

Earth as a System

Earth is a system made up of 4 primary parts: Geosphere (land); Hydrosphere (water); Atmosphere (air); and Biosphere (life).



Why Climate Change Isn't Our Biggest Environmental Problem, and Why Technology Won't Save Us

By [Richard Heinberg](#), originally published by [Post Carbon Institute](#)

⌚ August 17, 2017



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Why climate change is an irrelevance, economic growth is a myth and sustainability is forty years too late

By Kevin Casey Posted in [Commentary](#) [Culture](#) [Current Affairs](#) [Environment](#) [Society](#)

Posted on November 20, 2019



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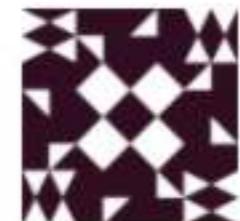
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Featured Writers



E. Young

E. Young is a small town country author of horror and sci-fi works. Strives to cultivate a general sense unease and wholesome pop culture references. Owns a multitude of cats and probably wants to talk to you about a movie or music from a band you've never heard of. Can also be found at *Bright Nightmares* or on the Twitter machine @xenoxands.

Tesla wins court approval to build Gigafactory by clearing forest in Germany

A high court in Berlin has allowed Tesla to continue clearing a 92 hectare forest for its massive Gigafactory. The court rejected pleas from environment activists and said that its decision was final.



© picture-alliance/dpa/P. Pleu

The higher administrative court of Berlin-Brandenburg on Thursday allowed Tesla Inc, a US electric-car maker, to continue clearing the Grünheide forest near Berlin for its massive Gigafactory project. The court said that its decision was final.

we knew we know

“In one or two hundred years, crisscrossed by railways and steamships, covered with factories and workshops, the world will emit billions of cubic meters of carbonic acid and carbon oxide, and, since the forests will have been destroyed, these hundreds of billions of carbonic acid and carbon oxide may indeed disturb the harmony of the world.”

Eugène Huzar
L’arbre de la science
(1857)

A black and white portrait of Svante Arrhenius, a man with a mustache, wearing a suit and bow tie.

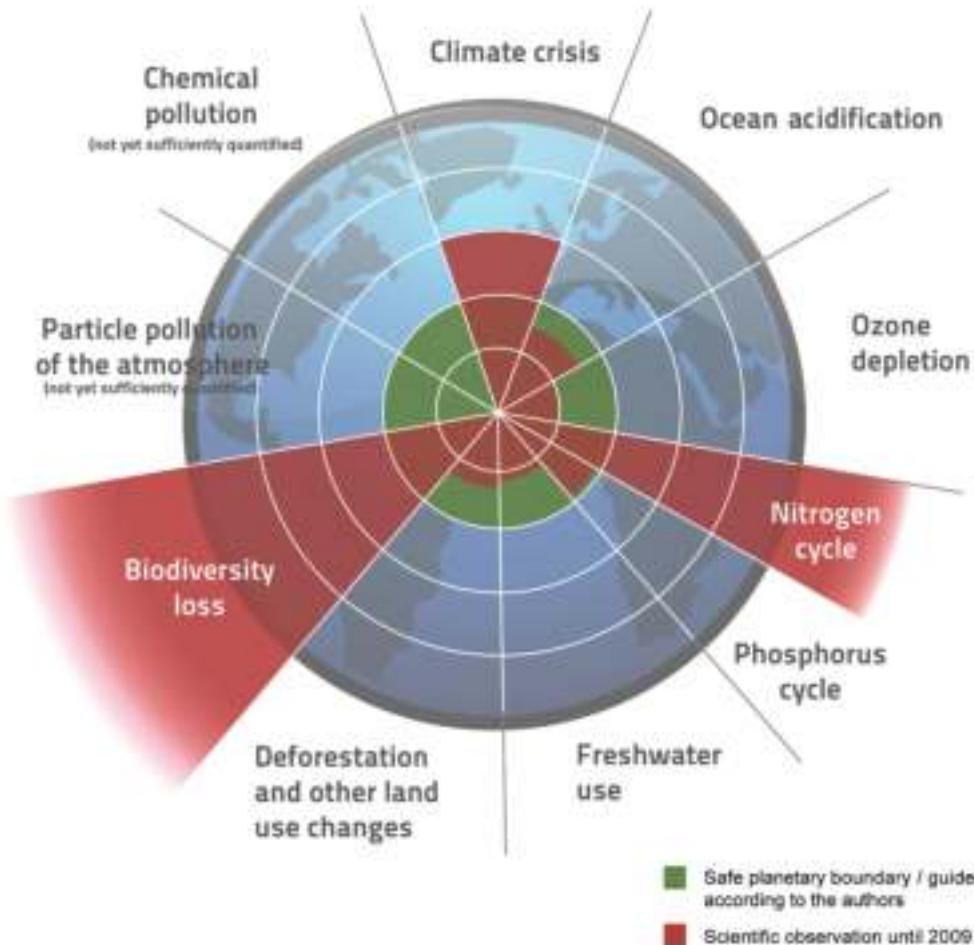
Is the mean temperature of the
ground in any way influenced by the
presence of heat-absorbing gases in
the atmosphere?

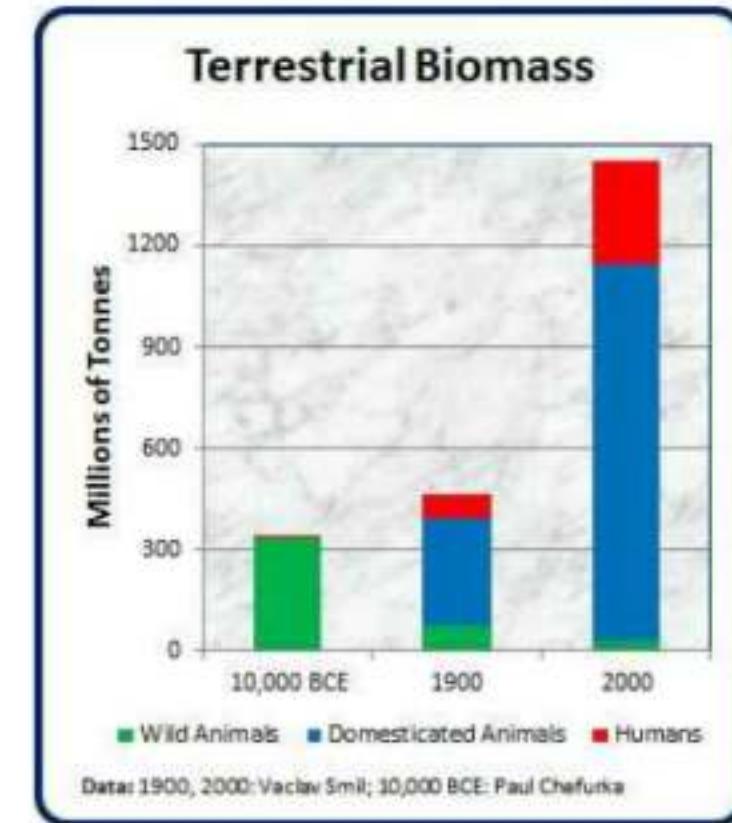
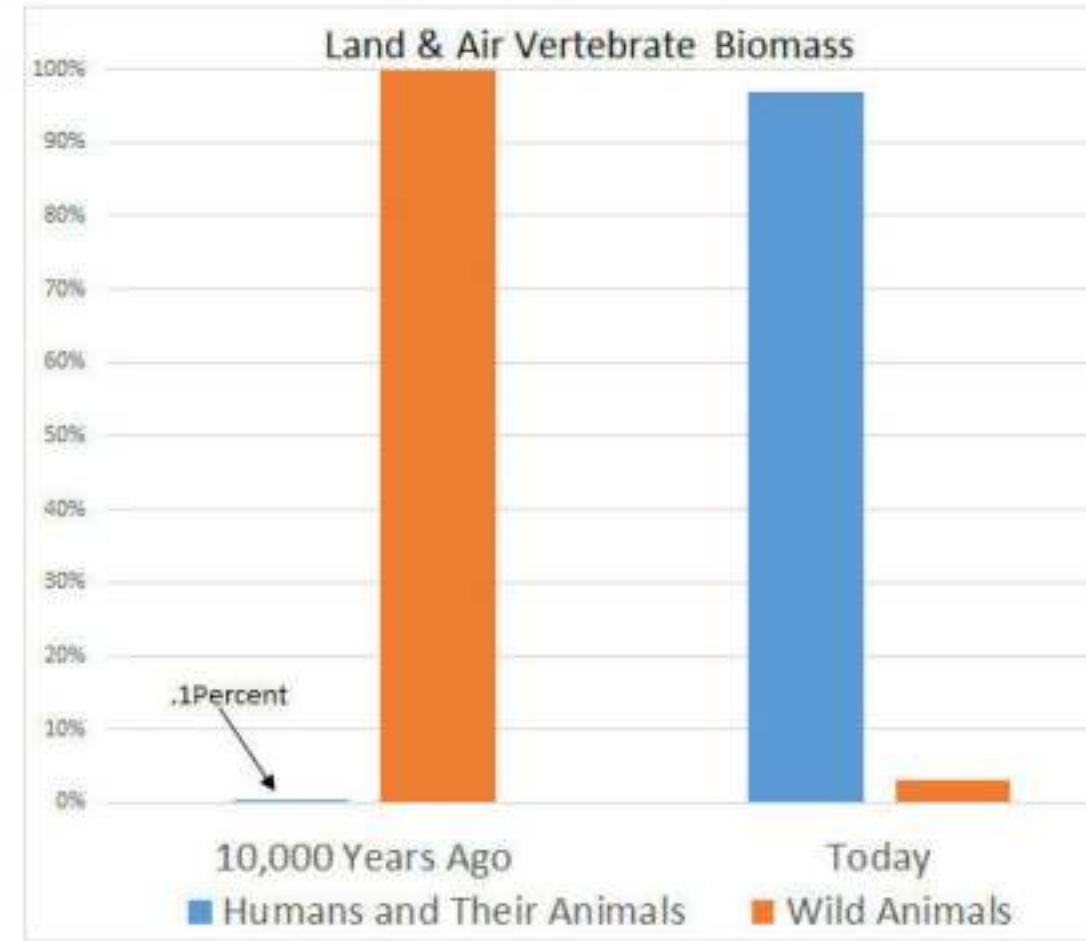
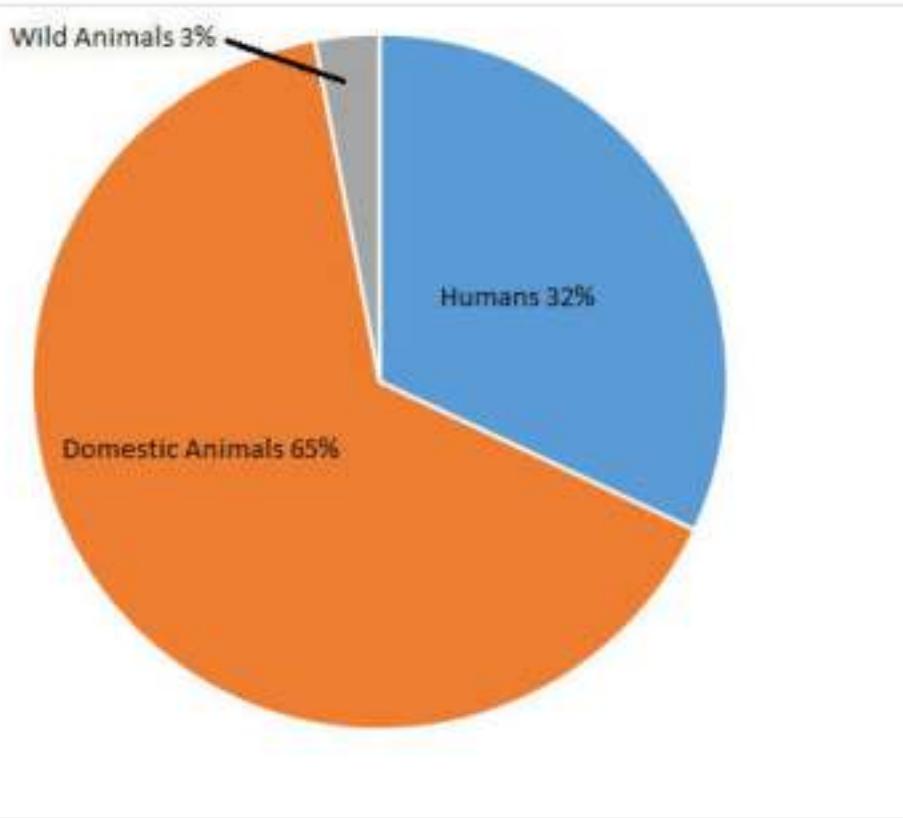
— *Svante Arrhenius* —

1896 : University of Stockholm
Paper on Carbon Emissions
and Global Warming
1903 : Nobel Prize Chemistry

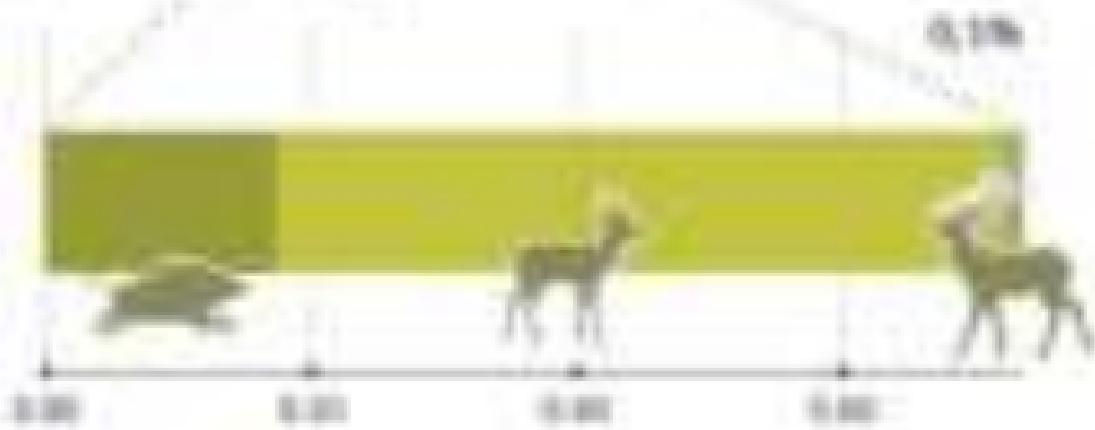
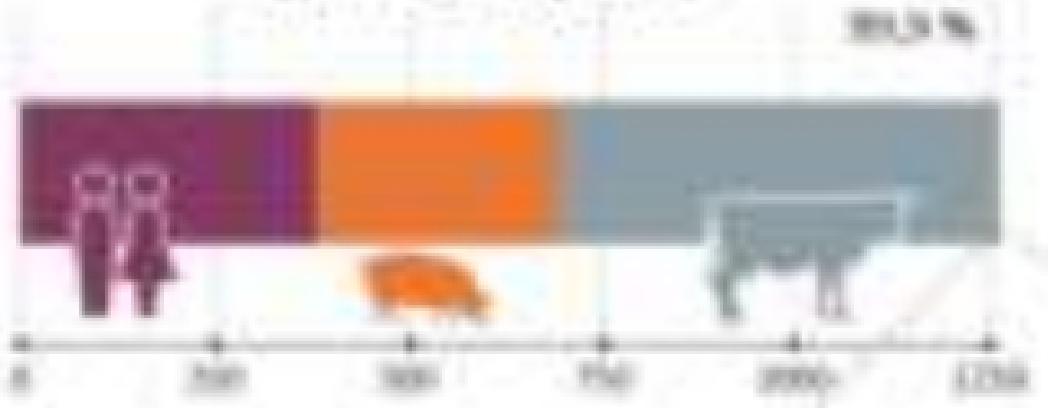
Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009



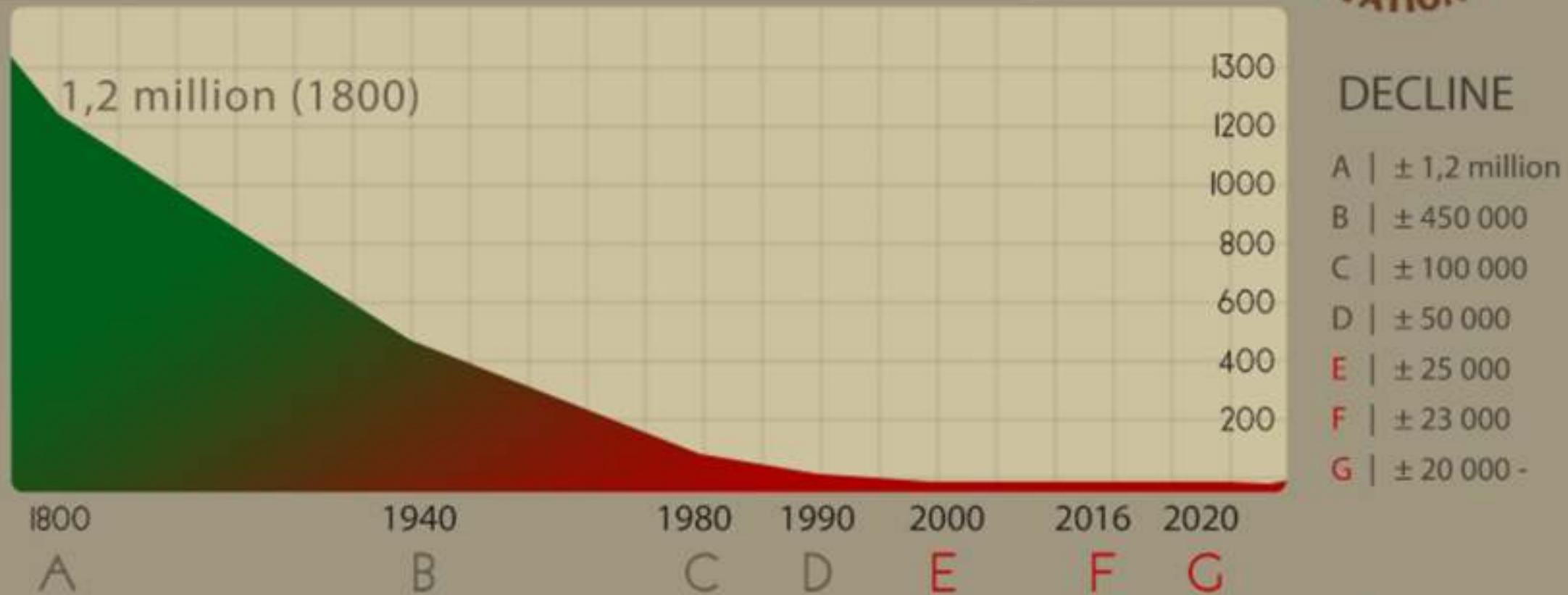


BIOAMASSA (kton)





DECLINE in LION numbers over last 216 years



Threats to biodiversity

Changes in land and sea use, including habitat loss and degradation



This refers to the modification of the environment where a species lives, by complete removal, fragmentation or reduction in quality of key habitat. Common changes in use are caused by unsustainable agriculture, logging, transportation, residential or commercial development, energy production and mining. For freshwater habitats, fragmentation of rivers and streams and abstraction of water are common threats.

Species overexploitation



There are both direct and indirect forms of overexploitation. Direct overexploitation refers to unsustainable hunting and poaching or harvesting, whether for subsistence or for trade. Indirect overexploitation occurs when non-target species are killed unintentionally, for example as bycatch in fisheries.

Invasive species and disease



Invasive species can compete with native species for space, food and other resources, can turn out to be a predator for native species, or spread diseases that were not previously present in the environment. Humans also transport new diseases from one area of the globe to another.

Pollution



Pollution can directly affect a species by making the environment unsuitable for its survival (this is what happens, for example, in the case of an oil spill). It can also affect a species indirectly, by affecting food availability or reproductive performance, thus reducing population numbers over time.

Climate change

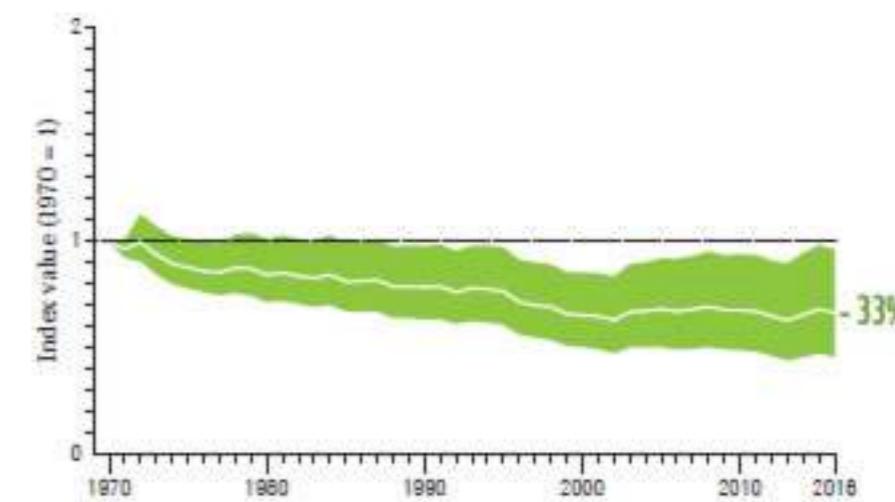
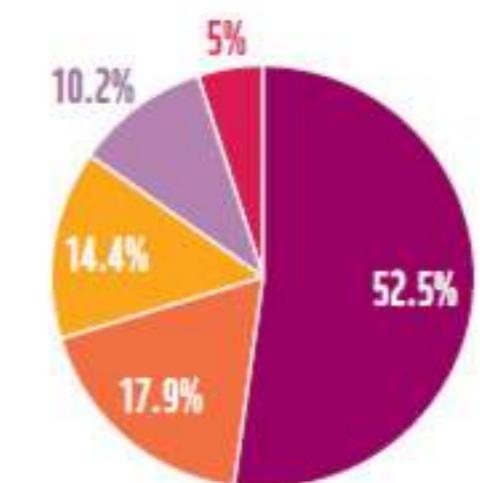


As temperatures change, some species will need to adapt by shifting their range to track a suitable climate. The effects of climate change on species are often indirect. Changes in temperature can confound the signals that trigger seasonal events such as migration and reproduction, causing these events to happen at the wrong time (for example misaligning reproduction and the period of greater food availability in a specific habitat).

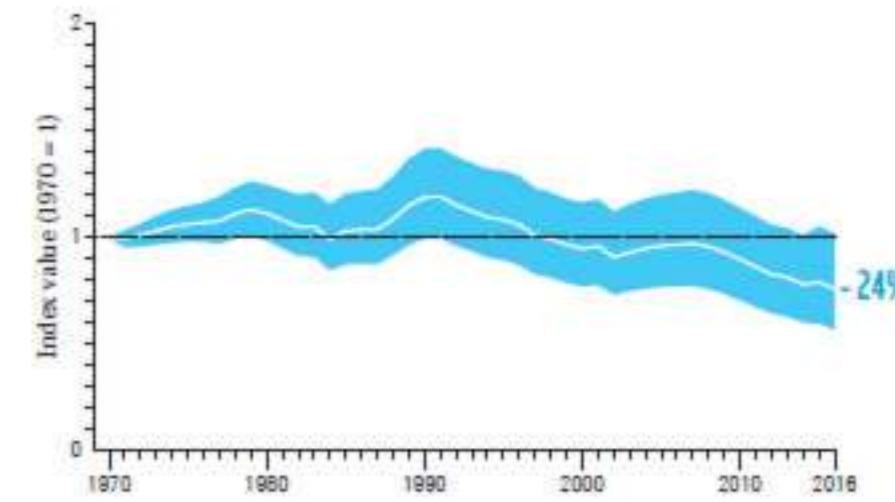
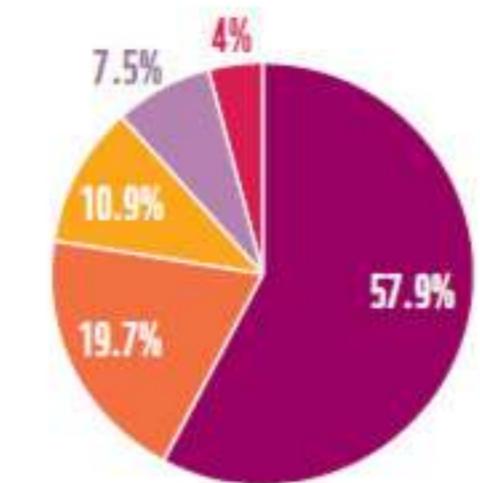
Figure 4: Different threat types in the Living Planet Database

Descriptions of the major threat categories used in the Living Planet Database. This classification reflects the direct drivers with the largest global impact as identified by IPBES⁹; it is also followed by the IUCN Red List and is based on the original classification by Salafsky, N. et al. (2010)¹⁰⁷. Source WWF/ZSL (2020)¹⁰⁷.

