The Youth
Water Vision



JONGE KLIMAAT-BEWEGING

Foreword

In September 2022, we launched the Dutch Youth Climate Agenda 3.0. An ambitious, comprehensive and concrete vision for the Netherlands. It gives a clear picture of what Dutch young people want their country to look like in 2040: sustainable, equitable, and habitable.

The work you are reading now is an indispensable addition to the Dutch Youth Climate Agenda. This year we commemorate the Dutch flood disaster of 1953, while simultaneously recognising the importance of water at an international level through the UN Water Conference 2023. It is also the year the Dutch young people raise their voices to shed light onto this theme. Water is an important part of the Dutch identity, both in the past, the present and will only become more important in the years to come.

When you think of the Netherlands, you think: waterland. We live in a delta and this is reflected throughout Dutch culture. From the verb 'to polder'1 to the enthusiasm with which we hope for an Elfstedentocht ice skating tournament every winter: water is an important part of the Netherlands. Not only physically, relating to the sea and the many rivers, canals and streams crossing our delta, but also in our way of thinking and acting. Many Dutch people live below sea level and the 1953 flood disaster is still etched in our collective memory. In fact, part of the Netherlands has only been 'dry' land for a relatively short time and was previously under water, such as Flevoland. In our dealings with water, we are unique. You've probably heard of the regional water authorities,2 but did you also know that they are one of the oldest institutions in the Netherlands and exist almost nowhere outside our country? Although we all grew up in this beautiful water country, we are also still unaware of the importance of water in a lot of ways. We take the clean drinking water that comes out of the kitchen tap for granted. Water is always there, for anyone who wants it, however much you want it, and it is clean, safe and drinkable. Right?

Dutch water policy has long focused on protecting ourselves from an 'excess' of water from the sea and rivers. The Netherlands has become an expert in technical water management: collecting, draining, and keeping water out. That policy is no longer sustainable without supplementation and change. Climate change means the sea level is rising faster than we could have imagined while we were building the storm surge barriers; changing weather patterns mean more precipitation in a shorter time; and for the first time, we also have to learn to cope with prolonged drought. The continuous lowering of groundwater levels threatens biodiversity and the unique Dutch delta landscape.

To keep the Netherlands safe for ourselves and generations to come, change is inevitable. We need to start moving with the water again, instead of solely controlling it. The Dutch Youth Water Vision paints a picture of how we will deal with water in 2040 if it is up to Dutch young people. Like the Dutch Youth Climate Agenda 3.0, it is an ambitious vision: everything shows that we value water as a much-needed but limited resource, which we need to deal with equitably, sustainably and socially. This may sounds like an impossible dream, but it is anything but: all the solutions to achieve a sustainable handling of water are within reach. We just need to implement them. To do so, the Dutch Youth Water Vision leads the way.

The Dutch Youth Water Vision brings together the opinions and ideas of a large group of Dutch young people. We could not have written the vision without them. Before we go on, we would like to thank the volunteers within the Dutch Youth Climate Movement who researched the various themes in this vision, entered into discussions with experts and other young people, and shaped all that information to create this vision. We would also like to thank all the youth organisations, experts, and other individuals who helped think about and co-author the Dutch Youth Water Vision. Thank you for your presence at the Water Dialogue, your valuable feedback and your inspiring ideas. Finally, but nevertheless most importantly, thank you for your trust in the Dutch Youth Climate Movement. You place your trust in us to represent your voice in the Dutch climate and water debate, and for that we are incredibly grateful. We will do our utmost to make your vision of the future a reality.

On behalf of the board of the Dutch Youth Climate Movement,

Irthe de Jong
Board member Dutch Youth Climate Agenda

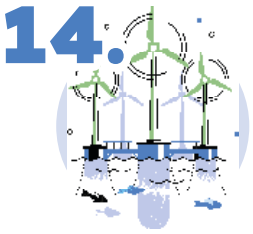
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Reading guide

Six connected **themes**

Our vision is composed of six themes: water & economy; water & adaptation; water & social change; water, biodiversity & nature; water & food; and water & the built environment. Based on these themes, we discuss how we deal with water sustainably in the Netherlands in 2040. However, these themes cannot be seen separately. Both the problems and the solutions fall under several themes: the chapter Water & Adaptation, for instance, cannot be seen separately from the chapter Water & the Built Environment. We therefore recommend reading the Dutch Youth Water Vision in its entirety.

In the theme *Water & Economy*, we discuss the crucial role of water in the Dutch economy. In order for our economy to use water more sustainably, a systemic change has taken place by 2040. The focus in 2040 is on broad prosperity instead of monetary profit. The economy is circular and we pay the true price for water. As a result, we save on water use, ensure that water pollution is avoided, and that pollutants are removed and re-used as raw materials. A scarcity issue exists for water, meaning its fair distribution requires a transparent balancing of interests. For the North Sea, for instance, we weigh up the interests of nature, shipping, energy extraction and fisheries, where societal benefits weigh most heavily. A fair distribution of water use means that necessary water use is accessible to all. At the same time, water is precious and we use it sparingly. Large consumers and polluters will pay more and there is a water saving obligation for companies.

Water & Adaptation describes the challenges the Netherlands faces to continue living safely with water in the future. Climate change has created a number of problems for which the water system was insufficiently prepared in 2023, such as increasingly frequent extreme river levels, drought, salinisation, and rising sea levels. These problems have long been addressed in 2040 by adapting the water system from focusing solely on rapid drainage of water to retaining it longer. We cooperate better with neighbouring countries upstream on the rivers. When taking measure we are guided by the long term and look far into the future to ensure that measures will still be effective if climate change unexpectedly accelerates further.

The *Water & Social Change* theme describes water as an integral part of our society. In 2040, a social behavioural change has taken place among individuals and companies, and everyone deals with water sustainably. Education in the Netherlands in 2040 is arranged in such a way that we are aware of the unique nature of the Dutch delta and everyone is familiar with the role of governmental bodies, such as the regional water authorities. The importance of water in 2040 is also reflected in water policy and law. Regional water authorities' policies steer towards nature-inclusive handling such as nature-friendly riverbanks, and water bodies have fundamental rights of their own. These rights ensure that the interests of nature and water are represented in decision-making and form a legal incentive for instances where this does not happen. To enable sustainable water management, the Netherlands has cross-border cooperation with neighbouring countries. As a result, joint care is taken to combat pollution and deal with water scarcity or surpluses.

