

## Appendix A - Interview municipality of Venlo, Lukassen

### **What does c2c activity in Venlo comprehend?**

C2c within Venlo is organized around three main themes: the built environment, the creation of a network of c2c businesses, and retaining the knowledge in the region. This last element is exemplified by the establishment of a master's degree in c2c, with Braungart as one of the professors. Also, Braungart's company EPEA will open a branch in Venlo. This is important because this way c2c is embedded in the region.

### **What is the goal of c2c in Venlo?**

Eventually the goal is growth, in the widest sense of the word: development of the region. According to predictions, Venlo will experience a declining population. To counter this, Venlo chooses growth, development, attractiveness. This may be a choice somewhat dubious, however we are willing to try.

### **Is c2c transformed to processes of a higher level of scale?**

Yes, it is. Especially in the Klavertje 4 project, where water and energy are prominent aspects. It really is large-scale area-development. The people of Klavertje 4 can tell you more about it, and also the Masterplan Klavertje 4. The GreenPark is more like a smaller business estate.

### **Is c2c applied on a regional level in Venlo?**

Certainly, because of all municipalities which work together. The entire area of northern Limburg is involved.

### **Which regional processes are involved?**

Transport is an important part of c2c. The transport business is very actively involved. Venlo is a logistical centre in the Netherlands. The sector itself should begin with c2c, they should get themselves started with c2c. The municipality could say "we think that is important, and that", but that wouldn't work. I am quite liberal in this, others would be more in favor of more strict rules. But how do you want to organize it all? That is very difficult.

You have to get started somewhere; maybe transport has to be organized nationally. This way everything starts: somewhere it begins, then it expands and now we are already cooperating with Noord-Brabant and Germany.

### **How far does Venlo aim to go with c2c?**

When c2c is completely thought through, it becomes clear that it essentially deals with everything. It has to be applied on every aspect of society. All the way from policy to everything else. This problem is relevant for Venlo as well. Right now, Venlo is in the process of discussing how far they are willing to go. An internal discussion group has been organized on this question and more.

### **What does Venlo consider to be the best and worst aspects of c2c?**

We look at it very pragmatically. So far, sustainability was not received cheerfully; in general the link with economy was absent. This is different with c2c. Venlo considers c2c primarily as an economical path towards development, all possible environmental benefits are a welcome extra. Therefore, it cannot go wrong. The whole discussion of believers and non-believers is not very interesting; you should simply try.

Venlo uses a policy window of until 2012, that is the year of evaluation; something has to be realized by then. If it has not worked out by then, you can say it sort of failed. For example, the master's degree on c2c should absolutely be realized in 2012. But still, all companies which have produced in an environmental-friendly way in the period until 2012 is simply positive.

### **How is Venlo trying to convince companies to use c2c?**

It should generally come from the businesses itself. For example, creating business areas where only c2c companies are welcome is too restrictive. Venlo does not believe in rules and enforcing, the fact that the companies themselves want it is much stronger than something which is enforced by the municipality.

The companies dealing with c2c right now, have a major advantage; they are the leaders in the field and that makes them attractive. It generates lots of positive publicity. Later on, being c2c could no longer be an asset. The municipality wants to help companies to become c2c as much as possible, but not with money, because that is not available for this specific target. More with contacts within the network, and getting as much subsidy from national government and EU as possible. This is something which requires cooperation between governments.

The Chamber of Commerce is the motivator of c2c, they try to convince companies to switch to c2c.

### **So you expect companies to switch to c2c by simply telling them about it?**

Well, those companies somewhat feel obliged by the current emphasis on environmental issues and the debate. C2c is sort of a statement, of course. Companies no longer want to be 'the polluter'. Some of them still don't care, but most do, and those are the ones you want to have. The Floriade is organized by a company which itself chose c2c because they considered it important to have something unique and innovative.

Next to education, no such thing as financing has been agreed on. But we're talking about it right now. There is no large amount of money available. It could be that for example locational benefits will be offered to c2c companies in the future. But now it is not like: when you become c2c, this brings the following benefits. It has not been laid down in policy very much.

