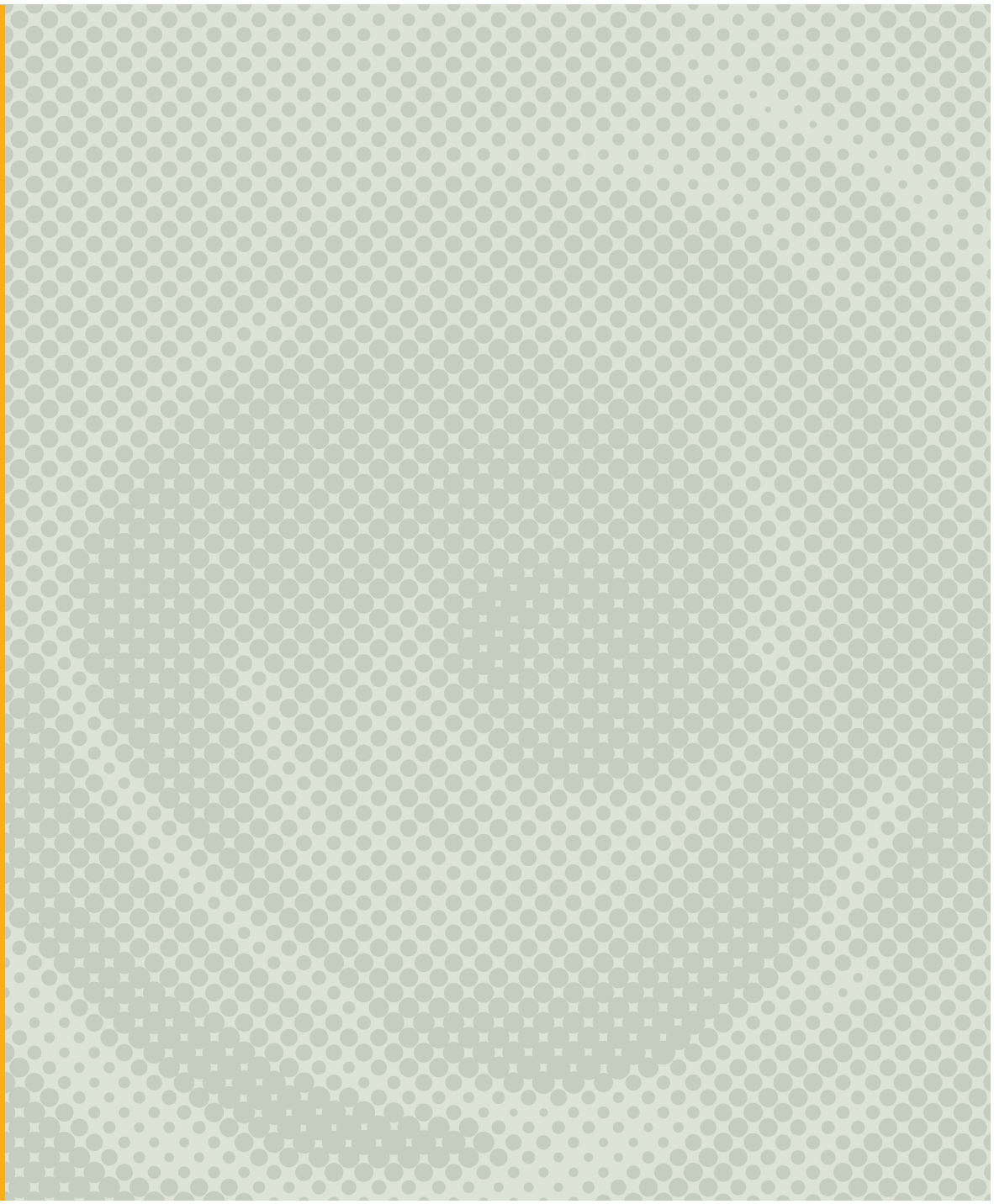
Multi-Scaling for Sustainability Transition: The Case of R-Urban in the Parisian Suburb of Colombes

Camille Atlani

Norwegian University of Life Sciences
Department of Plant and Environmental Sciences
Master Thesis 30 credits 2013



REGISTRATION FORM FOR SUBMISSION OF THESIS FOR A DEGREE

Student name	Camille Atlani

Student number	978507

Main Supervisor	Tor Arvid Breland	Department	Plant and Enviroı

Name of co-authors if so		Due date	25. 10.2013

The Department of Academic Affairs may need to contact you *before* your certificate is issued: Please give the following contact information:

Mobile number	+33688244215
e-mail address	camille.atlani@rocketmail.com
Name and address your certificate is to be sent to	Camille Atlani, 7 bis rue Michel

Thesis	
English title	Multi-Scaling for Sustainability Transition: The Case of R-Urban in
Norwegian title (optional)	
Is your thesis confidential? If so, for how long?	

Declaration

I hereby declare that this assignment is written by me and

- is a result of my own work
- has not been used for another exam at another department/ university/ university college in Norway or another country.
- does not refer to/quote works of others without stating it both in the text and in the reference list
- does not refer to/quote previous writings of my own without stating it both in the text and in the reference list
- mentions explicitly all sources of information in the reference list.

I am aware of the fact that violation of these clauses is regarded as cheating and can result in annulment of the examination or paper. Cheating or attempted cheating can result in the expulsion of the examinee, in accordance with the University and College Act Chapter 14-1.

Signature

Place/date: Paris, October 18th 2013

Signature: C Atlani

Acknowledgement

I would first like to heartily thank my supervisors Tor Arvid Breland, Jean-Claude Jauneau and Suzanne Morse for the thoughtfulness of their advice and the generosity of their presence throughout this long and laborious process.

I would also like to warmly thank Constantin Petcou and Doina Petrescu who have welcomed me in their beautiful project and have made this thesis possible. I further want to express my gratitude to the AAA team, whose members have been incredible partners throughout this experience, as well as to all the Colombians who have welcomed me in their lives with open arms.

Finally, I want to thank my family – my beautiful parents, incredible sister and lovely compagnon – for putting up with my moments of doubts and, at times, grumpiness. The fulfillment of this work owes a lot to their unconditional – and multi-scalar! – support during those six months.

Abstract

The past fifty years has seen an increasing acknowledgment of global sustainability challenges as well as a growing desire to transition towards greater sustainability. In this thesis, I reflect on the potential opportunity a multi-scale approach to sustainable development might have for creating a bridge between global challenges and local actions. By investigating the putatively multi-scale project R-Urban in the Parisian suburb of Colombes, I explore some of the characteristics that might constitute a multi-scale approach to sustainability transition and its potential benefits in terms of local experience as well as for addressing sustainability issues. The literature related to R-Urban was used to understand how it was framed, in order to define in what it could constitute a multi-scale approach to sustainability. A six-months internship with the initiators of the project served as basis for the investigation. Observations and interviews with local stakeholders were used to get a better grasp of how such a multi-scale project was experienced locally. The investigation revealed that designing complex, transversal and diverse projects to match the complexity of global sustainability challenges; involving a diversity of actors at various scales; and a conscious strategy to increase the breadth of local initiatives through scaling-out rather than scaling-up, were what constituted R-Urban's multi-scale approach. Investigation of stakeholders' experiences within the local project revealed that its multi-scale aspect did not play a role in their desire to participate. Rather, local actors were attracted by the positive outcomes that the project could bring in their everyday life. My conclusions were that a local project framed around locally beneficial practices which also have the "side effect" of positively contributing to tackling global challenges was the key to bridging the gap between local and global in this specific project. Local participants, invited to engage in a process of learning focused on learning-by-doing, thus became empowered agents of change who themselves disseminated the practices appropriated, therefore scaling-out the initiative.

Preface

If a book called "Global Sustainability Challenges for Dummies" were to be published, the example of the industrial food system would offer an excellent model for understanding any global sustainability challenge in all its complexity. First of all because it brings about cross-cutting themes of sustainability issues : climate change, with an extraordinary 19%-29% of global anthropogenic greenhouse gas emissions coming from the food system (Vermeulen et al. 2012) – thus doing also tackling energy issues. Loss of biodiversity and of soil, with large intensive monocultures wiping out plant and animal diversity and exploiting up to the last millimetre of topsoil (leading to another cross-cutting environmental issue, resource depletion). Waste, which occurs at every step of the process – on-farm, during transport, with retailers, in consumers' houses – leading to an estimated 30-50% of the food produced world-wide which doesn't end up eaten (Institution of Mechanical Engineers 2013). Finally, it links to other global challenges such as overpopulation, urbanisation, water management and, of course, food security. Secondly, the food system example would be valuable because, as with all sustainability challenges, social, ecological and economical dimensions are all inter-twined. Lastly the fact that, whichever the point of focus, it involves a multiplicity of stakeholders with often conflicting worldviews and goals and, as any situation involving humans, it leads to a system with fuzzy boundaries which is hard to grasp in all its complexity (Cordell 2010, Ison 2008). Interestingly enough, the generic term commonly used to designate it – food *system* – already acknowledges this complexity, and the inter-connectedness of its parts at different scales. These last characteristics – multi-perspective (social, ecological, economical), multiple stakeholders, conflicting goals, fussy boundaries, inter-connectedness of processes occurring at a diversity of scales – are features shared by all global sustainability challenges (Cordell 2010) . How can we tackle these challenges which occur at multiple scales with a multi-scalar approach? Is it possible? Can one implement such a design? This is the claim made by the Atelier d'Architecture autogérée with their R-Urban project in the Parisian region. Actors at multiple scales, initiatives which start at the local level but which then make their way up to tackle global issues... This thesis explores their philosophy and approach and discusses the experiences of those who, very locally, participate in it. I am hoping that this work will contribute to research on how we can collectively bridge the gap between local actions and global challenges so that to transition towards a more sustainable future.

Table of Content

Illustrations

Abbreviations

AAA	Atelier d'Architecture Autogérée
CSC	Centre Social et Culturel (Social and Cultural Centre)
Co2	Carbon Dioxide
EC	European Commission
GHG	Greenhouse Gas
UK	United Kingdom
SSE	Social and Solidarity Economy

Introduction

The past 50 years has seen an increasing acknowledgement of sustainability issues globally as well as a growing desire to transition towards greater sustainability (thereafter referred to as "sustainability transition"). Roorda et al. define transitions as "fundamental shifts in structures, mind-sets and practices, involving actors from many different domains and scale-levels" (2012, p.4). This last point – scales – is crucial and puts to light a common feature of global sustainability challenges which could be well summarised by the *Think global, Act local* motto. Sustainability challenges are global either because they involve direct changes in the global system or because they are issues which happen everywhere around the globe – called respectively global systemic changes and cumulative global changes (Wilbanks and Kates 1999). In either case, the causes from which it originates as well as the consequences of its happening are found very locally. Climate change is a great example here : local activities that occur all across the globe – transport, agriculture, buildings, etc. – accentuate a natural process of the global system and the effects of that can be found everywhere on the planet, be it through increased droughts, increased floods, higher or lower temperatures depending on the seasons and regions of the world. These hierarchical scales – global challenges in local places – are the first reason why scales are a crucial aspect of sustainability issues. The second reason is a question of time-scale. Global sustainability challenges, and the goals that are set to respond to them, happen at a time-scale which is very long-term when compared to the length of a human life. This time-scale aspect is essential in that it is extremely hard for individuals to relate the daily decisions they make to those long-term challenges, when these daily decisions, cumulatively, have a huge impact on the latter.

When it comes to sustainability transition initiatives, the scale at which they are implemented defines the type of instrument available and the impact the initiative will have. At all scales, sustainability issues have found their way into people's minds, translating into a diversity of activities – from international global treaties to national laws and regulations, from companies' labelling to individuals sorting their waste. Each scale of action has its benefits, its difficulties and its drawbacks. Initiatives occurring, for example, at the transnational scale such as the European Union benefit from a certain power of enforcement as well as important resources, but are often hindered in their application by this scale's administrative necessities. At the nation level, States also have resources and power of enforcement, as well as the power (and responsibility) to choose directions and lead the way for the country. To be able to manage such

large-scale changes in a centralised way, national governments however have a need for simplification which is often in mismatch with individuals' needs (Scott 1998). Instrumental goals such as "cutting greenhouse gas emissions by 20% by 2020" or "increasing the consumption and production of organic products by 30% by 2030" are abstract and ironically enough, vision-less (Atlani 2011). Additionally, whatever the instrument used (market reforms, policies, information provision, etc.) individuals are seldom considered as actual actors of a change process – as *active* actors. When States invest in structure and technologies – smart grids, eco-buildings, etc. – even if it is hugely necessary that they do so, there is an underlying idea that once individuals have the technology, they will have no choice but to use it and be somewhat eco-friendly. Even with market reforms or information provision, individuals are at most considered as consumers with bounded rationality who will respond to certain stimuli by making appropriate decisions. In short, individuals are rather considered as means to an end than as participating actors – disempowering these very individuals in the process (Spaargaren 2011, Bono 2013). Going down a few scales to the municipal level, decision-makers know the local specificities and needs of their cities and also have a fair amount of means at their disposal, but policy fragmentation, discontinuous political commitment and focus on short-term benefits rather than on long-term goals often hinder local governments' actions (Maas et al. 2012). Down yet another few notches to the community scale, grassroots projects have the ability to catalyse people's energy and desires through direct interactions with them and are at a great scale to generate empowerment. Talking about how grassroots action can support a transition process to tackle climate change, Reeves et al. (2012, p.2) explain very well the opportunities associated with this scale:

> "By drawing upon trusted social networks and exemplifying sustainable lifestyles, community-led action can also support a shift towards new social norms, values and practices that favour sustainable living (...) It is also posited that community-led action can provide a supportive environment for innovative experiments in sustainable living (e.g. lifestyle changes, new forms of project or enterprise) which, if successful, could potentially be adopted by other communities or by a greater proportion of the population."

These elements put the grassroots level in a very strong position to initiate a change process, but the fact that they generally lack power and resources (Seyfang & Smith 2007, Reeves et al. 2012) often makes them reliant on other scales of decision-making and puts them at risk of, at one point, remaining stuck at a certain level of action. It is thus fairly hard for a grassroots initiative to be up-scaled in order to trigger a wider change, other than by being incorporated in the mainstream, which often means losing some of the value of the alternative in the process (Seyfang & Smith 2007, Bono 2013).