Water, Biodiversity & Nature is about how we manage our water systems differently in 2040 to strengthen nature and biodiversity. Not agriculture and the economy, but natural water systems are central to making policy choices on spatial planning. Groundwater levels in natural areas and the countryside have been structurally raised. Water quality has improved enormously: hazardous substances no longer end up in surface water due to stricter regulations and enforcement. Furthermore, governments work together with farmers to keep the water clean, which also benefits the soil, plants and animals. The North Sea and Wadden Sea are strongly protected. Vulnerable and rare animal populations, and benthic nature in the North Sea and Wadden Sea have been restored.

and summary

The *Water & Food* theme shows how Dutch agriculture contributes to nature, soil, and groundwater restoration in 2040. We practise regenerative agriculture and grow food in food forests and permaculture, thus diversifying the landscape and increasing biodiversity. Along the coast, where we face salinisation, we grow salt-tolerant crops such as potatoes, beets, and carrots. Aquaculture, such as seaweed farming, has increased. Agriculture takes place not only in rural areas, but also in cities. Urban agriculture, such as through rooftop greenhouses and allotments, contributes to rainwater harvesting. Our food pattern has changed: we eat little animal protein, getting our protein mainly from plants. This has greatly reduced the water consumption of agriculture, and we also need to import less. Fishing has decreased, is sustainable, and does not take place in natural areas like the Wadden Sea, thus giving fish a chance to recover.

Finally, the theme *Water & the Built Environment* shows how, by 2040, we will have adapted our way of life to the challenges posed by climate change. By 2040, we will have solved the housing crisis, partially by building more in the eastern, upland part of the country. This means more housing in areas of higher elevation, where they are better protected from rising sea levels. Our buildings are nature-inclusive and built with circular materials. Green roofs, more plantation in the streets, and less stone surfaces provide water retention during rainfall. We collect this water and rely on it during dry periods. Water and nature run through our residential areas as green-blue urban arteries. This makes city life healthier and more comfortable for people and animals, but also provides space to retain and store water. Besides an energy label, our houses also have a climate label to make residents aware of the risks of flooding in their living environment. Where these risks are higher, we opt for amphibious or even floating houses. To waste less drinking water, installing water-efficient plumbing has become the standard and we use rainwater for our gardens.

Relationship to the **Youth Climate Agenda 3.0**

The Dutch Youth Water Vision is an extension of the Dutch Youth Climate Agenda 3.0. This means that the Dutch Youth Water Vision fits into the future picture of the Dutch Youth Climate Agenda 3.0, and cannot be separated from the Dutch Youth Climate Agenda 3.0. The vision for the year 2040 as outlined by the Dutch Youth Climate Agenda 3.0 is the starting point of the Dutch Youth Water Vision. Because a comprehensive picture of the future has already been sketched in the Dutch Youth Climate Agenda 3.0, the Dutch Youth Water Vision has a somewhat more practical approach: more focus is put on what we can already do in the here and now to ensure that the described future becomes reality. In the Dutch Youth Water Vision we regularly refer to concepts from the Dutch Youth Climate Agenda 3.0, such as broad prosperity, regenerative agriculture and a nature-inclusive society.

Water & Economy



The Dutch economy and industry are steeped in water. Without the availability of sufficient clean and safe (fresh) water, our entire economy and production capacity stagnates. Additionally, the land where our economic activity takes place must be protected from water.

Our economy depends on and is threatened by water; at the same time, the economy systematically causes water scarcity and pollution. Water authorities such as the regional water authorities are working hard behind the scenes to solve the water problems caused by the current economy.3 Systemic change is needed (*see also Economy, The Dutch Youth Climate Agenda 3.0*). In 2040, the sustainable handling of water is a prerequisite for our economy to exist. This ties in with the pursuit of **broad prosperity**: financial considerations are not most important, but rather social and natural capital. The Netherlands is not only an expert in water management, but also in sustainable and circular water use and building **future-proof infrastructure**. In this way, the Dutch water sector is future-proof.

In 2040, we ensure that water is **fairly distributed** and accessible as a **basic life necessity** everywhere. In every decision we consider the impact on water use and pollution, here and now but also later and elsewhere. The true value of water is factored into economic choices. Water affects several ecosystem services, especially production services. Production services of water include the production of food, raw materials and freshwater supply.4 Water also affects cultural services and regulatory services. **True pricing** of water use during a production process ensures that the positive and negative impacts on these ecosystem services, also known as social costs and benefits, are included in the price (see also Economics, The Dutch Youth Climate Agenda 3.0).5 As a result, in the future, we will pay the true price of water, including social and environmental costs, when purchasing products and for non-essential water usage.

Circular economy

Our current water-intensive economy causes water scarcity and pollution. This is because too much water is used and polluted water is not cleaned before it is discharged.6 A **circular economy** can solve these problems. Although water is not scarce, water is often used during production processes as if it is an infinite resource. In 2040, in the circular economy, we use water as a scarce resource: where possible, its use is avoided and circular innovations focus on saving water and preventing pollution. Water that we do use we clean before letting it flow back into the natural water cycle without pollution. We recover substances such as phosphate, methane and cellulose from the water, thus creating a source of raw materials and renewable energy.7 We prevent heat discharge into the water system and repurpose this heat to heat residential areas, for instance. We make agreements along the entire water production chain, prevent pollution and share knowledge so that all parties involved contribute to circular water use.

Water as a distribution issue

In 2040, we understand that water is scarce and focus more on **water retention** to reduce scarcity, and industry uses lower-quality water instead of drinking water whenever possible. Nonetheless, clean drinking water remains a scarce resource and should be secured for necessary uses whenever possible.8 Water is crucial, not only for households and nature but also for many sectors: from agriculture and industry to shipping and recreation. Dealing with water as a scare resource means there is a **distribution issue** which requires balancing interests. It is important to know for whom, and at what time, water has which functions. Before a transparent discussion about water distribution can take place, all parties of interest and their respective needs have to be researched and mapped out.9 While balancing these interests, we keep broad prosperity and the true price of water as a starting point: economic profit does not weigh most heavily, rather broader social profit does. The distribution issue does not only concern water consumption itself, but also the groundwater level and underground water reservoirs, where water can be extracted for drinking water or serve as energy storage. Furthermore, on the North Sea, a fair balance of interests between nature, shipping, fisheries, and growing sectors such as wind energy and aquaculture (seaweed) takes place, and there is an ongoing dialogue between the various stakeholders and the government. The Wadden Sea remains a nature reserve, like it is right now.

