryman, A. & Bell, E., *Business Research Methods*, 3rd ed., Oxford University Press, 2011, p. 386.

¹¹⁷ Sober, E., *Core questions in Philosophy*, 6th ed. Pearson, 2012.

¹¹⁸ Bryman & Bell, *Business Research Methods*, p. 398.

¹¹⁹ Rokeach, *Understanding Human Values*, p. 3.

investigate our question on a deeper level, and to get a deeper understanding of the workings of the commercial urban agriculture market. In addition to talking to people we assembled secondary data through online research and material produced by the different actors, this to get a broader perspective on their communication.

THE APPLE AND THE EXPERTS

In the spring of 2015 we spent one month in New York to meet up with a range of interesting people and businesses that in one way or another are connected to the commercial urban agriculture market. Why the big apple one might ask? There are many big cities that have come a long way in the area of commercial urban agriculture with North America and Asia being continents at the forefront.¹²⁰ However given the characteristics of this study we needed to be able to speak the same languages as the interviewees, thus Asia was not an option. Another requirement was to select an urban environment that is home to several commercial urban agriculture initiatives as well as industry experts, as money and time constraints limited us to visit one place. These kinds of actors have sprouted up across the whole US; New York however became the most suitable place as it fulfilled the criteria of a (very) large city home to many actors in field of commercial urban agriculture.

After extensive research, a couple of Skype calls and emailing we managed to pin down a selection of people suiting our purpose, with time to meet us. Due to the busy schedules of the pool of desired interviewees, and our own time limitations, our final sample is a convenience selection stemming from a snowballing effect¹²¹, slightly diverging from our original sample. The interviewees and talks lead us to new people and practices that furthered our research - an organic process so to speak. The final selection includes actors from different parts of the production/distribution network covering different angles and providing a broad range of values and a more holistic perspective on the phenomenon¹²². We met with farmers, an academic, a restaurant, a high tech farm, food system suppliers, an influencer and an architect; in total 6

¹²⁰ Urbanfarming.org, "View gardens from around the globe!", Garden locations, viewed April 16 2015 <http://www.urbanfarming.org/garden-locations.html>

¹²¹ Bryman & Bell, *Business Research Methods*, p. 491.

¹²² Heuts & Mol, 'What is a good tomato? A case of valuing in practice', p. 125–146.

women and 6 men between the ages of 25 and 75. See *appendix 2, p. 87* for an overview of interviewees.

THE INTERVIEW

We came to New York prepared with a set of semi structured questions based on elements and connected values brought up in the *Food Consumption Value framework*¹²³. As discussed earlier two more perspectives were needed; questions regarding societal values and commercialisation of values brought up were thus added. We designed open-ended questions, or questions demanding some kind of narration from the interviewee in order to not bias their answers and to let them speak freely. Since we could not foresee all alternatives there might be in their answers this open, semi-structure helped us limit their responses as little as possible. Before plunging into the interviews Professor Hans Kjellberg at the department for marketing and strategy at Stockholm School of Economics, reviewed the questions and structure. See *appendix 3, p.90* for an overview of this.

THE PROCESS

We've conducted interviews at the 19th floor downtown, inside a greenhouse, at a two star Michelin restaurant, at Union Square, on the roof of an art atelier in Chelsea... All in order to meet with people in an environment where they are comfortable and relaxed, allowing them speak freely around their practices and not feeling forced to provide "correct" answers. Out of convenience and scheduling difficulties two of the interviews were conducted via video-link. Both of us, one leading the interview whilst the other took notes, were present during the interviews. With the interviewees' consent every interview was also recorded, see *appendix 2, p. 87*.

The more we talked to people within the industry the better questions we could ask and so our original set of questions came to be tweaked and adjusted as we went along, similar to methods of grounded theory¹²⁴. We also realised that the people who work with urban agriculture love to talk about it, sometimes making questions superfluous and we'd let the person talk, using our questions more as supportive element and basis for discussion, to not inhibit the interviewee. We

¹²³ Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1473 - 1486.

¹²⁴ Bryman & Bell, *Business Research Methods*, p. 441.

kept probing until no new relevant answers emerged and interviewees started to repeat themselves. After 10 out of 12 interviews we could see a clear pattern in answers and discussions proof of us having achieved a certain theoretical saturation¹²⁵. The interviews lasted for between 45 minutes to 1,5 hours, depending on the interviewees' schedule and time it took to reach saturation.

In addition to what we uncovered whilst talking to the subjects we also made use of public documents including but not limited to websites, sales material, advertisements, films, social media communication and press articles - along with in-store observations.

DIGESTING THE FINDINGS

Just as with the collection of data, the processing and analysis was done in an iterative way, i.e. there was a constant interplay between collection and analysis. This approach inspired by systematic combining came naturally as it is well fitted with the aim to conceptualise what subject of the study.¹²⁶ Transcriptions of relevant quotes in combination with our interpretation of what has been said in the interviews are what constitute the empirics. As one of the wishes with this study is to make it accessible and interesting for a public also beyond academia we have chosen to recount our findings case by case, as a range of short stories. This puts the results in a richer context where we present the words and thoughts of the interviewees (if stated, also any secondary data), and our interpretations of these. Transcription and a codification process was initiated soon after collecting the initial data. Answers were examined, broken down, compared and finally categorised in an overview following the theoretical framework discussed earlier.

PRESENTATION FORMAT

Given the role food plays in our lives and how these new businesses can become a part of the urban community, we wanted to present our findings in a way that adheres to the interest of not only academia but something that could appeal to a larger audience, to the people who are affected by the market change a urban agriculture could infer. We have written this thesis with a more commercial target group in mind, with the goal of later on turning this into a book.

¹²⁵ Ibid. p. 442.

¹²⁶ Dubois, A. & Gadde, L-E., 'Systematic combining: an abductive approach to case research', *Journal of Business Research*, Vol. 55, Elsevier Science Inc., Sweden, 2002, p. 553-560.

ACTORS PLAYING HARD TO GET

Many of the largest actors within commercial urban agriculture in New York, such as Gotham Greens and Brooklyn Grange, did not have time or capacity to meet us or were hard to access, and this limited access to experts was one of our largest limitations. Secondly, after having spent time in two different grocery stores, talking to and observing consumers we concluded that interaction with consumers was too time consuming given the reward, as most people we're not willing to interrupt their shopping. Thus we decided to exclude collection of the direct consumer perspective and instead focus our full attention on talking to the production/distribution side of commercial urban agriculture.

QUALITY CERTIFICATION

SUBJECTIVITY

Urban agriculture is something which we both have a personal connection and long-time relation to meaning that we have preconceived ideas around the questions at hand which can be a source for bias. However, our subjectivity is in this case valuable since our pre-knowledge has helped us to ask relevant questions during the interviews and allowed us to be flexible and insightful in the interview process, ensuring an in-depth, detailed understanding of what the interviewee has tried to convey. The interpretation of the data is of course also coloured by our pre-knowledge, knowledge that expanded throughout the data collection process. This can be a source of bias or misinterpretation but as the nature of the qualitative study is subjective our knowledge and values has helped in the processing of data by allowing us to easily understand the underlying motivations behind what was told to us in the interviews and helped us in making this relevant to the study. Following is one example of an interpretation:

*"Using the ceiling is free rent right?"*¹²⁷ was understood and interpreted as commercial urban agriculture has a value in being able to exploit spaces in the city which is yet not filled with a value adding activity, as well as the value in maximizing the usage of a scarce resource.

¹²⁷ Kono, Yoshimi; Founder of Kono Designs, interview March 11 2015.

TRANSFERABILITY

The commercialisation of urban agriculture is a process in motion where we have looked at a specific place and point in time, making our findings true for that setting and the specific actors we have talked to only. Though, in order to make the results transferable to similar settings and actors we have tried to encounter for a thick description of the situation at hand.¹²⁸ A broader scope and number of actors and locations would of course enrich this description and thus improve the transferability to other settings. Even so given a setting with similar conditions where the process of commercialisation is at a similar stage in maturity the findings should be transferable.

RELIABILITY

It would be impossible to replicate the exact same study again since the phenomenon and context is continuously changing and the replication of a study requires an underlying stability of the situation. To recreate the same situation is not possible since it would require access to the exact same actors at this specific point in time. However, using the same structure, a replication in a similar environment should find similar processes as the ones we have uncovered. This given that the study has been using already existing ideas and that the interview guide is based on previous research.

Interviews are beneficial for the purpose of reliability since questions can be rephrased until certainty that it's been correctly perceived is reached - which was applied during the data collection process. As both researchers have been part of collection as well as interpretation of the data one can argue that the study has been conducted in good faith, and is not biased by the perceptions and subjectivity of a single person. This also limits the risk of misinterpretation of the data collected.¹²⁹

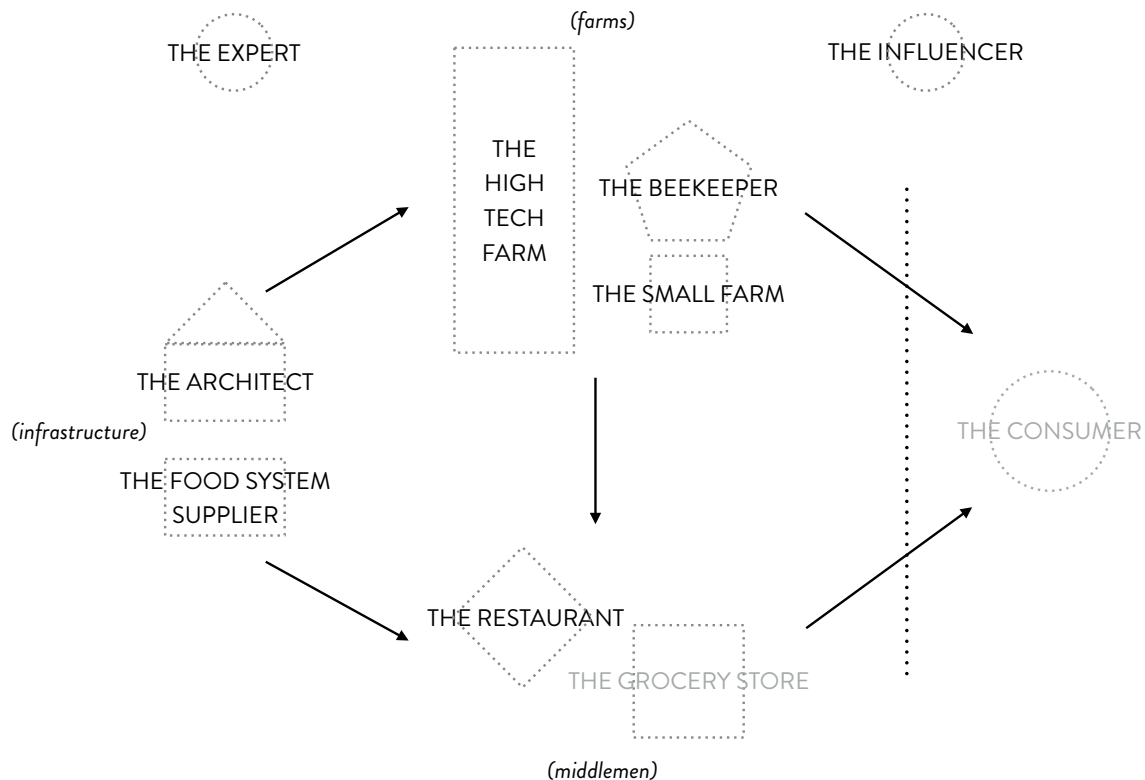
THE STORIES

Criss-crossing through Brooklyn, walking up and down Manhattan and even taking the train to New Jersey. On our journey we've met with an architect, a high tech vertical farm, a mobile

¹²⁸ Bryman & Bell, *Business Research Methods*, p. 398.

¹²⁹ Bryman & Bell, *Business Research Methods*, p. 395.

container farm company, an aquaponics farm, a restaurant, urban beekeepers, a university professor and a food blogger. These are their stories, together with what has caught our eye when browsing offers on the commercial urban agriculture market. But first of all let's start with the infrastructure.



Map of the different actors whose stories we've collected. As discussed we have not talked directly to the consumer, however the consumer perspective is as you will see still represented in the stories. At the grocery store we picked up observations.

A FARM NEEDS ITS ARCHITECT

In downtown Tokyo there is a big building - filled with green from inside out. The office space of human resources company Pasona is essentially an urban farm, with a rice field neatly placed in the entrance and tomato vines in the meeting rooms.¹³⁰ The architect behind this mountain of green is Yoshimi Kono of Kono Designs. We met him, a small Japanese man with laughter in his eyes, at the 19th floor just north of Union Square. He has approached farming and architecture in an entirely new way; awarding him both prizes and publicity, not to mention a name in the urban agriculture hall of fame. Even though his urban farm in Tokyo is not a regular commercial farm, but built for the company employees, it is bringing food production close to the urban citizen.

¹³⁰ Kono Designs, 'Portfolio', viewed April 5 2015, <http://konodesigns.com/portfolio/Urban-Farm/>

A GREEN MOUNTAIN IN THE CITY

*"I tried to make a mountain in the city."*¹³¹ That was Yoshimi Kono's vision when asked by CEO of human resource company Pasona to include an urban farm in their new office building. Now, five years later, Yoshimi has really seen the benefits of the space he designed. The balconies and facade burst with green and on the inside otherwise unutilised area, such as walls and ceilings are being used to grow vegetables. As space (especially downtown Tokyo) is expensive there is definitely an added value in maximising the usage of the "free" space within a building. *"Using the ceiling is free rent right?"*¹³² Instead of putting a piece of art on the wall or statue in an entrance - why not fill it with edible plants? These vegetables and greenery of the building brings joy to the employees, and as a consequence the green facade is a sight for sore eyes in the jungle of Tokyo skyscrapers. People stop at the traffic light next to the building, looking up, pointing and smiling, talking about it. Busy and tired workers of Tokyo getting a small moment of relaxation in a strict, grey and stone environment. *"Three months later I came back and thought; oh maybe I did something nice."*¹³³

Even Yoshimi thought it was a crazy idea at first - who builds a farm within an office? But for Pasona the goal was not to build a commercial farm for urban food production, but to become more trusted within the agricultural sector - and the farm has brought along many benefits besides that. The farm enables them to talk about something besides business with their clients - to talk about something close to life. He points out that in food deserts, where it's very cold or in places without farmland, such as Saudi Arabia the benefits of large-scale hydroponic factory systems are of course great to provide food production. Both in terms of food safety, freshness and the reduced transportation distance. However, to Yoshimi one of the biggest benefits with farming inside cities is that it brings produce close to the people. Not necessarily to feed the inhabitants but for us urbanites to understand the origin of food.

*"In New York you don't need to have an actual factory inside the city because, for instance, if you drive 15-20 minutes it's only farm fields. You don't need to grow vegetables inside the city. But the design can be implemented for people to enjoy."*¹³⁴ The point he is trying to make is that there are

¹³¹ Kono, Yoshimi; Founder of Kono Designs, interview March 11 2015.

¹³² Ibid.

¹³³ Ibid.

¹³⁴ Ibid.

benefits to urban agriculture beyond those achieved when producing it on a large scale in a factory setting. In such cases the food is still very distant from the people hidden in a place where no one will see it. The benefit in cities like New York is more of an educational and emotional character, not a nutritive, so the value comes with inviting people in. And the reaction to his design after interacting with it was great.

*"They were fascinated of how to grow plants, they attached to the vegetables, to growing. Which is kind of a key component if you have this type of facility in the city. Because people don't know how to grow the vegetables. And you don't know about the food, where it comes from. You just eat, or sometimes you just scroll [on a computer] - you order the food and you don't even need to talk. So people were kind of interested and attached to it. They learn something and bring it back home."*¹³⁵ The building itself is not only a showcase of what you can do inside a space but it brings knowledge and education to urban citizens, and creates new attachments to and interactions with the produce usually picked up from a grocery bag.

*"The eggplants and cucumbers hanging in front of the reception, it's kind of funny right? It looks tasty you know, you want to eat it. If you see the junk food in front of you, you eat it right. But if you have a vegetable in front of you that looks tasty you want to eat it. Like; I saw a nice looking tomato today so I want to buy something like that on the way home."*¹³⁶ Being exposed to a certain food creates a desire for it, so by exposing people to fresh and healthy vegetables society is by consequence being encouraged to eat more of those foods. And at Pasona the vegetables are not only nice to look at, the food grown within the building can be eaten in the company canteen. So besides contributing to a relaxed environment the benefit of being able to whip up a great salad with on site grown vegetables and throw it in a nice dressing is a great marketing point for any urban farm. To see the growing and then being able to eat the greens on the spot adds a lot to the product value, not only in terms of freshness but the experiencing the growing location becomes important from an emotional perspective. *"It's important to have the plant next to you. I think the presence of growing the vegetable is very interesting and also profitable for our daily life, to have it there. That's my learning."*¹³⁷

¹³⁵ Kono, Yoshimi; Founder of Kono Designs, interview March 11 2015.