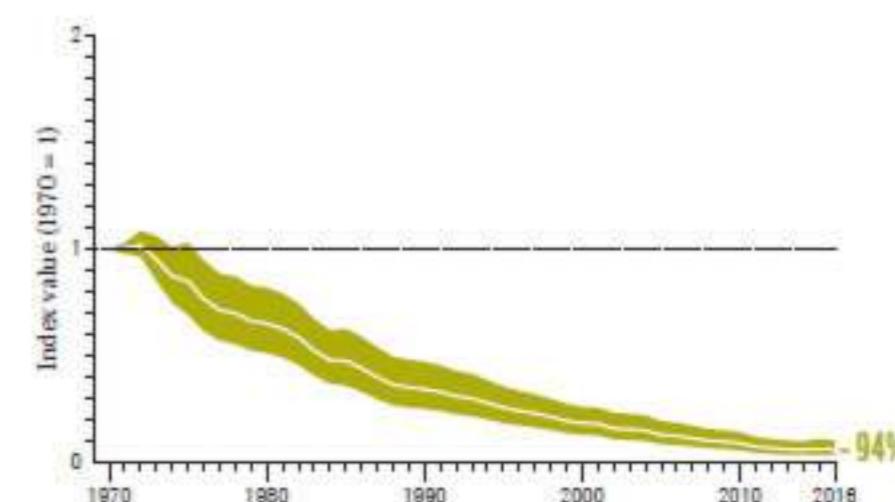
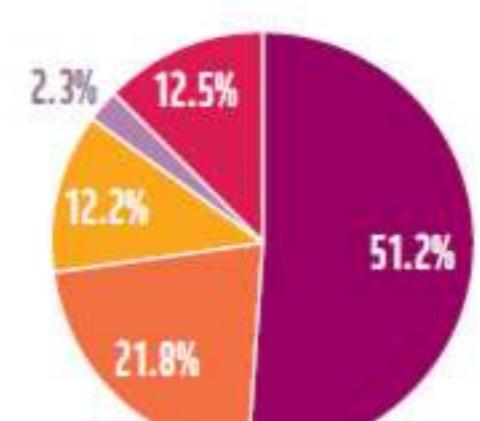
Regional threats to populations in the LPI



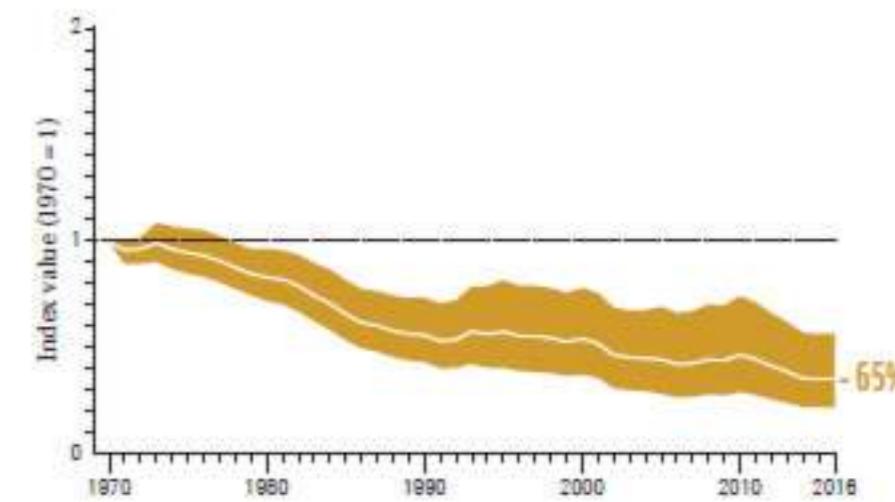
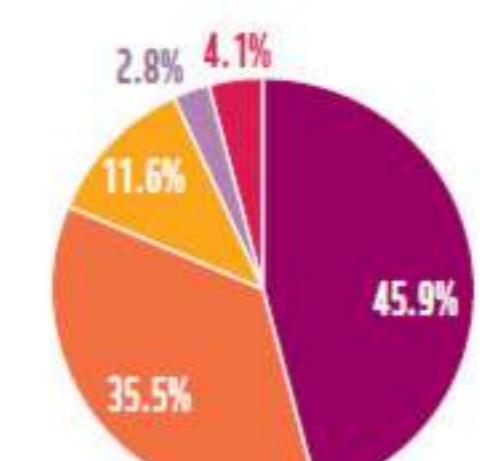
NORTH AMERICA



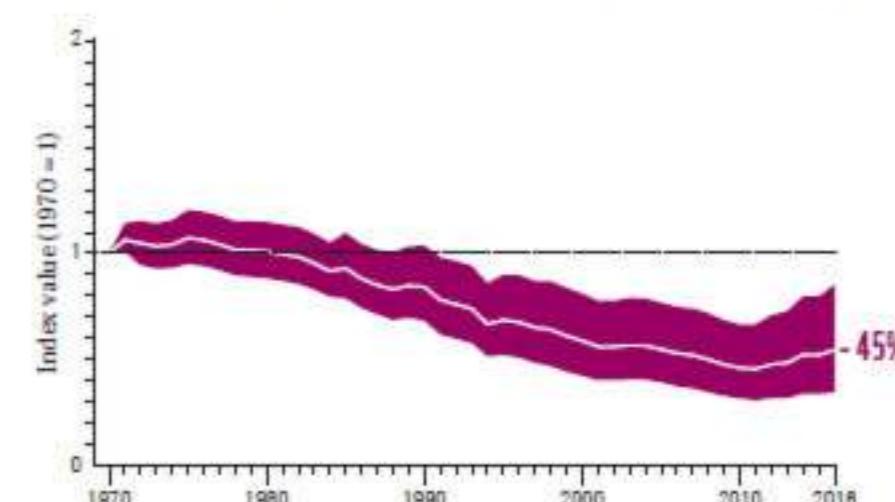
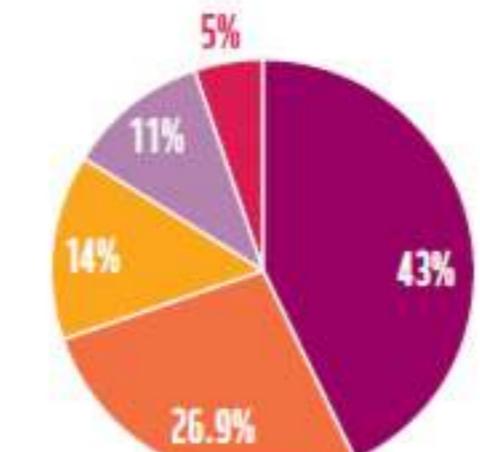
EUROPE AND
CENTRAL ASIA



LATIN AMERICA
& CARIBBEAN



AFRICA



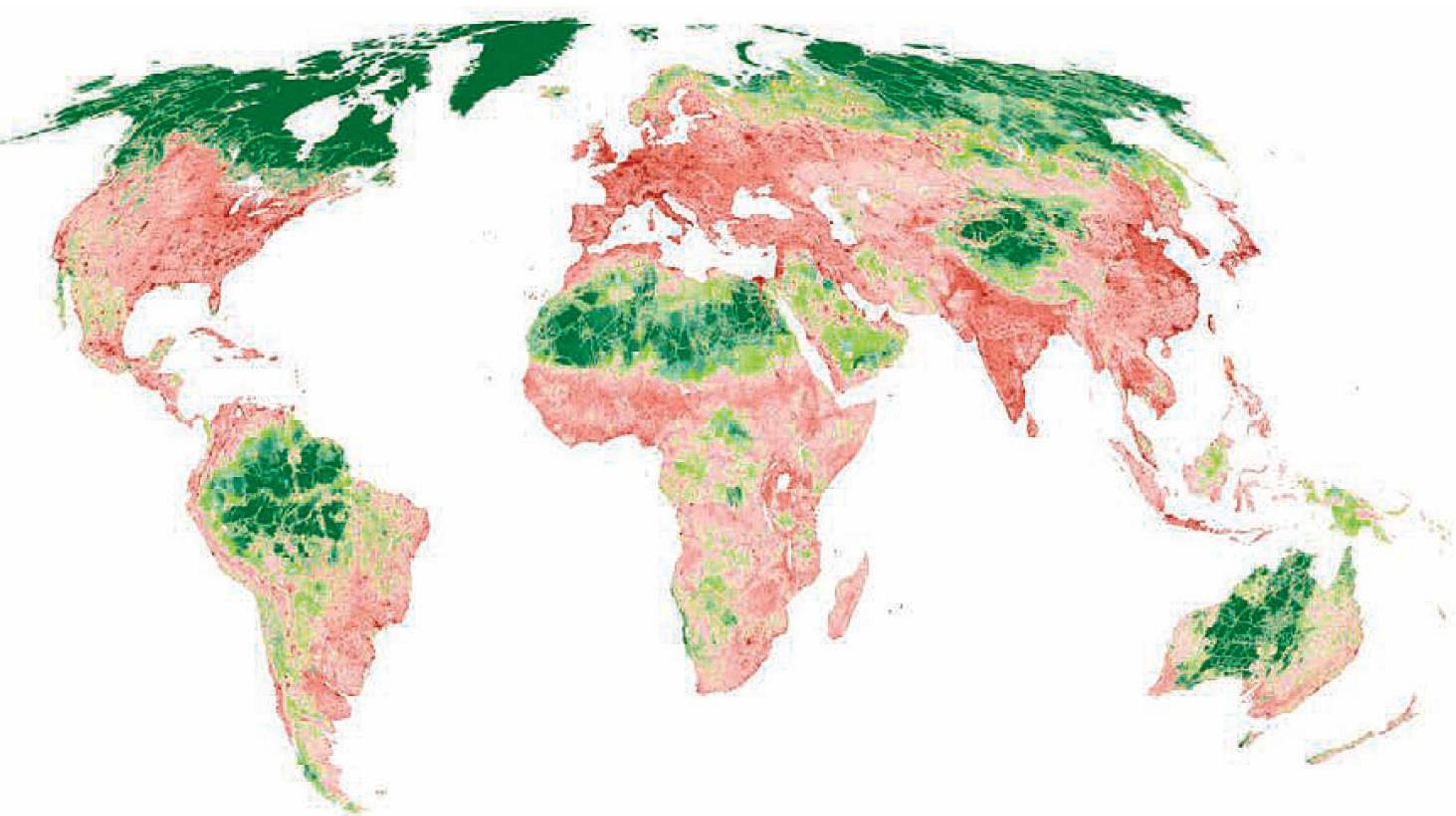
ASIA PACIFIC

Key

Damaged	Intact	Wilderness
High: 50	High: 1	High: 0
Low: 4	Low: 4	Low: 1

Figure 19:

The proportion of each terrestrial biome (excluding Antarctica) considered wilderness (dark green, human footprint value of <1), intact (light green, human footprint value of <4), or highly modified by humanity (red, human footprint value of > or equal to 4)⁷⁴.





Greenhouses, Almería



Industrial Livestock, Brazil



Deforestation in New Caledonia

- BIOMASS IS NOT RENEWABLE : NOT IN TIME / NOT IN YIELD / NOT IN SPACE

Biodiversité : l'initiative "Belgian Biodiversity Alliance"

LE MONDE DU DROIT | 2 NOVEMBRE 2021

ACTUALITES



OUTILS



RÉSEAUX SOCIAUX



TAILLE DU TEXTE

- MEDIUM +
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MODE DE LECTURE

En 2022, la Belgique lance une nouvelle initiative nationale, la "Belgian Biodiversity Alliance", afin de mobiliser toute la société belge de manière très concrète dans la lutte contre la perte de biodiversité.

En 2022, les pays du monde entier adopteront un nouveau cadre mondial pour la biodiversité.

La 15ème Conférence des Parties de la Convention sur la diversité biologique (COP15), qui aura lieu en 2022, vise à adopter un nouveau cadre mondial pour la biodiversité.

Les ministres fédéraux et régionaux belges compétents veulent s'engager dès à présent pour apporter de façon concrète une réponse positive à la perte globale de biodiversité, en reconnaissant et en encourageant les efforts existants et en facilitant ceux à venir.

Ainsi, une "Belgian Biodiversity Alliance" a été fondée afin de mettre en évidence les initiatives existantes et les engagements futurs, individuels ou collectifs, menés par des acteurs belges.

Ceci se fera sur base de **10 objectifs** répartis sur deux axes :

- renforcer le réseau bleu-vert, écologique, dans, autour et entre les villes ;
- promouvoir une production et consommation durable et respectueuse de la biodiversité.

Construite autour d'un **partenariat public-privé inclusif**, l'Alliance fournira une **plateforme** à tous les acteurs privés et publics en Belgique qui souhaitent participer et aura vocation à favoriser l'**intégration de la biodiversité dans nos activités quotidiennes** afin de maximiser leur impact positif et limiter leur impact négatif sur tout le territoire et à l'étranger.

Ainsi, des citoyens qui rendent une partie de leur jardin plus respectueuse de la nature (par exemple en friche), une commune qui aménage des espaces dédiés à la faune et la flore, ou une entreprise qui par exemple prend en compte la biodiversité dans ses processus d'importation, auront tous leur place sur la plateforme. Comme cette plateforme sera disponible gratuitement en ligne, cela permettra de donner une meilleure visibilité aux efforts concrets de tous les acteurs qui pourront servir d'exemple et d'inspiration à tous ceux qui souhaitent s'impliquer à petite, moyenne ou grande échelle.

L'alliance et sa plateforme web seront lancées par les partenaires publics et privés en 2022 afin d'affirmer l'engagement actif du pays en vue de la mise en œuvre ambitieuse du cadre mondial pour la biodiversité, lors de la COP15.

EU Biodiversity strategy for 2030

PAGE CONTENTS

Why do we need to protect biodiversity?

Key elements of the biodiversity strategy

The business case for biodiversity

Documents

- Establishing protected areas for at least



30% of land in Europe



30% of sea in Europe



with legally binding nature-restoration targets in 2021 providing stricter protection of EU forests.

- Restoring degraded ecosystems at land and sea across the whole of Europe by



increasing **organic farming and biodiversity-rich landscape features** on agricultural land.



restoring at least **25,000 km** of EU rivers to a free-flowing state



halting and reversing the decline of **pollinators**



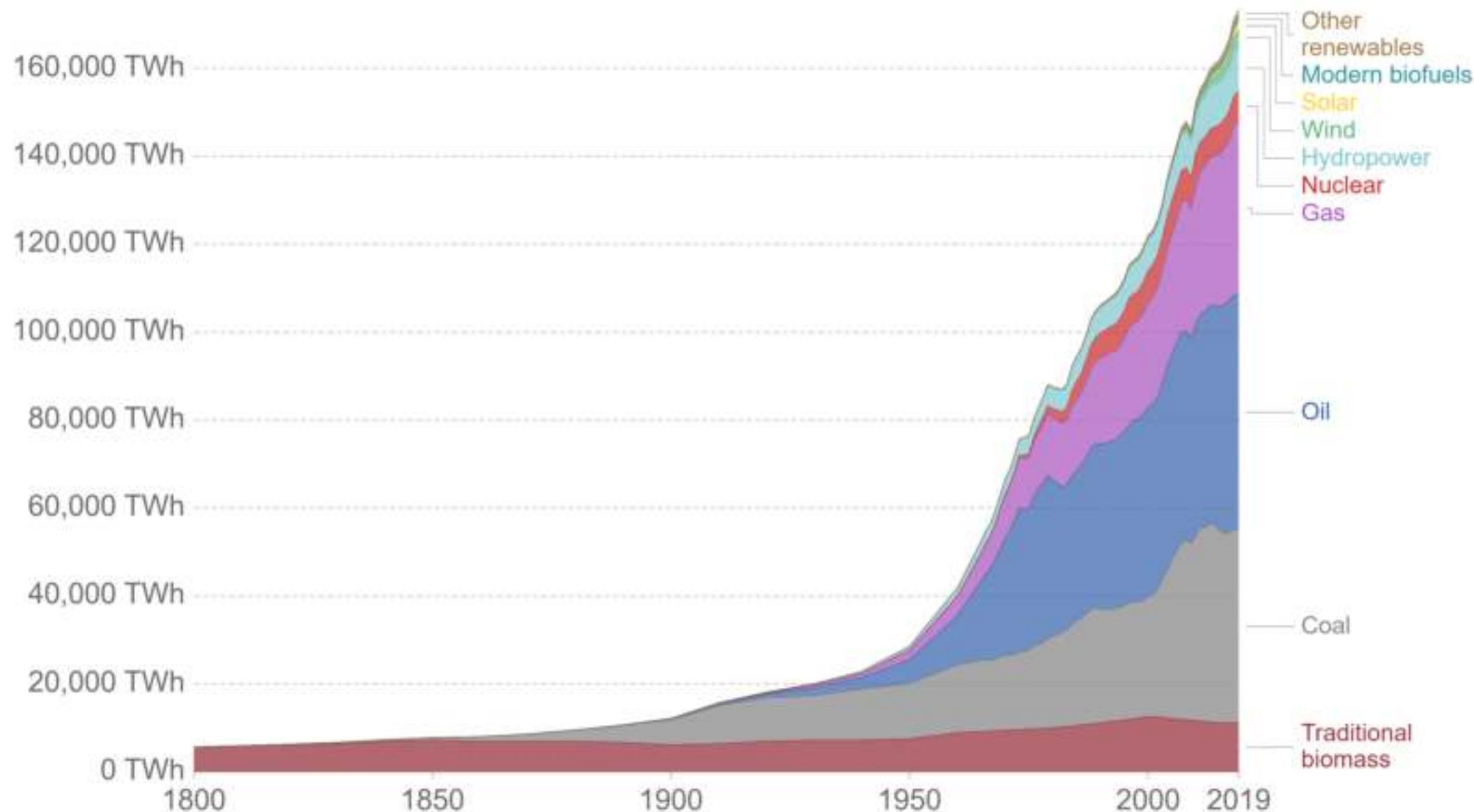
planting **3 billion** trees by 2030



reducing the use and harmfulness of pesticides by **50%** by 2030

Global primary energy consumption by source

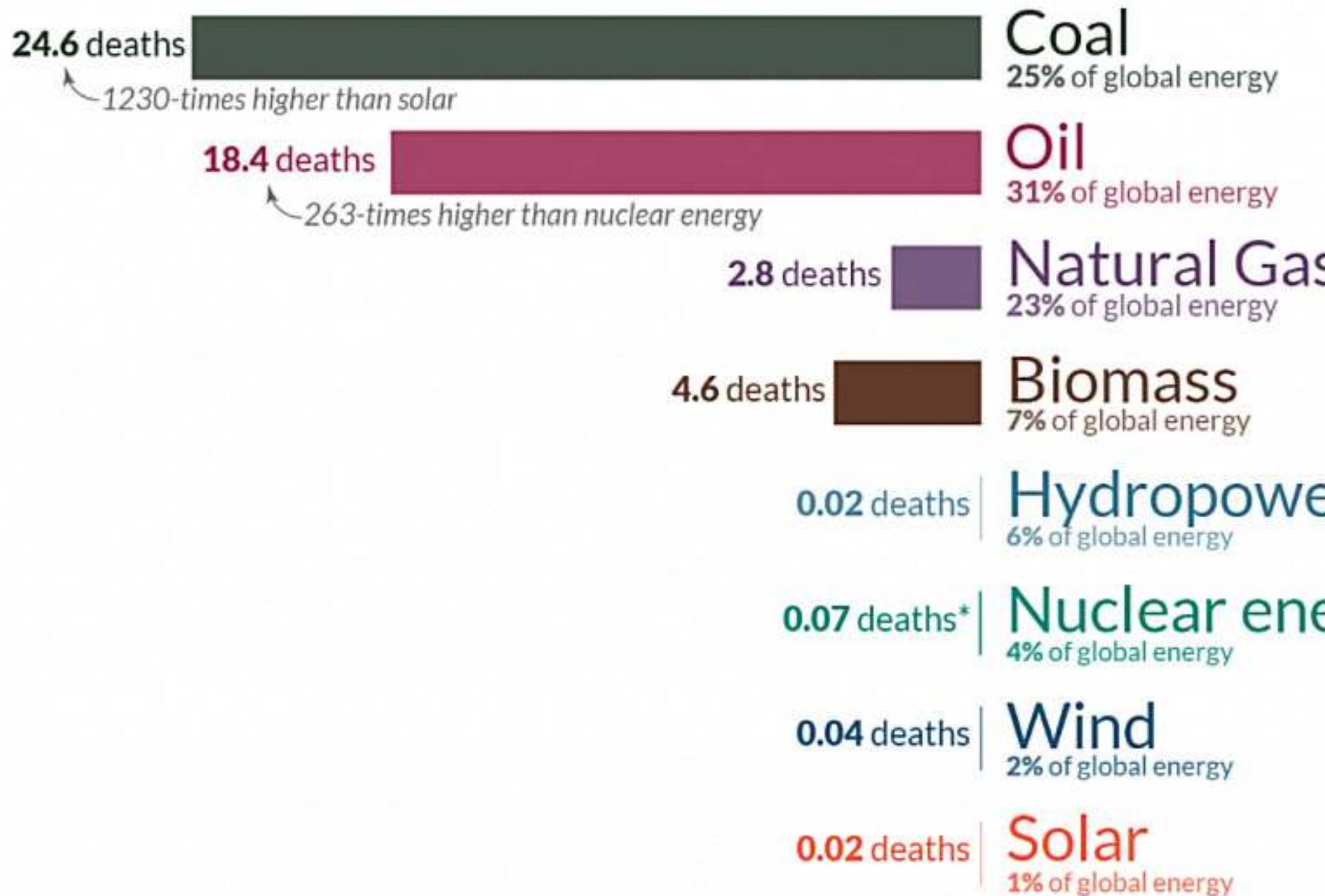
Primary energy is calculated based on the 'substitution method' which takes account of the inefficiencies in fossil fuel production by converting non-fossil energy into the energy inputs required if they had the same conversion losses as fossil fuels.



What are the safest and cleanest sources of energy?

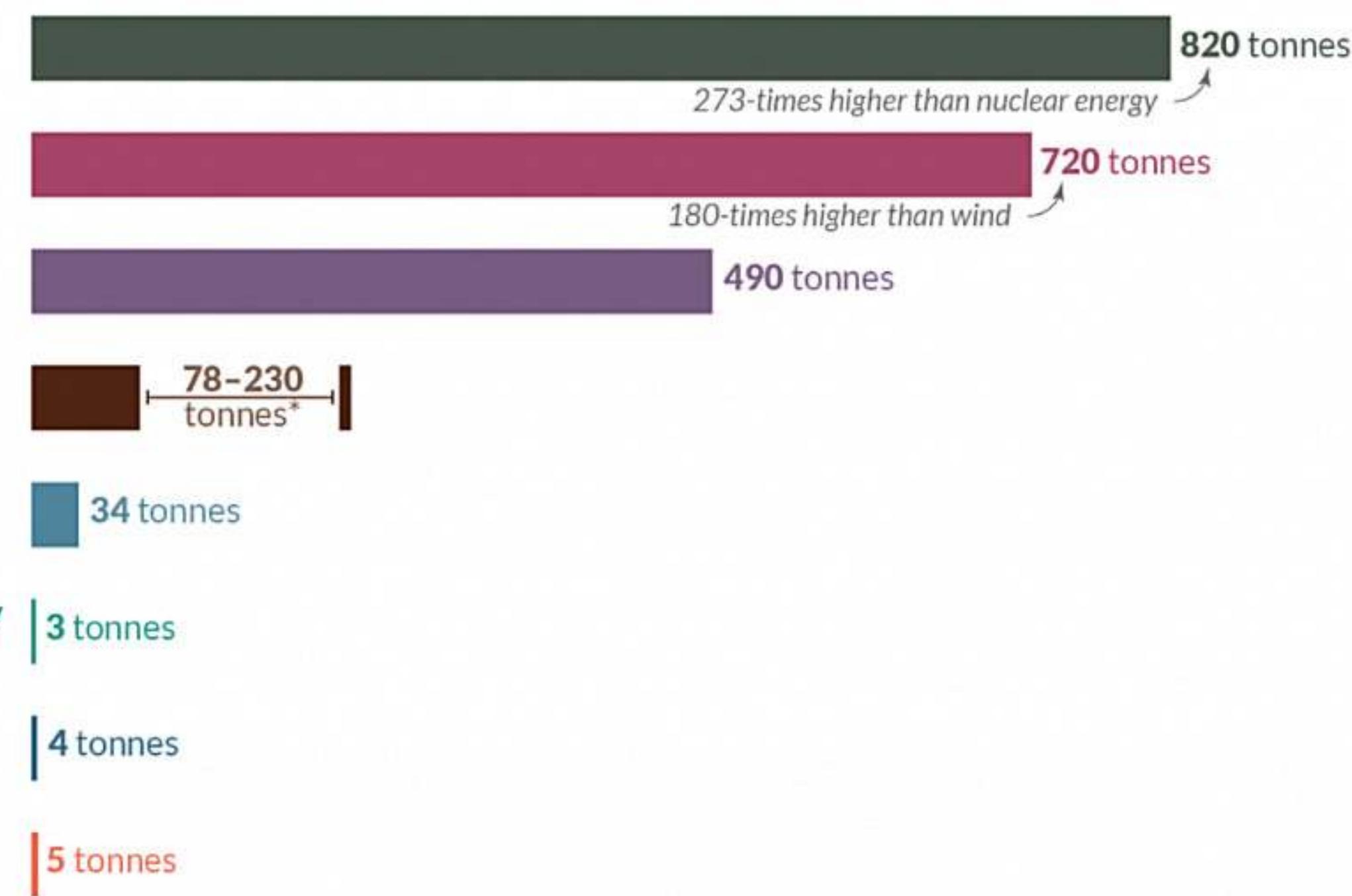
Death rate from accidents and air pollution

Measured as deaths per terawatt-hour of energy production.
1 terawatt-hour is the annual energy consumption of 27,000 people in the EU.



