

Spatial Strategies for Economic Growth within “Net Zero Land Take”

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1 ABSTRACT

In 2013 the European Parliament adopted a target of no net land take by 2050 in the EU as part of the seventh Environment Action Program. In Belgium, the highly fragmented urban region of Flanders has expressed the ambition of no net land take by 2040. Slowly, regional planning instruments are put into place to achieve this goal. Most of the planning tools however still have a functionalist, growth oriented conceptual basis, e.g. the demand forecasts for economic zones that are used to promote green field development. We need to develop regional planning tools that lead towards land take reduction.

In previous work, we developed a method for forecasting economic space demand in urban and peri-urban areas, within the context of net zero land take. The quantitative result provides insight in the part of economic space demand that could be accommodated in mixed use areas (economy and housing), and the demand that can only be met in functionally segregated economic zones. In this paper we will focus on a case where a local planning authority tries to combine spatial and economic policy strategies to promote economic growth without resorting to new greenfield development.

The research starts with a short critical review of existing functionalist planning practices and their close link to real estate development. In a second part we have a close look on four potential spatial-economic strategies that might cater to our objective. The first strategy stays close to the existing planning practice, but goes more into detail and resorts to a form of micro-zoning. A second strategy focusses on the development of financial instruments and covenants. Transferable development rights are explored in the third strategy, where innovative land value capture can steer owners into developing space for economic activities. The last strategy is a strong local public development company, that buys land and building to (re)develop in line with the needs of the local economy and the ambitions of the spatial policy plan.

An ex-ante evaluation of these strategies shows the potential of each approach, and highlights the organisational and financial consequences of each strategy. Local authorities can make an informed decision on what strategy and planning practice is fit for purpose in their specific situation. We will use the case of Lier (a small city between Antwerp and Brussels) to illustrate the positive and negative effects of each strategy, as the city has a strong ambition to remain an attractive location for industrial investment.

Keywords: space demand, zoning, net zero land take, economic development, new planning practises

2 NO NET LAND TAKE AND FUNCTIONALIST PLANNING

2.1 EU policy

In 2011, the European Commission presented the 'Roadmap to a Resource Efficient Europe', which set out a number of targets for sustainable resource use. One of the main objectives was to achieve "net zero land take" by 2050. Following this, the European Parliament (2013) adopted a target of no net land take by 2050 in the EU as part of the seventh Environment Action Program. In Belgium, the highly fragmented urban region of Flanders has expressed the ambition of no net land take by 2040. Slowly, regional planning instruments are put into place to achieve this goal. Most of the planning tools however still have a functionalist, growth oriented conceptual basis, e.g., the demand forecasts for economic zones that are used to promote green field development. We need to develop regional planning tools that lead towards land take reduction.

Net zero land take means no more increase in the net area used for urban development, infrastructure and other human activities. This means that new developments must be compensated by reusing existing buildings and infrastructure, or by returning land to nature. In other words, the policy of net zero land take aims to reduce land take in Europe by preventing further urbanisation and infrastructural developments at the expense of natural ecosystems. Land take is the amount of land used by human activities, e.g. for urban development, recreation, infrastructure and industry.

Meeting the target of net zero land take means that land take will no longer increase, which in turn can help preserve and improve soil quality, biodiversity, reduce pressure on natural resources and reduce negative impacts on the environment.

Reducing land take can be achieved in various ways, for example by reusing existing buildings and infrastructure, improving land use planning and planning, promoting high-quality resource use and circular economy, and encouraging sustainable mobility. Thereby, reducing land take is an important part of a sustainable policy, as it contributes to preserving the natural environment and the long-term livability of our cities and communities.

2.2 Implementation in Flanders

The Flemish ‘bouwshift’ (Construction Shift) is a policy initiative that falls within the broader policy of net zero land take. It aims to improve spatial planning in Flanders by strengthening urban cores and reducing the fragmentation of open space. Specifically, the Flemish bouwshift involves paying more attention to the densification of towns and villages, reusing empty buildings and developing vacant land. This is accompanied by a reduction in the development of new buildings in open space, thereby reducing land take.

To achieve these objectives, several policy measures are proposed. For instance, more investment should be made in renovating existing buildings, new developments should be concentrated in urban cores, and businesses and infrastructure should be better clustered to counteract fragmentation of open space.