¹³⁶ Ibid.

¹³⁷ Ibid.

THE TOURIST ATTRACTION

If you hop on a tourist bus in Tokyo today it will stop by the Pasona building, and school classes from outside the city come to visit the farm. *"We didn't expect it to draw a lot of outside people but then we were on the first page of the national newspaper."*¹³⁸ The farm has generated great PR value to say the least. Neither Yoshimi himself nor Pasona has had to market the building and initiative in any way. It has rather been the other way around. Yoshimi points out that once you build something unique in this way both ambassadors and presidents come look at it - the value of the building caters enough traction to market itself. And (online) word of mouth has taken the story of Yoshimi's design all over the world.

A GLIMPSE INTO THE FUTURE OF AGRICULTURE?

Whilst the Pasona urban farm mainly has an inspirational purpose there are people who use new technology to try to really cater to the growing need of food supply and access, to feed the many within the cities in a new way. One such company is AeroFarms located in Newark, New Jersey. After a train ride under the Hudson River we eventually ended up outside a very inconspicuous entrance hidden away in a back alley. No soil, no tractor, not even a greenhouse for all we could see - but yet a farm. Or at least a farm research facility, in the process of optimising methods of *Vertical Farming*. When marketing manager Marc Oshima took us inside and we caught glimpses of shelved racks with green sprouts bathing in strong lightning, researchers packing up spinach to test durability... All very high tech. And rightfully so, AeroFarms is planning to build the world's largest indoor vertical farm that will produce two million pounds of food per year¹³⁹. The goal is to fundamentally change how food is grown.

BUILDING IT HIGH

*"How do we bring food to people that haven't been able to have it in the past? How do we grow locally? How do we celebrate the community?"*¹⁴⁰ These are all questions AeroFarms are trying to answer.

¹³⁸ Kono, Yoshimi; Founder of Kono Designs, interview March 11 2015.

¹³⁹ Wang, L., 'World's largest indoor vertical farm will produce 2 million pounds of soil-free food in Newark', *Inhabitat*, March 14 2015, viewed March 24 2015 <http://inhabitat.com/worlds-largest-indoor-vertical-farm-will-produce-2-million-pounds-of-soil-free-food-in-newark/market-893rendered/?extend=1>

¹⁴⁰ Oshima, Marc; Chief Marketing Officer at AeroFarms, interview March 20 2015.

They are bringing food production to where people live, which also means bringing new business and jobs to urban areas, Marc emphasises.

“A big realisation we had is that if we want to make an impact on food as well, we want to teach people what food is about, and we can make that connection by showing how food is grown.”¹⁴¹

AeroFarms have seen a great educational value in their practices, by being present in and cultivating produce in urban areas (as well as inside schools) they can create a connection between people and food, which goes beyond its nutritional value. Using urban farms as a means for teaching is an important aspect for the company and it helps build a community with better understanding of food. *“You create a different connection to food when you are actually growing it.”¹⁴²*

However fine and dandy the educational value of urban agriculture is, what it comes down to for AeroFarms is the product and process values they can bring. *“In our system we can grow it in 12-16 days versus 30-45 days, even in greenhouse that would be 34-40 days. So this is a much more accelerated process. ... It’s a fresher product we can turnover very quickly.”¹⁴³* The process turnover of crops is much faster than a conventional farm and the technique AeroFarms are implementing use 95% less water than traditional farming. On top of that; fewer fertilizers and no pesticides or herbicides whatsoever. This is all of great value to both the producer and the wholesaler, but also the consumer. *“Because we grow in this controlled environment the product is ready to eat, it’s not washed or triple-washed as it is on the marketplace right now. That leads to damaging and bruising product, it’s (the washing) very energy intensive as well.”¹⁴⁴* Energy usage is cut also through optimised LED lightning controlled to only use the specific spectrum of light that the plant needs to mature, and then there is of course the energy cut through the reduced mileage produce needs to travel.

“You have a product that has lots of transportation miles, but the main thing is that because is travelling so long when the time it gets here it’s 5 or 7 days old so it’s no longer at its peak nutrition or its peak flavour.”¹⁴⁵ All of this of course reduces the strain on the environment but is also of value to the consumer. The produce is clean from both dirt and chemicals, and is kept beautiful, tasty and nutritious as a result. Even in food deserts people can be given access to food that is safe, and locally produced. Marc claims (and we’re willing to agree) that the consumer is first and foremost looking

¹⁴¹ Oshima, M., interview.

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

for freshness and then flavour when it comes to food - values that AeroFarms caters to. When it comes to flavour, an additional value that Marc points out is the potential to be able to offer a much broader variety of produce compared to the traditional farm where only the tougher varieties, which can stand for example transportation, can be grown. With their technology hundreds of varieties of lettuce can be grown and old varieties can be brought back - instead of only being able to offer around 10 varieties. *“When people think about food today it’s usually packaged, harvested for travel, it’s not really grown for flavour – so this is an opportunity to celebrate these flavours, it’s an opportunity celebrating these varieties, and really what we can do here is also bring back the loss of varieties.”*¹⁴⁶

There is also the possibility of easily catering to different markets, bringing for example easily growing different products for the Asian region or herbs specific for the Spanish market. This flexibility in produce also allows for the growing of exotic varieties in an environment which itself does not allow for such produce. *“If you think about all different cuisines and celebrating all those different cultures, and what’s amazing about food is that it brings people together like that, and this is one of the ways helping facilitate those traditions.”*¹⁴⁷ This in itself can be of social value, helping to keep cultural heritage alive even with the on-going globalisation. *“...more than ever there is an interest in understanding how your food is grown, understanding that back-story, there is a real interest in the authenticity of the food, how it’s made, how it’s prepared...”*¹⁴⁸

The urban farm brings the story of the food closer to the consumer, makes it more tangible and fills that bowl of salad with more than just the nutrition of the healthy greens.

WORD OF THE TASTING MOUTH

According to Marc the main means of communication so far has been PR work and word of mouth, they are also doing tastings with chefs and industry actors to showcase the product and give potential customers a glimpse of what’s to come. These are samplings and tasting where the product is the hero, allowing industry and customers to taste them as is. They also make sure to be present at Slow Food¹⁴⁹ events and the like.

¹⁴⁶ Oshima, Marc; Chief Marketing Officer at AeroFarms, interview March 20 2015.

¹⁴⁷ Ibid.

¹⁴⁸ Ibid.

¹⁴⁹ Slow Food, 'About us', viewed March 26 2015 <http://www.slowfood.com/international/1/about-us>

Further more they are trying to educate the market by giving them tools for critical thinking and highlighting what questions we should be asking. E.g. concerning the triple-wash¹⁵⁰; what are they washing away? Marc points out. This in order to start a dialogue around food and the production thereof. He also mentions the importance of approaching different customer groups in different ways - restaurants and chefs value one set of thing whereas retail may hold a different set of values as what's most important with a product.

Whilst AeroFarms has a great vision of building a very large scale farm with state of the art technology there are already solutions on the market which are accessible even if you have never farmed in your life before (and do not have the capital needed to construct a 2 million pounds food/year farm...).

SHIPPING THE FARM NOT THE PRODUCE

*“Everyone we talked to in food is terrified, they can’t hold the price of produce, they can’t hang their hat on food as a viable business option. Which is super sad because at the end of the day we really don’t need any of this other stuff [material things] but we all need food.”*¹⁵¹ Food is being moved around all over the world, across seas and oceans as well as vast areas of land to eventually land in a grocery store and on a plate. Unfortunately then not as fresh as it could have been. So why not make the production more mobile? Jon and Brad of Freight Farms have made this reality. By redesigning the interior of regular shipping containers they allow people and businesses to place a small growing unit anywhere. Their *Leafy Green Machines* are mobile unit farms that “any millennial can use, they just need to pick up their phone and start gardening” to quote Jon. Apparently cargo boxes are not just good for storing and shipping food, but for growing it as well (Jon did try to live in one but realised then that it could be put to even better use...). The hydroponic farm company¹⁵² grew out of a Kickstarter campaign in 2011 both co-founder Jon and marketing manager Caroline shared their story with enthusiasm.

¹⁵⁰ Fresh greens washed three times before being packed to avoid foodborne illness.

¹⁵¹ Friedman, Jon; President and Co-founder of Freight Farms, interview March 19 2015.

¹⁵² Here & Now Staff, ‘Freight Farms: How Boston Gets Local Greens, Even When Buried In Snow’, *NPR*, February 23 2015, viewed April 22 2015 <http://www.npr.org/blogs/thesalt/2015/02/23/388467327/-freight-farms-grow-local-flavor-year-round>

FROM CONTAINER TO TABLE

*"We kind of made the mistake of saying that we were gonna solve world hunger, haha. So we got a lot of response from our Kickstarter, it was an overwhelming response... so we just had to do it."*¹⁵³ But the Kickstarter was not the only reason. What had really been troubling Brad and Jon was the difficulties the food industry was facing on an everyday basis, due to unpredictable environmental conditions. Farming within an enclosed environment brings the benefit of being able to control all dependables, no matter climate or time of year. Urban farming bringing accessibility of otherwise uncertain produce is one of the first things Jon talks about.

*"We're not looking to be all solutions for food production but we're trying to be a solution for year round growing and the consistent produce; in areas that can't support local agriculture year round."*¹⁵⁴ The consistency urban agriculture can bring has more value than the product itself. As a business a product that's not fluctuating in quality or quantity means a price that's not fluctuating. Farmers and wholesalers can keep their prices consistent, and with such high volume every penny counts, Jon pointed out. Urban agriculture can make food more affordable and a more viable business model.

*"Let's imagine the iPhone, that every other one you've got was broken and you could buy one for a 100 bucks or the next day you could buy it for 200 bucks and then the next day you can buy it for like 39 cents. And you didn't know what it was gonna be until that morning. That idea that our food fluctuates so much, people talk about food security, that's a daily thing that people have to deal with but the general public doesn't realise that."*¹⁵⁵ According to Jon, what really attracts industry actors is the higher return on investment. Their farms are more spatially efficient than traditional farming as plant density within the farm is high.¹⁵⁶ Besides this, transportation and re-packaging costs can be cut; middlemen reduced which all saves money in operational cost and benefits the produce distributors. *"Produce distributors - they have the trucks already, and instead of having the food brought in from elsewhere they just make stops around the city when they are already dropping up stuff, picking up and dropping off rather than repackaging and re-distributing - they're just ecstatic."*¹⁵⁷

¹⁵³ Friedman, J., interview.

¹⁵⁴ Katsiroubas, Caroline; Marketing Manager at Freight Farms, interview March 25 2015.

¹⁵⁵ Friedman, J., interview.

¹⁵⁶ CBS Boston, 'Freight Farms & Corner Stalk on CBS Boston', CBS Boston, YouTube, November 6 2014, viewed April 4 2015
<https://www.youtube.com/watch?v=1L4RJgbWINg>

¹⁵⁷ Friedman, J., interview.

This time to table (or rather farm to table) aspect is put forward - urban agriculture holds the value of being able to have greens harvested, bagged and on somebody's plate within a matter of hours. For chefs this is greatly valuable and can work as a competitive advantage; to always have fresh produce at hand in the right quantities. What also works as a competitive advantage for businesses is the possibility to grow what no one else has, or stuff that cannot be found in the grocery store.

As a chef there is also the experiential value of being able to grow whatever you want to put on the menu, to not be limited by the assortment supplied by others. Not only can an urban farm be a competitive advantage for restaurants but Jon expresses also how educational institutions really can give their brand new benefits by engaging in urban agriculture. They can offer a facility with real hands on scientific learning to their students, but also a place for the community to learn about food and nutrition. An urban farm is not only educational in the school setting, it's also a way for the community to understand how food is produced as well as the benefits of eating healthy. Instead of taking up new land, a scarce resource in the city, land that would otherwise be abandoned can be used. Of course this brings new business to the community, which is beneficial to the local economy, something Freight Farms have already seen happening.

*"It brings life to the city. It brings conversations around something that is so vital to everyone. ... If people are disconnected from their food then they don't really understand what's put into their bodies and their overall health gets affected, and their health affects all other aspects of their life."*¹⁵⁸ Caroline lifts how urban agriculture sparks conversation around food and recreates the connection to food among urban dwellers. It allows for people and businesses to have a personal relationship to the farmer and the food production. This relationship has impact on how and what we eat, with possibilities of creating a healthier lifestyle.

Freight Farms talk also of the reduced transportation time and distance, and the improvement impact this has on the nutritional value as well as the freshness of the greens. The product itself looks more beautiful and does not have to be hidden beneath layers of plastic packaging as a result. Caroline also emphasises the value brought by the significant story behind the produce; the story of local food production and innovation, something appreciated by chefs as well

¹⁵⁸ Katsiroubas, C., interview.

as end customers. Food actors are able to tell the full story behind the product they're selling since they can actually have a personal connection to the farm - the transparency is high.

Growing urbanely also means that less negative health and ethical connotations are attached to the product, be it CO₂ emissions from transportation or herbicides and pesticides used in the growing phase.

THE CONTENT COUNTS

PR has been the company's main way for communication ever since the beginning, which has and still is creating word of mouth. People and business hear about them from someone and so they keep getting new business and visibility. *"Kickstarter was a huge amplifier for what we were doing. And it still is, people still find us through that."*¹⁵⁹ *"We have unbelievable fans out there, we call them 'Freight Fans' ... they make up a significant portion of our community. They might not be able to purchase a farm but they are all about spreading the word and helping out in any way that they can."*¹⁶⁰ Apart from being dependent upon 'Freight Fans', word of mouth and PR, they do spread the word themselves through conferences, trade-shows, events, city meetings or just local meet-ups. They make use and showcase produce from their farms, display customer testimonials and visual material how a farm can be integrated with an existing business.

They use mainly inbound marketing, creating content and sharing it through Facebook, Instagram and Twitter to tell the story of the day to day of Freight Farms. The blog is used to educate and elaborate more on the technicalities and trends within the industry, tips and suggestions on food and eating, as well as stories of the Freight Farms explorations¹⁶¹. Stories from farmers are also prevalent here. With the new release of their latest farm they are now taking it on a tour to different campuses - showcasing it and giving people hands on experience seems to be key to success.

However cool the notion of a container is there are people who are using urban space to produce food in a far less high tech way, using techniques that we humans have used for thousands of years, ever since we discovered the sweet taste of honey¹⁶².

¹⁵⁹ Friedman, J., interview.

¹⁶⁰ Katsiroubas, C., interview

¹⁶¹ Freight Farms, 'Blog', viewed April 4 2015 <http://freightfarms.com/blog/>

¹⁶² Beeologics, 'History of Beekeeping', viewed April 22 2015. <http://www.beeologics.com/bees-and-beekeeping/history-of-beekeeping/>

SUGAR-COATING MANHATTAN

“My story began on a snowy day 5.04 pm and on a Tuesday. It was snowing and it was April and I didn’t really make it to the delivery area, I popped out in the hallway ... But really it began 9 months earlier, I went to a picnic with my father, and came home with my mother... it’s all pollination.”¹⁶³

That’s the beginning of Andrew Coté’s story. He is a fourth-generation beekeeper, and his family has kept bees since the 1800’s. He started keeping beehives all over New York City soon after the allure of a woman had brought him to the city. On the top of Waldorf Astoria, in Queens, schools uptown, and even at the roof of an artist studio in Chelsea. We meet him early a Wednesday morning at Union Square Greenmarket. Among the fruit and vegetable chests he has a stand filled to the brim with NYC honey, where regulars and friends are popping by for a refill of their honey supply, or just a chat. We also meet one of his regulars, artist Judi Harvest, who decided to host a few hives on the building where she works, next to The High Line.

A SWEETER LIFE

When we talk to Andrew he has a lot to say about the benefits of honey (not strange as his whole life is built around them bees) and in connection to urban beehives he describes the environmental and health aspects. *“I think that people who choose to spend more on honey that was produced in NYC recognize number one; that the more local one buys one’s food the better for their carbon footprint, for the environment for their health, local honey helps fight pollen allergies. ... it’s cheaper, it’s healthier, and natural.”¹⁶⁴*

Andrew emphasises the benefit of urban agriculture being process transparent. Buying honey of the shelf in any supermarket you have no idea where it comes from or how the bees are treated (even though Andrew claim that most honey sold is fake-honey produced in China...). But with the urban production you can actually go visit his hives around the city, and really see where the product comes from and that it’s natural. However, Andrew lifts that the largest benefit of producing honey in the city is the experiential value. The keeping of bees being an attraction in itself, providing the urban citizen, and city, with a means for education (for e.g. schools) as well as a

¹⁶³ Coté, Andrew; Beekeeper, runs family business Andrew’s Honey, interview March 18 2015.

