How markets contribute quantitatively and qualitatively to local food consumption?

A comparative study between Almere and Angers.

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Introduction

The world is undergoing the largest wave of urban growth in history. Since 2007, more than half of the world's population has moved to towns and cities, and by 2050 this number will increase to reach 66% of the world's population. This growth will mostly occur in the urban areas of less developed countries.

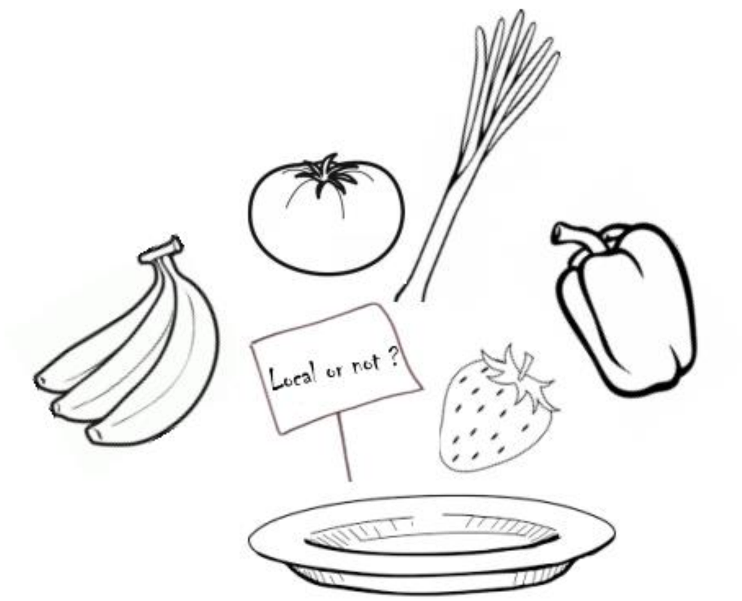
Faced with such an urbanization, cities must provide healthy, sustainable food to all their inhabitants. If they do not adapt their new realities, the expected boost in urbanization and population growth could further increase the vulnerability of urban dwellers to sudden crises in agricultural markets.

Many cities strive to develop sustainable food systems that are inclusive, resilient, safe and diverse and that provide healthy and affordable food to all people in a human rights-based framework.

To do so, cities promote local food production and consumption.

We will focus on markets, especially on two European cities, Almere in the Netherlands and Angers in France, and try to understand how markets contribute to local food consumption, restricted to fruit and vegetables.

First, we will identify the context of the study, made with the cities of Almere and Angers, to highlight their differences and their similarities. Next, the field observations carried out in the two cities will allow us to evaluate the importance of the supply of local fruits and vegetables in the markets of Almere and Angers. A survey will enable us to understand the motivations of consumer purchases. From these studies, we will be able to answer the main research question: how do markets contribute to local fruits and vegetables consumption.



Part 1: The general context and the central research question.

We eat every day and, for most of us, several times. But what influences our diet and what drives our daily purchases? This preliminary question seems necessary before comparing local food consumption between the two cities which are distant of 800 kilometers.

We will first identify the inhabitants in both cities : "those who cook and eat". We will also give contextual information (history, urbanism, eating habits,…) and say a few words about food trends. Finally, we will try to understand the ecosystem of these two cities, before starting a discussion on the contribution of markets to the consumption of local fruits and vegetables

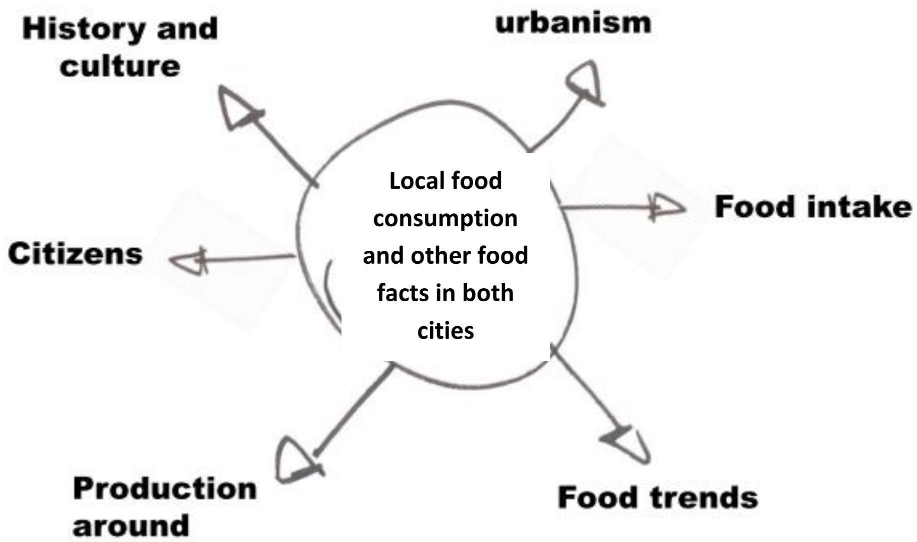


Figure 1: Framework of study

11-Almere v Angers

111- A young and dynamic city facing a historic and quiet one.

Almere is a new city, less than 248km², in the Netherlands, in the province of Flevoland. Flevoland is a polder; an area of land lying below the level of the surrounding water. The entire city lies 2 to 5 meters below sea level. Drainage and current water levels are artificially regulated by five pumping stations.

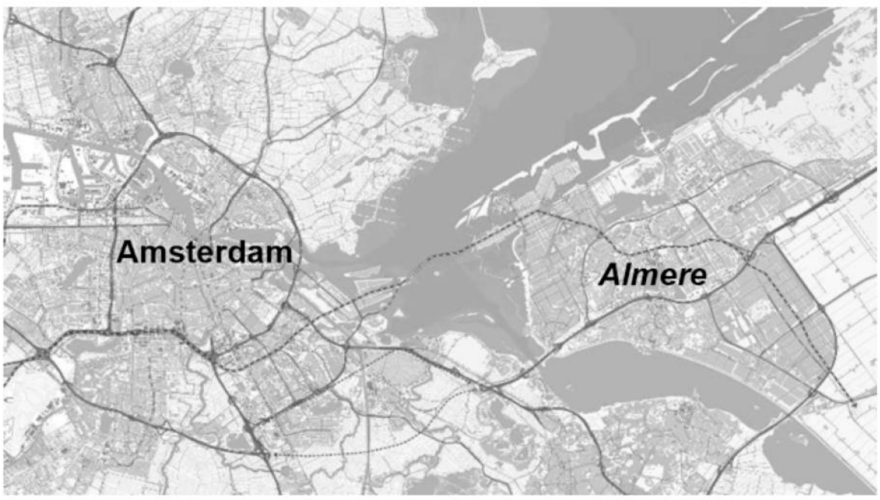


Figure 2 : Location of Almere

In 1971, the northern part of the Randstad conurbation is overcrowded.The Central Government decided to build a new city in the Ijsselmeer polders: Almere. The first house was finished in 1976, and Almere became a municipality in 1984. Over a period of 40 years, Almere developed into a city with 200,000 inhabitants and in October 2007, the city council of Almere settled an agreement with the government to expand the city with 350,000 inhabitants by 2030.

Almere will have to double in size over the next decades. This expansion should be sustainable, carbon-neutral and as self-sufficient as possible. In compliance with the urban strategy Almere 2.0, in 2030 Almere will be the fifth largest city in The Netherlands following Rotterdam, Utrecht,

Angers is an old city, with a long history. It was called *Andecavorum,* in the Antiquity. Today, the city of 151 000 inhabitants extends over 42,7km^2 within the Loire Valley. It is a low-lying territory, between 12m to 64mheight.

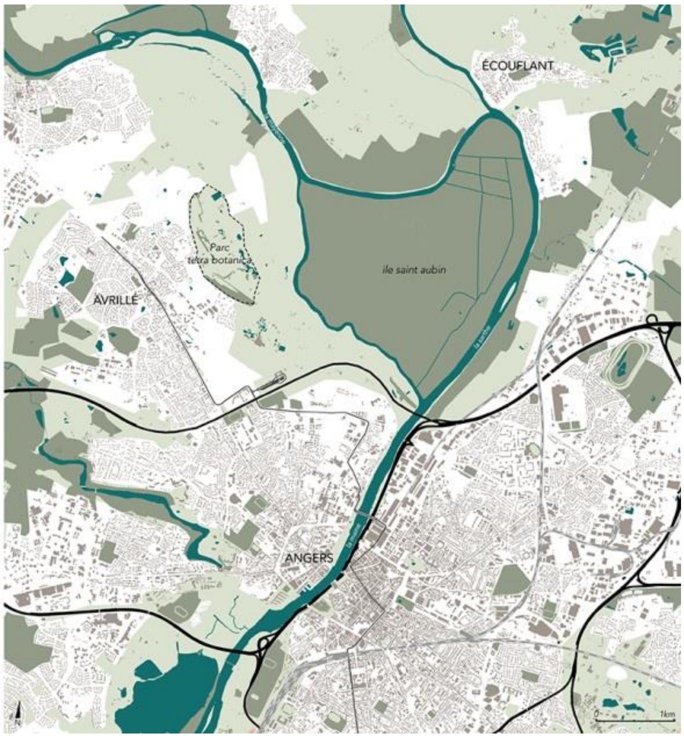


Figure 3: Location of Angers

Figure 4: Geological map (Maine et Loire)

This region is crossed by the Loire, the longest (630 miles) and the wildest river in France. The city is in the south of the confluence of the Loir, the Mayenne and the Sarthe, which form together the river the Maine. The Maine crosses Angers, and flows into the Loire. The Loire Valley is recognized for its rich heritage, particularly for its wines, its castles and its historic gardens. The Loire Valley is also recognized for its production of fruit (apple, pear) and vegetables.

Angers is located on the border of the Armorican Massif and the Paris Basin. This situation explains that inhabitants enjoy different landscapes on these varied soils. It is a real asset for the city of Angers, especially for agriculture. For many years, a lot of companies have specialized in ornamental plants, seeds and medicinal plants. The north of the region, called Anjou, includes many dairy farms: milk is used for butter, cheese or milk powder for children.

Angers is the center of an urban area, consisting of 33 municipalities. It's a dynamic city through its localization (300km from Paris, and 120km of the Atlantic Coast).

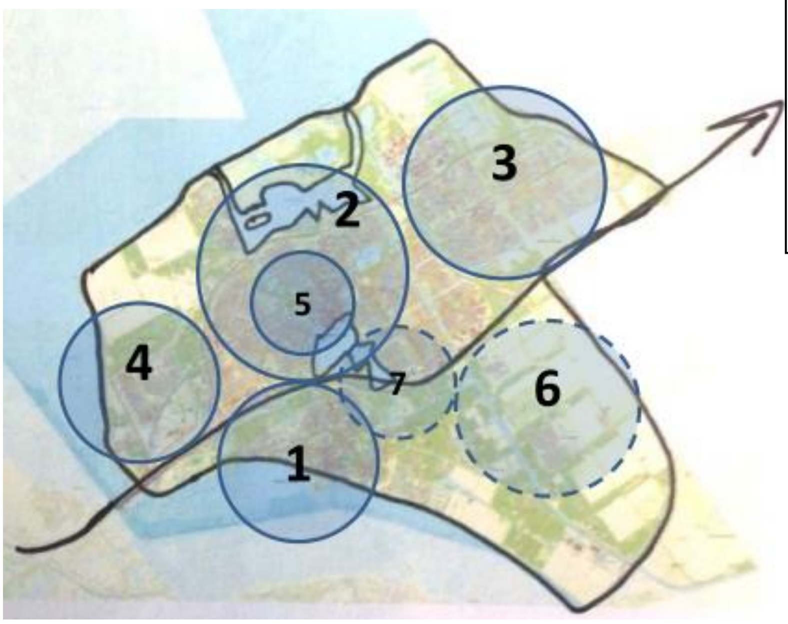
From an economic point of view, Angers has 14 000 companies, accounting for 141 000 jobs, around three strategic branches: plants, professional electronics and health-biotechnology-pharma. The city is also developed in the sectors of the green economy, creative economy, digital industry and tourism. Angers is a world competitive cluster for plants, called Vegepolys (https://www.vegepolys.eu/) which gathers companies, research and training centers and, in the field of vegetables, around innovative projects.

Angers is a city which distinguishes itself in France by its green commitment. In 1992, the city adopted a charter for developing urban ecology and in 1994, it signed the charter of Aalborg for sustainable European cities. The numerous green spaces inserted at the heart of the city and in the outskirts, offer inhabitants a real quality of life. In 2014, Angers became the first green city in France.

Angers is a cultural center. Indeed the city benefits from an important tourist attraction, because of its history, and organizes numerous festivals, in particular with shows and street arts, movies festivals and urban art.

112- Urbanism, so different!

Almere is a new town, built on a reclaimed polder. It was planned and built after the ideas of Ebenezer Howards Garden City: the town's spatial form consists of a polynuclear structure, with a few main centers. Almere includes a number of urban districts, each built in its own period according to the insights and experience at that time (https://english.almere.nl/the-city-of-almere/districts/#c2229). The resultant differences in character are further enhanced by the broad green zones separating the urban districts.



1-Almere Haven (first nucleus – 1974)
2-Almere Stad (second nucleus -1980), include 5- Almere City Center (2005-2008)
3-Almere Buiten (1980)
4-Almere Poort (2008)
6-Oosterwold area
7- Floriade area (2022)

Figure 5: Almere urban districts planned and built like a bunch of grapes

The first district was Almere Haven, built in 1974. The first inhabitants of Almere Stad district arrived in 1980. Four years later, the first settlers arrived in the Almere Buiten district. The last ones are Almere Poort and Oosterwold Area.

The central station is located at Almere Stad, which represents the main city-center, where most cultural and shopping sites are located. A walking boulevard extends right from the train station, with shops and restaurants on the ground level, and apartments above.

It seems that Almere long had a negative public image outside, seen as a suburban dormitory town, where there was nothing to do, and et the same time, the residents were often very positive about their town, praising the quality of life (peaceful, quiet and green spaces).

Accessibility is a key feature in Almere: city buses run along bus-only roads and a separate system of bike lanes makes it easy and comfortable to travel by bike. Almere's urban form is fairly compact, and each inhabitant has access to services (stores, schools), all at walking or riding distance ride. Most residents are no farther than 500 meters from green areas.

The World Expo Floriade Amsterdam Almere will be sited in Almere in 2022, on the south side of the lake "Weerwater". This recreational lake is located in the heart of the city. Floriade 2022 will establish a "green" city district: pleasant, healthy and self-sufficient.

Angers is an old city, marked by waves of different types of urbanization. The city grew, especially in the seventies with the building of new neighborhoods like Belle Beille, Monplaisir, and Roseraie, then in the eighties (Justice, Lac du Maine) and more recently with the Capucins district in the north. So Angers consists of a number of urban districts, each built in its own period. The resultant differences in character are important.

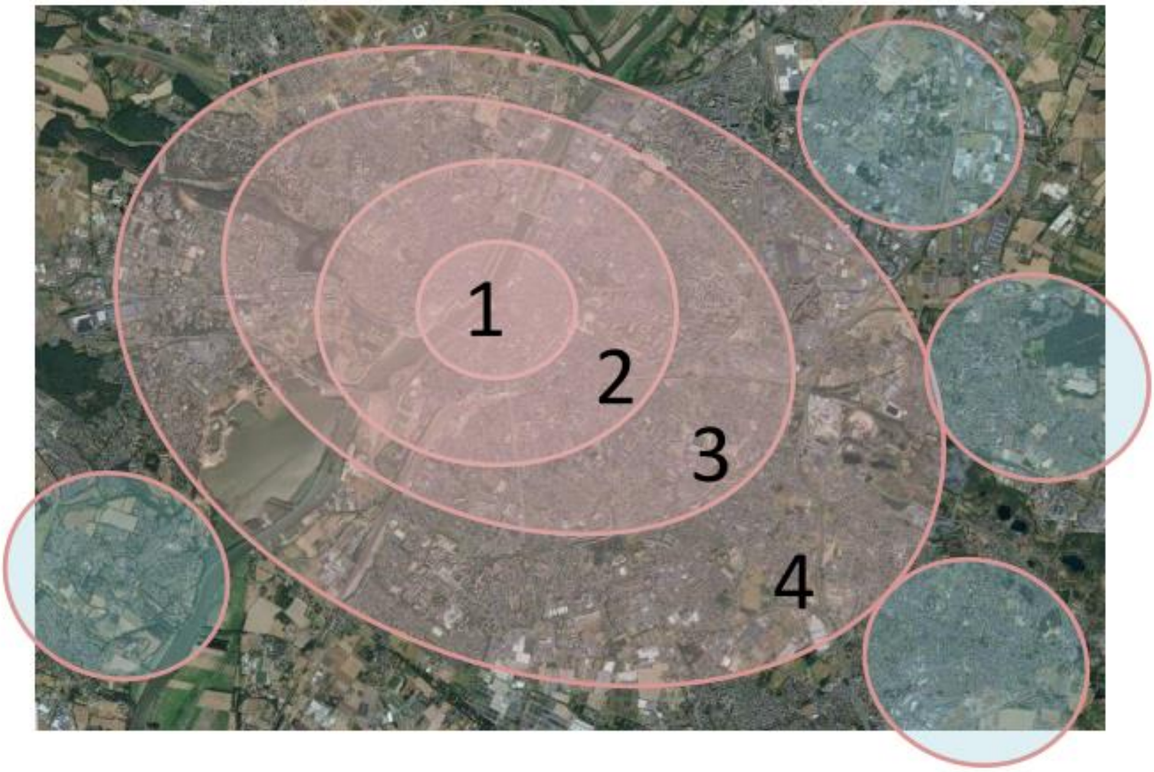


Figure 6: Angers, an old city, marked by waves of different types of urbanization

The districts built in the seventies consist of high buildings, surrounded by ornamental green area. After fifty years, they benefit from heavy and necessary renovation. We usually find community gardens in these districts, to answer the inhabitants' desire for gardening and to promote social cohesion.

Since the 1980s, "peri-urbanization" has become widespread, both regionally and nationally.

The individual house, a new form of urban development, has emerged. The desire for an individual house, with a garden, strongly participated in the development of this urban form. Urbanization in the Lac du Maine and Justice Districts are based on individual houses with gardens.

Outside the town center, the inhabitants in Angers have gardens for growing fruit and vegetables (kitchen garden). It reinforces the production and the consumption of local food.

A few years ago, the municipality decided that urban development should adapt to limit the consumption of space. Nowadays, we find more small collective, town houses, small plots instead of individual houses.

113- Who live in these two cities?

In 2009, Angers had 147,305 inhabitants, 0.3% less than ten years before. The city is the 18th most populated city in France, having reached its maximum population in 2006, with 152,337 inhabitants.