The end result will therefore be that when space is taken, it will have to be compensated elsewhere. In other words, functions will have to shrink - in terms of land take - to make room for something else.

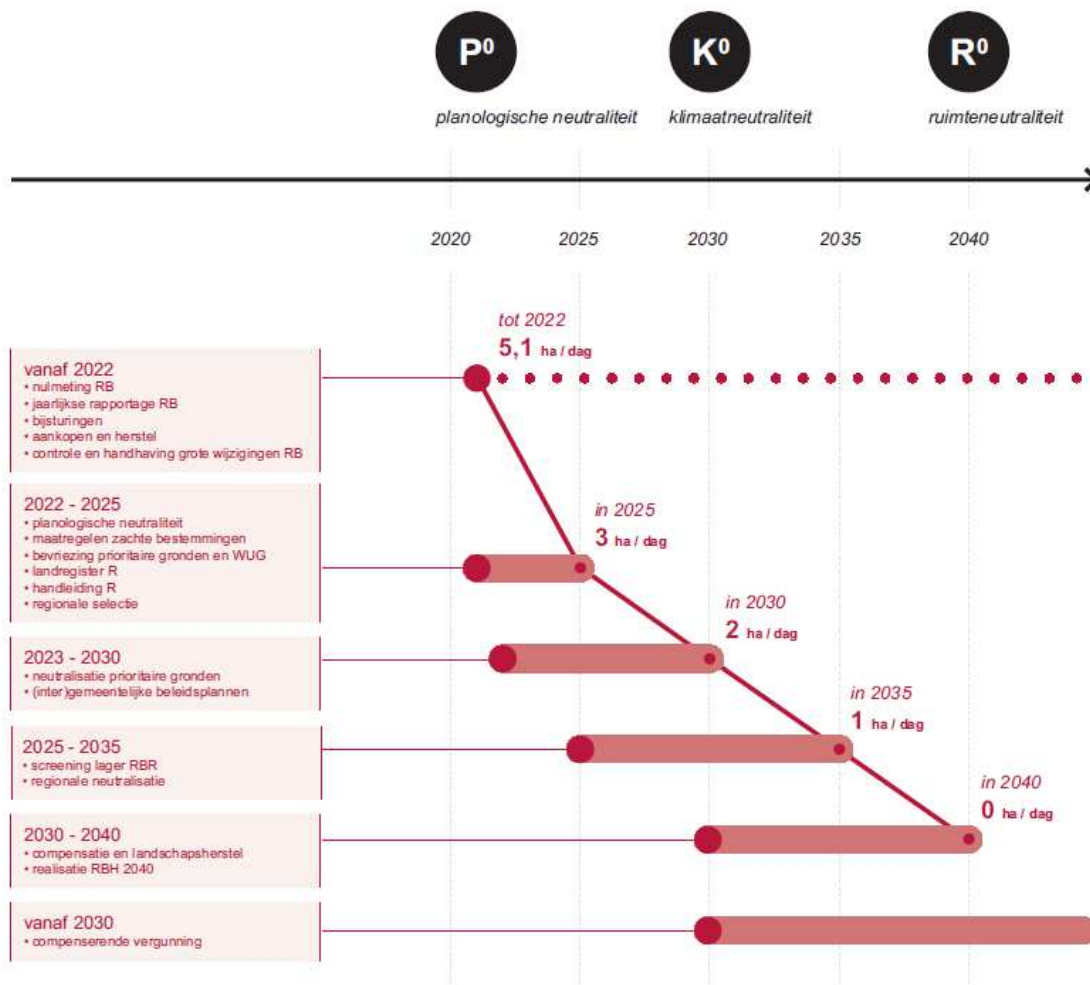


Figure 1: schematic timeline to reach net zero landtake in Flanders (Taskforce bouwshift, 2022)

Figure 1 shows the recommendations of the ‘taskforce bouwshift’, who were commissioned to draft a roadmap to the implementation of net zero land take in Flanders. In the scheme they propose a three step

approach: first to introduce the ‘planological neutrality’, which means that the amount of buildable land in the (comprehensive) land use destination plan can no longer grow. If a municipality, province or the regional level proposes to change agricultural land use (in the plan) to housing, recreation or industry, they have to compensate. The second phase focusses on ‘climate neutrality’, where the land use destination of unbuild, but buildable land that has to play a crucial role in adaptation to climate change is changed into open space. In this stage there is no compensation in the land use plan, but land owners can claim financial compensation. The third and final stage is to be reached in 2040 and looks at the actual settlement area as the maximum land take. This implies that new developments on open space can only be allowed if this is compensated by eliminating (demolishing) existing land take elsewhere in Flanders.