¹⁶⁴ Ibid.

nice connection to nature. *“It does not cure cancer, it makes the world a little bit sweeter. Think of it like this; we don’t need museums, we don’t need community gardens but they do make our experience of being alive better, more interesting, enriched and the honey makes our lives a little bit sweeter.”*¹⁶⁵

This connection to nature is also something Judi discusses. She sees the benefits in how urban agriculture creates attention to and awareness of nature - along with a beautification of the urban environment. She talks about nature and beekeeping as an art form with educational and spiritual benefits. And just as we put art on our walls and museums in the city for recreational benefits, incorporating nature in the urban landscape can be of the same value.

PASSING ON A STORY

*“We offer it to taste and people buy it or they don’t buy it”*¹⁶⁶. Andrew only sells his honey himself, at farmers markets around the city - and everyone passing by gets to taste the sweet gold. No online store or retailers. This makes the purchase very personal and allows him to tell the story of the product. Even restaurants have to go to the market, pick up their honey and pay in cash. So he, or his father who works alongside with him, meets every single customer that buys the honey. This way of distribution both allows for conversation and integrates as part of the story of the product. Mainly Andrew says it’s about being visible, being at the same markets every week. And so word gets around. People write about Andrew’s urban honey in The New York Times, CNN, The Time, to name a few; one of the perks of being able to place production in connection to (or together with) already well-known brands. When Waldorf Astoria decided to put beehives on their roof that in turn generated a lot of press and PR for Andrew. *“It is nice to have the honeybees, it is an attraction, they do produce honey, that is a great thing, it can be an income generator, it can get attention for their projects, learning tool, a hook to get people in, there is nothing negative about it.”*¹⁶⁷

However sweet bees are not the only animals helping out when it comes to food production. Fish are the dark horses in the world of agriculture and can actually be splendid at nourishing crops.

¹⁶⁵ Côté, A., interview.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

FISH AND GREENS

We took the M-train to Flushing Avenue in Bed-Stuy, walked a few blocks among liquor stores and fried chicken shops. There, next to Moore Street Market, an indoor food market built in the 40's is a formerly abandoned lot between buildings. A space that Oko Farms has turned into an aquaponics facility making the whole street smell of fresh basil during summertime. That's how we heard about them in the first place, because of the basil. Oko Farms is a 700 sq meter aquaponic farm offering up basil, but also watercress, chard, arugula, cilantro, parsley, tarragon, mint, chives, sage, lettuce and spinach during the summertime. Along with tours, workshops and even a farm training program. Yemi, who's managing the farm, greets us with her compost in one hand and her bike in the other, brings us in through the fence and inside where the farm Goldfish and Koi are kept.

WITH RESPECT FOR THE NATURE

We talk to Yemi about her basil and she mentions how the fragrance of basil lies thick in the kitchen of pizzeria Roberta's whenever she has delivered crops. She talks of the freshness and thus the amazing taste of the produce that's brought by having production just around the corner from consumption.

As Oko Farms is an aquaponic farm the technique alone has implications for the production value. It is efficient in both space and water usage - using 80% less water than regular farming. *"In a regular organic, soil farm, one that is organically certified there is about 200 chemical sprays that you can use, that are allowed under organic. We can't use any of those; if we use those we will definitely kill our fish. So we do nothing."*¹⁶⁸ The consequence of Oko Farms being set in an urban environment is that they have to use techniques for growing which eliminates use of chemicals and fertilizer. This makes the process healthier, both for those eating it and for those growing it. *"The people who are spraying the food are also exposed to all kinds of chemicals and I feel like you buy it with chemicals and you can wash it, but what about the people growing your food, how are they being treated?"*¹⁶⁹. This also means that the farm does neither give rise to any toxic runoff, which is of great environmental value.

¹⁶⁸ Amu, Yemi; Co-founder of Oko Farms, interview March 20 2015.

¹⁶⁹ Ibid.

Though, what Yemi emphasises most of all is the educational value farming within cities has. To her it's not about feeding people per se, but to teach them where their food comes from and making fresh food into something normal. Placing production close to people, where they can see it. Which in turn can affect our health positively. *"I really believe that access is more important than education. It's kind of a weird thing to say but people know that they're supposed to eat healthy but if they can't get the healthy food how are they gonna eat it right? ... The idea is that the more people who have small farms and people are exposed to healthy food and healthy vegetables and start to see it like normal - instead of making people feel guilty for eating unhealthy food or preaching to people."*¹⁷⁰

This presence and access is also a way of educating people on how the environment works, and doesn't work. Teachers seem to love Yemi's space as it can be used for educational purposes, and at the same time be fun and entertaining for students. *"This used to be an abandoned lot, so just by growing food in it we have increased the value of this space. School kids can come in and learn, not just where their food comes from and interesting ways you can grow food, but they also learn about the environmental impact of things like organic gardening. ... Any urban farm you go to there is a sense of environmental stewardship attached to it because you're learning about the earth, you're learning about water, you're learning about raising animals, what the impact of vegetation – [period] – has on the environment."*¹⁷¹

Not only does urban agriculture teach us about the environment but Yemi brings up how Oke Farms alone enhances the neighbourhood by introducing green among the concrete and through that increasing the value of those square meters. Experiencing nature in this way is one way of recreating respect for the world we live in since it makes the production of food and its impact very tangible to the market. And farm's like Yemi's reduces the carbon footprint, ecosystem pollution and health concerns associated with commercial-scale aquaculture, at the same time as it can produce a high-yield of organically grown vegetables in dense urban spaces.¹⁷²

BEING UNIQUE

Yemi runs a quite small farm where she does not have enough people to do much outside the farm operations. The story of Oke Farms is of course told during her workshops and tours, which in

¹⁷⁰ Amu, Y., interview.

¹⁷¹ Ibid.

¹⁷² Oke Farms, viewed April 7 2015 <http://www.okofarms.com/>

turn generates and passes the word around. Besides talking to people who come to the farm they are trying to opt for building on and reaching out through personal relations as well as strategic partnerships. One such partnership is together with the NYC Educational Department, where Oko Farms is part of a *Garden to café program* connecting school gardening and school lunch through seasonal harvest events and educational activities.¹⁷³ Yemi also points out that there aren't many aquaponics farms in the city; this uniqueness itself is beneficial from a commercial perspective, they get attention.

The produce is sold to customers at the farm only, and to the Bushwick restaurant Roberta's pizza, who buys the majority of their basil during the summertime. Roberta's is just a walk down the block, and Yemi takes the cases of basil there on her bike. This connection with the well-known restaurant generates word of mouth - going to Roberta's was how we ourselves discovered Oko Farms in the first place! So now let's talk about this pizza place.

A HIDEOUT IN BUSHWICK

We took the L-train to a seemingly dead street in an industrial neighbourhood; there right across from a truck park is the inconspicuous entrance of Roberta's. Bushwick, Brooklyn, has historically not had the best reputation, but some places have started to change this. Roberta's Pizza is one of them. The crowd queues hours for their pizza. And who wouldn't when it's organic and topped with greens from their own back yard and around the block? Founder Brandon and his team are more local than many NYC restaurants can brag with. The premises not only hold several wood fired pizza ovens, it is also the home of Heritage Radio (a radio station focused solely on culture and food), a big garden space for summer splurging, the high-end sister-restaurant Blanca (serving up a 28 dish tasting menu!) as well as a small growing space on top of the two shipping containers that make out the radio station. When we arrive the season is just starting so most plant beds are empty - waiting to be filled with edible greens and flowers. A few weeks later we go back to meet with kitchen manager Jane and the restaurant's head gardener Melissa (who also teaches Urban Farming at New School); at that point the season's first few greens are sprouting. This oasis in an otherwise concrete environment has been a popular spot since they opened in 2008, and other farming initiatives have started to pop up in the neighbourhood after Roberta's has paved the way.

¹⁷³ Grow to learn NYC, 'Garden to Café', viewed April 7 2015 <http://www.growtolearn.org/view/AboutGardentoCafe>

NOT FOR PROFIT, FOR EXPERIENCE

The urban farm at the back of Roberta's is not about selling huge amounts of vegetables or to make loads of money. It's more about the experience. Even though the farm itself does not bring any direct monetary value to the business it adds value to the brand, as it is part of the story and fabric of Roberta's.

*"If you're just into farming you'd grow weed."*¹⁷⁴ According to Brandon it's hard to make a profit from the farm they run, in order to do so the environment needs to be fully controllable - which is not the case at the backyard in Bushwick. What's grown there is a very, very small part of what the restaurant need in daily operations. So instead of growing a whole bunch of stuff they make that small percentage count, by growing more of less, and make sure what they grow is really potent. *"Just five leaves in a pasta dish you can really tell. Since they are quite peppery. Kind of like a horseradishy, peppery flavour. So it doesn't take much."*¹⁷⁵

They also grow foods that are expensive and hard to get buy at the market - such as edible flowers. Instead of paying 48 cents or \$1 dollar for a sensitive flower that might wilt on the way back to the restaurant, the chefs themselves can go out and pick what they need in the backyard. *"It's the connection between the garden and the chefs that is the bigger gain. They can just come in - take something and make a dish out of it directly. It's that participation, that whole thing, where we win."*¹⁷⁶ This is both a source for inspiration for the chefs in creating dishes, as well as the benefit of being able to escape the heat and busyness of the kitchen, diving into the calm of the garden. As a consequence the greens go straight from garden to table, harvested right before they're put on the plate - so the freshness speaks for itself. Melissa also emphasises how something like the garlic chive flower beautifies the space, brings pollinators, and is an interesting and aesthetically pleasing edible item rarely found on a plate.

A big part of the farm is educational; people being able to experience the small farm and see where and how things are grown. It not only brings joy to the employees at Roberta's but also to all the people who visit the restaurant, adding value to the space they're operating in. *"We're this oasis in this crazy area where for years this was just the industrial wasteland, and we tried to create this little*

¹⁷⁴ Hoy, Brandon; Co-founder of Roberta's Pizza, interview March 10 2015.

¹⁷⁵ Ibid.

¹⁷⁶ Ibid.

*oasis, a little pocket here where a real world environment lives.*¹⁷⁷ This oasis has been a source of inspiration for others in the area and a few urban farming initiatives, such as Oko Farms, have sprouted in the same neighbourhood.

Diverging from Roberta's itself both Melissa and Brandon see values for urban farms in food deserts or how urban agriculture can help educate people around the origin of food - changing the way people think about food by bringing it closer. *"It gets people who live in cities to actually see in front of their faces on a regular basis how things actually grow out of the ground and where food comes from, and puts them in touch with it."*¹⁷⁸

Jane also points out how disconnected urban citizens are from where their food comes from - urban agriculture is a way to bring back that connection. *"A lot of people have no idea what broccoli looks like before it's sitting in a supermarket or sitting in a basket at a farmers market. So the more people can find the connection with that, and really be in touch with the reality of all these things, I think it will really strengthen our American food culture as a whole. Because that's, I think, the problem is that most kids who grow up in cities a lot of them don't really understand what a vegetable is, and what a fruit is – or what the difference is. The concept of things flowering and starting one way and becoming another way and becoming ready to eat."*¹⁷⁹

THE FABRIC OF THE RESTAURANT

Roberta's business has more or less marketed itself. The story of the pizzeria in Bushwick with an urban farm at the back. They themselves have never sought out press, it's been the other way around. It seems the farm at the back is good PR. At the restaurant itself it's all about the customer experience, about creating great experiences and great products. Everything else is icing on the cake. *"At the table we're not preaching about what we do. We're really just giving you a good product."*¹⁸⁰ Roberta's hardly does any advertising. It's more about presenting the space and their own produce to people. They do garden tours where people actually get to experience their produce and production with all senses. *"People can see everything we're doing, and what things she [Melissa] is growing, and how things change throughout the season. Which I think is really cool. It's proven to be*

¹⁷⁷ Hoy, B., interview.

¹⁷⁸ Orgel, Jane; Kitchen manager at Roberta's Pizza, interview March 27 2015.

¹⁷⁹ Orgel, J., interview.

¹⁸⁰ Hoy, B., interview.

*really really popular, and not just like school groups but everybody, people who just come to eat here people who are tourists, people who live here which I think is the coolest way to get people involved, not just talk about it or make a video or whatever, but actually bring them into the space and show them the things we are growing; letting them taste them, try them.*¹⁸¹

The crucial thing seems to be the conversation between the server and the visitor - for both the employee, the customer and for the company. That's when they can really talk about the story behind their food, something which people really latch onto and get excited about. *"We don't do a lot of advertising on our menu or in our newsletters or emails or anything about where our ingredients are coming from, we really like to have that conversation face to face with guests."*¹⁸² But it is when people taste the products that the real communication of qualities happens. *"Ultimately everyone can appreciate the flavour and the quality that you get from using those products."*¹⁸³

No advertising, and yet so popular. One can guess some sort of influencer has played his or her role in popularizing Roberta's. Influencers and experts are very valuable for new concepts to have a breakthrough, not the least urban agriculture.

COINING VERTICAL FARMING

Dickson Despommier is the man behind the term *Vertical Farming*. Or rather, seven of his former students are. The concept came about in a class on Medical Ecology that he taught at Columbia University in 1999¹⁸⁴. *"I coined the term, but I didn't create the idea because the idea arose out of a discussion that we had in class about what are the biggest things facing humankind today and what will the world look like 25 years from now."*¹⁸⁵ This retired microbiology professor with a Steve Jobs turtleneck has been a key promoter of Vertical Farming (and hence urban agriculture) for the past 15 years. He's written a book on the topic¹⁸⁶, is part of both boards and jury's within the urban agriculture industry and speaks on the topic frequently. His idea? That it is possible to grow anything, anywhere through merging the practice of farming with new technology. We had to meet

¹⁸¹ Orgel, J., interview.

¹⁸² Hoy, B., interview.

¹⁸³ Orgel, J., interview.

¹⁸⁴ Columbia University Mailman School of public health, 'Faculty profile Dr. Dickson Despommier', viewed March 15 2015

<http://www.mailman.columbia.edu/academic-departments/environmental-health/dr-dickson-despommier>

¹⁸⁵ Despommier, Dickson; Retired professor of Microbiology and expert on urban agriculture, interview March 5 2015.

¹⁸⁶ Despommier, D., *The Vertical Farm: Feeding the World in the 21st Century*, Thomas Dunne Books, 2010.

this guy, whose name seemed to pop up everywhere we looked. So in somewhat of a New York City blizzard we travelled north of Harlem to meet Dr. Despommier at the Department of Microbiology at Columbia University's Medical School.

SAVING THE WORLD ONE SKYSCRAPER AT A TIME

*"The Babylonians had their towers of hanging gardens, that's fine all right, but they didn't really pass that on, and it wasn't edible plants, it was just decorative plants. But nevertheless who could have guessed that you can take a plant out of soil, put it into water and throw some animal dung in, and next thing you know it's growing like crazy. The idea of growing plants in water and indoors; it's not a new idea, perfecting it – that's new."*¹⁸⁷ Neither urban agriculture nor Vertical Farming is new ideas. The modern Vertical Farm is just in its infancy of development, meaning we are currently looking at a prototype. The iPhone might not have been an iPhone if the Nokia 3310 would not have been there a decade earlier, to use Dickson's analogy. The question is not at all whether cultivating in a fully enclosed and controlled environment is doable, the real question is why would someone want to do it? How and when does it have value? *"Don't ask me if you're going to grow rice, or wheat or you know pak choi, sure you can. Why would you want to? That's the biggest question."*¹⁸⁸ Let's say you're the Arab Emirates and you don't trust where imported food comes from, you will then of course prefer to produce it yourself. Or if you were the Japanese president and just had a terrible tsunami that trashed 5% of your farmland, you might look into Vertical Farming. The technology allows you to grow in places where there is no soil or no space; in deserts or mountains, or cities for that matter. Not only does it make up for the lack of soil but it also allows you to avoid being dependent on imports of produce. Singapore, a country with very little space, has naturally adopted the concept widely. In such a way food sovereignty can be reached in places formerly limited by environmental factors.

*"Do you know what's in your food? No. You probably don't."*¹⁸⁹ The crucial difference between this new farming and traditional ways is control. In traditional, outdoor farming a lot of pesticides, fertilizers, chemicals are used to try to adjust for outside influence on crops. By creating a fully controllable environment you can avoid such things but still attain food safety by keeping out food-

¹⁸⁷ Despommier, D., interview.

¹⁸⁸ Ibid.

¹⁸⁹ Ibid.

borne diseases originating from food production. Safer food can in turn cut medical costs if it keeps people healthy to a larger extent and thus has an economic value according to Despommier.