Greenhouse gas emissions

Measured in emissions of CO₂-equivalents per gigawatt-hour of electricity over the lifecycle of the power plant.
1 gigawatt-hour is the annual electricity consumption of 160 people in the EU.



*Life-cycle emissions from biomass vary significantly depending on fuel (e.g. crop residues vs. forestry) and the treatment of biogenic sources.

*The death rate for nuclear energy includes deaths from the Fukushima and Chernobyl disasters as well as the deaths from occupational accidents (largely mining and milling).

Energy shares refer to 2019 and are shown in primary energy substitution equivalents to correct for inefficiencies of fossil fuel combustion. Traditional biomass is taken into account.

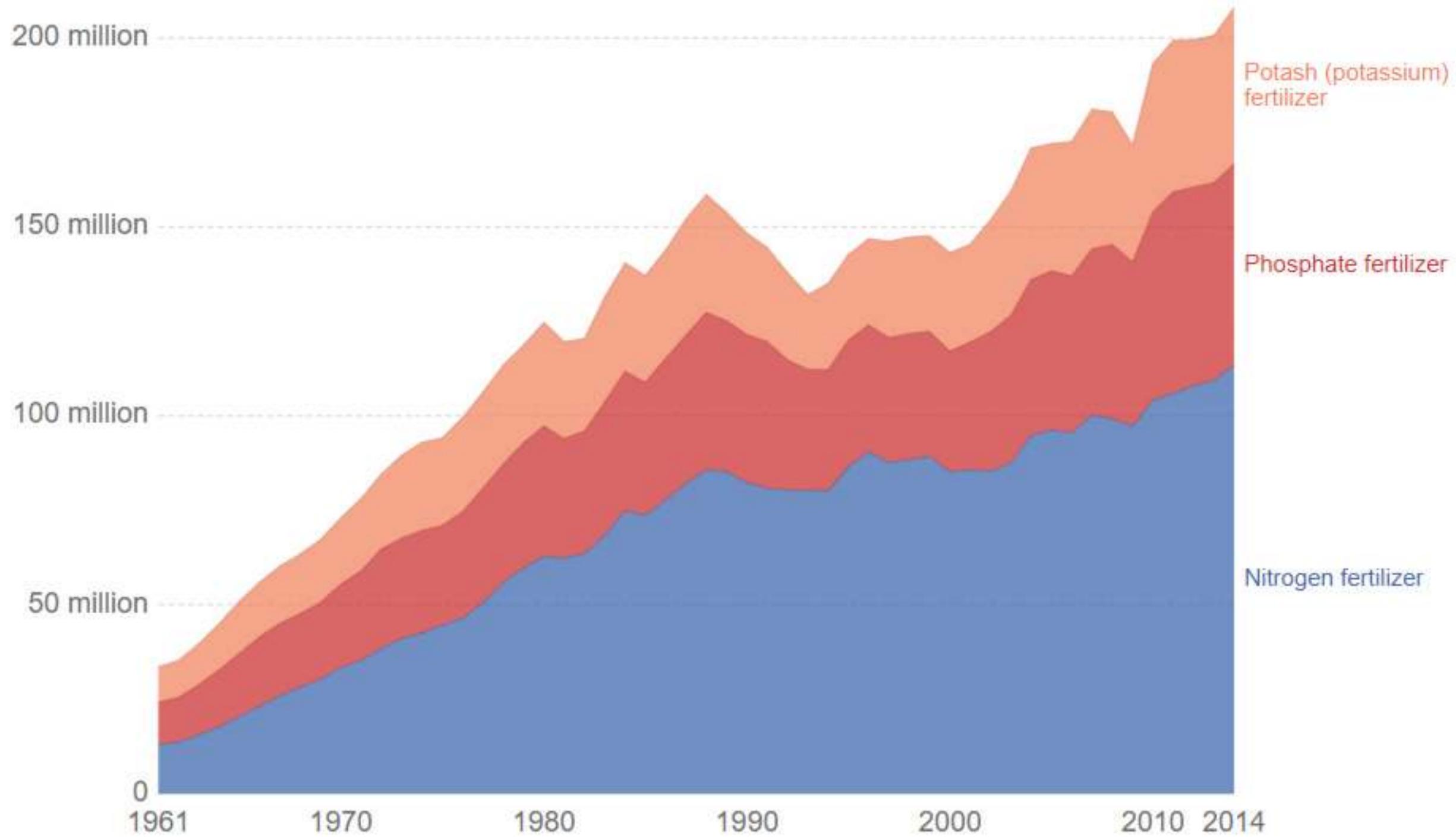
Data sources: Death rates from Markandya & Wilkinson (2007) in *The Lancet*, and Sovacool et al. (2016) in *Journal of Cleaner Production*; Greenhouse gas emission factors from IPCC AR5 (2014) and Pehl et al. (2017) in *Nature*; Energy shares from BP (2019) and Smil (2017).

OurWorldInData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the authors Hannah Ritchie and Max Roser.

Total fertilizer production by nutrient, tonnes, World

Total fertilizer production by nutrient type (nitrogen, phosphate and potash/potassium), measured in tonnes per year.



Landbouw beslaat 46% van totale Vlaamse grondoppervlakte

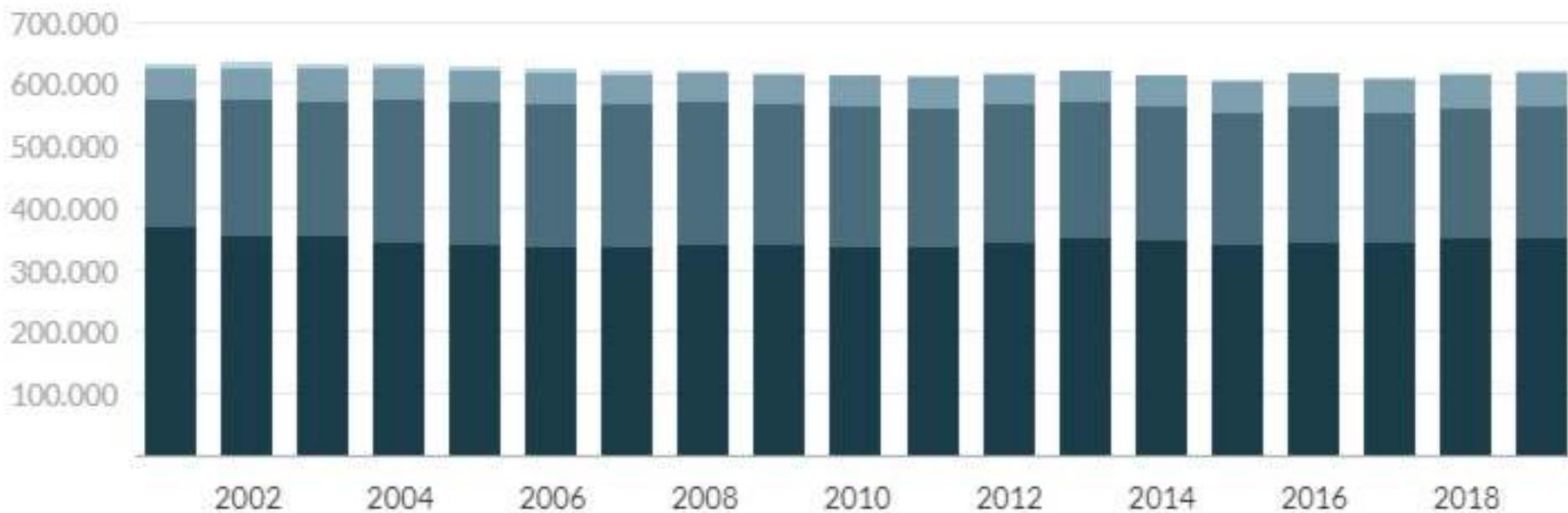
Het Vlaamse Gewest telde in 2019 bijna 622.000 hectare landbouwareaal. Dat komt overeen met 46% van de totale Vlaamse grondoppervlakte.

Tussen 2001 en 2019 is het aantal hectare landbouwareaal met 2,1% afgenomen. Deze daling is vooral een gevolg van de afname van de oppervlakte voor voedergewassen (weiden en maïs). Ook de oppervlakte voor braakland is sterk teruggelopen.

Benutte landbouwoppervlakte naar bestemming

Vlaams Gewest, 2001-2019, in hectare

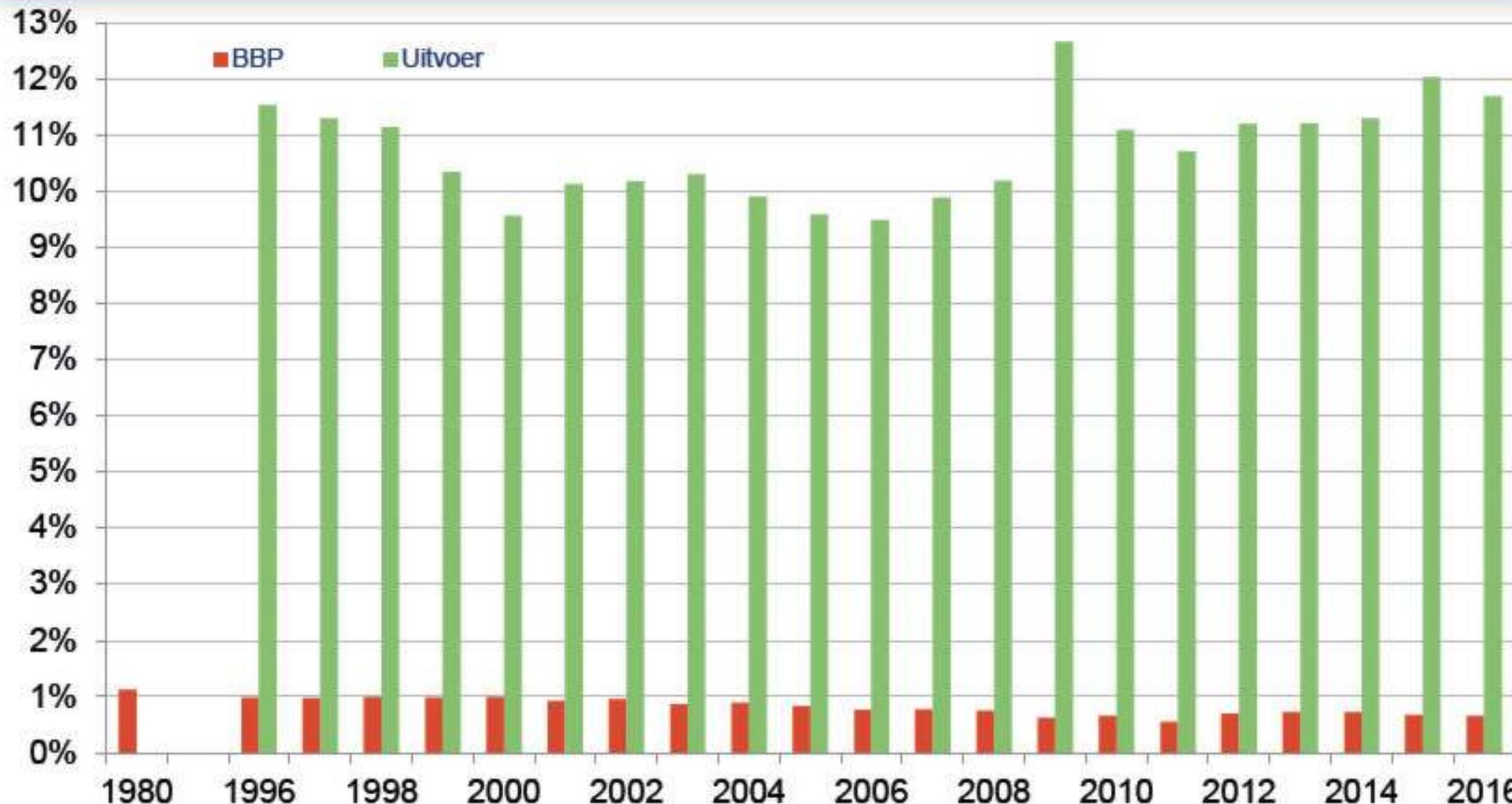
■ Voedergewassen ■ Akkerbouw ■ Tuinbouw ■ Andere



Bron: Departement Landbouw en Visserij op basis van Statbel

57% van landbouwareaal voor voedergewassen, 34% voor akkerbouw

Aandeel van de landbouw in het bbp en de uitvoer (1980 en 1996-2016)




Bron: Instituut voor de Nationale Rekeningen.

Kerncijfers landbouw 2017

World population growth, 1700-2100

Annual growth rate of the world population
World population

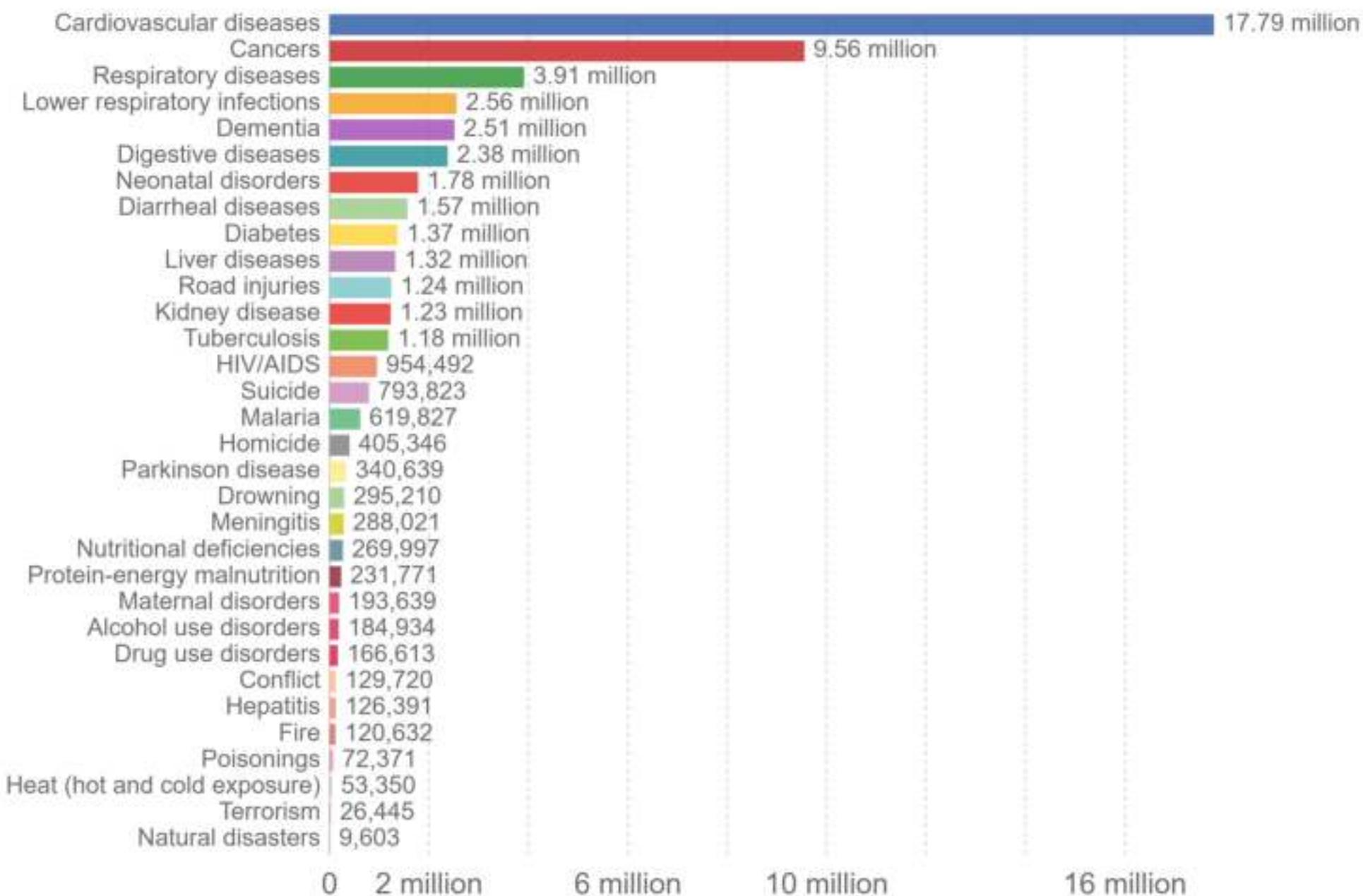


Data sources: Our World in Data based on HYDE, UN, and UN Population Division [2019 Revision]
This is a visualization from OurWorldInData.org, where you find data and research on how the world is changing.

Licensed under CC-BY by the author Max Roser.

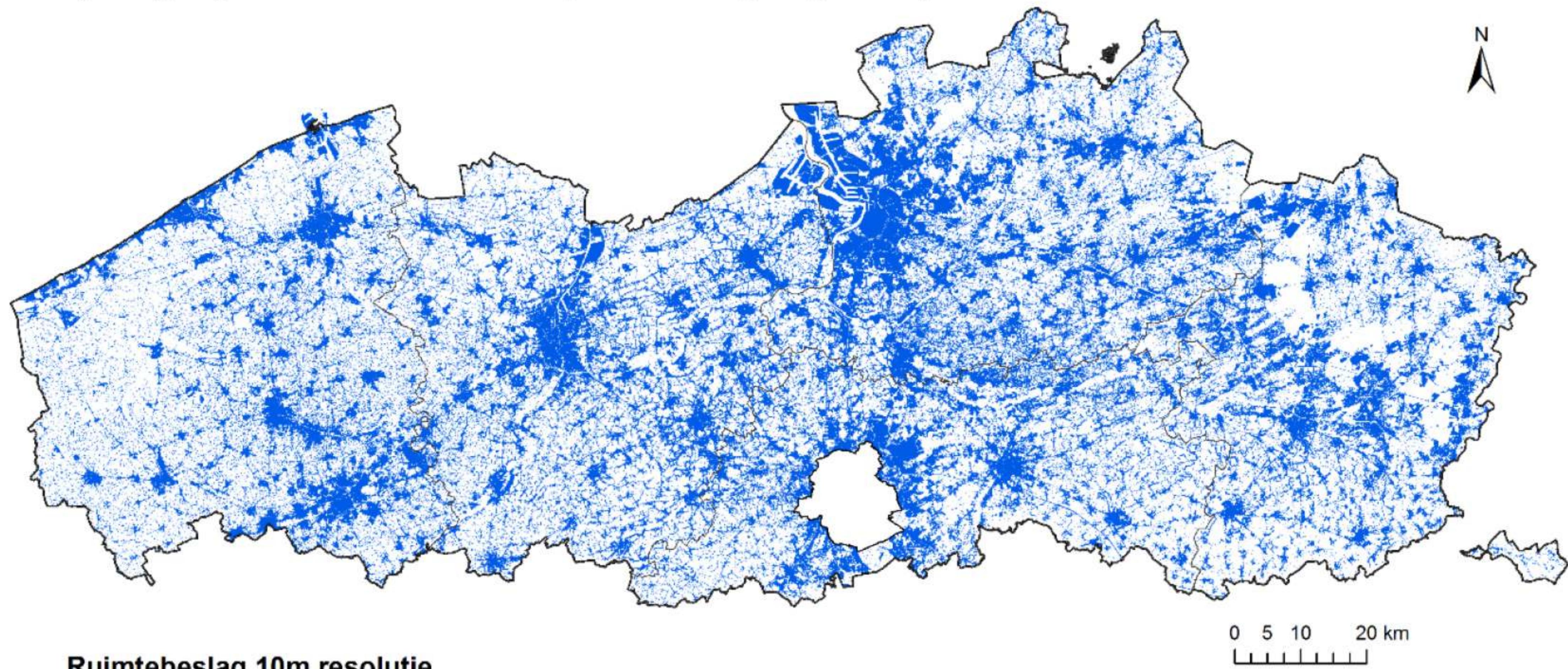
IETS NA 2100 ZAL DE WERELDBEVOLKING EINDELJK IN AANTAL BEGINNEN AFNEMEN
ALS WE AAN ELKE SOORT PLANT, MENS EN DIER EEN GEZONDE HOEVEELHEID ECOSYSTEEMRUIMTE WILLEN GEVEN DAN KAN DE AARDE
1 MILJARD MENSEN AAN (footprint USA vandaag), 2 à 3 MILJARD MENSEN (footprint Europa vandaag) en 3 à 4 miljard mensen (zero CO2 uitstoot en weinig vlees eten)

Number of deaths by cause, World, 2017

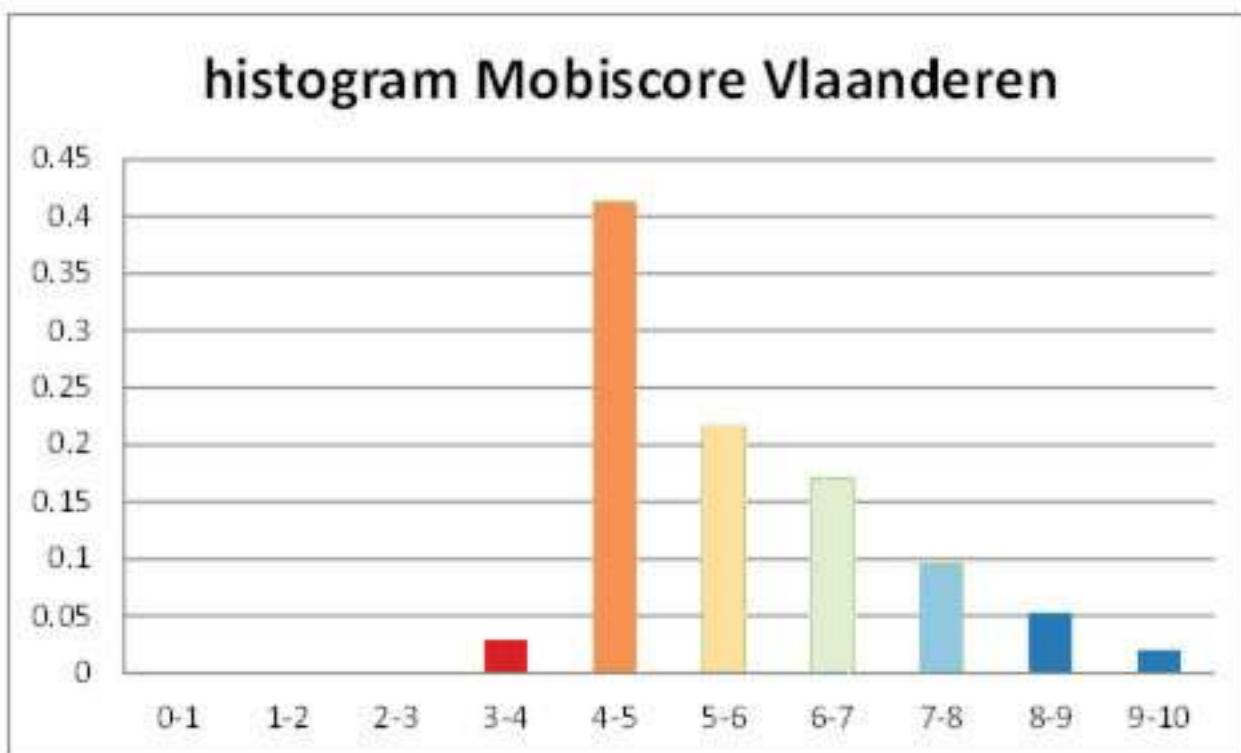


Figuur 16 Ruimtebeslag, toestand 2016

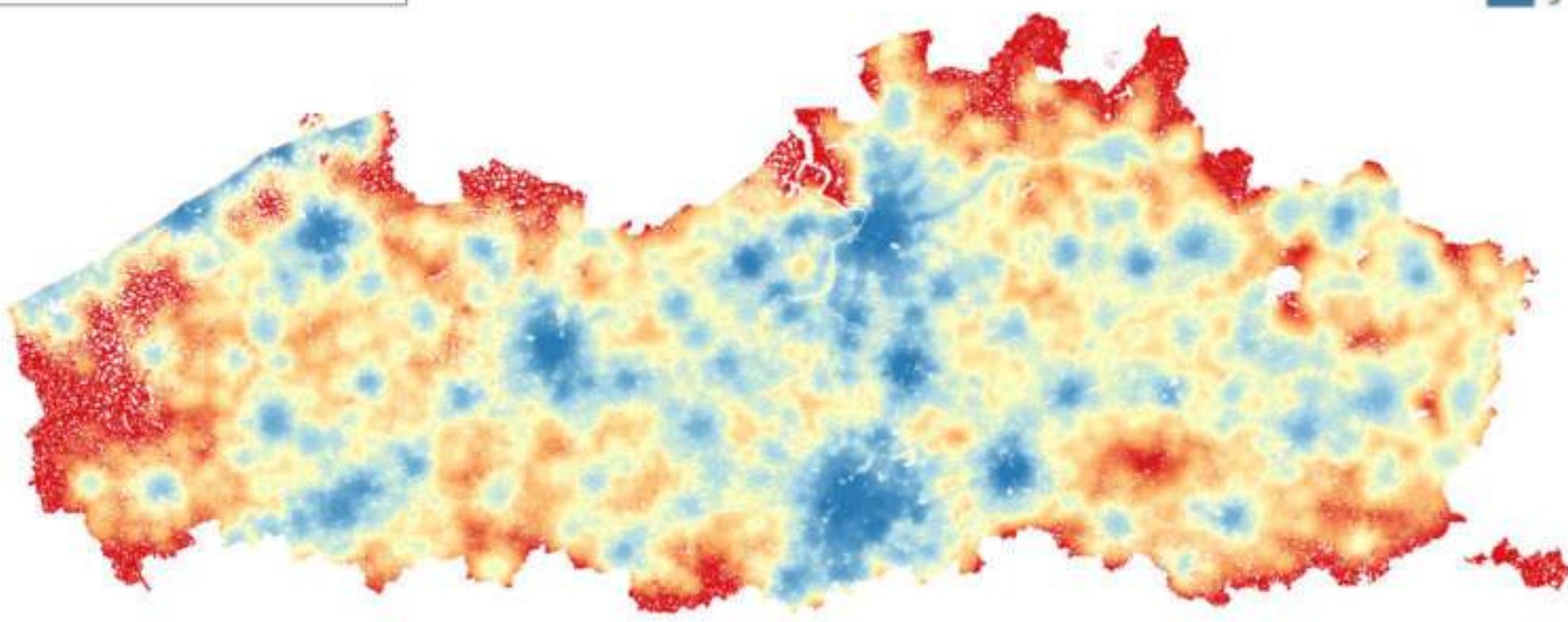
34% (meting volgens definitie EU - studie departement omgeving & VITO)



