

Summary: How to keep a liveable and vital future for Polder Giethoorn?

1 Why an international scholarship for my birthplace: Polder Giethoorn?

For my scholarship I researched the question: how do we keep a livable and vital countryside when there are so many challenges for the future? An answer to this question cannot be provided by the government, it should start with asking the inhabitants how they see the future for their surroundings. That is what I set out to do in my research project.

I defined the Polder Giethoorn as a specific research subject, with natural boundaries and specific challenges with regard to agriculture. This also is my birthplace and I am the third generation to farm these lands. The Polder is located between a touristic hotspot and two Natura 2000 areas. With all the challenges with regard to climate change, pollution from nitrogen and carbon dioxide, renewable energy and the demand for housing, the future of the Polder as an agricultural area is at stake.

My purpose for my scholarship is to learn about innovations and perspectives for agriculture in other countries and to apply these insights to the Polder Giethoorn. My purpose for the research assignment is to explore how inhabitants see the future for the Polder, how they value the innovations and find an answer to the question: how can it remain a liveable and vital area in the future?

The central question for my research project is: Which solutions that might solve the challenges for the Polder Giethoorn are supported by the inhabitants and stakeholders surrounding the Polder Giethoorn? In my research I identified the most important stakeholders, the future challenges, the opinion of inhabitants on the challenges and core values for the future, the innovations from other countries, the opinions of inhabitants on risk and opportunities with regard to the solutions for challenges and the support for solutions for the future of the Polder Giethoorn.

I conducted my research in cooperation with the local and regional government. The challenges for the Polder were chosen based on policy documents and after consultation with public administrators. And my selection of possible values for the area were also derived from vision documents of local and regional governments. They also supported my by providing me with a researcher to help with the survey and the analysis of the outcomes.

2 How did I approach my research and scholarship?

To answer my question, I employed several activities:

- I started with an analysis of policy documents that led to a series of values for the future and challenges for the future. In table 1, the values and challenges that were used in the research are summed up:

Tabel 1 Values and challenges based on policy analysis

Values	Challenges
Renewable energy	Nitrogen reduction
Circular production	Providing more housing
Characteristic landscape	Carbon dioxide reduction

Food production	Generating renewable energy
Profitable farming business	Enhancing tourism
Liveability	Raising water levels
Local services	Increasing biodiversity
Attractive for tourists	Enhancing water quality
Climate-proof	
Biodiversity	

- I conducted a survey for the citizens and farmers of the Polder Giethoorn, but also for the citizens and tourists in Steenwijkerland (the area surrounding the Polder Giethoorn). The survey has been completed by 4 tourists (the results were not included in the end), 42 inhabitants of Steenwijkerland and 58 inhabitants of the Polder Giethoorn, 23 of which were farmers. These groups had several overlapping questions and some specified for the characteristics of their subgroup.
- When the results of the surveys were in, I organized a series of round table discussions in which the results of the survey were discussed, future scenarios were explored and a manifest for the future was constructed. Three round table discussions were held, with an average of 25 participants each.
- In between the steps in my research I participated in several international trips for my scholarship as a source for inspiration and innovation. The insight of my scholarships were presented at one of the round table discussions and in several working groups in my network.
- Finally I presented the future manifest for the Polder Giethoorn at an event held at my farm. Representatives of the Province of Overijssel and the Municipality of Steenwijkerland were presented with the first copies of the manifest. Almost hundred people from the Polder and regional stakeholders attended the event.

In the following paragraphs of this summary I will present the results of my research, starting with the values for the future in paragraph 3, the challenges for the Polder in paragraph 4 and insights from my travels in paragraph 5. In paragraph 6 I will address the scenarios for the future and the summary will conclude with my recommendations for the future of Polder Giethoorn.