Lastly, the scale of the individual can be very powerful, given enough individuals engage with a certain transition process. It is also the most complex and less straightforward point of focus for sustainability transitions researchers. The amount of literature on individual behaviours outlining the complexity of what influences them – values, social norms, psychological factors, etc. – is ghastly. And when appropriated by policy-makers wanting individuals to "behave more sustainably", it comes close to sheer manipulation (see for example Dolan et al. 2010 or John et al. 2009). It can though be said that the time-frame of individuals is very different from the scales above it because, with conviction and a real desire to create an individual change, this change can be near to immediate. This however already requires conviction and trust in the fact that, individually, one can make a change. This is where the *Think global, Act local* motto is easier said than done. Wilbanks and Kates (1999) have identified two crucial reasons why people find it difficult linking their daily decisions to global challenges (in this case, climate change): the first one, which they say is conceptual, is that individuals struggle to grasp what their own share of responsibility can be in the total greenhouse-gas emissions that affect climate change globally – further leading to the *why change my behaviour when it would have such a greater impact if the State changed its own?* type of reasoning; the second reason, this time motivational, is that "people are being asked to take local actions on global change distant to both their place and time" (Wilbank and Kates 1999, p. 17). Finding the pathway that can lead from local to global scale is not that easy. People can feel like they don't have the necessary instruments to change certain behaviours even when they want to (like for example someone wanting to cut on his car travel to go to work but who has no public transport available to him); or that they are hindered by structural or institutional barriers on which they have no influence[1].

Sustainability challenges have roots and impacts at all of these scales; congruent transition initiatives are thus needed at all these scales. For the reasons outlined above, this fragmented approach where each scale has its own resources, instruments and area of impact poses problems. It always asks the question of decision-making and power and seldom do actors at these different scales interact within one same sustainability transition initiative in which they all have the space to act in a direction *given by their own selves*. My hypothesis is that sustainability challenges require transversality and diversity within projects, which are designed to allow and foster them. I call this approach *multi-scaling* – where resources from different scales are put together in one same project and where actors at all scales have the opportunity to do their bit, as

[1] The list of benefits and drawbacks of these various scales is of course not exhaustive, and is only aimed at sketching out some of the challenges associated with such actions.

they can, in accordance with what and whom they are; projects which account for the different time-scales and can work both with long-term goals and daily decisions; projects which can accommodate different loci of decision-making and types of actions; projects that can be scaled-up, in some form or another, to trigger a wider change.

The objective of this thesis is to use the putatively multi-scale project of the association the Atelier d'Architecture Autogérée, R-Urban, in the Parisian suburbs as a case to explore some of the characteristics that might constitute a multi-scalar approach to sustainable development, as well as some of its potential benefits in terms of personal experience and empowerment for addressing global sustainability issues. Based on an investigation of the case, the research questions that this thesis will explore are:

1. What might constitute a multi-scale project? What are some of the potential benefits of such an approach?

2. How is this multi-scale project experienced locally?

3. What might be learned about some of the factors that should be paid attention to when initiating a multi-scale project?

Materials & Methods

The project investigated to answer these questions, R-Urban, was conceived by an organisation called the *Atelier d'Architecture Autogérée*[2] (thereafter referred to as AAA), founded and led by two architects. AAA's past work has explored the possibilities of participative actions to foster a re-appropriation of urban space with projects settled on "interstitial land" – urban wastelands and spaces temporarily abandoned by local governments – in a reversible way. The concepts of interstice and reversibility have been AAA's trademark since its creation in 2001. Reversibility refers to the fact that the projects initiated can be moved to other spaces if need be, underlining that AAA's projects are more focused on immaterial benefits – such as building community or favouring the emergence of an ecological citizenship – rather than on the localised delivery of certain services. The structures built to welcome these project – be it an encounter room, a mobile kitchen or collective gardens – were, in the organisation's previous projects, all made in recycled materials (such as pallets) and in ways which could easily be replicated or moved by local inhabitants. AAA's usual process begins with research hypotheses which, to be tested in "real life", are proposed to different local governments.

In R-Urban's case, observations about global sustainability challenges and about the contribution of western cities in exacerbating them led to a reflection on how, very locally, certain strategies could be developed to both address the unsustainability of current urban lifestyles and prepare for a future made uncertain by these global challenges. AAA, based on their past experiences as well as on other initiatives such as those within the Transition Towns movement, thus conceived R-Urban on the hypothesis that by creating certain participative hubs around essential urban activities – hubs which come in synergy at the local level – resilient practices can be promoted, thus helping individuals to resist and, at their level, act on, changes which occur at a higher hierarchical scale (AAA 2008). The main directions of this proposition were sketched out in a document and proposed to various municipalities or neighbourhoods within and on the outskirts of Paris. The municipality of Colombes, a very densely urbanised suburban city on the north-western outskirts of Paris, was interested in welcoming R-Urban's pilot-project. Preliminary work with the municipality and local inhabitants started in 2009 and the initial proposition was fleshed-out with the idea of creating three pilot units, at walkable distance from each other,

[2] The "studio for self-managed architecture".

around activities assessed as most representative of what makes up an urban-dwellers life (food, habitat, leisure and culture, and economical activity). In 2011, actual work started with the development of the first unit, Agrocité, dedicated to urban agriculture (through a community-garden, an experimental micro-farm and a pedagogical space for children). 2013 saw the construction of the second unit, Recyclab, which is not yet in function but will be aimed at recycling building sites' wood waste and other raw materials by transforming them into objects that can be used in gardens or in eco-construction. Ecohab, the last pilot unit planned, has not yet been developed. Its purpose will be to offer a space for experimental ecological housing, in part self-built, which will promote values of sharing and collective living.

This project was deemed appropriate to answer my research questions for it presented the basic characteristics I had hypothesised a multi-scale approach should contain (actors at various scales, local action for global change, transversality and diversity), as outlined in the introduction. Three types of resources from the investigation were used for this thesis :

1) Second hand information

This entailed the analysis of reports, book chapters or articles written by AAA ; the close study of official documents such as reports, partnership conventions and ruling reports issued by institutional actors involved in the project, as well as these actors' websites.

2) Observations

A six-months internship with AAA, from March to September 2013 was realised in order to collect first-hand information on the project. I benefited from this position of "participant observer" and, using ethnographic methods, I recorded daily my observations in a field notebook, which provided a dense source of information. A detailed description of my activities as an intern can be found in Appendix 1.

3) Interviews

In total, twenty-two formal interviews were realised in July 2013 with four categories of people (community gardeners, R-Urban partners, AAA employees or interns, AAA coordinators), as well as an oral survey with twenty-five people coming out of the supermarket in front of Agrocité, and three people coming to the garden to buy vegetables. Table 1 summarises the stakeholders interviewed, indicating their position in the project, their number when appropriate, as well as the method used to interview them.

Table 1 : Stakeholders interviewed – positions, institutions and number – and the type of interview method used. "Baseline" refers to a set of questions which were asked to different categories of stakeholders; "targeted questions" refer to questions designed specifically for each interviewee. These interviews were realised in July 2013.

Institution / Position	Stakeholder / Number interviewed	Method used
Colombes Municipality	Environment & Energy Deputy Mayor	Semi-direct interview (phone) Baseline + targeted questions
Oréade-Brèche[3]	Monitoring expert in charge of R-Urban	Semi-direct interview (phone) Baseline + targeted questions
Jardins Sauvages d'Audra (local partner)	Co-founder of the Jardins Sauvages d'Audra	Semi-direct interview Baseline + targeted questions
Neighbourhood Development Council (prospective partner)	Technical supervisor of the Council	Semi-direct interview Baseline + targeted questions
Nature-Écologie (local partner)	Vermicomposting expert	Semi-direct interview Baseline + targeted questions
Research partner	Sociologist who has worked with AAA for several years	Semi-direct interview Baseline + targeted questions
AAA coordinator	1	Semi-direct interview Baseline + targeted questions
AAA employees	2	Semi-direct interviews One grid for all AAA employees
AAA interns	3	
Community gardeners	11	Semi-direct interviews One grid for all gardeners
Passers-by Agrocité	25	Oral survey (3 questions)
Buyers at Agrocité	3	Oral survey (2 questions)

The formal interviews lasted between 30 minutes and an hour. Some "baseline" questions were asked to all stakeholders (Appendix 2) with the objective to compare the results and assess whether the different stakeholders' position in the project had an influence on certain of their answers. The interviews were semi-directive to allow for a great deal of questions to be asked whilst leaving space for people to express feelings and perceptions, in order to get a grasp of their individual worldview. This last element was essential to answering the research questions as, in line with systems thinking, I consider that "boundaries of systems are determined by the perspectives of those who participate in formulating them" (Ison 2008, p. 149). For this reason also, it seemed important to get information on the perceptions of as large a panel of people as

[3] Consulting agency in charge of monitoring R-Urban on the account of the European Commission.

possible. However, this part of the investigation having been realised during the summer when many were away, the community gardeners interviewed (eleven out of thirty-five) were not as representative of the diversity in the garden as I had wished for, as they are mainly people who are very invested in the project.

The first objective of the investigation, contained in the research question – *What constitutes a multi-scale project? What are some of the potential benefits of such an approach?* – was aimed at exploring what it meant for this specific case to be multi-scale, in an attempt to specify the characteristics such an approach should present. Second-hand information was studied and analysed in order to assess whether and how some basic criteria for a multi-scale approach were present in this specific case. These criteria involved :

- **Local actions but with a global scope** : how does AAA justify the need for its project? What is the scope of R-Urban's objectives?
- **Actors at multiple scales** : what types actors are involved in the project? At what scale? Is R-Urban successful in creating a polycentric system?
- **Up-scaling strategy :** How does AAA plans on growing the positive impacts of its local initiatives so that it matches the scale of global sustainability challenges?

A map of the system of interest, taking the scale of Agrocité as focal point, was further realised in order to assist in the comprehension of the diverse involvements of actors and some of the interactions in this social-ecological system (it can be found in Appendix 3, as well as a key to the logos within it in Appendix 4).

The second research question – *How is this multi-scale development experienced locally?* – was investigated using the data obtained from observations, as well as explored thanks to the interviews. Drawing on Reeves et al.'s most recent research which confirmed that "social movement[s] framed around sustainability or climate change [are] likely to attract only limited levels of support and active participation" (2013, p. 13), the question on what made people want to participate in R-Urban seemed essential. Three key aspects were thus explored in more depth during my investigation with local stakeholders[4]:

- **Understanding :** How much of the project's global objectives do local stakeholders know about? How much do they want to know about? What is their understanding of the

[4] "Local stakeholders" here include community gardeners, buyers, neighbours passing-by and local partners.

project's local objectives? How do they apprehend the diverse activities of Agrocité, where do they set the boundary between them and what do they make of it?

- **Attractiveness :** What makes R-Urban attractive to local stakeholders? Are they attracted by the project's global objectives? Is R-Urban's multi-scale approach a factor of attraction for them?
- **Motives :** What do community gardeners actually get out of participating in the project? What motivates them to participate? What are their own objectives, if any, in the project?

Interviews were designed so as to find answers to these questionings. For the questions related to their understanding of the project, "the project" was purposefully left vague in order to understand what people spontaneously referred to when talking about it (the community garden? Agrocité? R-Urban as a whole?). When time allowed it, interviewees were also asked to draw Agrocité and to position participants within it, so I could get an appreciation of their perception of space and roles within the project (the drawings that were not used here can be found in Appendix 5).

To push the reflection further on this topic of the local experience related to multi-scale project, as well as to re-situate initial results in the frame of R-Urban's objectives, it appeared important to also assess the degree of appropriation of the project by local stakeholders. This aspect further seemed essential to evaluate the project's potential of durability, as appropriation is key to the successful local implementation of the strategy in the long-run. Indicators defined to evaluate this degree of appropriation were:

- Local stakeholders' visions and desires for the future, with regards to the project or themselves. The creation of desires locally could also be considered an indicator of success with regards to the project's local objectives.
- Local stakeholders' definition of success for the project. A question, *"For you, the project will have succeeded if..."*, was asked to all twenty-two stakeholders interviewed formally.

Still in the perspective of exploring local experiences related to the project, Agrocité's degree of integration in the neighbourhood was evaluated through questions asked to people coming out of the supermarket in front of Agrocité. Here, the questions that were addressed related to whether people knew about the project, how it was perceived by outsiders and whether people felt it was responding to a need they had. The results from this phase of investigation stressed the need to re-contextualise personal experiences in the frame of the locality's specificities, in order to better

apprehend people's worldviews. My pre-knowledge of the history of Parisian suburbs was thus cross-checked with internet researches on the neighbourhood's history, as well as on more recent developments of projected urban renewals which led to strong expectations from the community.

The last research question – *What might be learned about some of the factors that should be paid attention to when initiating a multi-scale project?* – has been explored through fieldwork data related to the adoption and dissemination of practices (core to linking local and global), reflected upon in the light of literature on other projects. Lastly, the durability and transferability aspect of the approach in the frame of this project – which seemed crucial to answer the question – has been considered.

Results and Discussion

1. R-Urban : a multi-scale project. Characteristics and benefits

1.1. "Complex, Multi-Scale Systems to Cope with Complex, Multi-Scale Problems"

This quote borrowed to Elinor Ostrom (2010, p. 8) pretty much sums up the necessity for multi-scale projects. However what this entails is still unclear. How was the need for a project like R-Urban rationalised by its conceptors? How is its discourse framing the link between local actions and global challenges?