*“Most of our seas are filled with agricultural runoff, forget manufacturing, agriculture is a worse pollutant. Every river that drains all the farmland of the world ends up in the ocean. And what is in that runoff? Pesticides, herbicides, fertilizers. And what is that doing to the ocean? Changing its pH value.”*¹⁹⁰

He lifts the notion that this new technology at a large scale could be a way to slow down climate change. The value chain is sustainable in terms of water and space usage, and the farm-to-table access cuts down on transportation. However the values Despommier talk of are not only of economic or environmental character, the product itself stand out.

*“You want to go to bed with this kale, keep it under your pillow.”*¹⁹¹ He lifts the freshness and flavour of something that is picked and eaten almost immediately. By closing the gap between production and consumption the result is fresher produce that retains taste in a different way than if picked in a premature stage. *“Today it was picked, today it was packaged, today it was put on a shelf and tomorrow it’s gone.”*¹⁹² This is how you can describe produce cultivated in an urban environment. A bunch of kale is harvested, packaged, then put into a container transported for days before reaching a store where it’s purchased by a customer and eaten, days after the initial harvest. This all damages the freshness of the produce.

*“Custom crops, on demand, as much as you’d like. Those are the three best reasons for a steady, sustainable supply chain.”*¹⁹³ Since the technology of Vertical Farming allow for greater control over produce, volumes and timing this benefits the buyer and the seller. As a producer you know your capacity and you can meet your client’s needs in best way, and in any way they want it. As client, you can adapt orders to sales, and you also know the exact conditions in which your produce is growing so the supply chain is very transparent. This benefits the actor providing the end customer with food as they can adjust orders after demand and not be dependent upon supply or irregular quality of crops. This change in production and distribution means economic, shipping and fuelling costs can be cut. However one thing is clear to Despommier, this all has to be done at a

¹⁹⁰ Despommier, D., interview.

¹⁹¹ Ibid.

¹⁹² Ibid.

¹⁹³ Ibid.

competitive price in the grocery store. And it can be. The NYC-farmed kale is no more expensive than organic kale transported in from California¹⁹⁴.

EXPERIENCING THE FOOD

Dr. Despommier has of course met with numerous vertical farms throughout the last decade and what seems to be a common denominator for getting the product to the market is to have people look at it, feel it, taste it. Like the Green Spirit Farm¹⁹⁵ in New Buffalo Michigan he told us about; *“His son went around to every single user facility; restaurants, grocery stores, delicatessens, hamburger stands ... and he would bring samples with him.”*¹⁹⁶

Going around these places showing their produce and giving them samples led to business for the company. The people who put the greens on the shelves or menus need to know that the product will appeal to their customers - what better way to do that then to sample it? In order to communicate the values, the produce that comes from urban farms is clearly marked. Usually the urban produce gets a whole section or shelf where it's clearly pointed out that the produce is grown within the borders of the city. And the packaging itself is labelled both with 'local' and specific location. Some places even have ranking systems in terms of responsibly grown, with labels of *good*, *better* and *best* - where the urban produce is ranked *best*.¹⁹⁷

Just as a voice is needed for the new ways of cultivating, the food itself that has been produced in an urban farm needs its advocates. It used to be TV chefs, cookbooks and magazines who set the mainstream trends for food, now bloggers are dictating the trend development to a large extent. So of course we had to meet with one.

THE INFLUENCER

*“I decided to start baking professionally and moving towards working in food photography which I had been kind of doing as a side job, and so during my last couple of years at the bakery I started my blog just for fun.”*¹⁹⁸. Yossy started out as a baker at a restaurant in 2007. After working there for five years

¹⁹⁴ Observation made by Natalie de Brun & Sofia Hellsten, Whole Foods Park Slope, 11 am March 9 2015.

¹⁹⁵ Green Spirit Farms, viewed March 15 2015 <http://www.greenspiritfarms.com/>

¹⁹⁶ Despommier, D., interview.

¹⁹⁷ Observation made by Natalie de Brun & Sofia Hellsten, Whole Foods Park Slope, 11 am March 9 2015.

¹⁹⁸ Arefi, Yossy; Food blogger, interview March 25 2015.

she decided to do her own thing - the blog, *Apt. 2B Baking Co*¹⁹⁹ with a focus on local and seasonal produce. This just-for-fun project has now become her full-time job. She does not only maintain her own blog but does freelance food photography projects and is soon launching a cookbook.

A TRENDY TOPIC

Even though eating locally and urban agricultural food in cities has become current and hyped at the moment, Yossy has been eating local food since she was a kid. She expresses how there is social pressure on consuming locally grown food. *"I feel like a lot of times people talk about it because they think that is what people want to hear because it is socially acceptable, politically correct, thing to say when you talk about food now."*²⁰⁰

Despite the hype she points out the educational value urban agriculture has, and given that today local food is not accessible for everyone urban agriculture can be one way in the direction of bringing such food, and knowledge of the process of growing it, to more people. *"I think it's important that we know about it and important for people to know it's possible."*²⁰¹

The way urban agriculture can use otherwise unused space to grow greens is an obvious value she points out, along with the reduced carbon footprint the placement of such farms give rise to. *"It's very carbon neutral to be buying things that are grown five blocks from my house for sure, rather than something that is flown from California ... the more things that are growing more closely, the better I think."*²⁰²

Another value that Yossy sees in the cultivation of urban produce is the access to healthy and clean, unprocessed food that it can bring - especially to places where such access is restricted. *"The greatest value; that it's healthy, and not processed, there are no chemicals. Yeah, I think it's the healthiest food you can eat and there are still places in NYC that are considered food deserts that don't have access to fresh produce, so if these farms could alleviate that, that would be amazing."*²⁰³

¹⁹⁹ Apt. 2b baking co, viewed April 10 2015 <http://www.ap2bbakingco.com/>

²⁰⁰ Arefi, Y., interview.

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Ibid.

THE PERSONAL STORY

Yossy contemplates her role as educator, she does not see herself in that role primarily but rather sees it as something that comes out of the inspiration she gives people. She wants to (and does) inspire people to bake with local and seasonal ingredients through telling her story of gathering and preparing this such delicacies, together with fantastic photography. That she is a source for inspiration is clear through the interactions she receives in her various social media.²⁰⁴

*“So my blog is this very personal thing, I do exactly what I want, I do what is inspiring for me, I take a trip to the market and buy what I think is really pretty and make something with it. So if other people are inspired by that and if I teach people through that process that’s wonderful and that is such a great bi-product to this fun thing that I do. And if people do learn of a new variety of apple or a new fruit that they might not have tried before, they’ve seen it on my blog and are not scared to buy it, I think that’s great.”*²⁰⁵ Even though the role as educator might not be the focus, bloggers do have power and influence people in their choices. Yossy brings up how the personal connection that a reader has to a blogger can make them trust their opinions, as there is always a personal story connected to the food itself. *“I think that now, bloggers have a lot of power, and people who are active with large social media followings have a lot of power, and that’s why, you know big brands are contacting them to promote their products. It’s because people want a personal recommendation for anything, any kind of product really, you know, food included. And you know, the audiences are wide and people generally follow bloggers because they trust their opinions ... There is a lot of value in people [bloggers] sharing because it’s personal, and when someone feels a personal connection to something it’s more interesting than if it’s a company promoting something.”*²⁰⁶

According to Yossy the story behind the produce is important as well as the connection to where food comes from. It’s not always about knowing or being in control of the whole food process, it might just be some symbolic connection to where the food has grown or how it has grown. Like in a garden of your childhood memories. *“I grew up in Seattle, Washington, which is on the other side of the country from New York, and my family always had a garden and we always had Blackberries from like a wireless, [hanging] like weed basically, so every summer you can go anywhere in*

²⁰⁴ Apt. 2b co <http://www.apt2bbakingco.com/>

²⁰⁵ Arefi, Y., interview.

²⁰⁶ Ibid.

*the city basically, pick blackberries, and so I grew up doing all of these things so living somewhere like New York it's nice to have a connection to that and have a connection to growing food even if it's kind of tacitly, because I don't grow my own food ... It's just nice for me, personally to have that connection because it allows me to have a little bit of that same feeling of having part in how my food is grown.*²⁰⁷

That same feeling or story is what she is conveying through her presence in social media.

THE OVERVIEW

We've encountered a plethora of values that can be attributed to urban agriculture, following we have categorised the different values discovered during our talks around New York. Here is a compilation of all values brought up by the different actors. See appendix 4, p 92 for larger versions of the following tables.

PRODUCT VALUES

HEALTH BENEFITS*	Most cases of urban agriculture use way less or no chemicals/pesticides/fertilisers than traditional agriculture which results in healthier produce. The controlled environment in high tech farming facilities reduces risk of food being contaminated, increasing food health safety. The high tech farm produce is very clean as a result of the growing technique (no need to wash).
SUPERIOR SENSORY PROPERTIES	Freshness at point of consumption is higher since the produce does not have to travel far and can be harvested at point of maturation. This elimination of long transports keeps the produce itself tastier (since it can be consumed within hours of harvest) and more beautiful as it's not bruised during travel. Also packaging design can be kept to a minimal enhancing the looks of the product better. The concentration of nutrients in high tech farming solutions can give rise to a heightened fragrance.
HIGHER NUTRITIONAL VALUE	Produce can be harvested and eaten at peak maturation, without a degeneration of the food thanks to a short time to table, this keeps the nutritional value of produce at peak.
VARIATION	Allows for actors (such as restaurants) to grow rare or unique ingredients which might be hard to come by otherwise. New farming techniques allows for cultivation of wider assortment of produce as well as the resurrection of produce which has been "lost" when optimising traditional commercial farms.
CONSISTENCY/PREDICTABILITY*	The product is predictable in terms of both quality and quantity. This is beneficial for all industry actors since demand can be met with more accuracy and the product consistency eliminates unnecessary waste.
ECONOMIC VALUE	The product consistency allows food actors to keep price consistent, without unpredictable fluctuations. To a restaurant it can also be cheaper to grow certain rare produce themselves, which can be expensive to buy at the regular market.

**True for high tech urban agriculture solutions (e.g. vertical farms)*

This category was led by the superior sensory properties urban farmed produce give rise to as a result of the produce's freshness; such as taste, looks and smell. Farm to table is also a recurring phrase used which seems to entail this freshness, as well as the transparency in source origin. For businesses the consistency brought by high tech farms stands out.

²⁰⁷ Arefi, Y., interview.

PROCESS VALUES

SUPPLY CHAIN BENEFITS*	High tech solutions in cities allows producer to control timing, volume, type of produce and adjust this to demand — resulting in a reliable, responsive and stable supply chain. This stability has economic benefits since it is very predictable and thus e.g. any sudden price dumping or unnecessary waste can be eliminated.
ENVIRONMENTAL CARE	Reduced transportation means a lower carbon footprint. New urban agriculture techniques are also better for the environment as they reduce water waste/usage as well as using no/less pesticides/fertilisers which eliminates/reduces harmful run-off.
EDUCATION/INSPIRATION	Restaurant (or store) employees' closeness to growth of produce can have educational benefits. The experiential value of having the production close by allows customers (e.g., restaurants) to participate and contribute to the cultivation as well as works as a source for inspiration for food workers such as chefs.
PROXIMITY	Having the production process close to consumption increases the understanding of food among the value network as well as consumers since it is made more accessible. Further more it reduces time to table as well as transportation costs and processes.
EFFECTIVE/EFFICIENT*	Most high tech urban farms has a higher productivity/area, is energy efficient in use of light and water, has a faster production (growing) cycle. Effectiveness is increased as produce does not have to be re-packaged as it goes directly from farm to table (or at least farm to restaurant/store).
EMPLOYEE BENEFITS*	The limited use of chemicals in high tech production has positive health benefits for people working within the farm, further more the work is not as labor intensive as on a regular farm since much can be automated. Bringing production close to a store or restaurant can have relaxant benefits for employees.
TRANSPARENCY	Bringing the production close to the consumer heightens the source and supply chain transparency as the produce origin is made visible.

*True for high tech urban agriculture solutions (e.g. vertical farms)

The reduced negative environmental impact brought by urban agriculture is one of the top values. One of the factors contributing to this is the reduced transportation; the proximity of an urban farm reduces not only negative environmental impact but also costs for the production company. Worth pointing out are the benefits high tech solutions bring in terms of a stable and responsive supply chain, stemming from a fully controllable environment, allowing suppliers to grow on demand and thus save money. From a consumer perspective the production also become more transparent by bringing the farm close.

EMOTION VALUES

ETHICAL/MORAL	Growing food close to consumption has less negative connotations in terms of health, ethics and emissions. There is an ethical and moral aspect of urban agriculture saving water and energy, as well as reducing pollutive run-off and carbon emissions. It gives consumers a way to support sustainable food production.
ENJOYMENT	The urban spots of green give rise to joy among employees, clients and community. They can also be a place for relaxation from a busy urban atmosphere.
ATTACHMENT/BELONGING	Buying locally grown food can give rise to a sense of belonging to the local community and create an emotional connection to the world and our environment. Since the produce has a visible story of local innovation it can create an attachment to the food — being able to see the produce being grown. It re-connects people to the food they eat by being able to showcase the origin and the cultivation of it. By bringing it to where the consumer lives emotional bonds can be created.

The main emotional values are related to ethical and moral issues concerning food. Urban agriculture can reduce water and energy consumption, as well as emissions. It's a more sustainable way to produce food, which consumers and urban farms themselves appreciate. Another emotional value that most of our interviewees brought up is the re-connection to food urban agriculture can enable by showcasing how food is grown, and its origin; this creates attachment to the food.

PLACE (location) VALUES

AVAILABILITY/ACCESSIBILITY	Using new technologies food can be made available no matter climate and time of year, seasonal dependency can be removed. This is also one way of overcoming food deserts and creates access to fresh produce in places where soil or weather conditions does not allow for regular agriculture. From a consumer perspective there is also the convenience of being able to "pick and eat" — having fresh food grown just around the corner.
EXPERIENTIAL VALUE	Growing food is a way of creating small oases in the urban environment, beautifying the space and bringing life to the city. It can also be part of enhancing a specific customer experience and makes the production visible to consumers, adding to the story of a brand. This story or experience can work as a conversation starter for a brands benefit.
INCREASED SPATIAL VALUE	Otherwise unused space can be filled with value, e.g., placing an edible plant in the place of a statue or making an abandoned lot green, which generates both pleasure and food.

The main place value of urban agriculture is that is close, it's available and accessible enabling you to "pick & eat" no matter place, or time of year. Urban agriculture also brings greener areas for people to enjoy thus increasing value of places that might be unused otherwise, the experience is important.

SOCIETAL VALUES

ECONOMIC BENEFITS	Urban agriculture brings new business to local economies and creates jobs in urban communities. In the long run exposure to healthier food (such as fresh greens) can have health benefits for the population which in turn can save medical costs.
EDUCATION OF SOCIETY	By bringing the cultivation of food into the city the urban population learn about eating fresh food, where the food comes from as well as how it's grown. Further more urban agriculture can work as an asset for schools in the teaching process.
ENVIRONMENTAL STEWARDSHIP	Exposing urban citizens to nature and the powers she as to produce foods can have environmental impact as it creates understanding and respect for our environment — a stewardship.
HEALTH BENEFITS	Exposure to healthy food creates a demand for healthier products, impacting what people choose to eat, which in the long run can impact the health of the society.
ATTRACTION	Green spaces filled with food in an urban neighbourhood creates a space for recreation and work as an urban attraction (similar to a museum or park). It also greens the neighbourhood and works as a source for inspiration showcasing to the community the possibilities of what can be done in a city.

The primary societal value we discovered in our interviews was the educational factor urban agriculture has. By bringing farming into the city urban citizens can learn about food, not only how it is produced but it inspires a healthier lifestyle.

COMMERCIALISATION

Following is an overview of judgement devices mentioned by the interviewees used in the commercialisation process sorted according to the five categories brought up earlier. Besides meeting these interesting people we have also looked into the more tangible marketing assets that some of the actors use to reach out with their business. To make the commercialisation process

overview a bit more comprehensible we have included an overview of communication tools and methods used by relevant actors, stemming both from the stories told to us, and our secondary findings. We have made no difference between communication targeted towards different stakeholders.

JUDGEMENT DEVICES

NETWORKS	Word of mouth (WoM) is maybe the most important factor in showcasing the values of urban agriculture, both in person and online. Recommendations from friends and family seems to be spreading the word. One example being the "Freight Fans" advocating the mobile urban farm.
APPELLATIONS	Labelling is used, where it is clearly stated on packaging (and menus) that the produce is grown urbanelly and locally. There are also examples of piggy-backing on other brands to achieve credibility — like Gotham Greens connecting their products to the set of values inherent within the Whole Foods brand. Strategic partnerships with government and community projects is also one way to fill urban agriculture with value and credibility.
CICERONES	PR is next to WoM the most used means for communication. Newspapers and bloggers writing about the urban agriculture brands and initiatives spreads the word — and since the phenomenon is quite new press seems to be highly self-generated. The innovative, unique and responsible feature of urban agriculture sells itself. Also online creational cicerones such as Kickstarter can have great impact.
CONFLUENCES	Ways of channeling the customer can be through tastings and samplings, or even through making value added products available. This together with personal selling at different events seems to be the way to go. Another way is through showcasing the production facilities through tours.
RANKINGS	At WholeFoods we've found rankings expressed through a comparison between urban agriculture, organic and local produce, in terms of which is best for the environment.

