



Let's change course now

Action Plan

**'Circe - European Regions towards Circular Economy'
INTERREG Europe Project**

Province of Gelderland

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1. Executive Summary

Gelderland is one of the first provinces in the Netherlands with an active policy to stimulate the circular economy. In this respect, Gelderland also acts as a role model, for instance in circular road construction. Businesses are triggered through entrepreneur programmes to reconsider (their use of) raw materials and business models. Via innovations we are working on new biobased resources to replace primary raw materials by biobased options and to close cycles. In the past 3 years a total of more than 60 initiatives have been supported.

Gelderland is now ready for the next step with upscaling and impact as central themes. In the new coalition agreement for the administration period 2019-2023, the circular economy is connected to residential building, economy, agriculture and permit granting processes. These are the pillars for a new - to be developed - approach to the circular economy. (<https://www.gelderland.nl/Grondstoffen-en-CO2-uitstoot-verminderen>). This approach is part of the provincial innovation policy. The policy is currently reassessed in the S3 strategy as a first step to a new ERDF programme 2021-2028.

In preparation, we have shared our experiences as partner in the Interreg EU CircE with 7 European partners. We have zoomed in on 3 sectors that are relevant to us: biomass, textile and the construction industry. A value chain analysis offered us a clearer view of opportunities and threats in the stated sectors.

The analysis of the database (CircE tool), best practices en workshops has produced in-depth insights in terms of opportunities and policy instruments. With regard to textile we have learned a lot from the systematic and sector-oriented approach in Catalonia. London opts for a pragmatic approach in which local residents are called on and challenged to buy sustainable clothing. In respect of the construction industry we have learned much from Sofia where building regulations e.g. pose specific requirements to the reuse of secondary materials. With regard to biomass, Haute France is a guiding country in respect of growing and processing new crops with large-scale biorefinery activities(<http://www.improve-innov.com/en/>).

This knowledge has resulted in the following concise CircE action plan. It describes three concrete actions to tighten policy instruments in particular our Operational Program for European Regional Development Fund (OP Oost). These interventions are necessary to capitalize on concrete opportunities in the three stated sectors in Gelderland.

It is also rewarding to see that the Gelderland examples in their turn inspire other CircE partners to start new actions. Our best practice for sustainable clothing for example helped Catalonia to draw up a sustainability manifesto in their region as well <https://euratex.eu/news/the-european-industry-and-global-leading-fashion-organisations-begin-the-reshaping-of-the-textile-and-apparel-sector/>

We have drawn up this action plan with the help of the contributions of our stakeholders in Gelderland. We would like to thank Fashion, Interior, Carpentry & Textile Trade Organisation Modint, Foundation Energy and Environmental Technology Cluster Stichting kiEMT, Knowledge Centre for Paper and Cardboard KCPK, Pioneering, Wageningen University and Environment Agency Nijmegen.



2. General Information

Project: 'CirCE - European Regions towards Circular Economy' INTERREG Europe Project

Partner organisation: Province of Gelderland

Other partner organisations involved: Kiemt, VNO-NCW, Oost NL

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With the regional investment programme 'Out with the disposable economy 2017-2019' the Province of Gelderland stimulates the realization of the circular economy in which raw materials are handled efficiently and materials and products remain in circulation. The transition to the circular economy will generate sustainable profits, produce extra jobs and economic growth, and reduce the use of raw materials up to 50% by 2030. The programme has three tracks, with a total of 60 activities, assisting entrepreneurs in their first steps towards circular business models, developing new biobased applications, and collect and disseminate inspiring examples of frontrunners.

Via the first track we explore and implement our leading role as launching costumer. We manage 1200 kilometres of provincial roads and cycle paths. Material management and circularity is increasingly applied in tenders and trajectory programming. Also during procurement, furnishing, construction and renovation of our (new) provincial building the circular philosophy is executed. The objective: minimal waste and minimum use of scarce raw materials. While applying our leading, exemplary role we work together with other governmental organisations, municipalities and water authorities.