The price of water

We pay the **true price** of water for non-essential water use. This includes the costs of managing and treating water. We share these costs fairly among water users in 2040. In 2040, everyone realises that clean water is not something to be taken for granted, but something with a cost. We handle tap water consciously. At the same time, clean water remains a **necessity for life** and a basic right for every citizen. The priority is to fulfil this basic need. For this reason, we use a **tiered price** for water: we pay a basic price for the amount of water used by the average household, and pay extra tax for excessive and non-essential use such as filling a swimming pool.

Currently, there are few financial incentives for companies to use water efficiently and sparingly, due to a low tax ceiling on drinking water. As a result, the cost of water is unfairly distributed: households pay taxes on all their consumption, but large consumers such as companies do not.10 By 2040, the tax ceiling will be abolished and companies will pay taxes on all their water consumption. There is also a **water-saving obligation**, similar to the energy-saving obligation11 which obliges companies to take water-saving measures that pay for themselves within five years.

Water & Ac

The effects of climate change have changed weather patterns: there are more periods of prolonged draught and more periods of increased wetness. The Netherlands has focused on climate change mitigation as much as possible, but reducing CO2 emissions has not completely prevented the effects of climate change. Therefore, by 2040, the Netherlands has had to adapt to changing weather patterns, rising sea levels, warming water temperatures and the disappearance of healthy ecosystems. The Netherlands was long designed to drain water as quickly as possible, but to ensure there is enough water in dry periods, we store more water in times of heavy rainfall. Think of the flooding in Limburg in 2021 and dry summers.12 To better cope with such issues, we have adapted our living environment to the changing climate by 2040. We have created space to store, keep and reuse water (*see also Water & the Built Environment*)

daptation

The long term

Because building infrastructure takes a long time, we started doing so well before 2040. This required a long-term vision and cooperation from provinces, regional water authorities, municipalities, central government, and cooperative bodies such as river commissions. This is why we designed a National Water Strategy. The Netherlands has always had the long-term view in mind when building adaptation infrastructure (think of the Afsluitdijk and Water Defences, for instance), but previously we were not yet sufficiently aware of the long-term consequences of climate change. We have adapted our view of the future to the reality of climate change, and as a result have started to look more broadly at the consequences of an adaptation strategy for the Netherlands. We are committed to protecting the coast against flooding and erosion through as many soft measures (natural) and open protection as possible. Nature-inclusive measures are always preferred. In case of very high sea levels, closed protection may be necessary. A system that is as safe and nature-inclusive as possible is key. Finally, area-specific considerations must be made on whether the costs of conserving these areas outweigh the added value.

Drought

We have learned to deal with prolonged drought in the Netherlands in 2040. Prolonged drought, especially in the growing season, caused lower crop yields in the agricultural sector, heat stress in our forests and logistical problems in inland shipping. Salinisation caused by rising sea levels and low groundwater levels also threatened the food supply. Whereas in the past we largely counteracted salinisation caused by drought through flushing methods, we replaced this approach with a more future-proof solutions. The old water system was set up to drain water quickly after a heavy downpour, but this was no longer sustainable as rain increasingly occurs in short but intense periods. We needed to retain water for drier periods to counter the effects of drought and salinisation. Therefore, by 2040, we have as **little stone ground coverage** as possible in the built environment, so that water is retained by soil and plants. There will also be more greenery in cities for this reason. To secure economic activities in times of drought, we have constructed **additional water buffers** both above and below ground, and the water level in fresh water bodies has been made more flexible. This not only provides extra water for agriculture in times of drought, but also sufficient water to keep the economy running and prevent salinisation (*see also Water & Food and Water & Economy*).

The Netherlands is well prepared for larger forest and heath fires in 2040. Especially in the east and south of the country these rage during dry and hot periods. We prevent fires by good forest management and creating firebreaks. When forest fires do break out, we have a **special emergency unit** trained to provide assistance during climate disasters. Since climate disasters do not occur every year, we organise this occupational unit in cooperation with our immediate neighbours and the European Union.



Flooding from the river

With more extreme weather patterns and melting glaciers in the high mountains, we need to protect ourselves from rivers bursting their banks. We give the river **space** so that it can flood safely in the floodplains without causing flooding. We build as little as possible in the floodplain and those buildings we do built are designed in a flood-resistant manner. We do not forcibly channel the river and ensure that future dyke reinforcement is not hindered. In case of excess rainwater, we do not channel that water directly into the river, but delay its absorption into the river through **improved water retention methods**. We protect and improve wet nature areas around the rivers so that there is room to retain water (*see also Water, Biodiversity & Nature*). The built environment is **de-stoned a**s much as possible and instead covered with plants that retain water with their roots *(see also Water & the Built Environment)*. Additionally, we have removed pain points in the tributaries. The Netherlands had many tributaries with high chances of flooding, but in 2040 these meander more to slow down the water. This means the water has to travel a longer distance before flowing into the main rivers.

Furthermore, the tributaries have been given more overflow space, preventing the "backwash effect" to avoid a situation like Limburg 2021. Last but not least, our riverbanks are green and biodiverse (*see also Water, Biodiversity & Nature*).

The Netherlands lies at the end of the catchment area of its major rivers. Therefore, the above measures have not only been implemented in the Netherlands, but we have collaborated with other countries upstream to slow down water along the entire river course. Through **international river commissions,** we continue to engage in discussions to make river policies more adaptive and able to act quickly when river water is abundant.