R-Urban's conception started with the observation that cities today are facing major challenges and changes at ecological, economical and social levels: climate change (on which they have a great impact through their activities), economical crisis and high unemployment rates, individualism and loss of social link... The processes which give birth to these challenges are extremely complex and depend on a set of inter-connected factors which are hard to change at the scale of the individual. However, R-Urban's conceptors strongly believed that citizens could not wait for governments to act on these processes and, further, that they had an important role to play in tackling them through their lifestyles. R-Urban was thus conceived as a strategy that offers a frame within which urban dwellers can explore alternative ways of living in a more sustainable manner. This encompasses more than simply creating eco-neighbourhoods which can be seen as "quick fixes" addressing only the infrastructural aspect of unsustainable lifestyles but not tackling the culture, habits and social frames that gave rise to them in the first place. The strategy is to create local networks and economical, social and cultural ecological short circuits in relation to various urban activities (AAA 2012) and, thus doing, to "explore possibilities of enhancing urban resilience" (Petcou & Petrescu 2010). These networks start off with (in time, resident-run) hubs focusing on certain activities, which represent "spaces of opportunity" where people can experiment and develop ideas. Agrocité in Colombes is one such hub which revolves around the production of food and social link. The community garden is a space where gardeners can experiment on cultural techniques and be introduced to certain practices, such as composting or re-using. These activities are realised on people's leisure time, but the space can also be used to develop certain economies, as is the case with the compost project-holder who is

experimenting ways of encouraging participative composting on the site and is hoping to use the space to organise, for example, trainings on vermicomposting which could generate a revenue. Micro-economical activities could also potentially be developed by people who have only been using it for leisure, as has been tested during the official opening of Agrocité, where gardeners have sold cakes, juices and jam made from the garden's rhubarb to the visitors. In sum, such hubs are aimed at becoming catalysts of local inhabitants' desires for alternative lifestyles.

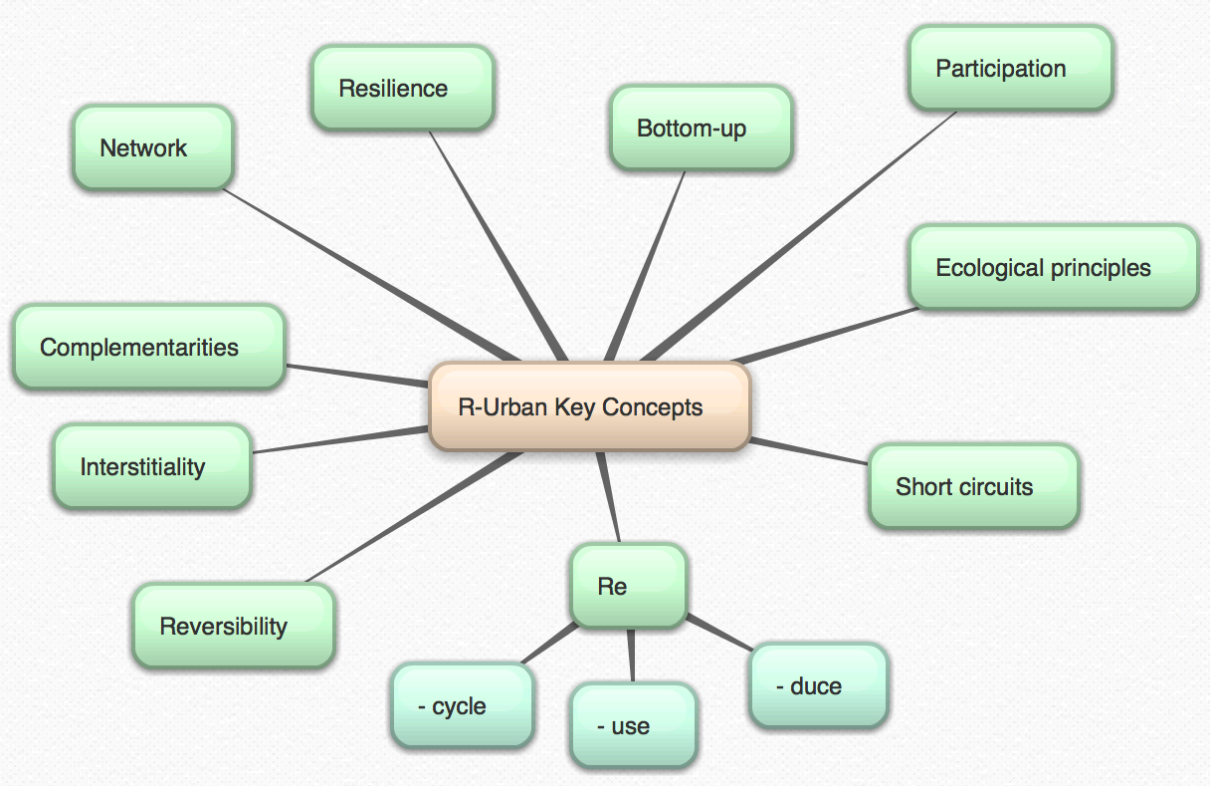


Figure 1 : Key concepts in the R-Urban discourse, extracted from interviews and discussions with R-Urban's conceptors

The pilot-project thus hopes to tackle long-term global challenges by a local action based on daily practices and individual initiatives, which will be facilitated by various structures proposed to local inhabitants. People can be active in one or more of these structures (such as the community garden) without necessarily espousing the whole project. Nor are they necessarily presented with the whole breadth of the project when they get involved in one of the local structures. Figure 2 highlights the multi-scalarity of R-Urban's rationale (in blue), of some of its objectives (red), of the means developed to reach them (green) and of some of its expected impacts (orange). What can be seen from this figure is the incredible complexity of the proposition, which starts with daily, local practices to activate processes that occur at higher

levels on the spatial as well as temporal scale, in order to contribute to addressing challenges that occur at a very global scale.

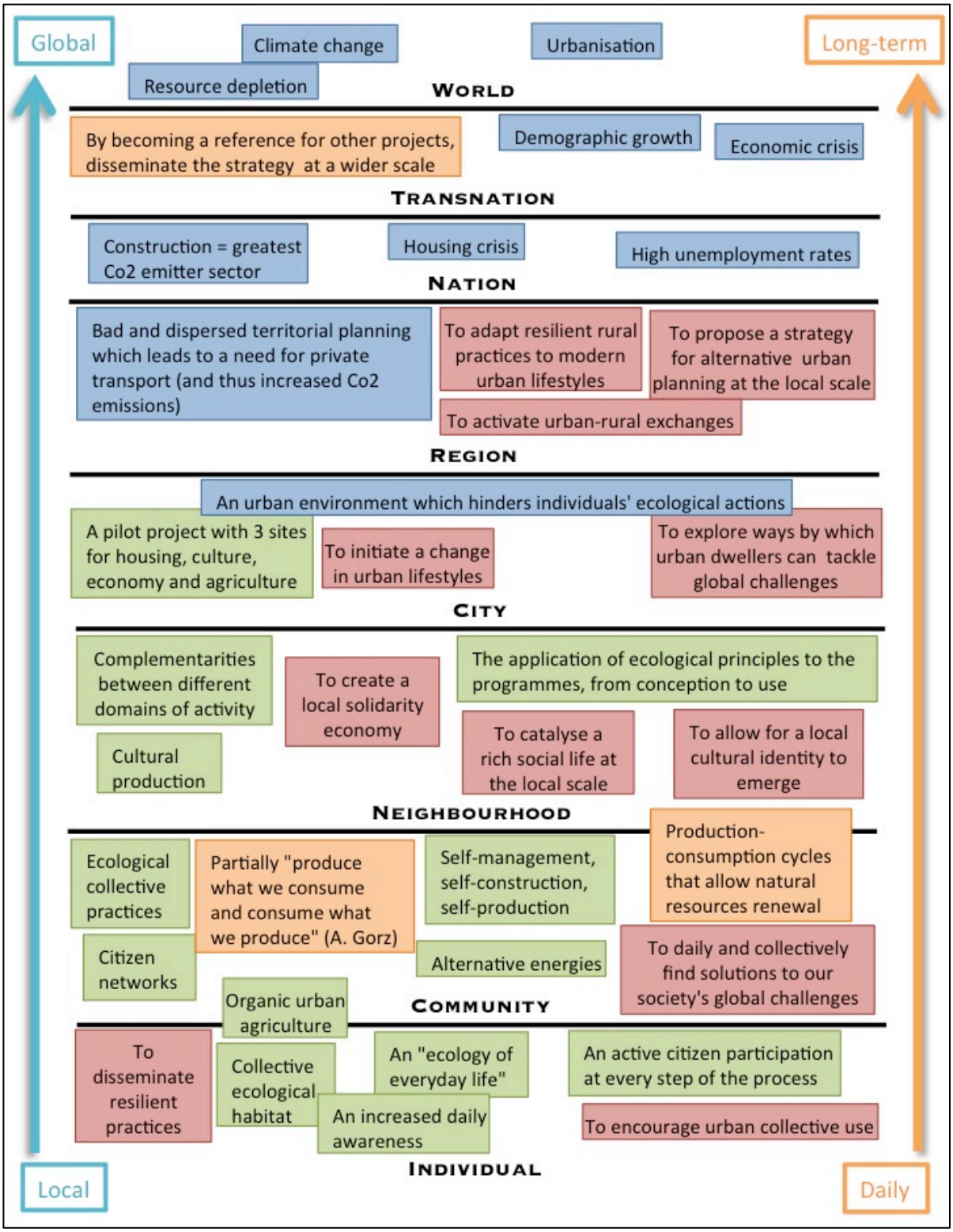


Figure 2 : R-Urban's rationale (blue), objectives (red), means (green) and some of its expected impacts (orange). Extracted from: AAA 2008, AAA 2012, Petcou & Petrescu 2010, Petcou & Petrescu 2012.

In that respect, a key element in AAA's discourse is the idea of R-Urban being a *bottom-up* strategy. The term is not used to refer to grassroots projects as is usually the case, but to

highlight this movement from local to global processes. It also underlines that R-Urban is not a "one size fits all" solution, it is a frame which is offered and will look very different from one place to the other as it will depend entirely on the people participating in it. As such, it could be said that what will occur in R-Urban, wherever it is set, will be the emergent property of the encounter between the frame implemented and the specificities of the place within which it will evolve. Key aspects of this frame will however remain wherever it is created, such as the application of ecological principles (e.g.: closed circuits, one's waste is someone else's food, etc.) to the whole process. Figure 2 also reveals that the strategy encompasses all dimensions of sustainability with social (e.g.: create social link), economical (e.g.: create a local alternative economy) and environmental (e.g.: reduce greenhouse-gas emissions) objectives that it hopes to fulfill. Figure 3 further shows the basic rationale behind the creation of Agrocité to underline the type of reflective process which was used to link global and local.

Figure 3 : Broad rationale for Agrocité. Key: blue - global challenges which trigger a need for transition initiatives; orange - desired impacts; green - means; red - local objectives. Extracted from personal conversations with AAA's coordinators.

The reflection behind R-Urban is thus multi-scale in that it attempts at understanding the complex processes that lead to global sustainability challenges by multiplying the points of focus. Ecologists have long acknowledged the fact that depending on the scale at which you situate your system of interest, the processes which create certain emergent properties at system-level are not the same. Taking the scale of the landscape, for instance, the processes at play are constituted by interactions between different subsystems (soil, plants, insects, etc.), which are themselves emerging from finer-scale processes and interactions. Depending on the point of focus, some of the patterns found at a finer scale resolution will play a role in the processes found at a higher scale. Back to Figure 2, global sustainability challenges at world scale are partly explained by processes which occur at national, regional and city-specific scales (in blue). The same systemic thinking is taken in the solutions proposed to tackle these challenges : changing people's individual behaviours and frames in the context of their communities will affect the processes and potentialities at play at the neighbourhood and city- scales. As such, what I have decided to perceive as "means" and "objectives" from individual to neighbourhood scales in Figure 2 can in fact be interchanged – at the lower level, triggering "an ecology of everyday life" is a mean for acting on global processes but can also be perceived as an objective in itself at individual level. Similarly, reaching the objective "to encourage urban collective use", which is an objective at individual to community levels, will participate to acting on challenges which occur at a global level.

1.2. Actors at multiple scales[5]

I had hypotethised that part of what constituted a multi-scale approach was to involve actors at different scales of decision-making and to promote polycentricity. Ostrom (2010, p. 552) defines polycentricity as such:

> "Polycentric systems are characterized by multiple governing authorities at differing scales rather than a monocentric unit. Each unit within a polycentric system exercises considerable independence to make norms and rules within a specific domain (such as a family, a firm, a local government, a network of local governments, a state or province, a region, a national government, or an international regime)."

[5] A map of the system of interest, taking Agrocité as focal point, can be found in Appendix 3 to better comprehend some of the social, ecological and economical interactions within the system (a key to the logos used in the map can be found in Appendix 5).

What particularly interested me here was the possibility of having different actors at different levels (from local stakeholders to transnational institutions), each participating in their own way within one project aimed at tackling global sustainability challenges. The idea that each person could individually define how he or she wanted to participate, on his or her own terms, seemed crucial, as outlined in Ostrom's quote.

Figure 4 shows some of the types of actors that participate in R-Urban with a) institutional actors at various jurisdictional levels and b) individuals (or groups of individuals) who come from various spatial levels.