Via the second track we stimulate our manufacturing industry in developing and implementing circular business and revenue models. Together with the Radboud and Wageningen Universities we promote collaboration between businesses as well as between the business community and knowledge institutes. More and more synergy arises between circular economy and smart industry. New technology as 3D printing, IT applications and track & trace systems will create substantial benefits in raw material savings. Our future industry will be future-proof, sustainable, smart and clean.

Via the third track we develop and implement new biobased applications. We focus on protein transition (from animal to vegetable), natural fibres (hemp, miscanthus and roadside grass for the paper industry, building materials and textile) and raw materials from manure (European frontrunner in the application of artificial fertilizer substitute). In the transfer to the new administration period (Provincial Council elections were held on the 20th of March 2019) we explore the content and direction of our new circular economy programme for the upcoming period. Therefore, we have conducted a raw material flow analysis leading to a new circular impact programme (2020-2023) base on several sectoral chain-oriented raw material strategies.



3. Policy context

Within the framework of the European (circular economy action plan) and national policy (Netherlands Circular 2050 programme) we take our responsibility and assume the role we have as 'middle' government. Our position enables us to bridge the gap between policy and practice, and we can connect businesses (multinationals/SMEs) with knowledge organisations, governments and the financial sector.

We distinguish the following roles, tools and instruments:

- Collect best circular practices and give leading entrepreneurs and frontrunners the 'stage' to inform, inspire and encourage others to follow their example (communication).
- Identify restrictive laws and regulations and put them on the agenda of organisations that can influence them.
- Set up and adjust (provincial) financial instruments.
- Promote triple helix collaboration around clusters, value chains and prime locations.
- Support business and product development.
- Take a leading role as launching customer in purchasing and tendering.
- Include circular economy in provincial programmes and instruments: economy and innovation, energy transition, sports, building environment and spatial planning, labour market development, mobility and infrastructure, soil/water/biodiversity, nature management.
- Insist on and lobby for supra-provincial issues, for instance: stimulating laws and regulations, emission trading, CO2 pricing, tax reduction, % circular materials (waste/residues) in new products etc.

Policy instruments

The objectives in the Economic Policy framework and regional circular economy plan are closely related to the S3 Strategy and ERDF. On European level the province Gelderland and province Overijssel join forces as one region East Netherlands. East Netherlands focuses on four sector spearheads in the timeframe 2014-2020: Agro & Food, Health, High-Tech Systems & Materials (HTSM) and Energy & Environmental Technology including biobased economy (EMT).

The Smart Specialisation Strategy in East Netherlands consists of the following elements:

- stimulate / intensify the cooperation between authorities (including the semi-public sector / health facilities), the business community and research and education institutes (Triple Helix or golden triangle) with the objective to jointly work on social issues choose a limited number of sectors (Agro & Food, Health, EMT and HTSM) and crossovers;
- support the valorisation of knowledge;
- enable and stimulate open innovation;
- deploy a set of financial instruments aligned to the various phases of the innovation process (including the use of European means);
- maintain and where necessary strengthen acquired organising capability for innovation.

The Operational Programme OP Oost focuses on two priorities, namely:

- priority 1: general innovation (67 mln)
- priority 2: low carbon innovation (30 mln)

Circular economy is encouraged within priority 2, under regulation 3.1 Smart CO2 reduction.

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instruments

Name of the policy instrument addressed: 1) ERDF Operationeel Programma Oost (OP Oost)

Instrument 3.1 Smart CO₂ reduction

Participation in Circe is therefore primarily intended to obtain best practices from partners in order to stimulate innovation in textiles, construction and biomass, and in particular, to use the ERDF instrument in a more targeted manner. To be more specific to encourage investments made possible under regulation 3.1 Smart CO₂ reduction of the Operational Programme OP Oost for ERDF:

- the reduction or reuse of raw materials and minerals,
- the substitution of fossil raw materials with biological raw materials.

Subsidies can be applied for by three or more independent cooperating organizations. At least one SME must be involved from Gelderland or Overijssel. A subsidy amounts to a minimum of € 350,000 and a maximum of € 2,000,000 per application. We offer a subsidy of up to 40% of the eligible costs. This is a maximum of 50% for an SME entrepreneur. For activities of knowledge institutions, which can be classified as industrial research, a maximum subsidy percentage of 50% of the eligible costs applies.