Flooding from the sea

In the Netherlands, we were well protected from flood hazards from the sea by our strong coastal defences, largely built after the 1953 flood disaster. However, due to climate change, sea levels are rising more than anticipated after 1953.13 By 2040, we have adapted coastal protection to the new predictions. We continue to protect and monitor the coast, constantly working to improve flood defences. We use **natural solutions** as much as possible, such as protecting dune areas and reefs. We protect the coast against flooding and erosion as much as possible with **soft, nature-inclusive measures** and **open protection**. We apply closed protection only where necessary, while still making the system as nature-inclusive as possible by, for instance, creating shelters for underwater animals such as gabions.

Protecting ourselves by managing high water levels has brought us far, but we can only hold back water to a limited extent in the further future if sea levels continue to rise. Therefore, by 2040, we are increasingly adapting our lives to live with water. If we build in areas of higher flood risk, we make homes **amphibious or floating** (*see also Water & the Built Environment*).

We use more s**alt-tolerant crops** *and* **non-land cultivation** (*see also Water & Food*). For each sector, we make a thorough assessment of whether the costs of preservation outweigh the economic as well as ecological, cultural and historical added value.

To ensure land conservation and protect the Dutch population from rising sea levels, steering (sea)water remains important, even in 2040. We will continue to improve flood defences and build new ones if necessary. When raising the defences becomes too difficult and costly and the Netherlands is at risk of flooding, we go seaward by constructing higher land in the sea to better protect the delta from high water. Only in extreme cases, when other adaptation strategies no longer help, will we move land inward.

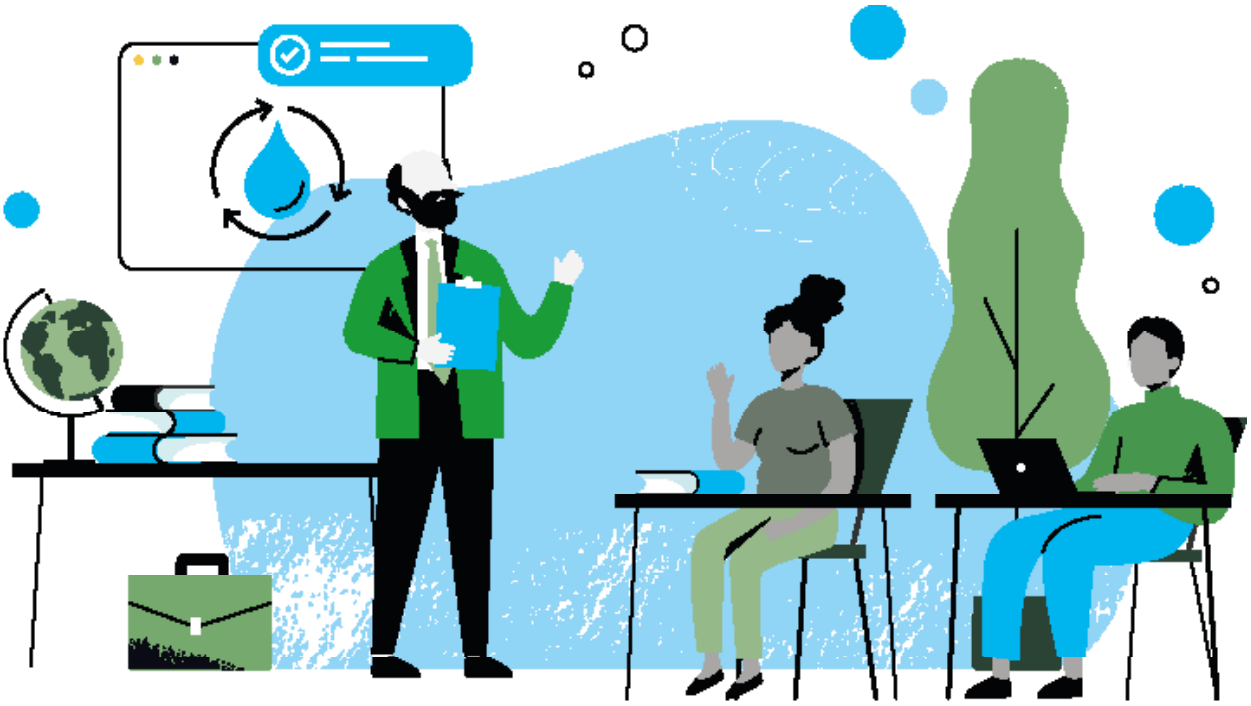
Water & Soc

Water is an integral part of our society and a basic necessity of life, but having enough clean fresh water is not a given. In 2040, the culture around our water has changed: everyone, from individuals to businesses, is aware of the importance of sustainable water use. This starts in the classroom, where we learn about sustainable water use. Our relationship to water has changed on many levels: through policy and our legal system, which is set up to protect water and nature. We are part of an international culture of cooperation which tackles environmental pollution, and, together with other countries, we devise solutions to the problems that cause it.

Water & education

In the past, many people in the Netherlands did not know what it meant to live in a delta. In 2040, we will be more aware of this and learn how to deal with it better. Due to climate change, the sea level is rising, and this will put more strain on our dunes, dykes and storm surge barriers.14 We appreciate the **unique nature** of the delta and the unique ways in which the Netherlands deal with the dangers of living in a delta, such as the **regional water authorities.** We know the tasks of the regional water authorities and we all vote in their elections. Water also has a central place in primary and secondary school education.

We are educated with knowledge about the power and importance of water for the Netherlands. This educates us for the future: we learn skills that help us find solutions to problems surrounding water. We also learn about better water usage: how companies, but also individuals, can save water. Adults are also continuously learning about water, through **informative videos or awareness campaigns** for example. This way, we live in a country where people really know what being a waterland means.