### **To what extent has c2c been laid down in official plans?**

It is an official starting point of the Floriade, it is part of Greenport plans and of Klavertje 4, and Venlo is thinking of how it can be a guiding principle for the municipality of Venlo itself, but this has not been officially laid down. We are going to make it part of the 'City Vision', and completely integrate it within spatial planning. Regio Venlo, which is a cooperation with 5 other municipalities, is going to adopt c2c as well.

There still is some discussion whether c2c should be the central story for the region. Some advocate that not c2c but bio-business should play the central role. Others opt for even other approaches. C2c has not 'landed' in every division of the municipality.

### **Do the people of Venlo identify with c2c?**

Not yet, but schools are using it. Also, we made contact with the cultural part of Venlo, young creatives who can provide fresh and innovative ideas on c2c. This way, we aim at involving as many parts of society as possible. This way, c2c should be embedded within the region. The past year there has been a doubling of the number of press questions. People are interested, want to know things about it.

### **C2c proposes unlimited consumption. Is this a likely future for Venlo?**

Growth is good, but it depends how it is done. Mobility is a good thing, but not the way it is done right now. Unlimited consumption is only possible when absolutely everything is made c2c, and that is not a realistic target, at least not on the short-term. Of course we are not all of a sudden going to abandon every policy we had so far, but as a principle c2c is great.

We are no puritans, rather we are very pragmatic. So, raising environmental awareness is still part of Venlo policy. But the fun about this concept is that it 'warms' people. People like it not because it offers economical opportunities, but also because it is friendly to the environment.

Few people are actually criticizing c2c. All the movement going on right now is due to c2c, if we had not embraced c2c, we would not have had this. All the energy, all the companies, it is all because they see opportunities. That is the magic of c2c. And how the municipality is facilitating everything; of course that's very hard. That is what we're doing right now, and it is a process of trial and error. You will not get there all at once. It is an opportunity and we seize it. All the scientific thinking and re-thinking is not interesting.

## Appendix B - Email Masterplan Klavertje 4, Van Geenhuizen

### **What is the size of these areas?**

- **GreenPort Venlo**
  - **Klavertje 4**
  - **One four-leafed clover**
  - **One leaf of a clover**
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- Greenport Venlo is not entirely an area, rather it is an 'economical' area. I always say the area involves the land between Nijmegen, Niederrhein, and Middle-Limburg, of which Klavertje 4 forms the physical heart.
  - The area as it is currently stated in the Masterplan, involves an area of some 5100 hectares.
  - The four-leafed clovers are developed to optimally fit the demands of the logistic sector. The leaves are at least 200 by 200 meters. With 4 leaves, one clover has 16 hectares of space available to businesses. However, when all additional things such as roads, water, and green are added, a four-leafed clover is at least some 23 hectares. The maximal size depends on the space available in the area; it could perhaps measure up to 100 hectares.

### **What is currently the status of the GreenPortLane?**

At the moment the trace of the GPL is under consideration; which trace is most friendly to the environment. After this, the design of the GPL will be considered. Possibly it will be constructed partly below or above the surface.

## Appendix C - Email province of Limburg, Levels

### **Which instruments does the province of Limburg use to stimulate c2c? On which parties does the province aim? Is any money available for the stimulation of c2c?**

We consider c2c as an ambitious form of sustainable development. Therefore it calls for vision and ambition. That must be translated into short-term and long-term goals. To realize the long-term goals is often a transition or change in system needed. We should start right now to make a difference. That means translating these ambitious goals into strategies and actions. This calls for the investment of extra money, and that hurts. Unless you are thinking about the future / are backcasting your way from the future to the present. Then you realize you have to make costs in order to realize benefits.

The province of Limburg is mainly aiming at a role related to the process, but is also aiming to be a good example of c2c. The document 'Provinciaal beleid duurzame ontwikkeling' tells you more about our ambitions.

Money is available very limited: 3 million euro's to further the process until 2011. Next to this, we need investment money for Province, national government, and private parties. With area development projects its often about large sums of money.