Mobiscore



4
5
6
7
8
9



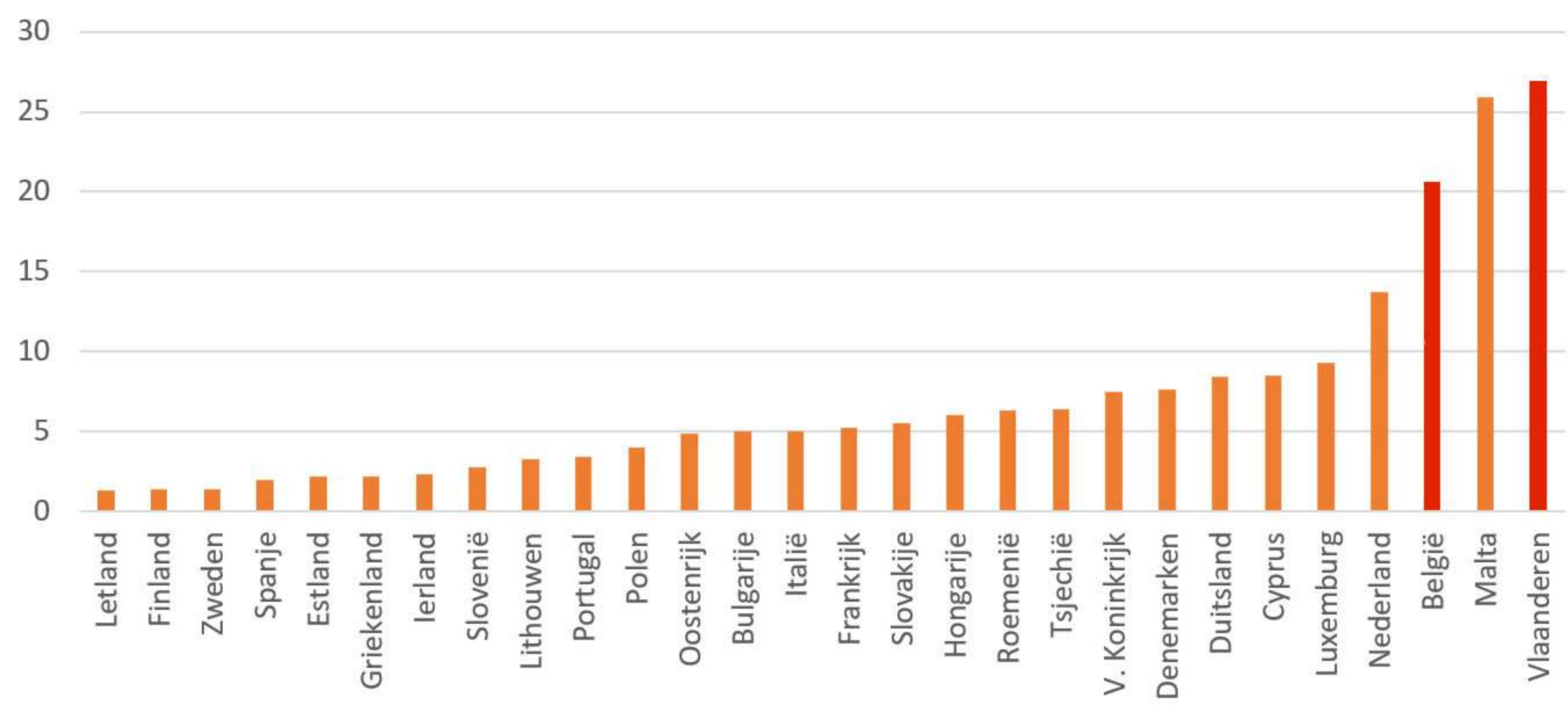


Fig 6. Ruimtebeslag EU27 (% totale oppervlakte, 2006) volgens de definitie van het Europees Milieuagentschap, vergeleken met Vlaanderen, dit volgens dezelfde definitie (naar Engelen, 2016).



ardennen



tuin



150.000 euro



bungalow



boerderij



koop west vlaanderen



magazijn



vlaamse Ardennen



landbouwgrond



villa



belgie



hoeve



Huis te koop - west-vlaanderen ...
immoweb.be



Zo ziet een woning van 150.000 euro ...
zimmo.be



Cottage villa, instapklaar te koop ...
cosyhome.immo



Huis te koop - oost-vlaanderen ...
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12 x Huizen te koop Antwerpen België ...
huisenaanbod.nl



Zo ziet een woning van 150.000 euro ...
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Karaktervolle villa met praktijkruimte.
engelvoelkers.com



Provincie Oost-vlaanderen (Gent, Aalst, ...
logic-immo.be



Huis bijgebouw provincie oost ...
huizen.trovit.be



Vlaanderen - Antwerpen - Hoogstraten ...
huisenaanbod.nl



Landelijk gelegen hoeve met bijgebouw ...
engelvoelkers.com



Uitzonderlijk vastgoed te koop - oost ...
immoweb.be



72 x Huizen in België te koop
huisenaanbod.nl



Huis te koop Roeselare in West-Vlaanderen
exclusievewoningen.be



Zo ziet een woning van 150.000 euro ...
zimmo.be



Te koop luxe huizen in Provincie We ...
nl.luxuryestate.com



Huis te koop Brugge te Loppem in West ...
exclusievewoningen.be



Te koop boerderij in Provincie Oost ...
huizen.trovit.be



Huis te koop in Beernem - Dewaele ...
dewaele.com



Instapklare woning met 3 slpk's en ...
cosyhome.immo



Provincie Oost-vlaanderen (Gent, Aalst ...
logic-immo.be



Grandjean Immobilier - Agence ...
grandjeanimmobilier.be

vendre - brabant wallon (provin...
immoweb.be)

La Maison Wallonne – Vendre votre bie...
lamaisonwallonne.be

Maison à vendre à Visé (Richelle)
immoachat.be

Maisons à vendre avec terrain | Maisons ...
maisonscompere.be

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renaissanceproperties.be

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realo.be



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Maison plain-pied à vendre Belgique ...
maisonscompere.be

vente de maisons en Belgique ...
seloger.com

Agence immobilière - Vente de maisons ...
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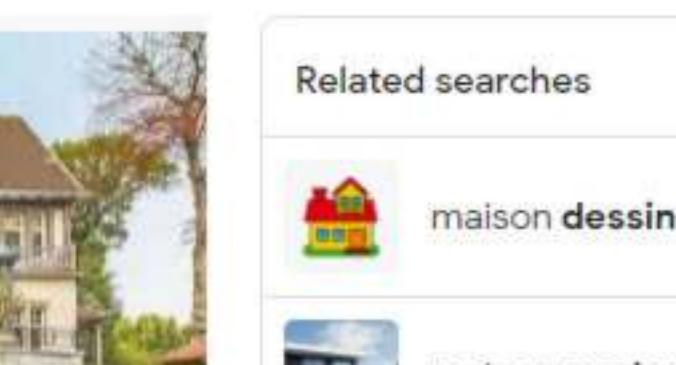
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etang a vendre brabant wallon ...
proprietes-etangs-a-vendre.com



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maison moderne

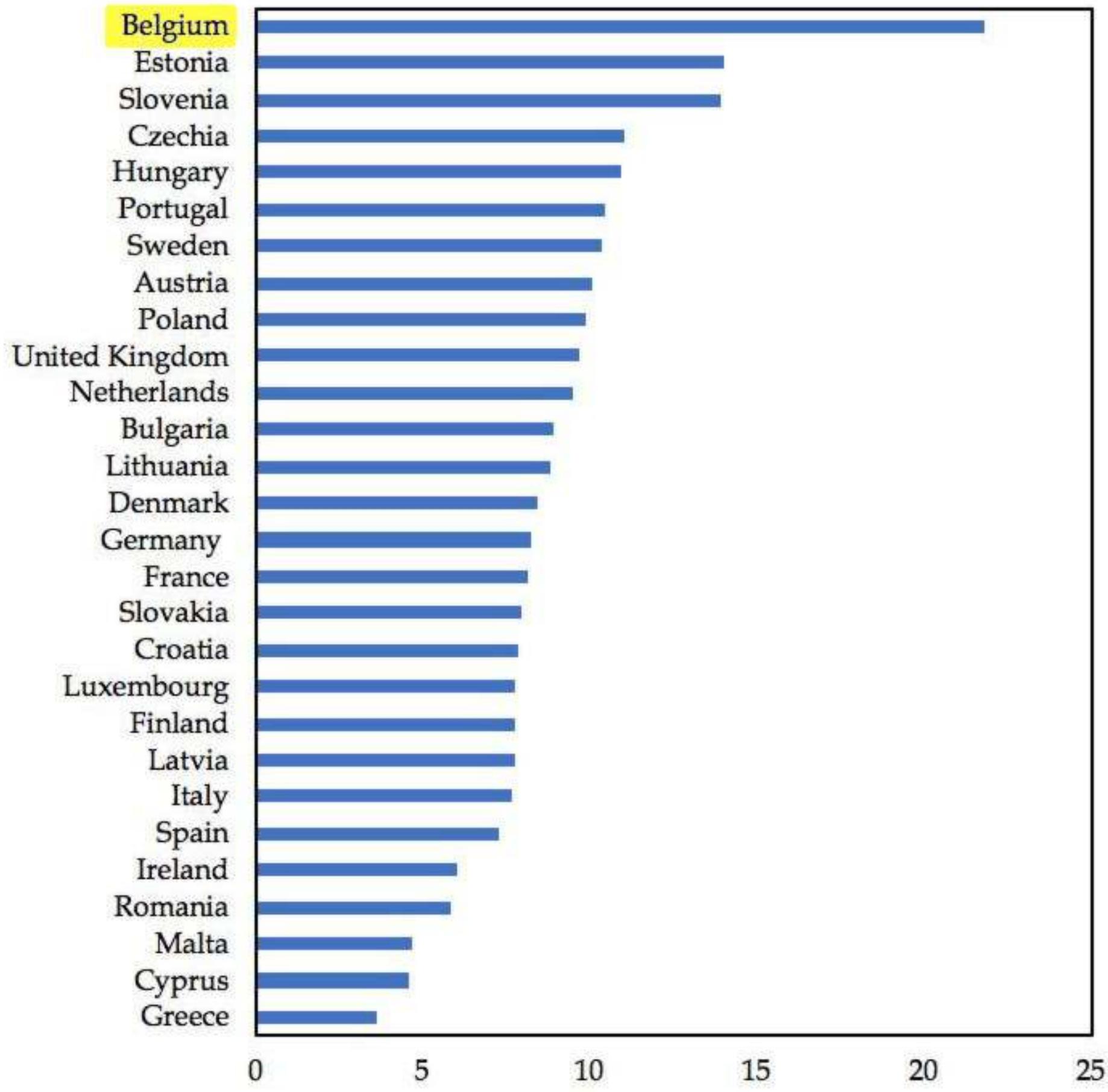
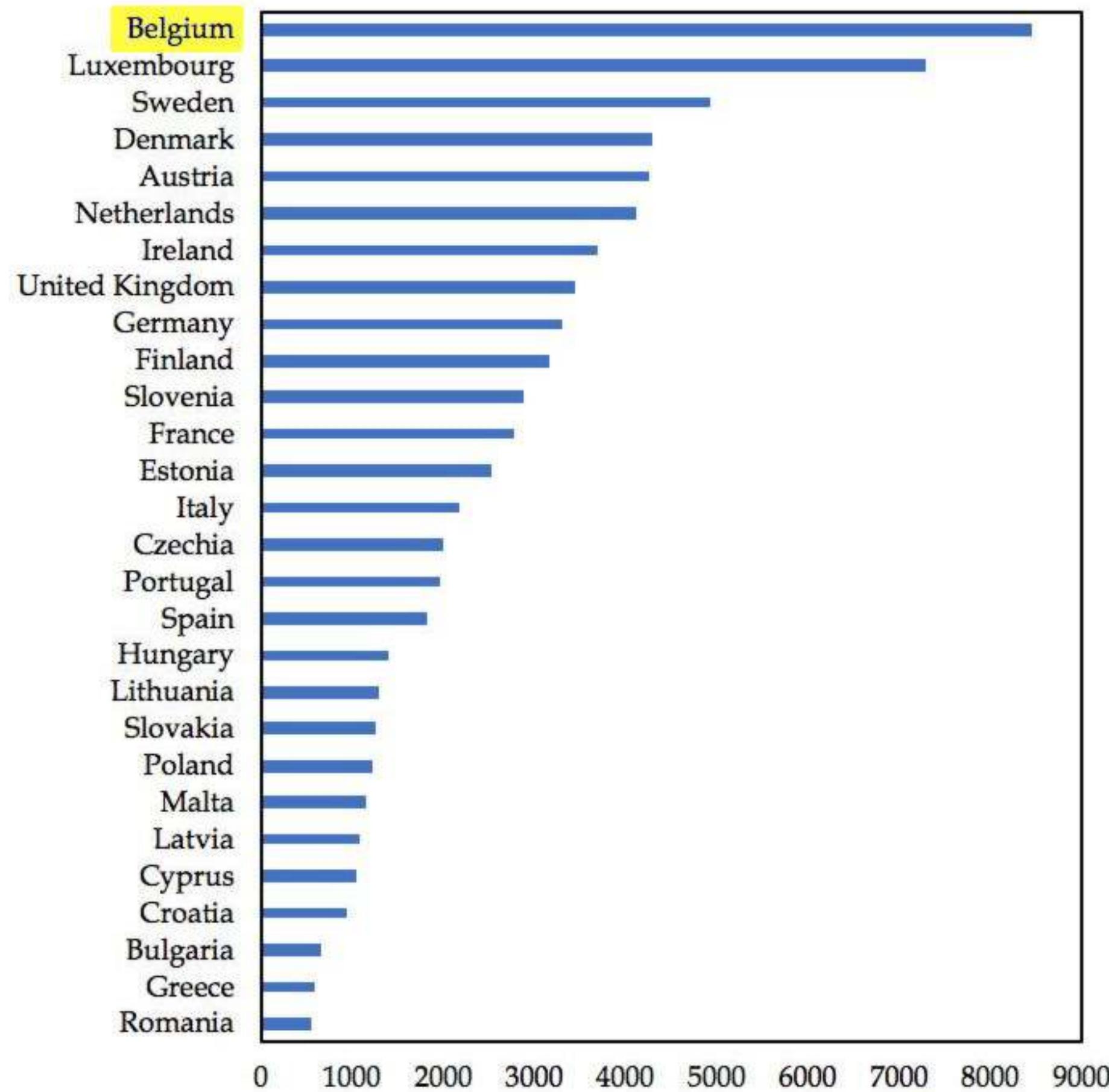


Chart. Turnover of sales of vehicles & parts compared to population (per capita) and GDP (%). Source: Eurostat.

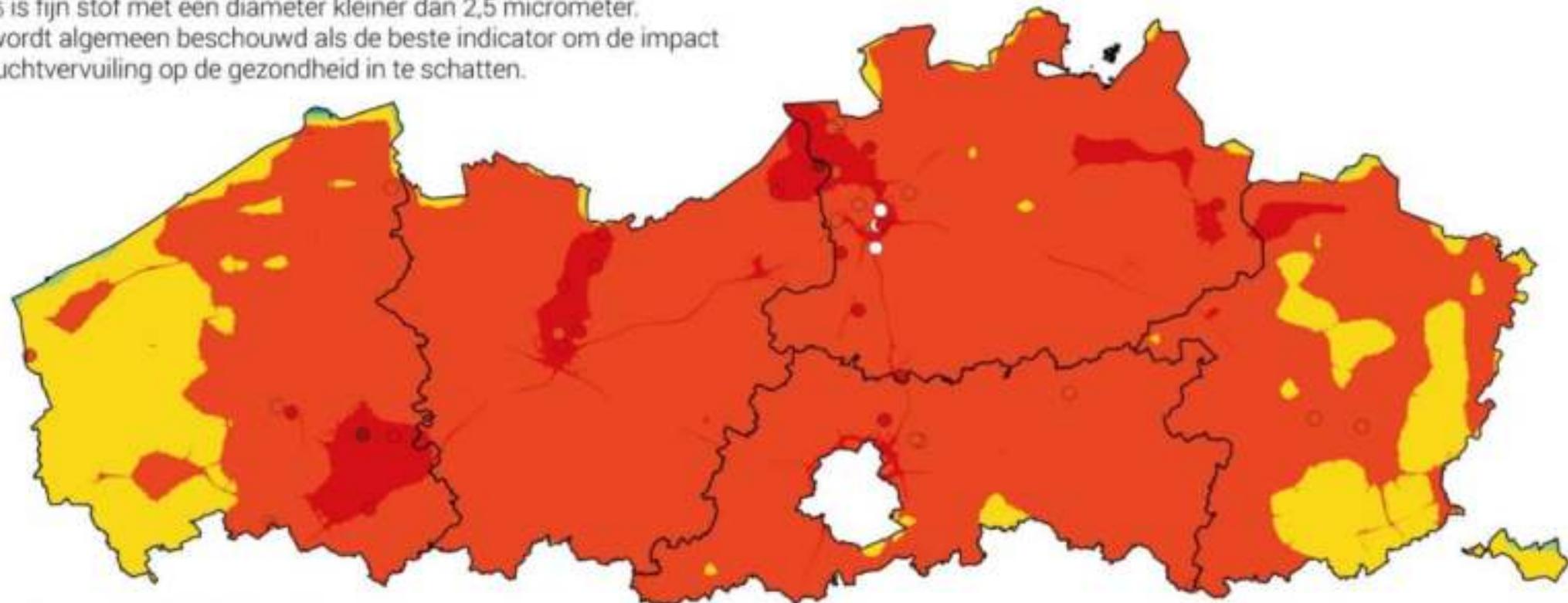
VAN ALLE EUROPESE LANDEN GEEFT BELGIE - ZOWEL PRO CAPITA ALS IN % VAN HET BBP - HET MEEST GELD UIT AAN AUTO'S

Vlaanderen buist voor WHO-norm fijn stof

De Wereldgezondheidsorganisatie (WHO) legt voor het jaargemiddelde een grenswaarde op van hoogstens 10 microgram per kubieke meter.

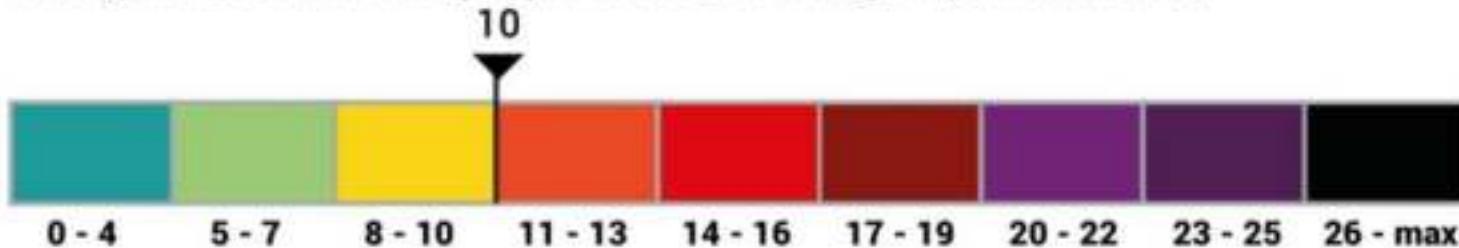
PM_{2.5} is fijn stof met een diameter kleiner dan 2,5 micrometer.

Het wordt algemeen beschouwd als de beste indicator om de impact van luchtvervuiling op de gezondheid in te schatten.