The use of regulation 3.1 by circular companies is still limited to date. We consult periodically with the Management Authority to fine tune regulation 3.1 for circular innovations. We have discussed with our partners in Circe about barriers for companies and opportunities to improve the use of ERDF schemes. It is all about raising awareness and removing administrative barriers. Many CircE-partners undertake actions to create learning networks, raise awareness and organize specific business events. For this purpose, we already support the Circles network in our current ERDF program, consisting of industry associations, educational institutions and other knowledge partners. Circles is one of the stakeholders in CircE. The best practices from CircE help us as a contractor as well as the partners in Circles in their consulting practice towards companies. We will also be organizing ERDF challenges with our partners in Circles in the coming six months. This mechanism how CircE helps us to improve the effectiveness of our current ERDF schemes is further explained in the description of the actions

On a general level, discussions with the MA resulted in adjustments to existing subsidy schemes, particular subsidy percentages and governance. Since six months now, applicants under 3.1 have been given a opportunity to pitch their plan for the assessment committee. The expectation is that under this new procedure more circular projects can be funded as a result. Best practices in CircE has helped us to underpin the importance of these changes in governance and decision making.

The actions in this CircE action plan will be part of a circular impact plan to be drawn up for the timeframe 2020-2023. Funding of this new policy plan is foreseen from existing regional budget and partly from the existing ERDF programme.

Working processes, best practises and analyses within the Interreg Europe project CircE perfectly fit our policy process. With regard to CircE-project we chose three sectors that are pre-eminently Gelderland-like, i.e. Textile, Biobased Economy and the Construction Sector. Sectors that were also dominantly present in the scope of Lombardy, Haute France, London and Catalonia.

Through our participation in CircE we came across new projects and approaches. These projects have inspired us to shape our policy differently. From the CircE analysis and cases from our project partners we learnt to focus more on value chains instead of individual business cases. This has contributed to the fact that in the new circular policy plan we are going to focus merely on larger investment projects were two or more partners in the value chains work together.

When it comes to our current operational plan for EFRD we must conclude that the existing framework does not yet meet the specific needs of circular entrepreneurs. The range of new projects inspired us to think differently about tools, instruments and TLR-levels. How can we encourage more joint-cooperation projects? And maybe we should no longer exclude main contractors as partners. The three actions described in this action plan serve as a starting point for further exploration with our management authority.



4. Actions

ACTION 1:

Textile: Circular Design Hub GIST

The background

Raw materials represent an important contribution to the environmental impact of the textile chain (textile includes all forms of interior furnishing, carpeting and textile clothing in this action plan). Large amounts of water, pesticides and fertilizers are used in the production of cotton. Wool production is responsible for the emission of large amounts of greenhouse gases. Synthetic substances are produced from non-renewable sources. In addition to choosing more sustainably grown or produced raw materials, the use of recycled raw materials is an essential step in balancing textile consumption with the earth's carrying capacity. In addition to high-quality recycling technologies, circular design is an essential link in the circular chain.

In the Netherlands, more than 250 ktons of textiles are discarded annually by businesses and households, of which 155 ktons are incinerated. Of these 155 ktons, 40 ktons can be reused for clothing and 73 ktons of the materials can be recycled. The potential for recycling and reuse is therefore much greater than is currently being used. For example, the extent of textile recycling could be increased tenfold in the Netherlands from 8 to 80 ktons with a value of 100 million Euro. In the national transition agenda, circular economy consumer goods (part of the national programme Netherlands Circular 2050), a sector approach for textile will be developed with a central role for the Dutch Circular Textile Valley (DCTV) initiative following the circular textile roadmap of trade association Modint.

What are our plans for Gelderland?

Arnhem (design), Enschede (high-quality recycling), Tilburg (corporate clothing) and Amsterdam (brands & business) are the main hotspots for circular textile in the Netherlands. In cooperation with Modint, Wageningen University, State of Fashion, public and private waste management businesses, a regional raw material impact strategy for textile is developed in which the Circular Design Hub GIST (Gelderland for Innovations in Sustainable Textile) occupies a central place. Our activities in the development and application of natural fibres in textile in recent years will be involved.