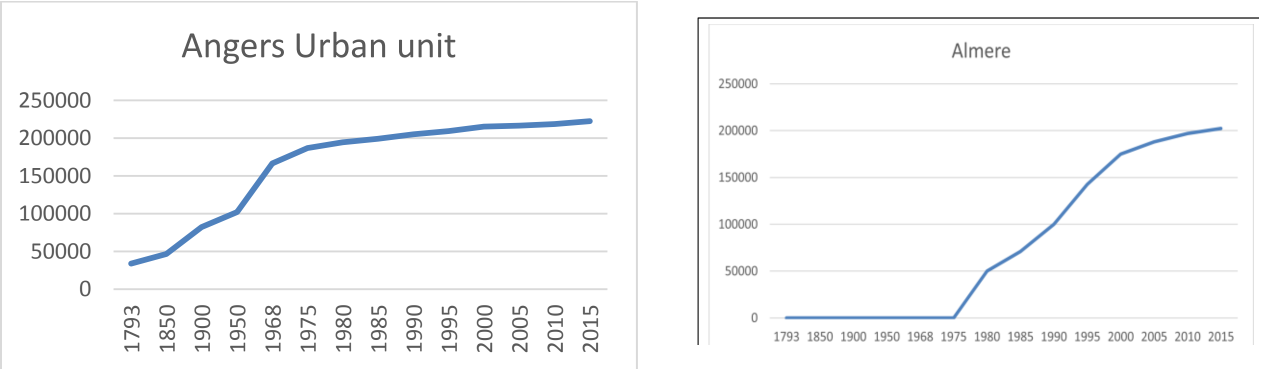


Figure 7: Population levels in Angers and Almere

In 2009, the urban area, which encompasses Angers plus nine surrounding city (188.6 km²), had 215,132 inhabitants. The metropolitan area included in 2009, 133 communes, 394,710 inhabitants on 2,353.8 km².

The population of Almere reached 200 914 inhabitants in 2017, but unlike Angers, a rapid growth is expected with the buildings of new districts (350 000 inhabitants in 2030).

Almere is a young city, with young people. 56% of the inhabitants are under 40, and only 20% were born in Almere.The largest shares of its population are to be found in the strata of the younger ages from 0 to 19 and the working ages from 35 to 55. Consequently, the population structure is young but with a risk of a growing aging population in the future. This risk will be further explored using the dependency ratios (*City Profile Almere Factsheet,By Hammash M. and Marskamp M).*

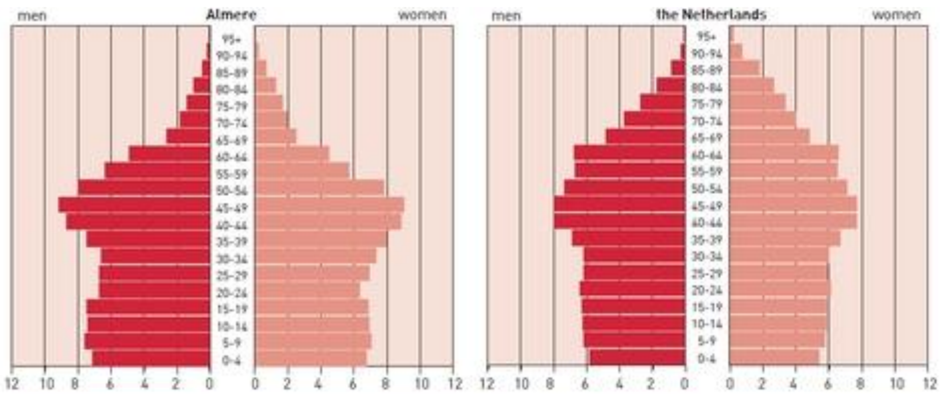
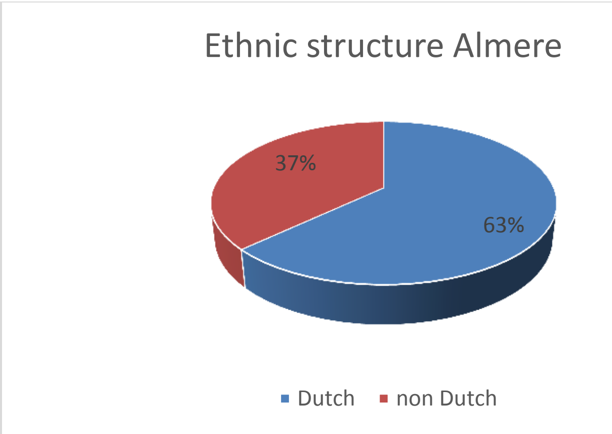


Figure 8: Population according to age. Almere vs Netherlands (*https://english.almere.nl/the-city-of-almere/population/)*

The ethnic composition of Almere was formed by 63 percent Dutch and 37 percent non Dutch in 2010. Of the non-Dutch, 74 percent are of non-western origin, with the main representations of Surinamese, the others are non-western, Moroccan and Netherlands Antilles and Aruba



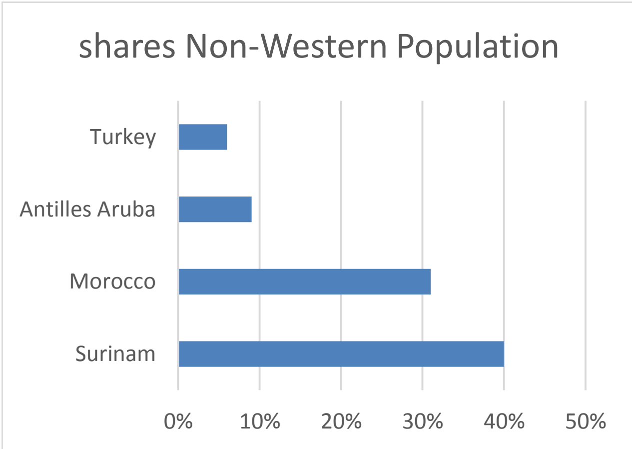


Figure 9: Ethnic composition in Almere (http://www.metropop.eu/ramon/cityprofiles2011_examples/FactsheetAlmere.pdf)

There are approximately 185 nationalities, which confers to the city a particular identity (melting-pot).

People from Suriname are the most numerous ethnic populations (about 40% of non-western ethnic population).

Suriname people often associate Almere with Paramaribo – the capital of Suriname and chose it for settling.

The district of Almere is one of the most concentrated lands in The Netherlands with Dutch population of Surinamese origin (more than 4.2%), in the city – it is about 11.4%.

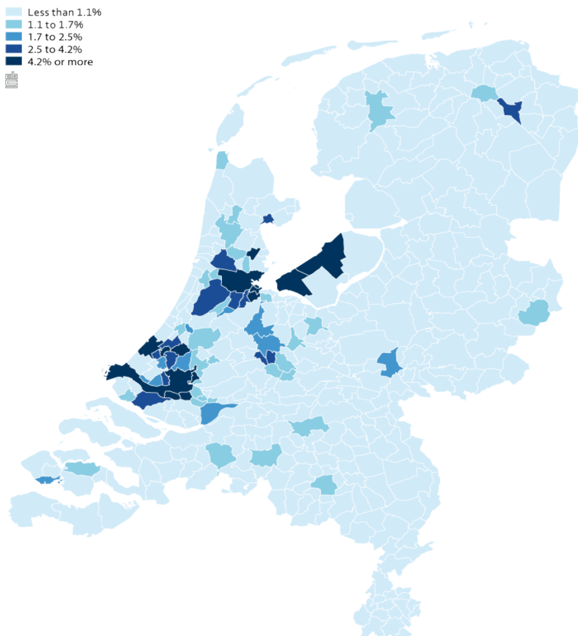


Figure 10: share of the Dutch population of Surinamese origin- 2015

The foreign population in the city of Angers, according to INSEE (The French National Institute of Statistics), accounts for 7.3% of the total population.

In the same year, the percentage of foreigners in total population in France was 11.6%. This lower percentage is due to the late urbanization and industrialization, compared to other French regions. The small quantity of

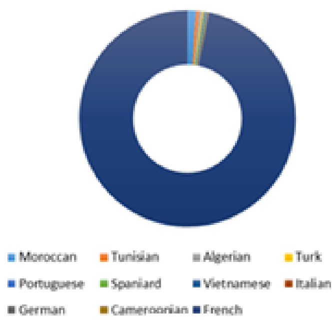


Figure 11: Graph of the foreign population Angers - 1999

jobs offered in the building and construction sectors also explains this rate.

Since the sixties, most immigrants have settled in Angers from Maghreb countries, like Morocco, Tunisia or Algeria. But immigration in Angers also includes a large proportion of people from Sub-Saharan Africa and from Asia. The immigration rate has increased since the sixties.

These foreign populations settled on the outskirts of Angers, not in the center of the city. This is a phenomenon which has been observed since the seventies, and is linked to family reunification as well as social housing policies. The percentage of foreigners is variable depending on neighborhoods.

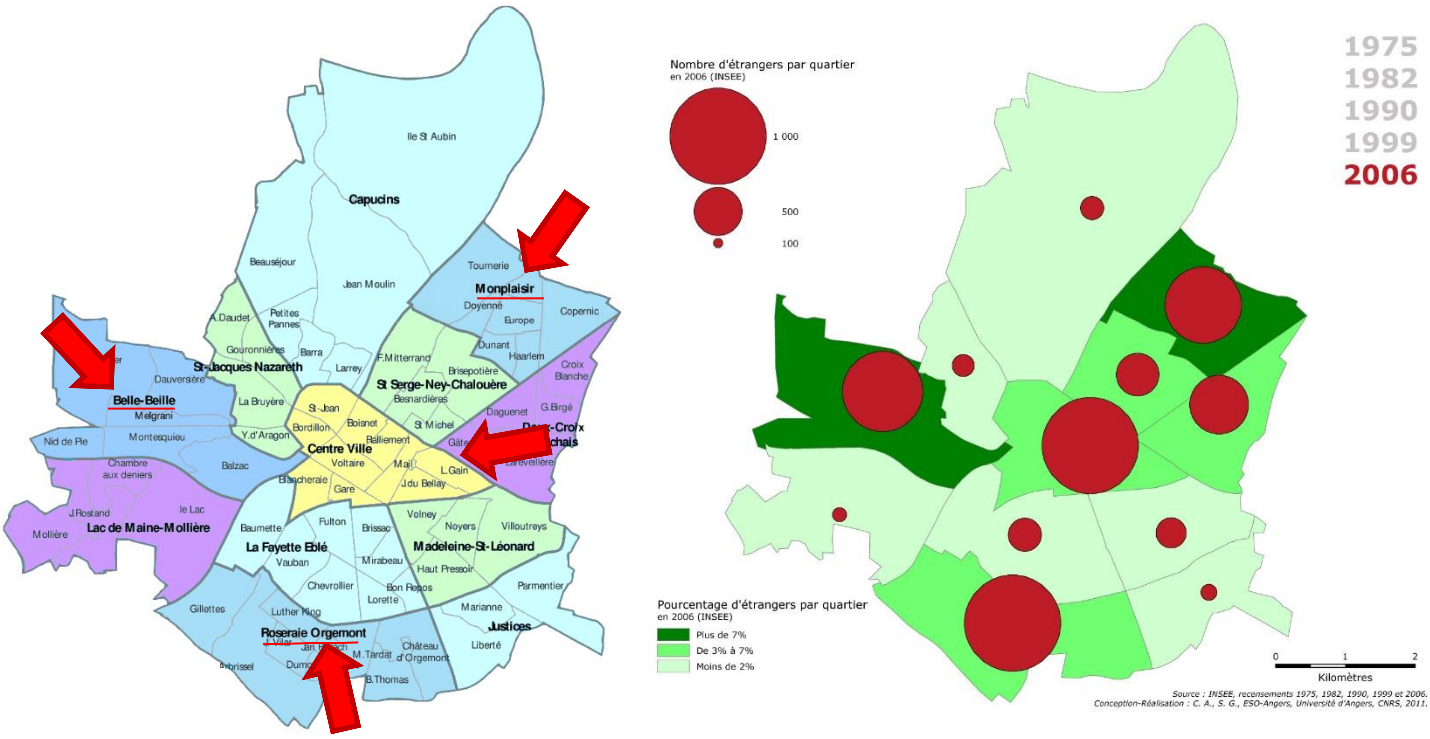


Figure 12: Number of foreign people per districts –Angers.

Today the phenomenon can still be observed. However it is important to notice a small islet in peri-center: Savary. The neighborhoods of Monplaisir, of Belle-Beille and of Roserais Orgemont have higher emigration percentages.

The population of the city is relatively young. In 2014, 30% of the inhabitants were aged between 15 and 29. Angers is a very attractive city for students, as it has many schools and several universities. There are 30 000 students in Angers (http://www.memo-ville.com/pays-de-la-loire/maine-et-loire/angers/_demographie/)

1.2- A few observations about food trends and daily food intake of the Dutch and French population

121- Food trends: health, purity, local and seasonal products

In France and in the Netherlands, the **health** trend concerns all social classes (except the less privileged). People are looking for ways to become healthier. The need to feel healthy drives people to follow certain diets.

The food industry is expected to evolve towards **purity**, abandoning unhealthy additives (lumped together as "E-numbers"), as well as unhealthy fats, salt, and sugar.

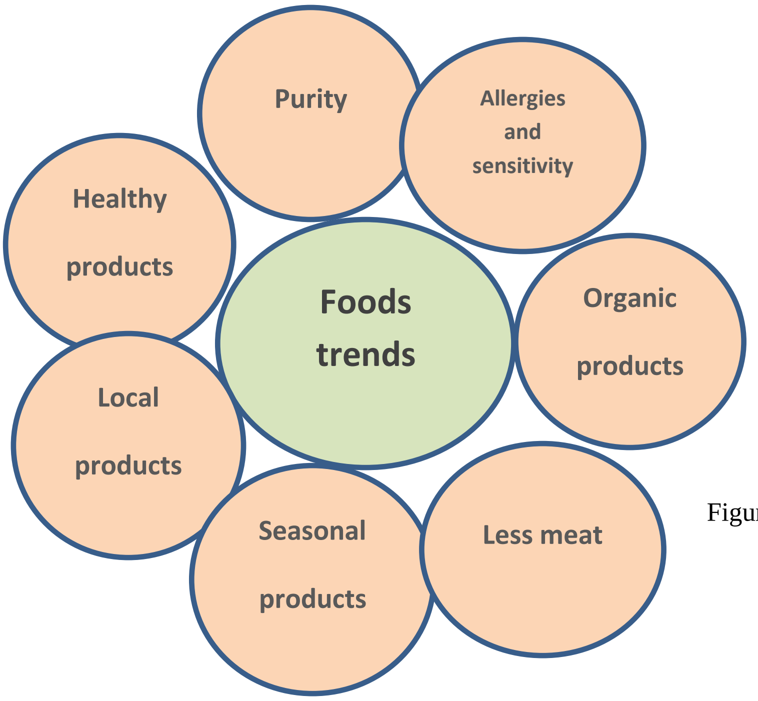


Figure 13: Foods trends

Sourcing **locally** means that more and more people prefer to eat food that was grown and processed in Dutch or European soils. People believe that the rules for food processing are much stricter in The Netherlands and Europe than elsewhere in the world and have become more aware of the environmental impact of transporting foods all over the world. The sourcing local trend has contributed to the rise of many farmers' markets, which allow consumers to buy their food directly from local farmers. The trend of eating **seasonal products** is closely linked to the trend of sourcing locally. An increasing number of people look for foods that are in season, in part because they tend to be cheaper, but also because they are usually more flavorful, locally grown, and believed to cater the most to our physical needs. (http://www.thecocreators.com/food-trends-netherlands/).

The popularity of organic products has increased rapidly in recent years. An increasing number of Dutch citizens are worried about industrial food. They are looking for fresh and healthy food.

122- Daily food intake of the Dutch and French population.

An adult daily food intake of the Dutch population weights a little more than 3 kilos. About 2 kilos originates from beverage. Other food groups with a high contribution to the daily food intake are breads, fruits, vegetables and potatoes. (Food consumption in the Netherlands and its determinants – RIVM Report 2016-0195)

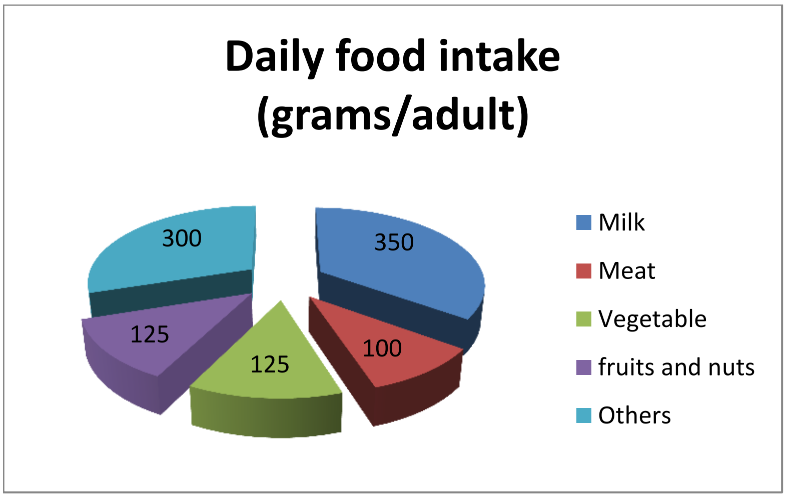


Figure 14: Daily food intake (Dutch population).

Adults Fruits consumption is about 125grams/day. Apple, Banana and Orange are the first three fruits consumed by Dutch women aged 7-69. Note that two of them must be imported.

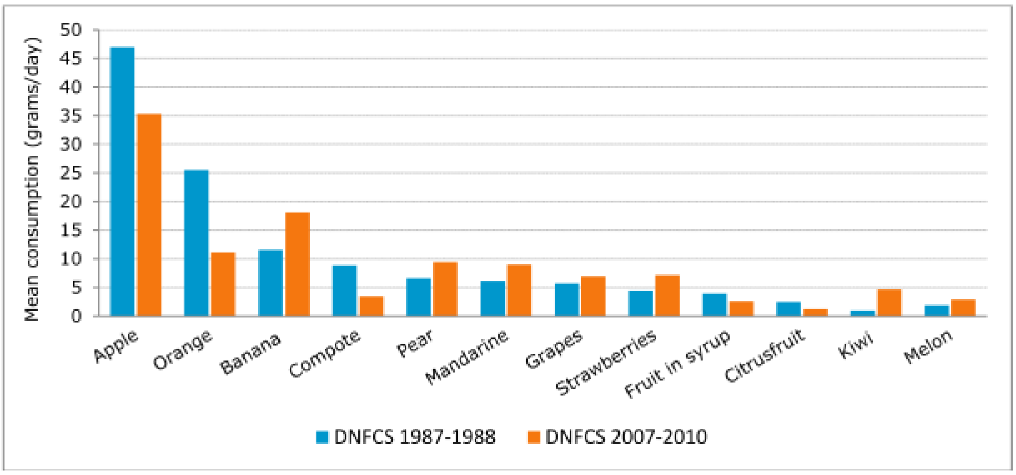
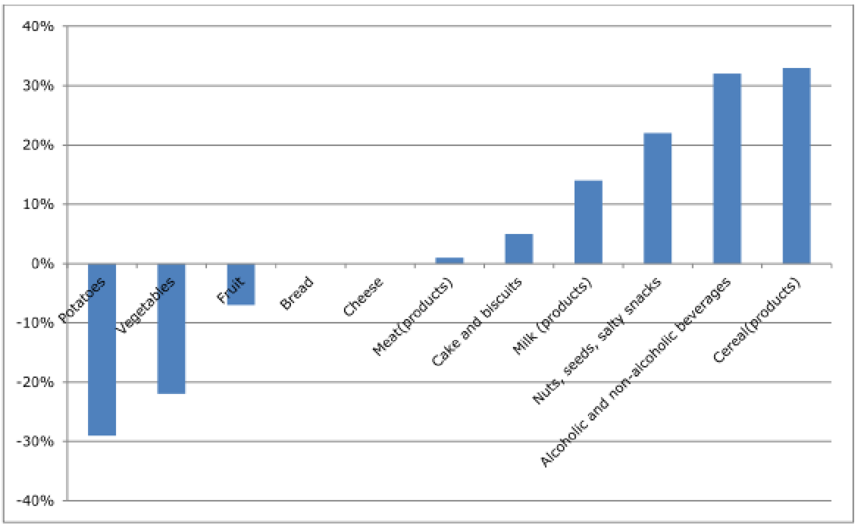


Figure 15: Popular fruit consumption (grams/day) by women aged7-69 in the Dutch National Food Consumption Survey of 1987-1988 and 2007-2010.