The most used devices to assess the value of commercial urban agriculture are personal as well as public word of mouth along with tours and tastings. Strategic partnerships also seem to be a way to reach markets.

COMMUNICATION TOOLS AND DEVICES

	INTERNAL CHANNELS owned by actor				EXTERNAL CHANNELS		
	SOCIAL MEDIA content	HOME PAGE content	EVENTS inviting the market	DIRECT SALES meeting the market	INFLUENCERS Who is helping?	PRESS What's been said?	EVENTS participation
AEROFARMS	Information about organic, vertical farms, educative links about UA, explaining the technology	AeroFarms farming and product advantages – both to consumer and producer, explanation of technology, comparison with regular farming, press clippings	Tasting and sampling events with retailers and chefs	Inviting retailers/chefs to taste, talking about the product and production		How AeroFarms is helping out both environment and the local community (economically) as well as being technology pioneers	Summits, forums, trade shows, innovation festivals, other food event colabs
FREIGHT FARMS	Educative info about agriculture technology, images of produce and of containers, films from office and team, info about events, food and farming, reading tips showcasing benefits of UA	Customer benefits, customer testimonials, farm showcase video, the story behind the company & the team is presented	Farm tours, Farm touring around the US	labelling of product 'farmed urbanely', bringing samples to external events,	Using online amplifiers (Kickstarter) to tell the vision of, using 'Freight Fans' (community)	a way of empowering people to grow food, the story of farm-to-table and local food, 'place' borders are breached, portrayed as the future of sustainable food	Trade shows, summits, conferences, city meetings
ROBERTA'S PIZZA	"Garden Tumble" showcasing greenhouse and produce in text and images, information on events and workshops, Pictures of harvest and garden life along with films of growing produce	Directions to "Garden Tumble", tickets for garden tours	Garden workshops and tasting tours	Telling the story behind the food at the table	Sustainable Food Radio station located at premises (Heritage radio)	The food with local sourcing is in focus, stories of fresh sustainable vegetables and the contribution to the Bushwick community	—
OKO FARMS	Inspirational images, pictures from workshops, pics of greens and the aquaponics practice and process	Story behind OF, info about aquaponics technology/technique and benefits, info about tours, workshops & team	Workshops, tours, training programs	Open to public; allowing passers by to experience farm and pick up produce	Strategic partnerships with communal/governmental projects	The aquaponics technique is in focus along with the uniqueness with this in NYC. Oka Farms portrayed as educator of children & community on environmental topics	—
ANDREW'S HONEY	Showcasing production, product, happenings and events, the "everyday" of Andrew's Honey	Info on where to buy Andrew's honey	—	Taste samples at point of sales, Andrew himself selling the honey, telling the story	Partnerships with other brands who want hives on their land/roof (Google, Waldorf Astoria)	The story about Andrew himself and collaborations with places such as Waldorf Astoria is in focus, being awarded best NYC local honey	Farmers markets

The methods of making values visible focus on creating opportunities to meet with the produce or the process and people behind it. Both online and in real life. It circles around creating a story or making a story available to stakeholders. Furthermore, emphasis is put on educating the market, making knowledge about these new practices available. There is an attraction to the phenomenon stemming from its uniqueness and news value, media wanting to tell the world about the new ways of growing food.

After travelling up and down Manhattan, after jumping on L-trains and M-trains to Brooklyn and the commuting train to New Jersey we have discovered a range of values and peeked into ideas and thoughts of market actors. Then what does all this mean?

FEEDING THE CITY. OR RATHER, EDUCATING ITS INHABITANTS.

Thoughts on what we found

Agriculture is about creating food to nurture the inhabitants of the world. Urban agriculture could then be assumed to be all about feeding the inhabitants of a city. In some places it is. Where resources, such as land or clean water, are scarce - where the area relies entirely on imported produce the development and optimisation of new technologies can have great impact on the food security, as well as safety. However, in places like New York City, where food actually can be

cultivated not too far away from the city the prime benefits might be different. It turns out there is much more to urban agriculture than food security and the environmental values connected to it. As our exploration of the (many!) values connected to urban agriculture has been moving along we have concluded that in the context where we have investigated the phenomenon it is not so much about securing food supply, but to meet demands of less environmentally harmful practices and the education of citizens.

As discussed in the beginning *local food* is one of the largest, and growing, trends within food at the moment, and this really shows; urban agriculture is one way of answering to this growing demand. Everyone we've talked to emphasise how this is one of the greatest values of urban agriculture, that it is local. Local food comes with a set of benefits ranging from shortened transportation with reduced environmental impact as a result, transparency in source origin as well as the emotional aspect of less negative moral/ethical connotations to the food - just as brought up in the beginning²⁰⁸. Thus a clear distinction between the values connected to local agriculture and urban agriculture is not obvious since an inherent aspect of urban agriculture is that it is local. This means that urban agriculture both can and have taken advantage of the local nature of the phenomenon in it's way to the market. But this is not the only thing we discovered.

When starting this journey we, just as many others in the same area (we're thinking of you Freight Farms), were taken by the idea that commercial urban agriculture is going to save the world. In a sense it is, but maybe not in the way we first thought. Commercial urban agriculture do have the potential to solve problems of food security in the longer run - however the technology and business models can, and is being tested out in environments such as New York. If we can get them to work they can later be exported to other parts of the world where the need for new and sustainable models for securing food supply and food safety is acute. However in places like New York urban agriculture is not about securing food supply but more about re-creating a relation between food and the citizens - which in turn can have positive impact on overall health of populations and the environment, as discussed by our interviewees.

²⁰⁸ Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1473 - 1486.

WHO VALUES WHAT, AND WHAT VALUES COME FROM WHOM

Even though we have talked to the production and distribution side of the value network the actors have shared values with us that they see for themselves as well as for the consumer, and society at large. The different aspects of urban agriculture are of different value depending upon who you are. A wholesaler will see the economic value in having a consistent product, just as discussed by Freight Farms, whereas the consumer values the kale leaves being beautiful and having turgor. The value of e.g. production process proximity to consumer can both save money for the producer in re-packaging and transportation cost but can also create experiential ('place') value for customer. It is thus hard to place values in exclusive categories as they might be transferable between categories depending upon which actor they are affecting; the same feature of urban agriculture may have different values depending upon who you are.^{209,210} So distinctions made above are not exclusive but an indication of the categories of values attributable to urban agriculture. This has also to do with the frameworks used as a starting point being based on a consumer perspective. Since the goal here has been to get a holistic overview of the values attributable to urban agriculture the results we have gathered go outside earlier theories. The product value is not only about the functional attributes the consumer perceives²¹¹ but also the functional values the product has to a producer. Thus, our categorisations are expanding beyond only values perceived by consumers. Even so the broad definitions of food consumption values (FCV) categories²¹² hold well, but need to be somewhat expanded. The epistemic value of urban agriculture in the environment we have studied is very prominent and this is something not taken into account in the FCV framework. Not only arousing curiosity, providing novelty, and/or satisfying a desire for knowledge²¹³ but for urban agriculture having the role as an educational and inspirational tool in business as well as society. There are benefits of urban agriculture to the society at large, which are important for communication towards investors or maybe primarily, decision makers in the city. We have found that the societal aspects of urban agriculture, such as it being an attraction in the city or a tool for education, are very important. Even though the community benefits of urban agriculture have been

²⁰⁹ Karababa, E. & Kjeldgaard, D., 'Value in marketing: Toward sociocultural perspectives', p. 119-127.

²¹⁰ Heuts & Mol, 'What is a good tomato? A case of valuing in practice', p. 125-146.

²¹¹ Sheth, Newman & Gross, 'Why we buy what we buy: A theory of consumption values', p. 159-170.

²¹² Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1479.

²¹³ Sheth, Newman & Gross, 'Why we buy what we buy: A theory of consumption values', p. 162.

brought up before they have not been clearly linked to being a value base for preferences. Thus this aspect of societal values should be taken into account when evaluating and taking urban agriculture to the market. All in all, knowing who values what is an important aspect if wanting to impact the commercialisation process, and many of these values are extrinsic, extending further than the freshness of the produce.

Though it's not only that different parts of the market value different things there are also different kinds of commercial urban agriculture which give rise to different values. Urban agriculture does not necessarily have to involve new technology (as we've seen in the cases of Andrew's Honey and Roberta's for example) however, there are values connected to these new ways of farming which are not transferable to urban agriculture in general. So Roberta's back garden of herbs and edible flowers do not possess enough value to be a viable business in itself, but can even so contribute to the overall experience of the restaurant and bring about fresher herbs than those shipped in. So there is a difference in the values high tech farms and other urban agriculture facilities hold - something that needs to be considered in continued commercialisation of urban agriculture. Most of the people we've talked to point out that we need to use new technologies for commercial urban agriculture to be truly beneficial. The value of efficient use of water, elimination of harmful runoff, energy efficiency as well as a fully controllable environment are a few points emphasised by many of the interviewees. Such practices also come with the benefit of a healthier product, as there is no need for contamination with pesticides or fertilizers.

The time aspect is also an important value for commercial urban agriculture as high tech solutions can transcend seasons and provide weather sensitive produce no matter time of year. Not only does this enable year round cultivation but the placement of farms reduce the time-to-table. Due to the location, produce can be eaten fresh and also picked in a more mature stage, instead of immature and hence less tasteful as when picked on the other side of the world. This aspect of location and time also implies saving time in the transportation thus cutting a step in the supply chain. Therefore we have rephrased the category of location²¹⁴ as "place" – to include both the spatial and time conditions giving rise to value.

²¹⁴ Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1478.

(UN)EXPECTED VALUES

The values stemming from the shortened transportation times and distances (such as reduced CO₂ emissions and heightened ethical/moral connotations) is of course something that is true no matter the type of urban agriculture. Such values are also some of the most evident aspects that came up in our discussions. But a product value²¹⁵ we came to discover which was not as evident is the possibility of broadening the variation of produce from the current market assortment, through using urban agriculture. To be able to grow either very special species at a better price or bring back variations of produce which has gotten lost during streamlining of regular commercial agriculture. Another consequence of not having to transport produce long distances is that the food then contains a heightened nutritional value, resulting from picking it and eating at peak maturation. Urban farming can eliminate time produce is in the back of a truck starting to degenerate.

The value of production transparency and clear origin was no news, however the experiential value which comes with bringing the production next to consumption/use is truly something which is of value both to the consumers, but also to the people refining or selling the food. Having cultivation close by can inspire and educate restaurant- as well as store employees, but also work as a place for relaxation in an otherwise hectic environment. This educational and inspirational aspect that urban agriculture can bring to a city was one of the major values brought up. Not only to the school children who can go on a tour at Oko Farms and learn about the photosynthesis but for the chefs working in a restaurant with an urban farm. Or why not for the society whose cultural supply is injected with beehives, school being able to use farms as tools for education or companies letting greens inspire their business models and client meetings? Keeping the food close showcases the origin of the food and it's naturalness, the history behind the produce becomes visible. It also shows what it's impacted by as well as how it impacts the environment, which in different ways has an effect on all value categories.

FILL 'EM GREENS WITH VALUES

In general what we have come to understand is that urban agriculture is much about actually filling the food on our plate with new values. Or rather re-filling it with values that have been diluted

²¹⁵ Dagevos & Van Ophem, 'Food consumption value - Developing a consumer-centred concept of value in the field of food', p. 1477.

through industrialisation. Food has become this wear and tear thing that we want at the cheapest price possible - maybe because we have become so disconnected from it so that we don't know the effort that goes into it? When children think that food is born in the magic box called the freezer it becomes important that the urban citizen sees that potatoes are grown from nutrients, light and water, and that chips just don't emerge from a package. It's about re-connecting the urban citizen to food and the production thereof, for consumers to gain deeper understanding in the history of what's on their plate. To put value in a cucumber by showcasing the effort which goes into growing it. To make us understand how food impacts both us and the world we live in by making these values visible at the market place.

TO THE MARKET

Commercialisation process

As different values are attributable to urban agriculture depending on who you are in the value network²¹⁶, there is a need to talk to these different actors in different ways - adapting communication to the target group and using the “right” values to the right people. How these values are agreed upon on the market is part of the commercialisation process. We have seen that different aspects of urban agriculture are being qualified and singularized through different processes using different channels and tools²¹⁷. We did talk about the process of commercialisation stemming from the commercialisation of intrinsic and extrinsic values²¹⁸ and that these are made visible to the market, and agreed upon, in different ways. This dual commercialisation process is something we have observed within urban agriculture.

LABELLING

The values of urban agriculture are many, ranging from consumer-centric product values such as higher nutritional value and healthier produce (less chemicals) to values such as a more effective/efficient supply chain and less pollution and energy use in production. These are values

²¹⁶ Heuts & Mol, 'What is a good tomato? A case of valuing in practice', p. 125–146.

²¹⁷ Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 194–217.

²¹⁸ Ibid., p. 199.

that can be measured²¹⁹ and the process of qualification and singularisation can then occur through making judgment devices such as rankings or labelling²²⁰ available to the market. They could also be clearly presented as AeroFarms does on their homepage, with water and energy savings black on white.

However given that this is still an emerging industry such devices are not yet in place to any large extent. What values urban agriculture brings to consumer as well as the production/distribution values can be measured, but this not yet clearly visible at the market. One already established label²²¹ of a more extrinsic character is “*local produce*”, filled with a set of values, which is applicable to urban agriculture and can thus be one way of trying to qualify the product²²². This does however not include all the values of urban agriculture per se, and is not sufficient to make the product stand out from other local products on the market - other labels or comparability devices are needed in order to reveal the intrinsic properties which go beyond *local*. How can the societal economic or health properties be revealed? Or the cleanliness of high tech urban agriculture compared to regular agriculture? Is a tasting enough to be able to compare and rank different products? Urban agriculture and the product derived from such practices are just starting the qualification process at the market. The Whole Foods ranking of *good, better, best* in terms of responsibly grown, does still not tell much of the value of urban agriculture beyond it being “number one”. More, and urban agriculture adapted, judgment devices for these intrinsic values are bound to come as the industry expands and the conversation between market actors continues, when the product becomes more stabilised. A label or brand you connect with a product, like urban produce being “responsible”, or “farm-to-table” helps the market make sense of the product’s more intrinsic values. They also come with the extrinsic reputation and image of that particular brand or label, creating trust or demand for the product.²²³

The intrinsic values are of course of functional importance but the most occurring product values that, on one hand are inherent with the product but on the other hand very subjective, are the sensory properties of the produce. Great emphasis is put on the flavour, the beauty and the freshness of urbanely farmed produce by all of the subjects. These are of course values which cannot

²¹⁹ Callon, Méadel & Rabeharisoa, ‘The Economy of Qualities’, p. 194-217.

²²⁰ Karpik, *Valuing the Unique*, p. 45.

²²¹ Ibid.

²²² Callon, Méadel & Rabeharisoa, ‘The Economy of Qualities’, p. 210.

²²³ Ibid., p. 194-217.

successfully be measured and boiled down to a functional measurement but are subject to interpretation and thus of a more extrinsic character²²⁴. It's something you need to experience in order to evaluate. You need to see the product itself, taste it, smell it, and feel it in order to make a judgment. And that's how it's being done - just as Yoshimi Kono said, if you see something that looks beautiful and tasty in front of you you'll want to eat it. Showcasing the product, providing potential customers with samples or arranging tastings, seems to be the way to go. This is not entirely surprising, since taste is a crucial value for end customers²²⁵.

This extrinsic aspect of many of the values, such as emotions roused from picking herbs or the environmental care connoted with the process of urban agriculture, is where interpretation and valuation depends on the receiver. To transfer such values, more than a simple label might be needed. We've learned that as with many products and services at today's markets the importance of the story is central. There has been an emphasis on how the story behind the produce, the story of the basil grown around the corner, in an innovative environment, is what makes people tick.

THE STORY

Through our journey among kale and herbs we have come to understand that one very central point in how urban agriculture is starting to be commercialised is the story, an intangible judgement device stemming from values. The story of a farm which can be placed anywhere, the story of a pizza place serving a pizza mounted with greens from around the block, the story of basil which actually tastes like basil, the story of the farm on top of the grocery store, the story of the green mountain in the city... They come in different shapes and circle around different topics - but it's always a story that fills the product, and practice, with value. Creating associations, airing opinions. Stories, which are attractive to shared by cicerones such as blogs or newspapers, or through personal networks in a community, and of course by the urban agriculture actors themselves²²⁶. The values being revealed here are often of a more extrinsic character. Such as the experience of eating among the greenery at Roberta's, the way of engaging with an urban farm creates a sense of belonging, how it can inspire, the educative nature of the urban farm or the notion of being able to "pick-and-eat". This is a way of creating reputation but also educating

²²⁴ Callon, Méadel & Rabeharisoa, 'The Economy of Qualities', p. 194-217.