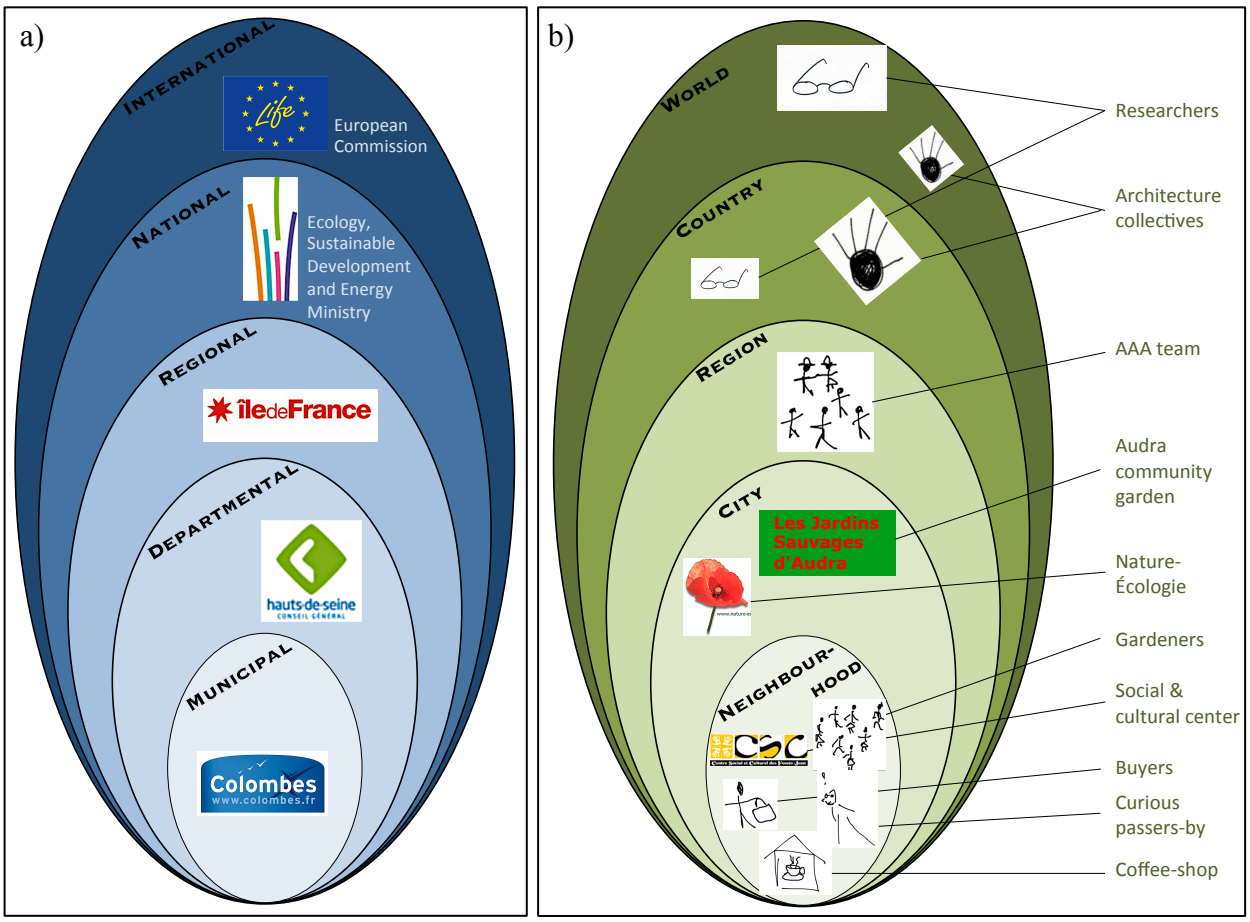


Figure 4 : Multiple actors at various scales. (a) institutional actors at various jurisdictional scales; (b) individual actors at various spatial scales. A key to the logos can be found in Appendix 4. Extracted from: (a) interviews with AAA's coordinator; (b) interviews with local stakeholders and observations.

This section will focus on institutional actors (a), for which the investigation revealed that their role in R-Urban was mostly one of "enablers". Defining the modalities of their enabling capacity therefore seemed important.

The main enabling capacity of these institutional actors has of course been in terms of financing R-Urban. As opposed to many grassroots project aimed at creating local sustainable systems, the breadth of R-Urban's objectives, as highlighted in the previous section, required an important financial investment – with a provisional budget of 1 312 500 euros over four years. The primary investor is the European Commission (EC) in the frame of its LIFE+ programme. LIFE+ is the EC's financial tool to support European projects for the environment, with the objective to "contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value" (European Commission 2013). The R-Urban LIFE+ project runs for a period of four years (which was considered by AAA's coordinators as the time required to set up the pilot-project and initiate the process), from 2011-2115. The EC is thus providing R-Urban with 630 000 euros over four years, on the condition that AAA double this amount with other investors. The second biggest investor is the municipality of Colombes, main partner in the project, which provides 240 000 euros. R-Urban was initially introduced to the municipality by the Municipal Counsellor in charge of Social and Solidarity Economy (SSE), who saw in this proposition an opportunity to promote other types of SSE programmes than what they have developed already (i.e.: projects of insertion through economical activity) (Conseil Municipal 2010, p. 2). As main partner in the project, Colombes' enabling capacity was also in the land it provided, for free, for the pilot units (in the case of Agrocité, the present lease runs for the LIFE+ period – 2011-2015), as well as in various technical, administrative and communication-related supports. The third greatest investor is the Ile-de-France Region, with a grant of 150 000 euros which was attributed in 2011-2012 in the frame of its support for the prevention and management of waste. Key to obtain this grant was that R-Urban's waste reduction and re-use objectives (mostly through Recyclab) matched very well the Region's Programme for Waste Reduction, especially the stated direction of "facilitating the development of prevention actions and mobilising new actors" (Conseil Régional d'Ile-de-France 2011, p. 28). In the frame of another programme – its support in favour of citizen and democratic participation in Ile-de-France – the region had already provided a grant to AAA in 2010-2011 of 20 000 euros; this money supported the preliminary work conducted by AAA in Colombes, such as triggering encounters between local stakeholders and forming an inhabitants base for the future project. Lastly, the Hauts-de-Seine Department invested 80 000 euros in the project after issuing in 2011 a call for projects around Social and Solidarity Economy.

What is striking here is to observe that each of these investments were made in the frame of specific programmes centred around different themes: the environment for the EC, Social and Solidarity Economy for the Municipality and the Department, waste reduction and democratic participation for the Region... This confirms my hypothesis that transversality and diversity, both in the way the project's rationale is framed and in the means that it wishes to develop to tackle sustainability challenges, is an important factor in mobilising enabling actors at various scales. In fact, this is confirmed by the response of Colombes' Environment and Energy Deputy Mayor to the question of what attracted her in R-Urban, which was : *"the breadth of the project and the different aspects it tackles"*. Some elements about this transversality and diversity aspect might be learned from AAA's process of developing their project. The first document they produced on R-Urban in 2008 sketched out the main directions of the proposition with very broad but diverse objectives, without entering into much detail (Atelier d'Architecture Autogérée 2008). As they went on applying for different investments, they included more specific objectives and fleshed-out certain aspects of their proposition – the dimensions that interested public powers in the frame of their own objectives. Importantly though, all these complex and transversal dimensions were already there initially facilitating their translation into specific goals that were congruent with those of public institutions.

1.3. Matching local action with global challenges : scaling-out

If successful local initiatives are to respond to the breadth of global sustainability challenges, they must cross scales in some form or another – either by increasing the scope of their repercussion (scaling-up), or by being replicated so that, cumulatively, many individual initiatives become a global movement (scaling-out)[6]. In R-Urban's proposition, this issue often confronted by local projects is addressed at micro, meso, and macro level with an approach focused on scaling-out.

At the micro-level, the whole strategy counts on the dissemination of resilient practices by local inhabitants themselves. The pilot-units should act as interfaces where people involved can appropriate certain thematics and the practices related to them (such as composting, recycling, re-using, etc.). These people then become agents of dissemination due to the demonstrative power of these practices, which should progressively be appropriated by others. In theory this

[6] The two expressions, "scaling-out" and "scaling-up" are defined as such in Moore & Westley 2011, p. 3.

has every reason to work, as pointed out by the literature on the role of social norms in behaviour change (see for example Loorbach 2007, Backhaus & van Lente 2013 and Bono 2013, amongst others). Seeing someone in one's surroundings demonstrating the use of a certain practice will, through unconscious processes, normalise it and make it easier to adopt (or make easier "taking the risk" of adopting it). This process usually increases with the degree of familiarity to the person showing the behaviour, thus making crucial the presence of trust amongst stakeholders (Moore & Westley 2010, amongst others).

At the meso-level, the strategy wishes the networks to grow rather than the initiatives themselves (Figure 5). AAA's past experience has demonstrated that when initiatives grow to a certain point, the question of management becomes problematic. Furthermore, higher scales of action imply different types of processes which require a restructuration of the initiatives, often at the expense of some of their value. As we have seen, R-Urban is about creating local networks of synergistic hubs. Thus, hypothetically, the number of independent hubs within these networks is infinite. However, further analysis will be required when the network is concretised to assess whether there are thresholds that mustn't be crossed for it to continue working successfully.

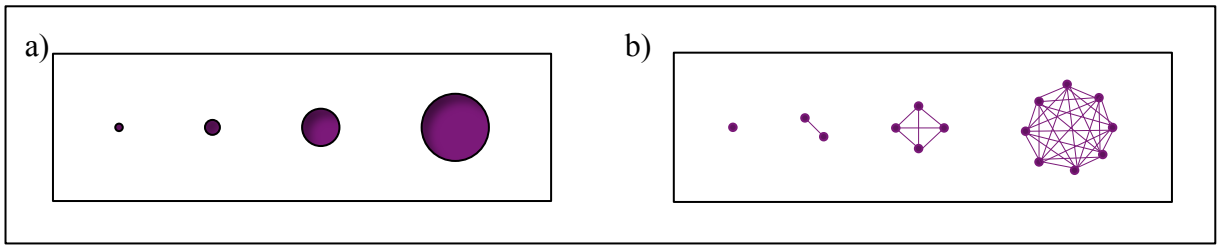


Figure 5 : Different approaches to up-scaling. (a) Traditional approach where the initiative is scaled-up. (b) R-Urban's approach where the network is scaled-up, thus scaling-out the initiative. Extracted from personal conversations with AAA's conceptors.

Finally, at the macro level, scaling-out is realised through research and dissemination of knowledge. The two architects who founded AAA have had, throughout their practice, the "double-hat" of coordinators and researchers. All of their previous project, after their partial completion, have been studied and theorised on, in a perspective of learning from experience (or action-research). In R-Urban, this research dimension is even more present as the French Ministry for Ecology, Sustainable Development and Energy is financing the R-Urban research programme in the hope that it will contribute to its endeavours in urban ecology. At present this research programme is essentially based on the contribution of researchers, academics and practicians who are part of AAA's network. These people are specialists in a diversity of fields

(including architecture, urban agriculture, ecology, economy, re-use, resilience, agroecology, arts, action-research, etc.) and from a diversity of countries (Sweden, Germany, United Kingdom, Spain, Italy, Australia, etc.). The national research network is much more sparse and AAA has been criticized for not paying enough attention to what is happening in France on their themes of interest. The research partners encounter once a year in Colombes to see the evolution of the project; the format is of a seminar where discussions are organised around certain themes. After the trip, each partner writes a report containing reflections on what they have seen as well as suggestions for the future evolution of the project in their field of competence.

Organised as such, the focus of the research programme is learning from experience. The knowledge thus created is then disseminated through various channels. First, through the R-Urban network at macro-level, at present constituted of a R-Urban unit in the UK which is being developed by public works, (London-based partner who has participated to the initiation of the project in Colombes in 2011); and of a third R-Urban project in Brezoi, Romania, which is only at its very beginning. Secondly, knowledge is disseminated through publications – book chapters or journal articles written by AAA's founders. In the same line, R-Urban is receiving increasing media coverage from the French press (benefiting from the contemporary trend of urban agriculture). Lastly, some of the territorial authorities who invest in the project expect a "return on their investment" in the form of knowledge that can be used to develop other projects. With regional-, national- and European- level authorities circulating knowledge, the potential is huge for the R-Urban strategy to be scaled-out, if proven successful and useful by this pilot-project in Colombes.

1.4. Conclusion : characteristics and benefits of multi-scaling

In conclusion, what might be learned from this experience in terms of (some of) the characteristics of a multi-scale approach and its potential benefits is, first and foremost, that multi-scaling entails a complexity of action which matches that of global sustainability problems. Diversifying means and local objectives in a synergistic way has more potential for tackling sustainability challenges in all their inter-connectedness than silver-bullet solution. Diversity and inter-connectedness of initiatives in the frame of one project encourage systemic developments which can decrease the negative feedbacks that are often experienced with monocentric solutions. This requires to account for the fact that processes and patterns causing

sustainability problems, and thus the processes and patterns which can respond to them, are different depending on the level chosen as point of focus. In this perspective, a positive local objective can be a mean to tackle global challenges, and an objective set to tackle global challenges might represent a mean to create a positive change locally. Another potential characteristic of multi-scaling, which is also representative of the latter point, is the development of local initiatives with a global scope. Multiplying complementary and interacting local initiatives with a focus on scaling-out rather than scaling-up can guarantee more polycentric systems where a more diverse population can be involved in their own way. The multi-scale project can thus enable a diversity of people to act locally and, thus doing, empower them to trigger a change. The change will be local but, through scaling-out, this could create a "cumulative global change" (to re-assign Wilbanks and Kates' expression) which might match the breadth of global sustainability challenges. This way, it is a real positive movement towards change that can be initiated, which might create more reactive feedbacks between causes and consequences of both global challenges and local actions. Lastly, if I don't think that mobilising such important financial resources as R-Urban did is a condition to multi-scaling, some elements might be learned about the enabling capacity of institutional partnering. Public institutions at various jurisdictional levels can in many ways enable projects which will in turn enable local stakeholders to generate a change process. There is potential for entering in mutually beneficial relationships where jurisdictional authorities help local actions develop – local actions which will in turn participate to reaching these institutions' sustainability objectives. This goes in the direction of a cross-scale effort towards sustainability where national policies are translated into regional programmes which are themselves translated into local projects that have greater potential to make a change than abstract goals.