Between 2007 and 2010, adults consumed fewer potatoes, fruit (-8% approximately) and vegetables (-21%) compared to 1987and 1988). More recently, changes were observed: it seems that the consumption of vegetables has stabilized, and the consumption of fruits has increased for children.

Figure 16: Changes in mean food consumption (main food groups) of the Dutch population aged 31 to 50. Other age groups show similar findings.

The daily vegetable consumption advice is minimally 250 grams. Almost 75% of the Dutch think they eat enough vegetables, only 15% of the Dutch eat the advised 200grams.

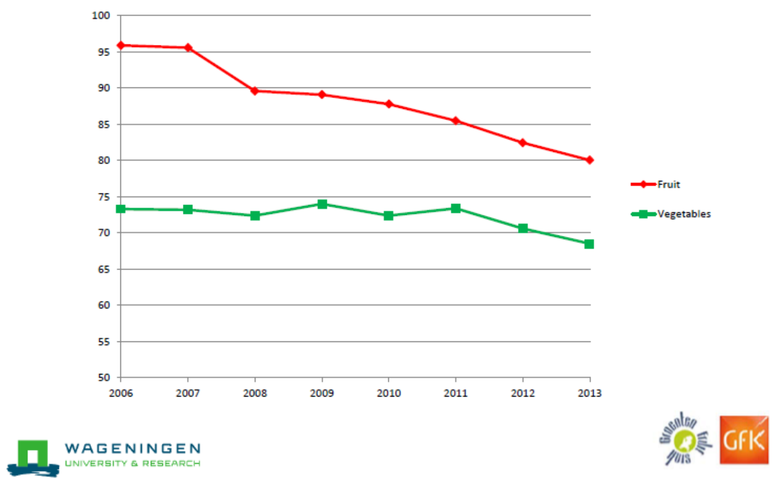


Figure17: Fruits and vegetables sales in NL
https://www.amsterdamproduceshow.com/wp-content/uploads/2016/04/Herman-Peppelenbos.pdf

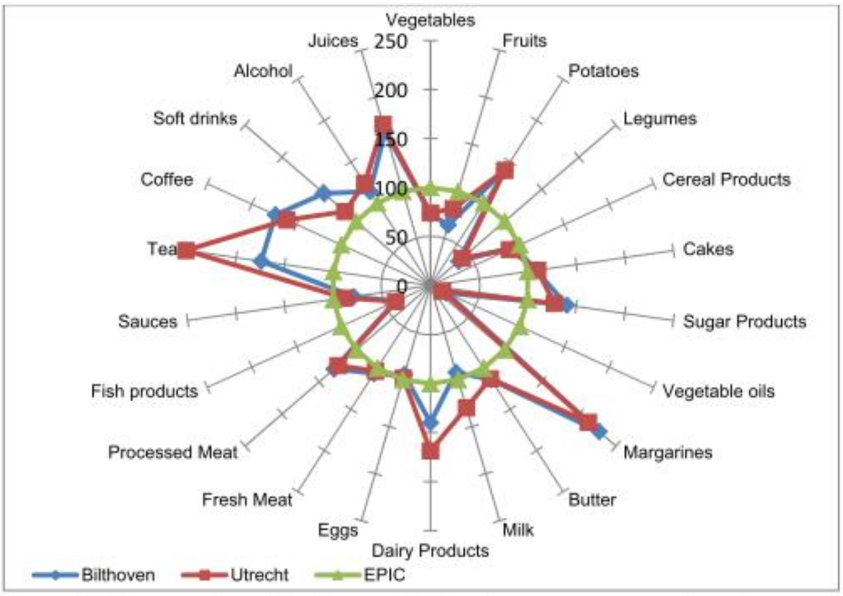


Figure 18: Consumption of food groups by Dutch women compared to other women included in the EPIC study

An adult daily food intake of the French population weights a little less than 3kg (2,9kg). About 55 percent originates from beverage. Other food groups with a high contribution to the daily food intake are vegetables (140 grams), fruits (140 grams), bread (126g), Soup (111g), and dairy products (85g)(http://www.aprifel.com/page-la-consommation-de-fruits-et-legumes,81.html).

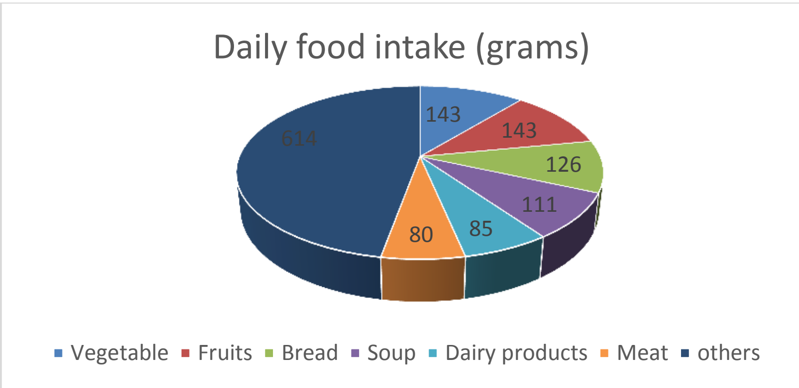


Figure 19: Daily food intake (French population).

Adults Fruits consumption is about 143grams/day. Apple (16kg), Banana (12kg) and Orange (10kg) are the first three fruits consumed by French adult.

Note that two of them must be imported. France is the third largest importer and the largest consumer market of fresh fruits and vegetables in the EU.

The consumption of apples in the EU is on average 15 kg per person. Regrettably a decline has been visible in the consumption of apples over the past few years. The downward trend is about 2% per year.

Since 2009, vegetable consumption has remained stable on an annual average, while fruit consumption has increased (+ 1.0% per year and per capita in volume). The consumption of fresh produce has to face to other products such as processed fruits and vegetables (compotes, frozen vegetables) or starchy foods (pasta, rice). This is due to change in dietary practices, new consumption patterns and reduced meal preparation time.

Fruit and vegetable also suffer from an erroneous image linked to the perception of high prices, in addition to the loss of benchmarks seasonals.

People in their 60s and 70s, who are respectively 19% and 17% of the French population, represent the base of fruit and vegetable buyers. But on the other hand, families with teenagers spend the most (5.8 € on average) and have the largest baskets (2.8 kilos on average).

<u>Conclusion: Comparison between the two cities:</u>

	Almere	Angers
history	created in 1976	old city (Antiquity)
Urbanism	poly nuclear	Nuclear
Population	202421	215132
perpective 2030	350000	249553
growth (percentage)	72% (extremely dynamic)	16% (dynamic)
ethnic (percentage)	37% (Cosmopolitan)	7,3% (homogene)
Age pyramid	56% under 40 years	30% between 15 to 29 year
Adult food intake (kg/day/person)	3kg	2,9kg
Daily fruit intake	125g/day	143g/day
Main fruit	Apple, banana, orange	Apple, banana, orange
Daily vegetable intake	125g/day	143g/day
Main vegetable	Tomato, carrot, cucumber	Tomato, carrot, melon

Tab1: Comparison between the two cities.

About their daily intakes, we can notice that Dutch and French consumers have the same rate of fruits and vegetable consumptions (about 130grams in fruits and 130grams in vegetable).

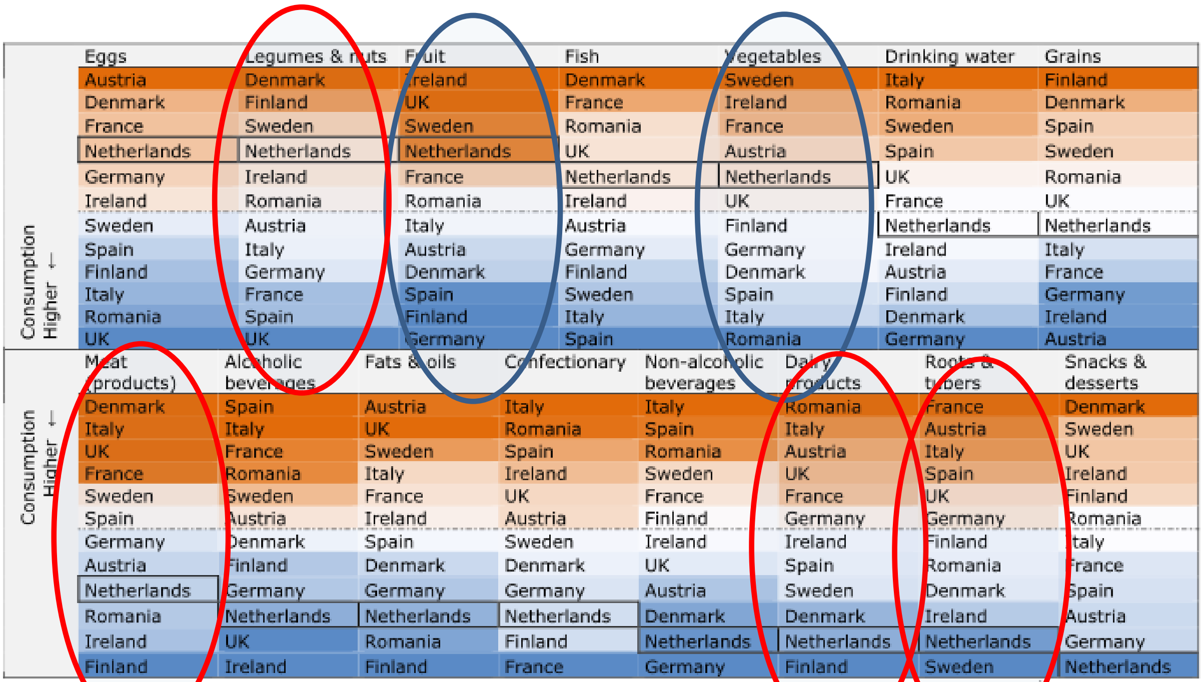


Figure 20: Twelve European countries ranked (from lowest to highest) according to the population's intake of several food groups due to differences in dietary assessment method qualitative comparisons were carried out.
The Dutch seem to eat more meat, dairy products and roots and tuber than the French and finally fewer legumes*.

*Legumes cover beans (including soya beans), lentils, chick peas and split peas. The consumption of legumes reduces cholesterol concentration. In the Netherlands, half of the population rarely or never eats legumes.
(https://www.gezondheidsraad.nl/sites/default/files/201524edutch_dietary_guidelines_2015.pdf)

The Dutch dietary guidelines recommend following a dietary pattern that involves eating more plant based and less animal based food.

Part 2: Main question and goals for the research program

21-Main research question

In a world where the population is growing and 70% of the population will live in urban areas in 2050, cities are supporting or inventing new ways of producing, distributing and consuming food. New food systems are emerging in response to consumer expectations.

In both countries, the most important sales channel for fruit and vegetables is the supermarket.

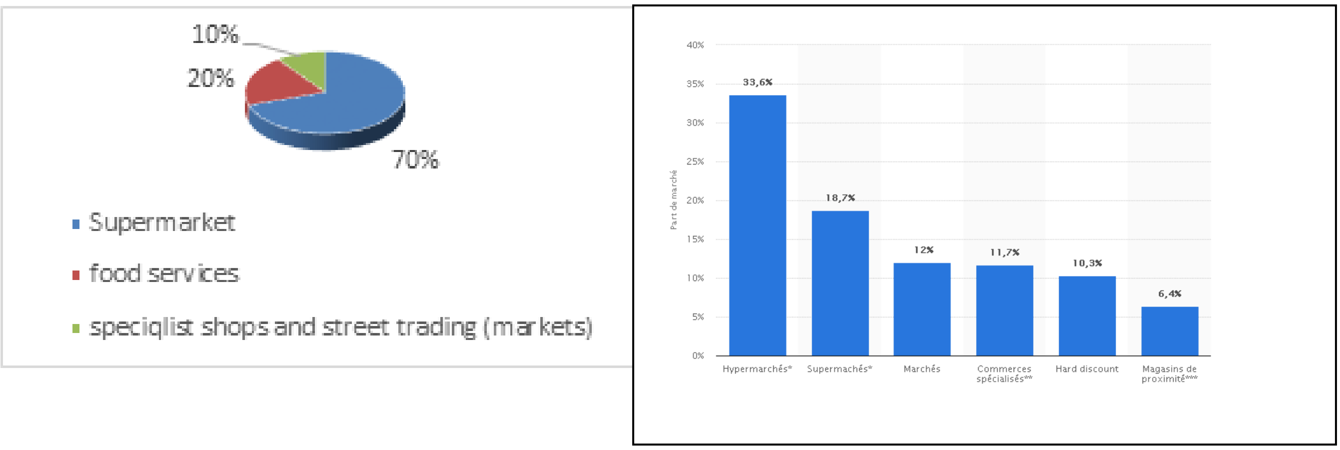


Figure 21: fruit and vegetables food sales channel in Netherlands and in France

Seventy percent of all fruit and vegetables they produce or import into the Netherlands end up on supermarket shelves. Ten percent go to specialist shops and street trading (market), while twenty percent go to food services such as hotels and catering services. In addition, the online sales and ordering of fresh fruit and vegetables is in development.

In France, approximately about 12-15 percent of the fruit and vegetable is bought at markets. Recently, a significant increase in the frequency of purchases has been observed in this circuit (+ 2.7%). It enabled the quantities purchased to increase sharply (+ 3.1%), allowing it to regain 0.3 market share point, to 13, 4% (Achat de fruits et legumes frais par les ménages Français. PDF Donnees 2014, FranceAgrimer.)

For centuries, markets have been privileged places where consumers could buy their food, especially their fruits and vegetables. The birth of supermarkets explains their decline until recently it seems. Nevertheless, markets are still present in most cities, but what is their real weight in the consumption of local fruits and vegetables? That is our main question:

How markets contribute quantitatively and qualitatively to local food consumption, a comparative study between Angers and Almere.

The research main question raises several sub-questions. They will help us generate an answer to the main question.

-What are the differences and the similarities between Almere and Angers markets (size, organization, number of fruits and vegetable stalls, origin of the fruits and vegetables, fruits and vegetables offer…)

-What are consumers' expectations about fruits and vegetables, are they different? What are the reasons why people go shopping at markets? (Quality, price, food origin, connection with farmers, seasonal products, others…)

-Are fruits and vegetables local or not? Is it easy or not to find local products in these markets?

22- Restrictions, opportunities and risks:

The research time is less than 2 months – this is a limit to collect data especially when we study two cities in two different countries.

We need to do a survey with consumers at markets to learn more about their food habits and their practices. If, a lot of people speak English in Almere, there may be several limitations among which are the language– so the survey will be done in English, and in Dutch.

In France, we think that it is better to do the survey in French, because French people, especially elderly people don't speak English.

Key words	Opportunities	Constraints
Two cities	The two cities have about 200 000 inhabitants. Same size.	Apart from the size, the two cities are really different (growth, age pyramid, ethnic structure).
	As we live in Angers, it seems easier to do the survey and to continue the study after the two months.	Attention will have to be paid to a fair balance of the two cities
Consumers; Cosmopolitan population in Almere and in Angers	Diversity of food culture and diet in Almere because of ethnic groups. People are usually proud of their culture and want to share their culinary traditions	Communities may be closed the ones to the others. It may be difficult to gain confidence. Attention will be paid to whom we want to get data from.
Cities food system	Good knowledge about Angers food system.	We don't know many things about Almere food system, just that Almere promotes urban and peri-urban agriculture (Oosterwold area), and is engaged in MUFPP. Also, over the years the region of Flevoland has developed an intensive and export agriculture.
Milan Urban Food Policy Pact	A community of cities with the same goals, which can share experience	Almere has particularities (cosmopolitan population- 40 percent). Answers will certainly be different. Angers is not engaged in the MUFPP, but seems to have the same goals.
Floriade 2022	Food production, safety and food security solutions are themes of Expo 2022 Floriade. It stimulates innovations, and projects A new city district: Oosterwold area	Deadlines are short. It requires time to build new food systems. Floriade focus attention and effort to the detriment of other projects

Tab2: opportunities and constraints

23- Methods

The study is organized around 4 steps:

Step ONE: learn about the context in the two cities

Objectives	What? How?
Collect information about the cities and try to understand the ecosystem of these two cities.	Information about history and culture, urbanism, inhabitants, food intake

Step TWO: Learn about street markets

Objectives	What? How?
Collect information about street markets in both cities.	Number of streets markets, where, when View and investigate; Data collected will be accompanied by several interviews of sellers

Step THREE: Collect valuable data about consumers.

Objectives	How?
Identify reasons why inhabitants of the two cities go shopping in street markets	Consumer surveys The format of the survey allows us to gather comparable information because the same questions will be asked in both cities (in English/Dutch in Almere, and in French in Angers)

Step FOUR: results.

Step FIVE: discussion and conclusion

Part 3: Results.

21-Which place for street markets? ...

211- The markets in Almere.

In Almere, we find 3 outdoor markets which are held once or twice a week in three districts (Almere centrum, Almere Buiten and Almere Haven).