²²⁵ Lusk & Briggeman, 'Food values', p. 184-196.

²²⁶ Karpik, *Valuing the Unique*, p. 45.

stakeholders in the values of their farm and its produce. Letting people actually experience the product or process; tasting the kale, showing it to potential customers at events or shows - or through simply bringing people into the farm. It's hard to feel the enjoyment of the nature brought to the city by urban agriculture if you are not there to experience it. This is also part of how urban agriculture can work as an attraction in a city and contribute with value to the society through this.

Even though urban agriculture is not an entirely new phenomenon the entrance of such facilities on the New York scene has during the past years been subject to quite a lot of press and PR, thanks to the uniqueness of businesses. For the most part the stories of these businesses have been sought out by press. When you build something as unexpected as a farm in a city the PR is kind of self-generative. There is of course a news value to commercial urban agriculture that has been important, but that will not last forever and so there is a need to keep the story alive. This is where word of mouth comes in. Both digital and offline. As mentioned networks can be one way of spreading the word²²⁷, through people talking of these businesses to the people around them, if it's at a dinner table, in a niche community or in a twitter feed.

The stories can of course come from within as well; Freight Farms themselves tells the stories of their customers in video and text, they let you follow a farm's journey through the US and they let you get to know the team behind the business. They are trying for that personal connection Yossy talks about. Creating and showcasing storytelling content that enriches the description and perception of urban agriculture is crucial since the market needs to understand and be educated in this new phenomenon. This is also one way of creating emotional associations²²⁸ to both produce and practices since it puts this in context and relation to previous market knowledge. Same goes for Andrew chatting away with his customers, talking about his beehives.

Another way to reveal the above-mentioned values can be through appellations²²⁹, through partnering with or taking advantage of others brands already existing connotations. Just as Freight Farms can be ascribed values at the market by a certain restaurant or school using their system. Andrew placing beehives on top of the well-known Waldorf Astoria hotel showcases how his practice can be an attraction in the city as well as the increased spatial value this give rise to. His practice earns credibility and reach through this connection with an already established brand. A

²²⁷ Karpik, *Valuing the Unique*, p. 45.

²²⁸ Sheth, Newman & Gross, 'Why we buy what we buy: A theory of consumption values', p. 159-170.

²²⁹ Karpik, *Valuing the Unique*, p. 45.

similar thing is the case with Gotham Greens who partnered with Whole Foods, which already has a strong brand in healthy and organic food, and hence these values become stabilised²³⁰ also for the urban farm. Another example is how Oko Farms has collaborated with the city in an educational program filling the farm with the value of being a tool for education as well as credibility, since the city itself approves of their practice. This kind of piggybacking is one way of how commercial urban agriculture is creating judgement devices the market can relate to.

GO GROW!

Down to business

The stories we have told can be seen as a source for inspiration, planting a seed in the minds of researchers as well as business to further dig into the possibilities of the urban environment.

Our main aim has been to provide arguments for how commercial urban agriculture can be beneficial, through revealing values that are connected to the phenomenon. These are arguments that can be used towards press, governmental institutions, municipalities, investors, existing actors or for actors wanting to enter the market. For a restaurant wanting permission to set up a farm on the vacant lot around the corner, or an entrepreneur who needs to raise funds from investors. Or a city planning to oversee their landscape planning. Not to mention how to talk to potential consumers. With our work actors can gain inspiration and get examples of how other actors have commercialised values, enabling them to explore and develop selling points and methods as well as finding arguments to get involved with such initiatives. Keep in mind that the story behind the produce is of great importance - and if you have a good story that you make available you will be noticed. Let's face it, greenhouses on top of grocery stores is not a saturated market yet.

There are clearly a large range of values attributable to urban agriculture, values that to some extent differs given the type of farming or technique used. Businesses must ask themselves - what's the purpose of going into this market? What do we want to achieve? And choose accordingly. If it's for the money: AeroFarms style, for the employees; think Pasona or Roberta's and for the education; Freight Farms maybe?

²³⁰ Rosa et al, 'Sociocognitive Dynamics in Product Market', p. 64-77.

Urban agriculture can provide great societal values thus have an important role in a community. This implies that when planning a city or building new buildings, it can be beneficial to include areas with edible greenery since this can have impact on the community both in terms of economy and health but also as a source for new job creation. Installing or collaborating with an urban farm could also potentially function as a source for goodwill and innovation for a company, this by connecting itself to the positive values associated with urban agriculture. Furthermore the component of joy and relaxation brought by the aspect of nature impacts the people working near it - that alone can be a way of branding oneself towards employees.

However if the goal is to sell a mountain of veggies, you might want to glance at starting a business in Saudi Arabia.

BEYOND NEW YORK

What we cannot say and going forward

The big apple is a wonderful place filled with possibilities and crazy businesses. There is almost always an interest for or market in even the smallest of niches. Because of the fact that it is a diverse city with a large population, what happens there does not happen everywhere. Thus it can be of great value to look into other cities where urban agriculture is being commercialised to see whether the same reasoning is applicable also elsewhere. Further it should be pointed out that we have visited a city where traditional farming is possible, thus the necessity of urban agriculture is not as present, comparing with a country without soil such as Saudi Arabia or a country without space such as Singapore where reasons behind such initiatives might be different.

In order to say even more about commercial urban agriculture in New York City it would have been beneficial to meet with the two largest actors on the market, Gotham Greens and Brooklyn Grange. Our wish was to do this, as mentioned before, but it was not possible due to factors out of our control. Looking forward these, or similar examples of practicing, larger scale commercial urban farms could be interesting to study in terms of business models. How are all the values we've found being captured by the actual business set up? What prerequisites, apart from a demand, are needed for business to take off? From the city and government as well as from the business setting itself. We have seen benefits of connecting with already existing brands or actors, to

give the company credibility. Is the way forward for urban agriculture growing inherently through brand extensions to already existing brands or through entrepreneurial disruption of the market?

Another approach could be to go more in depth on specific parts of the food value network - looking into what urban agriculture mean to specific actors such as a wholesalers, producers, or even restaurants. And what happens to the supply chain when suddenly there is a decreased need for transportation and re-packaging of food? With the value of accessibility inherent in urban agriculture will new actors emerge and old go out of business as the phenomenon continues to commercialise?

Our study represents the production/distribution perspective on the phenomenon. Even though our interviews have provided us with insights on consumer values of urban agriculture there are evident benefits of pursuing also a more consumer-centric study, talking to the people who are already today purchasing and consuming urbanely grown food, or potential future consumers. Research on consumer behaviour regarding urban produce is definitely a field open for further research and it could be interesting to look more in-depth at what models and channels of communication that are the most effective to attract consumers. Another way to go forward on the topic in terms of consumers could be to investigate the willingness to pay for urbanely farmed produce. Will people perceive food as more valuable once the values of urban agriculture have been commercialised and will this be reflected in the price? If we start filling food with new values through urban agriculture will we be able to see an overall increase in food's value?

As mentioned the distinction between local and urban agriculture is not super clear, neither is the distinction between vertical farming and urban agriculture. Local farming can be urban and so can vertical farming - but it does not necessarily have to be. This means that for some of the findings of our study may not attributable to urban agriculture at large - but just a specific type of urban agriculture. It could therefore be beneficial to for example look into Vertical Farming specifically to gain deeper knowledge of this specific business - both on the business and the consumer side of things.

An interesting thought is how the more industrialised way of farming urbanely, similar to the approach AeroFarms are taking, is in one way disconnecting the human from food even more. As discussed the story behind the produce is central to the commercialisation process. What happens when the story behind food is not circling around “back to the roots” but rather “into the

laboratory”? When the human factor is even more disconnected from the food - when lettuce is harvested in an assembly line environment, losing the human presence in production. The trends and surge in demand for organic, local food has a lot to do with knowing the origin of the produce (and is also a valued aspect of urban agriculture), being able to trace it back to something personal. Maybe even to a specific person to which you can create a relation. What happens when that person is removed - the produce is local all the same but will it hold the same emotional connotations? Some of the emotional value clearly stems from the environmental aspect of eating local, the ethical reasons as well as the feeling of being part of the local community, which holds despite the type of farming facility. But the attachment to the greens, will that hold even when food is grown in factories?

A FINAL WORD

This digging into commercial urban agriculture has shown that there is potentially a movement where food (at least the kind we have studied) is being filled with new values, creating a need for broader categories when evaluating practices around it. The society is clearly a beneficiary in the world of commercial urban agriculture that needs to be taken into account. So are the expanded values connected to *‘place’*. However, in the context of our study, urban agriculture is foremost about re-connecting people to food. We have seen that revealing a story around urban produce is of great importance in the process of commercialising urban agriculture. Without showcasing the practice and telling the history behind the company or produce all values attributable to urban farming will not be revealed. Right now we are in a place where the consumer, and market actors, need to be informed of what urban agriculture is about and as the market knowledge (and methods) expand so will the devices used for valuing such practices. The commercial urban agriculture market seen today is only a prototype of what is to come. This seed is just starting to sprout and we can yet not tell what will be harvested, or how and when this will happen. Though it seems to us that the old industry of agriculture has not been keeping up with the new world we live in and is just starting to catch up. In order to adapt, businesses need to rethink their practices given the external factors facing today’s cities and populations. If this will happen through urban agriculture is yet to be seen.

LITERATURE AND SOURCES

ORAL SOURCES

Amu, Yemi; Co-founder of Oko Farms, interview March 20 2015.

Arefi, Yossy; Food blogger/founder of Apt. 2B Baking Co and food photographer, interview March 25 2015.

Coté, Andrew; Beekeeper, runs family business Andrew's Honey, interview March 18 2015.

Despommier, Dickson; Retired professor of Microbiology and Public Health at Columbia University and expert on urban agriculture, interview March 5 2015.

Friedman, Jon; President and Co-founder of Freight Farms, interview March 19 2015.

Harvest, Judi; Artist and hostess of beehives, interview March 25 2015.

Hoy, Brandon; Co-founder of Roberta's Pizza, interview March 10 2015.

Katsiroubas, Caroline; Marketing Manager at Freight Farms, interview March 25 2015.

Kono, Yoshimi; Founder of Kono Designs, interview March 11 2015.

Metrick, Melissa; Head gardener at Roberta's Pizza, interview March 10 2015.

Orgel, Jane; Kitchen manager at Roberta's Pizza, interview March 27 2015.

Oshima, Marc; Chief Marketing Officer at AeroFarms, interview March 20 2015.

PRINTED SOURCES/ARTICLES

Altieri, M. A., et al, 'The greening of the "barrios": Urban agriculture for food security in Cuba', *Agriculture and Human Values Volume 16, Issue 2*, Kluwer Academic Publishers, 1999, p. 131-140.

Aspert, P. & Beckert, J., 'Introduction: Value in markets', *The worth of goods - Valuation and Pricing in the Economy*, Oxford University Press, UK, 2011, p. 3-38.

Berkel, B. E., '*High-Tech Urban Farming: A business Model to Enable Breakthrough Development*', Master Thesis, Eindhoven University of Technology, 2013.

Bryman, A. & Bell, E., *Business Research Methods*, 3rd ed., Oxford University Press, 2011.

Bryld, E., 'Potentials, problems, and policy implications for urban agriculture in developing countries', *Agriculture and Human Values pp Volume 20, Issue 1*, Kluwer Academic Publishers, 2003, p. 79-86.

Callon, M., Méadel, C. & Rabeharisoa, V., 'The Economy of Qualities', *Economy and Society*, Vol. 31, No. 2, Taylor & Francis Ltd, 2002, p. 194-217.

Choen, N., Reynolds, K. & Sanghvi, R., 'Five Borough Farm - Seeding the future of Urban Farming in New York City', A project of the Design Trust for Public Space, Print Craft Inc., New York, 2012.

Dagevos, H. & Van Ophem, J., 'Food consumption value - Developing a consumer-centred concept of value in the field of food', *British Food Journal*, Vol. 115, Issue 10, Emerald Group Publishing Limited, 2013 p. 1473 - 1486.

Deelstra, T. & Girardet, H., Urban Agriculture and Sustainable Cities Proc. of the International Workshop Growing Cities Growing Food, Havana, Cuba 1999, Thematic Paper 2, p. 43-65.

Dubois, A. & Gadde, L-E., 'Systematic combining: an abductive approach to case research', *Journal of Business Research*, Vol. 55, Elsevier Science Inc., Sweden, 2002, p. 553-560.

Furst, T., Connors, M., Bisogni, C.A., Sobal, J. & Winter Falk, L., 'Food Choice: A Conceptual Model of the Process', *Appetite 1996 26*, Academic Press Limited, USA, 1996, p. 247-266.

Gupta, R. & Gangopadhyay, S. G., 'Urban Food Security through Urban Agriculture and Waste Recycling: Some Lessons for India', *Vikalpa*, Vol 38, No. 3, India, 2013, p. 13-22.

Heuts, F. & Mol, A., 'What is a good tomato? A case of valuing in practice', *Valuation Studies 1(2) 2013*, LiU Electronic Press, 2013, p. 125-146.

Hui, S. C. M., 'Green roof urban farming for buildings in high-density urban cities', The University of Hong Kong, 2011 p. 1-9.

- Karpik, L., 'Judgement Devices', *Valuing the Unique: The Economics of Singularities*, Princeton University Press, Princeton, 2010.
- Karababa, E. & Kjeldgaard, D., 'Value in marketing: Toward sociocultural perspectives', *Marketing Theory*, Vol. 14 (1), Sage Publications, 2014, p. 119-127.
- Koscica, M., 'Agropolis: The role of urban agriculture in addressing food insecurity in developing cities', *Journal of International Affairs*, Vol. 67, No. 2, new York, 2014, p. 177-186.
- Lusk, J. L. & Briggeman, B. C., 'Food values', *American Journal of Agricultural Economics*, Vol. 91 No.1, Agricultural and Applied Economics Association, Blackwell Publ. Ltd., 2009, p. 184–196.
- Makatouni, A., 'What motivates consumers to buy organic food in the UK? Results from a qualitative study', *British Food Journal* 104, 3-5, ABI/INFORM Global MCB UP Limited UK, 2002, p. 345-352.
- Nyström, J., 'Stadsbornas mat blir närodlat i extrema växthus', *Forskning och Framsteg*, 3, 2013, p. 36-40.
- Rokeach, M., 'Introduction', *Understanding Human Values: Individual and Societal*, New York, NY: The Free Press, 1979, p. 3.
- Rosa, J. A. et al, 'Sociocognitive Dynamics in Product Market', *Journal of Marketing*, Vol. 63, ABI/INFORM Global, 1999, p. 64-77.
- Secretariat of the Convention on Biological Diversity, 'Cities and Biodiversity Outlook', *Secretariat of the Convention on Biological Diversity*, Montreal, 2012, 64 pages.
- Sheth, J. N., Newman, B. I. & Gross, B. L., 'Why we buy what we buy: A theory of consumption values', *Journal of Business Research* 22, Elsevier Science Publishing Co. Inc., 1991, p. 159-170.
- Smit, J., Ratta, A., & Nasr, J., 'Urban Farming: Food Jobs and Sustainable Cities', *USA: UN Development Programme*, New York, 1996.
- Smith, J. & Nasr, J. 'Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources', *Environment and Urbanization*, Vol. 4, No. 2, USA, 1992, p. 141-152.
- Sober, E., *Core questions in Philosophy*, 6th ed. Pearson, 2012.

Thornton, A., Nel, E. & Hampwaye, G., 'Cultivating Kaunda's plan for self-sufficiency: Is urban agriculture finally beginning to receive support in Zambia?', *Development Southern Africa*, Vol. 27, No. 4, Routledge, 2010 p. 613-625.

Zanoli, R. & Naspetti, S., 'Consumer motivations in the purchase of organic food', *British Food Journal* Vol. 104 Issue 8/9, Emerald Group Publishing UK, 2002, p. 643-653.

Zeza, A. & Tasciotti, L., 'Urban agriculture, poverty, and food security: Empirical evidence from a sample of developing countries', *Food Policy Volume 35, Issue 4*, Elsevier Ltd, 2010, p. 265–273.