With the regional raw material strategy textile, which is implemented via this action plan, we aim for the following main goals:

- Become a well-known and appreciated national inspiring frontrunner in the design of circular and natural fibre-based textile. Results: new products, services, product market combinations and start-ups.
- Realize a regional collection, separation, reuse and recycling infrastructure. Results: more recycling, more reuse, less incineration, technological innovation.
- Inhabitants of Gelderland are aware of the negative (environmental) impact of textile production and the disposable economy of textile. Results: social impact and awareness, mobilizing the demand side.

Learning points from CircE

Catalonia and London are project partners with a strong policy focus on textile. The analysis of opportunities and barriers shows that technical aspects are not the bottleneck. It is more a matter of organisation: how to organise the entire chain from collection, design, production to retail chain and consumer. Existing policy instruments restrict themselves to innovation between one or two chain links. Without involvement of major labels or retail chains (demand pull), innovations cannot successfully be brought to the market place. For this reason Gelderland is keen to take part in the national icon project Dutch Circular Textile Valley (DCTV).

Circular Fashion Games

Changes call for new actions and approaches. In this context Gelderland engages in the third edition of the Circular Fashion Games started. The ambitious group of 12 participating changemakers are an international mix of students from top universities, and (young) professionals with experience inside and outside the fashion and textile industry. They share the ambition to transform the current linear fashion system into an industry that is circular and future proof. With the Games, they use their creative thinking to come up with innovative and concrete solutions for the circular challenges that the challenger organizations have brought to the table.

Concrete actions

We distinguish 3 concrete actions in relation to the formulated goals:

1. We will contribute 15.000 euro in order to develop a sound business plan voor the Circular Design Hub GIST
2. We wil engage in the Circular Fashion games and contribute 10.000 for organisation expenses
3. In orde to execute the business plan we will encourage the GIST partners to write a proposal that will qualify for instrument 3.1 under our Operational EFRD-programme OP Oost

Players involved

1. GIST business plan will be developed in cooperation with Circular Fashion Lab Wageningen UR (projectleader), ArtEZ University of the Arts, Circles network, municipality Arnhem, Modinth textile branche organisation
2. During the Games, changemakers work in multidisciplinary teams on challenges from ID&T, Texco and Design Hub GIST (For this hub, KIEMT, ArtEZ University of the Arts and Wageningen University & Research will jointly submitted a challenge)
3. For the implementation of the business plan GIST our regional development agency Oost NL will be our partner to consult the GIST partners in close connection to our Management Authority

Timeframe

1. The business plan for circular design hub GIST is expected for end of 2019. The implementation of the business plan is scheduled for 2020-2025
2. The circular fashion games have started and our attention is now focused on the implentation of the results in 2020
3. The EFRD-proposal for GIST is expexted late 2020.

Investments

Province of Gelderland has already decided to contribute 15.000 euro to write the business plan for the Circular Design Hub GIST, In addition Gelderland contibuted 10.000 euro in de organisation of the circular fashion games.

The total costs of DRTV to be covered by all partners are estimated at 1 million euro in a period of 4 years.

Relation to Policy Instrument

Our involvement in CircE ans close coperation with PP's Catalunya. London and Lombardia helps us to put textile recycling and circular textile higher on the political agenda. As mentioned before fiber based initiatives fase serious barriers to appy for ERDF funding. This new network approach across the value chain will bridge the gap to the market. This brings funding of GIST by our policy instrument 3.1 a step closer. Furthermore, this action will further strenghten the position of the Circles network that will play a central role in GIST. This means an extra boost for a project funded by the current OP.





