



SUPURBFOOD  
Towards sustainable modes of urban  
and peri-urban food provisioning

Work Package 2 / Deliverable 2.2

**Overview Report Rotterdam city region**  
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# Section 1 - National and regional context: description and analysis

## 1.1 Introduction Rotterdam City region

Rotterdam is a city with 616.000 inhabitants in 2012. The city is home to a large seaport (untill 2004 it was the biggest port in the world, now it is third to Shanghai and Singapore). The Rotterdam port area also hosts a large inland port, river barges forward cargo from the seaport navigating the Rijn and Maas river system inland Europe.

Rotterdam is part of the city region Rijnmond (Stadsregio Rijnmond), a cooperation between 15 municipalities which includes cities along the river Maas and also more inland orientated municipalities (see fig 1). The city region is supposed to constitute one housing market, one labour market, and one transport market. The city region is responsible for among other things small scale infrastructure, public transport and spatial planning.

In 2011 the city region adopted a revised Regional Green Blue Structure Plan (Regionaal Groen Blauw Structuur Plan RGSP3, <http://stadsregio.nl/regionaal-groenblauw-structuurplan>) which forms the basis for cooperation to work on green and recreation projects in the region. Interestingly urban agriculture (also called multifunctional agriculture) is part of the agenda (point 3.4.4 on page 17: [http://stadsregio.nl/sites/stadsregio.nl/files/files/Uitvoeringsprogramma%20RGSP3\(1\).pdf](http://stadsregio.nl/sites/stadsregio.nl/files/files/Uitvoeringsprogramma%20RGSP3(1).pdf)). The document argues that despite the pressure on land, there is a role for city orientated agriculture in the region. It can deliver several societally beneficial services, such as recreation and nature. But also it can deliver food production, as urban dwellers increasingly demand transparency and provenance in short food supply chains.

The Rijnmond city region will merge in 2015 with The Hague city region (Stadsgewest Haaglanden) and will form the Metropole Rotterdam The Hague

(Metropool Rotterdam Den Haag MRDH). This reinforcement of collaboration at the enlarged metropole level is deemed necessary to increase economic competitiveness.



**Figure 1 - Rotterdam city region (Stadsregio Rijnmond)**

### 1.2 Urban Agriculture and short food supply chains: description at national level

At national level there is a city network urban agriculture (<http://www.stedennetwerkstadslandbouw.nl/>). In this network civil servants of several cities, including Rotterdam, meet and discuss problems to get urban agriculture on the agenda locally. This network is supported by the Ministry of Economic Affairs. Supported by the Ministry of Infrastructure and Environment there also is a local action network Climate Change which also incorporates urban agriculture (Lokale Klimaat Agenda Leergroep Stadslandbouw, VROM). The deputy major of Rotterdam is ambassador of urban agriculture in this local action network. Aim of the network is to gather and exchange experiences with urban agriculture ([http://www.rwsleefomgeving.nl/publish/pages/94530/tussentijdse\\_evaluatie\\_klimaatagenda\\_2011-2012.pdf](http://www.rwsleefomgeving.nl/publish/pages/94530/tussentijdse_evaluatie_klimaatagenda_2011-2012.pdf))

A manifesto was written by the city network urban agriculture and presented at National Day of Urban Agriculture in Rotterdam (25 April 2013,

<http://www.stedennetwerkstadslandbouw.nl/wp-content/uploads/2013/10/AgendaStadslandbouw2014.pdf>). This is meant to be signed by local authorities throughout the Netherlands. The manifesto addresses several challenges for urban and peri urban agriculture: physical space; space in the rules for food safety and recycling waste which currently are too much orientated at longer, industrial food chains; professionalization of urban and peri urban agriculture and finally the possibility to cooperate with public and private parties in food policy networks (<http://www.stedennetwerkstadslandbouw.nl/wp-content/uploads/2013/10/AgendaStadslandbouw2014.pdf>).

At national level there is also an informal network on regional products (producers and distributors). This network was set up by the Task Force Multifunctional Agriculture which was operational 2008-2012. This network is focussing mainly on peri urban agriculture and also includes intermediate parties such as wholesalers and catering companies specialising in regional produce (<http://multifunctionelelandbouw.net/content/over-boerderijverkoop-streekproducten>). The regional products network's annual meeting was in Rotterdam 9th of April 2013. The national government supported the development of a website on regional products. <http://streekproductenloket.nu/>, which aims to inform business to business relations.

At national level there also is a Green deal concerning the further professionalization of urban agriculture (<http://www.greendeals.nl/wp-content/uploads/2015/06/GD083-Nationale-Federatie-Stadsgerichte-landbouw.pdf>). This involves a deal between the two afore-mentioned Ministries and several parties, a firm of architects, a venture capitalist, a climate control company (green houses and offices climate control) and a research institute (LEI-WUR). Some 12 case studies were made to analyse a variety of viable urban agriculture business models, with the potential to attract external capital, such as venture capital and philanthropic capital or crowdfunded capital (<http://www.vanbergenkolpa.nl/postbus/website/NFSL.pdf>).

At national level there is a policy on sustainable procurement (<http://www.rvo.nl/subsidies-regelingen/duurzaam-inkopen>). To establish guidelines has been a very complicated process. The national policy deals with procurement in general (food and non-food), and when it comes to food there is debate whether distance (proximity) can be a valid criterion. The Dutch Ministry of Infrastructure & Environment's "Criteria for Sustainable Procurement of Catering" still included the minimization of food miles and the 'Acknowledged Regional Product' certificate as proof of sustainability in 2011. Both conditions were removed however from the document in 2012 (Ministerie van Infrastructuur en Milieu, 2011; 2012). In the meantime some local authorities (such as Rotterdam and Nijmegen) do require proximity as an extra criterion (and there have been no law suits from the catering companies yet).

At national level there is a task force Trustworthy food, as a response to the horse meat scandal and several other food safety and food integrity infringements. In the action plan that came out recently shortening of food supply chains is seen as a solution, ideally only parties that "add value" to the supply chain should be allowed (<https://www.rijksoverheid.nl/documenten/rapporten/2013/06/13/actieplan-taskforce-voedselvertrouwen>). The formal control regime is tightened and reinforced (HACCP etc.).

At the national level there is a change in social health care policy from AWBZ to WMO (<https://www.movisie.nl/artikel/wijzigingen-awbz-wmo-overzicht>). This is a profound transition from a national special health care program (AWBZ) to a local program which should be closer to the people in need themselves (WMO). It involves better cooperation between care provider and care client, and also builds on self-reliance and social participation. This transition is so important that it was mentioned in the Troonrede 2013 (a general policy document prepared by the Dutch Government and read by the Dutch King in a yearly ceremony called Prinsjesdag). The 2013 version included an appeal to the "participation society" ("participatie maatschappij"): the notion that the classical

welfare state is untenable financially and that we should all bear more responsibility to take care of each other in the social domain (<https://www.rijksoverheid.nl/documenten/toespraken/2013/09/17/troonrede-2013>). This would mean in practice for example that clients of social care farms will not be funded by a national budget anymore, but this task has been delegated to local authorities (with a reduced budget). This major policy change hasn't been settled yet. There is a lot of debate going on, what and how. Local farmers anticipating cuts in travel cost recovery, only select clients from their own town, and not from the larger metropolitan region, as they used to do (and is implied by the idea that the metropole is one housing, one labour and one transport market).

At national level there may be a position for urban agriculture and short food supply chains in sector innovation policy. In the 'Food and Agriculture' top sector short food supply chains ("local products for local markets") are mentioned as an innovation challenge. ' (<http://www.tki-agrifood.nl/downloads/innovatiecontract/update-innovatiecontract-agrifood-2013.pdf>). In the "Horticulture" top sector it is more difficult to find explicit references ([http://topsectortu.nl/sites/topsectortu.nl/files/files/Update%20innovatiecontract\(3\).pdf](http://topsectortu.nl/sites/topsectortu.nl/files/files/Update%20innovatiecontract(3).pdf)). But in 2013 a public private partnership was awarded by the top sector Horticulture to study urban agriculture (<http://www.wageningenur.nl/nl/project/Stadslandbouw-9.htm>). In practice it has been difficult to find private parties dealing with urban agriculture that are financially capable to contribute in cash to the PPS. The Horticulture Product Board (Productschap Tuinbouw) was interested to support an innovation program on urban horticulture, but all product boards are being dismantled at the moment.

At EU level there is a local food systems report published by the Committee of the Regions (Lenie Dwarshuis, 2011). The Committee argues for a balance between export orientated agriculture and regionally orientated agriculture.

([http://www.europa-nu.nl/id/vimip5g6hrzj/nieuws/comite van de regio s lokale?ctx=vg9hm2g38wdd&tab=1&start\\_tab0=120](http://www.europa-nu.nl/id/vimip5g6hrzj/nieuws/comite_van_de_regio_s_lokale?ctx=vg9hm2g38wdd&tab=1&start_tab0=120)).