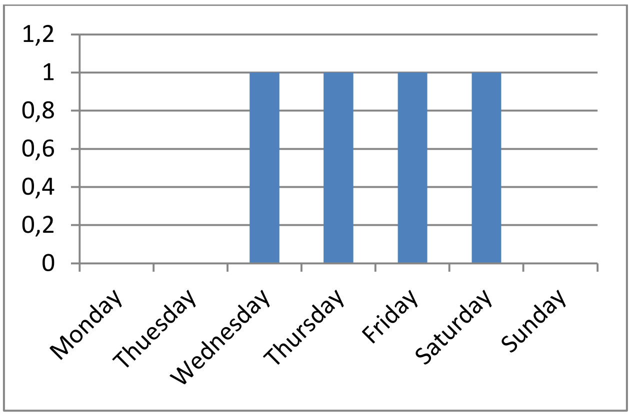


Figure 22: number of markets/per day in Almere

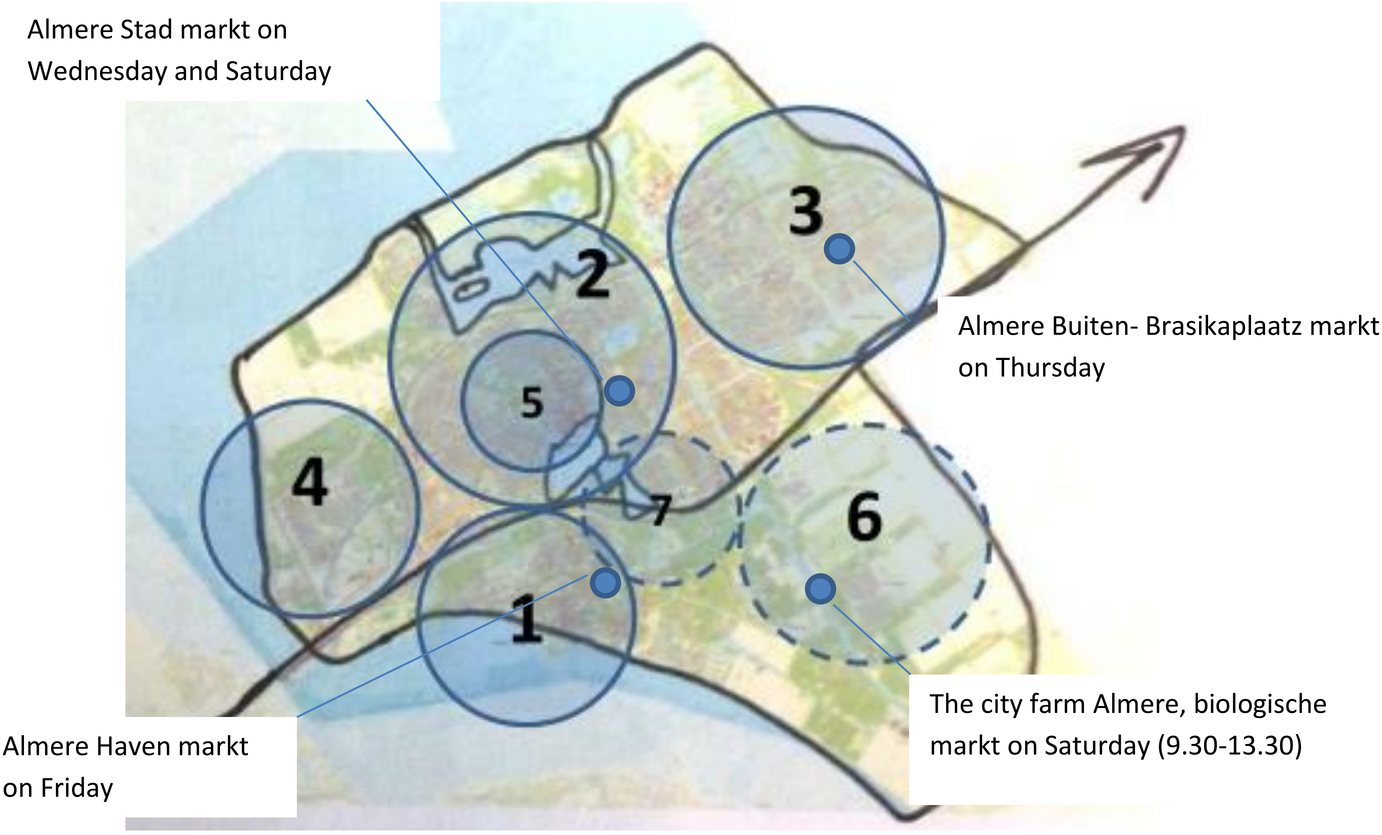


Figure 23: localization of Almere street markets

Near the city, a farmers market (De stads boerderij Biologisch in Almere- is specialized in organic foods (http://www.stadsboerderijalmere.nl/).

Tab 3: Street markets in Almere.

Number	Market	Where?	When?	
1	Almere Stad market		Wednesday and Saturday	9 :00 to 4pm
2	Almere Haven market		Friday	9 :00 to 2 pm
3	Almere Buiten market	Brasiliaplaats	Thursday	9 :00 to 2pm
4	The city farm market	Kemphaampad 14 1358 AC Almere	Saturday	9 :30 to 1.30pm

Picture 2: Almere (D.Croissant 10-2-2018)- View of the Almere Stadt market.

Almere Stad market : https://www.youtube.com/watch?v=oNU4wl6RLUI

Almere Haven market : https://www.youtube.com/watch?v=cof3arMK3Xs

212- The markets in Angers

The number of markets in the city of Angers has fluctuated, following the waves of history. The first market was established in 1655, and was sited Place des Halles. At the end of the 19th century, new markets like Madeleine or Bordillon Markets appeared. Then at the end of the 20th century, the number of markets increased. http://tpe-marchedangers.e-monsite.com

After the First World War, 7 news markets were created, but some were interrupted, for example, during the Second World War and a few years after, because of rationing. In these years, the sellers were gathered in the Halles, which was open every day.

At the end of the World War II, Angers had only 4 markets : Lafayette, Place Bichon, Place Leclerc and Place Bordillon. The Place Lafayette and Leclerc markets resumed their activity on Saturday morning in 1949. The desire to build a Halles Market (Covered Market) as in the major cities, did not succeed, and they were destroyed in 1971, giving way to a shopping center, called “Fleurs d’eau”.

Pictures 3,4 and 5 : Views of the market halls and the Monplaisir street market
http://archives.angers.fr/archives-municipales/valorisation/expositions-virtuelles/monplaisir-ville-nouvelle-1963-1975/monplaisir-ville-nouvelle-1963-1975-41/index.html

Some markets have disappeared, including the Halles and the cattle markets, but others appeared, as in 2009, the local producers market, and in 2011, the market in the Place Ney, as an answer to the wishes of the locals.

The recent emergence of new markets is linked to the inhabitants' demands and new consumption patterns.

Markets are numerous at Angers: **16** approx.. Most of them are located in the center of the city, with easy access (bus, tramway,..). Each neighborhood has one or two markets per week. The inhabitants can go shopping every day, except on Monday.

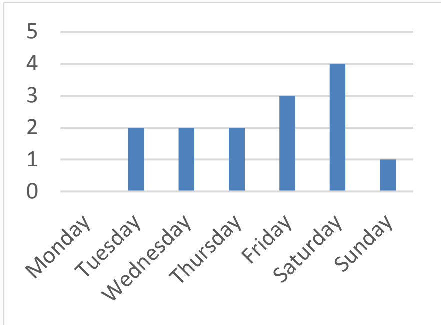


Figure 24: number of markets/per day in Angers

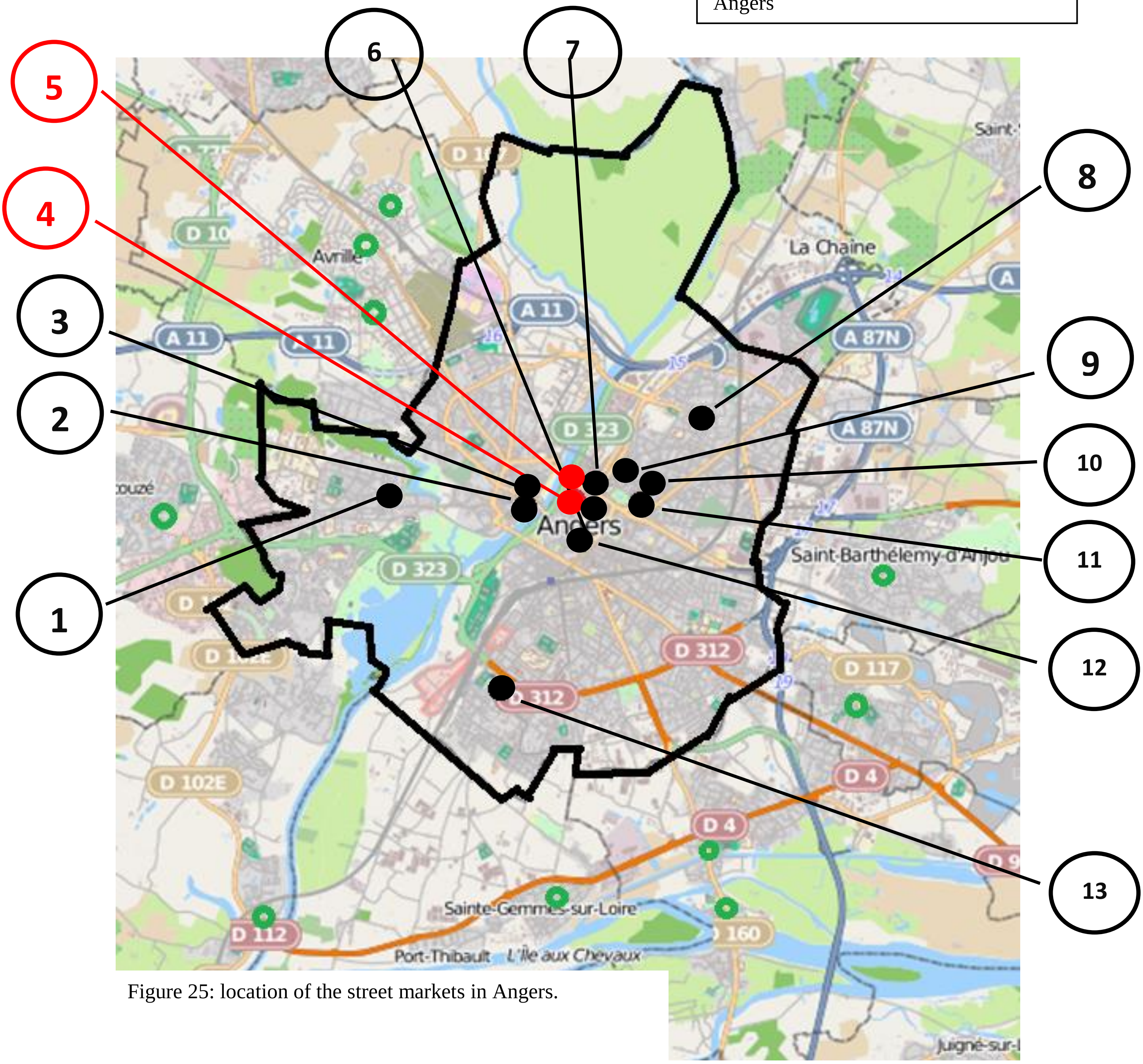


Figure 25: location of the street markets in Angers.

Number	Market	Where?	When?	
1	Belle Beille Market	Place Marcel Vigne	Friday	8-1.30 pm
2	Doutre St Jacques Nazareth Market	Place du Docteur Bichon	Thursday	8-1.30pm
3	Doutre St Jacques Market	Place Grégoire Bordillon	Saturday	8-1.30pm
4	Molière Organic Market	Place Molière	Saturday	8-1.30pm
5	Producer Market	Jean Chevillard Street St Julien Square	Friday	4-7pm
6	The Big Market	Place Imbach	Saturday	8-1.30pm
7	Central Market	Place Lafayette and General Leclerc	Wednesday, Saturday	8-1.30pm
8	Monplaisir Market	Boulevard Auguste Alloneau	Wednesday, Sunday	8-1-30pm
9	Deux-Croix Banchais Market	Place Camille Claudel	Friday	8-1.30
10	Ney Chalouere Market	Place Ney	Tuesday	8-1.30
11	Jeanne D'Arc Market	Square Jeanne D'Arc	Thursday	8-1.30
12	Justice Madeleine St Léonard Market	Pont de Cé Street	Tuesday	8-1.30
13	Roseraie Market	Place Jean XXIII	Saturday	8-1.30

Tab 4: The street markets in Angers (http://www.angers.fr/index.php?id=57561)

Many of them are located in the town centre, but some quarters, like Montplaisir(8), Belle Beille(1) and Roseraie(13) have their own market.

These districts were built during the seventies, and the markets were created at the same time (eg: on 6th October 1945 for the Monplaisir Market).

22-What place for fruits and vegetables?

221- What place for fruits and vegetable in the markets of Angers

Number of stalls: 185
Number of fruit and vegetable stalls: 58 (31%)
Number of producers: 24
Number of retailers: 22

The central market is one of the biggest markets in Angers (185 stalls), it sells mainly food (fruits and vegetables, meat and processed meat, fish and bread).

Access:
By bus, at walking distance (people live close), by car (underground car parks under Place Leclerc), and by bike.
In the future, the tram will pass along the market.

Pictures 6 : Leclerc street market location

Pictures 7 and 8: global views of the fruit and vegetable market (Angers-D.Croissant)

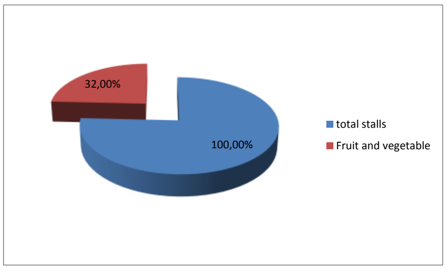


Figure 27: percentage of fruit and vegetable stalls on Central street market (Angers)

The 58 Fruit and vegetable stalls are regrouped (red zone). Municipality officials say it is a choice of the fruit and vegetable corporation. In other towns, it may be different: fruit and vegetable stalls are scattered here and there in the market.

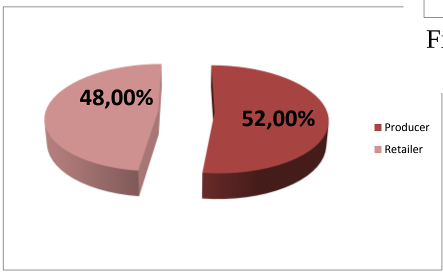


Figure 26: percentage of producers and retailers on central street market (Angers)

About 50% of the fruit and vegetable stall-holders are producers. Many of them sell only what they produce. Gathering fruit and vegetable stalls in the same area facilitates purchases: usually consumers can't find all they need in one place. This is a reason why the fruit and vegetables are regrouped.

Picture 9: retailer with high quality fruit and vegetable (Angers -D.Croissant)

Picture 10: local producer (Breto farm), with vegetables produced on the farm and a few products bought to supplement the offer (Angers-D.Croissant).

322- Almere markets

The fruit and vegetables in Almere markets

It is important to point out that we investigated markets in winter and it is surely not the most attractive season to observe what is sold and purchased. However, the number of fruit and vegetable stall goes from 6 for Almere central market to 2 for Almere Buiten market. The share of fruit and vegetable stalls is limited (from 9,5% to 14%). We haven't seen local farmers.

Almere market	Number of fruit and vegetable stalls	share	retailer
Almere stad	6	9,5%	6
Almere Haven	3	14%	2
Almere Buiten	2	12,5%	2
Organic farm*	2	12,5%	0*

Tab5: Fruit and vegetable stalls on Almere markets.

*As the farmer said, only 10% of vegetable come from the farm in January and February (against 80% in spring and summer), and for fruit, only the apples and pears are local from Flevoland (Dronten).

Stalls	Almere stad market	Almere Haven market	Almere Buiten market
Jansen Groenten	yes	yes	Yes
Robin en Kees	Yes	yes	
Surinam fruit and vegetables	yes	no	Yes
Roots and potatoes	yes	yes	No
Asian fruit and vegetables	yes	no	no
Other	Yes (1)	no	No

Tab 6: retailers seen on Almere markets

The fruit and vegetable stalls are scattered on the market, especially at market entrances, for the two biggest retailers (Jansen Groenten & Robin en Kees). For them, we can notice that the way fruit and vegetable are displayed is just like supermarkets. At the entrance, customers take a red or blue basket (it depends on the retailer) and go shopping.
For the other stalls, it's more usual: shop assistants ask customers what they need, and serve them.

Picture 11: customers wishing to pay (Robin en kees- Almere Stad market)

Picture 12: vegetable assortment – Robin en Kees, Almere.

Picture 13: fruit assortment – Robin en Kees. Almere

Fruit and vegetables assortment: customers find a large assortment of fruit and vegetables, sold per unit or in one kilo bags.

There is a wide offer of seasonal and non-seasonal fruit and vegetables
The offer is wide and includes a large diversity of fruit and vegetables. We can see both seasonal products (Brussels sprouts, cabbage, carrots, onion), and non-seasonal products (this is not common in France), coming from Africa, or South America by airplane, boats or trucks (asparagus, green bean, maize for vegetable and grapes from South Africa, cherries from Chile).

Tab7: non local and local fruit and vegetables – Almere- January and February 2018

Non local fruit and vegetable	Local fruit and vegetable (i.e from the Netherlands)
Orange (morocco), Mango (Peru), Banana (Columbia), kivwi (Italy), Mandarin (Spain), **grapes** (south Africa, Namibia, Chile), **Cherries** (Chile), **Raspberries** (Spain), **Bluberries** (Chile), **Strawberries** (Morocco, Spain), Pineapple (Costa Rica), grapefruit (China), Litchi (South Africa).	Apple (sometimes France), Pear
Tomato (Tunisia), **Sweet Corn** (Senegal), **Asparagus**(Peru), Spinach (Spain), Salad (Italy), Cauliflower (Spain), **Green bean** (Senegal), Broccoli (Italy), Shangaï paksoï (Spain), avocado (Mexico), Coriander (Spain), **Paprika** (Spain), Ginger, **Zuchini** (Spain), herbs (spain)	Potato, Bruxelles sprouts, carrots (sometimes Belgium), witloof (sometimes France), Leek, radish, beet, red and white cabbage, pumpkins, onion, shallot, garlic,
***non seasonal**	

33-Who are the consumers?

In the 3 traditional markets of Almere, we have observed consumer behavior when buying fruit and vegetables and we have paid attention to what fruit and vegetables they were buying.

The average purchase for fruit and vegetables seems to vary between markets (between 2.2 to 3.56). These figures indicate that, for most customers, market purchases are only a part of fruit and vegetable groceries. The fruit and vegetable stalls organization (like the supermarket) can explain these low figures. Nothing differentiates shopping at the supermarket from shopping at the market, and that is why the weather can explain the strong variations of attendance observed.
The average purchases for fruit and vegetables is higher for Almere Haven (2,95) et Almere Buiten (3,56) markets.

Tab8: average purchase of fruit and vegetables on street markets, Almere, January and February 2018

Market	Almere stad	Almere stad	Almere Haven	Almere Haven	Almere Buiten
date	31-janv	31-janv	02-févr	09-févr	08-févr
day of the week	Wednesday	Wednesday	Friday	Friday	Thursday
weather	bad	bad	rather cool	cold and windy, not cool	sunny but cold
retailer	Janssen Groente	Robin en Kees	Robin en Kees	Robin en kees/Janssen	Janssen Groente
total fruit and vegetables/purchase	2,13	2,27	3,56	2,95	3,76
total fruit/purchase	1,58	1,17	1,73	1,4	1,98
total vegetables/purchase	0,57	1,1	1,93	1,6	1,78

How can we explain such a difference if not for the weather? The population, observed in these markets seems to be more elderly and less ethnic in comparison with Almere Stad.