cial Change



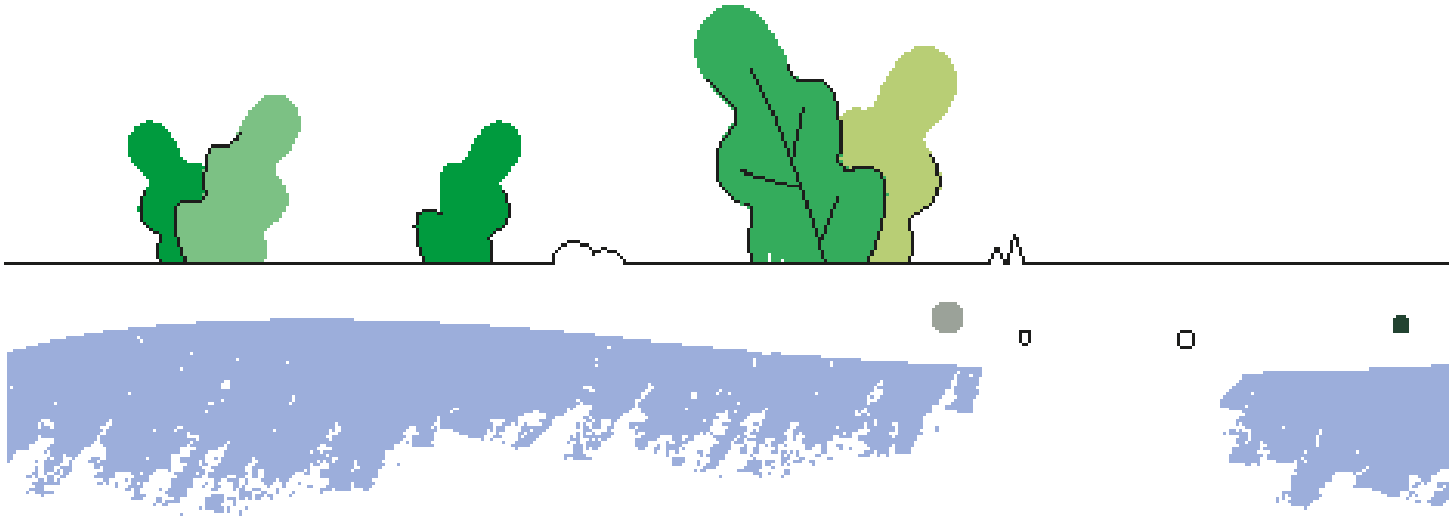
Water policy and rights

In 2040, the government and the legal system are geared up to ensure that we use water consciously and carefully. This is reflected in the policies of regional water authorities, municipalities, provinces and the national government. The regional water authorities deal with **nature restoration and conservation** in water management by creating **nature-friendly banks** and promoting biodiversity in rivers. Public spaces everywhere are designed to restore the sponge effect of the soil. The government sets stricter requirements when issuing permits for groundwater abstraction and groundwater filtration. The Dutch legal system is set up to protect nature and water bodies. Many countries preceded the Netherlands with introducing **rights for nature and water**, such as Ecuador, Spain and New Zealand. The Netherlands was quick to follow their example.15 These fundamental rights for water bodies are not only symbolic but also practical and much needed. Due to these rights, we have a new appreciation for water and the ecosystem that water is part of, including the animals and organisms that depend on water. Fundamental water rights ensure that water bodies and ecosystems are participants in decision-making through **representation** on committees and governing bodies. These rights provide a legal incentive in reducing pollution, enforcing environmental policies, preserving ecosystems, and maintaining healthy water quality.16 By taking into account the needs of our natural environment, we shape a sustainable living environment for current and future generations.

Water & cross-border cooperation

Water is not boundary-bound. The water cycle - from evaporation to condensation, from precipitation to runoff and finally outflow into the oceans - is spread over large areas, covering several countries. This also applies to pollution: it is transboundary and creates environmental problems across the entire basin and in international waters such as the North Sea. The transboundary characteristics of water can be observed through melting glaciers observed land inward, which lead increasingly smaller amounts of melt water in our rivers and rising sea levels.17 This is why we cooperate internationally, with a special focus on the countries in our river basin.18 In the future, the current **cooperation agreements on water** are enhanced and increasingly comprehensive. New agreements are introduced on topics relating to nature-inclusive solutions, the circular use of water, and improving and protecting water quality. In making these agreements, we take future generations and countries other than the Netherlands into account: we do not shift our responsibilities onto their shoulders.19 We take a multidisciplinary approach to problems, **preventing sectoral shifting**: creating new problems by solving another problem. We have agreed how to deal with scarcity and surplus river water discharge, and how to prevent pollution in the entire river basin.20 We exchange data and knowledge based on mutual trust and a shared interest in taking the best possible care of our shared waters and nature.

Water, Biodiv



Drought and pollution are currently a serious threat to Dutch nature and biodiversity. 90% of all water in the Netherlands does not meet the water quality standards as defined in the European Water Framework Directive (WFD), due to pesticides and sewer overflows, among other things.21 In addition, the Netherlands retains far too little water, so we often experience severe drought. This has serious consequences for the survival of many plant species, and therefore also threatens the survival of animals that depend on these plants. Droughts in natural areas enhances the negative effects of high nitrogen levels.22 This drought is largely the result of policy choices. Those policies will be different in 2040.

By 2040, the Netherlands will be a **nature-inclusive society** (*see also Biodiversity, the Dutch Youth Climate Agenda 3.0*). This means that policies and choices on spatial planning will focus not only on agriculture and the economy, but also on the natural water system. We do not try to manipulate the natural water system, but rather base policies on the water cycle and the ecosystem. We move with the water, instead of forcing it to flow to the sea as fast as possible. This requires a **cultural change** (see also *Water & Social Change*). Due to extreme droughts and large-scale flooding in the past, we take water seriously. We no longer take for granted that clean drinking water comes out of the tap and that we can safely go swimming in fens and rivers on hot summer days. We have all learned to adapt to the natural water system.