2. Local experience of a multi-scale project

Do local actors understand the multi-scale scope of the project? Is it part of the reason why they want to participate? Do they understand the rationale behind Agrocité's three spaces? Do people participate because they want to engage with global sustainability challenges? What is it that attracts people when they hear about R-Urban, and what motivates them to participate if not its multi-scale scope? These seemed like important questions in order to move from the theory into the practice of multi-scaling.[7]

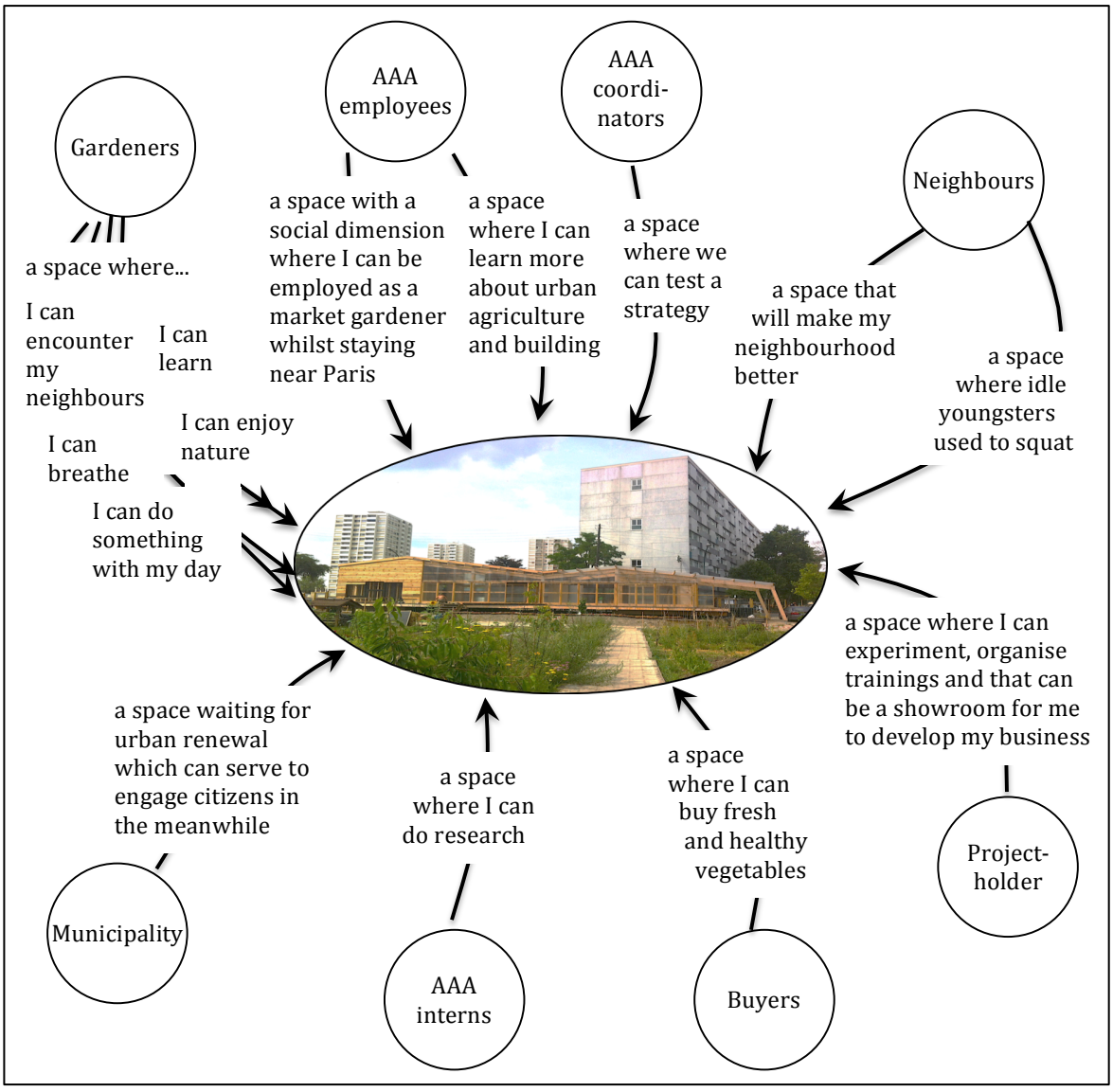


Figure 6: Representation of the multiple perceptions related to Agrocité, as understood through interviews or discussions with local stakeholders and actors in the project.

[7] The local socio-economical context is key to understanding some of the factors that have an influence on stakeholders' worldviews, and thus on these results. Please refer to Appendix 6, which presents a short history of the neighbourhood in the frame of larger socio-economical processes that have occured at national-scale over the past fifty years.

2.1. Understanding of the project and its objectives

The interviews revealed a great diversity in community gardeners' responses with regards to their understanding of the project and its scope. None of the community gardeners directly referred to the project as being aimed at tackling global sustainability challenges. One interviewee even only referred to the community garden and the positive social outcomes it led to in her answer to the question *"How would you describe the project?"* : *"It's difficult to explain it well. Each one has a plot that was given to us and that allows us to encounter, to participate, help each other, reflect together, advise each other, share convivial meals"*. Figure 7, showing the drawing she made of Agrocité, also reveals this focus on the community garden.

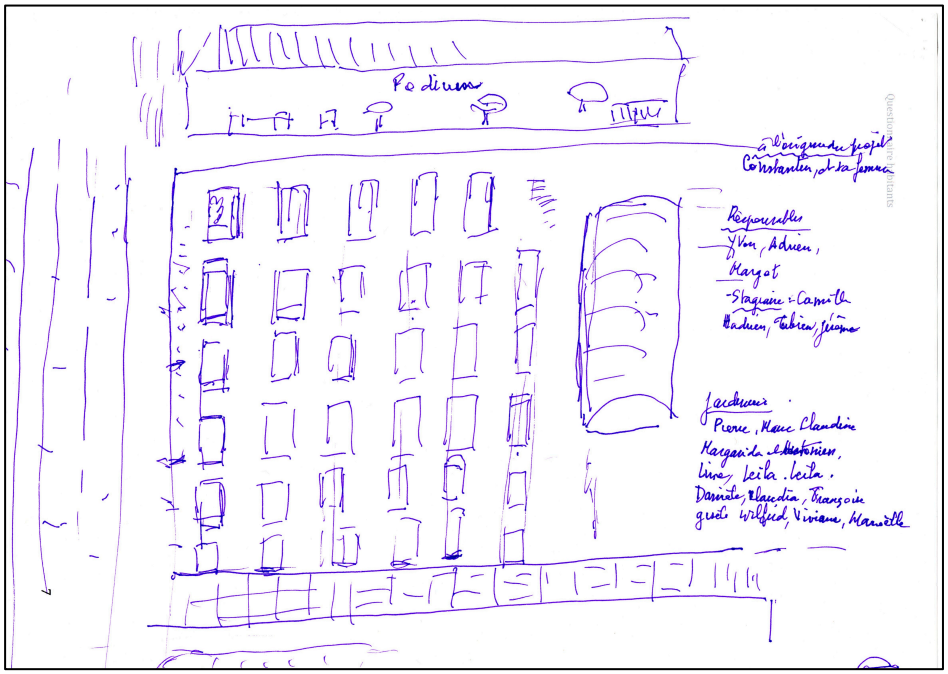


Figure 7 : Drawing from a community gardener who has been there for a year, comes daily and doesn't usually participate in Agrolab. The drawing, clearly focusing on the community garden, is consistent with the rest of her answers with regards to her definition of the project (drawn during interview).

Most interviewees, like her, come daily or several times a week. It seems though that most other community gardeners who come at this regularity have a better understanding of the scope of the project, as outlined by this quote by another gardener: *"At first, when we work in the garden it's only for ourselves. When we see Agrocité we think about something that is more environmental, more collective. Working in it we can see ideas grow"*. However, my observations during my six-months stay have shown that a good number of gardeners who come weekly or less to Agrocité perceive it first and foremost as a community garden.

A few interviewees did refer to other activities hosted by Agrocité (*"It's a project in which there are people who grow things. There are vegetables that are being sold also"*, for example). Quite a few community gardeners in fact help the AAA Agrolab gardener on a regular basis (about five help daily, all women over 40 years-old), either by assisting her in her tasks or by asking her what needs to be done (such as weeding, etc.). A good number of community gardeners also help watering Agrolab, which is done manually, if they are present when AAA members start doing it. Figure 8 is a drawing of Agrocité from one of the five women who help in Agrolab daily, in which her participation is the different activities is represented by the arrows, forming a triangle. In her drawing we can see that the three activities are represented : "pedagogy" on the right hand-side, individual plots in the middle and what she referred to as the "collective" plot on the left. When Agrocité started in 2011, Agrolab's direction was not well established and that side of the garden was used for trials by AAA and as collective plots by the community gardeners. The more professional orientation of Agrolab only started this year, and some confusion remains as to what to call it (Agrolab being a term that none use, probably explained by the fact that AAA employees seldom refer to it as such when talking to gardeners). The terms most commonly used by gardeners to refer to this side of the garden are "the collective plot" (only people who have been there from the beginning), "the exploitation" (mostly new-comers) or, simply, "the other side".

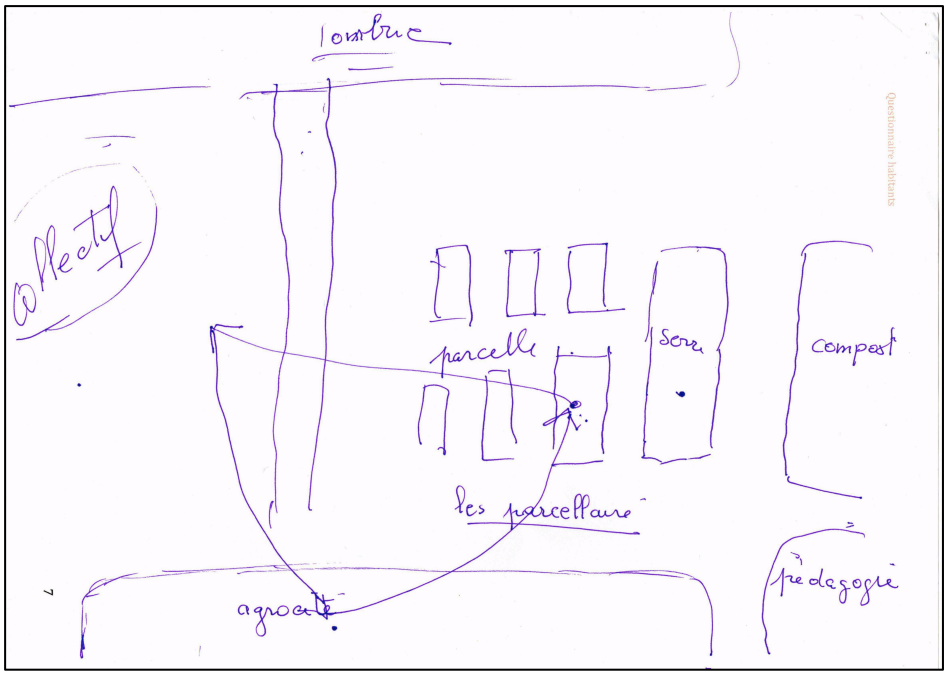


Figure 8 : Drawing from a community gardener who has been there since the beginning. The arrows, forming a triangle, represent herself participating in the different spaces (drawn during interview).

In terms of understanding the rationale behind diversifying activities in Agrocité, once again there are divergences, which can create tensions amongst community gardeners. Some gardeners understand that the three activities are all part of one same project and all go in the direction of that project's objective. *"You know we were told that we could help on the other side if we wanted to. Because anyway, even if we plant as many things in our plot as you do on the other side, it's not the same kind of surface!"*. This quote is by the community gardener who is the most involved in Agrocité as a whole, spending her days there. Her global understanding of Agrocité sometimes is challenged by some of her co-gardeners' understanding which focuses on the community garden only, as shown by the altercation she had one day with the author of Figure 7. The latter once reproached her of not having watered the community garden's plots[8], which frustrated her very much : *"I can't believe it! It's not my job to water everyone's plots. It's a collective garden, it doesn't mean that people will do everything for you. And I work a lot on the other side, but this is never taken into account by the others"*.

The objective of disseminating certain practices, even if not worded as such, is understood by some community gardeners, as shown by this response to the question about the project's objectives: *"The main objective is that everyone that has space in their home do the same. It's like the garbage, because it's not that easy to sort out waste when you live in an apartment. (...) Me I can't but those who have a balcony, that they collect rainwater to water their plants for example. Obviously it won't be at the same scale as here, because it's a big project, but that we do the same in houses. That's why I'm so proud of my little pea on my window sill! What we learn here, that it be Claudia's cosmetics[9] or gardening here, it's always to re-create something, we re-create the same gestures"*.

The level of understanding of the project's scope and objectives is thus diverse amongst community gardeners, ranging from a space where people can garden and encounter to learning how to adopt certain practices and encouraging others to do the same. This relative understanding might be explained by the fact that they are presented with the global objectives of the project mostly through the discourse used by AAA during official events, but which might not have a concrete reality for them.

[8] It is common practice amongst community gardeners to water more than one's own plot, especially during the summer.

[9] Claudia is a young community gardener who is being trained in organic cosmetics; she organised a workshop in Agrocité to introduce her fellow gardeners to the creation of ecological cosmetics from plants.

2.2. Attractiveness and motives for participating

If it is not directly the multi-scale approach of R-Urban which attracts local stakeholders, what is it? Stories counted by community gardeners who participated in the creation of Agrocité from scratch give some elements of response : *"We would work with Leo[10] for hours and hours on the week-end, with our shovels, digging out of the ground pieces of sidewalks so big that they required five men to be displaced. We would get home at night, completely exhausted but happy, because we could see what this place could become, and how great it would be for the kids".* In this neighbourhood crippled by teen delinquency, the benefits of the project for children appears to be an essential factor in why parents gardeners want to have a plot. The fact that Agrocité has a pedagogical space where the neighbourhood's Social and Cultural Centre comes with children also helps its integration in the neighbourhood. *"At the beginning, when I got a plot here, none of my neighbours wanted one, they were criticizing, saying that it would never work. On the other day I was just outside planting flowers and someone stopped and asked me if I was working with the kids. This they like, I wouldn't have expected that!"* once recounted a gardener. This was also reflected by the answers obtained from people in the street – out of the 25, 10 mentioned that the project might be good for children and teenagers. *"I hope that the small ones will go there rather than staying in the street doing nothing". "It's important, kids must learn what a tomato is and not just in their plate". "It might help teenagers stay busy. It can change a little bit, if our kids can grow up learning how to grow food. It's better than other things. It can also represent an obstacle for teens who squat in front and do their business"...* Also, out of the three people who said that there were more urgent things than a project like this to do for the neighbourhood, two in fact mentioned "something for young people" as an example.

Table 2 summarises the responses obtained during interviews with community gardeners to the question : *"What initially attracted you when you first heard about the project?"*. The results for questions around their motives for participating at present showed that, mostly, the project provided them with what they were hoping to find there when they first heard about the project. Amongst the motives of the community gardeners for participating, socialisation – encountering neighbours, not being alone, discussing – was the most recurrent answer during interviews (mentioned by eight gardeners out of eleven).

[10] Leo: AAA employee who was in charge of making a garden out of this urban wasteland. He left the association in January this year.

Table 2 : Factors of attractiveness for community gardeners. From responses to the question : *"What initially attracted you when you first heard about the project?"* during interviews realised in July 2013.