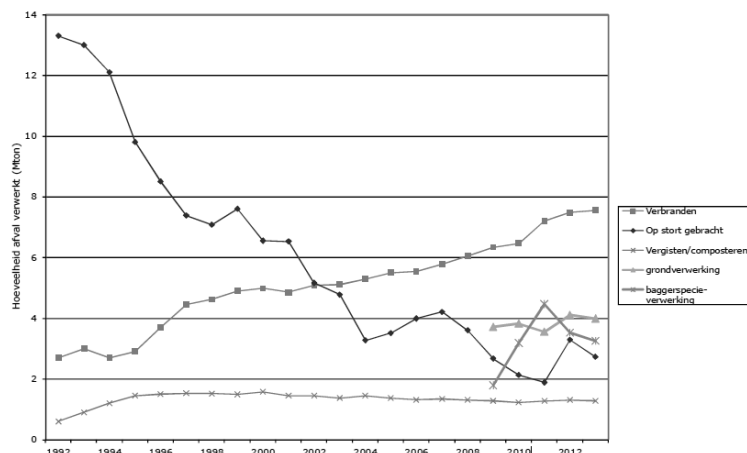
At EU level there are proposals for a new seed directive (the Plant Reproductive Material Law, <http://www.cpvo.europa.eu/main/nl/68-news/notas-de-prensa-y-comunicaciones/228-draft-new-eu-plant-reproductive-material-law>). This law meets a lot of resistance as it requires seeds to be tested before they can enter the market. A lot of the seeds used in small scale peri urban and urban agriculture are natural seeds (free seeds) shared between growers and not formally tested. There was major opposition to this Directive in 2013 (<http://www.seed-sovereignty.org/EN/> also a “March against Monsanto” was organised including urban agriculture bottom up initiatives). An exemption has been proposed for seeds in small production locations.

### 1.3 Urban Agriculture and closing urban waste loops: description at national level

In the Netherlands three ways are distinguished to manage waste: landfill, incineration and digestion and composting ([http://www.rwsleefomgeving.nl/publish/pages/104618/afvalverwerking\\_in\\_nederland\\_gegevens\\_2013\\_1\\_1.pdf](http://www.rwsleefomgeving.nl/publish/pages/104618/afvalverwerking_in_nederland_gegevens_2013_1_1.pdf)). Most of the waste is incinerated for energy. There still is a small amount of land fill. Waste digestion and composting is relative stable.



Figuur 1: Overzicht verwerkte hoeveelheden afvalstoffen per verwerkingsmethode\*



\*Gegevens voor grond en baggerspecie verwerking zijn beschikbaar vanaf 2009.

Figure 2 – Overview processed amounts of waste per method of processing

The national policy for waste management is laid down in a National Waste Management Plan (Landelijk Afvalbeheer Plan of LAP). The current plan (the second version) runs from 2009 to 2021 (<http://www.lap2.nl/>, and [http://www.lap2.nl/sn\\_documents/downloads/01%20Beleidskader/Beleidskader\(ttw2\)\\_00\\_compleet.pdf](http://www.lap2.nl/sn_documents/downloads/01%20Beleidskader/Beleidskader(ttw2)_00_compleet.pdf)).

This second plan tries to make the transition from waste management to material flow management, its leverage is not in the final stage of the product (when it becomes waste) but throughout the production chain (products are designed such that they can be more easily recycled). This approach is called From Waste to Resource (Van Afval naar Grondstof VANG: <http://www.vang-hha.nl/>). The national government has a central role in waste management policy, and provinces and municipalities have a role in prevention, separation, licencing and enforcement. Municipalities are legally responsible to collect domestic waste, but they can do this themselves or hire a private company to do so if this is more efficient. Market controls are being lifted as much as possible. For example in 2003 de capacity controls on waste incineration were being lifted, allowing as of 2007 the import of foreign not toxic waste to be incinerated in the Netherlands. In Rotterdam, the waste incineration installation near residential areas at the southern river bank was closed in 2010. There still

are incineration installations in the city region in Dordrecht and Rozenburg, the Rozenburg installation delivers heat to warm residential houses in Rotterdam (through a 26 kilometre long pipeline, De Nieuwe Warmte Weg: <http://www.avr.nl/energy-inside/>).

If domestic waste is collected separately, it is possible to recycle some components, thus maintaining more value and reducing the need for new inputs. Organic waste may be collected separately to be composted and this is done in many other cities and towns in the Netherlands. In Rotterdam however, due to the large number of people living in high risers, the policy is to collect domestic waste unseparated. Most domestic waste is therefore being incinerated. Biogenic waste from parks and gardens may be composted. This will be organised by professional companies in park maintenance contracts. Citizens can compost their own waste if they want, or they can carry their green waste voluntary to waste collection points (milieuparken) where it will be composted by or under supervision of the municipality.

In 2011 the Nutrient Platform has been founded, a cross sectoral initiative of Dutch organisations worried about the world wide impact of the depletion of phosphate mines, and the way in which nutrients are treated in general (<http://www.nutrientplatform.org/english.html>). More than 35 Dutch businesses, knowledge institutes, governments and NGOs are member of the Nutrient Platform. Their joint ambition is to create a market for recycled nutrients in which as many nutrients as possible are recovered from 'waste' streams (wastewater, sludge, manure, swill) and recycled into valuable new products (fertilizers, animal feed, chemicals). As the Netherlands has an intensive livestock system, we also have a surplus of phosphorus. The Nutrient Platform also aims to promote the export of recovered nutrients to contribute to soil improvement and food security elsewhere, This is a prime example of the so-called "circular economy" at the national (even international) level. The circular economy is a conception of the economy as a restorative system, which aims to

keep products, components and materials at their highest utility and value at all times (<http://www.ellenmacarthurfoundation.org/circular-economy>).

In Rotterdam, the port authority together with the Rabobank (a Dutch cooperative bank with its roots in agriculture) commissioned a research to explore the potential of the Circular Economy in the Rijnmond region. (<https://www.rabobank.com/nl/images/Pathways-to-a-circular-economy.pdf> ). They developed four business cases in different sectors: energy, metals, chemicals and food. The food example was a proposal to grow fish in a land based aquaculture system, with algae components as feed input. The algae was grown on nutrient rich urban waste water. The proposal has not been realised yet, but the research commissioned by the port authority and a bank shows that interest for circular urban solutions is rising and innovative business cases are being explored.

### **1.4 Urban agriculture and multifunctional landuse: description at national level**

With respect to multifunctional land use, it should be noted that at the national level the Department of Housing, Physical Planning and the Environment (VROM) is drastically re-organised. The responsibility for comprehensive physical planning is delegated to the Provinces (<https://www.rijksoverheid.nl/actueel/nieuws/2011/04/21/bestuursakkoord-over-decentralisatie>). For the Provinces this means more responsibility in the economic domain (regional economic policy), nature (green infrastructure), physical planning and transport (new infrastructure and public transport). The Provinces are supposed to reinforce their spatial profile, the national government will reduce in size. This decentralisation of planning authority to Provinces also leads to criticism that this level of government is not capable to pick up this task and also that green space will erode and inner cities will deteriorate (<http://www.binnenlandsbestuur.nl/ruimte-en-milieu/nieuws/kritiek-op-ruimtelijk-beleid-kabinet.1151184.lynkx>).

The budget for development and management of green space has been reduced. When the new right wing coalition government (Rutte 1) entered office in 2010, the national program to establish an Ecological Main Structure was cut back drastically (less hectares to be acquired and also no zones to connect nature reserves to form a bigger whole). When the coalition government re-entered office in 2013 (Rutte 2) some of these cut backs were recalled but the program is less ambitious (less budget to acquire land and more time to realise goals) (<http://www.groeneruimte.nl/dossiers/ehs/home.html>). The idea that farmers can cost efficiently contribute to biodiversity is being put forward again (e.g.: <http://cultuurtijdschriften.nl/download?type=document&docid=495070>).

At the same time there is a national crisis in real estate in the Netherlands since 2012 (and perhaps earlier already starting from the international bank crisis in 2007). A lot of farm land that was bought to be developed remained vacant, causing problems for both public and private development agencies (<https://www.rijksoverheid.nl/actueel/nieuws/2011/10/03/financiele-effecten-van-de-vastgoedcrisis-bij-gemeentelijke-grondbedrijven>). There is overcapacity on the commercial real estate market: newly built offices remain empty ([http://www.am.nl/wp-content/uploads/2012/03/AM-IS5DEF\\_Drukkerpagina.pdf](http://www.am.nl/wp-content/uploads/2012/03/AM-IS5DEF_Drukkerpagina.pdf)). In this context, urban agriculture is seen as one of the strategies to redevelop cities. The Ministry of Infrastructure and Environment supports projects and platforms to explore new forms of urban area development, including so-called organic development: involve users right from the start, make use of material and energy flows, redevelop what is already there rather than put out something brand new ([http://www.pbl.nl/sites/default/files/cms/publicaties/PBL\\_2012\\_Vormgeven-aan-de-Spontane-Stad\\_500232002.pdf](http://www.pbl.nl/sites/default/files/cms/publicaties/PBL_2012_Vormgeven-aan-de-Spontane-Stad_500232002.pdf)).

### 1.5 Analysis

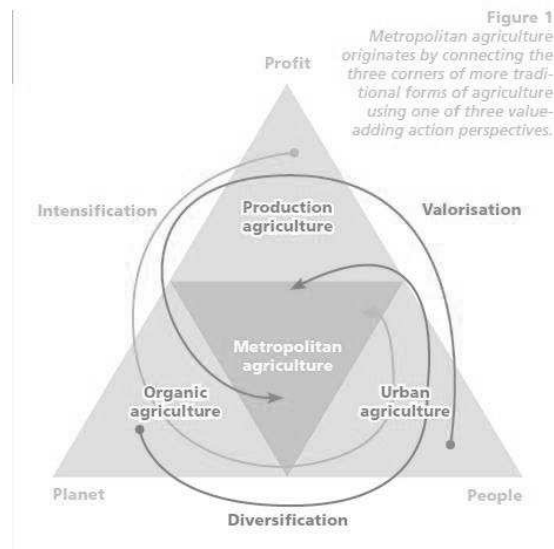
The subject of short supply chains and urban agriculture does not receive much systematic attention from national policy makers. Locally and regionally embedded short food supply chains are being brought under the attention

through parliamentary questions (for example the Animal Welfare Party: <https://www.partijvoordedieren.nl/news/esther-ouwehand-bezoekt-rotterdamse-koplopers-in-stadslandbouw>).