### **How can c2c become a concept for regional development, in Limburg for example?**

This one is difficult to answer. The province of Limburg directs, facilitates, and stimulates sustainable development and c2c. One of the main points is area development. On the level of neighbourhoods or sub-region. There is no project which involves the entire province. That level of scale is way too big anyway.

We are trying to connect various actors who are trying to work with c2c (if useful). We still have to realize something like a community or practice on the Limburg level. Within this community, we will facilitate the knowledge, which will be partly hired from external sources, for example from SenterNovem. This way, the layer approach and the closing of cycles become major approaches. Cycles can be closed on the level of an area rather than project-based.

## Appendix D - Interview municipality of Almere, Van Oost

### **What does Almere do with c2c?**

The Almere Principles are the result of agreements made in October 2007, when a contract was signed with the national government; the 'Urgentieprogramma Randstad' (Urgency Programme Randstad). The 'schaalsprong' (the growth to 350.000 inhabitants of the city) is part of these agreements. In total 33 projects in the Randstad are included, Almere is one of them. The contract states that Almere will grow to 350.000 inhabitants and will add 100.000 jobs. Also, the accessibility has to be improved. So, some quantitative agreements were made, but also qualitative ones: sustainability was chosen as guiding principle, as a starting point for the structure vision and all agreements. We indicated to the national government that they wanted to adopt c2c as a principle. C2c is the 'innovative engine' of our city. Almere itself mentioned to the government that some qualitative agreements should also be made. The Hannover Principles were the main inspiration. Also, alderman Duijvestein saw the Tegenlicht-documentary on c2c and was very inspired by it. He was triggered by the Hannover Principles, and wanted to do the same for Almere.

This assignment led to the cooperation with McDonough, together with the national government. The seven Almere Principles resulted from this cooperation. This forms the higher level, under this some smaller things have been formulated, such as explaining texts. These Principles are binding for both new and existing development of the city. This is the first important point in the process of implementing c2c. The major motivation to do it is the city's doubling population.

The Principles are laid down by the important municipal institutions, such as the city council and the major and aldermen. It has been declared that c2c has to be applied on the 'schaalsprong' en everything else. Everything we do is being checked on whether it is 'Principle-proof', the question is asked whether this development leads us towards a sustainable city. This causes plans to be reviewed again. On the level of policy the Principles have guided the direction of development of the city.

C2c is not all suddenly a change of direction, we did not just follow the hype. Almere was founded some 30 years ago, as a sustainable concept, in the years of the Club of Rome. All kinds of sustainability principles are involved in the design of the city. A design with multiple city centers, emphasis on water and green environment, and the orientation towards public transport. This enables the city to work towards c2c, otherwise this would have been a step too far. We have always been dealing with sustainability, in every layer of the city. In some periods there has been less emphasis on sustainability, in the VINEX-years, for example. Extra demands on sustainability only led to delays, but now it is different.

We are rather ambitious, but we dare to do this because of our great starting point. There is a great basis on which we can build. However, the Principles require a radical change: from eco-efficiency towards eco-effectivity. We have already for quite some time been investing in a line of growth within which sustainability was important.

Now the time has come for a new growth curve, a new paradigm. This will be stimulated by the Principles. Existing plans are used to start this new curve. Right now, we are beginning to start certain developments, such as the eastern and western development of the city; this is in fact area-development (gebiedsontwikkeling). Urban accessibility and sustainability will get their own plans. Sustainability should become something of the entire city. For this purpose, an integrated framework of agreements has to be agreed on, one year is remaining to finish this. For example, there are thoughts on the development of the western part of the city, to combine this with a subway through the IJmeer. These are things of the higher level of scale, in combination with the Noordvleugel (the northernmost area of the Randstad).

At the moment we are looking at the pre-investments we will have to do in landscape, infrastructure. We are examining to what extent c2c offers a clear guideline at this higher level. Here, too, we want to get to some guiding principles. This is not easy, McDonough does not know this either. Together we have been working on these regional assignments. McDonough is an expert on the level of buildings and neighbourhoods, but not on the regional level. The closing of material flows turns out to be important on every level, just as healthy systems.

We are currently investigating how flows can be closed as much as possible, and on which level of scale we want to accomplish this. Within this, we work on the regional level of the Noordvleugel but also on the level of buildings and neighbourhoods. We are examining what is feasible at which level of scale.