3 Which values are important for the inhabitants of Polder Giethoorn?

From my policy analysis I found out the values for the future as defined by local and regional governments. But how do the inhabitants value the Polder and what characteristics do they want to maintain? In the survey, inhabitants were asked to describe the Polder Giethoorn in three keywords. Keywords for the Polder Giethoorn are: agricultural, spatial, authentic, nature. They were also asked to reflect on the characteristics of the Polder when all challenges for the Polder were solved. When all challenges are solved, inhabitants fear that the Polder Giethoorn will no longer be agricultural, but more nature, more biodiversity, but also filled with windmills and solar panels: growing energy rather than food. That is not what they want for the future. In de roundtable discussions participant were asked to define core values for the Polder Giethoorn that they want to preserve for the future:

- Polder Giethoorn produces food: land has to be used for cattle and agriculture;
- The cultural landscape with its straight ditches, typical farmhouses and grand views should be preserved;
- Agriculture and nature are balanced;

- Polder Giethoorn is enterprising and innovative: inhabitants are pioneers and opportunity seekers.

These future values should be taken into account when addressing the challenges for Polder Giethoorn.

Both the inhabitants of Steenwijkerland and of the Polder Giethoorn were asked to rank both the importance of the values derived from policy documents as well as their satisfaction with the performance of this value in the present. This resulted in an important/performance analysis of all of the values as shown in table 2. The orange blocks are bottlenecks: satisfaction is lower than importance. The green blocks are signs of over quality: performance is higher than importance. But more relevant are the differences in importance and performance between the subgroups.

Table 2 Importance/performance of the values for Polder Giethoorn

Value	Inhabitants Steenwijkerland		Inhabitants Polder		Farmers Polder		Inhabitants & farmers Polder		Totaal	
	I	P	I	P	I	P	I	P	I	P
Renewable energy	6,1	6,2	5,8	6,2	6,9	6,7	6,2	6,4	6,2	6,3
Circulair production	6,7	5,7	7,2	6,7	6,3	6,0	6,9	6,4	6,8	6,1
Characteristic landscape	6,7	7,4	7,5	7,9	6,3	7,3	7,1	7,7	6,9	7,6
Food production	5,3	7,2	6,1	8,0	7,3	7,5	6,6	7,8	6,1	7,5
Profitable farming business	5,8	7,8	7,3	6,7	7,4	7,6	7,4	7,0	6,7	7,4
Liveability	6,6	7,6	8,4	8,1	8,4	8,0	8,4	8,1	7,6	7,9
Local services	6,0	7,1	6,5	6,9	7,0	5,7	6,6	6,5	6,4	6,7
Attractive for tourists	4,6	5,5	4,6	6,7	5,2	6,1	4,8	6,5	4,7	6,1
Climate-proof	7,5	5,3	7,1	5,6	6,4	5,9	6,8	5,7	7,1	5,5
Biodiversity	7,3	4,7	6,9	5,8	5,9	5,7	6,5	5,7	6,8	5,3

The following can be deduced from the analysis of the importance and performance of the values for the Polder Giethoorn:

- Residents of the Polder are concerned about a number of values for farmers, while farmers are mainly concerned about the facilities for residents.
- The polder landscape is considered important and people are very satisfied with it. This also applies to the economical aspects: to earn a living as an agricultural farmer in the area.
- Both residents and farmers do not think it is important to invest in tourism, they are satisfied with the way it is now.
- The liveability and the level of local services are highly rated, but satisfaction with this is not as high as the importance people attach to it - that could become a bottleneck in the future.
- Climate-proof is a bottleneck, although residents think so more than farmers.
- For the residents and farmers in the Polder, liveability, profitable farming and the polder landscape are top priorities. This is followed by the values relating to the climate.

- The residents of the Polder consider different values important than residents of Steenwijkerland (well, a small group of residents from Steenwijkerland): according to them more attention should be paid to climate and biodiversity.

4 How do the inhabitants of Polder Giethoorn value the challenges for the future?

Inhabitants see a few challenges based on the values, but there are more challenges and problems to be solved. In the survey the inhabitants have ranked the importance of addressing the challenges that were identified based on the policy analysis. The results are found in table 3.