There is no clear national policy on urban agriculture or short food supply chains, as there once was vis a vis multifunctional agriculture (the Task Force Multifunctional Agriculture was dismantled in 2012). This lack of systematic support may be attributed to conceptual confusion.

Urban agriculture is positioned in the Netherlands as being different from metropolitan agriculture. Metropolitan agriculture (in the Dutch policy discourse) is a high tech version of agriculture clustered in industrial sites close to cities (agroparcs), promoted as a way to feed large metropolises. An example is the project that has been proposed for the Shanghai metropole (<https://www.youtube.com/watch?v=MO3dK90HvFI>). In later versions of the concept (<http://www.metropolitanagriculture.com/>), urban agriculture was embraced as a relevant form of agriculture but it was situated exclusively in the social domain, whereas other forms of metropolitan agriculture were situated in the ecological (multifunctional farming) and economic domain (commercial farming). In this conceptualisation it is impossible to see urban agriculture as a form of agriculture able to contribute to feeding cities in its own right, addressing social as well as ecological and economic aspects at the same time.

Figure 3: Different concepts of metropolitan agriculture



(source: <http://www.metropolitanagriculture.com/resources/Metropolitan-agriculture---Space-for-the-Future.pdf>, page 7)

In the international literature urban agriculture includes forms of agriculture that are spatially, socially and ecologically connected to the city (UNDP 1996, <http://www.jacsmit.com/book.html>).

The lack of support for short and ultra-short food supply chains may also be attributed to the dominance of the export orientated model of agriculture in the Netherlands over the regionally embedded model of agriculture that seems inherent to the notion of urban agriculture and short food supply chains (Van Broekhuizen and Van Cooten 1997).

Urban agriculture can be seen as a specific manifestation of a more general phenomenon which is thought to be needed to move a society to a greening of the economy. This is a diversion of attention from direct government intervention to acknowledge the creativity and innovation of citizens and companies. In the Netherlands, this is called the 'Energetic Society'. A new role

for self-organising citizen initiatives. But what then is the role of government? The government should develop an inspiring perspective to motivate people, dynamic rules that reward innovation and learn continuously of societal dynamics

([http://www.pbl.nl/sites/default/files/cms/publicaties/Signalenrapport\\_web.pdf](http://www.pbl.nl/sites/default/files/cms/publicaties/Signalenrapport_web.pdf)).

Interestingly decentralisation and citizen empowerment take shape not only in energy, but also in social insurance, food production and waste management (Rotmans 2012)

At national level it strikes that local authorities are supported in a network but there are no networks for individual initiatives, whether these are entrepreneurial or societal initiatives. There is no Community of Practice for real practitioners. Some questions however around urban agriculture are being asked every time and at every place (e.g. effect of soil and air pollution on crops). It would be good had there been a national research and extension program to solve these issues once and for all. At the moment the debate is very ad hoc, from one newspaper item to another (one ecologist arguing that one cannot eat tomatoes grown in urban soils, and another ecologist arguing that most of the contamination remains in the soil and does not affect food safety and food quality).

One could argue that urban agriculture is a place of innovation not just in its own right but also for the agricultural and food sector writ large (this was the theme of a symposium organised by Eetbaar Rotterdam in 2011, <http://www.eetbaarrotterdam.nl/symposium-rvsl/>). See also the report resulting from that symposium: [http://www.eetbaarrotterdam.nl/Downloads/Onvermoede-Potenties\\_Reflectief-Verslag\\_RvSL-Symposium.pdf](http://www.eetbaarrotterdam.nl/Downloads/Onvermoede-Potenties_Reflectief-Verslag_RvSL-Symposium.pdf)

The place of urban agriculture in Dutch innovation policy however is fragmented and unsecure. The national innovation policy itself -the top sector policy- has been questioned. It is deemed too much orientated towards vested business interests rather than breaking new grounds, which would be warranted given the public money dedicated to top sector innovation (Marian Ammazucato in

NRC newspaper article 2013:

<https://m.sussex.ac.uk/webteam/gateway/file.php?name=mazzucato-nrc-translation.pdf&site=25>). It has been difficult for SMEs (which are the basis of many short food supply chains) to acquire a position in the top sector innovation agendas. Some question the idea of sectors of industry as engines of innovation altogether (Brakman 2012; <http://www.trouw.nl/tr/nl/5009/Archief/article/detail/3368890/2012/12/27/Blijf-niet-hangen-in-19de-eeuw.dhtml>). Economic activities cluster around spatially separated parts of the supply chain rather than sectors. On this account one should look at what part of the supply chain we are good at in the Netherlands when it comes to horticulture or food, rather than stimulate these sectors as a whole. But this idea is going even further away from the re-regionalisation and re-localisation of the food system that urban agriculture seems to imply. In any case, one could argue that certain tasks in the food chain cannot be outsourced by definition such as fresh food processing and the food service industry.



## Section 2 - General introduction city region Rotterdam

### 2.1. Developing a food policy in Rotterdam

In 2008 Rotterdam organised the Green Year. They did a research to review the use and appreciation of public green space, both inside as well as outside the city ([http://www.polderdag-rhoon.nl/uploaded\\_files/DV\\_2008%20Groenonderzoek%20Rotterdam%20Samenvatting.pdf](http://www.polderdag-rhoon.nl/uploaded_files/DV_2008%20Groenonderzoek%20Rotterdam%20Samenvatting.pdf)). It was found that green space outside the city does not attract so many visitors and also is not so well appreciated, even though budgets to develop and maintain it are rather high. Green space inside the city on the other hand is well visited by urban dwellers but quality is rather uniform and could be improved. Budgets for urban green infrastructure will be cut however, as both national and municipal funding is under threat. On the conference concluding the Green Year urban agriculture, a combination of landscape maintenance and food production, was identified as potential solution.

In 2009 a Think tank on urban agriculture was set up. This is a civil servant platform to discuss the potential of urban agriculture as a solution to problems in green space (the author of this report is the only external member of the Think tank). Several meetings were organised with experts and with local and regional parties. There was a change of city government but the new executive councillor for public space embraced the idea of urban agriculture wholeheartedly. A policy document was written, urban farming is defined as farming both in and around the city (urban and peri-urban). Several successful examples are identified in the document. On the basis of an analysis of public goals and initiatives that already existed several policy priorities were established: public health, quality of green space and local economy (<http://www.rotterdam.nl/Stadsontwikkeling/Document/FoodTheCity22022012Laag.pdf>). In English:

<http://www.rotterdam.nl/Clusters/Stadsontwikkeling/Document%202013/Groen/FoodTheCityEngels.pdf>.

The policy document was officially adopted by the Municipal Council in May 2012.

### 2.2. Policy implementation

In its first years the Think tank on urban agriculture saw as its responsibility to implement the policies outlined in the document. But toward the end of her governing period, the executive councillor responsible for green space convened the Regional Food Council Rotterdam to institute continuity of policies (<http://www.rotterdam.nl/foodcouncil>). Rotterdam decided to drop the word “Policy” as in “Food Policy Council”, because it wanted to show that this about actions not words. The Food Council is an advisory body including representatives from a wide background, public policy makers, NGOs, farmers, and food businesses large and small. The Council met for the first time 24 April 2013 and is now preparing its work program. There are three themes that the Food Council will focus on: improving urban rural relations (match rural supply with urban demand), education, participation and communication (stimulate a healthy lifestyle for kids), circular economy and innovation (reducing food waste and closing urban loops). There is no budget made available for the Food Council, all actions must be taken on a voluntary basis or funds should come from elsewhere (on an ad hoc basis).

Rotterdam is also organising meetings to match supply and demand for food in and around the city. These meetings may take the form of “trade missions”, a group of urban parties (wholesalers, hotel/restaurant, retail) is invited to join the deputy major on a trip to one of the farmland areas around Rotterdam, where farmers and growers present their produce. The aim of the mission is to establish urban rural trade relations. One mission has been organised, two more to come.

As host of the Day of Urban Agriculture, the city of Rotterdam produced a special edition of the professional journal Groen, which highlights the current state of urban agriculture in and around Rotterdam (<http://www.rotterdam.nl/Clusters/Stadsontwikkeling/Document%202013/Groen/Groen%202013-04.pdf>). The city is also preparing for the next edition of the

International Architecture Biannual Rotterdam, which will be in 2014 and is about mapping urban flows (people, water, food, waste, energy, etc.) and conceptualising the implications for urban planning and urban development.

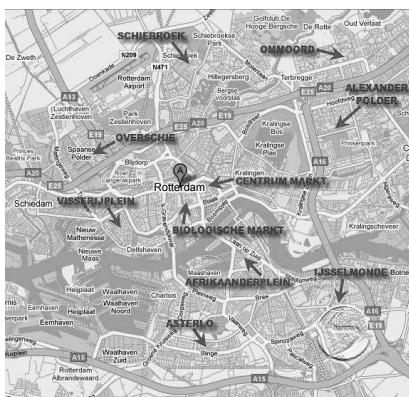
In terms of public procurement, the city of Rotterdam tendered its canteen contract in 2013 and added as special criterion the supply of “produce from urban agriculture” (less than 40 km distance). This however was only one criterion among many others. There was, for example, also a criterion requiring 65% of the people employed by the catering company to have some labour market disadvantage. The contract was won by Eurest company ([www.eurestfood.nl](http://www.eurestfood.nl), part of Compass group) who is now working to comply to the requirements.