ACTION 2:

Biobased economy: multiyear structural approach

The background

In the biobased economy raw materials are sourced from living nature. The use of biomass is of great importance for the energy transition, climate policy and the transition to a circular economy in which renewable resources are used and (raw) materials are kept in circulation. The market for biomass is worldwide and supply & demand are coordinated through market forces. Due to the increasing demand for biomass as a renewable energy source and sustainable raw materials (especially in the chemical industry), scarcity is expected to occur at a global level. The Netherlands Environmental Assessment Agency PBL expects bottlenecks in the supply in the period after 2030 in the Netherlands for all types of demand. Until 2030 biomass can be used for multiple applications as a transition fuel. From 2030 it is important to use biomass primarily for high-value applications for which hardly any alternative, cost-effective sources are available, such as: high temperature heat for industry, biofuels for air transport and shipping, and raw materials for chemicals and materials. The aim is to increase the supply of sustainable biomass as much as possible. The national government is aiming at doubling national production. An adequate food supply and preservation of soil fertility and quality of soil, water and air are important preconditions for the development of the biobased economy. In addition to increasing the sustainable supply of biomass, major challenges are the improvement of conversion techniques and market change to give biobased raw materials and energy preference over 'fossil' applications.

Gelderland is not only the biggest but also the greenest province of the Netherlands. In recent years the Netherlands Enterprise Agency RVO has analyzed the development of the biobased economy. From this analysis, Gelderland invariably emerges as a national leader in terms of projects, investments and employment. Based on the strength of Gelderland, in recent years we have focused on: natural fibres, manure and proteins. The province has supported natural fibre projects for the use of roadside grass, hemp, miscanthus and fibres from sewage sludge in paper, textile, building materials and food ingredients. Animal manure can form a valuable raw material for agriculture and replace artificial fertilizer. A production plant for minerals has been built in Beltrum. Produced artificial fertilizer substitute may be used for the next four years as an (EU) exception for a limited group of farmers in De Achterhoek region. The province of Gelderland is leading in the transition from production and consumption of meat to vegetable meat substitutes. This change is necessary to cut down on raw materials (animal feed) and to reduce the burden on the (living) environment. The Protein Cluster (TPC) plays a central role in this 'protein transition'.

Our efforts have been focused on cluster formation and the development of new biobased products and applications. This has resulted in a wide range of: best practices, example projects, new products / business cases and partnerships. The challenge at the moment is to scale up (breakthrough) technologies and applications and realize market impact. Efforts must increasingly shift to the actual reduction of raw materials consumption, stimulating market demand, application and realization. This is increasingly possible because economically profitable business cases emerge. We want to achieve this by the multiple valorisation of biomass (using all the fractions of biomass, sales in various sectors) and in this way formulate a solid business case.

Learning points from Circe

The existing examples of the cluster in Haute France and in Gelderland show that valorisation of biomass is still in its infancy stage. Breakthroughs require focus and scale. In this respect, Haute France is a good example of a multiyear structured approach.

The strategy of the Region Haute France focuses on 4 axes :

1. increase the regional supply of proteins
2. stimulate appliance of biosourced materials for construction and transport
3. convert biomass that can not be used in materials into biogas
4. stimulate added value products in biotech and biosourced chemistry

The Master Plan is targeting 4 different actors :

1. The Region: must embrace and incorporate bioeconomy in the Policy Instruments managed by the Region
2. Biomass producers: support the structuring of new biomass producers through financial instruments and communication campaign
3. Research & Development & Innovation: invest in R&D&I projects and help them apply to European tenders
4. Consumers: Create communication and meeting events to inform people about bioeconomy positive impacts

What are our plans for Gelderland?

Gelderland and Wageningen UR we want to increasingly focus on scaling up bio-based innovations towards the market via the following main goals.

- Increase the acreage of (protein-rich) crops for (animal) food and raw materials for the bio-based economy (textile, construction materials, paper industry, chemical and plastic industry).
- Replace animal proteins by plant proteins for human consumption (protein transition).
- High-quality application of raw materials from (water treatment) sludge and manure. E.g. as fertilizer substitute in agriculture.

Before Gelderland got involved in CircE, Wageningen University already established excellent personal contacts with officials in Haute France (Pole IAR, Lille municipality). From this starting point CircE has helped to strengthen the contacts and bring our cooperation to a higher level. Concrete examples are the assignment of a French professor in Wageningen and the organisation of two matchmaking events in Lille and Arnhem. We will certainly continue our cooperation in the next years.