Currently, only the first step is put into legislation. The more complex second and third phase are not easy to implement in the Belgian context, and innovative planning instruments need to be developed. Traditional land use planning in Belgium has two main ways of financing these goals: the first is through subsidies for the realisation of natural areas, public infrastructure, recreational and cultural spaces; the second is by creating additional land value that private owners and developers can reap by building housing, commercial buildings, offices,...

2.3 Economic growth and the concept of no net land take

Economy needs space, and the transition toward circular economy requires growth. Recent EU initiatives to push forward the return of essential economic activities (batteries, personal protective equipment, textile recycling,...) and the transition to circular economy will all increase the demand for industrial accommodation, especially for production and logistics. To reconcile urban and economic growth with the no net land take policy, there are currently two main territorial strategies. The first is to intensify the current zoning plan, meaning that more houses are accommodated in existing residential areas and more economic floor space is provided in economic zones. The second is to allow more mixed use in cases where it is acceptable from an environmental and social point of view. The orange strategy path in figure 2 shows that, while both territorial strategies are needed, there will always be societal needs (roads, big new investments, imperfection in spatial planning instruments) that cannot find a place. The most probable political outcome is that these so-called exceptional needs require additional space. The no net land take goal will not be reached. An open space reclamation strategy and instrument (light green path) needs to be developed that can actually deliver a no net land take future. Only when we combine this with the intensification and mixed-use strategy we arrive at a future where affordable economic space can be provided in the long run.

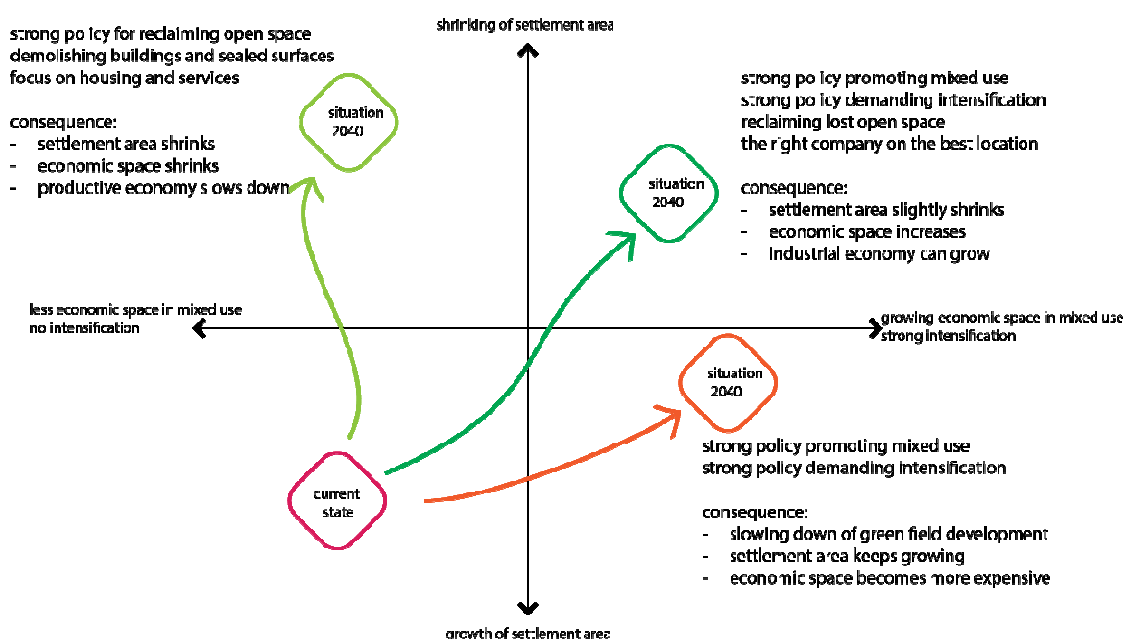


Figure 2: potential policy development paths for no net land take and the consequences for economic activities

3 LIER CASE STUDY – PLANNING PRACTISE

3.1 Economic situation in Lier

While developing the Economic policy framework for Lier, a small city (37.000 inhabitants) southeast of Antwerp, it became clear that a new spatial-economic approach is needed if the city wants to retain its economic position in Belgium. Lier has a strong service economy, combined with a good number of medium sized and large industrial companies. The current 5-year economic forecast predicts an employment growth of almost 8%. If Lier wants to accommodate its share of this growth, it will need to provide the necessary space, especially for the growth in the industrial and logistics sectors.