More generally speaking, the city of Rotterdam is re-organising its social services policies to accommodate the delegation of national tasks to the local level and the budget cuts that went with this delegation (as explained above). Although talks are still not finished it seems that social care farms close to the city of Rotterdam but outside the city limits will not be funded by the city for clients coming from Rotterdam. Hence these social care farms look mainly for clients from their own municipality (satellite municipalities of Rotterdam).

In terms of multifunctional land use, it is worth mentioning that the city of Rotterdam re-considered its plans for the Schieveen polder to the north of Rotterdam (<http://www.rotterdam.nl/schieveen>, and also, <http://www.vanrottetotschie.nl/projecten/polder-schieveen/>). This peat meadow polder was first designated as business and nature parc (an integrated design mixing commercial property with nature compensation). The city bought out several (dairy) farmers acquiring 400 ha of farm land. But there was opposition and delay. The emerging economic crisis further delayed the plans and eventually the municipal government realised that the proposed business and nature parc will not be developed. In 2013 the adapted Nature and Recreation Plan Schieveen was published, in its foreword the Executive Councillor

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responsible for green space suggested the existing farmers to become engaged in “urban agriculture”. With this, she meant a form of agriculture with high nature values and with high accessibility for city dwellers. The municipality invited local entrepreneurs to develop plans in line with the new designation, and most farmers came up with plans. A jury (including a LEI-WUR member of the Supurbfood research team) ranked the plans according to economic feasibility and impact on city dwellers. Even though the re-consideration of the development of this area seems quite relevant given the economic and societal context, not all people in the City Council agreed that we really need this type of city orientated multifunctional farming at the north side of the city (<http://www.vvdrotterdam.nl/news/vvd-rotterdam/geen-tekentafelnaatuur-in-polder-schieveen/2075>).



**Figure 4 Open air markets in Rotterdam**

(source”<http://www.derotterdamsemarkt.nl/>)

There is a rather well developed system of open air markets (twelve in total) managed by the local government to provide accessible fresh food supply to city dwellers with low income. The open air markets were in decline however, as supermarkets gained more importance and market traders failed to attract higher income customers who would be interested in more innovative food concepts such as artisanal foods, freshly prepared take home meals, sustainable foods, etc. The idea of a covered market hall was developed to turn the tide for the Centrum Market location. In 2006 the local government at that time decided however to dismantle the public market management organisation

(Marktwezen) and hand over the strategic management of the markets to the Rotterdam Development Agency (Ontwikkel Bedrijf Rotterdam OBR; <http://www.rotterdam.nl/STZ/Document/BenO/resultaen%20onderzoek%20waremarkt.pdf>). On a similar note the management of the wholesale market in Spaanse Polder was handed over to a specialised agency (<http://groothandelsmarktrotterdam.nl/en/>). The development of the new covered market, the Market Hall (Markthal) was tendered and a combination of real estate development and retail investment won the bid. The Market Hall will open in august 2014, and it will be positioned next to the open air market, which will be reduced in size.

There is a fairly active food movement in Rotterdam city region. On January 21 in 2005 the Rotterdam Convivium of Slow Food was established. In July 2007 Het Portaal, an agency specialising in communication and debate, organised an expert meeting to discuss the Rotterdam urban food supply system. When the results of the discussion were summarised at the end of the meeting, a group of Rotterdam people decided to meet more often. This developed into Eetbaar Rotterdam (Edible Rotterdam), first an expert group later an association (<http://stadslandbouw.blogspot.nl/2008/12/eetbaar-rotterdam-gelanceerd.html>). Other food related NGO initiatives became active as well: a restaurant sourcing locally as much as possible was established (VandeBoer restaurant) and from that also an initiative emerged to organise open air festivals celebrating locally produced food (Rotterdamse Oogst, [www.rotterdamseoogst.nl](http://www.rotterdamseoogst.nl)). In 2009 Transition Towns established a local group, which became very active in urban agriculture (<http://www.transitiontowns.nl/nieuws/tt-nieuws-uit-rotterdam/>). Apart from these new initiatives, there is an active allotment garden movement in Rotterdam (Rotterdamse Bond van Volkstuinders RBvV <http://rotterdamsebondvanvolkstuiders.nl/>) and also some of the school gardens run by the municipality are quite active not just for school kids but also gradually opening up to the neighbourhood (notably educational garden De Enk in the southern part of Rotterdam <http://enktuin.blogspot.nl/> and also educational garden Essenburgsingel in the centre of the city

[http://www.rotterdam.nl/voorziening:essenburgsingel\\_educatieve\\_tuin\\_educatieve\\_tuinen](http://www.rotterdam.nl/voorziening:essenburgsingel_educatieve_tuin_educatieve_tuinen)).

### 2.3 Preliminary conclusions

Rotterdam builds up a “food policy” gradually, step by step, acting and thinking at the same time. There is no grand design, there is no (or hardly any) budget, rather a network has been build up which is gradually moving into a certain direction (landscape preservation, building up a regional food system, etc.). This rather low profile approach is partly due to the “down to earth” governance culture in Rotterdam (“no words but actions”, “geen woorden maar daden”). It may also be partly due to opposition in the local municipal council: notably the more conservative parties wonder why we should intervene in the Rotterdam food system, as we are so close to the Westland greenhouse horticulture cluster which is internationally renowned for quality and sustainability. Interestingly there is also opposition to urban farming from the urban ecologists in Rotterdam (<http://www.bureaustadsnatuur.nl/>). This independent bureau, which originated from the Rotterdam Museum of Natural History and the Rotterdam Municipal Government, argued that vacant land in the city quite often gives a place to high levels of biodiversity. To turn this land into productive space (with low levels of biodiversity) was thought undesirable, as we could feed ourselves more efficiently from professional agri- and horticulture surrounding the city (point 3 in this document, <http://www.rotterdam.nl/Clusters/Maatschappelijke%20ontwikkeling/Document%202013/SenC/verslag%20overleg%20Adviescommissie%20DWSt%2012%20februari%202013.pdf>). At sub council–city district- level and supra council–city region- level there seems to be less opposition (and there is for example also more financial support for initiatives, as mentioned above).

Five years into food policy building has led to some integration in other policy domains, but this integration is not yet firmly rooted. In the Rotterdam climate policy, urban agriculture and short food supply chains are mentioned in a couple

of action points. It will be a criterion in public procurement (action 86). There will be support for urban agriculture initiatives in order to green the city and allow people to meet each other (action 87). More generally the city will help initiatives to find a place and remove unnecessary limiting regulations. The city is eager to develop more urban green spaces, both in parks but also on rooftops and attached to walls (action 3). The focus is in particular on 10 inner city districts with very little urban green (action 84). Although the policy document is focussed on greening the city, the introduction of *edible* green is welcomed

(<http://www.rotterdam.nl/DSV/Document/Lucht/Programma%20Duurzaam%20gemeente%20Rotterdam.pdf>). Not all the action points have a clear budget (except green roof tops, there is an edible green rooftop receiving funding; <http://www.schieblock.com/index.php?pageID=8&studioID=70>)

In social policy disadvantaged labour participation is mentioned in public procurement of catering services but not related to production and processing stages, only to catering stage of food chain (therefore social farms or social urban agriculture projects are not recognised). Several urban farming projects have adopted work experience goals but it seems fragmented, food production and processing is not yet seen as urban career opportunity by the administration. Here is a lot of untapped potential vis a vis using urban agriculture or short food supply chains as a mechanism to realise “full engagement” i.e. the idea that people who receive public benefits must actively participate, in one way or another.

Food policy has not yet been integrated in economic policy. Until now, urban agriculture received municipal attention from the planning department (housing and green urban infrastructure), but increasingly there is also interest from the urban development department. This is partly because food seems to be an interesting component of city marketing. Rotterdam committed to bid for the World Food Experience, and iconic building and permanent exhibition celebrating Dutch achievements in food production processing and distribution

(<http://www.worldfoodcenters.com/foodexperiencecenter/>). Rotterdam lost the bid but the network of parties that was mobilised decided to stay active and develop a “Food Cluster” approach. It turned out that food production, processing and distribution in the city region could be seen as a third cluster next to the port and the medical industry cluster. Hence, food is also receiving more and more attention as an engine for regional economic development (jobs). But there is no clear strategy yet what might be the ambition. At a much smaller scale streets like the Nieuwe Binnenweg are now positioned as a food boulevard

(<http://www.rotterdam.nl/Clusters/Stadsontwikkeling/Document%202013/Groen/Groen%202013-04.pdf>, p 22) and:

[http://airfoundation.nl/air\\_activiteiten/excursie\\_en\\_bezoek/architectuur\\_aan\\_de\\_keukentafe.html](http://airfoundation.nl/air_activiteiten/excursie_en_bezoek/architectuur_aan_de_keukentafe.html)). Also walking and cycling tours with local food production and the urban green environment as a theme

(<http://www.groeneloper010.nl/home.html>). The central open air market of Rotterdam (the biggest in the Netherlands) is in the process of redevelopment towards a covered market (Markthal, <http://markthalrotterdam.nl/>). But as yet there has been little interaction with the policy goals embraced in the Rotterdam Food Council. The Markthal is developed by a private development company Provast (<http://provast.nl/>) and will be handed over to a private investment company Corio, specialising in shopping malls and other retail complexes ([https://en.wikipedia.org/wiki/Corio\\_\(company\)](https://en.wikipedia.org/wiki/Corio_(company))). Corio was actually a merger of investment companies related to pension funds, including the public sector pension fund ABP, but it invests funds primarily on a commercial basis not so much orientated towards societal considerations.