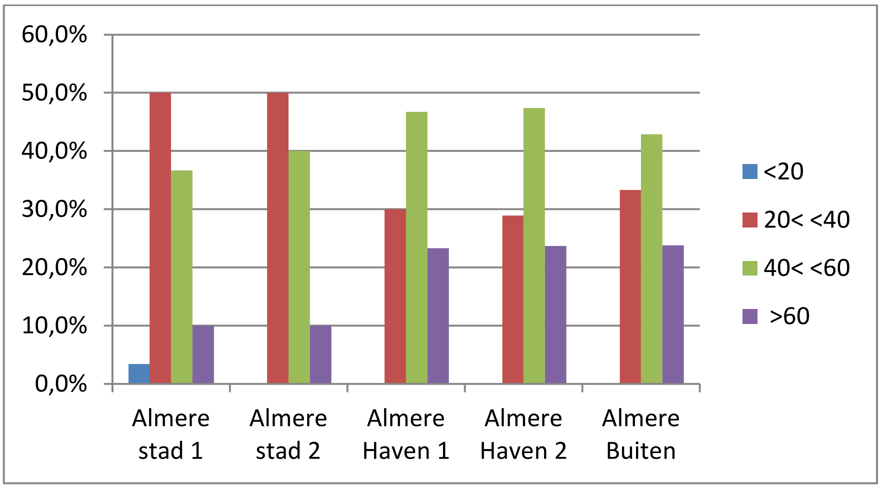


Figure 28: age distribution of fruit and vegetable buyers, Almere street markets, January and February 2018

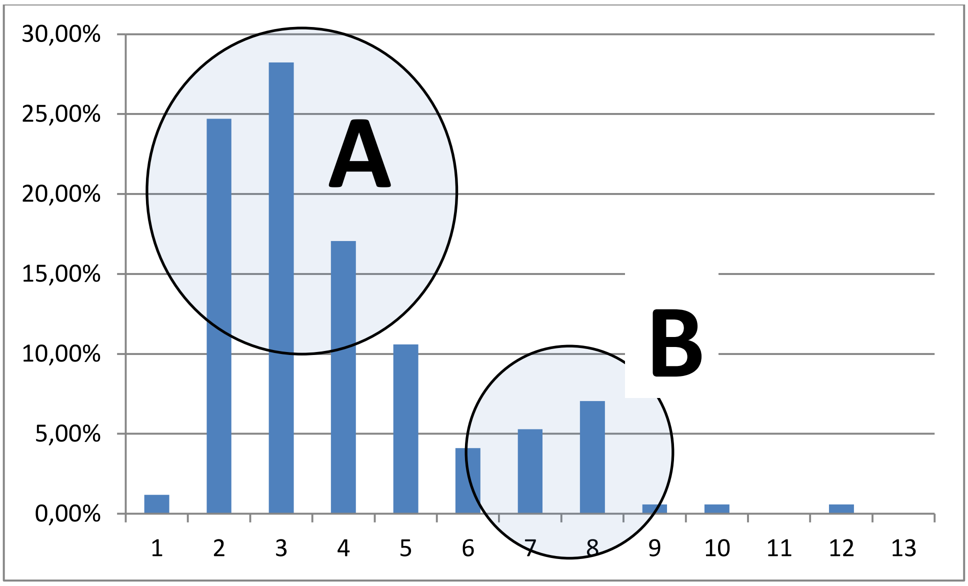


Figure 29: percentage of buyers per number of fruit and vegetable, Almere street markets, January and February 2018

There are several groups of consumers:

- A- The largest includes buyers of 1-3 fruits and vegetables for consumption on purchase day or in the following days. Purchases of fruit and vegetable seem to be a complement to larger purchases in other food supply chains (supermarkets, groceries stores ...). The price or freshness (for herbs) seems to trigger purchase.

- B- The second group of consumers seems to shop for fruits and vegetables on the market mostly. The reasons must be defined.

Buying fruit:

7 or 8 different fruit are mainly bought (orange, mandarin, banana, apple, mango, grapes, pear, strawberries), and we can notice that only two of them come from the Netherlands (apple for a part, and pear), and two of them are non-seasonal (grapes, strawberries).
The top five fruit accounts for 60 to 70% of all fruit purchases.

Tab 9: top five Fruit purchases per street markets, Almere -January and February 2018

Market	Almere stad 1	Almere stad 2	Almere Haven 1	Almere Haven 2	Almere Buiten
Date	31-jan	31-jan	02-Feb	09-Feb	08-Feb
total fruit and vegetables/purchase	2,13	2,27	3,56	2,95	3,76
total fruit/purchase	1,58	1,17	1,73	1,4	1,98
fruit purchase rate	80%	70,0%	66,7%	66,0%	90%
Top 5 fruit(fruit purchase rate percent)	**orange (30%-spain)**	orange(23,3%-spain)	apple (27%)	mandarin (20%)	**mandarin (35%-marocco)**
	mango (23%-perou)	apple(20%)	**orange (20% - spain)**	Banana (20%)	**banana (22% - columbia)**
	banana (20%-columbia)	mandarin(16,7 %- marocco)	**banana (20%-columbia)**	grape (17%)	**orange (22% - spain)**
	strawberries(20 %-spain)	grape (13,3%-south africa)	**mandarin (20%-marocco)**	apple (15%)	**grape (22% - south africa)**
	apple (17%)	mango (10%-peru)	**mango (17%-peru)**	pear (15%)	**strawberries (22% - spain)**
Weight of top five fruit /total fruit purchase	70%	71%	60%	61%	62%

*in red local fruit.

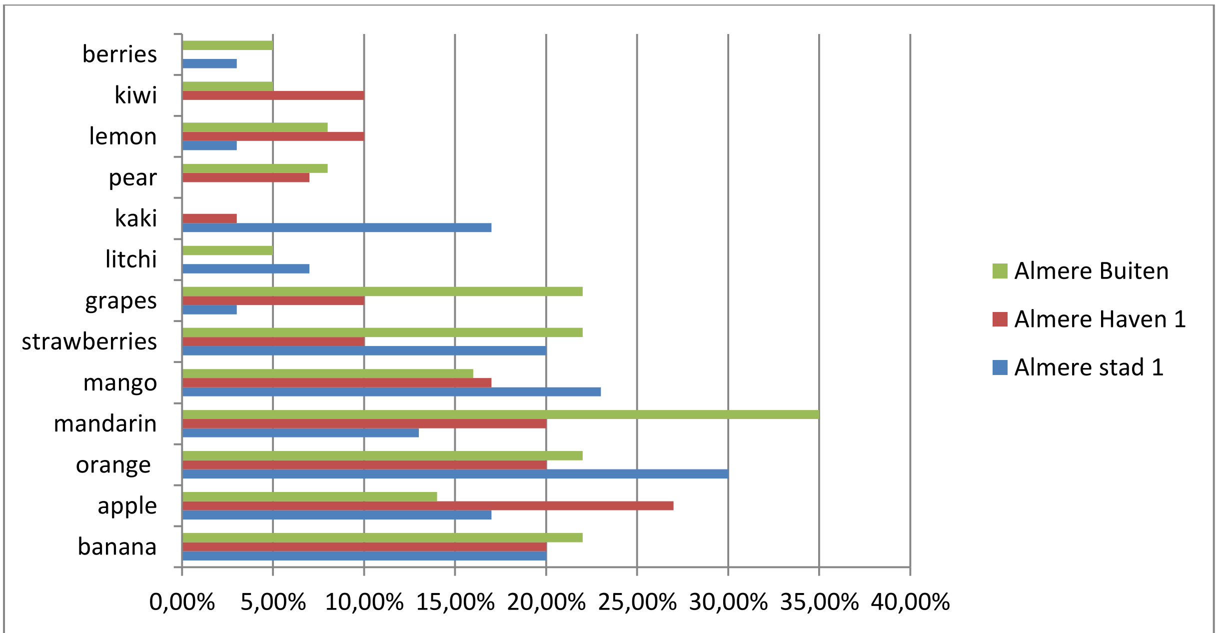


Figure 30: percentage of fruit purchase per street markets, Almere -January and February 2018

The vegetables :

Purchases represent about 0,57/customers (Almere Stad 1) to 1,93/customers (Almere Haven 1). In Almere stad market, only 40% of the customers bought vegetables (against 80% for fruit), which is significantly less than in Almere Haven market and Almere Buiten market (70% of customers bought vegetables).

Tab 10: top five vegetables purchases per street markets, Almere -January and February 2018

Market	Almere stad 1	Almere stad 2	Almere Haven 1	Almere Haven 2	Almere Buiten
date	31-Jan	31-Jan	02-Feb	09-Feb	08-Feb
total fruit and vegetable/purchase	2,13	2,27	3,56	2,95	3,76
total vegetable/purchase	0,57	1,1	1,93	1,6	1,78
vegetable purchase rate (vegetable purchase rate percent)	40%	40%	66,70%	71,00%	70%
Top 5 vegetable	tomato (10%- Spain, Marocco)	herbs* (23% - Spain)	mushroom (23%- Netherlands)	paprika (22%- Spain, Turkey)	broccoli (38% - Spain, Italy)
	Avocado (10%- Mexico-Israël)	paprika (17%- Spain, Turkey)	paprika (20%- Spain, Turkey)	Leek (17% - Netherlands)	tomato (35%- Spain, Marocco)
	paprika (7% - Spain, Turkey)	broccoli (10% - Spain, Italy)	herbs* (17%- Spain)	Spinach (15%- Spain)	paprika (22% - Spain, Turkey)
	herbs* (7%- Spain)	cucumber (10% - Spain)	salad (17% - Italy, and Netherlands)	Broccoli (12%- Spain,Italy)	avocado (11%, Mexico, Israël)
	broccoli (3% - Spain, Italy)	tauge (10%)	tomato (13% - Spain, Marocco)	tomato (12% - spain, Marocco)	sauekraut (8% - Netherlands)
Weight of top five vegetables /total vegetable purchase	65%	64%	47%	50%	64%

In red, local vegetables

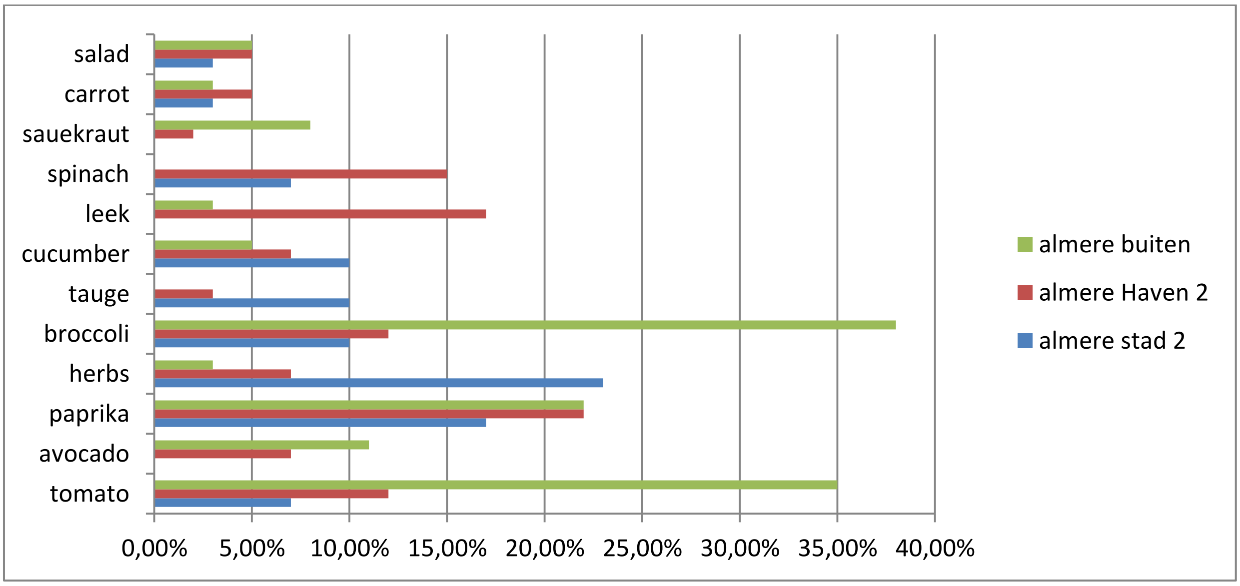


Figure 31: percentage of vegetable purchase per street markets, Almere -January and February 2018

Paprika, tomato, and brocolli are common purchases, which can be surprising in winter. The most commonly purchased vegetable is **paprika** (present in all top five), **broccoli** and **tomato** (in 4 of 5 top

five), **herbs** like coriander and parnsley (in 3 of 5 top five), or **avocado** (in 2 of 5 top five). Over the period investigated (January and February), none of them were produced in the Netherlands: a large part of the assortment is not seasonal and comes from Spain, Italy and Morocco.
A large number of vegetables are packaged and some of them are processed.

The big quantity of herbs purchased (like coriander, mint or parsley…) is in relation with the high level of ethnic population (They are commonly used as culinary herbs). Although they are from Spain, their freshness seems to be appreciated by customers.

The top five vegetables account for 47 to 65% of all vegetables purchased, which means that vegetable purchases are more varied than fruit.

Picture 14: local or not – Robin en Kees. Almere stadt market, January 2018

34-What is local?

341- What is local in Almere?

Some fruit and vegetables (banana, orange, mango, maïze, articfor hoke), are produced abroad, which is easy to understand. But others, it's really difficult because the origin (where ii comes from?) is rarely mentioned.

The price is the only information given and sales seem to be based on price: low prices are used to attract customers.

This situation is all the more puzzling as the Netherlands are known to produce a large quantity of fruits and vegetables. Consumers may believe that peppers, tomatoes or strawberries bought in January or February come from the Netherlands (But that is wrong!).

Many vegetables are packed and in that case, it is easy to find the origin. But customers should look twice: an unpacked vegetable is not necessarily produced in the country.

When we try to know where the products come from, it appears that sellers can't answer.

Neither can we find information about the way the vegetables are produced, or by whom.

Picture 15: for packed vegetable, the origin is mentioned, like Senegal for green bean, Almere.

Picture 16: in some rare cases, the origin is mentioned, Almere

Due to the high proportion of population from Suriname, there is a Surinam fruit and vegetable stall. Our study showed without much surprise, that a large part of the assortment is imported. Some references like Mrs. Jeannette peppers are produced in the Netherlands though, but this is not mentioned. According to the seller, fruit and vegetable from Surinam are more and more appreciated and recognized for their health benefits (like sopropo). Many Dutch people are interested in these fruit and vegetables, but, the lack of knowledge on how to cook prevents them from buying. The lack of information doesn't stimulate customers (it is something that worries the Surinam fruit and vegetable seller).

Surprisingly, there is more information in a supermarket than on street markets.

	Fruit	Vegetables
Almere Stad 1	11%	**12%**
Almere Stad 2	**23%**	15%
Almere Haven 1	19%	**41%**
Almere Haven 2	**11%**	23%
Almere Buiten	21%	34%
Average	**17%**	**25%**

Tab 11: Estimated percentage of local product purchase

When we know (or sometimes guess) the origin of the fruit and vegetables, we can estimate the share of local fruit and vegetable purchase: in this study, the weight of local fruit purchase is around 17% (between to 11% to 23%). For vegetables, it is more : around 25% (between to 12% to 41%). These low rates are related to customers' buying behaviors: seasonality doesn't seem to be important for a large part of the customers we saw in these markets.

Also, January and February are not favorable to the local fruit and vegetable production. Paprika, tomatoes, salad or green bean will become local in a few months, increasing the local fruit and vegetable purchase rate.

342-What is local in Angers?

Who are the local producers?

We found approximately 24 producers in the market. Two of them are organic farmers.

A part of them sells only what they produce on their farm: the assortment is reduced to seasonnal fruit (like apple and pears), and vegetable (potato, salad, carrot, leek, cabbage,onion,….). Few of them complete their assortment by buying some seasonnal fruits (like kiwi, or orange) or seasonnal vegetables (mushrooms), but in that case, they must make sure that the main part of the offer is produced on the farm.

Where they come from, What local means

Agriculture around Angers appears to be extremely diversified. Vegetable and fruit producers are historically established in the Loire valley, around Angers, because of water for irrigation, and alluvial soils interesting for plants growth.

Their location can be accounrted for by the presence of the river which helps producers and sellers export vegetable and fruits by boat.

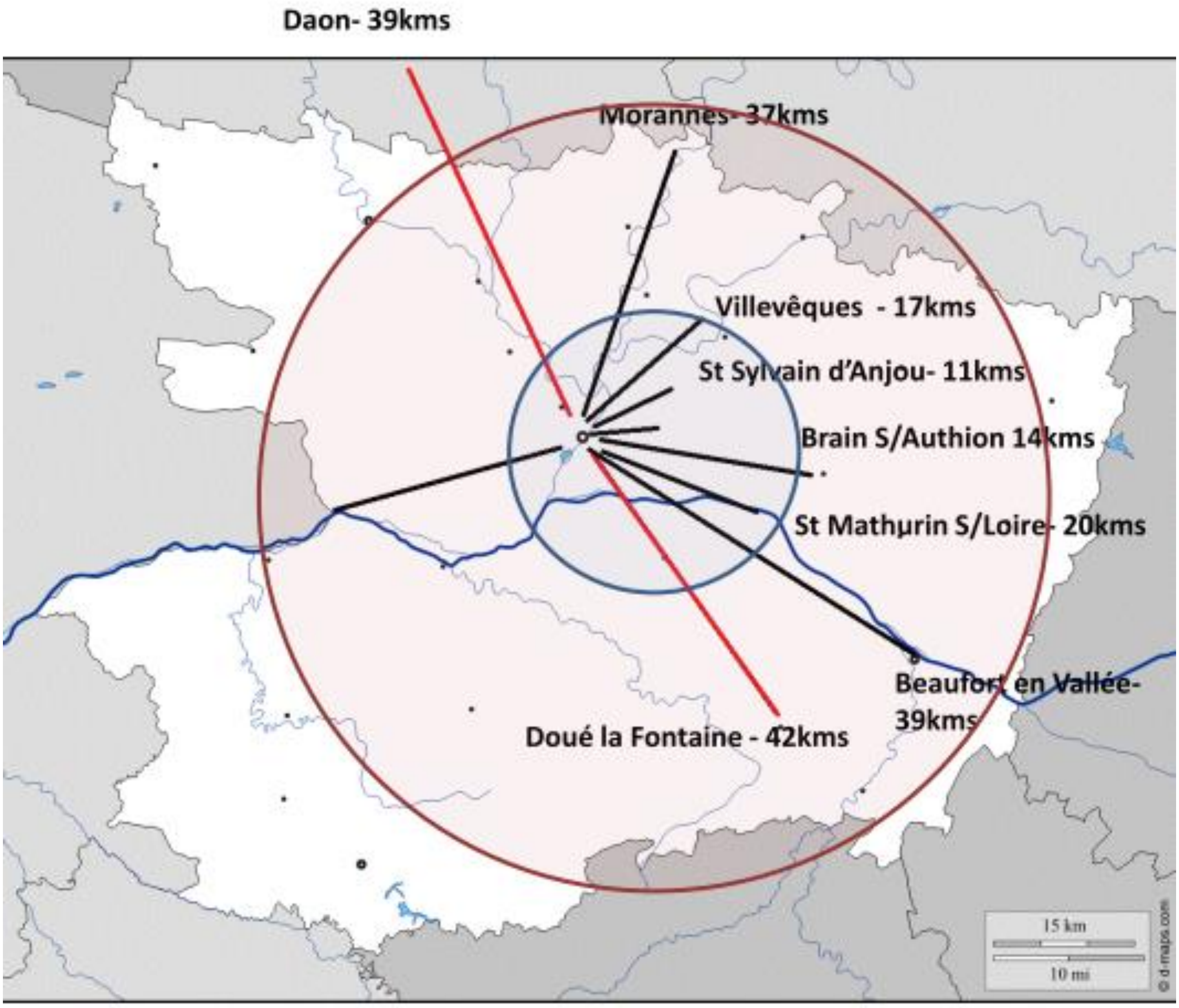
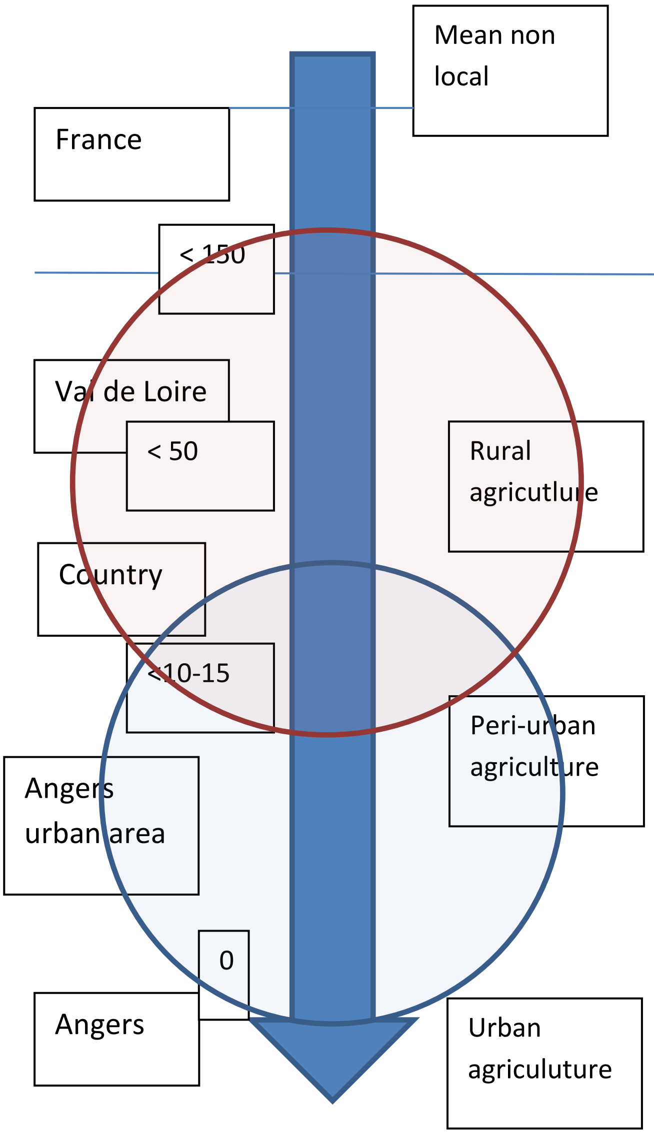


Figure 32: location of central market fruit and vegetable producers.