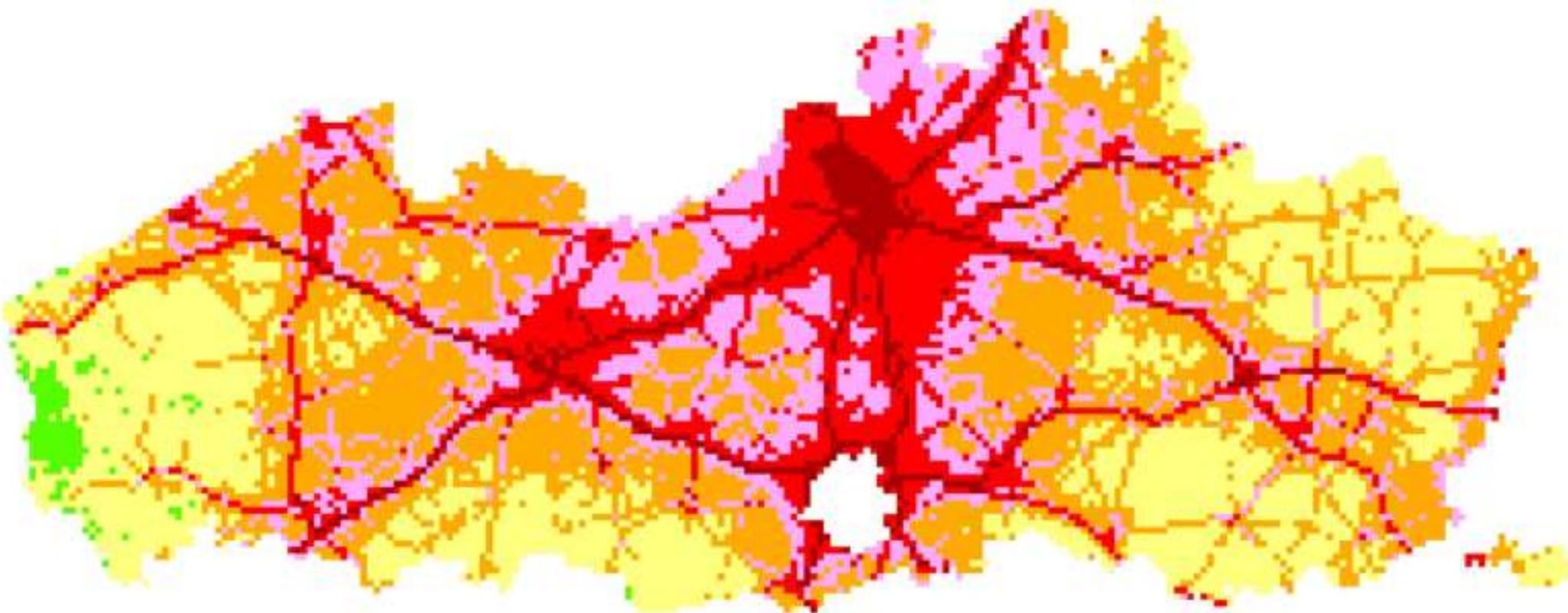


PM_{2.5}-jaargemiddelde in 2015

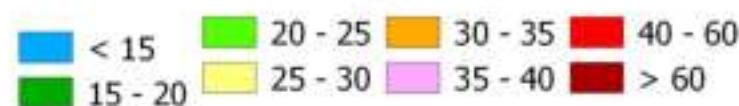
WHO-grenswaarde voor PM_{2.5}-jaargemiddelde is 10 microgram per kubieke meter

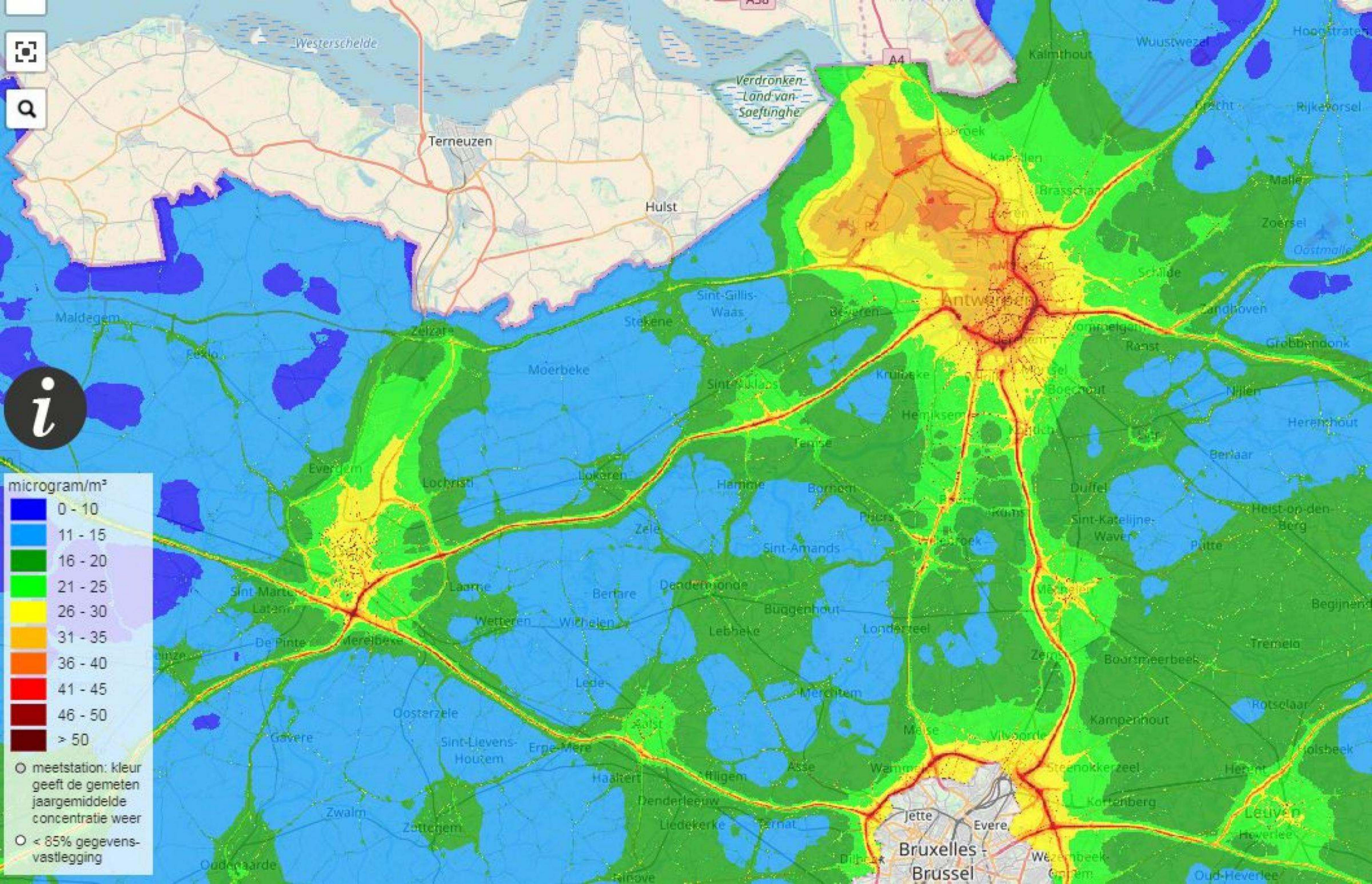


Bron: Jaarrapport lucht 2015, Vlaamse Milieumaatschappij



NOx concentratie ($\mu\text{g}/\text{m}^3$)

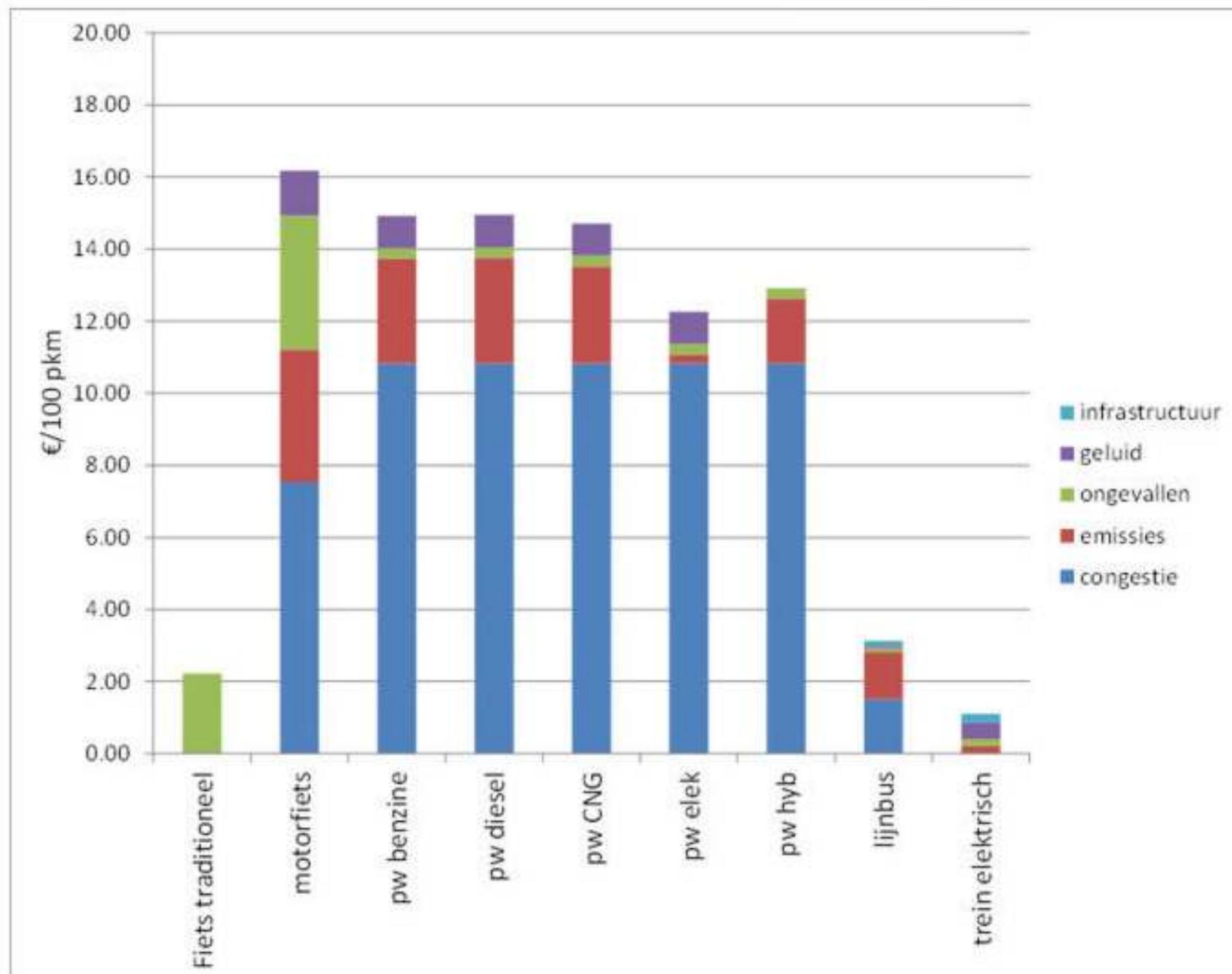




Milieukost

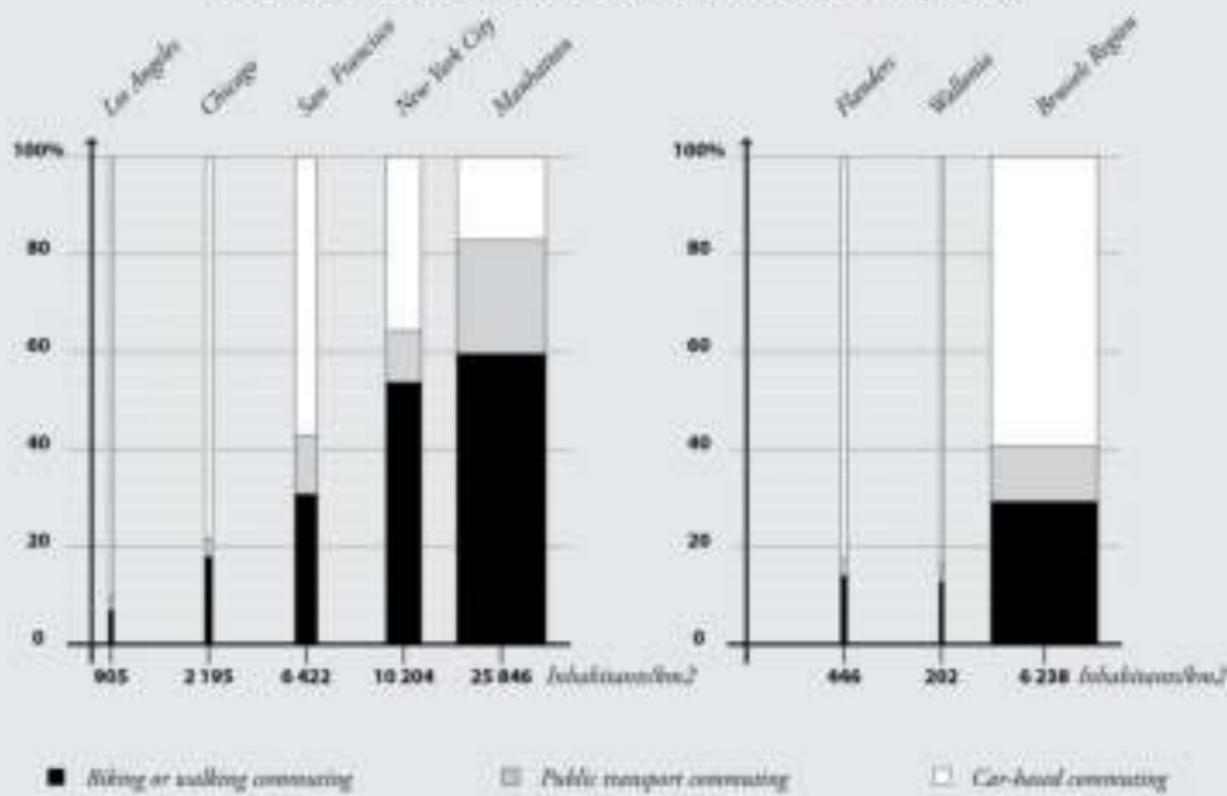


Vlaanderen
is omgeving



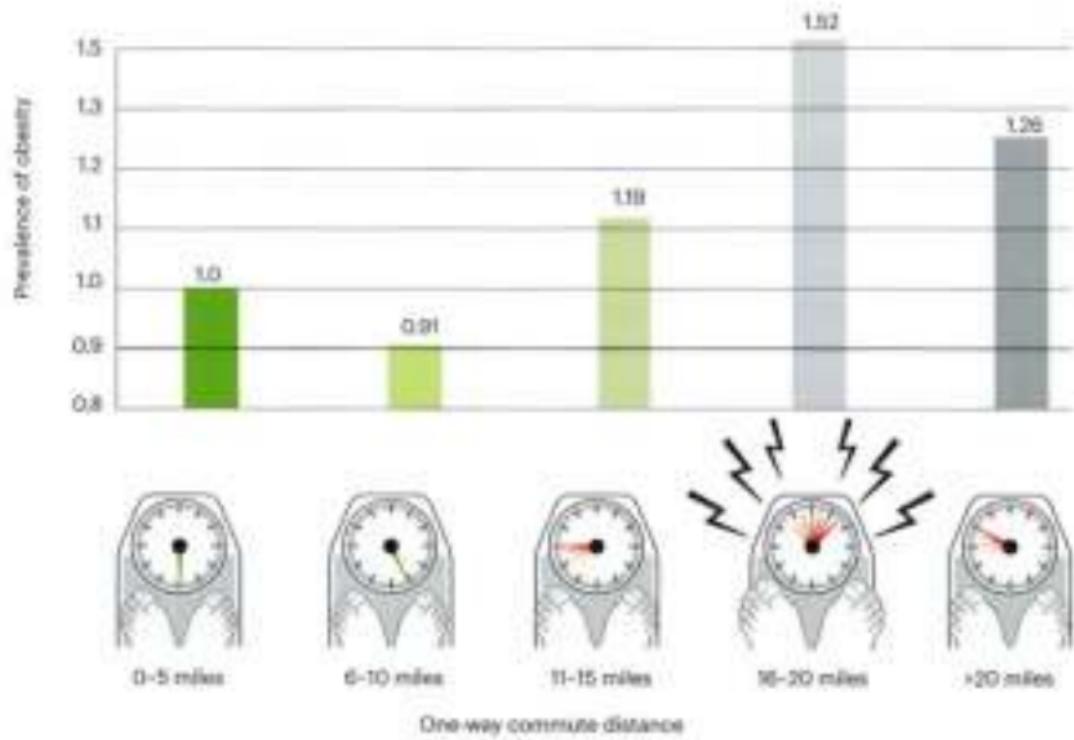
totale milieukost in euro per 100 personenkilometer
motorfietsen en personenwagens - zelfs elektrische - scoren slecht
fiets, trein en lijnbus scoren het best

RELATION BETWEEN DENSITY AND COMMUTING



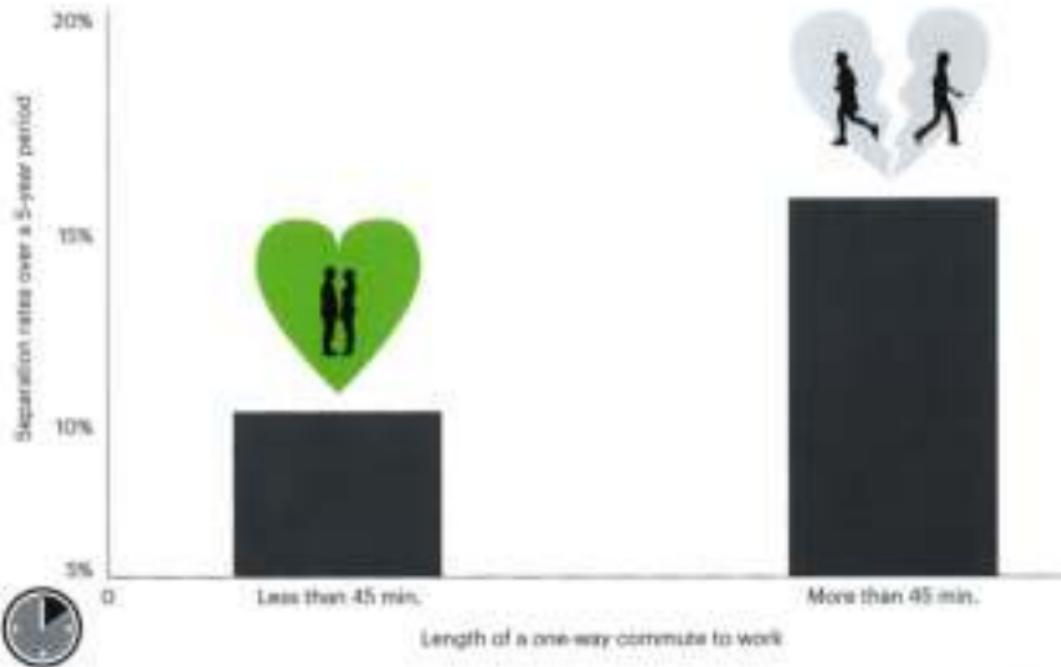
COMMUTING DISTANCE AFFECT PREVALENCE OF OBESITY

The work of Dr. Hoechner published in the American Journal of Preventive Medicine recorded that the prevalence of obesity increases when people have longer commuting distances.



ROMANCE AND COMMUTING TIME

Long commutes put unnecessary strain on relationships. In a 10-year study of over 2 million Swedish couples, those with commute times of over 45 minutes each way experienced a 5% higher rate of separation or divorce than those who had shorter commutes.



Pendelaars lopen meer risico op een burn-out

BRUSSEL Druge lijka pendelen met de bus, trapje of fiets coopteert ons niet alleen met de zodige vertragingen en aankomsten. Wie meer pendelt dan twintig minuten per dag loopt ook meer risico op oververmoeidheid of een burn-out.

Van wege vermoeidheid word lange tijd gedacht dat het positieve kantteken had. Zo liep je voor je auto je dijkweg heerlijk langs water op en ontspande jezelf uit door je 's avonds na het werk meer uit te gaan. Nu blijkt dat het tegenovergestelde mogelijk.

STRESS

Canadese onderzoekers kunnen in 2.000 pendelaars onder de hulpdeskundigen zijn wat bewezen dat in de regio's rond Quebec. «Als de arbeidsdag al dan niet een zicke verontschuldiging is tussen pendelen, merken we dat dat kan op ons levensgehalte. Tegenvoerende!» Antwoort Jeanneke van de merkantie van Maastricht als vóór vertrekkende voorzitter van het verenigingsbestuur van verenigingsleven.

Die pendelaars die niet de auto maar grote stappen maken, zijn het meer geschoond. Mensen die net zolang het plezierhoofd rolleren, hebben dat weer minder stress. Gependeld, pagina's verloren meer stress dan de



Foto: AP

autobewoner zelf. «Geplaatste vertragingen kan groter van oorsprong zijn dan juist een constant gevoel van rukkelijk lichaam, nog meer zo op de werkdag zijn gestandaardiseerd.»

Wie dat vermoeden heeft, al dan niet het openbaar vervoer, wordt zich zonder gedwongeniging aan de werkdag. Dat geldt zeker voor plattelandsbewoners, mensen die in plaats van het platteland zijn zonder goed bedoeld, waardoor een aantal vertragingen dagelijks kan zijn. Pendelaars kunnen daarom maar liefst 10 minuten van oververmoeidheid voorzien die werkplicht. Vlakbijna, het tegenovergestelde geldt voor de

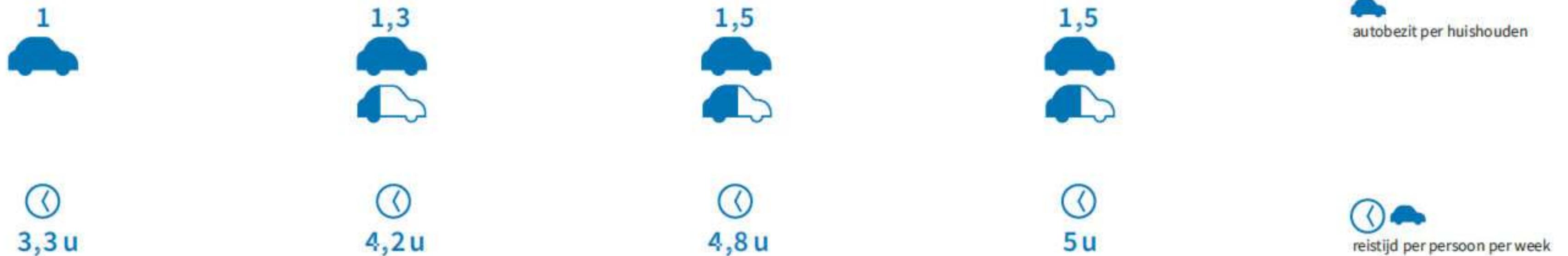
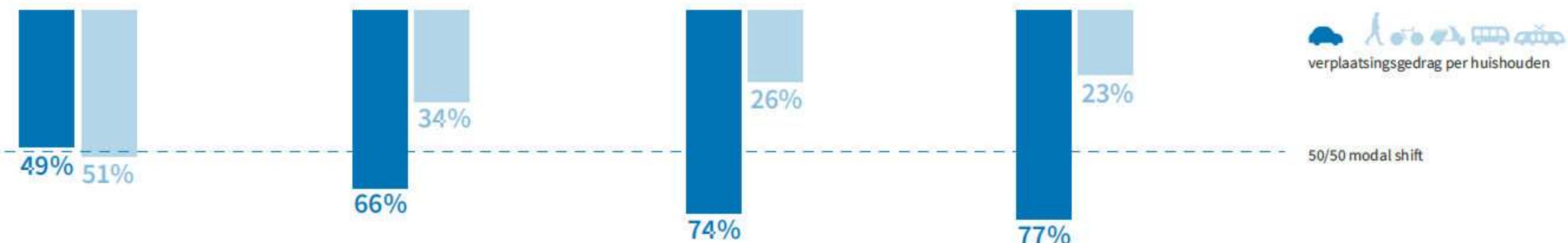
bus- en treinreizigers die grote afstandseindigen.

CYCLISTEN

Wie langer dan 30 minuten aflegt naar het werk, zal zich langzaam maar zeker cyclus gedragen op het werk.

Blaauw beschrijft dat het de last is van vertragingen aan de structuurverbetering die daarvan. De onderstaande zijn het resultaat van flexibele werktijden nadat mensen buiten de parkerplaats mocht parkeren. «Ook flexibele werktijden vereisen vertragingen die parkerplaatsen en auto beschouwen in staat om optimaal te werk te kunnen.» ■







Urban Sprawl: Get Fat, Stay Poor, And Die In Car Crashes

A new report has linked sprawl and its related problems to obesity, poverty, and death.

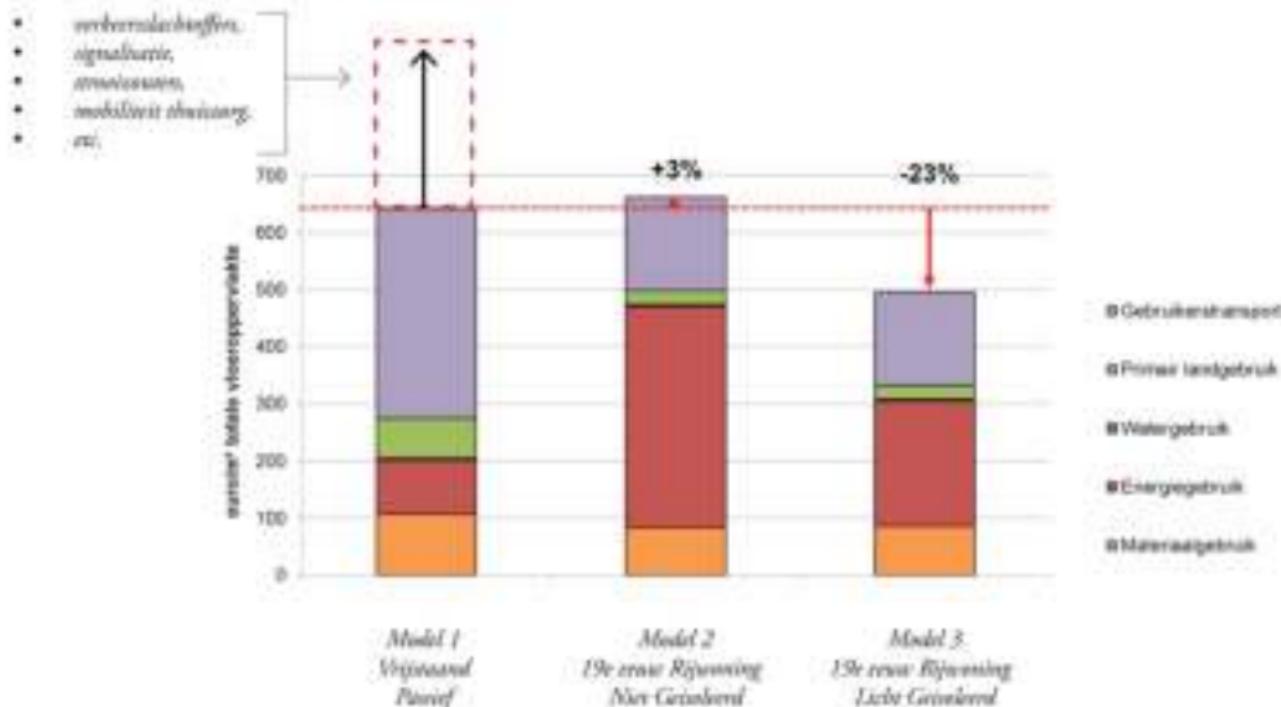
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100

SLICKER CITY

COMMERCIAL SPACES, SUBURBAN HOUSING, AND CAR OWNERSHIP ARE THE THREE KEY FACTORS THAT MAKE CITIES AND SUBURBS SO UNHEALTHY. HERE'S HOW THEY WORK, AND HOW YOU CAN USE THEM TO YOUR ADVANTAGE.