Table 3: Importance of the challenges for inhabitants of Polder Giethoorn

Categories	Very unimportant	Unimportant	Neutral	Important	Very important
Nitrogen reduction	11%	13%	22%	23%	31%
Providing more housing	25%	25%	18%	27%	5%
Carbon dioxide reduction	10%	5%	28%	34%	23%
Generating renewable energy	11%	6%	16%	51%	16%
Enhancing tourism	27%	22%	19%	24%	8%
Raising water levels	11%	14%	20%	27%	28%
Increasing biodiversity	1%	7%	31%	25%	36%
Enhancing water quality	1%	10%	25%	30%	34%

The most important challenge according to the inhabitants is generating sustainable energy and improving water quality. In the round table discussions the participants valued generating renewable energy as most important, because the water quality in the Polder is believed to be high. Other important challenges are: reducing nitrogen, enhancing biodiversity, reducing carbon dioxide and the water level. Inhabitants are not sure what the extent of these problems is and what the possible consequences of addressing these problems are. Building more houses or attracting more tourists are not seen as urgent or important challenges.

An analysis of subgroups revealed that inhabitants of Steenwijkerland value the challenges differently than inhabitants of the Polder: they value the more nature and climate related challenges as most important. In the round table discussions the participants therefore saw the image of the Polder Giethoorn as an extra challenge. People outside the Polder do not value the agricultural aspects but rather the natural aspects of the Polder. That is something the inhabitants want to correct: the Polder Giethoorn is primarily agricultural.

The participants could also submit new assignments. The new tasks that have been mentioned several times are:

- Attention to the balance between nature and agriculture, either by clearly demarcating it, with a transition area, or in the form of cooperation between nature and agricultural organizations.

- The infrastructure, which includes both improving and preserving the historic form.
- Preserving the cultural landscape, for example by paying more attention to materials suitable for the area (swamp forest and reeds).
- Compensation for farmers, slowing down changes also have been mentioned.

In the survey, participants were asked to rate the consequences of resolving the challenges as positive or negative. The result can be found in table 4.

Table 4: Consequences of resolving the challenges

Problems/tasks	Positive consequences	Negative consequences
Nitrogen reduction	Nature/climate	Landscape, farmers
Providing more housing	Local services	Landscape, farmers, nature/climate, liveability
Carbon dioxide reduction	Nature/climate	Landscape, economy, tourism
Generating renewable energy	Nature/climate, economy	Landscape, farmers, tourism
Enhancing tourism	Tourism, local services, economy	Landscape, farmers, nature/climate, liveability
Raising water levels	Nature/climate	Farmers, landscape, tourism
Increasing biodiversity	Nature/climate, landscape, liveability	Farmers, economy, tourism
Enhancing water quality	Nature/climate	Farmers, tourism

This leads to several interesting insights:

- For several challenges the expectation is that if resolved they benefit nature and climate, but have negative effects for farmers. This leads to a more principal dilemma between nature and agriculture.
- It is striking that residents of Steenwijkerland in particular think that the approach to nature challenges is positive for the landscape, while the residents of the Polder see it differently. This becomes most visible when raising the water level and generating energy.

The participants of the survey were also asked who they thought should play a role in tackling the tasks. The results were clear: the challenges should be resolved in collaboration - residents, entrepreneurs and governments all have a role in tackling them. Only when it comes to housing, tourism and the water level the main actor is the government.

5 What did I learn from my travels?

In my travels I tried to find out how the agricultural sector is dealing with challenges in other countries. I took notes, asked questions and had lots of conversations with experts and colleagues. I sought inspiration and ideas for innovation for the future, with regard to farming and business development. I ordered my insights from the travels in several themes, as shown in table 5.