versity



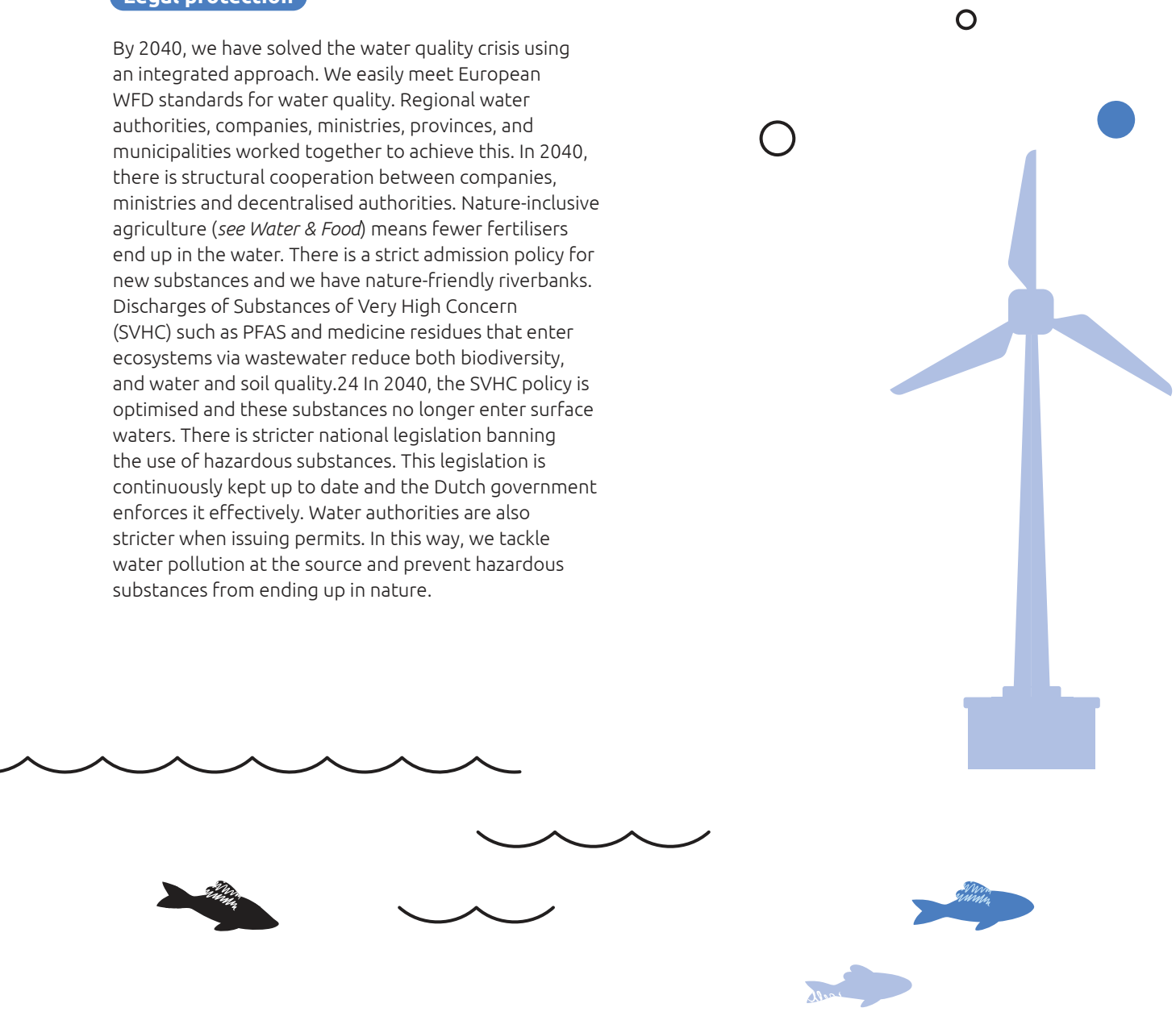
More water retention and better water quality

In 2040, we support nature in retaining water. The **groundwater level** in nature areas and rural areas is **structurally raised**. This means nature gets the chance to recover after decades of pollution and oppression, and nature can remain healthy even in drier times. There is more space for meadow birds to nest safely, and animal and plant species return. Raising the groundwater level is not only good for nature and biodiversity, it also prevents subsidence of houses and lowers CO2 emissions. Dehydrated peatland areas in the Netherlands emit CO2. This dehydration releases other pollutants, which end up in surface water.23 Additionally, cities and villages are improving water retention possibilities, giving nature more space and creating green-blue arteries between the built environment and rural areas (*see Water and the Built Environment*).

Because regional water authorities maintained low groundwater levels for the use of heavy agricultural machinery in the agricultural sector, we involve the agricultural sector and farmers in the transition to sustainable agriculture. In 2040, we practice a different kind of agriculture in (the vicinity of) peat meadow areas: extensive agriculture with crops that can withstand an excess of water (see also Water & Food). Farmers play an important role in improving and protecting water. **Biocascades** on their farmland purify water before it enters nature reserves. Farmers own these processes and have sufficient income, enabling them to be directly involved. In this way, agriculture contributes to healthy soil, prevents subsidence, achieves climate goals faster, improves water and soil quality and preserves fertile farmland for future generations.