There are several transitions going on at the same time in the Netherlands and in the Rotterdam city region. Urban agriculture could be a mechanism to combine these transitions and bring out better solutions for the challenges that need to be faced. There is a real estate crisis (vacant lots are available), there is a transition in the welfare state (people need to be more fully engaged which means that volunteering becomes an obligation), there is a transition in city



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redevelopment (from an integral top down approach to a piecemeal bottom up approach) and there is a transition in the economy (from lifelong employment to self-employed professionalism). Urban agriculture fits in many of these transitions as a low entrance arena for experimentation. City departments work in strictly functionally separated domains of urban activity which all receive cuts in budgets (physical environment, social welfare, economic development). Urban agriculture entrepreneurs could combine these spheres of activity and develop more integrated solutions, such that even if each separate budget is reduced, several budgets added up together may generate synergies and create more impact than previously assumed.

### Section 3 - Dynamics in the city region

#### 3.1 Overview of short supply chain initiatives

Short food supply chains may involve direct sales on farm, webshops and box schemes, farmers markets, retail concepts and out of home sales (hotels, restaurants, catering public institutions and private companies).

##### 3.1.1 Direct sales on farm shops

There are several websites that map the possibilities in the Rotterdam city region to buy your food directly from the farmer/grower: [www.heerlijkvers.nl](http://www.heerlijkvers.nl) is a website run by local food enthusiasts with some public funding focussed on the wider Province South Holland region, which Rotterdam is part of. Another website is [www.bijteun.nl](http://www.bijteun.nl) focussing on recreation in the countryside. It also includes green destinations in the city (such as the Zoo). There is a selection criterion for "buying at the farm". A national website covering farms where one can buy produce is <http://www.thegreenbee.nl/>, it is also a web shop.

Landwinkel [www.landwinkel.nl](http://www.landwinkel.nl) is a national cooperative of farm shops (soft franchise, they sell their own produce but also some products developed nationally), with 15 locations in the province of South Holland, 3 in or close to the Rotterdam city region.

Interestingly the national farmers union used to run an elaborate programme and website where farms could present themselves to customers with local produce and other on farm activities and services:

[www.vriendenvanhetplatteland.nl](http://www.vriendenvanhetplatteland.nl) (Friends of the countryside). The programme and website were abandoned in 2008, it was argued that the programme communicated the creation of welfare rather than wealth by the farming sector, and wealth was supposed to be more important. The follow program included a map of all farmers ([www.nederlandbloeit.nl](http://www.nederlandbloeit.nl)) both conventional farmers producing for the world market and multifunctional farmers selling locally. This

website was abandoned 2<sup>nd</sup> April 2013, “the dialogue with society will take place in a different form”.

A relatively new category of direct supply are the urban farms or urban production sites inside the city. Eetbaar Rotterdam, the association promoting professionalization of urban farming in and around Rotterdam, produced a map of all urban farming initiatives in the Rotterdam city region (see Appendix). Initiatives range from urban to peri-urban and from self-organised citizen initiatives to professional farmers, earning an income from farming. Examples of self-organised citizens are: Tuin aan de Maas (<http://www.tuinaandemaas.nl/>), Gandhi tuin (<http://gandhituin.org/>), Transition Town Bergweg (<http://www.transitiontowns.nl/voedsel-gezondheid/buurtuin-bergweg-groeit-en-bloeit-tt-rotterdam/>), Transition Town de Esch (<http://www.wijktuindeesch.nl/>). Examples of semi-self-organised initiatives are HotspotHutspot (<http://www.hotspothutspot.nl/>), Dante Tuin, Stadslandbouw SchiebroekZuid (<http://stadslandbouwschiebroek.blogspot.nl/>), Voedseltuin (<http://www.voedseltuin.com/>). Examples of publicly organised initiatives are :Tuin Schiemond (<http://degroenestad.nl/ook-schiemond-kent-sinds-deze-maand-een-gemeenschapstuin/>). Examples of entrepreneurial initiatives are Uitjeeigenstad ([www.uitjeeigenstad.nl](http://www.uitjeeigenstad.nl)), and Rotterzwam ([www.rotterzwam.nl](http://www.rotterzwam.nl)).

### 3.1.2 Web shops and box schemes

The number of web shops and box schemes is rapidly increasing in the Netherlands and the Rotterdam city region, but also some initiatives have stopped already. Webshop [www.versvandekweker.nl](http://www.versvandekweker.nl) was originally set up by greenhouse growers in the Rotterdam city region (tomatoes, peppers, flowers, plants). At its heyday it also included produce from arable farming, orchards, dairy and even fishery products. But running a web shop with a home delivery system is not so easy. It was not possible to get the logistics profitable and the initiative stopped. Webshop [www.bestelvers.nl](http://www.bestelvers.nl) (set up by an asparagus grower far south of Rotterdam in the Province of Zeeland) was taken over by a Rotterdam based wholesaler, and it died a quiet death.

But there are still new initiatives almost every week, e.g. [www.streekbox.nl](http://www.streekbox.nl), [www.buurtboer.nl](http://www.buurtboer.nl), or [www.dekrat.nl](http://www.dekrat.nl) (nation-wide coverage), <http://boereninzicht.net/> is a Rotterdam based initiative which just set up a web shop last month. It is interesting to mention that some of these box schemes are not (only) directed to consumers at home but rather to small offices that do not (yet) have a canteen. This seems to be an emerging market in the Netherlands (also serviced by large supermarkets with web shops and home delivery [www.albert.nl](http://www.albert.nl)).

Organic vegetable box schemes have been around for some time and are still doing well, in the Rotterdam region we have <http://www.groentenabonnement.nl/> (one organic farm), [www.bioaanhuis.nl](http://www.bioaanhuis.nl) (organic farm), and <http://www.biologischgoed.nl/> (a cooperative of organic farmers).

### 3.1.3 Farmers markets

The number of farmers markets in Rotterdam is increasing. Or rather one could say, the number of farmers food festivals is increasing because the official open air market sector is heavily organised and it is hardly possible to introduce farmers as new trading parties, since they have no historical rights. Hence farmers markets are called “festivals” (cultural events). And indeed one could say we are talking about cultural events: [www.rotterdamseoogst.nl](http://www.rotterdamseoogst.nl) started as a

festival, is now a monthly market, and involves farmers and traders selling local produce and artists performing acts about food in the widest sense. Another new market in Rotterdam is <http://www.moesdistrict.nl/>, a combination of farmers and designers. Ad hoc farmers markets also appear such as at garden shopping centres (dé Capelse Streekmarkt, <https://www.facebook.com/events/144095432431971/>).

It strikes that the usual organic week market in Rotterdam (and other cities) is dominated by non-local organic producers and traders (i.e. the long organic supply chains). The festival markets mentioned above involve mostly (but not always) organic local producers and traders.

### 3.1.4 Retail

In retailing differentiation on the basis of origin claims is a major trend. This expresses itself both in new retail shop concepts as well new retail product concepts. <http://buiten010.nl/> is a new Rotterdam independent organic deli shop and restaurant with produce from the region. A much older organic shop (and restaurant) is [http://www.degroenepassage.nl/gimsel\\_supermarkt.php](http://www.degroenepassage.nl/gimsel_supermarkt.php) (voted twice as the best organic supermarket of the Netherlands). They procure produce from an organic wholesale trader sourcing nationally when it is possible and globally when it is necessary. But in the summer season they also source locally, directly from a grower in Voorne south west of Rotterdam. They also source from [www.biologischgoed.nl](http://www.biologischgoed.nl) already mentioned before.

A retail shop concept that is based on short (or at least rather transparent) supply chains is [www.marqt.nl](http://www.marqt.nl) which started in Amsterdam and has seven locations at the moment (3 in Amsterdam, 1 in Haarlem, 1 in The Hague and 2 in Rotterdam). Here the supply chain organisation developed with the expansion of the company. The first Amsterdam location was supplied by a cooperative of farmers from the North of Amsterdam (Groene Hoed cooperative). The cooperative was restructured into a limited company, called MijnBoer. When the company expanded (it supplied Marqt but also the out of home market) it also selected supplying farmers from other regions in the

Netherlands and worldwide (but always with no middlemen and also certified sustainable, i.e. organic if possible otherwise green label). Finally MijnBoer was taken over by a conventional vegetable wholesaler Smeding that is now part of the Sligrogroup. The Rotterdam locations do not specifically source from the Rotterdam city region (peppers are accidentally sourced from a pepper grower in Pijnacker).

There are also in store product concepts with a designated origin claim. An interesting and innovative fresh produce (potato, vegetables and fruits) wholesaler is [www.willemendrees.nl](http://www.willemendrees.nl). They argue that consumers want convenience, although farmers markets are nice, it is clear that most consumers will not abandon the supermarket, hence they introduce an in store product concept Willem en Drees which claims to source within a 40 km radius from the shop. W&D also supply the out of home market (catering companies). In the Rotterdam region they have about 10 suppliers and a multitude in points of sale.