Producers who sell their vegetables and fruits are located around Angers, at less than 20 kilometers for most of them. A few of them come from far away, but less than 50 kilometers.

We can try to illustrate what “loca”l means for consumers. For every fruit and vegetable, the origin is mentioned, except for the vegetablse and fruit produced oin the farm and sold by the farmer.

Figure 33: What local means for consumers, Angers.



Picture 17 :onions origin France, Angers central market.

Picture 18: onions with origin France and local country, Angers central market.

Picture 19: onions with the name of the farmer, Angers central market

For example, consumers have the choice between onion from France (1,90€/kg) or from a local farmer (1,90€/kg).
At the same time, they may wih to know how the onions are produced (with or without pesticides for example) and choose organic onions (2,80€/kg).

Picture 20: organic onions, Angers central market.

As they are local producers, we understand that they sell what they produce on their farm. The offer is smaller than at retailers', especially for fuits. "Seasonnal" is an important key word.

Tab 12: Assortment of vegetables, Breto Farm, Angers central market – February 2018

Vegetable		
root vegetable	Potato	2,20€/kg
	Celeriac	2,60€/kg
	Carrot	1,70€/kg
	Jerusalem artichoke	2,80€/kg
	Helianthus	2,80€/kg
	Turnip	2,60€/kg
	Sweet potato	
	Parnsnip	2,80€/kg
	Black radish	1,60€/kg
	Cooked beet	4,00€/kg
Leaf vegetable	Salad	
	Cabbage (red and white)	1,90€/kg
	Leek	2,20€/kg
	Celery branch	2,60€/kg
	Fennel	3,90€/kg
	Witloof	2,90€/kg
	Lamb's lettuce	
	Bruxelles sprouts	2,90€/kg
	Parnsley	
Fruit vegetable	Pumpkins	2,50€/kg
others	Onion	1,90€/kg
	Garlic	8,00€/kg
	Shallot	
	Mushrom	4,90€/kg
Fruit	Apple	1,60€/kg
	Old variety apple	2,00€/kg
	Pear	1,60€/kg
	Kiwi	
	Orange	

Pictures 21 and 22: assortment of vegetables, Breto Farm, Angers central market – February 2018

In winter, the vegetable assortment is mainly focused on roots and leaf vegetables. There are no non seasonnal vegetable like tomato, paprika or zuchini (fruit vegetable).
The fruit supply is limited (apple and pear). That seems to be the reason why some producers decide to buy and sell kiwi and oranges (in red, fruit and vegetable not produced on the Breto farm).

The farmer we talked to claims that on average, customers buy from 2 to 5 different fruit and vegetable (mainly vegetables in that case), for ten euros. He thinks that consumers buy from several stalls.

What about quality?
Quality is something difficult to define. In that case, it seems that quality means "produced locally" on a farm near Angers, with as little pesticide as possible.

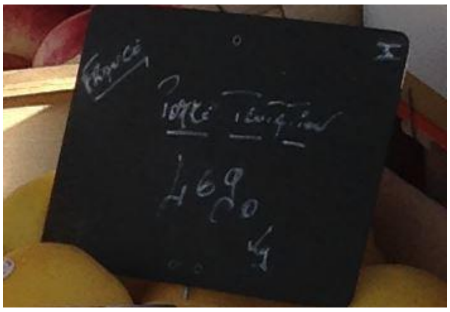
What can we conclude about the quality of the apples sold by Breto farm (see picture below)?

The apples are not calibrated (different size) and just packed in crates.
They have defects (like diseases (speckle) on their skins.
These apples certainly wouldn't be accepted in supermarket food supply chains and by their customers !

How can we explain that some customers accept to buy such ugly apples?

For the customers of Breto Farm, we can imagine that health is something important. They try to buy local, with no of very few pesticides.
They trust the local farmer (in fact, he can explain them where and how he produces his fruit)
They may want to promote local and small farmers, and spend their money in favour of their community.

Close to Breto farm, we find a retailer. The apples come from France, the quality is high (category 1), but the price too (4,90€/kg).



Pictures 23 to 25: comparison of apple quality between Breto farm (above picture) and the retailer located (this picture), Angers central market, February 2018.

Part 4: Discussion

41- Comparison between the two cities.

Tab13: final comparison between the two cities

	Angers (France)	Almere (Netherlands)	Conclusion and questioning
Size and profile	Old city (long history) 215 132 inhabitants, growth (+0,5%), population rather homogeneous	New city on a polder (created in 1976) 200 000 inhabitants, dynamic growth (350000 in 2030), news nucleus, High level of ethnic population	Same size approximately , but so different in many aspects
Number of street markets ‘	**14** traditional street markets + **2** (organic street markets and local producers markets) and some initiatives for local food consumption (CSA, direct sales in farms,…)	**3** traditional street markets+1 (organic farm market-Kemphaanpad) and some new initiatives	Street markets are more numerous in Angers than in Almere. But why such a difference? What are the city goals concerning the markets? What is planned for future new districts, like Oosterwold? In Both cases, street markets are traditional, but we can see some innovations in Angers like the organic market or local producer market.
Street markets	**Angers central market**	**Almere stad market**	The two biggest markets, both on Saturday.
Percentage of fruit&vegetables stalls **for the two** (restriction : winter)	**35%** (58 stalls/185) Stalls are gathered together Ethnic stall : only 1 Asian.	**15%** (6 stalls/63). Stalls are scattered Ethnic stall : 2 (Surinam & Asia).	The street market in Angers is more focused on food (and especially on fruit and vegetables). Why are there more fruit and vegetable stalls in Angers markets? The fruit and vegetable purchase level in street markets is higher in France (between 15 to 20%) than in the Netherlands Regulation defines the fruit and vegetable stalls number (see regulation Marktreglement_Almere_2012_met_toelichting.pdf
Fruit and vegetables stalls Farmer/retailer	**50%** of them (**24**) are local farmers. 50% of them are retailers	**No farmer** (**0**), Retailers only, and the same for the 3 streets market (Janssen Groenten, Robin en Kees).	Why such differences? Aren’t Dutch farmers interested in selling directly on markets? What about the food supply chain? Customers don’t care about farming around the city, and about local food.
Assortment per seller	**Short assortment** Local farmers sell their production only, not more, based on seasonal fruit and vegetables.	**Large assortment of fruit and vegetable**, including non-seasonal fruit and vegetables. Exotic fruit and vegetables linked with	Where are the Dutch customers doing their purchase?

	If customers want to buy non local fruit and vegetables, they find them close to retailers.	ethnic structure (Surinam) It seems to be the same assortment in supermarket, and the same display.	
What mean local?	Local farmers are located around the city (less than 15 miles for a part and less than 50 miles for the others). 'France' doesn't mean local for French people	Does local mean produced in the Netherlands? Or Flevoland?	What does local mean for customers? Is it something important or not?
Origin	Always written (country) and imposed by regulation with often more precision like the city or the name of the farm or the farmer itself) Customers confidence. **Sales/marketing based on origin**	Uncommon, little information about origin, except on packed products. It's not easy for Dutch consumers to know if they buy local or not. **Sales/marketing based on price.**	Is origin not important for sellers and consumers? See regulation.
Seasonal	Non seasonal products are really difficult to find (for example, only one retailer was selling strawberries and grapes)	Non seasonal fruit and vegetables are usual (cherries, berries, grapes, sweet corn, green bean), come by plane. A large part of customers buys non seasonal fruit and vegetable.	Is seasonality important for customers?
Other information	Labeling (AB) and quality for customer's' confidence	None, not even price.. (No information at all for example for organic products on the farm.	See regulation

42- A few words about the main research question.
In this part, we answer every sub-questions in order to provide an overall response to the main research question.

Main research question:

How markets contribute quantitatively and qualitatively to local food consumption : a comparative study between Angers and Almere.

- What are the fruit and vegetable sold at markets in both cities?

First, concerning markets, Angers dwellers have many markets, most of them being located in the city center. Fruit and vegetable stalls are more numerous and a large part of them belongs to local farmers. Some of them contain only organic products; others have staggered hours (4pm-7pm). Markets answer customer expectations in terms of price, local origin, organic products).

Some fruit and vegetable retailers are organized like supermarkets. It may mean that fruit and vegetable stalls can be perceived as outdoor supermarkets.

Pictures 26 to29: View of Almere Stadt market- January and February 2018

Assortments are different: Large, including non-seasonal fruit and vegetable, but also exotic fruit and vegetable linked with ethnic population are more present in Almere. In Angers, the offer is based on seasonal fruit and vegetables, and on local ones for a large part

-Is it easy or not to find local products in both cities?

As regards the supply of local products, it is easier to find local products on the Angers markets than in Almere, for several reasons:

- First, in Angers, the last street markets created by the municipality are reserved for local producers. These small markets mainly sell food and there is a big offer for fruit and vegetable. They are clearly recognized and appreciated for their local products.

- Second, local farmers are usually numerous on Angers markets, except Monplaisir market. They can easily be recognized by the banners or advertisements on their truck.

- Third, consumers can identify the origin of the fruit and vegetable: this is a compulsory mention.

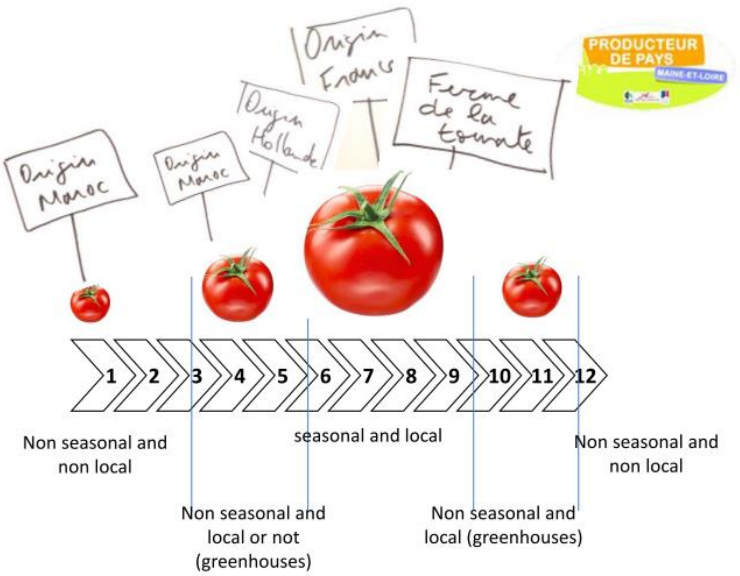


Figure 34: Origin of tomatoes, Angers street market.

Pictures30: local farmer, Angers Stadt market- January and February 2018

Local farmers are numerous on Angers markets. They are located around the town. We can try to illustrate the connections between the city and the surrounding areas.

The presence of local farmers on markets is the basis of connections between the city and the countryside. Customers and farmers have strong links: each one needs the other.

Local farmers have chosen to sell directly to urban consumers and consumers choose to promote seasonal and local fruit and vegetables purchases.

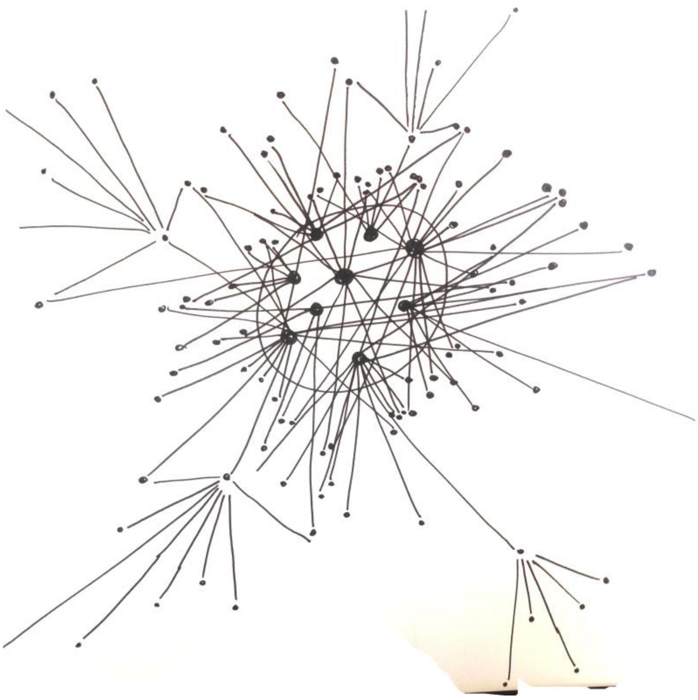


Figure 35: representation of the link between sellers (retailer and farmers) and the city, Angers.

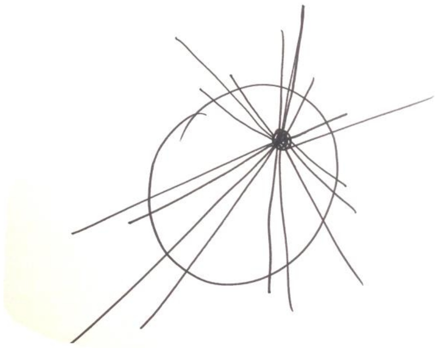


Figure 36: representation of the links between the countryside and the central market, Angers.

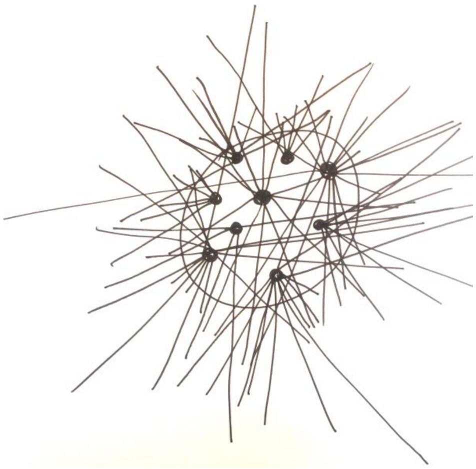


Figure 37: representation of the links between the countryside and markets, Angers

Unlike Angers, the three main markets in Almere have the same retailers. They are similar, even if Almere stad market is bigger than the two others. During the research period (January and February), we didn't identify any farmer. Regulations define the number of fruit and vegetable stalls and impose the number of fruit and vegetable sellers without distinction between farmer and retailer.

Tab13: maximum number of sellers in Almere markets, January 2018.

Market days	Wednesday	Thursday	Friday	Saturday
total	80	66	70	100
foodstuffs	35	20	24	35
Potato, fruit and vegetables	3	1	2	3
Surinam fruit and vegetables	2	1	1	2

- The price is the only information for customers: **sales seem based on price**: Low prices are used to attract customers. Concerning the origin, it's really difficult to find the information except for packed fruit and vegetables.

Concerning the origin of fruit and vegetables, consumers have no information, and can't know if it is local or not, and sometimes they are wrong, thinking that some (for example tomatoes or paprika) are local, but in fact are not!

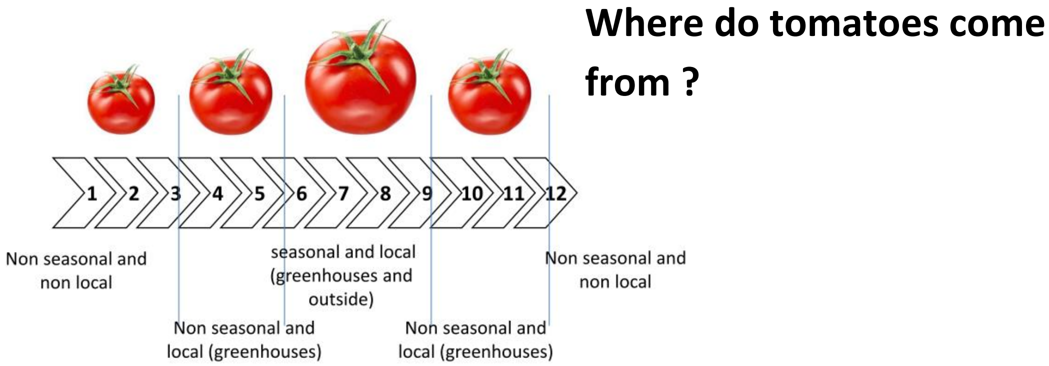


Figure 38: Origin of tomatoes, Almere street market.

The Netherlands is a major producer of tomatoes and cucumbers, but it does not mean that the tomatoes produced end up on the markets, and it does not mean too that Dutch farmers are able to supply markets all year round as consumers would want.

-What are the reasons why people go shopping at markets? (Quality, price, food origin, connection with farmer, seasonal products).

- Regarding the lack of origin of fruit and vegetables on the markets, we can question the desire of customers to consume locally, at least for those interviewed in the three markets of Almere. It seems that people do not know the origin of the products. It does not play such an important role in consumer's behavior. They don't have special emotions concerning where the food is produced or conversely, they are convinced that the fruit and vegetables they bought are local, or at least produced in Netherlands.

If we assume that supply meets demand, a hypothesis confirmed by buyers' behavior, we may think that a part of them want to enjoy a wide range of fruits and vegetables, whatever the season and the origin. People want low prices and these are associated with street markets.

- In Angers, concerning the question of "How markets contribute to the local food consumption", there are several points in favor of a local fruits and vegetables consumption.
    - Many farmers are located on the outskirts of the city (less than 20 miles), and consider the city as an opportunity for their business. They have adapted their production (more various and more sustainable (organic,) in response to urban expectations.
    - Food supply chains are numerous and various (CSA or AMAP, direct sales on farm, farmer markets, markets,..)
    - The municipality promotes local food consumption by setting up new markets (organic markets, farmers markets,) thus responding to citizens' expectations. There are 13 various markets in the city.
    - Farmers have the opportunity to sell their production on markets.