ONLINE SOURCES

AeroFarms, viewed May 3 2015 <http://aerofarms.com/>

Allen, K., 'In Tokyo, A Vertical Farm Inside and Out', *Arch Daily*, September 29 2013, viewed May 2 2015 <http://www.archdaily.com/428868/in-tokyo-a-vertical-farm-inside-and-out/>

Apt. 2b baking co, viewed April 10 2015 <http://www.apt2bbakingco.com/>

'Aquaponics', Wikipedia, viewed April 24 2015 <http://en.wikipedia.org/wiki/Aquaponics>

Beeologics, 'History of Beekeeping', viewed April 22 2015 <http://www.beeologics.com/bees-and-beekeeping/history-of-beekeeping/>

Brooklyn Grange, 'About', viewed May 1 2015 <http://brooklyngrangefarm.com/about/>

Buncombe, A., 'AeroFarms: Work starts to build world's largest vertical urban farm in Newark', *The Independent*, April 28 2015, viewed May 3 2015 <http://www.independent.co.uk/environment/aerofarms-work-starts-to-build-worlds-largest-vertical-urban-farm-in-newark-10211245.html>

CBS Boston, 'Freight Farms & Corner Stalk on CBS Boston', YouTube, November 6 2014, viewed April 4 2015 <https://www.youtube.com/watch?v=1L4RJgbWlNg>

Celsias, 'Japan Railway Opens Tokyo's Largest Rooftop Rental Farm', *Celsias*, May 30 2011, viewed May 2 2015 <http://www.celsias.com/article/japan-railway-openstokyos-largest-rooftop-rental-f/>

Columbia University Mailman School of Public Health, 'Faculty profile Dr. Dickson Despommier', viewed March 15 2015 <http://www.mailman.columbia.edu/academic-departments/environmental-health/dr-dickson-despommier>

de Boer, J., 'Japanese Commuters Grow Veggies On Train Station Rooftops', *Pop Up City*, 24 March 2014, viewed February 17 2015 <http://popupcity.net/japanese-commuters-grow-veggies-on-train-station-rooftops/>

Dorsey, S., 'Entrepreneurs Transform Urban Farming with High-Tech Solutions', *Triple Pundit*, July 23 2014, viewed February 24 2015 <http://www.triplepundit.com/2014/07/entrepreneurs-transform-urban-farming-high-tech-solutions/>

Food and Agriculture Organization of the United Nations, 'Coping with water scarcity An action framework for agriculture and food security', *FAO Water Reports*, No. 38, 2012, viewed February 10 2015 <http://www.fao.org/docrep/016/i3015e/i3015e.pdf>

Food & Friends, 'Matrapporten 2014', March 11 2014, viewed May 14 2015 http://www.foodfriends.se/files/5613/9453/2953/PRM_Matrapporten_2014.pdf

Food Security Network of Newfoundland & Labrador, 'What is Food Security?', viewed April 22 2015 <http://www.foodsecuritynews.com/What-is-food-security.htm>

Frank, J., 'Sustainability – Consumer Demand & Challenges in the Food Industry', *Prospector*, October 10 2014, viewed February 24 2015 <http://knowledge.ulprospector.com/1011/fb-sustainability-in-food/>

Freight Farms, 'Blog', viewed April 4 2015 <http://freightfarms.com/blog/>

Frommer, D., 'Toshiba's high-tech grow rooms are churning out lettuce that never needs washing', *Quartz*, November 13 2014, viewed April 23 2015 <http://qz.com/295936/toshibas-high-tech-grow-rooms-are-churning-out-lettuce-that-never-needs-washing/>

Fugere, L., 'Why the Going Local Trend Is Growing, and What It Means for Big Business', *Radius*, February 4 2014, viewed May 13 2015 <http://radius.com/2014/02/04/goinglocal/>

Geere, D., 'First Vertical Farm Opens in Singapore', *Wired*, October 30 2012, viewed January 21 2015 <http://www.wired.com/2012/10/vertical-farm-in-singapore/>

Gotham Greens, 'Our farm', viewed May 1 2015 <http://gothamgreens.com/our-farm/>

Green Spirit Farms, viewed March 15 2015 <http://www.greenspiritfarms.com/>

Grow to learn NYC, 'Garden to Café', viewed April 7 2015
<http://www.growtolearn.org/view/AboutGardentoCafe>

Halais, F., 'Can urban agriculture work on a commercial scale?', August 21 2014, viewed May 2 2015, <http://citiscope.org/story/2014/can-urban-agriculture-work-commercial-scale>

Halais, F., 'Five urban farms that are growing big', *Cititscope*, August 21 2014, viewed April 27 2015 <http://citiscope.org/story/2014/five-urban-farms-are-growing-big>

Hansson, E., 'Vi vill veta vad vi äter', *Prat*, September 18 2013, viewed February 16 2015
<http://www.prat.se/trend/vi-vill-veta-vad-vi-ater/>

Hedlund, A., 'Bönder i storstadens djungel', *DN.se*, February 28 2012, viewed April 23 2015
<http://www.dn.se/livsstil/reportage/bonder-i-storstadens-djungel/>

Hongo, J., 'Fujitsu Hoping to Turn Lettuce into Cash', *The Wall Street Journal*, May 14 2014, viewed April 23 2015 <http://blogs.wsj.com/japanrealtime/2014/05/14/fujitsu-hoping-to-turn-lettuce-into-cash/>

Horrovitz, B., 'Vegetables shift to center of the plate', in *USA Today*, November 11 2013, viewed January 23 2015 <http://www.usatoday.com/story/money/business/2013/11/09/vegetables-culinary-trends-restaurant-menus/3417879/>

Howard, B. C., 'Urban Farming Is Growing a Green Future', *National Geographic*, viewed April 23 2015 http://environment.nationalgeographic.com/environment/photos/urban-farming/#/earth-day-urban-farming-new-york-rooftop_51631_600x450.jpg

Hupkes, S., 'Algae Farming On Bangkok Rooftops', *Pop Up City*, 12 October 2013, viewed February 27 2015 <http://popupcity.net/algae-farming-on-bangkok-rooftops/>

Instructables, 'Hydroponics - at Home and for Beginners', viewed April 24 2015
<http://www.instructables.com/id/Hydroponics---at-Home-and-for-Beginners/>

Keohane, D., 'Freight Farms cultivates \$3.7 million from Spark Capital', *BetaBoston*, December 17 2014, viewed May 4 2015 <http://www.betaboston.com/news/2014/12/17/freight-farms-cultivates-3-7-million-from-spark-capital/>

Kinver, M., 'Global importance of urban agriculture 'underestimated'', *BBC News*, November 25 2014, viewed April 24 2015 <http://www.bbc.com/news/science-environment-30182326>

Kono Designs, 'Portfolio', viewed April 5 2015, <http://konodesigns.com/portfolio/Urban-Farm/>

Levitt, T., 'Urban farming: how far can we go in feeding cities?', *Chinadialogue*, April 3 2013, viewed April 27 2015 <https://www.chinadialogue.net/article/show/single/en/5854-Urban-farming-how-far-can-we-go-in-feeding-cities->

National Restaurant Association, 'What's Hot Culinary Forecast', viewed January 23 2015

<http://www.restaurant.org/News-Research/Research/What-s-Hot>

NPR, Here & Now Staff, 'Freight Farms: How Boston Gets Local Greens, Even When Buried In Snow', *NPR*, February 23 2015, viewed May 4 2015

<http://www.npr.org/blogs/thesalt/2015/02/23/388467327/-freight-farms-grow-local-flavor-year-round>

Nutrition Digest, 'USDA Defines Food Deserts', *Nutrition Digest*, Vol. 37, No. 2, viewed April 24 2015 <http://americannutritionassociation.org/newsletter/usda-defines-food-deserts>

Oko Farms, viewed April 7 2015 <http://www.okofarms.com/>

Oxford Dictionaries, 'Value', viewed May 1 2015

<http://www.oxforddictionaries.com/definition/english/value>

Plantagon, 'Vertical Greenhouse', viewed February 24 2015

<http://plantagon.com/urban-agriculture/vertical-greenhouse>

Portlandia, 'In the restaurant', *Portlandia*, YouTube, Uploaded January 25 2011, viewed January 23 2015 <https://www.youtube.com/watch?v=WAlWrT5P2VI>

RUAF Foundation, 'Urban agriculture: what and why?', viewed May 2 2015

<http://www.ruaf.org/urban-agriculture-what-and-why>

Science Daily, 'Unhealthy eating habits outpacing healthy eating patterns in most world regions', *Science Daily*, February 15 2015, viewed May 10 2015

<http://www.sciencedaily.com/releases/2015/02/150218191719.htm>

Sharp, 'Corporate news', viewed April 23 2015 <http://sharp-world.com/corporate/news/130920.html>

Siemens, 'Nyhet! Slow food, snabbt.', iQ700 folder, *Siemens Home*, viewed May 5 2015 http://www.siemens-home.se/Files/SiemensNew/Se/sv/Document/SIEM_iQ700_Folder_S14CO803BSE.pdf

Sievers, J., 'Färdig plan för Plantagons växthus', *Corren.se*, June 17 2014, viewed May 3 2015 <http://www.corren.se/nyheter/linkoping/fardig-plan-for-plantagons-vaxthus-7067514.aspx>

Sjöström, M., 'I framtiden måste vi odla i städerna', *SVD*, June 26 2012, viewed April 23 2015 http://www.svd.se/nyheter/idagsidan/i-framtiden-maste-vi-odla-i-staderna_7304115.svd

Sky Greens, viewed May 3 2015 <http://www.skygreens.com/>

Slow Food, 'About us', viewed March 26 2015 <http://www.slowfood.com/international/1/about-us>
Smith, A., 'Commercial urban farming – what is it and why does it matter?', Sustainable Business Toolkit, December 4 2012, viewed February 24 2015 <http://www.sustainablebusiness toolkit.com/commercial-urban-farming-what-is-it-and-why-does-it-matter/>

Soil Association, 'Community Supported Agriculture', viewed May 7 2015 <http://www.soilassociation.org/communitysupportedagriculture>

Solazzi, G., 'Storytelling in food writing', *Medium*, December 6 2013, viewed May 2 2015 <https://medium.com/what-we-talk-about-when-we-talk-about-food/storytelling-in-food-writing-347425c66500>

Soury, L. 'New \$30 Million Deal To Develop World's Largest Indoor Vertical Farm In Newark', *PR Newswire*, March 9 2015, viewed May 3 2015 <http://www.prnewswire.com/news-releases/new-30-million-deal-to-develop-worlds-largest-indoor-vertical-farm-in-newark-300047493.html>

The Food and Agriculture Organization of the United Nations, 'Global Agriculture towards 2050', viewed February 10 2015 http://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Global_Agriculture.pdf

The London Honey Company, 'About us' viewed May 3 2015 <http://www.thelondonhoneycompany.co.uk/about-us>

Tower Gardening, 'Aeroponics: the modern, clean, efficient way to better gardening', viewed April 24 2015 <http://www.towergarden.com/content/towergarden/en-us/what-is-tower-garden/how-it-works/aeroponics.html#.VTqGI63tmko>

University of Maryland Medical Center, 'Food Safety Definition', viewed April 24 2015 <http://umm.edu/health/medical/ency/articles/food-safety>

Urban Farming Org, 'View gardens from around the globe!', *Urban Farming Org*, viewed April 16 2015 <http://www.urbanfarming.org/garden-locations.html>

'Value Network', Wikipedia, viewed April 24 2015 http://en.wikipedia.org/wiki/Value_network

Veckans Affärer 'Gröna vågen har flyttat in till stan', March 4 2011, viewed April 23 2015 <http://www.va.se/nyheter/2011/03/04/grona-vagen-har-aflyttat-in-till-stan/>

Vegoeco, 'Trendigt med hälsosam mat', February 22 2014, viewed May 10 2015 <http://vegoeco.se/2014/02/22/trendigt-med-halsosam-mat/>

Wang, L., 'World's largest indoor vertical farm will produce 2 million pounds of soil-free food in Newark', *Inhabitat*, March 14 2015, viewed March 24 2015 <http://inhabitat.com/worlds-largest-indoor-vertical-farm-will-produce-2-million-pounds-of-soil-free-food-in-newark/market-893rendered/?extend=1>

Whole Foods Market, 'Greenhouse Brooklyn', viewed May 1 2015 <http://www.wholefoodsmarket.com/service/greenhouse-brooklyn>

WWF Global, 'Farming: Pollution', viewed February 24 2015 http://wwf.panda.org/what_we_do/footprint/agriculture/impacts/pollution/

SOCIAL MEDIA

Facebook, 'Oko farms', viewed May 4 2015 <https://www.facebook.com/OkoFarms?fref=ts>

Facebook, 'Roberta's Pizza', viewed May 4 2015 <https://www.facebook.com/robertasrestaurant>

Instagram, 'Andrew's Honey', viewed May 4 2015 <https://instagram.com/andrewshoney/>

Instagram, 'Freight Farms', viewed May 4 2015 <https://instagram.com/freightfarms/>

Instagram, 'Roberta's Garden', viewed May 4 2015 <https://instagram.com/robertasgarden/>

Linkedin, 'AeroFarms', viewed May 4 2014 <https://www.linkedin.com/company/aerofarms>

Twitter, 'AeroFarms', viewed May 4 2015 <https://twitter.com/aerofarms>

Twitter, 'Freight Farms', viewed May 4 2015 <https://twitter.com/freightfarms>

Twitter, 'Roberta's Pizza', viewed May 4 2015 <https://twitter.com/robertaspizza>

OTHER SOURCES

af Klintberg, K., *Landet Brunsås*, Sverige: Thelma/Louise. 2010. [TV series SVT]

Sources for commercialisation table (Page X)

Allen, J., '4 Best Jars Of Honey In New York City', CBS Local, September 2 2014, viewed May 4 2015, <http://newyork.cbslocal.com/top-lists/4-best-jars-of-honey-in-new-york-city/>

Andrew's Honey, viewed May 3 2015 <http://andrewshoney.com/coming-soon/>

Catherine, 'City Farm Spotlight: Roberta's', Get Dirty NYC, June 18 2012, viewed May 4 2015 <http://getdirtynyc.org/news/?p=765>

Conte, A., 'In New York, Seriously Local Honey', Diner's Journal, New York Times, September 1, 2009, viewed May 4 2015 http://dinersjournal.blogs.nytimes.com/2009/09/01/in-new-york-seriously-local-honey/?_r=0

Fantozzi, J., 'Brooklyn's Roberta's Pizzeria Cultivates Own Garden', The Daily Meal, April 15 2014, viewed May 4 2015 <http://www.thedailymeal.com/brooklyns-robertas-pizzeria-cultivates-own-garden/41514>

Feel food NY, 'Chefs - Andrew', viewed May 3 2015 http://www.feelfoodny.com/chefs_04_andrew/

'Food+Tech Connect Food Editorial Series featuring Freight Farms', Freight Farms, Youtube, March 4 2015, viewed April 11 2015 <https://www.youtube.com/watch?v=-E-FxDO2SAw>

Freight Farms, viewed May 3 2015 <http://www.freightfarms.com/>

Furfaro, D., 'Fish fuel farm! Bushwick's Moore Street Market to boast 'aquaponic' garden', Brooklyn Paper, November 21 2012, viewed May 4 2015
http://www.brooklynpaper.com/stories/35/47/all_williamsburgfarm_2012_11_21_bk.html

Howard, M., 'The Waldorf Astoria Wins the Battle of the Bees"', Waldorf Astoria New York, September 22 2014, viewed May 4 2015
<http://www.waldorfnewyork.com/blog/the-waldorf-astoria-wins-the-battle-of-the-bees/>

Johnson, M., 'Brief Interviews on Local Farms: OKO Farms', Food Politic, October 23 2013, viewed May 4 2015 <http://www.foodpolitic.com/brief-interviews-on-local-farms-oko-farms/>

Knapik, M., 'A Social Recipe for Food that Matters', The Dodge Blog, March 10 2010, viewed May 4 2015 <http://blog.grdodge.org/2010/03/10/a-social-recipe-for-food-that-matters/>

Moore street farm, viewed May 4 2015 <http://moorestreetfarm.tumblr.com/>

Pang, A., 'This is New York: Andrew Coté, Urban Beekeeper', The Epoch Times, July 27 2013, viewed May 4 2015
<http://www.theepochtimes.com/n3/198464-this-is-new-york-andrew-cote-urban-beekeeper/>

Robertas, S., 'When is a shipping container not a shipping container? When it's a farm', Gizmag, March 24 2015, viewed May 4 2015
<http://www.gizmag.com/freight-farms-cropbox-shipping-container-farms/36689/>

Roberta's Grows, viewed May 4 2015 <http://robertasgrows.tumblr.com/>

Roberta's Pizza, viewed May 3 2015 <http://www.robertaspizza.com/>

Roberta's Pizza, YouTube Channel, viewed May 4 2015
<https://www.youtube.com/channel/UC9OTAla0B97xO0fxQNHedkA>

Scholtus, P., 'New York's Waldorf Astoria Hotel, Home to 360,000 Bees', Treehugger, September 20, 2012, viewed May 4 2015
<http://www.treehugger.com/travel/seriously-local-honey-beehives-waldorf-astoria-hotel-new-york-city.html>