Concrete Actions

- The use of biomass is important for the transition to a circular economy in every sector, chain and industry. Therefore, the substitution of fossil, finite raw materials to biobased materials will be a **fixed paragraph** in all our future raw material strategies (agro, food, construction, infrastructure, textile, paper etc.).
- 1 Biomass availability and application. Research how, where in Gelderland, what types, in which quantities and for which applications, extra biomass can be made available as raw material for new protein-rich food, regionally grown animal feed, construction material and the (paper, textile, ...) industry. Draw up an implementation-focused, **action plan** together with (potential) producers of biomass, processors and market parties. Investigate whether a (provincial) incentive instrument can be created to open up the market for specific biomass applications to replace finite, fossil raw materials.
 - 2 Protein transition. Strengthen and accelerate The Protein Cluster (TPC) aimed at cultivation, product development and marketing of new protein-rich foods. Widen the attention to insects, prevent food wastage and application of food waste and residues (food and feed applications). Scale up networks and initiatives to a national level. Join new developments (potential establishment IMEC knowledge institute for smart food and smart health) and initiatives from the business community (Sustainable Food Initiative). Together with IMEC and Rabobank we will organize a business challenge for innovations in agrofood, scheduled for medio 2020
 - 3 Raw materials from manure and sludge. Continue De Achterhoek (artificial) fertilizer-free initiative. Continue research and efforts to apply fertilizer from livestock manure in agriculture. Support expanding manure processing capacity in Gelderland. New initiatives in addition to energy also to extract raw materials from manure (including development financial instruments). Scale up De Achterhoek initiatives to the rest of Gelderland. Strengthen cooperation with the Provinces of Overijssel and Brabant. Strengthen cooperation with water boards in seeking synergy between manure and sludge processing and application.

Players involved

- Biomass availability and application: primary agricultural sector, nature organisations, road management authorities, municipalities, water boards, processors of biomass, waste management companies, construction companies, producers construction and building materials, industry (textile, paper)
- Protein transition: The Protein Cluster (TPC), Food Valley NL, SMEs, multinationals in food, Wageningen University & Research, Radboud University, Leuven University, Provinces of Overijssel, Flevoland, Brabant, Ministry of Agriculture, Nature and Food Quality, Regional Development Agency Oost NL
- Raw materials from sludge and manure: initiators manure processing plant (farmers, cooperatives), technology providers, licensing authorities (environment, spatial), European Commissions (laws and regulations applying manure in agriculture), financial institutions, the Provinces of Overijssel and Brabant, water boards, and regional authorities.

Timeframe

1. Biobased will be a fixed paragraph in our new circular impact plan 2020-2023. The policy paper will be decided upon by regional parlement february 2020.
2. The assignment of the research proposall is expected medio 2020
3. Recently Wageningen University, Radboud University and IMEC Leuven (B) joint forces to open up an major institute for applied science in Gelderland called One Planet. As a major new player in our biobased and food innovation system we will organize together with Rabobank and One Planet a business challenge for radical shifts in food production, agriculture and consumption (media 2020)
4. In 2018, 10 farmers in the Achterhoek have tested the fertilizers on their land. The number of participants will gradually be expanded to around 150 in 2020. The effect of fertilizers on crop growth and soil quality is being investigated by Wageningen University.

Costs

Activities related to agro (manure) and food (protein transition) are already part of the provincial agri-food programme. Estimated costs for research and development of extra biomass availability/application are 150,000 euro (research, action planning, financial instrument). This does not include the costs for the financing arrangement itself. Additional costs for intensifying the cooperation with water boards and investigate synergy between processing and application manure and sludge are estimated on 75,000 euro during 2019/2020.

Funding sources

Biobased activities will be executed in close cooperation between the provincial circular economy, energy transition and agri-food programmes. Costs will be distributed in close cooperation. Co-financing from the market will actively be sought to increase involvement and support from our partners for efficient spending of our provincial (public) resources.