Legal protection

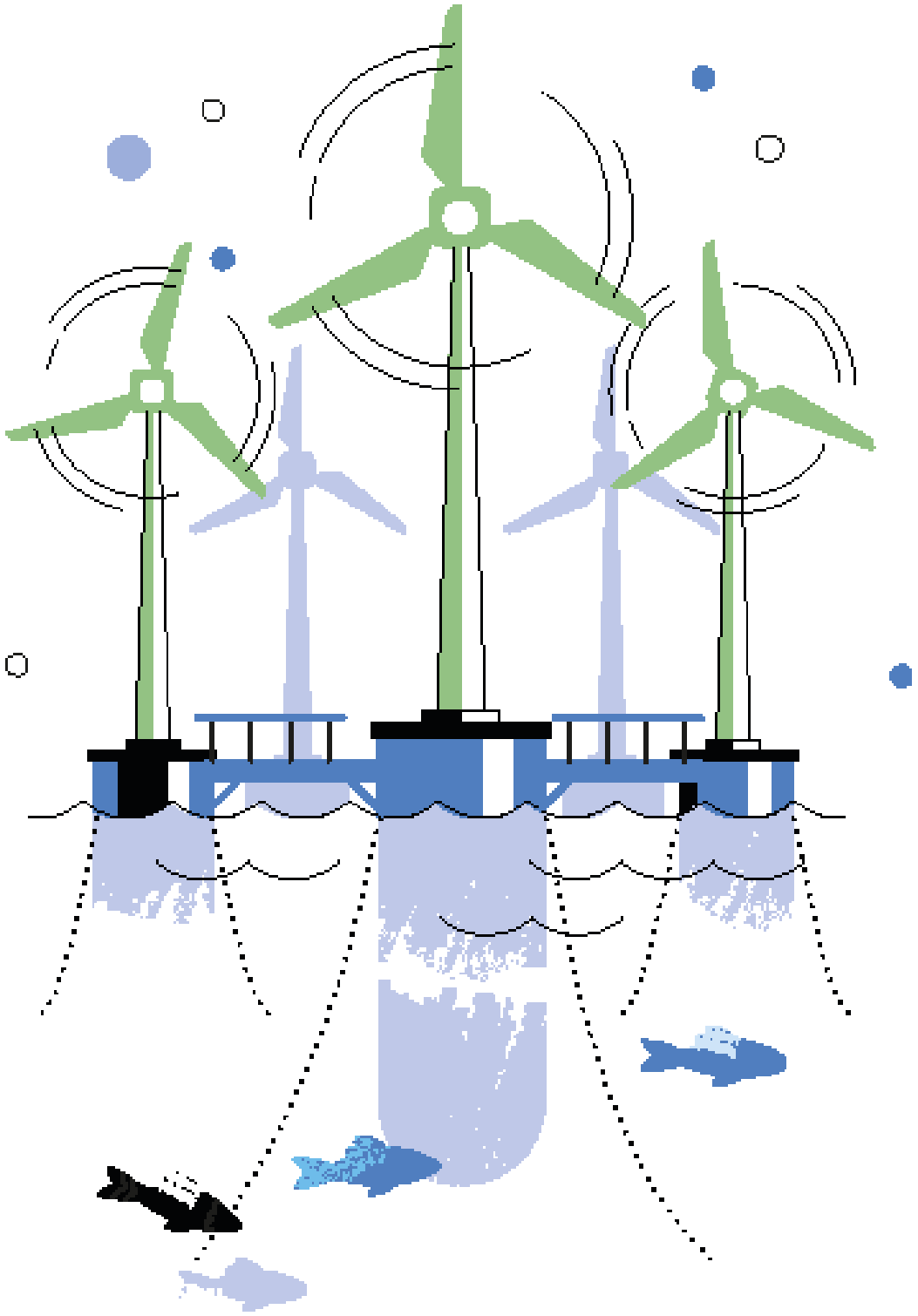
By 2040, we have solved the water quality crisis using an integrated approach. We easily meet European WFD standards for water quality. Regional water authorities, companies, ministries, provinces, and municipalities worked together to achieve this. In 2040, there is structural cooperation between companies, ministries and decentralised authorities. Nature-inclusive agriculture (*see Water & Food*) means fewer fertilisers end up in the water. There is a strict admission policy for new substances and we have nature-friendly riverbanks. Discharges of Substances of Very High Concern (SVHC) such as PFAS and medicine residues that enter ecosystems via wastewater reduce both biodiversity, and water and soil quality.24 In 2040, the SVHC policy is optimised and these substances no longer enter surface waters. There is stricter national legislation banning the use of hazardous substances. This legislation is continuously kept up to date and the Dutch government enforces it effectively. Water authorities are also stricter when issuing permits. In this way, we tackle water pollution at the source and prevent hazardous substances from ending up in nature.



The North Sea and Wadden Sea better

The Dutch part of the North Sea is more than one and a half times the size of the Netherlands. In 2040, the North Sea will be much better protected than it is today. This happens largely at international level: we have agreements on **protected (nature) areas** with the countries bordering the North Sea. In addition, the North Sea Agreement looks further ahead than before, and actively involves all stakeholders. This allows vulnerable species to recover.

We have agreements on offshore wind farms. The offshore wind farms built before 2040 were good for the energy transition, but also had a large negative impact on nature living on the bottom of the North Sea. Therefore we switched to **floating wind farms** wherever ecological models allowed us to do so, thus ensuring that the energy transition did not develop at the expense of nature. Places where wind farms had already been placed on the seafloor, we monitored carefully in 2040. In this way, we can compensate for their negative effects on the vulnerable and special benthic animals as much as possible and restore the soil nature.



Finally, in 2040 the Wadden Sea will be even better protected as a nature reserve than before, especially the intertidal areas. This is necessary, as benthic animals and birds benefit from sufficient mudflat area that floods during high tide, and runs dry during low tide.

Underwater noise from shipping has been reduced, and container discharges are prevented with modified routes over the Wadden Islands. Scrubber discharges are prohibited, and flat oyster and sandbar worm reefs are actively restored.

Water &



The Netherlands is not only a water country, but also an agricultural country. We used a lot of drinking water in the agriculture and food sector, but not in a circular way. This is different in 2040: the Netherlands is the leader in sustainable water use in agriculture. Agriculture is an integral part of our dealings with water and securing agriculture for future generations, including future farmers

In the Netherlands, groundwater abstraction and drainage policies caused low groundwater levels for many years (*see also Water, Biodiversity & Nature*). Intensive tillage dehydrated and eroded the soil, removing much life from the soil. Water quality also deteriorated due to pesticide use.

Therefore, by 2040, we no longer use pesticides to grow crops. We also spread much less animal manure on the land. This has reduced excess nutrients and toxins in small surface waters (around plots), restoring healthy oxygen levels in the water.

Food

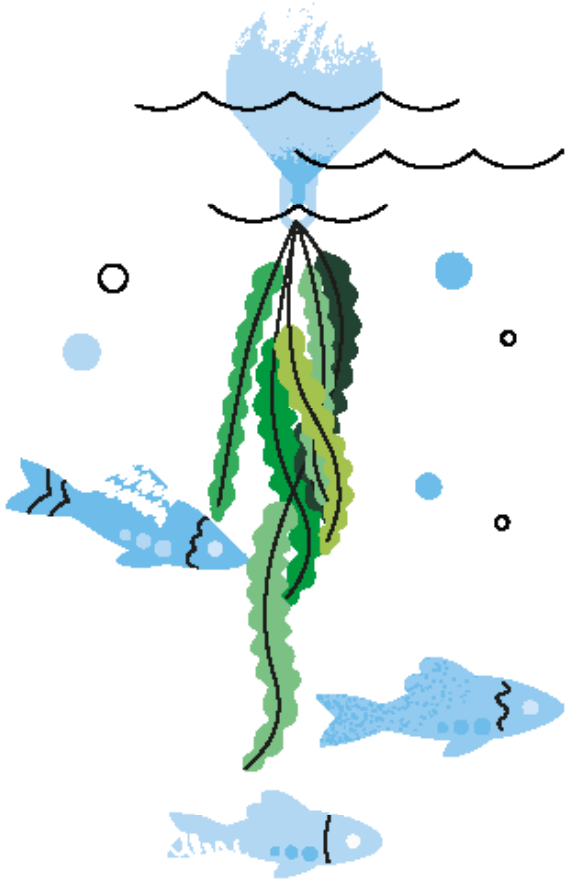
Because we apply less animal manure and no more fertiliser, there is much less nitrogen in our water.