In the organic food retail market there is strong competition between regular supermarkets which enter the organic market (with value for money propositions such as <http://www.bio-plus.nl/>), and traditional organic food stores (“natuurvoedingswinkels”). The traditional organic stores replied with new store concepts such as [www.ekoplaza.nl](http://www.ekoplaza.nl) (1 location in Rotterdam). Interestingly *local* organic supply chains only play a minor role in this repositioning. As part of the Supurbfood networking effort, we tried to hook up Ekoplaza Rotterdam with local farmers but didn’t succeed (yet).

### 3.1.5. Out of home

The out of home market constitutes of restaurants, cafes, and hotels, catering to business, health and education institutions and public authorities. There is an increasing number of restaurants that use short supply chains (or “transparency about origin claims”) as a distinctive feature. Already mentioned is <http://www.vandeboer.nl/>, a restaurant using local products (also no waste). [www.villa-augustus.nl](http://www.villa-augustus.nl) is a restaurant that also has production facilities at the

premises, to complement their own products they source locally. There are also urban farms that run a restaurant to market their products [www.uitjeigenstad.nl](http://www.uitjeigenstad.nl). Conventional restaurant chain LaPlace is trying to source more locally, also in the Rotterdam region, and recently announced that it will build a farm of top of the restaurant roof in Rotterdam (vegetables, chicken may be even a pig).

Interestingly local sourcing is not a snobbish feature anymore only for upmarket restaurants. Fast food (snack bar) chain Bram Ladage is trying to source the potatoes for its world famous Flemish chips from the region. They are in direct contact with Novifarm, but the potatoes of this farm first go to potato trader Heezen where they may be mixed with potatoes from other sources. Ladage and Novifarm are working on shorting the supply chain (cut out the trader). We also see conventional wholesalers setting up local for local concepts to supply the (more or less) conventional restaurant sector. Food logistics company Deli XL set up [www.vers247.nl](http://www.vers247.nl), this is a platform where chefs and farmers (called “specialists”) meet and exchange products and recipes. Interestingly the software from the order system prevents clients from out of the region to order produce from a local specialist. Other wholesalers also experiment with local supply chains. Kruidenier Foodservice adopted the Blaarkop project. This is a project re-introducing a special cow in the peaty meadows in the Rotterdam city region. These cows can feed themselves on low quality grass, that grows when the ground water level is raised to prevent oxidation of the peat soil. The cows are double purpose, they provide dairy and at the end of their lives also beef. Kruidenier is involved in selling the beef and also the lower quality meat parts of the cows (e.g. Blaarkop hamburgers for snack bars in the region). Kruidenier is also involved in developing cow feed from plant rests from horticulture, in order to reduce the amount of imported cow feed.

Even though the large logistics players are setting up these local 4 local systems it remains to be seen whether this is viable. Vers 247 is aimed at restaurants and hotels, Deli XL is also the logistics partner of Eurest catering (part of Compass group) and Eurest won the Rotterdam municipal catering

contract on the premise that they would source locally. But Eurest cannot order from vers247 because that concept is "currently only operational for restaurants and hotels".

### 3.1.6 Preliminary conclusions

ERgroeit is a yearly meeting of practitioners in urban agriculture, developed by Eetbaar Rotterdam chairman Paul de Graaf. In 2013, as part of ERgroeit, we organised a meeting with all parties involved in urban farming (with some track record) to discuss common themes. The themes mentioned were: set up cooperative at local level to pool purchasing power (and develop a solidarity fund), share access to physical and network resources (such as where to get compost, etc.), share knowledge and experiences (also with professionals), create space in laws and regulations (develop a grey book of practices that seem to work even though there is no clear explicit policy)

Eetbaar Rotterdam also organised a meeting with social housing corporations. There have been several cases of fraud with social housing funds. This resulted in a lot of critique at national political level that social housing corporations invest in activities that are not relevant to their core, which is to provide affordable housing. To what extent can investing in urban farming be seen as core business of housing corporations?. The role of social housing corporations in urban agriculture is striking in Rotterdam (Dante Tuin, UJES, Stadslandbouw Schiebroek, HotspotHutspot). But this role is under pressure. As a result of this social housing initiated initiatives can be very entrepreneurial (Stadslandbouw Schiedam developed catering, Hotspot Hutspot is now a restaurant).

There are urban agriculture projects which are essentially artistic interventions in public space (Nu Hier, Werkplaats Buitenland, Park16hoven, Pig house on Katendrecht). These projects claim a lot of freedom but since they are art projects, rules and regulations are not strictly applied and implemented. Initiatives remain "informal". Therefore one could argue that their impact on (changing) formal rules and regulations is not so big. As an example may serve



that Eetbaar Rotterdam invited an organic dairy farmer to a farmers market in Rotterdam and organised a raw milk tasting event. It is not allowed to sell raw milk in the Netherlands, other than directly from the farm. Therefore we organised a “tasting event” and did not formally sell the raw milk.

The role of education is increasing (Bloemhof school Tarwewijk, several school programs urban farming are in development). The Municipal Nature and Environment Education is under pressure of budget cuts but this service tries to accommodate urban farming in order to re-invent itself (Dakakker, Spoorlaan, Enk, etc.). In a way one could argue that regime players (municipal nature education) is taking over now what entrepreneurial urban farmers have started. Is this good or bad?

In terms of logistics, the market for decentralised solutions seems to be in development. There are more possibilities for farmers today to supply local food chains. Several farmers are engaged with different logistical providers including that they do their own logistics. There are two different local food chain concepts, one operating at a national level (local 2 local), the other operating at a regional level (local 4 local). If demand for local product is aggregated at the national level and concentrated with a limited number of specialised farmers strategically located in the national food landscape, this may increase logistical efficiency and it may also allow the buying company to set environmental standards higher. This can still be called a short food supply chain if the farmer is selling directly to the consumer (or through maximum one intermediate party). Alternatively demand for local product is aggregated at the regional level and the supply base is decentralised to different regions, and per region farms have a diversified range of products (local 4 local). This is a short food supply chain proper; geographical distance between farmer and consumer is limited (up to 40 km in the Netherlands, some initiatives take 25 km). And also the organisation of the supply chain is short in that farmers sell directly to nearby consumers (or through maximum one intermediate party). It is unclear which model will prevail in the long run in the Netherlands. Some people argue that even a national solution (local 2 local) may be called a short food supply chain proper, as the

Netherlands as a whole is smaller than Brittany in France and Brittany is considered a regional food system in its own right. In any case the challenges may lie in the integration of short chain logistics with other logistics (multi-channel approach), and a match between supply and demand in quantity and quality at the regional level

### 3.2 Multifunctional land use

#### 3.2.1. Productive landscapes in the Rotterdam city region

The Rotterdam municipal government reconsidered its land use policy with respect to several areas of land that it has under its control. As discussed before, in the Schieveen Polder north of Rotterdam the municipality tries to implement a form of agricultural land use in combination with nature and recreation values. Even though the plans are innovative and multi-functional in its essence, the municipality finally decided to hand over land use management to Natuur Monumenten, a land management institution specialising in nature management (with some experience in inviting sheep keeping farmers to assist in nature conservation and management). It would have been more innovative and perhaps also more effective if land use management was handed over to a newly created institution, a park management authority that in its constitution would require to meet different goals simultaneously, i.e. agriculture, biodiversity and recreation. These examples exist abroad e.g. Parc Agrari del Baix Llobregat in the Barcelona city region (<http://parcs.diba.cat/web/BaixLlobregat>) or Parco Agricolo Sud Milano (<http://www.parcoagricolosudmilano.it/>). Rotterdam could learn from these and develop this agro parc concept even further for the Schieveen polder area.

With respect to recreation areas, the situation in the Rotterdam region is that special functional government entities are created (recreation boards, recreatieschappen) in which several municipalities in the region cooperate to manage the green areas in the region. Rotterdam is represented in these recreation boards at the city district level most relevant to the recreation area (deelgemeente). As Rotterdam is the biggest city in the region, it adds the

biggest share of the budget to maintain these green spaces. There is an umbrella organisation of the recreation boards, het Koepelschap, which develops policies, the organisation doing the actual management is called Groen Service Zuid Holland, an organisation which is now part of the province Zuid Holland but in a process of transition. The budgets for maintaining the green spaces are cut and municipalities like Rotterdam are looking for possibilities to generate more revenues from the private sector in the management of green spaces (urban agriculture, ecolodges, etc.). This will increase multifunctional use of land.

There are also areas of land that are not under the control of the city of Rotterdam but for which land use transformation is important for Rotterdam. These are some 750 ha of agricultural land that should be transformed into nature and recreation areas as part of a deal to expand the Rotterdam port area by reclaiming land from the sea (Project Mainport Rotterdam PMR). Expansion of the port into the sea (Maasvlakte 2) was only allowed if there would be compensation in the form of nature development (an area of water will be designated nature reserve and be conserved). Also part of the deal was an extra impulse into quality of life; three areas of agricultural land would be transformed into nature and recreation. The largest area is South of Rotterdam, it is now called polder Midden IJsselmonde, arable agricultural land, which will be transformed into Parc Buytenland, a parc like landscape for recreation and new nature development (<http://www.buijtenland.nl/>).