Theme/ county	Image sector/ inhabitants	Regulation	Innovation/ future	Landuse dilemmas	Governance
United Kingdom	Focus on food production	European regulation is not realistic, animals as central to biodiversity, agriculture has a positive effect on CO ₂ reduction	Vertical farming	More land, less dilemmas	
Spain					Cooperative models, employees get paid and share in profits
Singapore	Small sector, everything is imported	Trust instead of certification	Cultured meat, 3D printing, insect farming, vertical farming	Cityfarming	
Borneo	Polluting sector (rubber, pepper, rice, palm oil)	Unreliable government, investment only in cities	No future for agriculture unless the rainforest is damages	Money goes to cities and young people leave the countryside	
Denmark	large sector, valued highly	Minister of Agriculture, following EU rules without problem, measuring instead modelling, lobbying with the sector as a whole (including production companies)	Biological farming mostly for export, less attention of animal welfare, more room for pesticides and modification, regenerative agriculture, large salmon sector	Different approaches with sun and wind. Solar energy is seen as produce and farmers keep the profits, wind is chosen with inhabitant and everybody shares in the profits	Efficient production, CO ₂ emissions are small
Brazil	Topsector: Brazil feeds the world		Focus on China, excellent soil management, huge production rate	More land, less dilemmas	Larger companies thrive, smaller companies struggle
Australia	Large sector, large scale production	Practical regulation, compensation for damages is easily obtained	CO ₂ reduction through fungi. genetic modification instead of pesticides	More land, less dilemmas	From produce to product on the farm itself
Netherlands	Polluting sector, less important, citizens are divided on the sector	EU regulation based on models are seen as limiting, political focus on environment rather than farming, sectoral lobby structure	Sector needs to decrease and change	Too many claims on limited land	Regular farming is profitable, biological not, efficient production, new regulates frustrates the sector

The travels have shaped my vision on the future of farming. Several highlights for me were:

- Reputation is key. In countries with a strong sector, the reputation of the agricultural sector among government and residents is positive: agriculture plays a crucial role in food production. This is currently not the case in the Netherlands, where the sector is viewed as polluting, while there is much to be proud of: the Netherlands produces efficiently, high quality and as clean as possible.
- A second insight is that there are many innovative ideas for the future of agriculture: other crops, other ways of production, but that none of these methods have yet proven to be profitable. And: innovations arise where there is a need for change: scarcity of land or raw materials. For the Polder scarcity of land, but not so much for food but for other purposes, seems to be the problem. What will the land be used for is an important question for the future.
- A third insight is that regulations really have an influence: the same rules apply in Denmark, but there is much less resistance to the rules. A possible reason for less resistance is cooperation in the sector: because the entire chain is seen as a top sector, more attention is paid to the interests of the sector. Another reason for less resistance is that the rules are met in a different way: measuring instead of intervening on the basis of models. The choices are therefore more acceptable to the farmers.
- A fourth insight is that dilemmas for use of land do not apply everywhere, but when they do occur it is disastrous if the space is only used as a revenue model for the landowner. Choices you make as a landowner should be made together with the area.
- A fifth insight is that an important discussion is not being conducted properly: the discussion about soil management and the role of pesticides in it. If you want to keep pesticides out of soil and water, genetic modification seems to be a route to profitable production. If you want regenerative agriculture without genetic modification, you will still have to allow pesticides. Good soil management ensures that you store more CO₂ than you emit when cultivating and grazing - we sometimes seem to forget that in the Netherlands.
- A final insight is that there are many different revenue models in the various countries. This is closely related to the presence of land/raw materials, the way in which regulation is structured and the organizational culture in a country. In all countries it is striking that large companies often manage themselves, while smaller companies are struggling.

The question is: which innovations and perspectives from other countries are relevant for the future of the Giethoorn Polder? The answer to this in short is the realization that choices in the use of land, especially when it comes to generating energy, should be made with the inhabitants - cooperation is key. Furthermore: image is everything and if Polder Giethoorn wants to be seen as a food producing area, they should invest in that image. And finally: entrepreneurship is key, if you cartoon make a living, you should stop farming.