- The origin is mentioned on each fruit and vegetable: consumers know where the food comes from. People can see whether it is local or not.
- There are no non seasonal products (like grapes or strawberries in January or February). Consumers pay attention to fruit and vegetable seasonality.

In order to conclude and answer the main research question, we can say that in Angers, in January and February, markets contribute more to local food consumption than in Almere.

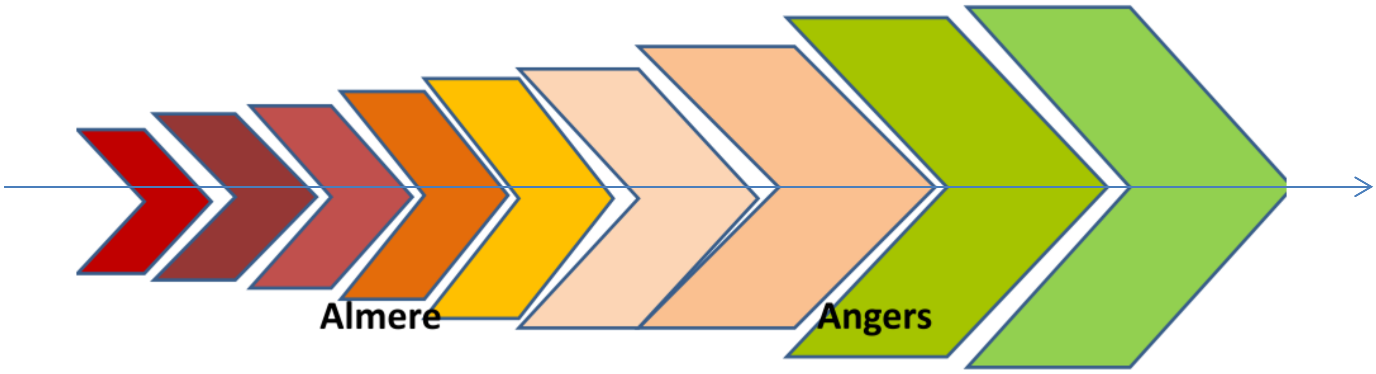


Figure 39: street market contribution to local food consumption, comparative between Almere and Angers, January and February 2018

Conclusion: Reflexions about the research

Cities as hubs of food consumption recognize their responsibility in building more sustainable food system. The cities of Angers and Almere are engaged in a process to encourage sustainable urban food production projects and local food consumption.

Concerning food consumption, they will always be dependent on hybrid systems: they will continue to source a major part of their food from distant locations and global food chains, but should put efforts into developing local sources.

To do so, both cities must facilitate and support street markets. The city of Angers, to satisfies its inhabitants, tries to stimulate the demand for local food, supports street markets for local products, and uses its institutional purchasing power to support small and local producers around the city. The city reacts to bottom-up initiatives, granting licenses, or facilitating access to markets.

In accordance with the Almere goals of promoting local food consumption, the municipality should put more effort into markets. Local authorities need to invest in infrastructure such as markets places, but need too to listen to citizens' expectations.

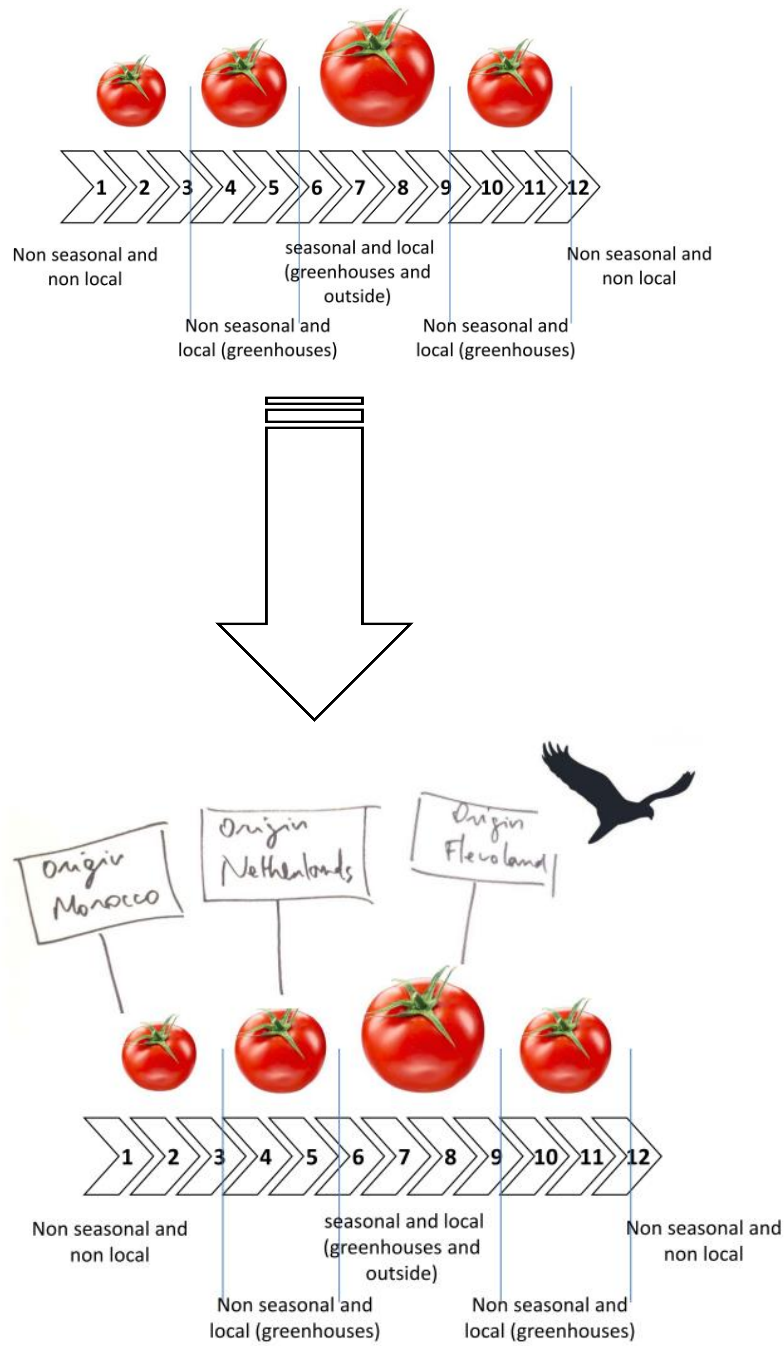
- Like the whole population, Almere' citizens go shopping several times a week, and a large part in supermarkets. Increasing the part of fruit and vegetable shopping in markets needs to enhance the number of markets, ensuring that all inhabitants can find a market near their home. New neighborhoods like Oosterwold need to have their own street market, adapted to their expectations.

- By increasing the number of stalls of fruits and vegetables and reserving them to local farmers

Pictures 31: local farmer in Roterdam market, Roterdam-February 2018.

Pictures 32: Origin mentioned on vegetables, Roterdam market, Roterdam-February 2018.

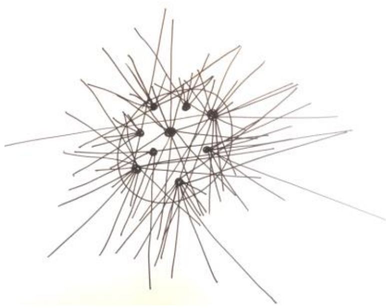
- By requiring the seller to indicate where the food comes from. This will ensure that people can see if it is local or not. Consumers need to know where the tomatoes they buy come from. For quality, it may be important, because the ways tomatoes are produced are surely different whether you are in the Netherlands or in Morocco for example.

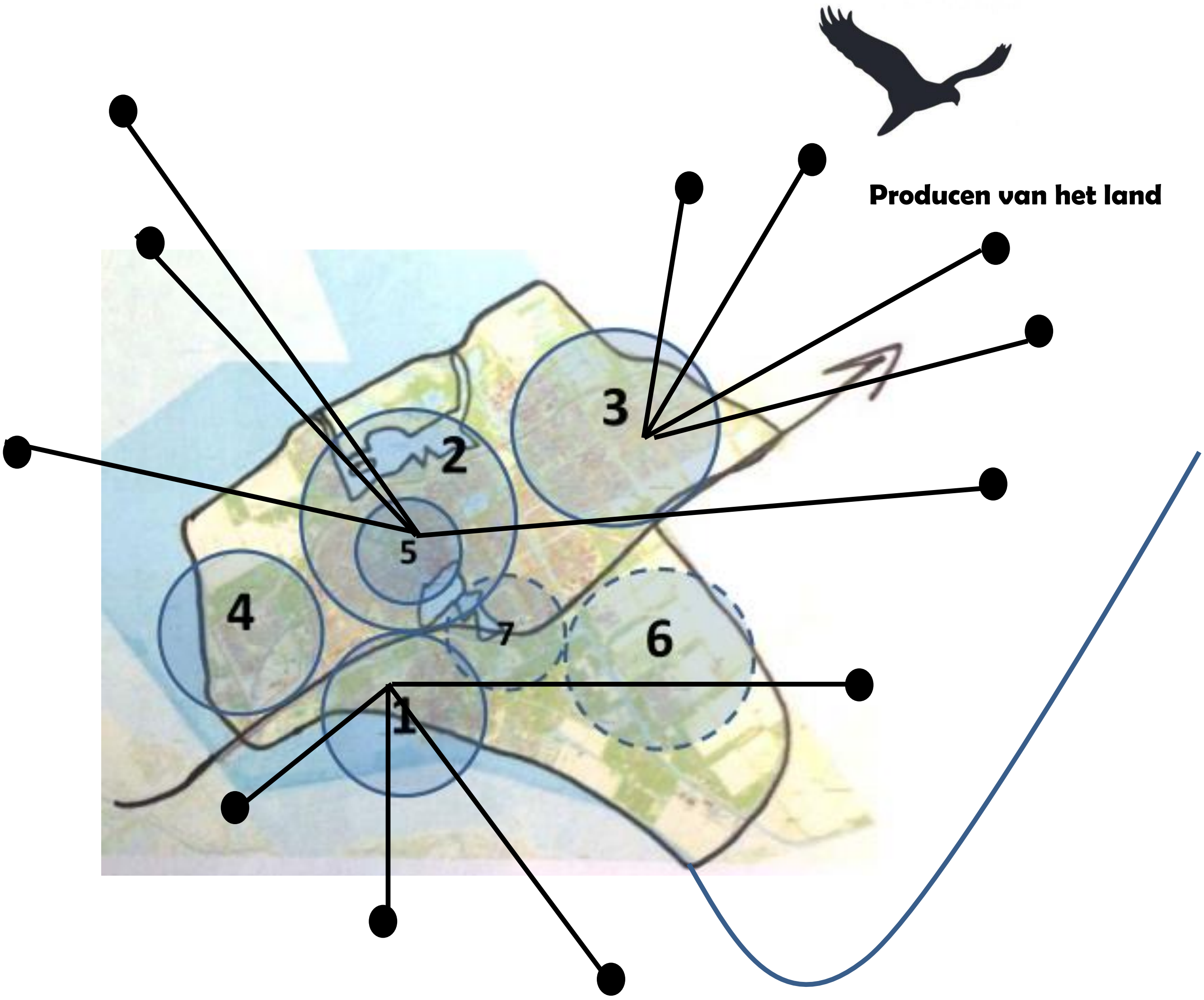


Picture 33: Tomatoes and cucumber from the Netherlands, Rotterdam market, Rotterdam February 2018.

Figure 40: Mentioning the origin of fruit and vegetable provides more information for consumers, a way to increase local consumption.

- By trying to connect more local farmers with the city and by creating a brand for fruit and vegetable from Flevoland





If we hope to increase the consumption of local vegetables and fruit, connections between local agriculture and the city must be numerous: farmers have to produce to sell all or a part of their fruit and vegetables locally.

Almere is growing strongly and new neighborhoods are appearing. What is planned in terms of market for these new districts, while still promoting the consumption of local products?

Almere is focusing firmly on the future and has introduced the Green City concept, with the 2022 World Expo on Horticulture ‘Floriade’ as an important accelerator. The Floriade district will be a place where food and energy will be produced, connecting the city and the country. With these objectives, it seems obvious that the current model of markets on Almere will have to be reviewed. Markets can be territories of social innovations.

In conclusion, if it appears that the local fruit and vegetables consumption in Angers is more developed and that for many reasons, Almere is a dynamic city, a territory of innovation.

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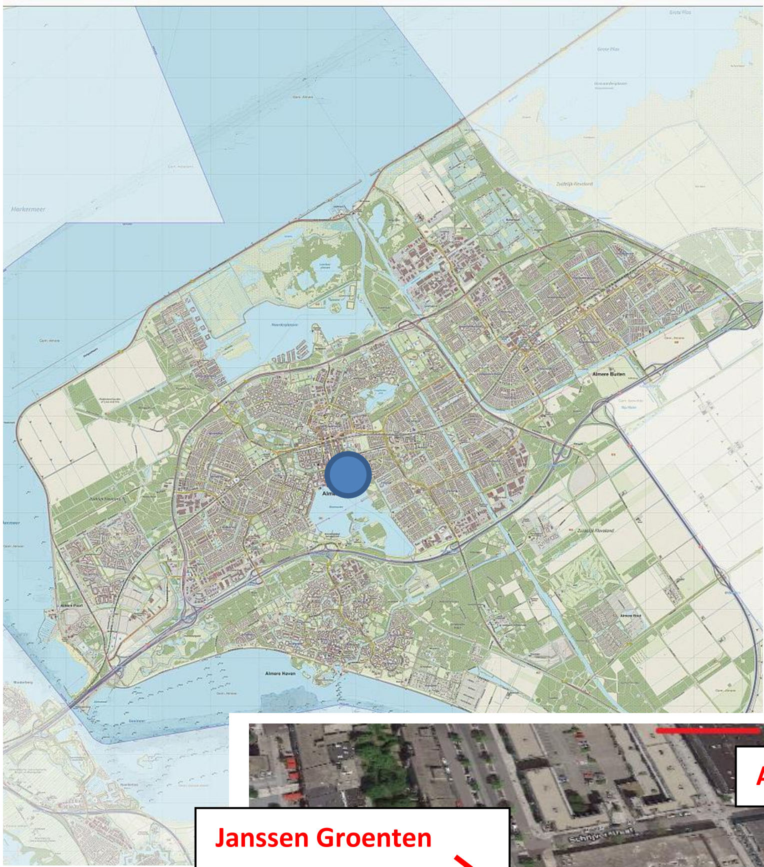
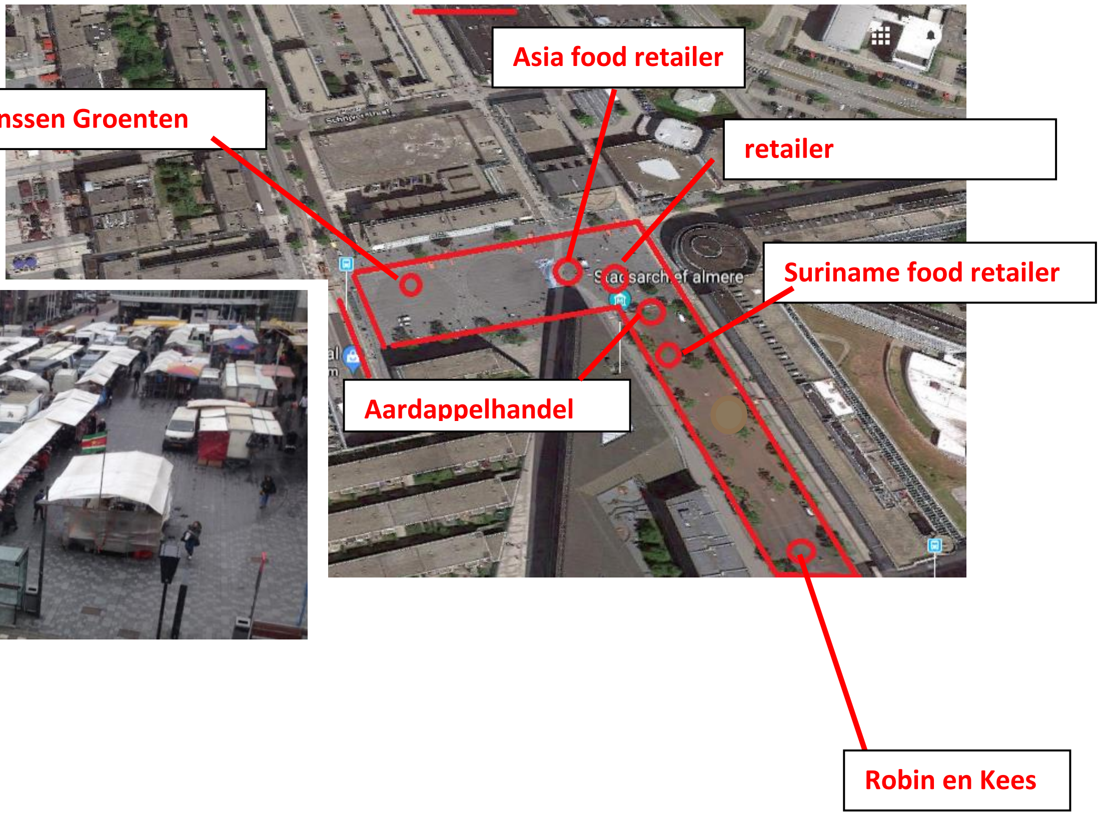
Appendices 1: Almere Stad market

The biggest one is Almere Stad market, with 220 stalls, located in Almere centre, every Wednesday and Saturday.