We aim at becoming an 'upcycle city', how can we achieve something like that? That's one of the central questions. The answer lies somewhere in the area of closing cycles, and adding value to projects. We examine for every scale whether it is feasible to apply c2c. Regional, city, neighbourhood. Especially the completely new neighbourhoods are suitable for c2c application. One of the aspects which is important is energy. Right now we are, in cooperation with Delft University, investigating the energy potentials. Using this, we are trying to establish cascades, at least in the new neighbourhoods. For example, Eastern Almere could produce enough energy for the entire city.

Next to energy, we are examining other flows, such as utilizing waste water, heat from waste water, and using the nutrients. How can urban design take this into account? The city already has a separate sewer system for rainwater. We also store water on the surface to increase the people's connection with water. This way, separate systems are already identified. Also, climate change is counter effectively. We want the entire city to function as an urban metabolism. This is quite an assignment, existing systems should be reviewed again.

We already use waste heat from the local energy plant to warm residences. One plant from Almere and one from adjacent Diemen will be used to warm 10.000 houses in Almere-Poort, one of the new neighbourhoods. Right now, both plants are fossil-fuelled, we aim at changing this to biomass. In most new areas the plan is to switch from central energy provision toward decentralized, small-scale energy production. This provides a more robust energy provision. This could take the form of a small biomass plant, in combination with wind and solar power. With Delft University is examined what exactly should be done to reach such a target; reserve

space, or on the level of buildings, or both? This way, we are trying to take all levels into account; infrastructure, water, etc.

### **How do the plans translate into the various sub-plans?**

On a social level, c2c does not mention much. The Almere Principles are more comprehensive about this social level. One of the Principles is: People make the city. The social aspect and the corresponding transitions are needed in practice, and this is explicitly acknowledged. We have a project in which the end user gets a great amount of responsibility about the residence in which he/she will be living. Maybe the influence will even expand to the living environment. This project results in the need of some kind of support; education, self-organisation, and different forms of planning. This development stimulated different kinds of development (not planning-based), more diverse. 3.500 residences will be realized this way. Experiences are going to be preserved for future neighbourhoods.

### **But how is determined whether these houses actually produce energy, as planned?**

That is a question which we deal with right now. The project started in the period ahead of the Principles. We now question ourselves how we can educate the inhabitants in such a way that they will build energy efficient and producing. Educate, stimulate and possibly also financing to stimulate even more. No demands will be put upon the inhabitants, that does not work and it also is not allowed by the law. Also, we would have been obliged to make some 1.000 agreements or so. We chose a more stimulating track. Whether c2c is applicable within this individual construction is not yet clear. We are first aiming at changing the role of developers to build energy producing building and not so much at changing the individual builders.

The guiding framework is set, goals are being formulated. Now development strategies are being stated to work towards the upcycle city. Before the arrival of the Principles we were dealing with various projects in the city without much integration. Now many projects are adapted to the Principles. Now the future includes energy potentials, the closing of cycles, and sustainable business activity. For this last point, we are developing a Business and Science Center, for sustainable business activity. We want to attract c2c companies. This Center should attract sustainable businesses. Knowledge and parties with development power should be tied to the city. These are things which are guiding our development, combined with things which have proven to work well in the past, or the things which form the sustainable basis of Almere.

### **In Venlo there is no financing for companies to go c2c. Is this the same in Almere?**

We don't have a pro-active Chamber of Commerce, such as Venlo. This has to evolve. We do have an economical department of the municipality which actively communicates with companies. We organize competitions ('prijsvragen') to stimulate companies, next to this we are also examining whether we can offer financial benefits to companies which produce in a c2c way. This is still in development, and nothing has been approved yet by municipal institutions. We are dealing with it right now.



**Does the province play a role?**

Yes, they have assigned Almere to perform certain parts of the 'schaalsprong'. Also, they are responsible for major investments in the ecological zone, and deal with the water-related aspects. Moreover, the province is aiming high with their climate change policy, and this also affects Almere.