Factors of attractiveness	Number of gardeners mentioning them
The idea of culture	4
A change from life in the towers	3
Convenience / proximity	3
Community / social link	3
Good space for their children	3
Love of nature	2
An opportunity for well-being	2

In terms of recurrence of answers during the interviews, socialising was immediately followed by well-being (5/11), gardening and being with nature (4/11), learning (3/11), health, eating what they grow and doing something / being capable of doing something (2/11). During informal conversations, the importance of having a space outside of home also appeared as very important to some people. Effectively, most gardeners live in apartments, most in the big social housing blocks on the other side of the street. *"I did a training in gardening once, I really didn't like it, I'm not good with plants"* once told me the youngest (early twenties) gardener. When I asked him why then he wanted a plot in Agrocité, his answer was: *"For the idea of having a little piece of land that is mine – well, not mine mine but, you know, a little bit of something out of my flat"*. Quite a few gardeners also talk about "being in their garden" or "going to their garden" when talking to outsiders.

For one community gardener interviewed only, it was the whole of what R-Urban wanted to achieve locally at neighbourhood-scale which attracted her and seems to have met her exactly where she was at in terms of her own reflections on urban living. Effectively, she said that right before hearing about the start of R-Urban in her neighbourhood she was considering setting up an association herself to install community gardens at the feet of buildings, convinced that it would make *"life more acceptable and pleasant (...), that it would change the neighbourhood's face, that people would find a meaning to their life, a dignity, social link"*. Two other interviewees were also attracted by the whole of R-Urban: a man from the Jardins Sauvages d'Audra, the only other community garden in the area (to the creation of which AAA participated in 2009) – a local R-Urban partner. The Jardins Sauvages d'Audra were created with the goal of bringing some life back in the community, using gardening as a "pretext" to so. The man

interviewed comes to Agrocité every Saturday to see the project evolve and how life is brought in the community through it. During the interview, he said that what initially attracted him was *"the coherence between the different sites. I like to create new economical partnerships, circular, to link. I also think that doing this on an urban wasteland and changing things from within is the most efficient way. A way to change things in daily life"*. Once again, R-Urban seemed to meet him where he was at in his own reflections and objectives. The third interviewee who was straight-away interested in R-Urban as a whole was the technical supervisor of the Neighbourhood Development Council: *"what interested me the most was what went along in the project in terms of construction and using wood with recycled materials. And the garden with this division of plots where people can encounter, it's social, it's complementary. It was in my dreams, that we learn how to live from nature, by respecting it"*. The latter, who also has a plot in the community garden, wishes to establish a partnership between R-Urban and his organisation – a partnership that will, he hopes, help him reach his own objective to make the Neighbourhood Development Council more sustainable, especially with regards to waste. It should be however noted that, importantly, these three people who have been immediately interested in the whole of R-Urban rather than solely by the community garden are all friends with the Municipal Counsellor in charge of Social and Solidarity Economy. This means that, as opposed to other community gardeners who are introduced to the whole of the project progressively, they were presented with R-Urban's complex objectives straight from the beginning.

It thus seems that local stakeholders are rather attracted by the concrete, positive outcomes that participating in Agrocité can have on their daily lives than by the abstract idea that they might be tackling global challenges in doing so. It also appears that R-Urban's local objectives are congruent with the activities and desires of stakeholders already trying to make a change in their community.[11]

[11] On a more poetic yet powerful note, I have put in Appendix 7 the translation of two texts that a community gardener wrote me when she learned I was doing research on the project, because she wanted to express her own feelings on Agrocité.

2.3. Emergent outcomes : desires for the future

Table 3 : Local partners' responses to the question *"For you, the project will have succeeded if..."* asked during interviews in July 2013.

Local partners' responses to the question : *"For you the project will have succeeded if..."*	
Vermicomposting project-holder	"... if in five years it becomes a place so unavoidable that we cannot imagine anything else in its place."
Jardins Sauvages d'Audra member	"... if it allows people to change their practices."
Neighbourhood Development Council technical supervisor	"... if there is a multiplication of projects like this. That we see a little bit of nature everywhere."
Environmental and Energy Deputy Mayor	"... if we manage to make it durable – but it will be difficult – or find another place. Or at least, if it doesn't work here, that it serves as a model for other cities."

Table 4 : Gardeners' responses to the question *"For you, the project will have succeeded if..."* asked during interviews in July 2013.

Gardeners' responses to the question : *"For you the project will have succeeded if..."*
"...if we have a lot of people coming to the workshops. If we have good feedback, if mothers come to tell us that they have done the same at home. If it's redone, we won."
".. if we manage to live from our garden, that we can sell our products, live from our vegetables. Have chickens and sell our eggs, our cakes, our vegetables. Coming here we project ourselves in two years and it creates desire."
"... if there is a collective cultivation and more small plots. If there are exchanges with other projects in France, and exhibitions, like on tomatoes or something."
"...if it becomes like AAA's previous project, that after a few years the project continues autonomously and that the municipality let the project be and develop. That the three sites be reproduced. The witness of that would be more well-being in this neighbourhood."
"... if it continues."
"It has already succeeded."
"It has already succeeded, if we look at the waiting list! It has to continue. We will sign a petition so that it doesn't shut down if it happens. It is so pleasant compared to the concrete everywhere around. It's much better than buying industrial vegetables, and it's cheaper."

What can be seen from the responses presented in Table 4 is that, importantly, R-Urban is successful in occasioning desires for the future amongst community gardeners. For instance, the

desire that the project continue after the 2015 was mentioned spontaneously during interviews with gardeners and was a recurring theme in informal conversations as well. Most of them indicated that they would fight for Agrocité to remain if need be, which could be perceived as an indicator of empowerment. They further appropriated some of the project's social objectives at individual- to neighbourhood- levels, such as that it persuade people to change their practices or that it create well-being in the community. For some of them, it even goes beyond simple desires to enter the realm of visions, such as for this lady who sees a future where gardeners will be able to create a micro-economy with the garden. The vermicomposting project-holder also has such a complex vision of what can become of Agrocité : he imagines that schools can be brought in, with canteens bringing their organic waste to the garden and children coming to learn how to sort their waste, and that people living in the neighbouring towers also come to learn how to manage their waste themselves. Lieblein et al. (2004, p. 150), citing Parker (1990, p.1-2), define visions as:

> "powerful mental images of what we want to create in the future. They reflect what we care about the most, and are harmonious with our values and sense of purpose. Visions are the product of insight, values and imagination, they are the head and the heart working together."

The presence of such a space which enables the emergence of visions for the future might be even more critical in this neighbourhood in which some people have somewhat "lost hope". During the investigation, oral surveys in the street initially contained a question for those interviewed who didn't know Agrocité – *"If it could be whatever you wanted, what would it be?"*. The answer from one woman in her forties, who was waiting for the bus with her son in his early teens, was quite revealing in that respect : *"Honestly, nothing more, for the neighbourhood now I lost hope!"*. The question was also asked to several youngsters (14-17 years old) and all but one could not come up with an idea of what they would want that space to be (the one answer obtained being a sports hall). However, it seems that for now Agrocité is a catalyser of visions only for those involved. Also, that the visions that have emerged have been "elaborated" individually, as opposed to shared visions where people collectively envision a future for their community. Lieblein et al. (2004, p. 150) have also drawn on the work of Senge (1990) to say that a "shared vision at its simplest is the answer to the question, 'What do we want to create?'". It seems that in a project that wishes to encourage collective urban use, an active facilitation for the emergence of a shared vision amongst members of the community would be highly relevant.

2.4. Conclusion : How is this multi-scale project experienced locally?

The investigation has revealed that the multi-scale dimension of R-Urban is not much of a reason why local stakeholders want to participate in the project. Their experience of the project is rather situated in the concrete development of the project locally rather than in the discourse that underlies it. Their interest in the project lies mainly in the concrete benefits that it can bring to their daily lives, be it through the well-being they get out of gardening, the social encounters that the garden permits, or the adoption of practices that make them more independent from the system. Coming back to Reeves et al.'s conclusion that "social movement[s] framed around sustainability (...) [are] likely to attract only limited levels of support and active participation" (2013, p. 13), it can be said that part of why R-Urban is successful in engaging people locally is in fact because it is not framed around sustainability, but rather around a concrete experience which makes a positive change in people's lives, whilst being congruent with sustainability objectives. The investigation has further revealed that R-Urban is successful in offering a space for individual desires and visions for the future to emerge, but that there would be much potential to also facilitate the emergence of a shared vision for the future of the community.

3. From local to global

3.1. Adoption and dissemination

The example of compost is relevant to demonstrate how in Agrocité certain practices are not only adopted (meaning people do certain things) but also appropriated (people do certain things in their own way), and to discuss some of the factors that contributed to this appropriation.

Due to the vermicomposting project-holder, composting and vermicomposting infrastructures were integrated in the garden almost from the beginning. A sign on the top of the compost structure indicates in a simple manner which organic waste is to be composted. Saturday workshops are regularly organised around compost during which the compost project-holder completes the various activities needed to facilitate the composting process with gardeners, answering to their questions if they have any. At the end of the process, when vermicomposting is ready, they take some to add to their plots. The organic waste which is added to the compost comes from the garden itself and from community gardeners who bring their waste from home. One community gardener made a habit of going to the end of the market, every Saturday, with his car to collect the vegetables left behind by sales-people. It thus became a ritual for community gardeners to collectively sort out that market waste between what is still edible (which is shared amongst them), cutting the rest in small pieces to add it to the compost which is then stirred extensively. Increasingly, neighbours who have recently discovered this opportunity for composting bring their organic waste to the garden. Generally, when community gardeners see someone from the outside bringing his or her waste, they go to his or her encounter, partly to socialise with newcomers, partly to make sure they do things right. If they don't (for example by putting lemon in the compost or by not stirring it after adding to it), gardeners generally explain how it should be done, and why it should be done that way.

Several elements can be extracted from this example. It starts with the fact that there are structural and information-provision components to this process of composting, however these are supplemented by other key elements that lead to the appropriation of the practice. The first

one is a focus on learning-by-doing and experiential learning[12] : learning is not only accomplished through being told, or shown what to do, but by assisting the project-holder in his doing. There is no obligation of learning, people are free to participate at a degree that suits them. The adoption of the practice thus becomes the result of an active desire to learn, leading to a) empowerment and b) a greater anchorage of the practice in people's life. Backhaus & van Lente call this the "principle of creativity", which "does not prescribe and indoctrinate but offers inspiration and possible directions and motivates to find own ways" (2013, p. 43).

Secondly, the process offers an opportunity for people to build on what they have learned and do it their own way, as shown by the man who decided to go to the market every Saturday and which confirms the presence of this principle of creativity. This further confirms that the process of learning and contributing to a collective action leads to a certain empowerment, as also shown by Fraser et al.'s study (2006) where engaging local stakeholders in defining sustainability indicators about their landscape led to empowerment of the community, an objective which had not been previously reached by programmes aimed specifically at empowerment. It also puts Agrocité and such hubs of activities in a position of "local niche experiment", to adopt the terminology of Transition Theory : "As a result of niche practices, which are often participative, individuals and communities can benefit in terms of greater empowerment and confidence, skills and capacity for further community-based action" (Seyfang & Smith 2007, p. 595).

Third, the composting activity is one which fosters social learning[13], as is demonstrated by the fact that this man's Saturday ritual became a Saturday ritual for the whole community. This activity further led to self-generated knowledge on the issue of food waste, by seeing that nearly half of the waste collected is in fact still good to eat, and by seeing their co-gardeners take that food home, thus making it acceptable to do so. In this way, "long-term change is enabled by a supportive social environment, whereby social links mutually benefit a common purpose" (Taylor & Allen 2008, p. 6). This is congruent with several other studies, as for example that of Holst Andersen which demonstrated "how ideals and standards of 'good' food provisioning are

[12] Sriskandarajah et al. define experiential learning as concerning "the way we perceive the world and how we behave in the world. In other words, what we experience in the world, how we perceive these experiences, and what meanings, values, and theories we attribute to them will determine what actions we take (Kolb 1984)" (1991, p. 3).

[13] Social learning is defined as "a multidimensional process, that results in a relatively enduring change in a person or persons, and consequently how that person or persons will perceive the world and reciprocally respond to its affordances physically, psychologically, and socially" (Alexander et al. 2009, p. 186, cited in Sol et al. 2012, p. 13). Sol et al., citing this quote, highlight the fact that what results from this learning process is both a change in perception (first) and in behaviour (second) (2012, p.13).

learned from parents or through the introduction to new social environments, and how knowledge of food risks and fashions is learned through media or personal relations" (2011, p. 134).

All these results go in the sense of behaviour change and appropriation being the result of an active learning process – a process which also generates empowerment. As such, an essential conclusion is that the process of learning is as important as the knowledge to be learned, because it leads to emerging outcomes – such as empowerment, social bonding or creativity – which are important both for individuals and in terms of the change these individuals can initiate in their community.

The fact that the practice of composting was *appropriated* rather than simply *adopted* is also demonstrated by the fact that gardeners feel it is important for them to share their knowledge on how to do it right with other people, thus disseminating knowledge. This offers a good transition to analyse the process of dissemination at play in this specific case, and thus learn how such a local project can effectively be multi-scale through scaling-out.

Interviews provided additional evidence that practices are being disseminated, and not only with regards to composting. For example, one community gardener helped Agrolab's gardener in chief to collect nettles in order to make nettle manure. She told me that the first thing she did when she got home was to find the recipe on internet (*"it was exactly what we had done!"*) and send it to her family in Portugal who owns a farm. This confirms that key to the adoption of the practices is that, regardless of their global benefits, they have a value at the scale of the individual's life. Interviews have also revealed that certain local stakeholders appropriated the project's replication objective : *"I'm curious, and I don't stop asking questions until I understand. So what was explained to me, I try it explaining it more simply to others".* A key element here is that people, empowered by their learning, become active agents of change by appropriating and disseminating sustainable practices.

Thus, an essential conclusion of this investigation is that focusing on initiating processes of learning-by-doing – framed around action rather than around abstract notions of sustainability – leads to the empowerment of individuals who then become agents of change by disseminating practices which have a positive impact both at the local scale of individuals' lives and at the

global scale of sustainability challenges. The fact that the practices themselves have this multi-scale benefits creates a situation where people are not just means to an end of tackling global sustainability issues, but agents of a change driven by them, and which have the positive "side-effect" of also contributing to solving global challenges. This is an indication of how a "cumulative global change" towards more global sustainability can start very locally.

3.2. Durability and transferability

Only two years into the the pilot project, there is not much hindsight to assess the potential for durability of the initiative, nor to identify possible difficulties that might emerge from the multi-scale approach. However, based on the present situation, some elements that could become problematical can be identified.