Sutton, R., 'Artisanal-Everything Roberta's Defies the Stereotypes', NY Eater, April 15 2014, viewed May 4 2015 <http://ny.eater.com/2014/4/15/6246051/restaurant-review-robertas>

Worden, S. & Hilvert, S., 'Brooklyn's Roberta's Pizza', Know Where Your Food Comes From, September 6 2011, viewed May 4 2015
<http://knowwhereyourfoodcomesfrom.com/2011/09/06/brooklyns-robertas-pizza/>

Zimmer, L., 'Roberta's Pizza in Brooklyn Grows its Own Produce in Shipping Container Greenhouses', Inhabitat New York City, June 22 2011, viewed May 4 2015
<http://inhabitat.com/nyc/robertas-pizzeria-in-brooklyn-grows-its-own-produce-in-shipping-container-greenhouses/robertas-pizza-table/>

APPENDICES

1. Interviewee index
2. Interview guideline
3. Overview: Result tables

1. INTERVIEWEE INDEX

Link to audio recordings:

<https://www.dropbox.com/sh/9z91rlhq9tix05r/AAAQuxRN6NVol1cnCBwl2T2Pa?dl=0>

Case: Kono Designs

Date of interview: 11 March 2015

Type of actor: Architect

Name: Yoshimi Kono

Position: Founder, Kono Designs

Gender: Male

<http://www.konodesigns.com/>

Case: AeroFarms

Date of interview: 20 March 2015

Type of actor: Vertical Farm

Name: Marc Oshima

Position: Chief Marketing Officer

Gender: Male

<http://aerofarms.com/>

Case: Freight Farms

Date of interview: 25 March 2015

Type of actor: Food System Supplier

Name: Caroline Katsiroubas

Position: Marketing Manager

Gender: Female

<http://www.freightfarms.com/>

Case: Freight Farms

Date of interview: 19 March 2015

Type of actor: Food System Supplier

Name: Jon Friedman

Position: President, Co-founder

Gender: Male

<http://www.freightfarms.com/>

Case: Andrew's Honey

Date of interview: 18 March 2015
Type of actor: Beekeeper
Name: Andrew Coté
Position: Beekeeper, runs family business
Gender: Male
<http://andrewshoney.com/>

Case: Andrew's Honey (no recording, notes from casual conversation)
Date of interview: 25 March 2015
Type of actor: Host of beehives
Name: Judi Harvest
Position: Artist, running her own business
Gender: Female
<http://www.judiharvest.net/>

Case: Oko Farms
Date of interview: 20 March 2015
Type of actor: Urban aquaponics farm
Name: Yemi Amu
Position: Co-founder
Gender: Female
<http://www.okofarms.com/>

Case: Roberta's Pizza
Date of interview: 10 March 2015
Type of actor: Restaurant, urban farm
Name: Melissa Metrick
Position: Head Gardener
Gender: Female
<http://www.robertaspizza.com/>

Case: Roberta's Pizza
Date of interview: 27 March 2015
Type of actor: Restaurant, urban farm
Name: Jane Orgel
Position: Kitchen Manager
Gender: Female
<http://www.robertaspizza.com/>

Case: Roberta's Pizza

Date of interview: 10 March 2015

Type of actor: Restaurant, urban farm

Name: Brandon Hoy

Position: Co-founder

Gender: Male

<http://www.robortaspizza.com/>

Case: Expert on urban agriculture/vertical farming

Date of interview: 5 March 2015

Type of actor: Expert

Name: Dickson Despommier

Position: Retired professor of Microbiology and Public Health at Columbia University

Gender: Male

<http://www.verticalfarm.com/>

Case: Apt. 2B Baking Co

Date of interview: 25 March 2015

Type of actor: Food blogger/Food photographer

Name: Yossy Arefi

Position: Blogger, running her own business

Gender: Female

<http://www.ap2bbakingco.com/>

2. INTERVIEW GUIDELINE

Topics for conversation

*UA = urban agriculture

WHAT?	QUESTIONS	WHY?
BACKGROUND	Name and position? Tell us a bit about yourself? Tell us a bit about (your business/this business you're working at) - how it started etc?	<i>Opening questions to get a better picture of interviewee, allowing them to relax</i>
GENERAL ABOUT URBAN AGRICULTURE	How did you first come across/get in contact UA? Why UA? Why [xxx] work with UA? What makes UA important?	<i>Uncover why interesting - are there values there?</i>
VALUES		
GENERAL VALUES	When eating and buying food - what's most important to you? Why is "this" (your practice) important? What value do you see that you/your business/UA bring to the city?	<i>Understand more general food values, Discover salient values of UA</i>
PRODUCT VALUES	What's most appreciated with your product? Is there anything special that you or your consumer values in it?	<i>Discover values of their offering, See values connected to urban agriculture and urban agriculture produce</i>
PROCESS VALUES	Can you tell me about your own and your consumer's attitudes/perception towards your production?	<i>Discover values connected to the production process</i>
EMOTIONAL VALUES	Who is your typical customer? What are they looking for?	<i>Discover any values connected to identity, experience, associations, memories</i>
LOCATION VALUES	Where do you sell your produce - why there? What does the selling process and place look like? Packaging?	<i>Discover values connected to time and space</i>

COMMERCIALISATION		
	<p>Apart from the "good food" why do you think people come here/buy your product?</p> <p>What other things do they value with regards to your business/food/architecture...?</p> <p>Describe the value network you work within... - what's the value for them to work with you? UA?</p> <p>Challenges/opportunities?</p> <p>Who is your customer/end consumer?</p> <p>How do you reach them?</p> <p>Who are the end consumers?</p> <p>How do you sell the idea/product? What are you communicating? What arguments do you use?</p> <p>What's the market pull?</p> <p>Do you have to educate the customer?</p> <p>How do you communicate the values attached to you?</p>	<p><i>Discover relations between actors, values within these relations, Discover how consumer is reached, How are values brought to the market</i></p>

This table is an overview of what questions we used as a basis when interviewing the different actors. The questions worked as support in what most often became a natural discussion.

3. OVERVIEW: RESULT TABLES

PRODUCT VALUES

HEALTH BENEFITS*	Most cases of urban agriculture use way less or no chemicals/pesticides/fertilisers than traditional agriculture which results in healthier produce. The controlled environment in high tech farming facilities reduces risk of food being contaminated, increasing food health safety. The high tech farm produce is very clean as a result of the growing technique (no need to wash).
SUPERIOR SENSORY PROPERTIES	Freshness at point of consumption is higher since the produce does not have to travel far and can be harvested at point of maturation. This elimination of long transports keeps the produce itself tastier (since it can be consumed within hours of harvest) and more beautiful as it's not bruised during travel. Also packaging design can be kept to a minimal enhancing the looks of the product better. The concentration of nutrition in high tech farming solutions can give rise to a heightened fragrance.
HIGHER NUTRITIONAL VALUE	Produce can be harvested and eaten at peak maturation, without a degeneration of the food thanks to a short time to table, this keeps the nutritional value of produce at peak.
VARIATION	Allows for actors (such as restaurants) to grow rare or unique ingredients which might be hard to come by otherwise. New farming techniques allows for cultivation of wider assortment of produce as well as the resurrection of produce which has been "lost" when optimising traditional commercial farms.
CONSISTENCY/PREDICTABILITY*	The product is predictable in terms of both quality and quantity. This is beneficial for all industry actors since demand can be met with more accuracy and the product consistency eliminates unnecessary waste.
ECONOMIC VALUE	The product consistency allows food actors to keep price consistent, without unpredictable fluctuations. To a restaurant it can also be cheaper to grow certain rare produce themselves, which can be expensive to buy at the regular market.

**True for high tech urban agriculture solutions (e.g. vertical farms)*

PROCESS VALUES

SUPPLY CHAIN BENEFITS*	High tech solutions in cities allows producer to control timing, volume, type of produce and adjust this to demand - resulting in a reliable, responsive and stable supply chain. This stability has economic benefits since it is very predictable and thus e.g. any sudden price dumping or unnecessary waste can be eliminated.
------------------------	--

ENVIRONMENTAL CARE	Reduced transportation means a lower carbon footprint. New urban agriculture techniques are also better for the environment as they reduce water waste/usage as well as using no/less pesticides/fertilisers which eliminates/reduces harmful run-off.
EDUCATION/INSPIRATION	Restaurant (or store) employees' closeness to growth of produce can have educational benefits. The experiential value of having the production close by allows customers (e.g. restaurants) to participate and contribute to the cultivation as well as works as a source for inspiration for food workers such as chefs.
PROXIMITY	Having the production process close to consumption increases the understanding of food among the value network as well as consumers since it is made more accessible. Further more it reduces time to table as well as transportation costs and processes.
EFFECTIVE/EFFICIENT*	Most high tech urban farms has a higher productivity/area, is energy efficient in use of light and water, has a faster production (growing) cycle. Effectiveness is increased as produce does not have to be re-packaged as it goes directly from farm to table (or at least farm to restaurant/store).
EMPLOYEE BENEFITS*	The limited use of chemicals in high tech production has positive health benefits for people working within the farm, further more the work is not as labour intensive as on a regular farm since much can be automated. Bringing production close to a store or restaurant can have relaxant benefits for employees.
TRANSPARENCY	Bringing the production close to the consumer heightens the source and supply chain transparency as the produce origin is made visible.

**True for high tech urban agriculture solutions (e.g. vertical farms)*

EMOTION VALUES

ETHICAL/MORAL	Growing food close to consumption has less negative connotations in terms of health, ethics and emissions. There is an ethical and moral aspect of urban agriculture saving water and energy, as well as reducing pollutant run-off and carbon emissions. It gives consumers a way to support sustainable food production.
ENJOYMENT	The urban spots of green give rise to joy among employees, clients and community. They can also be a place for relaxation from a busy urban atmosphere.

ATTACHMENT/BELONGING	Buying locally grown food can give rise to a sense of belonging to the local community and create an emotional connection to the world and our environment. Since the produce has a visible story of local innovation it can create an attachment to the food - being able to see the produce being grown. It re-connects people to the food they eat by being able to showcase the origin and the cultivation of it. By bringing it to where the consumer lives emotional bonds can be created.
----------------------	--

EMOTION VALUES

ETHICAL/MORAL	Growing food close to consumption has less negative connotations in terms of health, ethics and emissions. There is an ethical and moral aspect of urban agriculture saving water and energy, as well as reducing pollutant run-off and carbon emissions. It gives consumers a way to support sustainable food production.
ENJOYMENT	The urban spots of green give rise to joy among employees, clients and community. They can also be a place for relaxation from a busy urban atmosphere.
ATTACHMENT/BELONGING	Buying locally grown food can give rise to a sense of belonging to the local community and create an emotional connection to the world and our environment. Since the produce has a visible story of local innovation it can create an attachment to the food - being able to see the produce being grown. It re-connects people to the food they eat by being able to showcase the origin and the cultivation of it. By bringing it to where the consumer lives emotional bonds can be created.

PLACE VALUES

AVAILABILITY/ACCESSIBILITY	Using new technologies food can be made available no matter climate and time of year, seasonal dependency can be removed. This is also one way of overcoming food deserts and creates access to fresh produce in places where soil or weather conditions does not allow for regular agriculture. From a consumer perspective there is also the convenience of being able to "pick and eat" - having fresh food grown just around the corner.
EXPERIENTIAL VALUE	Growing food is a way of creating small oases in the urban environment, beautifying the space and bringing life to the city. It can also be part of enhancing a specific customer experience and makes the production visible to consumers, adding to the story of a brand. This story or experience can work as a conversation starter for a brands benefit.

INCREASED SPATIAL VALUE	Otherwise unused space can be filled with value, e.g. placing an edible plant in the place of a statue or making an abandoned lot green, which generates both pleasure and food.
-------------------------	--

SOCIETAL VALUES

ECONOMIC BENEFITS	Urban agriculture brings new business to local economies and creates jobs in urban communities. In the long run exposure to healthier food (such as fresh greens) can have health benefits for the population that in turn can save medical costs.
EDUCATION OF SOCIETY	By bringing the cultivation of food into the city the urban population learn about eating fresh food, where the food comes from as well as how it's grown. Further more urban agriculture can work as an asset for schools in the teaching process.
ENVIRONMENTAL STEWARDSHIP	Exposing urban citizens to nature and the powers she as to produce foods can have environmental impact as it creates understanding and respect for our environment - a stewardship.
HEALTH BENEFITS	Exposure to healthy food creates a demand for healthier products, impacting what people choose to eat, which in the long run can impact the health of the society.
ATTRACTION	Green spaces filled with food in an urban neighbourhood create a space for recreation and work as an urban attraction (similar to a museum or park). It also greens the neighbourhood and works as a source for inspiration showcasing to the community the possibilities of what can be done in a city.

JUDGEMENT DEVICES

NETWORKS	Word of mouth (WoM) is maybe the most important factor in showcasing the values of urban agriculture, both in person and online. Recommendations from friends and family seem to be spreading the word. One example being the "Freight Fans" advocating the mobile urban farm.
APPELLATIONS	Labelling is used, where it is clearly stated on packaging (and menus) that the produce is grown urbanely and locally. There are also examples of piggybacking on other brands to achieve credibility - like Gotham Greens connecting their products to the set of values inherent within the Whole Foods brand. Strategic partnerships with government and community projects are also one way to fill

	urban agriculture with value and credibility.
CICERONES	PR is next to WoM the most used means for communication. Newspapers and bloggers writing about the urban agriculture brands and initiatives spreads the word - and since the phenomenon is quite new press seems to be highly self-generated. The innovative, unique and responsible feature of urban agriculture sells itself. Also online creational cicerones such as Kickstarter can have great impact.
CONFLUENCES	Ways of channelling the customer can be through tastings and samplings, or even through making value added products available. This together with personal selling at different events seems to be the way to go. Another way is through showcasing the production facilities through tours.
RANKINGS	At WholeFoods we've found rankings expressed through a comparison between urban agriculture-, organic and local produce, in terms of which is best for the environment.

COMMUNICATION TOOLS AND DEVICES

INTERNAL CHANNELS owned by actor				
	SOCIAL MEDIA content	HOME PAGE content	EVENTS inviting the market	DIRECT SALES meeting the market

AEROFARMS	Information about organic, vertical farms, educative links about UA, explaining the technology	AeroFarms farming and product advantages - both to consumer and producer, explanation of technology, comparison with regular farming, press clippings	Tasting and sampling events with retailers and chefs	Inviting retailers/chefs to taste, talking about the product and production
FREIGHT FARMS	Educative info about agriculture technology, images of produce and of containers, films from office and team, info about events, food and farming, reading tips showcasing benefits of UA	Customer benefits, customer testimonials, farm showcase video, the story behind the company & the team is presented	Farm tours, Farm touring around the US	Labelling of product 'farmed urbanely', bringing samples to external events,
ROBERTA'S PIZZA	"Garden Tumblr" showcasing greenhouse and produce in text and images, information on events and workshops. Pictures of harvest and garden life along with films of growing produce	Directions to "Garden Tumblr", tickets for garden tours	Garden workshops and tasting tours	Telling the story behind the food at the table
OKO FARMS	Inspirational images, pictures from workshops, pics of greens and the aquaponics practice and process	Story behind OF, info about aquaponics technology/technique and benefits, info about tours, workshops & team	Workshops, tours, training programs	Open to public; allowing passers by to experience farm and pick up produce
ANDREW'S HONEY	Showcasing production, product, happenings and events, the "everyday" of Andrew's Honey	Info on where to buy Andrew's honey	—	Taste samples at point of sales, Andrew himself selling the honey, telling the story

EXTERNAL CHANNELS			
	INFLUENCERS who is helping?	PRESS what's been said?	EVENTS participation
AEROFARMS		How AreoFarms is helping out both environment and the local community (economically) as well as being technology pioneers	Summits, forums, trade shows, innovation festivals, other food event colabs
FREIGHT FARMS	Using online amplifiers (Kickstarter) to tell the vision of, using 'Freight Fans' (community)	a way of empowering people to grow food, the story of farm-to-table and local food, 'place' borders are breached, portrayed as the future of sustainable food	Trade shows, summits, conferences, city meetings
ROBERTA'S PIZZA	Sustainable Food Radio station located at premises (Heritage radio)	The food with local sourcing is in focus, stories of fresh sustainable vegetables and the contribution to the Bushwick community	—

OKO FARMS	Strategic partnerships with communal/governmental projects	The aquaponics technique is in focus along with the uniqueness with this in NYC. Oko Farms portrayed as educator of children & community on environmental topics	—
ANDREW'S HONEY	Partnerships with other brands who want hives on their land/roof (Google, Waldorf Astoria)	The story about Andrew himself and collaborations with places such as Waldorf Astoria is in focus, being awarded best NYC local honey	Farmers markets