**So the province is not involved in using the c2c approach?**

No, but it does have these climate change goals, and some other programmes which are relevant for the 'schaalsprong'.

**What aspects of c2c are considered the best and the worst in Almere?**

The main positive side of c2c is the integrated and positive nature. The change in paradigm away from the defensive approach which was dominant within sustainability and the environment. Sustainability used to be expensive, regulations were important, restrictions and limitations were the starting point. C2c offers a new opportunity for the acting from ideals, from idealistic visions. No longer do we have to look at each other from the LOOPGRAVEN. This really is the starting point here. The thinking in systems can be applied on all levels, this is required to shape Almere's 'schaalsprong' properly.

This breakthrough is essential, towards integral and positive. Or else you would only muddle through, follow well-known patterns, and then the ambitious goals of Almere would never be reached. That way Almere will once again be chosen the ugliest city of the Netherlands and nothing will change.

The intention is to contribute to the economic structure of the Noordvleugel, and to transform Almere to an attractive city. The result is that we need something which is 'bigger' than the current issues. In this case, c2c offers the guiding perspective, without instantly offering all the solutions. Of course, its not a simple manual. It is primarily a way of thinking which enables you to get to other solutions than we have done in the past, and other solutions than the ones we would have gotten with the usual way of thinking. We have reached the limits of what can be achieved by the sector-oriented approach. We can not make the step required to get the Netherlands to reach the next level: we need a change in paradigm. We should change things fundamentally. This is not going to take one year, rather it is going to take longer, at least 25 years.

So, the Principles are the start of a movement, that not only physically, but also socially and economically should make a change. Right now an effort is made to start this movement. We recognize the opportunities which are offered for this by c2c. Of course, no certainty can be offered that it will be reached, but c2c does offer a stepping stone towards this future.

Everything is still in the early stages! Many things have yet to be started up. A new college means new priorities; this could mean that there will be a new direction that will be followed. The Principles include a statement saying that keeping with a direction is important, and they exceed a political colour. However a new college will nevertheless shake things up. So we want it to be robust enough, so all the parties can work with it. Nonetheless in this way a separation from the trend can be made.

If it will work anywhere, it will be here: we are a young city, used to change and innovation, not rusted; it is part of the DNA of this city. The basic conditions are very good for implementing c2c. The college, council, and the main people of the environmental department are supportive and a sustainability laboratory is being constructed. Consequently, many people are being brought together, also extern parties, to make everything possible. Focussed on that goal we are organising everything. For the rest, it is an adventure.

**In Venlo it is especially the economical department of the municipality that works with c2c, is that comparable to your situation?**

We are trying to create 100.000 jobs. The whole assignment is not only about economy, it also concerns the total development of the city and the regional assignment of the Noordvleugel. It is important that the Noordvleugel will be able to compete with other regions internationally. Capability needs to be enhanced. To make this possible, housing for example is also important. Almere can play an important role in this part.

Therefore, it is also important to increase the level of education, make sure people connect with the region. The uniqueness of this place, beautiful surroundings, lakes, Veluwe, pools. It is important to reach a certain level in the area of social, economics and ecological that will have a spin-off effect on economics, health, biodiversity and climate-proofing. Venlo is in many aspects an area in decline, it needs a push and they want to brand it, make it part of the market and make it recognizable as an innovative area. Here, we are trying to make a healthy and prosperous Noordvleugel, on the social area as well as ecological and economical aspect: so the integral sustainability approach.

**Therefore it is different from Venlo?**

Yes, their focus is more on the economic side.

**Then why are you presenting c2c so prominently in the media?**

Indeed, with branding and communicating we try to put Almere in the spotlight. Investing and binding people to you is of course a goal. We want to present Almere as a place that has potential for the future.

**Who are involved in c2c?**

Municipality, national government, GOB, the waterboard and the province, however the last two are mainly following Almere's initiatives. Nevertheless, waterboard Zuiderzeeland has been inspired by c2c and they are looking for opportunities to use it in the area of water. Nutrient flows, what more can we do with it. The function of Almere and the national government is mainly to boost the whole process.