In terms of the multi-scale approach, it should be noted that at present there is little direct interaction between actors at different scales of decision-making. If R-Urban managed to establish a polycentric system at the very local level of the community, AAA is still acting as a hinge between this community and all other actors at higher scales of decision-making. Thus for now, this aspect of multi-scaling – a diversity of actors at various scales – might not be durable in that it relies on AAA's presence. For this diversity to be perennial, the polycentricity should move up the scales in order to truly generate a system of collective governance. Furthermore, one can easily imagine that such a breadth of objectives and complexity in the project might, in time, become difficult to manage if AAA doesn't succeed in passing on some elements of the project to other stakeholders. In terms of appropriation of the project as a whole by local actors, the R-Urban strategy will need flexibility to be able to accommodate other visions which might, on some aspects, diverge from the initial vision. Durability in that respect will thus also depend a lot on whether the project becomes self-managed, as is projected. For this self-management to be successful, some elements will have to be defined more clearly, such as the economical model of the project. At present, the operating costs of Agrocité are mostly paid by the grants obtained from institutional partners. As an example, the water bill for the summer period of 2013 has been of 100€/ month. Considering that the total income earned by AAA from the sole sale of Agrolab's vegetables over the whole season (May-September) was 1 030€, this would mean that, if the water had been paid with the money earned from the vegetable production, half of the total income would have been spent solely on water. With regards to durability, the grant money

attributed for the four years of the LIFE+ project might be better spent on a more efficient irrigation system that will save money in the long-run, and thus facilitate local stakeholders' self-management. However if the project is to be moved in two years when the first lease for Agrocité stops, such an investment might not be coherent. This underlines a crucial factor of multi-scaling that hasn't yet been discussed : the importance of relating the temporal scale to all other scales involved, in order to prevent "scale mismatchs" (Cash et al. 2006). It can be assumed that the time required to set up the pilot project – four years – was defined according to the social scale which ranges from individuals to strong communities able to self-manage. However when one looks at the economical scale, creating a local micro-economy might require more than four years. From an ecological scale's point of view, the mismatch is even more salient – rebuilding a soil that has been covered with concrete for many years might require decades if the objective is to provide a nutrient-rich substrate on which to grow vegetables, and thus generate an income. At present, if Agrolab's vegetables are praised by buyers for their taste, they are also criticised for their size which is, for most, well below average. Once again, there are structural elements that could help, such as adding organic matter to the soil (as is currently done with the vermicompost), but this type of ecological process works at a time-scale which remain very long compared to social processes. This scale mismatch comes in contradiction with AAA's traditional emphasis on reversibility.

These elements – possible scale mismatches, flexibility of initial visions and the potential for cross-scale governance – should all be considered when initiating multi-scale projects. Lastly, I believe that there is potential for a multi-scale approach to sustainable development to be replicated with smaller financial investment than the one R-Urban benefits from. Effectively, what has been identified as the most important element of the approach locally – experiential learning leading to empowerment – can rely mostly on social capital rather than economical capital.

Conclusion

This thesis has demonstrated that there is much potential for multi-scale projects to be locally empowering for individuals, who can then engage in change processes that are both relevant to their daily lives and congruent with the objective of tackling global sustainability challenges. The results of this research provide preliminary conclusions on what multi-scaling for sustainability transition might entail. These conclusions should however be tested by analyses of other such projects, with an assessment of the potential long-term impacts of the approach on projects that are more advanced in their development.

For now, this research has put multi-scaling in a strong position to initiate changes towards sustainability. It is an approach in which all actors – from the local stakeholder to the European Commission – are important in their own way and at their own level. Whatever the scale at which actors operate, what made them want to engage in this specific process of change stemmed from a similar core: for institutional actors, R-Urban contributed to fulfilling their own scale-specific sustainability objectives; for local actors, R-Urban contributed to making a positive change in their daily lives. In both cases, where R-Urban has been successful was in encountering them in the very locality of their own objectives and desires and, thus doing, initiating a global change.

References

Alexander P, Schallert DL, Reynolds RE, 2009. What Is Learning Anyway? A Topographical Perspective Considered. In: Educational Psychologist. Routledge.

Atelier d'Architecture Autogérée, 2008. Rurban / Stratégie d'éco-rurbanité. Proposition pour un projet-pilote, Paris

Atelier d'Architecture Autogérée, 2012. R-Urban, Réseaux de Résilience Urbaine (flyer). http://r-urban.net/wp-content/uploads/2012/01/R-URBAN_flyer.pdf [Retrieved March 2012]

Atlani C, 2011. A "scientific review" of our findings in Trondheim. Learner document p. 4-10 [Unpublished].

Backhaus J & van Lente H, 2013. Organising Principles of Transition Efforts Towards more Sustainable Food Systems: a Study of Assumptions and Sensemaking. In *Proceedings of the 4th International Conference on Sustainability Transitions*. Zürich, pp. 30–45.

Bono F, 2013. Shifting the Focus: Towards Socially Just Sustainability Transitions based on Social Innovations. An institutionalist approach. In *Proceedings of the 4th International Conference on Sustainability Transitions*. Zürich, pp. 123–144.

Cash DW et al., 2006. Scale and Cross-Scale Dynamics : Governance and Information in a Multilevel World. *Ecology And Society*, 11((2): 8), p.12.

Conseil Municipal de Colombes, 2010. *Convention entre la Ville et l'Association Atelier d'Architecture Autogérée (AAA) Relative à la Mise en Oeuvre de Projets Relevant de l'Objectif 5 du Programme Européen Life* +, Colombes.

Conseil Régional d'Ile-de-France, 2011. *Délibération n° CP-11-800 du 20 octobre 2011. Affectation de Subvention : Politique de Soutien à la Prévention et la Gestion des Déchets – Rapport n°5*.

Cordell D, 2010. *The Story of Phosphorus. Sustainability implications of global phosphorus scarcity for food security*. Linköping University.

Dolan P et al., 2010. MINDSPACE: Influencing behaviour through public policy, London.

European Commission, 2013. The LIFE Programme. Available at: http://ec.europa.eu/environment/life/about/index.htm [Accessed August 13, 2013].

Francis C et al., 2003. Agroecology : The Ecology of Food Systems. *Journal of Sustainable Agriculture*, 22(3), pp.99–118.

Fraser, E.D.G. et al., 2006. Bottom up and top down: analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *Journal of environmental management*, 78(2), pp.114–27.

Holst Andersen A, 2011. *From organic consumers to organic consumption*. Thesis. Aarhus University.

Institution of Mechanical Engineers, 2013. *Global Food. Waste Not, Want Not*, London.

Ison R, 2008. Systems Thinking and Practice for Action Research. In P. W. Reason & H. Bradbury, eds. *The Sage Handbook of Action Research Participative Inquiry and Practice*. London, UK: Sage Publications, pp. 139–158.

John P, Smith G & Stoker G, 2009. Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour. *Political Quarterly*, 80(3), pp.361–370.

Lieblein G, Østergaard E & Francis C, 2004. Becoming an Agroecologist through Action Education. *International Journal of Agricultural Sustainability*, 2(3), pp.147–153.

Loorbach DA, 2007. *Transition Management. New mode of governance for sustainable development*. Erasmus Universiteit Rotterdam.

Maas S et al., 2012. A Systems Analysis Methodology for Exploring Urban Sustainability Transitions in Ghent and Aberdeen. In *Proceedings of the 3rd International Conference on Sustainability Transitions, 29-31 August 2012*. Copenhagen, Denmark, pp. 1–24.

Moore M & Westley F, 2011. Surmountable Chasms : Networks and Social Innovation for Resilient Systems. *Ecology And Society*, 16((1): 5 [online]). Available at: http://www.ecologyandsociety.org/vol16/iss1/art5/.

Ostrom E, 2010. A Multi-Scale Approach to Coping with Climate Change and Other Collective Action Problems. *The Solutions Journal [online]*, 1(2), pp.27–36. Available at: http://www.thesolutionsjournal.com/node/565.

Parker M, 1990. Creating Shared Vision. Oak Park, IL: DIALOG International Ltd.

Petcou C & Petrescu D, 2010. R-URBAN: Strategies and tactics for participative utopias and resilient practices, 2012, p.17.

Petcou C & Petrescu D, 2012. R-Urban Resilience. In R. Tyszczuk et al., eds. *ATLAS: Geography, Architecture and Change in an Interdependent World*. Black Dog Publishing, pp. 64–71.

Reeves A, Lemon M & Cook D, 2013. Jump-starting transition? Catalysing grassroots action on climate change. *Energy Efficiency*, pp.1–18.

Roorda C et al., 2012. Transition Management in Urban Context. Guidance manual - collaborative evaluation version, Rottordam.

Senge PM, 1990. The Fifth Discipline: The Art and Practice of the Learning Organization. New York: Doubleday

Seyfang G & Smith A, 2007. Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics*, 16(4), pp.584–603.

Scott JC, 1998. Seeing Like a State. How Certain Schemes to Improve the Human Condition Have Failed, New Haven: Yale University Press.

Sol, J., Beers, P.J. & Wals, A.E.J., 2012. Social learning in regional innovation networks: trust, commitment and reframing as emergent properties of interaction. *Journal of Cleaner Production*, 49, pp.35–43.

Spaargaren G, 2011. Theories of practices: Agency, technology, and culture. Exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order. *Global Environmental Change*, 21, pp.813–822.

Sriskandarajah N, Bawden RJ & Packham RG, 1991. Systems Agriculture : A Paradigm for Sustainability. *Association for Farming Systems Research-Extension Newsletter*, 2(3), pp.1–5.

Taylor RE & Allen W, 2008. Changing household behaviours : learning for urban sustainability. *The Innovation Journal: The Public Sector Innovation Journal*, 13(2), pp.2–16.

Vermeulen SJ, Campbell, BM & Ingram, JSI, 2012. Climate Change and Food Systems. *Annual Review of Environment and Resources*, 37(1), pp.195–222.

Wilbanks TJ & Kates, RW, 1999. Global change in local places: how scale matters. *Climatic Change*, 43, pp.601–628.

Appendices

Appendix 1 : Description of my activities as an AAA intern

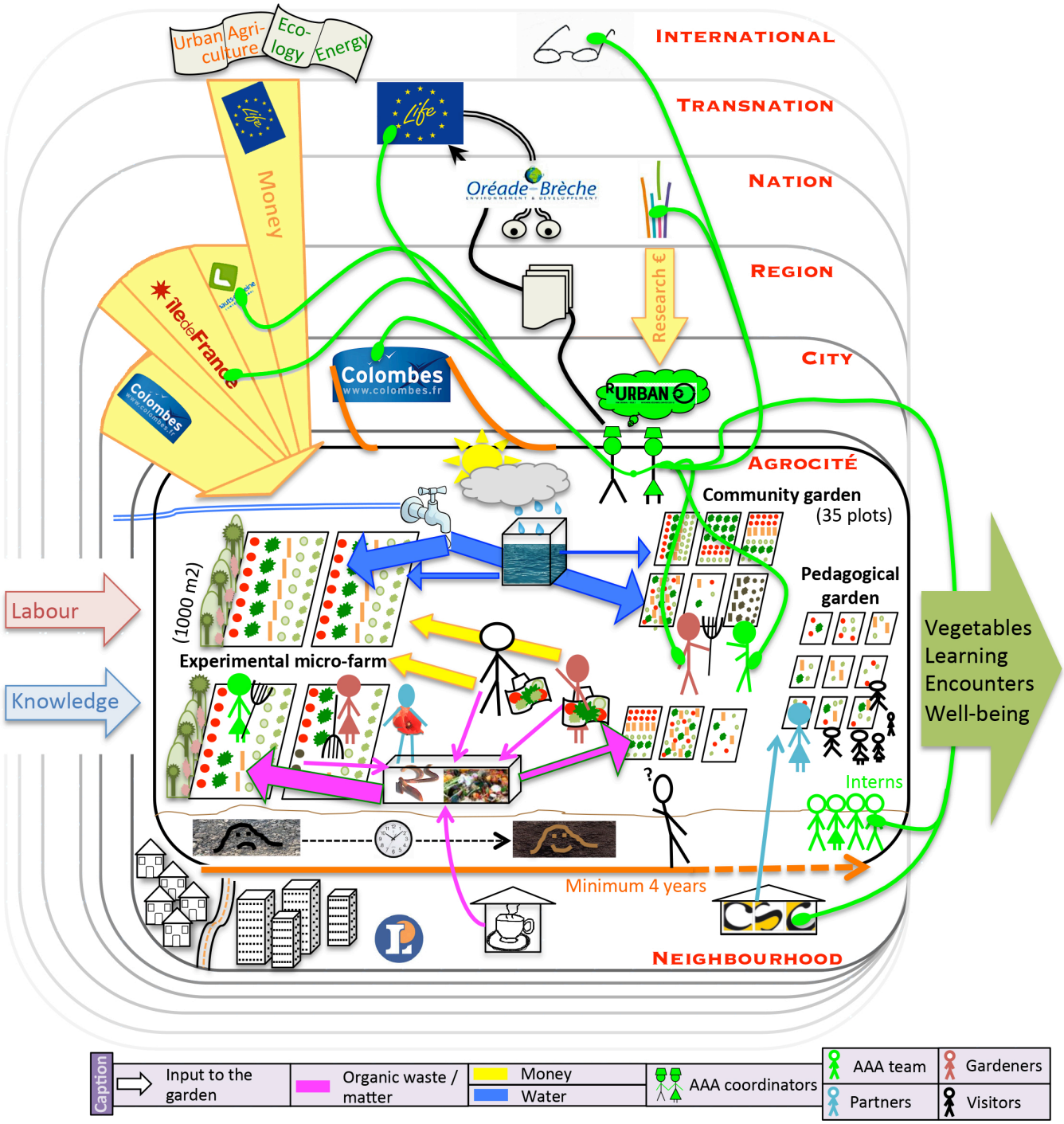
The data necessary to this work was collected during a six-months internship with AAA, from March to September 2013. This period was extremely busy in the development of R-Urban as it witnessed the construction of the Recyclab unit, the finalisation of Agrocité's building, the first season of real production in the experimental micro-farm (thereafter referred to as Agrolab), the start of the sale of Agrolab's vegetables and, finally certain key events like the official opening of Agrocité and Recyclab as well as a research seminar on R-Urban which gathered AAA's international research partners. AAA being, at present, composed of a small team (four employees in March, only two in September, on the top of the two coordinators), five interns were hired during the period to assist in these developments. The diversity and amount of the tasks at hand and the limited manpower required that interns be pretty versatile, none having a specific function in the organisation. During my internship, about half my time was spent in Agrocité and the other half at the office in Paris. In Agrocité, my work consisted of assisting the person in charge of Agrolab in her daily tasks – planting, weeding, watering, discussing techniques to use, etc – which was very beneficial in understanding the ecological aspects of the site; I was also in charge of the management of the community garden plots after the winter, when a lot of gardeners didn't come back (calling these people to ask them if they would come back, calling people on the waiting list to give them available plots, etc) – an activity which allowed me to quickly encounter and interact with the local participants. In the office, my tasks went from writing newsposts for R-Urban's blog to transcribing recordings of interviews with research partners from the previous year. I also co-coordinated the organisation of two research events – a trip to the UK to visit transition projects there and the research seminar which took place in Colombes. All these activities allowed me to get a better grasp of the breadth of R-Urban at a macro-level. I further completed ponctual tasks, depending of the need of the moment (such as a history of past and planned urban developments in the area where R-urban is set). At the end of the internship, I was able to produce a document with suggestions of activities and partnerships with local actors which summarised the local inhabitants' ideas I has gathered in the course of the six months in a way that could be usable by AAA.