Currently, there is only a few industrial spaces that are available on the market. An online survey shows that there is an urgent need for both large buildings (over 15.000 m²) and many smaller units. We assume that this type of demand will continue over the next years. On the private market, there is a tendency to buy large industrial buildings, and split them into smaller units. The result is that the city loses the large accomodation, and the smaller companies find inadequate space, as they benefit from a more mixed, urban environment. Before the ‘Bouwshift’, the city would start the planning process to change agricultural land into a new industrial business park. The No Net Land Take policy makes this impossible, so another approach is needed to keep providing affordable and adapted economic accomodation in Lier.

3.2 Four implementation models

From the current planning practice in Flanders and recent research and debate we selected four potential methods for providing affordable economic accomodation in the long run, within the context of No Net Land Take (or bouwshift). In this paragraph we will explain how the four models (micro-zoning, financial incentives, transferrable development rights and public land policy) can be implemented. The next paragraph will focus on a theoretical evaluation of these models.

3.2.1 Micro-zoning

The first model, micro-zoning, takes the current planning practice of (rather generic) land use plans with planning prescriptions to another level. The idea is to use the same instrument to make really specific and detailed planning prescriptions to differentiate between (1) areas for large economic units, high ceilings, lots of space for heavy goods vehicles, (2) areas where smaller units are allowed in multiple storey buildings and (3) residential areas with an obligation to provide super-mix live-work environments. From a planners point of view all this is feasible and can be put in a plan. Usually there is no clear view on the actual demand and potential market uptake for the spaces prescribed. This is why the planning prescription remain rather general, and detailed prescriptions are often left out of the final plan. The key question for micro-zoning is how to make sure that there is a market for the units allowed in the planning prescriptions.

The main difficulty to use micro-zoning as a method to provide economic units in a no net land take context, is that it is not easy to change the rules and adapt the prescriptions to fast changing economic reality. A change of the land use plan normally takes at least 3 years to be adopted, and requires a huge financial and labour effort from the local government.

3.2.2 Financial and fiscal incentives

In the second model we combine property taxes, land value capture, VAT on construction and subsidies in one instrument. As a flat rate will either overshoot or miss the point, this model will only work if the public authorities use these financial incentives in project based discussion with a developer. The final agreement is put in a (publicly available) covenant. This requires the public administration to have the necessary skills to go into an open, constructive debate with developers on the additional costs to provide large industrial spaces, or to put part of the units on the market at an affordable price. Currently there is only experience with the different instruments separately, and different government levels are competent for the diverse fiscal and financial instruments. To apply this on a local level, competences need to be transferred to the local level for the implementation of the no net land take policy.

3.2.3 Transferable development rights

Around Lake Tahoe in California and Nevada the authorities developed a lot of experience with transferable development rights. In recent literature we find examples all over north America, and recently also in India

and other fast-growing countries. The model only works if (1) there is a good and stable zoning or land use plan, (2) there is a transparent and widely accepted method for defining the development rights of each parcel, and (3) an independent trading mechanism to allow people to sell their development rights to someone else who can transfer it to another parcel. The trading mechanism can also provide multipliers, so if you take away development rights from a parcel that is badly located and you transfer them to a better location you can multiply the building rights. When this is the case, the development rights of badly located parcels are worth more money, and thus more likely to be transferred.

When looking at the requirements of the third phase in figure 1, it seems that there are not many alternatives to this as an instrument that can actually deliver the shifting of land take from one place to another. Probably this model will be developed as a planning instrument in different regions in Europe, or it might even take a similar form to the carbon emission trade system on a European level. For the moment there is no or limited experience with this model, and the instrument needs to be developed for use in the European context.