Relation to Policy Instrument

The attention from Circe for biomass helps us to put biobased economy politics higher on the agenda. Biobased innovations already receive support from our operational program, but there is no clear framework for ranking initiatives on value. Haute France's approach helps us to build on this framework and the conditions needed to build a long-term biobased economy

Furthermore by this particular action we want to contribute to the research effort carried out to develop a new updated S3 strategy for East Netherlands for the forthcoming ERFD period. The new strategy we will highlight the importance of green raw materials as an important policy option to arrive at a circular economy. This in relation to the capacity for innovation of the Food Valley region including Wageningen University. Just as Haute France, this requires a strong focus and support by businesses and knowledge institutes. For profitable business cases, plants must be valorised multiple times (quadratic equation). We have to extract all raw materials to make it cost-effective. The operational programme will have to contain instruments to accelerate market acceptance and the introduction of biobased raw materials and resources.





ACTION 3: Built Environment : Urban and regional mining

The background

The built environment is responsible for approximately 20% of the use of raw materials in the Netherlands for (new) construction, building renovation and the construction of infrastructure. This is approximately 40 Mtons (Megaton) of used material in the Netherlands excluding soil, asphalt and building sand. At the same time, 26 Mtons of building and demolition waste is produced during construction and demolition. This is a large part of the total amount of waste released in the Netherlands (around 40%). Construction waste is already being recycled for 97%, especially as foundation material in infrastructure and civil engineering, where the challenge consists of increasing the value of this reuse. In the current situation it is not cost-effective to transport construction and demolition waste over large distances. Reuse of building materials is an important task that requires local solutions.

Learning points from CirCE

The challenge within the construction and infrastructure sector is:

- Keep materials and raw materials (stone, concrete, steel, wood) in the chain for as long as possible.
- Apply lighter materials with lower environmental impact.
- Use renewable (biobased) raw materials and energy sources instead of fossil-based materials.

The connection between energy transition and circular economy plays a major role in all cases. A comprehensive approach is needed to reduce emission of greenhouse gases and material use across the whole chain. Sometimes interests can be contradictory when insulation of existing housing construction, for example, leads to the use of more material.

Today's reality, however, teaches that innovations only slowly penetrate the building practice. It is necessary to speed up the market via public procurement, to develop tools to involve and measure circularity in projects, to adjust legislation and regulations and to work on knowledge development and awareness throughout the construction chain.

Through our CirCE partner Sofia we have learned how to draw up and apply criteria in public consultations to tender. This way, the market will be forced to recycle materials and to use secondary raw materials in projects. These criteria must be incorporated in the tendering policy.

What are our plans for Gelderland?

Based on our provincial role and spatial challenges in respect of residential building we focus our circular ambitions on:

- New residential construction.
- Renovation of existing housing (energy-neutral).
- Reuse of demolition waste.
- Application of biobased materials.

Concrete actions

This action plan will focus on the built environment. Infrastructure is not included. For this sector we will draw up a separate raw material strategy.

- The aim of the Circle region is more knowledge sharing and expertise on circularity in the Achterhoek. This makes the Achterhoek the first region to participate in the national Circle City network. Incidentally, it is also connected to Circles (network in the Eastern Netherlands). Three initiatives have already been placed with the Circle region. An example of this is the inventory of residual flows and residual capacities on business parks that companies may be able to use from each other. The project to make an inventory of the built environment is also important. There will be information about buildings to be demolished, to make clear which elements of a building are eligible for reuse. These projects provide input for the digital and physical materials marketplace, also part of the Circle region. Here, (building) materials are stored, processed and placed on the market again.

- Province Gelderland has the ambition and feels the obligation to be a good example. As launching customer and contractor the provincial administration has a powerful tool to influence market conditions in a more circular way. More specific the province Gelderland is contributing partner and asset owner in a local development project called het 'Bestuurskwartier'. Part of the project will be the reuse of timber.
- Our project partner Sofia shows that as a government you can set requirements for construction projects. By imposing requirements on the reuse of materials, you can force market parties to use more secondary materials. We will now also apply this principle in Gelderland. To be more precisely we will propose our parlement to make a law to prescribe the reuse of 10% in building projects. As more secondary material will come available we will rise this percentage

Players involved

- Involved in the various activities are: project developers, housing associations, municipalities, regions, construction businesses, architects, contractors, raw material (biobased material) providers.