**What is your approach to the criticisms on c2c?**

We are not using 'pure' c2c. The Hannover Principles were our inspiration, the integral approach used there. We approach c2c as a part of those Principles: some of them were chosen en worked out, turning them into c2c. C2c is only a part of the sustainability story. The Hannover Principles in fact present a vision on sustainability en we've adopted it and translated it into the Almere Principles. McDonough doesn't only bring c2c, in our meeting he talks about much more; he also presents an integrated approach to sustainability. We think it's a misconception that c2c is a hype, and that the approach is not complete enough. This is

reflected in the criticisms summed up in your thesis; people do not consider the whole history, where c2c came from: they look at it as an approach which came out of nowhere. People should look back a bit, see where c2c came from, and learn from that. Previous approaches are still relevant, and c2c takes this into account.

The idea of technical and biological cycles will lead to all kinds of innovations. For us it is much more a story which leads to a different approach to things. We also don't think people should transport materials all the way back to the source; shipping materials all over the globe isn't a good idea.

**To what extent do the concepts of biological and technical cycle return in Almere's plans?**

We are dealing with how buildings can become sustainable. Construction is a sector which is highly polluting. In one of the neighbourhoods we have a contest for designers, one of the parts of this is c2c: try to come up with a vision on the level of residential building in which is shown how c2c affects all aspects, and which steps should be taken to work towards c2c houses.

**Is Almere also trying to make everyday products c2c?**

Not yet. We are looking at recycling, we already have a good recycling station. On every level we are working on starting pioneering projects, to find out what will work where. On level of public space we are also trying to begin to work with different materials and products.

**Almere is currently examining c2c on all levels and on many aspects. Is that going to continue this way?**

It will be necessary to pursue c2c at all levels. However, right now we try all various directions, later on our efforts shall be narrowed down. First we have to find out where and on what c2c works best.

**C2c does not specifically argue in favour of sustainable energy. But this is one of the main aspects of the Almere plans, and of the Principles.**

The Hannover Principles do clearly make a point for energy. In the book on c2c it may come to the front less obvious. McDonough does always include sustainable energy in his philosophy. Our emphasis on c2c is limited.

**When should de 'schaalsprong' be finished?**

Halfway 2009 we want to have finished the integrated framework of agreements, together with the national government. In the meantime many development on a smaller level of scale are continuing. In 2030 the 350.000 inhabitants should have arrived.

That's what makes this place special; there is still room to grow. And this growth provides an excellent booster for development, and also for changing paradigm. The high level of scale offers a great opportunity for a radical change in policy. There simply are many great assignments waiting in this region.

## Appendix E - The Hannover Principles

From: William McDonough & Partners (1992) The Hannover Principles – Design for Sustainability.

- 1. Insist on rights of humanity and nature to co-exist** in a healthy, supportive, diverse and sustainable condition.
- 2. Recognize interdependence.** The elements of human design interact with and depend upon the natural world, with broad and diverse implications at every scale. Expand design considerations to recognizing even distant effects.
- 3. Respect relationships between spirit and matter.** Consider all aspects of human settlement including community, dwelling, industry and trade in terms of existing and evolving connections between spiritual and material consciousness.
- 4. Accept responsibility for the consequences of design** decisions upon human well-being, the viability of natural systems and their right to co-exist.
- 5. Create safe objects of long-term value.** Do not burden future generations with requirements for maintenance or vigilant administration of potential danger due to the careless creation of products, processes or standards.
- 6. Eliminate the concept of waste.** Evaluate and optimize the full life-cycle of products and processes, to approach the state of natural systems, in which there is no waste.
- 7. Rely on natural energy flows.** Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.
- 8. Understand the limitations of design.** No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in the face of nature. Treat nature as a model and mentor, not as an inconvenience to be evaded or controlled.
- 9. Seek constant improvement by the sharing of knowledge.** Encourage direct and open communication between colleagues, patrons, manufacturers and users to link long term sustainable considerations with ethical responsibility, and re-establish the integral relationship between natural processes and human activity.

The Hannover Principles should be seen as a living document committed to the transformation and growth in the understanding of our interdependence with nature, so that they may adapt as our knowledge of the world evolves.