3.2.4 Public investment in industrial land

The last model is to install a public development company that can buy land and building and (re)develop the necessary economic accommodation. Belgium has a long standing tradition in public development companies on a local and intermunicipal level. In the 1970s these companies were used to build motorways and industrial business parks, from the early 2000s many Flemish cities started their own development company to complement the market oriented developments. Mostly these urban development companies took up more difficult areas (eg with soil pollution) or implemented other goals such as affordable housing or super-mix developments. In this case we would use the public development companies to buy industrial real estate that can help achieving the goals of intensification, affordability and the growth of industrial economic space. The advantage of this model could be that it can accumulate financial means to slowly move from standard, easy to build and market spaces, to more complex, multi-storey, multi-user buildings. The latter currently only have a potential long-term yield in very tight market as the Brussels Capital Region, where industrial space demand is growing, while the offer is shrinking.

3.3 Ex-ante assessment and feasibility within the Belgian context

In this paragraph we test the four models to their ability to deliver the desired result, without producing inadvertent negative side effects. For Lier, the requirements and risks are:

- availability of a large industrial space (> 10.000m²)
- availability of many (5 – 10) small and medium sized spaces (100m²-600m²)
- space on the market at an affordable price (regarding the revenue in specific sectors)
- timely renovation of industrial buildings
- quality of available spaces correspond to the evolution of the economy in Lier
- avoid companies being priced out of Lier and forced to move to find an affordable location
- avoid shrinking of industrial space (eg replacement with higher value real estate: housing, offices,...)
- providing economic space comes at a acceptable cost (labour + investment) for the local government
- the policy can adapt to the fast changing economic reality
- is the local government able to implement the policy alone
- does the model help reach net zero land take target

All topics are evaluated for each model in table 1 by giving a qualitative assessment, followed by a general goodness of fit appreciation.

4 CONCLUSION

No net land take will prove to be a huge challenge to provide affordable industrial spaces, to accommodate for the needed and forecasted economic growth. Of the four models that were studied, only the public development company can deliver to the ambitions of the city of Lier. Luckily, they have an existing, strong public development company that has experience with developing industrial units. The public development

company is currently studying how to turn this into a long-term business case, and whether they need other public or private partners to deliver space for the future industrial economy.

	Micro-zoning	Financial incentives	Transferable development rights	Public land policy
Provide large units	Planning for different unit sizes will only deliver if the market can develop them with a profit. Large units will come at a higher price.	If financial and fiscal incentives can be easily adapted to development costs, large units will be provided.	If the development certificates and trading system works correctly, yes.	Yes.
Provide (many) small units	Planning for different unit sizes will only deliver if the market can develop them with a profit. Small units are easy to sell.	Small units will probably be developed in any case, regardless of financial incentives.	Small units will probably be developed in any case, regardless of transferable development rights.	Yes.
Affordability	Probably only a selling market, aiming at the highest yield.	Financial incentives can be used to cap prices, and to provide a larger variety of types of spaces.	More difficult to achieve as it is down to developers to define the price.	Yes.
Renovation is stimulated	No.	If this is included in the legal framework or covenant, yes.	Yes, it promotes redevelopment and intensification.	Yes.
Offer is related to the demand	Yes, through the market mechanism, so the lower end will have to rely on the secondary market.	If the incentives are related to the unserved demand, it will.	Yes, if the trading system is flexible and easy to adjust.	Yes.
Companies priced out	Yes, especially companies that need large spaces or cannot afford to pay a high price.	Not if the incentives work properly.	Probably, due to imperfections in the development rights trading system.	No, unless the construction cost is too high
Growth of industrial space	No, where allowed other functions will grow, industry will decline	Yes.	Yes.	Yes.
Investment cost for city	High. Making and updating spatial plans comes at an important cost	Low.	Low.	High, but with a good long-term yield
Labour cost for city	High. Making and updating spatial plans is very time consuming	High, because of the need to negotiate covenants and monitor the incentive rates.	Low.	High, but done by a public company or a public-private partnership.
Swift adaptation of policy	No. Adaptation of a plan will take at least 3 years (current planning system)	Yes.	Yes.	Yes.
Multi-level governance	City can act alone.	A legal framework is necessary, probably involving the federal and regional government	A new instrument needs to be developed by the regional and federal government.	City can act alone
NNLT is achieved	Yes.	Yes.	Yes	Yes.
Overall assessment	High investment, time consuming method, which will not meet the requirement of affordability. Industrial space will probably shrink.	Finetuning the financial levers and drafting covenants is time consuming. The legal framework needs to be put in place.	TDR on a regional level can be highly effective to steer investments. The lower end of the market will not be served. No experience in Flanders.	High investment, with a financial yield and a direct link between policy and action. Method can deliver on almost all points.