But the planning and implementation process, under the coordination of the Province Zuid Holland, has been slowed down by opposition from farmers and other rural residents who opposed the transformation of farmland into recreation area or new nature (especially wetland type of new nature was criticised as this would reverse the age old struggle of the Dutch against the sea). Although the opposition could first be interpreted as land owners dissatisfied with the land prices that they were offered and rural dwellers opposing the colonisation of the countryside by the city, one could say that gradually insights gained prominence

in society more widely that local food supply is important, that converting prime farmland artificially into nature might not be such a good idea after all. The Province responded by developing an adapted plan which included a small scale agricultural production zone (next to a new nature and a recreation zone). Plans were even developed to combine the various functions (agriculture, nature and recreation) even more intimately. Urban agriculture was advocated as a solution, a form of city orientated agriculture which would produce high biodiversity and recreation values. But the Province never changed its basic position. The opposition lost a court case against the transformation plans and the Province is now active again to try to buy out farmers in order to redevelop the area. In the meantime some farmers and local parties have been organising events to show that city orientated farming is already happening in this area and that nature and recreation values are already nurtured and developed. The city of Rotterdam position remains rather passive and unclear.

As discussed before, the national government delegated physical planning to the provincial level. But at the same time there were cuts in budgets. The Province Zuid Holland developed a policy for soil-based agriculture. This policy included three categorisations: top agriculture, city orientated agriculture and agriculture with natural handicaps. Thus short supply chains or city- orientated farming is currently part of the physical planning discourse at provincial level. But this opening up of the planning discourse hasn't trickled down yet in a change of position towards the PMR compensation areas (Parc Buijtenland and other areas).

### 3.2.2 Preliminary conclusions

Regional economic development policy was based on the idea to expand industry and to improve quality of life at the same time. The large land reclamation needed to expand the port area (Maasvlakte 2) was to be compensated by the conversion of farm land into recreation and new nature land. If we talk about quality of life at the city region level there seems to be a re-appreciation of the multifunctional role of farmers in a regional food system.

## Overview Rotterdam city region



There seems to be a shift in public perception from “farmland conversion to nature and recreation” to “regional food system as asset for social and economic development” (Rabobank Amsterdam 2013; [https://www.rabobank.nl/images/vva\\_brochure\\_29530811.pdf](https://www.rabobank.nl/images/vva_brochure_29530811.pdf)).

### 3.3 Closing urban cycles

#### 3.3.1 Sustainable area development and closing urban cycles

As explained before, the Netherlands is doing quite well as compared to other European cities, the way in which urban waste is being treated. Landfilling is virtually abandoned, about 2/3 of waste is recycled and about 1/3 is incinerated (<http://www.eea.europa.eu/data-and-maps/figures/the-rate-of-recycling-versus-incineration-with-energy-recovery-of-municipal-waste-2005>).

If we look at Rotterdam, these percentages may be different. From the national database on waste management (<http://afvalmonitor.databank.nl/Jive/>) we learn that most of the waste collected in Rotterdam is not separated (vegetables/fruits/garden waste, paper, glass, textile, chemical, cartons, plastics, diapers). Only 18% of domestic waste is separated. This means that in Rotterdam only 1 kilogram of vegetables/fruits/garden waste per person per year is separately collected (with Dutch average 78 kilograms per year). As explanation for this high amount of inseparably collected domestic waste in Rotterdam, it has been argued that Rotterdam has a large amount of people living in high rise apartment blocks, where they have no space to separate waste (if organic waste is only collected once a week, it will start smelling on the balcony). Another argument that has been put forward is the fact that the city has invested in incineration capacity, and this needs to be filled with (unseparated) waste, hence a lock in situation.

Waste management is integrated in the sustainability program in the same way as greening the city / urban agriculture is integrated (as discussed before, <http://www.rotterdam.nl/DSV/Document/Lucht/Programma%20Duurzaam%20gemeente%20Rotterdam.pdf>). The policy document embraces closing urban loops (energy, water, waste and materials) as a principle, but it acknowledges that there is much potential for improvement in practice as waste is not separated at source. Separation after selection is chosen as the preferred method, as this is deemed cheaper, more efficient and also more sustainable (action 88). Apart

from that the document acknowledges the potential for sustainable area development, if activities take place in a spatially clustered way recycling and upcycling may be less difficult to organise (challenge 10). An inspiring example may be the Rotterdam Zoo which tries to implement the cradle-to-cradle approach in its integrated Zoo management: ungulates (cows, goats etc.) eat fodder grown in the zoo and the manure of these animals is used to generate biogas used for heating or electricity.

The possibility for individual citizens to separate vegetable/fruit/garden waste and compost this at their own premises was acknowledged ([http://www.rotterdam.nl/roteb/document/roteb\\_afvalwijzer.pdf](http://www.rotterdam.nl/roteb/document/roteb_afvalwijzer.pdf)). But there was no official policy to stimulate this and to think about more collective approaches to separate and compost organic waste.

There was no official policy to pursue more far reaching options to close urban nutrient cycles, such as harvesting nutrients and water from urban sludge. In the Netherlands most of the produced sewage sludge is incinerated, mineralizing the organic carbon into the atmosphere rather than returning it back to the soil (Tervahauta et al 2014). It was acknowledged however in interviews that the old centralised sewage infrastructure in Rotterdam needed revision in the coming years, hence now was the time to think about more decentralised alternatives.

### 3.3.2 Preliminary conclusions

It is important to acknowledge that there are some places in Rotterdam where new sewage infrastructure investments are more pertinent, such as in the old harbour zones, where residential housing is to be developed. In these harbour zones in transition (particularly in Stadshavens north west), urban agriculture projects such as UJES and Voedseltuinen are situated and they are keen to experiment with more decentral approaches to urban waste recycling. For the Marconistrip (where UJES is located) some form of autarky was officially promoted by the local government, but only in energy and water (not in food or

waste recycling). UJES chose this site specifically as it had a heavy industry zoning designation which it was hoped would allow them to benefit from urban waste energy (the municipal incinerator was close by) and/or experiment with recycling urban waste (e.g. composting). These areas could be perfect experimentation grounds for “sustainable area development” as promoted by the Municipality in its Green Programme.

More detailed case studies about closing urban loops have been made of UJES, Rotterdamse Munt, Maashoek sheep farm (<http://www.vanbergenkolpa.nl/postbus/website/NFSL.pdf>). Closing nutrient, water and energy cycles however turned out not to be the main focus of the initiatives studied. Even if they alluded to these principles, in practice they were lagging behind their ambitions. This may be due to the relatively short periods that these initiatives are tolerated at a particular location. Hence it is difficult to invest in the necessary equipment (e.g. compost machines) and /or infrastructure (e.g. a physical connection between a waste incinerator and the fish growing tanks of UJES to share waste energy).

Whatever the reasons are why it is difficult to turn theory into practice when it comes to closing urban cycles, there is still potential to be realised. For that reason Rotterdam chose to make the concept of “Urban Metabolism” to be the central theme of the International Architecture Biannual Rotterdam 2014. This biannual exhibition will explore several material and energy flows constituting the Rotterdam city region urban metabolism.



### Section 4 Conclusions

The most important factor to explain why public and private parties in Rotterdam are interested in urban agriculture and short food supply chains is the crisis in real estate. Vacant land inside or outside the city is waiting for development, but this will never happen or it will not happen in the foreseeable future. Thus parties are reconsidering their plans, and urban agriculture seems to be an interesting option. It is a response to trends in the food system (people want to know where their food is coming from) but it is also a relatively cheap but highly visible way of showing that you are doing something, even if it is not building houses or offices.

The Rotterdam municipality even abandoned plans for a whole business and nature park and replaced this with an urban agriculture inspired development plan. But also social housing corporations in Rotterdam are using vacant spots of city land to invite urban dwellers to grow their own food. They do this to improve the quality of the urban space, which is good for the people that rent housing from them but will also improve the value of their property. It should be noted that both the city as well as social housing companies have no or very small budgets to actually compensate urban farmers for the services they provide in terms of landscape development and maintenance, social cohesion, etc. This is exactly where the food production part of urban agriculture comes in (and the services related to food production such as education, restaurant, catering, etc.). It is expected that this will bring an extra stream of income, independent of subsidies.

Another factor conducive to urban agriculture and short food supply chains in the Rotterdam city region is the fact that so many different sectors are available close to the city (dairy, arable farming, greenhouses, fisheries, etc.) but it is rather difficult to make a connection just as an individual farmer or urban dweller. The City of Rotterdam has grown in almost any direction, hence farmland is always rather far away. This is unlike Amsterdam where urban development was projected in a star shaped way and wedges between

the arms of the star remained green (and often continued to be productive farmland). Even though geographical proximity is still quite close in Rotterdam, farms seem quite far away as urban dwellers have to cross the ring road, industrial zones around the city, nature and recreation zones that are not so well maintained, before they can visit a real farm in operation. Not many people make this trip by bike. Given this situation, there is a sense of urgency among many different actors in the city to reconnect with the countryside. Rotterdam may be the most "urban" city in the Netherlands, "urban" in the sense of urban problems like unemployment, low levels of education, cultural diversity, loneliness of the elderly, etc. To bring agriculture to such a place, a kind of ruralism, may just be what people think is a good idea (with the effect of greening the city, of providing meaningful outdoor activities or educating kids a healthy diet, of bringing people together around an easy accessible theme as food, etc.