## Appendix F - Percentage of c2c-goals within POP

Summary of all ambitions expressed in chapter 1 (p. 7 – p. 17) of the new POP of the Province of Groningen. These ambitions can be found in the POP, and for this research they were translated from Dutch. All ambitions which are underlined can be considered as goals which seem similar to c2c. Not all underlined ambitions are reviewed in chapter 4. Some of them are very similar to the other ambitions expressed, and are therefore not included. Others are too general to discuss properly. For example the second ambition mentioned here is very hard to review.

Also, some ambitions may have a sustainable point of view; this does not mean that these goals are c2c. Therefore, some are not underlined and are not considered similar to c2c.

In total 51 goals are identified. 20 of them could also have been c2c goals. These 20 are represented by the 4 goals mentioned in Box 4.2. The 16 other goals are either very similar to these 4 or are not very testable. The 20 goals are 39% of all goals.

The 51 goals are:

When practicing spatial planning we want to keep the environmental pressure for people and nature as low as possible.

We are working on a correct balance between liveability, environment and economy.

We are contributing to a liveable and sustainable Groningen with our ‘Social Agenda’.

We will aim at an economic use of resources and energy, and at the creation of chains (‘ketenvorming’) and/or bundling with other production processes (Goal 1 from Box 4.2)

Our goal is maintenance (stand-still) of the current environmental quality.

Next to the instruments on the area of environmental policy we use the spatial policy to realize our liveability goals.

Amongst others, water guides the spatial planning of our province: we want enough space for water in a system that is as natural as possible. The emphasis is on safety and improvement of water quality.

On the long-term climate change will have large consequences for our province. We need to adjust to changes in time, also when taking future generations into account. Because of this we will screen our plans and regulations for the need to adjust them for climate adaptation and we will execute these adaptations before 2015.

As a province we want to present ourselves nationally and internationally as a leader in the field of energy. We aim at making a significant contribution to the realization of European and national energy and climate goals. (Goal 3 of Box 4.2)

Core qualities of our province are the values of nature, landscape, historic-culture and archaeology. The different areas in our province also have their own characteristics, determined by physiological and historic-cultural differences and differences in use. We want to emphasise these differences in the characteristics.

We want to be an active and enterprising province, who, together with others, dares to invest in the growth of Groningen.

The social-economic growth of our province should not disproportionately affect the quality of the living environment negatively. There has to be a balance between growth and quality.

A balance between growth and quality is important for another reason. We pay specific attention to liveability in the parts of the rural area where the size of the population decreases and the make up of the population changes significantly because of demographic development.

We want to support the further development of high-quality and sustainable agriculture.

With activities such as water- and nature management, recreation and care, we offer space for an increasing level of scale.

We also want to offer opportunities for non-agricultural functions for example in buildings in rural areas that are no longer used.

It is important to us that the liveability is maintained and strengthened where possible, in the countryside as well as in the regional centres of Groningen.

We are going to take the properties and functions of the soil and ground into account more within spatial planning.

We aim at utilizing the available environmental space to a maximum within business activity.

In the forthcoming decennia it will remain important to strictly live up to environmental rules, while in the meantime also stimulating positive developments.

We continue to involve citizens within our environmental policy, because many inhabitants feel connected to the quality of their living environment.

Living safely in the Groningen province means a coastal protection system with dykes against the sea which are rising sea level-proof. These dykes should be reinforced on time. On the

long-term the coastal defence could be built up from a system of superdykes and 'slaperdijken'.

The increasing precipitation will both cause increasing drought and floods. Waterboards should take adequate measures, such as heightening dykes, and building water storage areas.

Our ambition is a clean, healthy and safe living environment. (Goal 2 of Box 4.2)

Our province possesses important and characteristic values on the area of nature, landscape, culture history, and archaeology. We aim at preserving these values, protect them, and strengthen them. The countering of the 'verrommeling' (decreasing qualities) of the landscape is our priority.

The strength of a living environment often can be found in diversity. We want to strengthen that diversity. We aim at carrying out the picture of a province with diverse natural and landscape qualities (...) and stimulate corresponding developments. (Goal 3 of Box 4.2)

We want to strengthen our profile as a province with diverse qualities on nature and landscape. These qualities become increasingly important for the image of our province and therefore also for our recreation and tourism.