Appendix 2 : Baseline questions asked to different categories of interviewees

Different categories of stakeholders were interviewed in July 2013. One interview grid was realised for all gardeners and all employees, as well as one targeted grid for each partner. Some "baseline" questions were asked to different categories of interviewees, in order to add a comparative value to the interviews.

	Gardeners	Employees	Political partners	Research partners	Institutional partners
How did you first "encounter" R-Urban?	x	x	x	x	x
What initially attracted you in that proposition?	x	x	x	x	x
How would you explain the project?	x	x	x	x	x
What are, according to you, the project's objectives?	x	x	x	x	x
If you were to give one word, R-Urban is a ...		x	x	x	x
What do you understand by "resilient practices"?		x	x	x	x
What values do you think the project wants to promote?		x		x	x
What impact do you think Agrocité can have on local inhabitants? / What impact does it have on your daily life?	x	x	x	x	x
Do you think all stakeholders must understand and adhere to the vision as a whole for the project to reach its objectives?		x		x	x
Motives for participating / what they get out of it (formulated differently for each group)	x	x	x	x	x
What are your three best memories.	x	x			x
For you, the project will have succeeded if...	x	x	x	x	x
What elements do you think are necessary for that to happen?	x	x	x	x	x
How do you imagine R-Urban in Colombes in 5 years?	x	x	x	x	x
Drawing	x	x		x	x
SWOT		x		x	x

Appendix 3 : Map of the system, taking Agrocité as point of focus



Map realised to represent my understanding of the system after having completed most of the interviews, at the end of July 2013.

Appendix 4 : Key to the logos used in the figures

Colombes Municipality

Centre Social et Culturel des Fossés-Jean : Social and Cultural Center of the neighbourhood where Agrocité is set, they are the local partner who use the pedagogical plots to introduce children to vegetable-growing.

French Ecology, Sustainable Development and Energy Ministry

Hauts-de-Seine Department

Ile-de-France Region

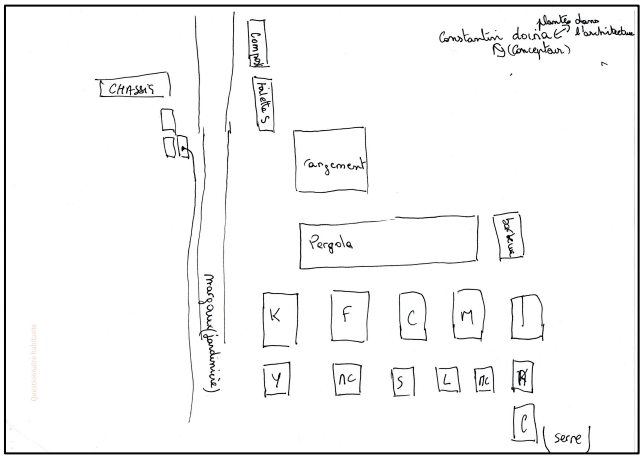
LIFE+, the European Commission's programme for the environment

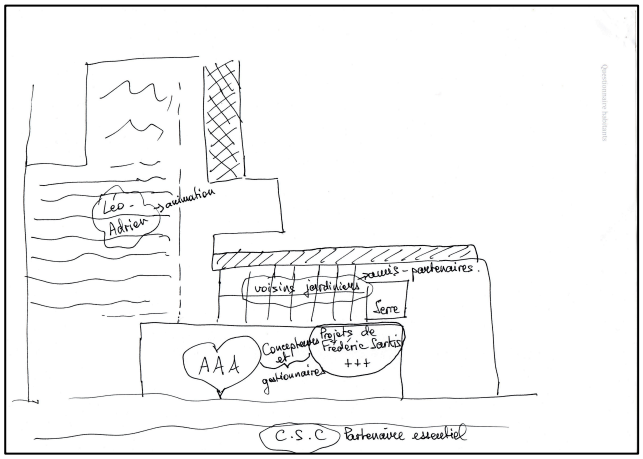
Leclerc, one of the top French industrial distribution company. It has a supermarket in front of Agrocité.

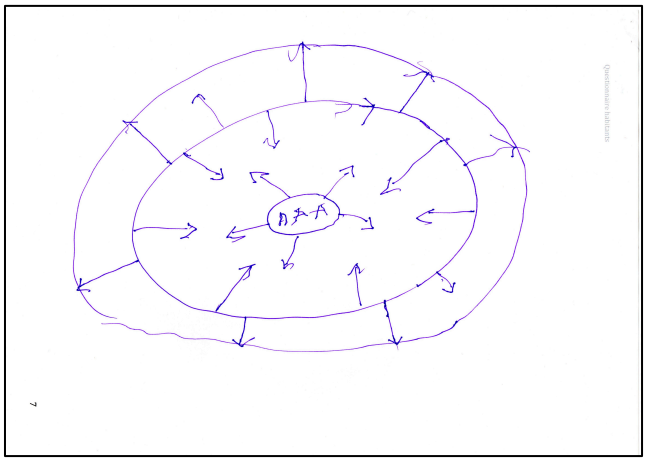
Nature-Écologie, the entreprise of Agrocité's vermicompost project-holder

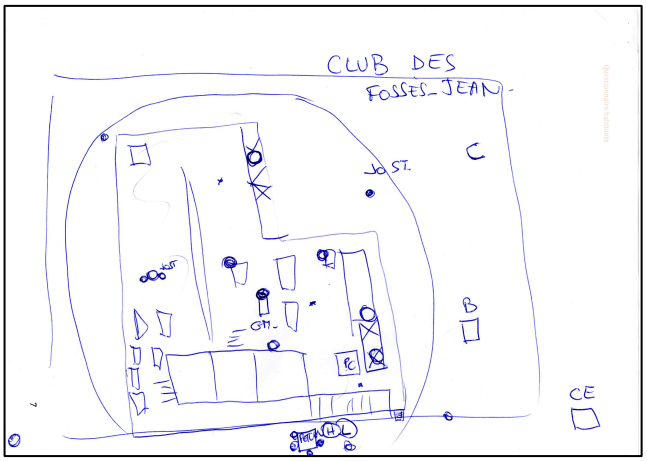
Oréade-Brèche, the consulting agency in charge of monitoring LIFE+ projects on the account of the European

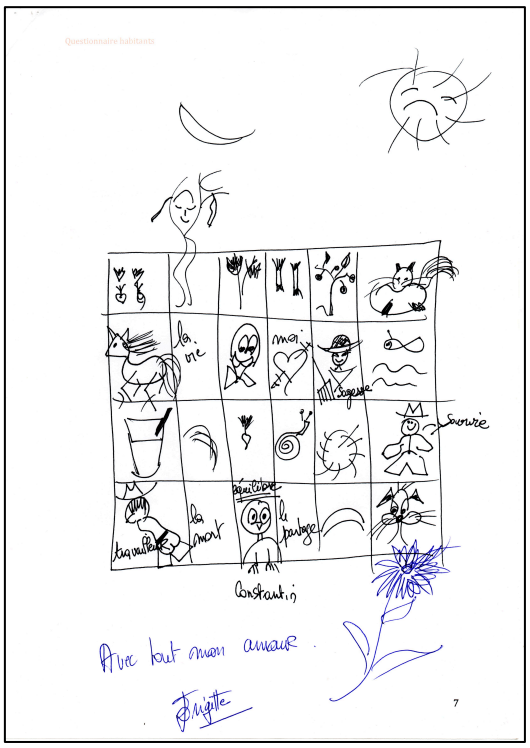
Appendix 5 : Drawings of Agrocité made by community gardeners during interviews

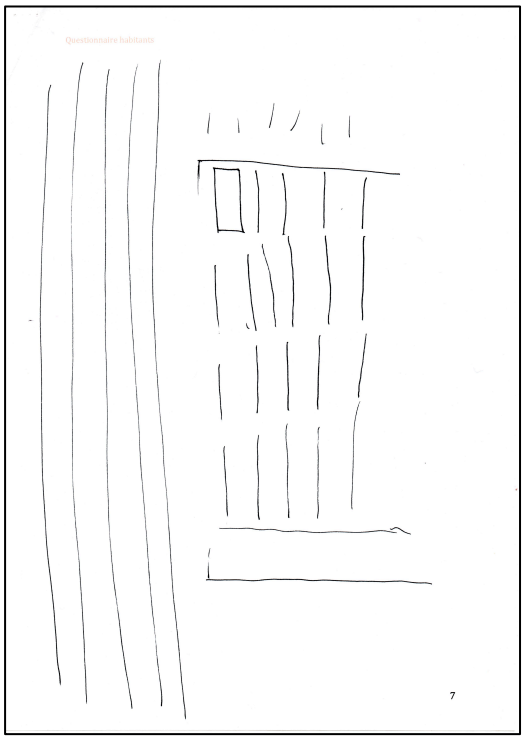












Appendix 6 : Re-situating Agrocité in its context

Colombes is a city of 85 398 inhabitants on the North-Western outskirts of Paris. Despite its well-deserved nickname, "the city of the 9 000 pavilions", it is characterised by a high diversity in its population and habitat, mixing up social housing, pavilions and old "bourgeois" houses. Agrocité is set in on the opposide of the street from a complex of social housing towers. This type of neighbourhood and buildings accommodating hundreds of flats are very characteristic of suburbs around important French cities. After the Second World War, a great amount of people coming mainly from North Africa came to France to help "rebuild" the country. Soon enough housing all these people became a problem, and great housing blocks replaced the unformal slums in which this population had been living so far. These initial slums that were housing people coming from everywhere (including France) had seen the development of an organic social system which promoted social circuits of solidarity and conviviality. By wanting to "do good" and giving each family a flat, the French government in fact destroyed this organic social structure by not creating any space for encounters in these neighbourhoods. People were at first happy to have their own space (which also greatly decreased the mortality rate) but soon realised that it created a dichotomy between inside and outside spaces. Where children were watched by all in the slums, they now occupied that outside space, far from anyone's eyes. Half a decade later, these estates are often places of high rates of unemployment and great juvenile delinquency, revealing the failure of the French government to "integrate" – in its own words – these populations; or rather, to adapt to a more diverse French culture. Furthermore, these buildings which were constructed in rush and with cheap material are now in very poor conditions and unsanitary. The population of the neighbourhood is very diverse, with a lot of people coming from North Africa and Portugal. A few metres West, on the other side of a main road are typical suburban pavilions accommodating people with slightly more financial means. Agrocité is thus truly at the intersection between those two worlds which have few places of encounter, apart from the Leclerc mall in front of Agrocité. The community has been waiting for an urban renewal programme, supposed to truly transform the face of the neighbourhood, for many years, leading to strong expectations and hopes from local inhabitants. Hovewer, the urban renewal has been delayed, leading to frustration and exasperation from a lot of community members.

Appendix 7 : Poems in prose about Agrocité from a community gardener

First poem

A Garden, a City, Concrete...
A flower in front of Tower Z[14].
Why Z by the way?
Buildings all around between crisis and stone,
A plot of land, 1,25 by 2 meters,
40 plots layed out like graves!
Is it people who die or the city being born again?
And then a smile, two, three smiles, and so many children who, perhaps, won't go away for holidays. Holidays are right here, one could believe himself in the countryside.
Simplicity in the city,
Is it illusion, is it reality?
Simply seeing a seed grow, it's already waiting for tomorrow, of what will become of it.
What about us?
Unusual encounter, citizenship, a journey, conviviality...
Harvesting the fruit of one's work,
at what price!
But also to communicate, to look at what the city misses
Just a bit of space, a bit of tolerance, friendship, encounters.
It could be just an illusion for this project is no due to last.
When we plant a seed, we need time to wait for the harvest,
Wait for the seeds and harvest again
Happiness and Life.

Second poem

Lost in the city, a garden.
A secret garden, or the secret of encounter, of opportunity?
Multipli-City, so many colours, so many souls, so many origins...
Here, we can grow everything, even rare species... chinese radish, broad bean, portugese cabbage, coriander, sweet potatoe.
Could we gather our harvests for a common soup?
If I see the vegetables, they are so different as much as so common.
Common, community, commune...
All of you citizen, let' go on with such project of sharing and learning what we could bring to an other. It could be just a smile, a bit of help, a listening ear, the sun.
Mutiplicity of the town.
Mutiplicity lies here.
From the tower Z, locked up between suffocating walls, I watch the garden.
I'm watched from the garden but nobody sees me.
I doubt of my own existence.
A man is like a plant; he has to grow, to grow up, reproduce, just exist.
Like the plots in the garden, we are layed out in line in the tower Z.
In line for life, in line for bills, for misery...
Resigned at not doing anything, or so little!
Ladies and gentlemen, citizen, it's time to react.

[14] Social buildings in the complex facing Agrocité are named by letters, starting with A and, at one point, jumping straight to Z. The Tower Z, with its 28 storeys, is the highest of the neighbourhood.