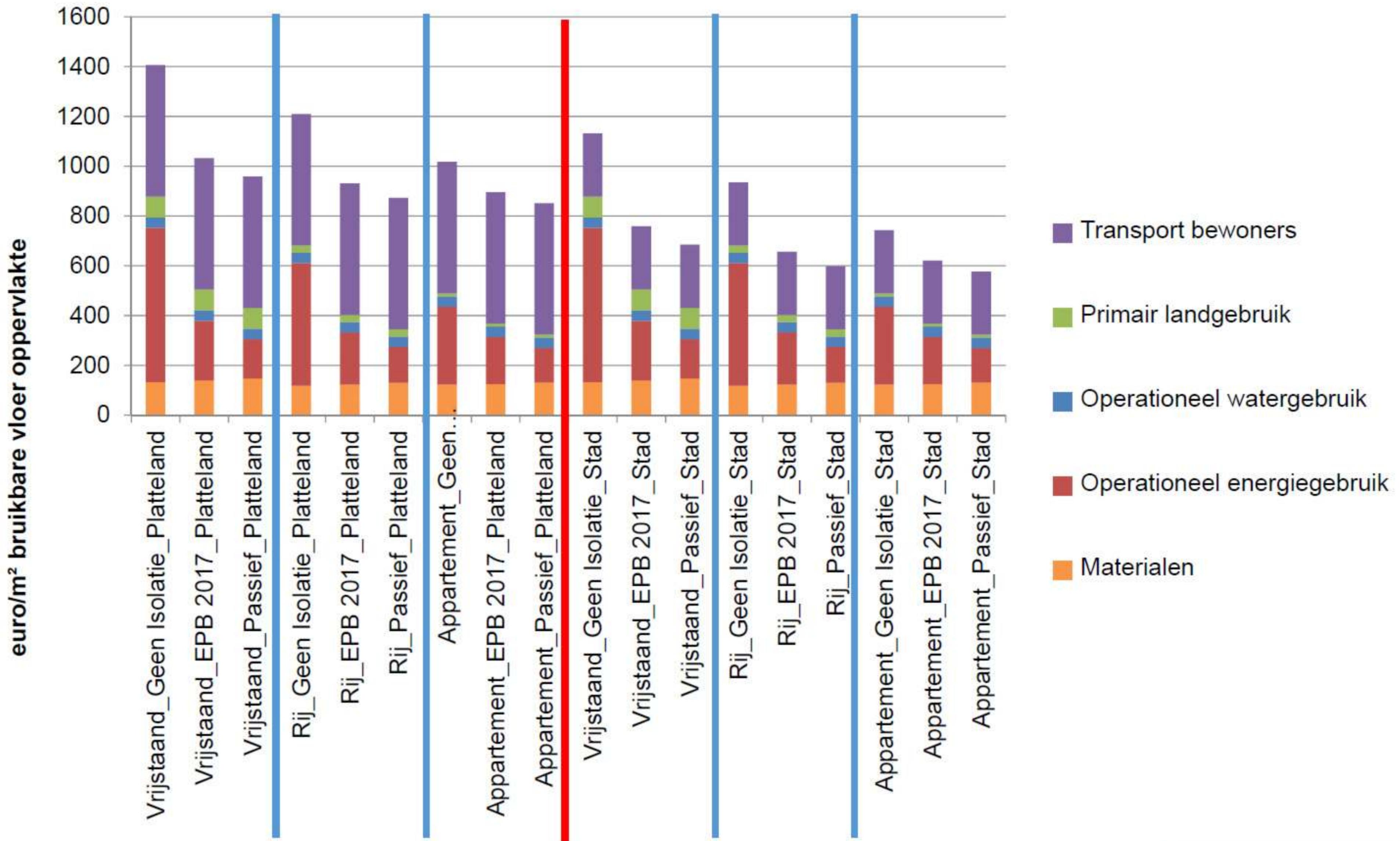


MILIEU IMPACTBEREKENING



DE TOTALE MILIEU IMPACT VAN EEN VRIJSTAANDE PASSIEFWONING
IS GELIJK AAN DIE VAN EEN NIET THERMISCH GEISOLEERDE 19E EEUWSE RIJWONING

Stedenbouw & ruimtelijke ordening (MMG)



KU LEUVEN

AVERAGE CARBON EMISSIONS PER HOUSEHOLD BY SELECTED NEIGHBORHOOD TYPES



EXURBAN AVERAGE

0.7 to 1 dwelling units per acre
26.5 jobs per acre



8.47
tons

Annual carbon emissions
per household



SUBURBAN AVERAGE

3 to 4 dwelling units per acre
72 jobs per acre



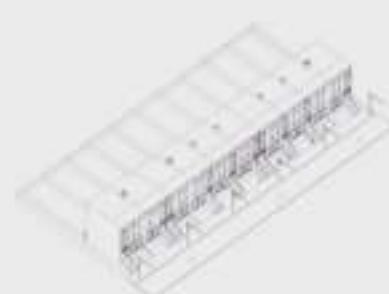
5.25
tons

Annual carbon
emissions per household



URBAN AVERAGE

30+ dwelling units per acre
268 jobs per acre



4.2
tons

Annual carbon
emissions per household



CARLESS URBAN AVERAGE

60+ dwelling units per acre
1,049 jobs per acre

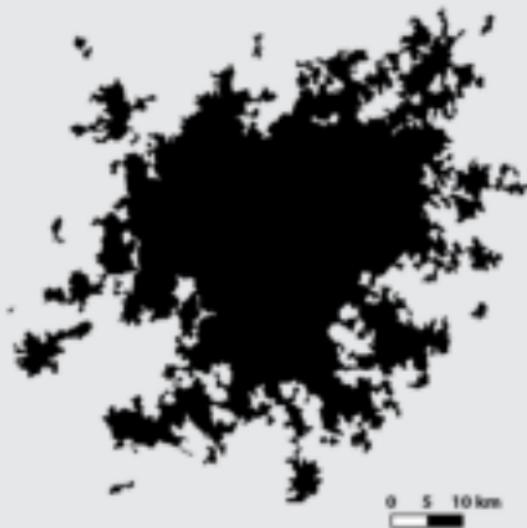


1.29
tons

Annual carbon
emissions per household

TRANSPORT EMISSIONS

ATLANTA



BARCELONA



Population	Urban area	Transport carbon emission p.c.
5.3 million	7,692 km ²	6.9 tonnes

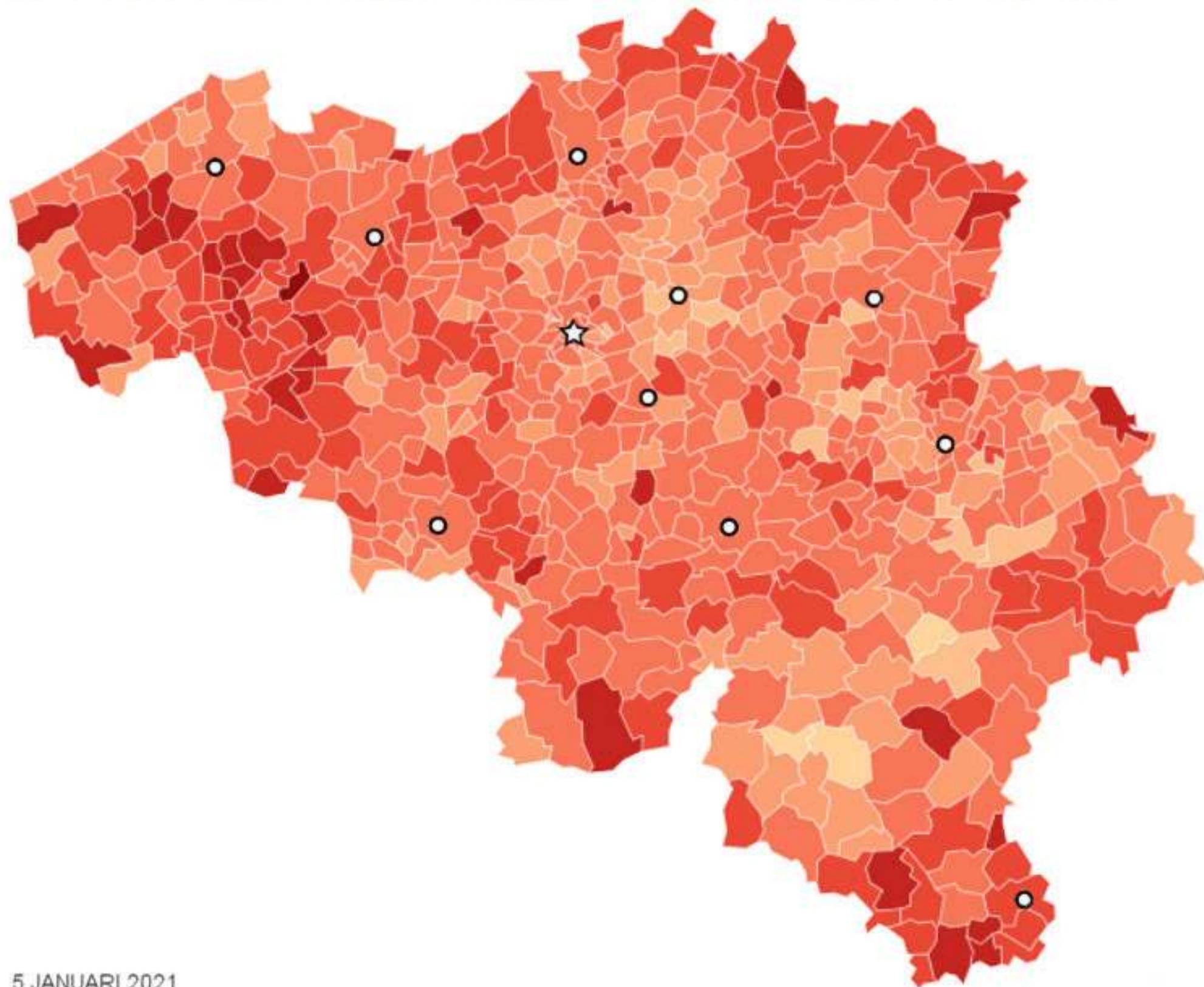
Population	Urban area	Transport carbon emission p.c.
5 million	648 km ²	1.16 tonnes

More compact development can reduce transport emissions by order of magnitude

Coronabesmettingen per gemeente

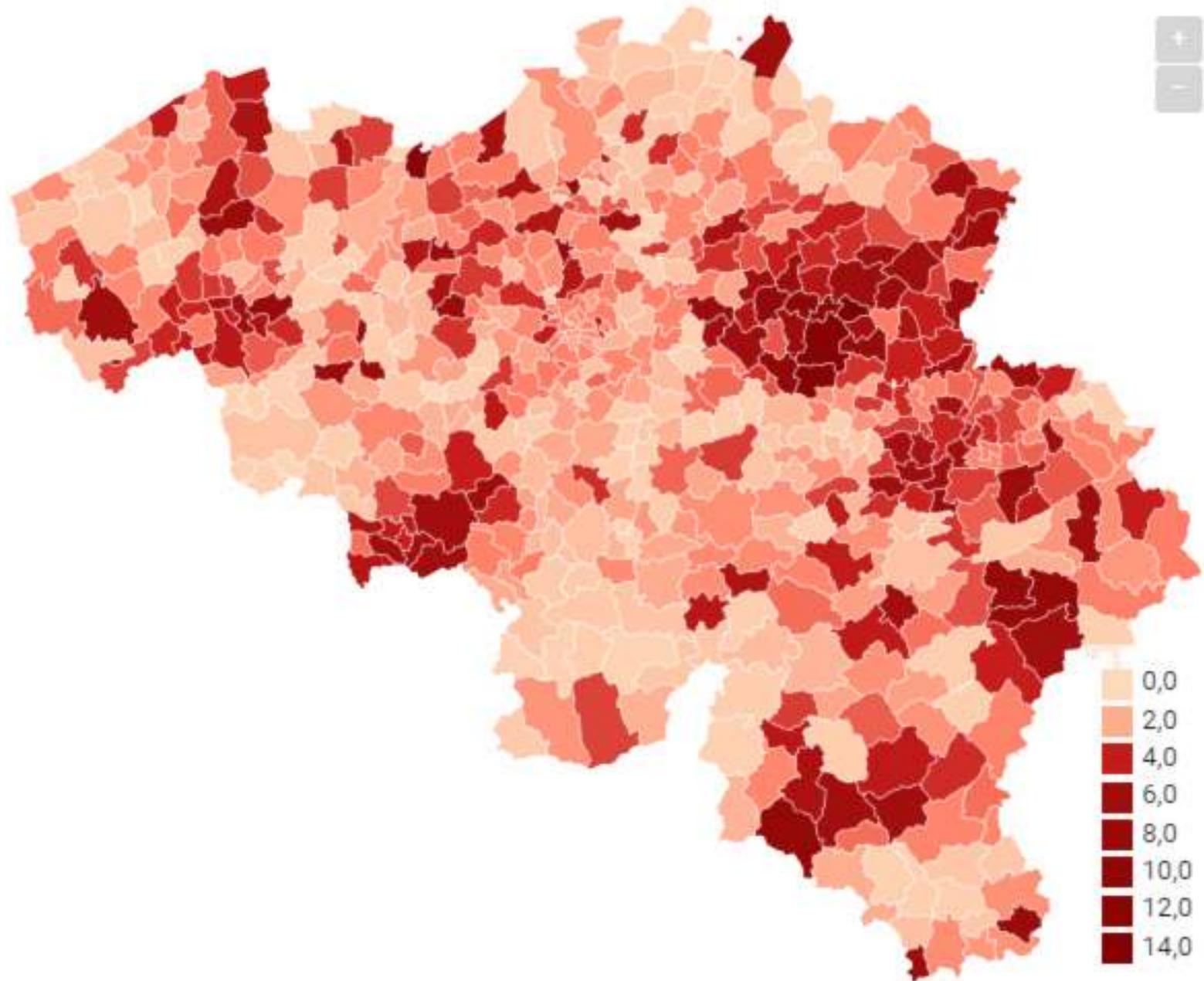
Besmettingen laatste twee weken per 100.000 inwoners

240 - hoogste Europese drempel



5 JANUARI 2021

Aantal besmettingen per gemeente per 1.000 personen

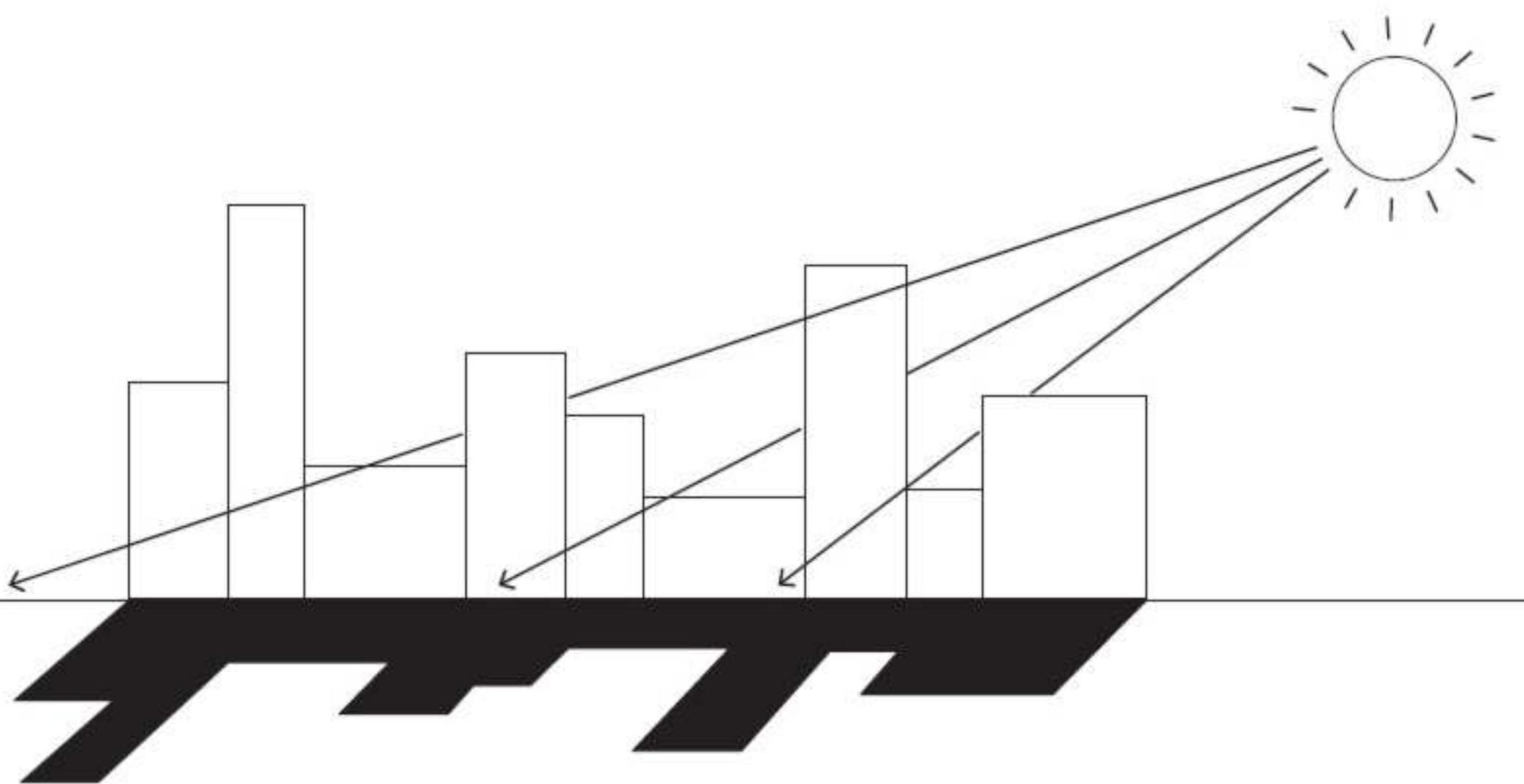
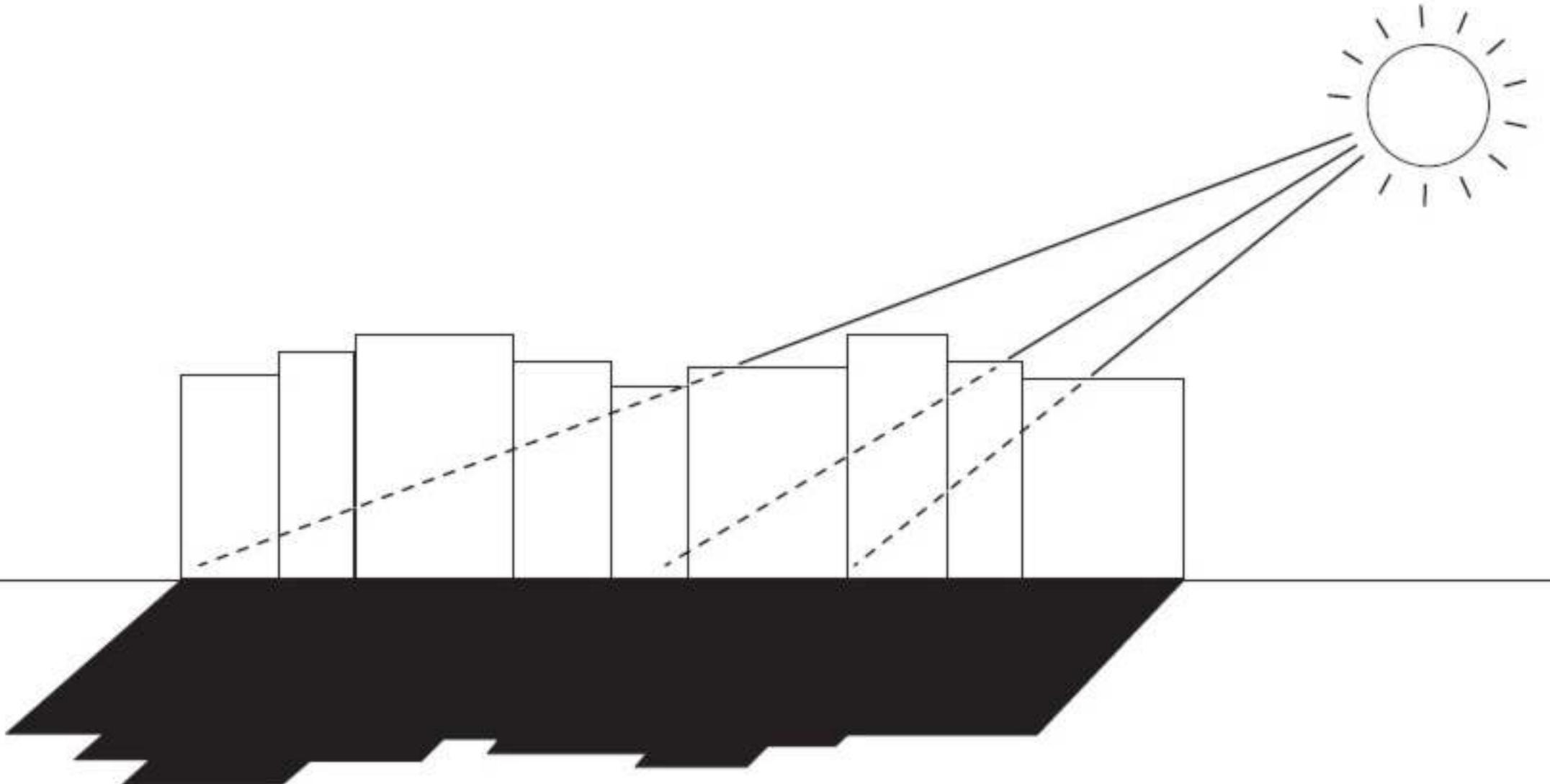