There is a trend towards more strict European and national regulation on the protection of nature and landscape. This urges us to search for creative and innovative solutions for new nature and nature compensation.

We want to develop a sustainable water system which can be managed effectively.

Our ambition is a characteristic living environment and high-quality nature.

We aim at measures to keep our province accessible. On the short term we think we have to strengthen road, rail, water, and air infrastructure.

Accessibility of rural areas is essential for the liveability in these areas.

Car, public transport, and bicycle should play an important role in this.

Also, we will develop an extensive network of high-quality public transport within and surrounding the city of Groningen.

We want to make traffic more safe and more sustainable, and integrate the infrastructure within the landscape properly.

Our ambition is good accessibility.

We have the ambition to create a strong regional economy. We specifically aim at these six points: energy (Energy Valley), life sciences, chemical industry, ICT, agri-business, and shipyards.

We aim at the maximal utilization of existing space. We give priority to restructuring of existing business areas.

Our efforts to concentrate business activity of a scale higher than the regional, will be continued.

Due to the rising sea levels, we will pay extra attention to the protection of business areas against flooding.

Next to the regular growth of scale of existing companies, we also see the rise of large-scale enterprises.

We want to promote our possibilities on tourism more, and make our province more readily accessible. On the long-term we are looking at the effects of climate change: higher temperatures and longer summers offer new opportunities for various kinds of recreation.

We are offering plenty of possibilities for the extraction of raw materials, however we are cautious about negative effects on nature, landscape, sustainability and safety.

Our ambition is a strong regional economy.

We aim at positioning our province both nationally and internationally as a leader on the area of energy, and provide a large contribution to European and national energy- and climate goals. (...) The goal is a sustainable energy provision within fifty years. (Goal 4 of Box 4.2)

Our ambition is a sustainable energy provision.

We have the ambition of realizing a high quality of living for all inhabitants of our province, with enough supply and quality of residences, and an attractive living and working environment, and well accessible facilities such as education and healthcare.

We think it is important that municipalities experiencing a declining and changing population, will develop a vision, together with 'woningcorporaties' (housing corporations) private parties and societal institutions, about liveability and living-related questions resulting from this situation of decline, including the availability and accessibility of facilities.

The development of our population (decline) also offers opportunities: we could stimulate liveability and economical development, by activity of sectors which aim at facilities for elderly people or for specific groups of young people. We consider it our role to develop a vision, as well as coordinating the regional demands for living and liveability, and supply this process with knowledge and information.



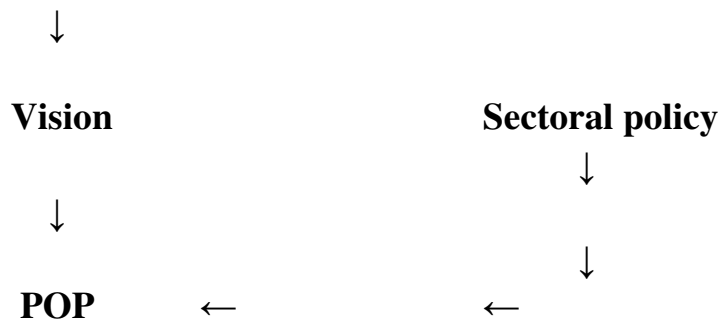
Another important development which could influence living in our province on the long-term is climate change. We are forced to check how save it is to live with increasing risk of flooding.

Our ambition is a high quality of living for our inhabitants.

## Appendix G - Vision of Roggema, province of Groningen

Aspects such as housing and energy are handled separately. Within the process of the POP, first these sectoral aspects created their own policy. This ended up in the policy part directly, without relating to any central vision. Afterwards, a central vision is added. But because of the late stage of the process, this vision did not influence any of the policy parts which were finished already much earlier. This way many of the things from the visionary part do not specifically return in the policy part. The process can be summarized as follows:

### Analysis



Clearly, the link between Vision and Sectoral policy is missing. So, the structure of designing a POP should be changed, and also there should be a central vision to play an important role.