Table 1: Assessment of four implementation models for providing space for economic growth in the context of net zero land take.

5 REFERENCES

- Borms, L., Pals, E., Dams, Y. (2023) Socio-economic effects for the circular economy. Mol, 2023.
- Anderson, R. I., and Guirguis, H. (2011) Industrial Space Demand – NAIOP Research Foundation. Available at: <https://www.naiop.org/link/7b45f4fc42544ed199ccb0edc08f053c.aspx> (Accessed 4 January 2023)
- Beckers P. & Schuur J. (2015) The future demand for industrial sites in the Netherlands: is employment a good predictor? Regional Studies, 49:9, 1535-1547, DOI: 10.1080/00343404.2013.838320
- City of Melbourne (2022) City of Melbourne Population and Jobs Forecasts 2021-2041 - Summary report 2022. Available at: <https://www.melbourne.vic.gov.au/about-melbourne/research-and-statistics/Pages/city-forecasts.aspx> (Accessed: 4 January 2023)
- de Kort, E-J, Beekmans, J., Stopel, P. & Lewis, C. (2021). Behoefteraming bedrijventerreinen Zuid-Holland. Available at: <https://www.zuid-holland.nl/onderwerpen/economie/werklocaties/bedrijventerreinen/@29831/behoefteraming-bedrijventerreinen-zuid-holland/> (Accessed: 4 January 2023)
- IBM (2004) Onderzoek naar de evolutie van de ruimtebehoefte voor niet verweefbare bedrijvigheid - Studie in het kader van de evaluatie van het Ruimtelijk Structuurplan Vlaanderen, Brussel, department Omgeving. Available at: <https://archieff.onderzoek.omgeving.vlaanderen.be/Onderzoek-1830271> (accessed 20 July 2023)
- Giaretta, F., Penninx, I., De Mulder, S., & Zaman, J. (2018). Defining economic typologies based on an economic activities database. Paper presented at the Real Corp 2018, Wien.

- Grujthuijsen W., Steenberghen T., Vanneste D., Zaman J., Penninx I., De Mulder S., Vermoesen K. and Horemans E. (2018) 'Assessing Discrepancies between Official Economic Statistics and Land Use through a Field Inventory System'. *Infrastructures* 2018 3(3), 27.
- Minne, V. and IDEA Consult (2014) Raming van de behoefte aan bedrijventerreinen in het Vlaams Gewest Deel 2: Ruimtebehoefteraming Eindrapport. Available at: <https://www.vlaanderen.be/ruimtelijke-planning/ruimtebehoefteraming-eindrapport>
- Provincie West-Vlaanderen (2020). Saving Space – zuinig ruimtegebruik op bedrijventerreinen. Available at: <https://www.west-vlaanderen.be/ruimtelijke-planning/beleidskaders-visies-en-onderzoek/saving-space> (Accessed: 1 september 2022)
- Staelens, P., Caset, F., Witlox, W. (2017) Ruimte vraag bedrijventerreinen West-Vlaanderen. Available at https://bestanden.west-vlaanderen.be/rup/publiek/B_070_Bedrijvigheid/B_070_Bedrijvigheid_Bijlage3_NotaVraagaming.pdf (Accessed: 7 November 2022)
- Van der Beken, W., De Witte, P., Bieseman, H. (2018) Berekening van de kwantitatieve en kwalitatieve vraag naar bedrijventerreinen voor de provincie Oost- Vlaanderen globaal en binnen een opdeling van relevante economische subregio's
- Van Haverbeke, W., & Cabus, P. (2004). Strategisch Plan Ruimtelijke Economie. Ruimte en economie in Vlaanderen. Analyse en beleidsuggesties. (not published online)
- Witlox, F. and Derudder, B. (2006) Ruimtebehoefteraming van bedrijven aan de hand van een economische terreinquotiëntenmethode – een eerste verkenning voor Vlaanderen. Available at: <https://core.ac.uk/reader/55833560> (Accessed 22 July 2023)
- Zaman, J., De Mulder, S., Penninx I. & Van Haute, G. (2022). Segmentatie VI: typering van gebieden met economische activiteiten. Available at: <https://archieff.onderzoek.omgeving.vlaanderen.be/Onderzoek-3223763> (Accessed: 23 July 2023)