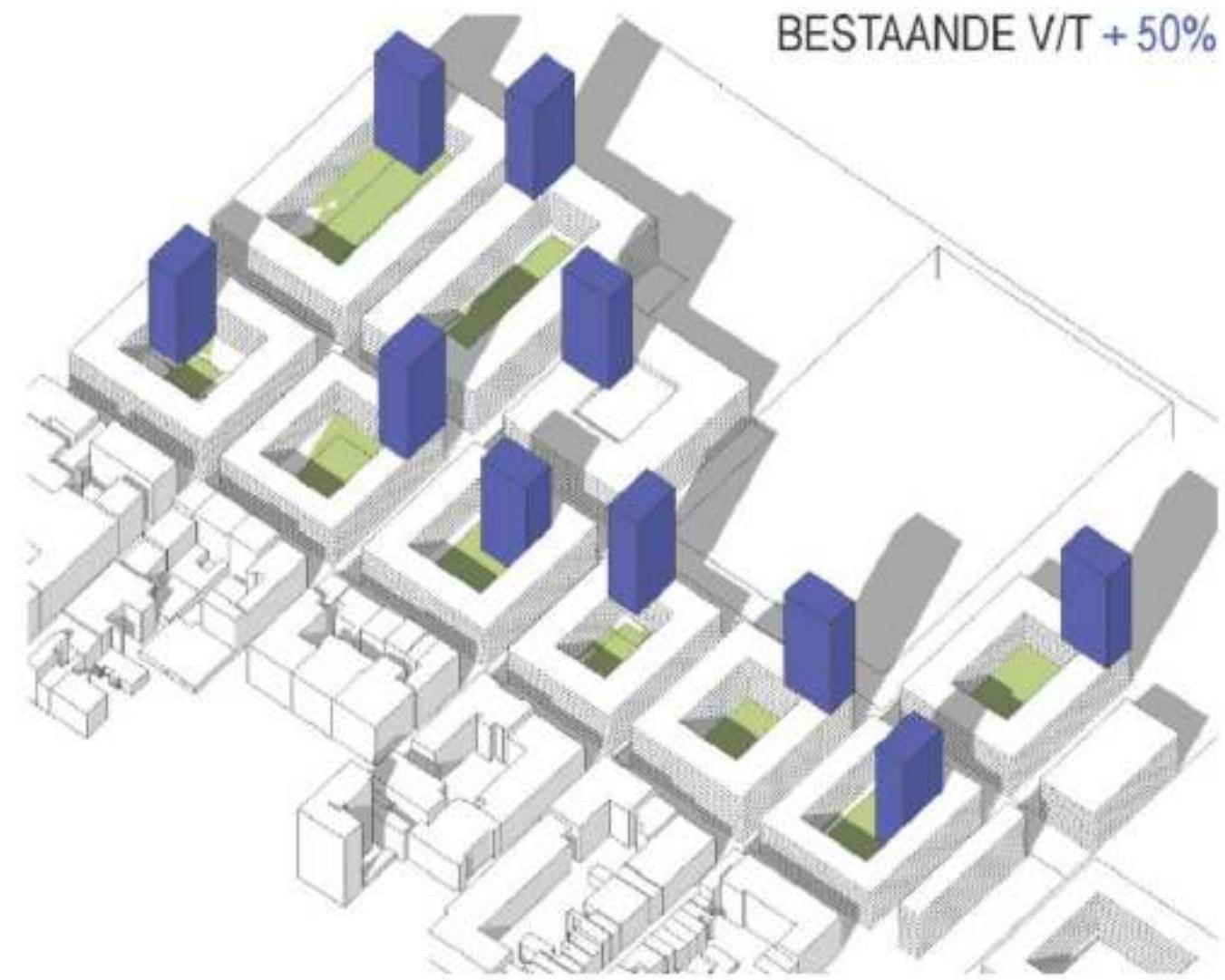
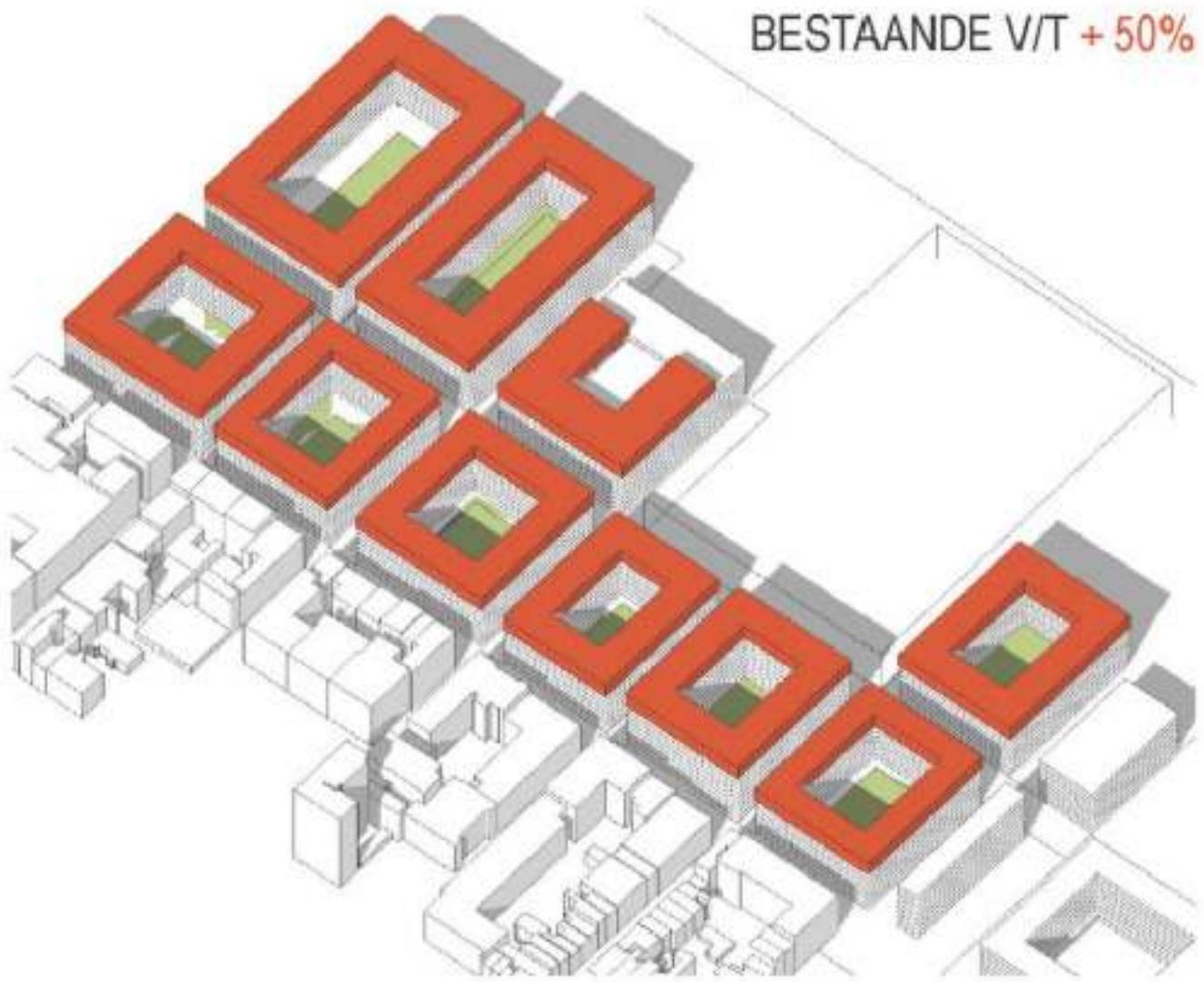


Typical wild nature in the Belgian gardens

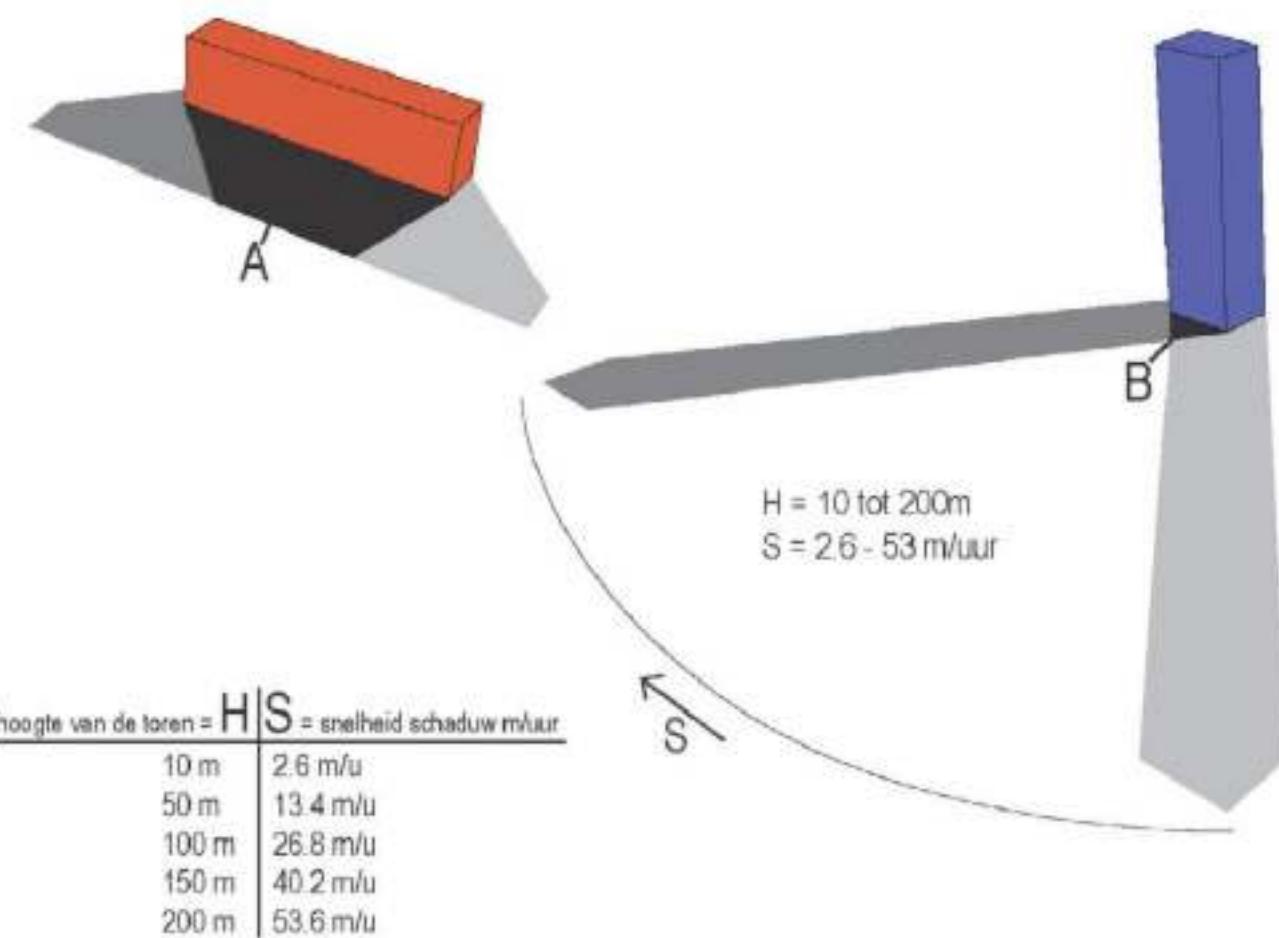
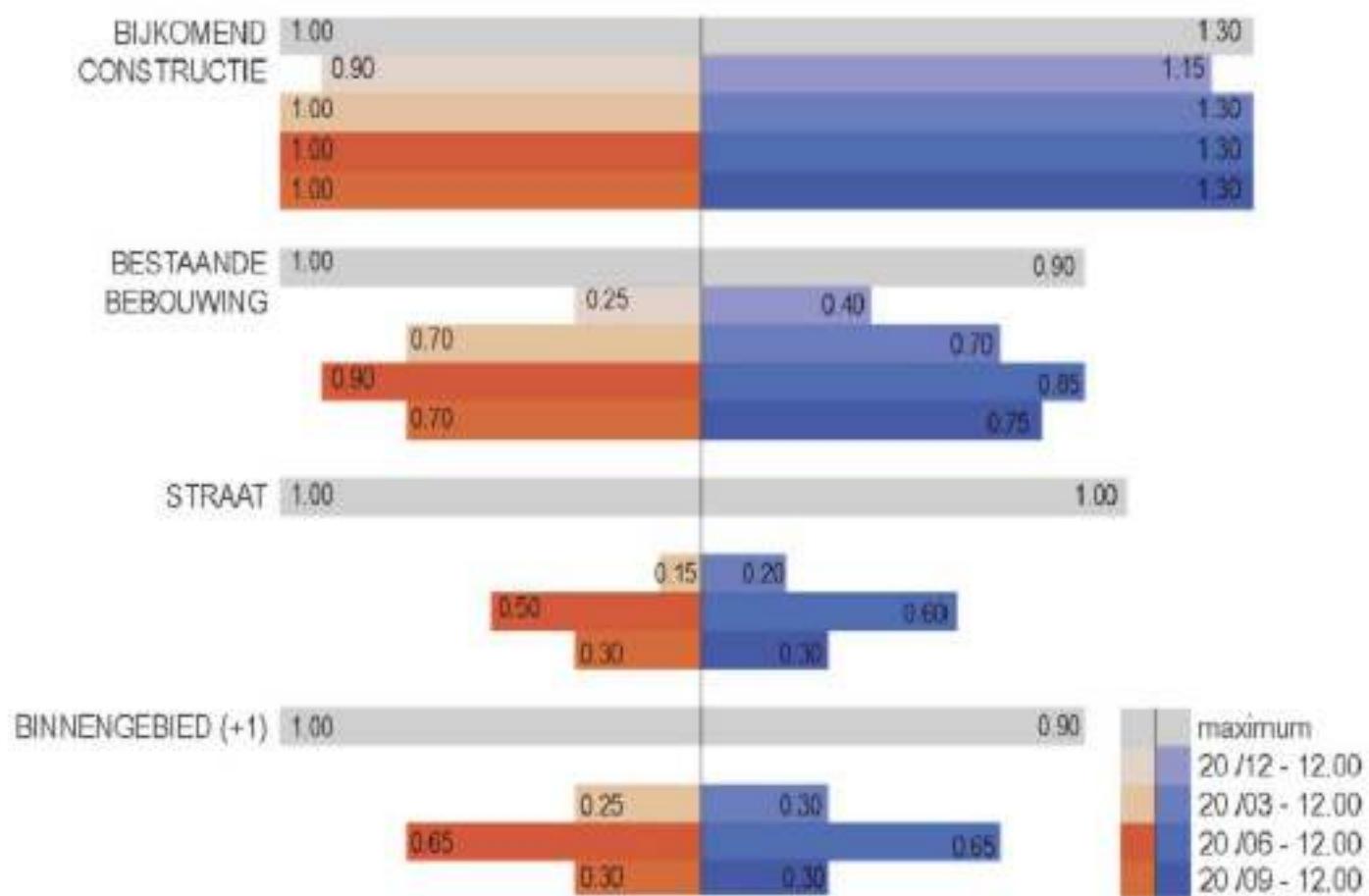








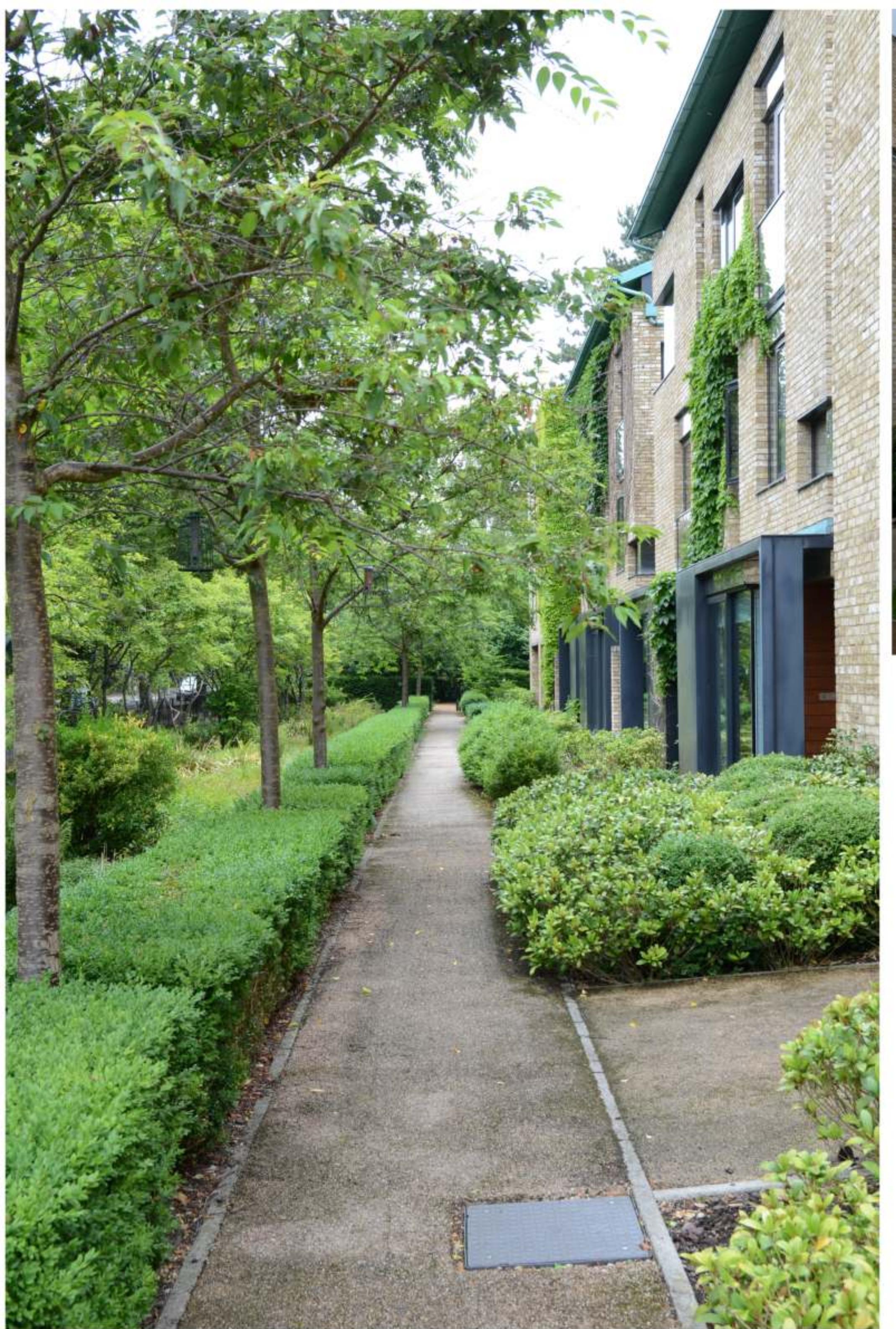
BEZONDE OPPERVLAKTE





BROOKLANDS AVENUE, CAMBRIDGE, FOR LIGHTFIELD PROPERTIES PLC

SITE MASTERPLAN - REVISED 11 MARCH 2013
MANCHESTER LAVENDER ARCHITECTS, ALBION BROOK ARCHITECTS, GRANT ASSOCIATES, FULHAM CROSS BRASLEY ARCHITECTS LLP













Roseni

7

Laudsepabõokoda

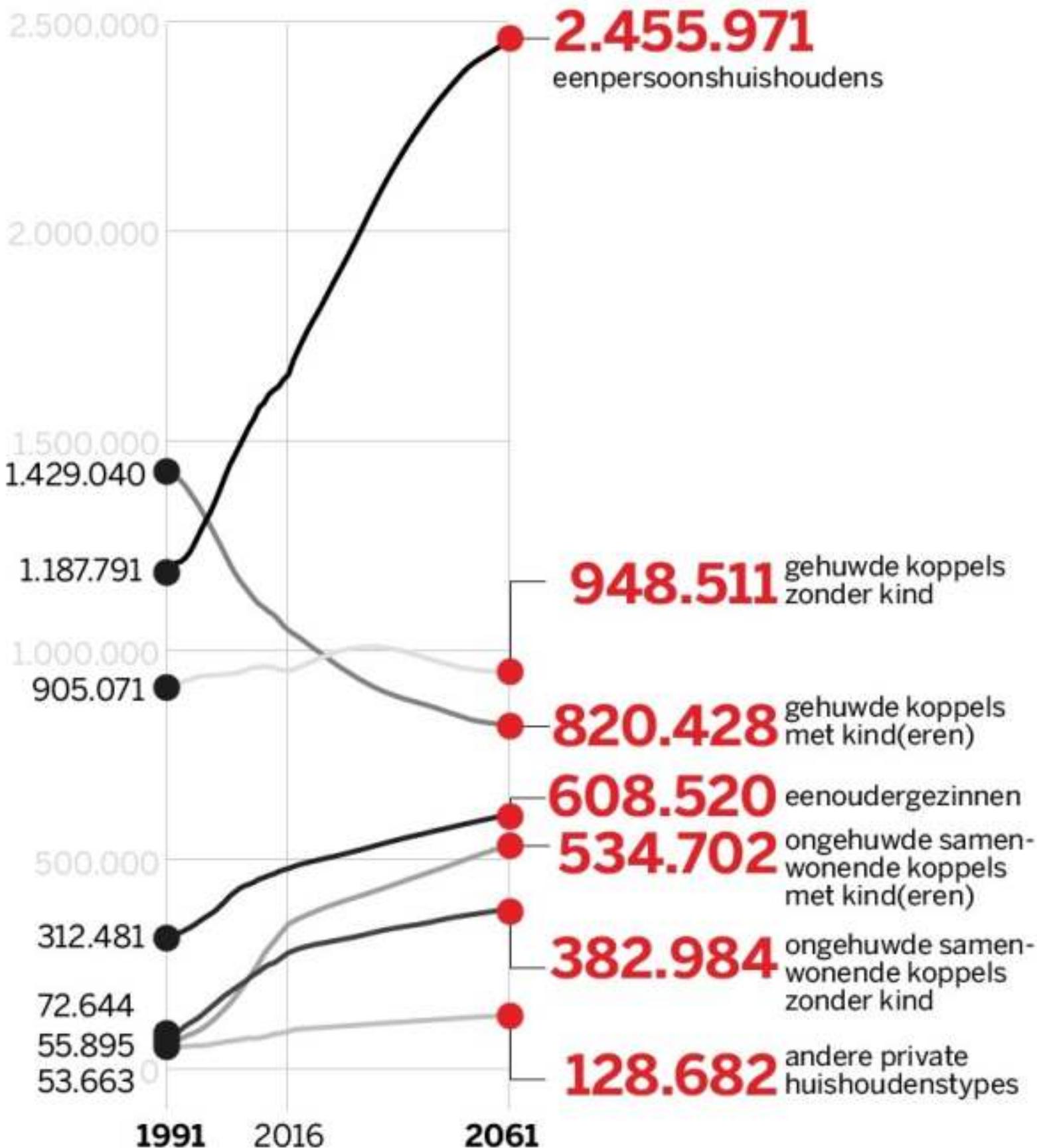
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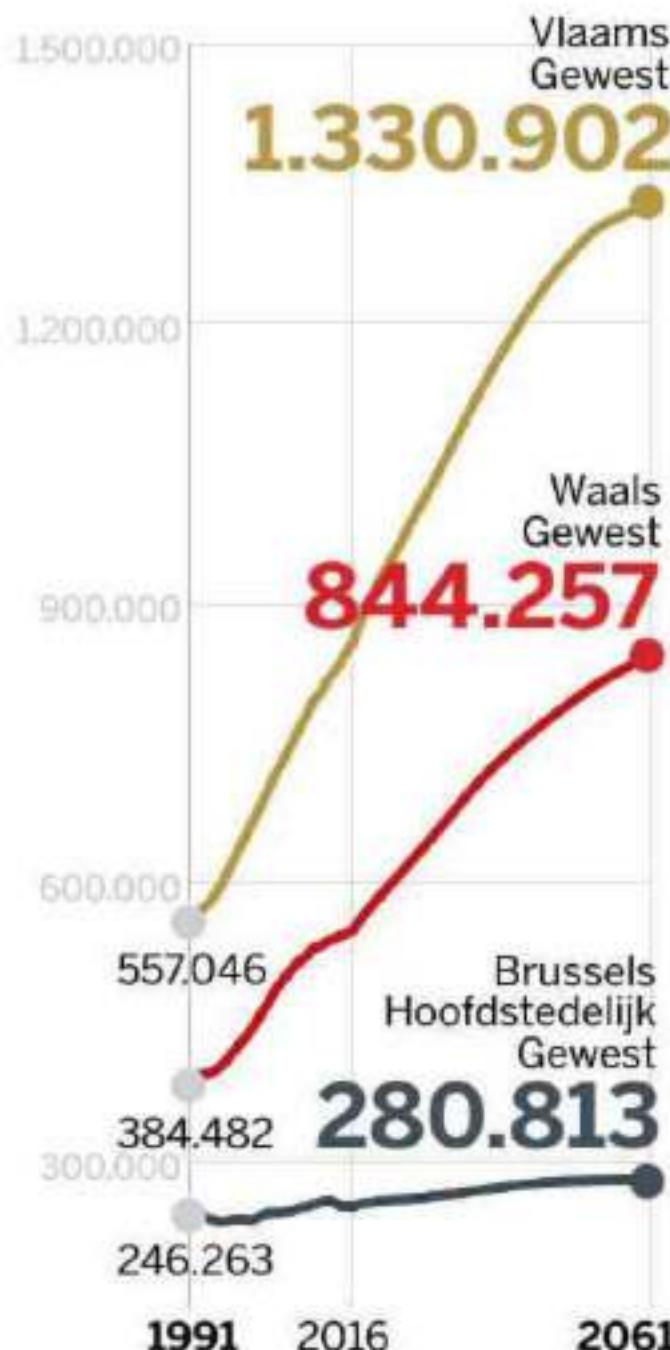


Evolutie samenlevingsvormen in België



Helft Belgen single in 2060

Evolutie aantal eenpersoonshuishoudens



DS Infografiek | Bron FOD Economie

Het aantal singles in België blijft toenemen. En dat vraagt een omslag in ons woon- en mobiliteitsbeleid.

VAN ONZE REDACTRICE

MYRTE DE DECKER

BRUSSEL | Alleen de kosten voor een huis dragen of de vuilniszakken die alweer duurder worden: singles dragen bijna altijd meer lasten dan gehuwden of samenwonenden. Toch zal tegen 2060 de helft van alle Belgische huishoudens uit één persoon bestaan. Dat blijkt uit de nieuwste cijfers van het Federaal Planbureau België, dat vandaag de demografische vooruitzichten 2016-2060 voorstelt. Ter vergelijking: in 2016 ging het nog maar om een op de drie huishoudens. In 1991 bedroeg het Belgische gemiddelde 29 procent. Het maakt de aankomende stijging des te opmerkelijker.