6 How do the inhabitants of Polder Giethoorn see the future?

The survey asked to briefly write down a dream for the future of Polder Giethoorn. The short texts (maximum 100 words) make it clear that sustainability and nature are important principles for the future: doing what we do now, but with less damage to nature and climate. Furthermore, words such as together, harmonious, and balance were frequently used:

choosing together for a better future. But people dream very differently about how to get there: Should we use the land for energy generation or not? Large or small windmills? Intensive production or small-scale enterprises? Depoldering or a traditional polder landscape? Choose your own pace or enforce measures now?

Dreaming about the future already reveals a number of dilemmas and possible scenarios. Various future scenarios were explored during the round table discussions. A simplifying version of scenario planning was used for this purpose. The participants were asked to think about scenarios around two key questions: Do you use the land in the Polder for (food) production or for nature? Do you make more room for tourism or do you keep the focus on the residents/entrepreneurs in the area? This resulted in four visions of the future:

Table 6: Constructed scenarios for the future of the Polder Giethoorn

<p>Innovation & development</p> <p>In this scenario the Polder will develop in the same way that it does now: more liveability, more foodproduction. Land will be used for food, not for nature. There will be strong and innovative farmers. If necessary, land can be used for industry, needed for foodproduction. Farmers will grow and develop: less farms using more land. A plan is needed for the farmhouses that will not actively produce anymore. This is an opportunity for small-scale tourism in order to avoid decay of the farmhouses.</p>	<p>Rugged Polder</p> <p>In this scenario the Polder will introduce more nature and address the issue of liveability. Half of the farmers will have to relocate. Biological farming will be the new future. Land will be used for nature, the water level will increase. A question is if there will be enough farmers left to manage the natural assets. The Polder already has the experience that land will become more and more rugged. This makes the Polder less attractive for tourists and is a risk for the livability.</p>
<p>Open Farmhouse</p> <p>In this scenario the Polder celebrates the agricultural sector and local food production. There still are a few large farmers, but most farmers have modest businesses and also deploy other activities, such as a food shop or tourist activities. No extra land will be used for nature, but there are a variety of activities to be visited in the farmhouses: cooking classes, field trips, nature education, and helping out on the farm. Tourism is booming and there are extra facilities for longer stay tourism. The area is known for water tourism, nature walks and food & farm education.</p>	<p>Green Polder</p> <p>In this scenario the Polder provides lots of room for nature and tourism. Land is withdrawn from farms and given back to nature, the water level rises. There are only small scale biological farms and farmers sell produce from the farm itself. Agriculture changes as well, farmers need to find new types of crops to grow on the wetlands. There is no room for industry or renewable energy. Residents and businesses will earn a living promoting eco-tourism. Farmhouses will get a new function. The landscape will be more green and diverse.</p>

When residents look at these scenarios in the round table discussions, there appears to be little support for the Green Polder and Rugged Polder scenarios, both of which do not fit with the agricultural character of the area. The Innovation & Development and Open Farmhouse scenarios are more focused on the agricultural character of the Polder. If the area wants to remain an agricultural area, then that is the direction for the residents of the Polder. Within these scenarios, the area wants to work on improving nature, but especially on a strong agricultural profile.

Not all challenges are solved in all scenarios and each scenario has a number of disadvantages to overcome. At the round table the participants discussed the scenarios and tried to solve some of the dilemmas. This led to several principal choices:

- Solutions that affect the nature of the Polder are not desirable: space, lines, domain farms and the agriculture/nature balance must remain.
- You should not invest in energy generation or tourism if the residents cannot benefit from it and can participate in decisions about it themselves.
- You should not invest in energy generation or tourism if it cannot be done profitably.
- Nature/climate challenges are first assessed based on the possibility to still produce food.

There are still plenty of dilemmas left:

- The form in which you generate energy has a major impact on the area. The area is not open to solar meadows: that does not fit in with an agricultural area, land is for food, not for energy. Sun on the roof is of course possible. Manure digesters and mono-digesters suit the agricultural character, but require a large investment. Opinions differ in the area about wind turbines: is it a deterioration of the landscape or the new reality in rural areas?
- Tourism can also be on a large or small scale. The attitude is: if you start a tourist business, it must be profitable, which fits in with the entrepreneurial attitude in the area. And – tourism should not harm the landscape. There are opportunities but also risks.
- The participants also see opportunity in using land for industry, as long as it does not harm the landscape.