It should be noted that Rotterdam (and the Netherlands as a whole) went through a period with rather extreme multi-cultural tensions. This is the city where Pim Fortuyn lived, a local politician with a rather stormy national breakthrough warning for Muslim dominance in the Dutch nation. Pim was killed by a left wing activist and tensions increased. In this context urban agriculture came as a socially inclusive activity, bridging people of rather different cultural or religious backgrounds in a not so explicit way in public space. For example Eetbaar Rotterdam (edible Rotterdam), the platform of expertise and association advocating urban agriculture, chose this name also because it sounded like Leefbaar Rotterdam (liveable Rotterdam, the local political party based on Pim Fortuyn's ideas). Urban gardening is being a-political in a very political way, in that it totally ignores the political discourse that dominated the years before, which was whether or not people with a different ethnic background would be allowed to show this in public space.

These factors explain why short food supply chains and urban agriculture gained so much attention in the Rotterdam city region in particular and the Netherlands in general. This is beyond the factors related to the food system as

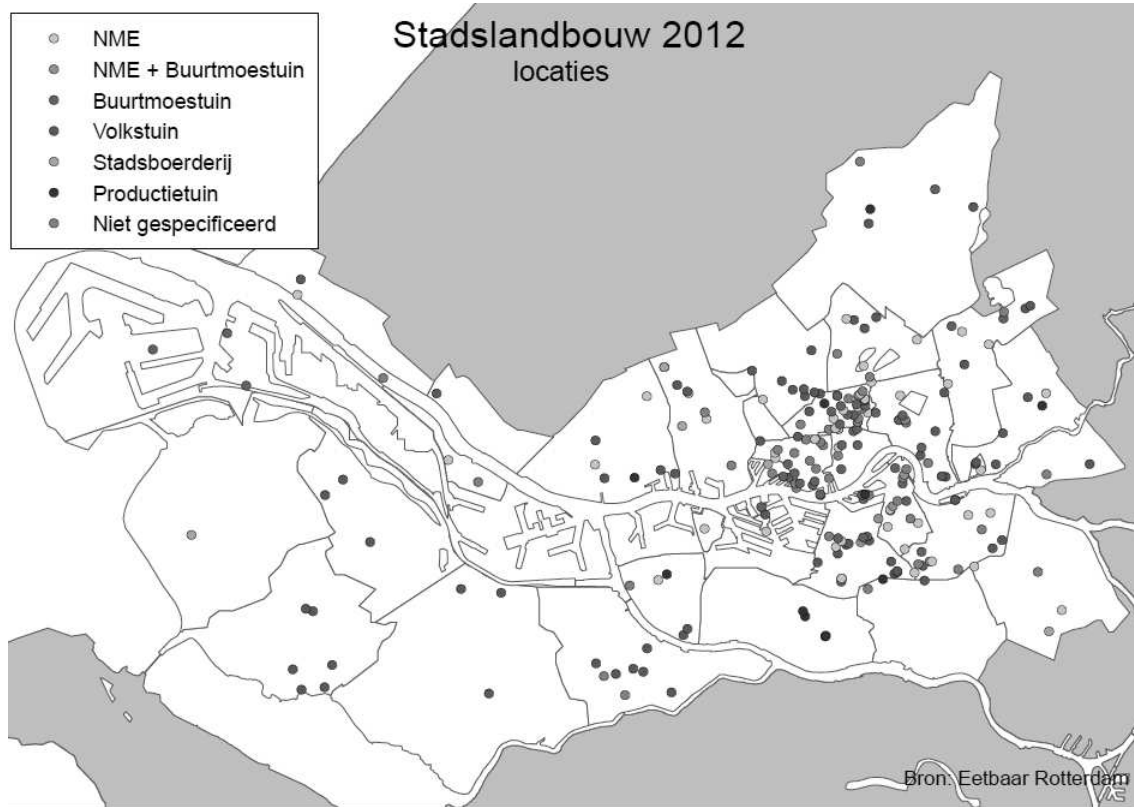
such. Obesity among the youth, lack of transparency in long supply chains (horsemeat scandal, etc.) and in general the idea that we do not control the food system anymore, and nobody really does.

There are also factors inhibiting short food supply chains and urban agriculture. Rotterdam already embraced the climate agenda, but they relate this to energy efficiency and water management more than to food. Energy and water are themes that can make progress with an engineering approach (require ships to take electric power from the quai side rather than to produce it on board with a diesel generator, etc.). The way we produce, process, distribute and consume food also this have a climate effect, but to change our ways is not just a technical problem but also a social and cultural one. Engineering top down approaches alone will not work, one also needs bottom up engagement.

Another factor inhibiting the development of urban agriculture and short food supply chains is the fact that no or very limited budgets were made available for this cause. Civil servants were mandated to spend time on supporting new initiatives whenever possible, but there were no or very limited budgets at the municipal level (more budgets were available at the city region level and at the city district and neighbourhood level). Limited budgets from the city may however to some extent also be a blessing in disguise. Initiatives in Rotterdam have learnt to stand on their own feet very soon. Unlike other cities, initiatives in Rotterdam look for funding in many different directions, not just the local politicians. This brings some continuity, also over a longer period of time (more than one election cycle).

*Appendices*

**Appendix 1 Map of initiatives urban and peri urban agriculture**



**Legenda**

NME: Nature and Environmental Education

NME + Buurtmoestuin: Nature and Environmental Education plus neighbourhood / community garden

Buurtmoestuin: neighbourhood / community garden

Volkstuin: allotment garden

Stadsboerderij: urban farm

Productie tuin: production garden

Niet gespecificeerd: unspecified

### Appendix 2 Social media analysis (discourses)

Efficiency versus integration. “We already have efficient food production in Westland area, why would we need it in or close to city”. Versus. “Food can be an integrative force to improve quality of life in city region”.

Compact city versus biodiversity in the city / extensive food production in the city

Social projects versus economic projects. Whether or not we say that projects need “subsidy” or is this an agro-ecological “service” for which asking a fee makes economic sense. It is hardly ever acknowledged that farmers outside city are also subsidised.

Autarky versus re-balancing the dependence on local versus global food supply chains. (Local executive councillor VHuffelen first argued that 80% of Rotterdam consumption should be locally sourced, later she became more nuanced but she was stereotyped to this position (De Stad Schaft debate, Except study Schiebroek Zuid is also taking food and energy autarky as starting point).

Discourse about “real farmers” and “farmers, as city dwellers want to see farmers”. Farmers in the Buytenland area south of Rotterdam publicly emphasise that they are “production oriented” not city oriented (experience economy oriented). But even these farmers privately admit that they earn income from direct sales, recreation, horse riding, etc.

### Apendix 3 Social network diagram (gaps and interventions)

- Active involvement in FoodCouncil membership and Trade Missions invitations and follow up. In general it can be said that (institutional or wholesale) buyers in the city don't know the farmers in the city region. Hence the trade missions. Also it can be said that NGOs, public officials and entrepreneurs in food and health don't know each other. Hence the Food Council with diverse participation.
- Wholesaler Kruidenier with ambitions to relocalise food didn't know deputy major who is advocating local food systems. I organised a diner and I arranged an invitation to Food Council membership
- Wholesaler Kruidenier didn't know Groene Hart farmers' cooperative which is trying to build up short supply chain with city region Rotterdam.
- Green house grower wants to relocalise his market, but doesn't know how to do it. I organised a meeting with wholesaler Kruidenier and they now work together to restructure his greenhouse business (from monocrop to multicrop, from conventional to green label, from sales through grower association Fresq to sales through wholesaler Kruidenier).
- Organic farmer cooperative with box scheme in Rotterdam didn't know organic retail store in Rotterdam while they both use the same wholesaler organisation Udea
- Catering organisation Eurest (part of Compass group) won municipal catering contract in Rotterdam but didn't know any local farmers to source from. I offered them suggestions. I found out that Eurest Rotterdam manager doesn't know what his own company has to offer in terms of local food concepts and strategic partnerships with logistics parties (i.e. they work with Deli XL, also an international stock listed company and Deli XL developed Vers247 in the Rotterdam region. But not for the institutional market, only for the hotel/restaurant/café market. This is also dealt with through Trade Missions.
- Catering organisation Albron who tries to relocalise food in order to win contracts that ask this as requirement doesn't know farmers locally who can supply them. I brought them into contact with several initiatives in and around Rotterdam. The bid for the municipality failed but we are looking at other large buyers in Rotterdam (Rabobank)
- Meeting to bring together urban farming initiatives in Rotterdam, and to organise exchange of experiences and skills with professionals (ER Groeit, Green Thumbs Up event).

- Local urban farming initiatives don't know conventional players in food system, I connected UJES and Rotterdamse Munt to Kruidenier. For Rotterdamse Munt this means better access to finance (because they have an agreement to supply wholesaler, hence they can take out a loan).
- We cooperated in a research for municipal nature education to look at role of urban farming in repositioning municipal nature and environment education (NME). We connect entrepreneurial urban farming projects with more traditional municipality supported nature and environment education projects.
- Ethnic parties haven't been involved yet in Trade Missions or Food Council. We will look into that shortly.
- We pushed the organisation of a meeting with municipal compost supply to develop a strategy for urban farmers. Normally compost is supplied for free to citizens but only in small quantities, urban farming projects require large quantities. How does municipality organise this?
- We gave presentations on urban farming in Vlaardingen, part of Rotterdam city region. They are setting up urban farming projects there as well now.
- We co-organised a "decision makers conference", as part of the Day of Urban Agriculture in Rotterdam. We connected the deputy Major to the deputy CEO of LaPlace, a national restaurant chain who wants to pilot a restaurant with rooftop farm in Rotterdam.
- The development of the covered Market Hall happens with very little input from parties in the food sector. A meeting will be organised (preferably through the Food Council) to link these two worlds.

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