'Die toename is toe te schrijven aan twee groepen', zegt Dimitri Mortelmans, socioloog aan de Universiteit Antwerpen. 'Zo speelt de vergrijzing een grote rol. Zowel alleenstaanden als weduwen of

weduwnaars willen langer zelfstandig thuis wonen.' Ook het Planbureau herkent die trend. Veel toekomstige singles zijn vrouwen ouder dan tachtig.

De tweede groep is volgens Mortelmans de *Sex-and-the-City-generatie*. 'De "happy singles" die graag in bruisende grootsteden wonen.' Het Planbureau ziet nog een derde groep: alleenstaande mannen tussen dertig en vijftig jaar. Zij hebben meestal een echtscheiding achter de rug.

Singlereflex

De vooruitzichten zijn niet per se negatief zijn voor België, maar het beleid moet zich wel aanpassen. 'Deze resultaten stemmen tot nadenken', meent Philippe Donnay van het Planbureau. 'Op het vlak van woon- en mobiliteitsbeleid moet rekening worden gehouden met die verwachting.'

'Er worden al maatregelen genomen', zegt Carla Dejonghe,

voorzitster van de vzw All1, een belangenvereniging voor personen die alleen wonen. Zij pleit er bij beleidsmakers al jaren voor om een 'singlereflex' in te bouwen, zodat de alleenstaanden niet te veel worden benadeeld. 'Brussel trekt de kar', zegt Dejonghe, 'maar ook de belastingverlaging in Mechelen ter compensatie van de verhoogde afvaltaks zet de goede

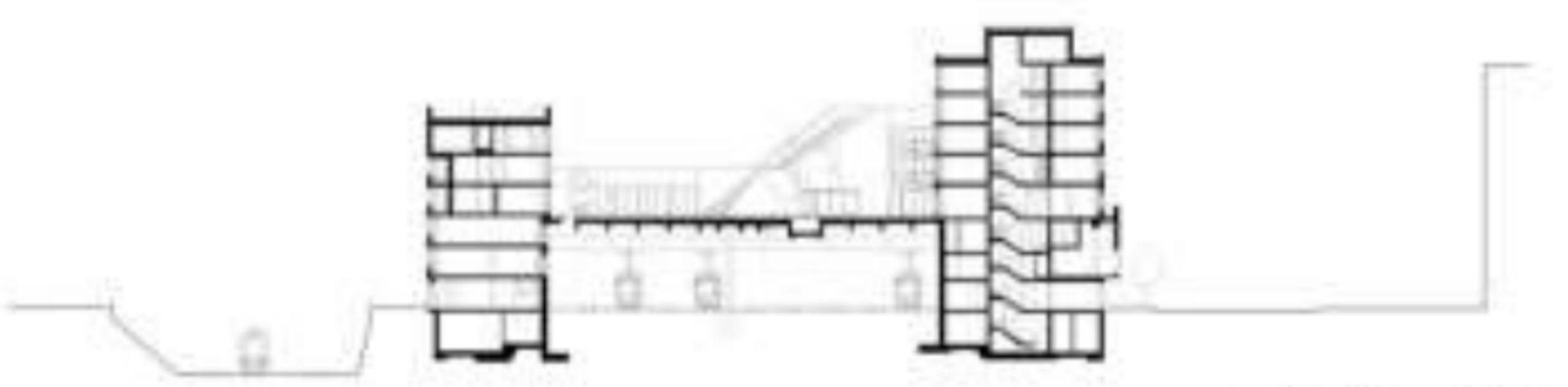
toon.' Al is dat niet voldoende. Urbanoloog Johan Rutgeerts (KU Leuven) wijst op de nood aan kleinere woningen: '95 m² met twee slaapkamers kan niet meer. Kleinere units van 50 tot 65m², zoals in Scandinavische landen, moeten hun weg vinden in België. Zowel bij bouwheren als in de opleidingen wordt daar al over nagedacht. Nu de Belg zelf nog, want de baksteen in onze maag blijft. Een eigen woonst is nog altijd ons appetijtje voor de dorst. Nadenken over een alternatief pensioenplan is nodig.'

Opmerkelijk is dat, in tegenstelling tot de rest van België, de singles in Brussel nu al de helft van de huishoudens vormen. Veel actieve jongeren zien economische en culturele voordelen aan wonen in de grootstad. Maar er is ook de grote instroom van jonge migranten. De vergrijzing wordt er dan ook grotendeels tenietgedaan door de nieuwkomers.

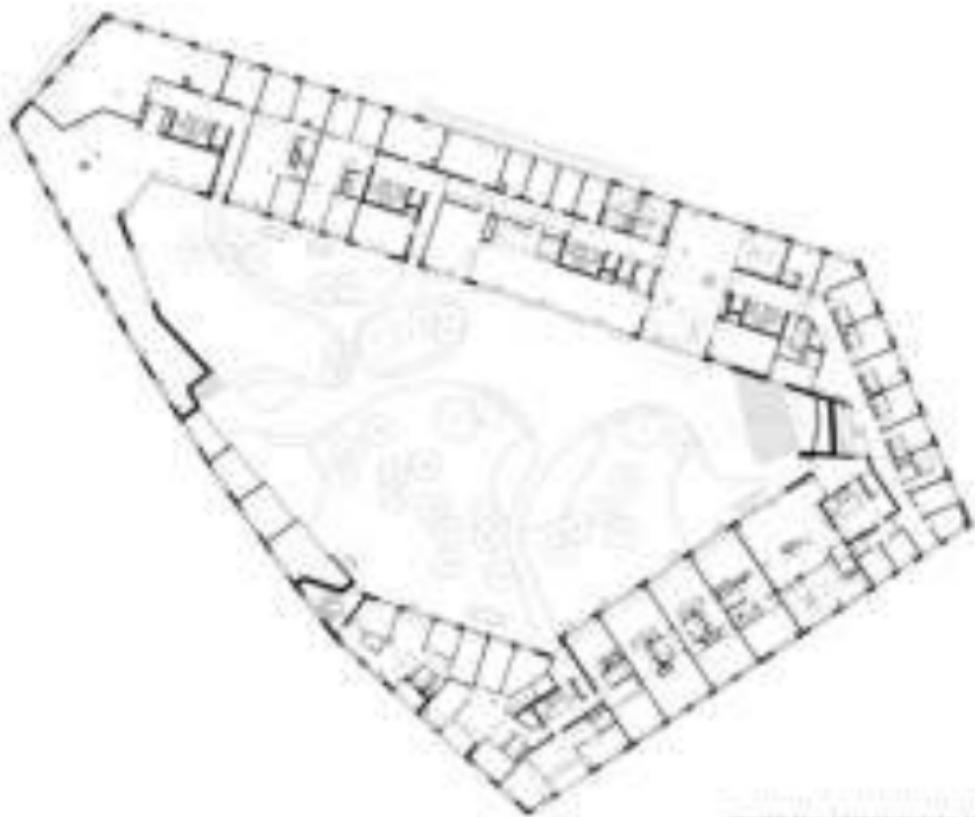
'Kleinere wooneenheden van 50 tot 65 m², zoals in Scandinavische landen, moeten hun weg vinden in België'

JOHAN RUTGEERTS
Urbanoloog (KU Leuven)



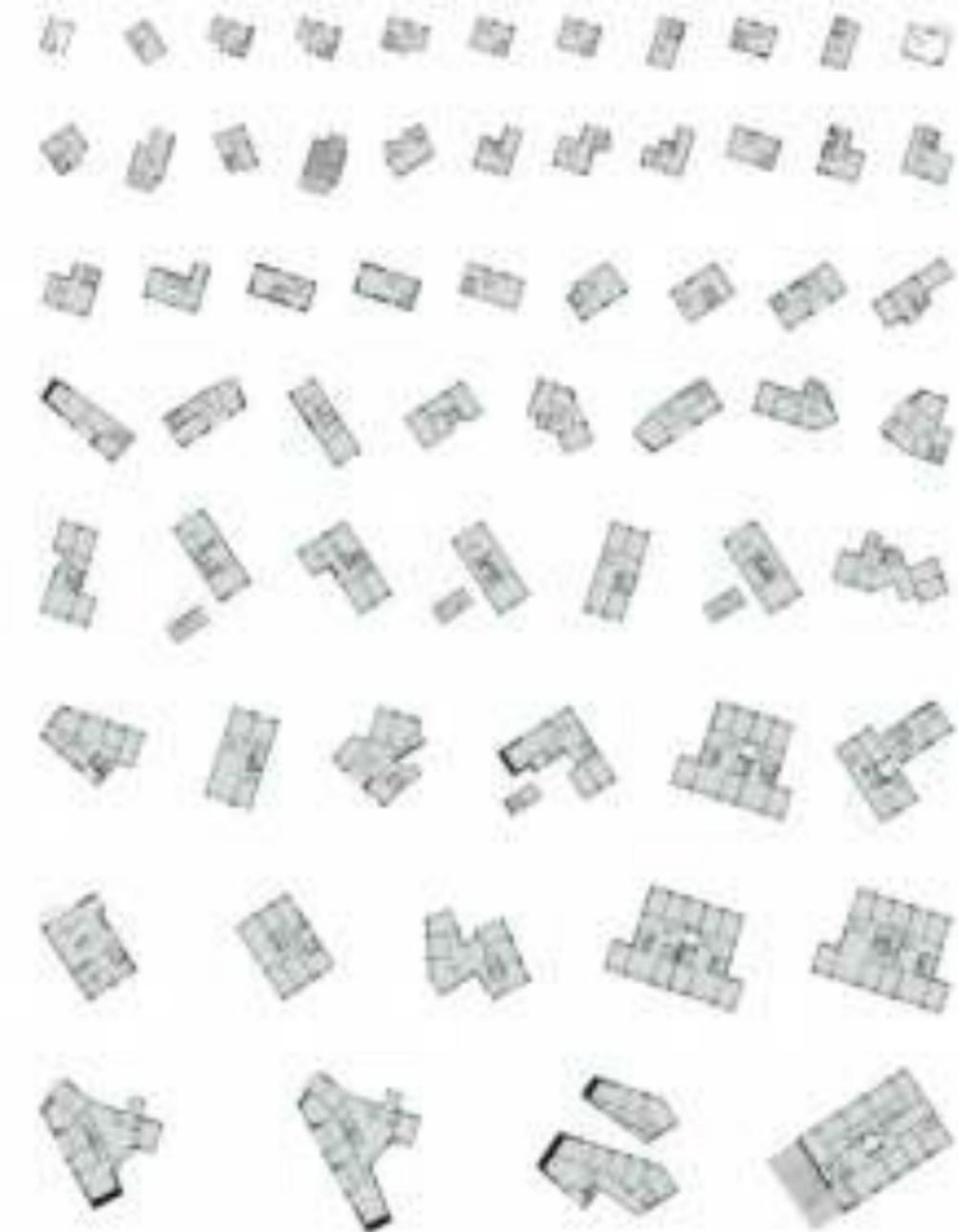


Architectural rendering of a proposed development



PRINTED ON 01/11/2018 BY 10:55 AM

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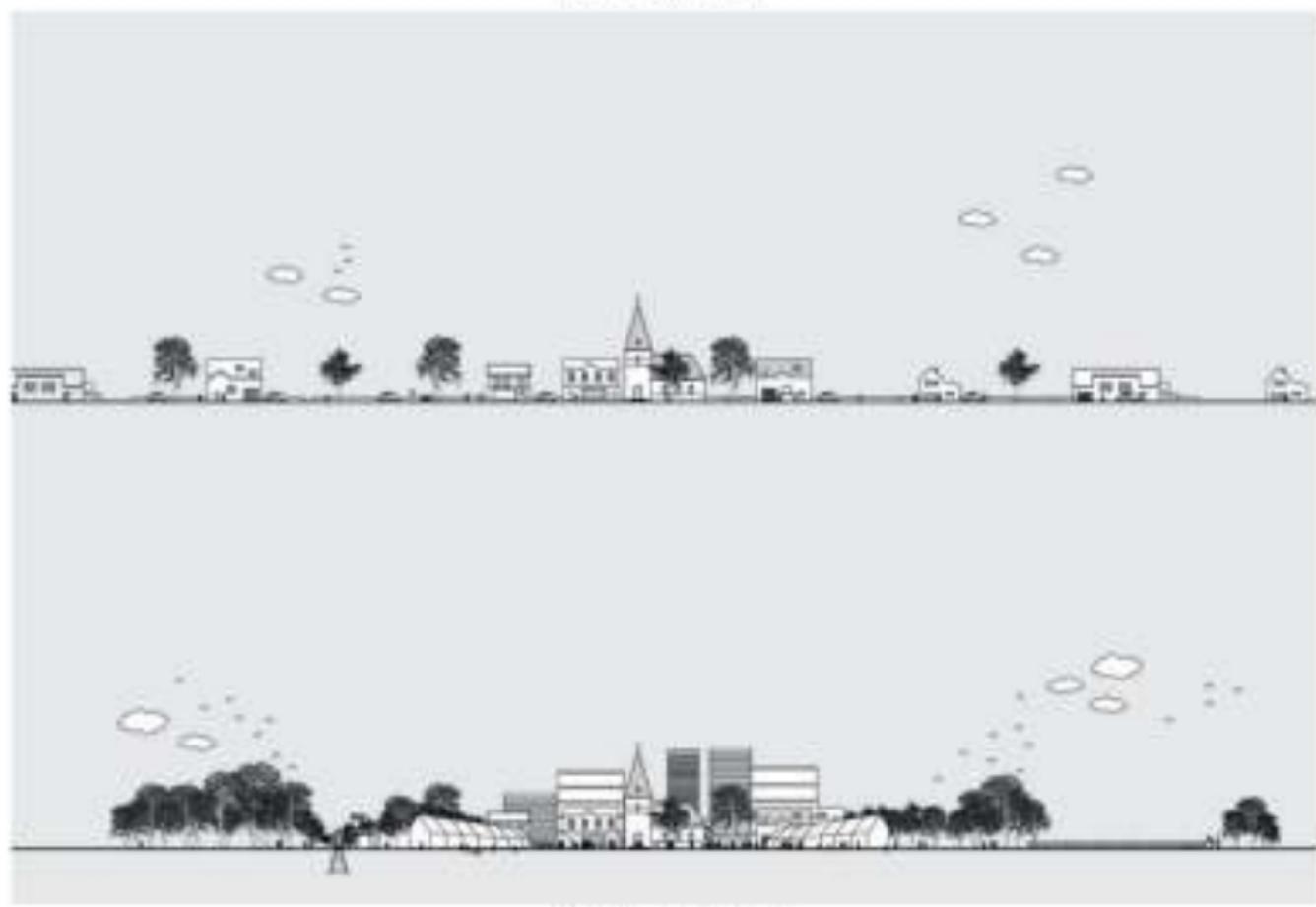












Sprawl vs compact urban areas









647 ha



Knepp Castle Estate - Sussex





URBAN HIGH RISE & PUBLIC FACILITIES TO SHARE WITH GRAND-CHILDREN



Paul Wieland Seing: Poma and Ricard Gutiérrez-Torre Julia in Barcelona, Spain





LEGENDE

- The diagram illustrates a building footprint with the following features:

 - Voorbouwlijn**: The outer boundary of the building.
 - Zone voor hoofdgebouwen**: A red rectangular area at the top left.
 - Zone non-dedificandi**: A yellow rectangular area below the red one.
 - Zone voor koeren en hovingen**: A green rectangular area to the right of the yellow one.
 - Garage / carport**: A blue rectangle with an 'X' pattern representing a garage or carport.
 - Overbouw van verdiep mogelijk**: A red rectangle with a grid pattern representing an upper floor extension.
 - DETACHÉT GROEN & BONNE Océlie**: A dashed line indicating a green belt or property boundary.
 - VOIE Charge & Franchise**: A dashed line indicating a road or franchise boundary.
 - 8** and **10**: Numerical labels placed near the top corners of the building footprint.

BELANGRIJKE NOOT:

Algemeen zijn religieuze wijzigingen niet toegestaan.

De bestaande reliëfform wordt integraal behouden, behalve de kleine correcties die nodig zijn om gelijk te komen met het voorliggende peil van het openbaar domein.





























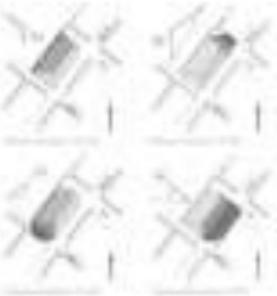




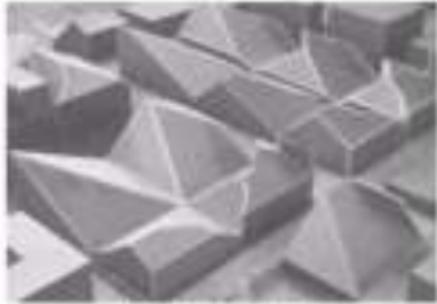
THE SOLAR ENVELOPE: HOW TO HEAT AND COOL CITIES WITHOUT FOSSIL FUELS

From solar-oriented buildings to solar-oriented cities

This does not mean that passive solar design could not be applied to entire cities. It just takes more sophisticated planning. Solar access to an individual building is determined by only four factors: latitude, the distance north or south from the equator, slope, building shape and orientation.



Compared to conventional zoning practices, the solar envelope problem is different geometry — the limits of the envelope derive their vertical dimension from the sun's daily and seasonal movements. Thus, while conventional zoning envelopes are shaped like a box, the solar envelope has both vertical and sloping spaces.



Close-up view of the angular limits of a building's solar envelope



Aerial view of a city street grid showing solar envelope limits



Aerial view of a city street grid showing solar envelope limits

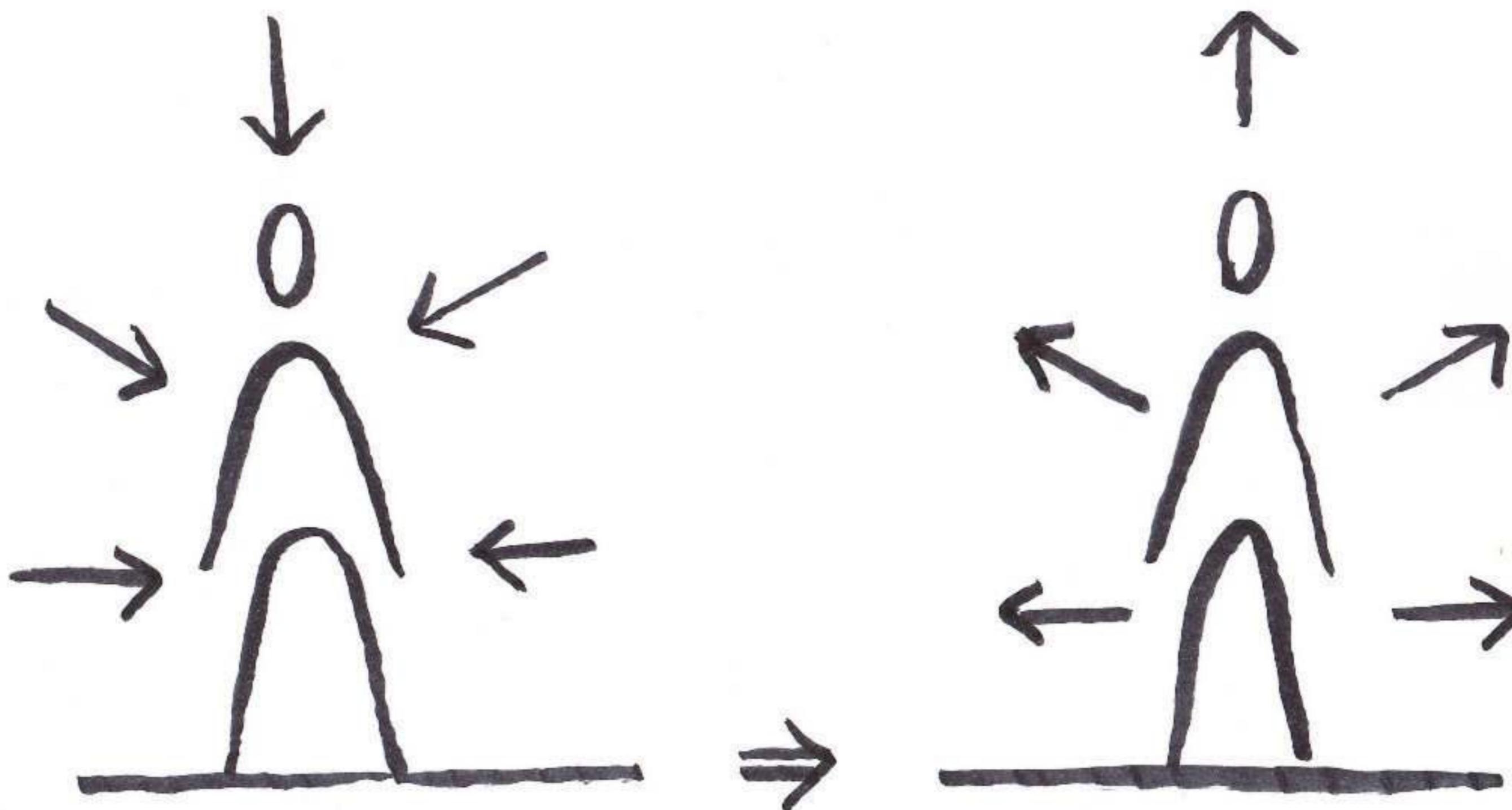
As a result, the buildings and city blocks that fall these imaginary solar envelopes are more likely to have unique shapes. One side of a building would not look like the other, nor would each side of the same. In the northern hemisphere, development would tend to be lower on the south side of a street than on the north where a major southern exposure would be preserved. There is also a dimensional character where solar orientation is clearly recognizable.

Kroesel and his students have reached densities of up to 100 dwelling units per acre (100 houses or 247 duplexes) for residential developments. If we count on an average of two people per apartment (Kroesel does not give occupancy rates, but comes down to 200 people per acre), these figures were calculated on the Spanish grid, with apartments averaging 93 sq m (1000-sq ft); a maximum of 4 hours of sunlight in winter, and a 6:1 ratio (20 m shadow length) for mixed-use developments, Kroesel obtains a FAR of up to 7.5.





A new sequence of priorities



From the consumption of quality towards the production of quality

OVERTSHOOT = TOTAL IMPACT IS BIGGER THAN WHAT EARTH CAN STAND

TOTAL IMPACT = AVERAGE IMPACT PER PERSON x NUMBER OF PEOPLE

AVERAGE IMPACT PER PERSON = AVERAGE (LAND USE + EMISSIONS + WASTE)

NUMBER OF PEOPLE = BIRTH RATE

CAUSES OF IMPACT ARE POTENTIAL VECTORS OF CHANGE

REDUCING OUR LAND USE – GIVE LAND BACK TO NATURE <ul style="list-style-type: none">• Causes of land use: food, housing, raw materials.• Agriculture: smaller surface, less red meat, less land to feed livestock.• Undo urban sprawl: densify all forms of built land use, free standing housing should be forbidden.• All housing above 50 units per hectare (the minimum needed for a feasible heat net).• Maximum rewilding. New nature with restricted respectful accessibility.	ECONOMICAL MODEL <ul style="list-style-type: none">• Stock market driven max. profit economy or economy driven by max. quality of life for all life forms?• Private concentration of shares (hard capitalism) or public concentration of shares (communism) do not work.• Socio-capitalism: a genuine sharing economy with access to shares for all people.• Growth of value creation and turnover of services, reduction of turnover of goods, reduced land use.
BIRTH RATE <ul style="list-style-type: none">• Depends on level of education, equal rights for women, health care system.• Development aid and equal distribution of wealth. No low-income countries.	GOVERNANCE <ul style="list-style-type: none">• Nobody stays behind. A more equal society reduces polarisation and reduces extremist votes.• Sharing economy takes care of redistribution of wealth.

TECHNOLOGY BY ITSELF IS NEVER GOOD NOR BAD

EXAMPLE: WE ALREADY HAVE NEW BIOTECH THAT ALLOWS TO GROW TWICE THE AMOUNT OF FOOD PER HECTARE.

- Will it be patented and used by rich farmers to make twice as much food on the same surface for half the price, to compete and push other farmers out of the market (shareholder driven)?
- Will it be used to give almost half of the agricultural land back to nature (max. quality of life for all life forms)?

TECHNOLOGY IS LIKE A KITCHEN KNIFE.

YOU CAN KILL SOMEONE WITH

YOU CAN PREPARE HEALTHY TASTY FOOD.

THE QUALITY OF TECHNOLOGY DEPENDS ON THE INTENTIONS OF THE ONES WHO USE IT

DO WE GO FOR ANTROPOCENTRIC?

MORE

DO WE GO OR FOR ECOCENTRED?

LESS BUT BETTER



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



 **SUSTAINABLE DEVELOPMENT GOALS**