It is clear from the round table discussions that support is not only needed for a certain future direction in the area, but also for the specific measures that are taken. The core values chosen by the residents help in choosing a direction and the residents would like to continue the discussion with each other about the specific measures. In the roundtable discussions the inhabitants of Polder Giethoorn discussed the challenges for the future in order to prioritize solutions. Key in the discussions is the enterprising nature of the inhabitants: a liveable and vital Polder is an enterprising Polder. Based on the discussions three types of challenges were distinguished:

1. challenges that are seen as promising and in which the inhabitants want to participate: generating sustainable energy and promoting tourism;
2. challenges that are seen as necessary but risky and in which farmers and governments should participate: improving biodiversity, water quality and water level, avoiding nitrogen and carbon dioxide;
3. challenges that can be ignored: building houses.

For the first category the inhabitants see dilemmas in which they want to choose a position as collective. For the second category inhabitants want to gain more knowledge, but they leave taking measures up to the government and landowners. The third category can be ignored. And inhabitants also want to take on an extra challenge: improving the image of the Polder as a food producing area.

7 What is needed to keep Polder Giethoorn vital and livable?

The objective of my research project was to identify how inhabitants of the Polder Giethoorn see the future and how they want to solve the problems and challenges for this area. During the round table discussion the participant formulated core values for the future. New developments can be valued along the lines of these values. Inhabitants prioritize the values: agriculture, tradition landscape, nature and entrepreneurship. For the inhabitants, the

Polder is vital and livable when land is used for food production, that is the essence of the Polder Giethoorn. For the future, inhabitants want agriculture to be more important than nature and climate. Only then the Polder will exist to be a place of food production. Where possible, initiatives to improve the climate should be supported, but the possibilities for farmers to earn a decent living need to be taken into account. The landscape breathes agriculture, something to keep for the future. Without agricultural entrepreneurs there is no future for the Polder. The farmers have faith in their abilities to innovate and cooperate and in doing so maintain a healthy balance between agriculture and nature.

The fact that entrepreneurship is highly valued creates opportunities for generating renewable energy and investing in tourism. There is debate with regard to the type and form in which this is done and inhabitants want to discuss these dilemmas themselves. For these two challenges: generating sustainable energy and promoting tourism, the inhabitants should make plans themselves. For the challenges with regard to nature and biodiversity, inhabitants lack knowledge and find that farmers and government are in the lead. Nature and biodiversity should be improved, but the farmers face the consequences and have a more important role in decision making than inhabitants. The inhabitants want to invest in education and concretization of challenges, in close cooperation with local and regional government.

Based on this research a manifest was created, in which the inhabitants of Polder Giethoorn state how they see the future. My recommendations are to see the manifest that was created and this research as the starting point for a cooperation between government and inhabitants. There should be a working group of inhabitants to coordinate talks with the government and activities that enhance the future plans. The manifest is presented to local and regional governments at a festive event, visited by more than hundred participants.

This research and my scholarship have made clear that the inhabitants want to be involved in the future plans for the Polder Giethoorn. However, the role that they want to have differs per challenge. For the following year, I have the following recommendations:

1. Make sure that there is a central committee that can function as an intermediary and is in the lead of the process to make choices for the future.
2. Invest in regular meetings between the inhabitants in order to build the trust that is needed to make hard choices.
3. With regard to the challenges in which the inhabitants want to choose themselves, make sure that there is deliberation (options, consequences, preferences) and a process in which decisions are made.
4. Invest in education and concretization of the challenges related to nature and climate, and make sure the government is involved. Inform the inhabitants, but make decisions in a working group with the government and farmers.
5. Start an area process and vary in approach, participant and pace per challenge.