Timeframe

- Cirkelregio Achterhoek: this project will start from 2020 and will be funded for three more years
- The project Bestuurskwartier has started recently and will be continued the next three years.
- The law (Omgevingsverordening) is subject to our regional parlement medio 2020

Costs

- Gelderland contributes 200.000 euro in the costs of Cirkelregio 2020-2023
- The cost for the project Bestuurskwartier are internal cost covered by Gelderland
- This also applies for the law-making process

Funding sources

Circular activities concerning the built environment are executed in close cooperation between built environment & spatial planning, energy transition and circular economy programmes. Funding will be equally divided. We will actively search for partners that also contribute, and network initiatives (Netherlands Organisation for Applied Scientific Research TNO, Cirkelstad) with which we collaborate.

Relation to Policy Instrument (PI)

The construction industry is not known for its innovative character and as such it is not part of our S3 strategy. Innovation will rather have to be realised by the contracting parties and contract awarders. And by the legislator who needs to prescribe the use of secondary materials. Within the framework of resource efficiency use cases may be stimulated in the ERDF programme, in which construction companies and contractors are challenged to develop new circular building solutions. With the launch of Cirkelregio platform we expect new projects qualifying for ERFD funding. Another specific option is a tender specific for market-focussed application. We will propose as such to our Management Authority but have to bear in mind that changing an existing and running operational programme EFRD is not an easy task. Anyway, we will take this suggestion to policy makers in charge of the forthcoming operational plan ERDF





5. Future Policy Instrument (for instance, future Regional Occupation Programme ROP 2021-2027)

Together with the Province of Overijssel, Gelderland is currently working on an S3 strategy as basis for a new ERDF programme for 2021-2027. S3 aligns with the innovation capacity of the East Netherlands region. This capacity for innovation is deployed to generate solutions for meeting social challenges and enabling transitions.

The first concept of the S3 strategy contains ideas that relate to the 'Sustainable Earth' concept as major binding social challenge. In this concept the different innovation domains are discussed that may jointly make a contribution, i.e.:

- AgroFood
- Circular economy
- Water
- Biomass
- CleanTech



6. Policy recommendations for the Policy Instrument

a. Current Policy Instrument

In the current ERDF programme we will determine how to more specifically fine tune the measures within Priority 2.1 Low-carbon and instrument 3.1 in the operational programme, towards the actions in the sectors from our CircE action plan.

b. Future version of PI

Specific recommendations in respect of S3 in East Netherlands are:

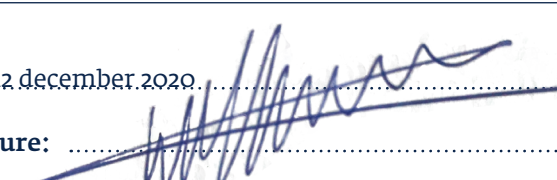
- Label the circular economy as a mission-driven innovation in East Netherlands.
- Make use of specific opportunities in AgroFood (cultivation and development of vegetable protein products) and biobased materials (applications in the textile and the construction industry).
- Create new instruments that stimulate innovation across chains (do not target subsidy on single businesses) and stimulate area-oriented prototypes (e.g. Fertilizer-free Achterhoek) and roll-out (e.g. grassphalt).

Policy recommendations for other Policy Instruments

The CircE action plan will also impact the Gelderland circular economy policy plan. It is expected that this autumn a regional policy instrument will be published. This policy will focus on four themes, i.e.

1. AgroFood (CircE biomass action)
2. Construction industry & Infra (CircE construction industry action)
3. Manufacturing Industry and
4. Consumer and waste (CircE textile action)

The CircE action plan is an important building block for the construction and implementation of this policy instrument. It helped us a great deal to align regional policy priorities with overall European innovation objectives. But most of all it opened a network of 8 partners all committed to bring the circular economy into practice.

<p>Date: 12 december 2020</p> <p>Signature: </p> <p>Stamp of the organisation (if available):</p>
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