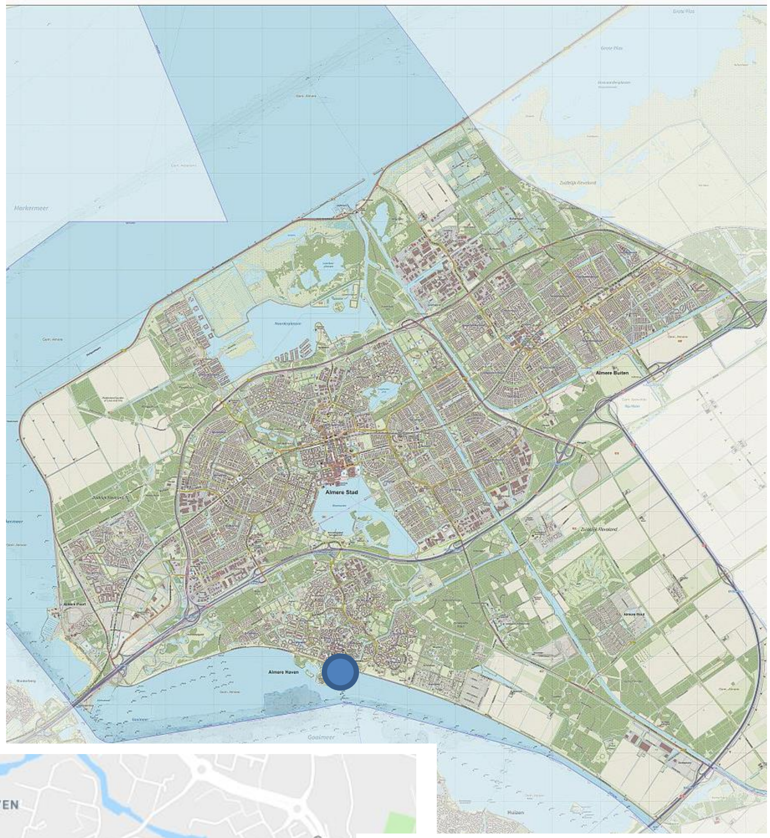


Almere Stad market

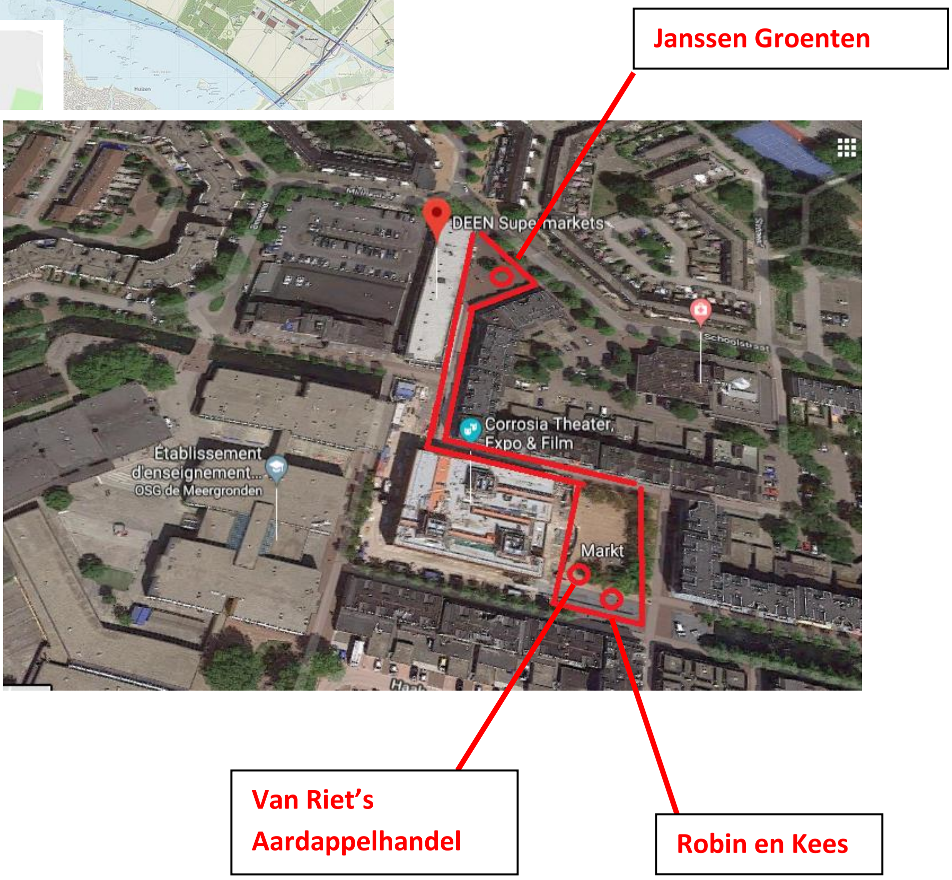
When	Wednesday & Saturday
Where	Stadhuisplein
Opening time	9: - 4pm
Number of stalls	80 to 100 (63 on 24.01.2018 and 03 02 2018)
Fruit & Vegetables	6
percentage	9,5%
retailers	5
producers	1 (roots and potatoes)
organic	no
Key word	Non local, non seasonal
Access	Easy by bus, bike, train,…



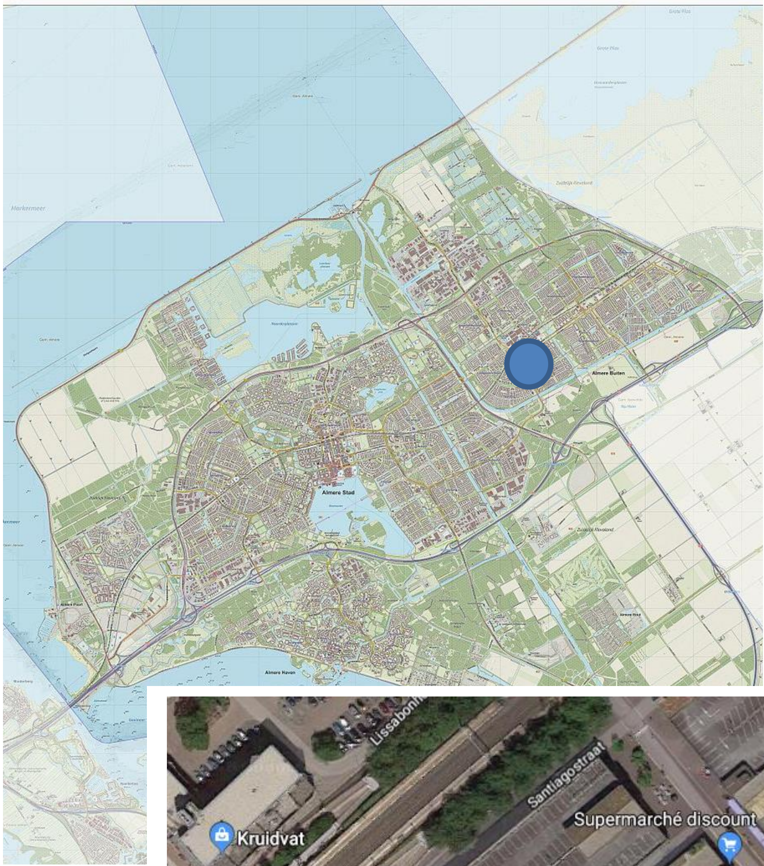
Appendices 2: Almere Haven market



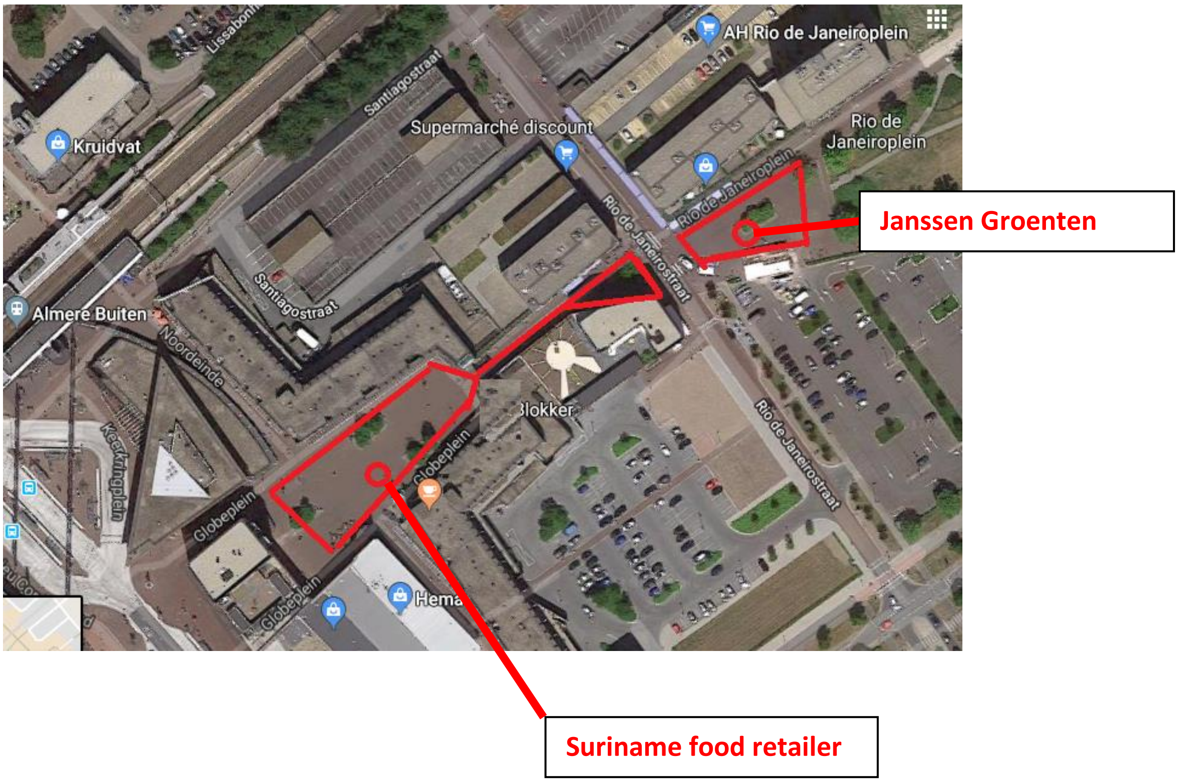
When	Friday
Where	Brink
Opening time	9-2pm
Number of stalls	70 (21 on 02.02.2018)
Fruit & Vegetables	3
percentage	14%
retailers	2
producers	1 (potatoes)
organic	No except producer
Key word	Dynamic, elderly people homogeneous
Access	Not so easy



Appendices 3: Almere Buiten market



When	Thursday
Where	Brasikaplaats
Opening time	9 – 2pm
Number of stalls	66 (16 on 01.02.2018)
Fruit & Vegetables	2
percentage	12,5%
retailers	2
producers	0
organic	No
Key word	Little used
Access	Easy parking, train station



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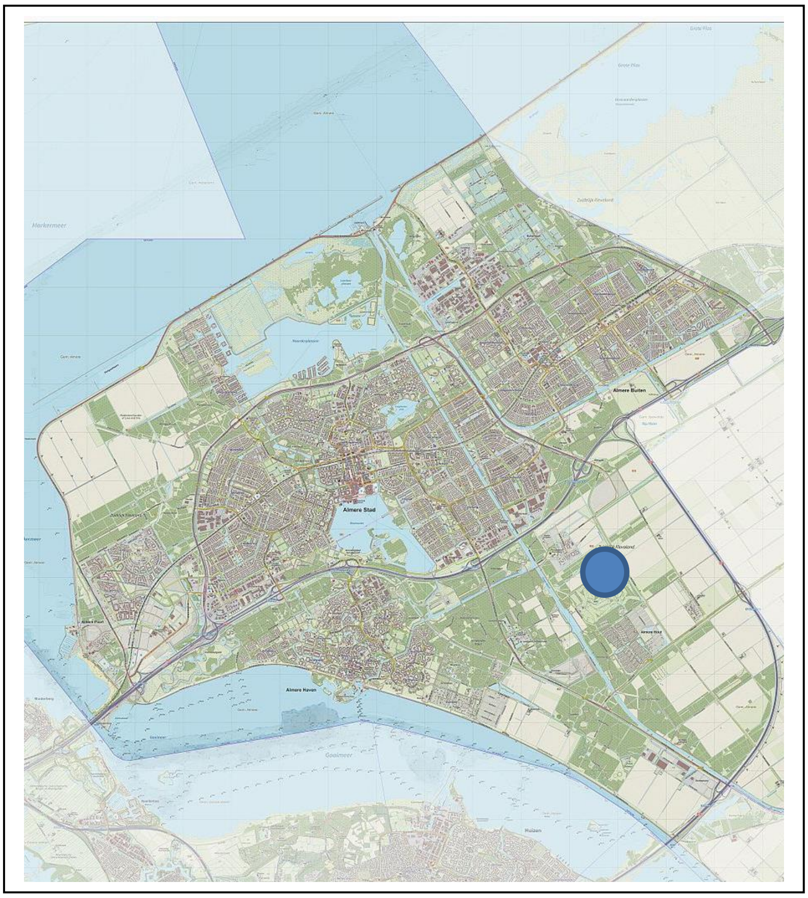

When	Saturday
Where	Stadslandgoed de Kemphaandpad 14
Opening time	9:30- 1.30pm
Number of stalls	16 on 03.02.2018
Fruit & Vegetables	2
percentage	12,5%
retailers	0
producers	2
organic	yes
Key word	confident
Access	Outside the city, car, bike lane

Picture : vegetable choice, no price, and no origin.

Picture : fruit choice, farmer or retailer. Few fruit from Dronten.

Appendices 5: English survey

This questionnaire was set up for a research project. We want to know how markets contribute to local food consumption. This questionnaire is carried out in two cities (Almere and Angers, in France). The questionnaire contains 13 questions. It is an anonymous survey and your answers will be used only for this research.

1. **How many markets in the city or outside the city do you visit?**
   a. Only that one
   b. Two
   c. More than two
   Which other markets? :………………………………………………………………….

2. **How often do you come to this market?**
   a. Less than once a month
   b. Once in a month
   c. 2x per month
   d. Every week

3. **What do you like about this market specifically?** Please indicate the importance of the complete statement.

		Totally unimportant	Unimportant	neutral	important	absolute
A	Meeting other people	1	2	3	4	5
B	Wide product assortment	1	2	3	4	5
C	Organic product	1	2	3	4	5
D	Local product	1	2	3	4	5
E	Distance from your home	1	2	3	4	5
F	Low price	1	2	3	4	5

4. **What do you buy in this market?** Please indicate the frequency of your purchases.

		Never	Sometimes (less than 2 times out of 5)	Often (3 times out of 5)	Repeatedly (4 times out of 5)	Each time
A	Meat	1	2	3	4	5
B	Fruit	1	2	3	4	5
C	Vegetable	1	2	3	4	5
D	Fish	1	2	3	4	5
E	Dairy products	1	2	3	4	5
F	Clothes	1	2	3	4	5
G	Other	1	2	3	4	5

5. **To what extent do you agree with the following statements concerning the fruit and vegetables sold in this market?**

		Totally not agree	Not agree	Neutral	agree	Totally agree
A	I'm attentive to the origin of fruits and vegetable for my groceries.	1	2	3	4	5
B	In the market, it's easy to know the origin of fruit and vegetables.	1	2	3	4	5
C	There are enough local fruit and vegetables in the market	1	2	3	4	5
D	I'm more confident in	1	2	3	4	5

	local fruit and vegetables than others					
E	For quality, I think there are no differences between local and non-local fruit and vegetables.	1	2	3	4	5
F	Local fruit and vegetables are more expensive.	1	2	3	4	5
G	I'm attentive to the way of fruits and vegetable are produced.					

6. What percentage of your weekly fruit and vegetable shopping do you buy at this market?

		All	Approximately 75%	Around 50 percent	Around 25 percent	Less than 10 percent	No at all
A	For fruit	1	2	3	4	5	6
B	For Vegetables	1	2	3	4	5	6
C	For Local fruit and vegetables	1	2	3	4	5	6
D	Organic fruit and vegetables local fruit and vegetables	1	2	3	4	5	6
E	For potatoes	1	2	3	4	5	6
F	For exotic fruit and vegetable	1	2	3	4	5	6

7. To what extent do you agree with the below statement regarding the fruit and vegetables for sale in this market <u>today</u>?

		Totally not agree	Not agree	Neutral	agree	Totally agree	I don't know
A	Oranges are not local	1	2	3	4	5	6
B	Apples are local.	1	2	3	4	5	6
C	Paprika come from Spain	1	2	3	4	5	6
D	Tomatoes come from the Netherlands	1	2	3	4	5	6
E	Broccolis come from the Netherlands like cabbage	1	2	3	4	5	6
F	Strawberries come from Morocco	1	2	3	4	5	6
G	Cauliflowers are local.	1	2	3	4	5	6

Country of origin and birth/Nationality: …………………………/……………………

Gender: M F

Age: ………. y.o.

Do you have a kitchen garden ?: yes / no

Appendices 6: Netherland survey

Deze vragenlijst is opgezed voor een onderzoeksproject. We willen weten hoe markten bijdragen aan de lokale voedselconsumptie. Deze vragenlijst wordt uitgevoerd in twee steden (Almere en Angers in Frankrijk). De vragenlijst bevat 13 vragen. Het is een anonieme enquête en uw antwoorden wollen alleen voor dit onderzoek gebruikt.

8. **Hoeveel markten in de stad kom je vaak tegen?**
   d. Alleen die
   e. twee
   f. Meer dan twee

   Welke andere markten? :………………………………………………………………….

9. **Hoe vaak kom je naar deze markt?**
   e. Om de paar maanden
   f. Een keer per maand
   g. 2x per maand
   h. Elke week

10. **Wat vindt u het leukst aan deze markt?** Geef aan welke stelling het beste bij u past.

		Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
A	Nieuwe mensen ontmoeten	1	2	3	4	5
B	Groot assortiment aan producten	1	2	3	4	5
C	Biologische producten	1	2	3	4	5
D	Lokale producten	1	2	3	4	5
E	Afstand vanaf uw huis	1	2	3	4	5
F	Lage prijs	1	2	3	4	5

11. **Wat koopt u meestal op deze markt?** Geef de frequentie van uw aankopen aan.

		Nooit	Soms (minder dan 2 keer van de 5)	Regelmatig (3 keer van de 5)	Vaak (4 keer van de 5)	Altijd
A	Vlees	1	2	3	4	5
B	Fruit	1	2	3	4	5
C	Groente	1	2	3	4	5
D	Vis	1	2	3	4	5
E	Zuivel	1	2	3	4	5
F	Kleding	1	2	3	4	5
G	Anders	1	2	3	4	5

12. **In hoeverre bent u het eens met de volgende uitspraken over groenten en fruit die op deze markt worden verkocht?**

		Helemaal oneens	Oneens	Neutraal	Eens	Helemaal eens
A	Ik ben op de hoogte van de herkomst van de groenten en fruit die ik koop.	1	2	3	4	5
B	Op de markt is het gemakkelijk om de herkomst van groenten en fruit te achterhalen.	1	2	3	4	5
C	Er zijn voldoende lokale groenten en fruit op de markt aanwezig.	1	2	3	4	5

D	Ik heb meer vertrouwen in lokale groenten en fruit dan in producten die elders vandaan komen.	1	2	3	4	5
E	Wat kwaliteit betreft denk ik dat er nauwelijks verschil is tussen lokale en niet-lokale groenten en fruit.	1	2	3	4	5
F	Lokale groenten en fruit zijn duurder.	1	2	3	4	5
G	Ik ben op de hoogte van de manier waarop groenten en fruit worden geproduceerd.					

13. Welk percentage van uw wekelijkse aankopen aan groenten en fruit koopt u op deze markt?

		Alles	Ongeveer 75%	Ongeveer 50%	Ongeveer 25%	Minder dan 10%	Helemaal niets
A	Fruit	1	2	3	4	5	6
B	Groenten	1	2	3	4	5	6
C	Lokale groenten en fruit	1	2	3	4	5	6
D	Biologische groenten en fruit	1	2	3	4	5	6
E	Aardappels	1	2	3	4	5	6
F	Exotische groenten en fruit	1	2	3	4	5	6

14. In hoeverre bent u het eens met de volgende uitspraken over groenten en fruit die <u>vandaag</u> op de markt te koop zijn?

		Helemaal oneens	Oneens	Neutraal	Eens	Helemaal eens	Ik weet het niet
A	Sinaasappels zijn géén lokaal fruit.	1	2	3	4	5	6
B	Appels zijn lokaal fruit.	1	2	3	4	5	6
C	Paprika's komen uit Spanje	1	2	3	4	5	6
D	Tomaten komen uit Nederland.	1	2	3	4	5	6
E	Broccoli komt uit Nederland, net als kool.	1	2	3	4	5	6
F	Aardbeien komen uit Marokko.						6
G	Bloemkolen zijn lokale groenten.	1	2	3	4	5	6

Land van herkomst/Nationaliteit:
…………………………/……………………
Geslacht: M V
Leeftijd: ………. jaar
Heeft u een moestuin? : ja / nee