By 2040, agriculture is actively contributing to improving water quality through regenerative agriculture. **Regenerative agriculture** (*for the definition see Nutrition, Dutch Youth Climate Agenda 3.0*) is a collaboration between agriculture and nature without pesticide use, artificial fertilisers, concentrate feed, intensive tillage and monocultures.26 Regenerative agriculture literally means bringing back life and thus contributes to restoring nature as well as our water quality (*see also Nutrition, Dutch Youth Climate Agenda 3.0*). Regenerative agriculture ensures climate-neutral soil and the restoration of groundwater levels. The term regenerative agriculture will be legally protected in 2040, just like organic cultivation, thus preventing greenwashing. The government encourages farmers to experiment with regenerative farming methods through subsidies. Farmers retrain themselves to move away from intensive livestock farming and towards regenerative forms of agriculture. There will also be more room for lateral entrants, new farmers who do not come from a farming family, to access land and engage in regenerative agriculture. Above all, farmers are paid **fairly** for nature management and good water quality on and outside their plots (*see also Nutrition, the Dutch Youth Climate Agenda 3.0*). Both wholesalers, supermarkets and consumers pay real, fair prices for food.

Saline agriculture and aquaculture

Rising sea levels, subsidence and salinisation have made much of Dutch soil and farmland saltier.27 This is not a problem because many crops, such as carrots, tomatoes, beets, strawberries and potatoes, can be grown well on saline soil. On two of the Wadden Islands (Terschelling and Texel) and in the province of Zeeland, crops were already grown on saline soil, but in 2040 we will do it on a larger scale along the Dutch coast and on the Wadden Islands.

Harmful aquaculture in fresh and salt water is gone by 2040. However, a new form of aquaculture has become bigger, namely seaweed and shellfish farming (on a small scale). These filter nitrogen, phosphate and other heavy metals from the water and act as **natural fertilisers** in agriculture. Also, growing seaweed, and possibly shellfish, promotes life under water- by creating oxygen and making the water less acidic, among other things, thus creating a hotspot of biodiversity where oysters, mussels and fish can live.28





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Food pattern

In 2040, we will have a different diet: animal proteins have largely been replaced by plant proteins. Livestock farming always consumed a lot of freshwater, but plant protein farming much less.30 We also eat seaweed, a valuable source of protein and iron for humans and animals. Our changed food pattern has also reduced our freshwater use abroad.31 Decreased production of animal protein in the Netherlands means we need to import less animal feed, which has dramatically reduced our global footprint. Fishing has also declined and where fishing still takes place, strict rules apply and sustainable management practices are in place (*see also Water and Economy).* There is no fishing in protected nature areas and there is more room for fish populations to recover.

Water & **the Built**



neighbourhoods and residential areas, we take water management into account to retain water longer in the soil instead of discharging it quickly through the sewer system. This makes the built environment of 2040 incredibly resilient.

Environment



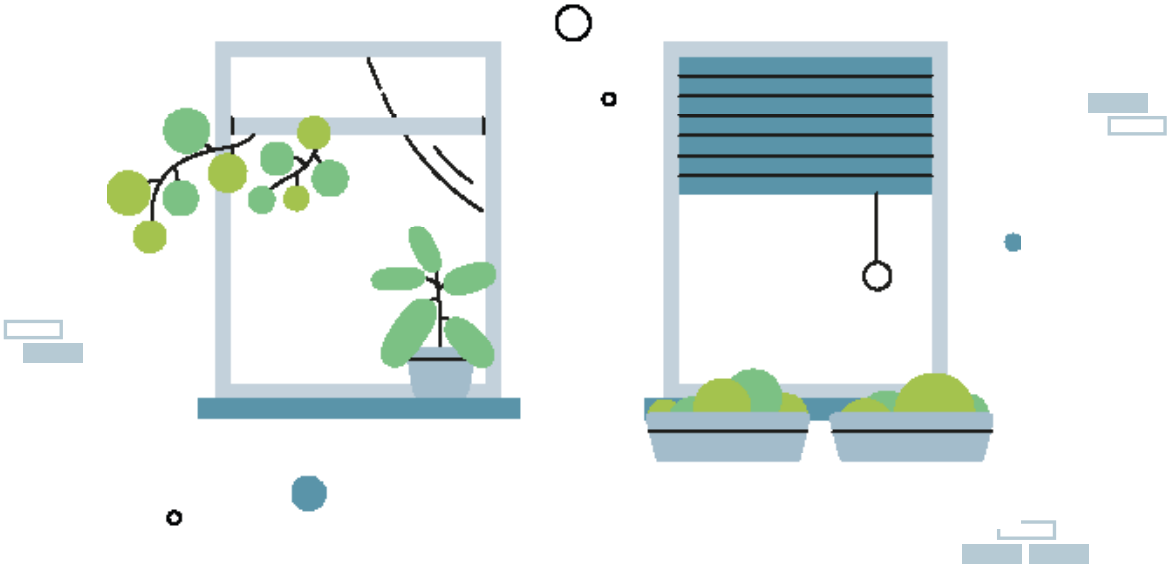
Green-blue city districts

In 2040, we live surrounded by greenery, water and nature. This was badly needed to be able to cope with the effects of climate change, such as increasing temperatures, subsidence and more extreme periods of drought and flooding. During heavy rainfall, our green surroundings retain more water and less water flows into the sewers or surface water.33 In hot periods, greenery provides a buffer, making our buildings and infrastructure less hot.34 This makes life more pleasant in densely built city centres. Cities are car-free as much as possible (*see also Mobility, The Dutch Youth Climate Agenda 3.0*), the parking spaces we still have inside the city are constructed with infiltration tiles so that rainwater can still reach the ground.

We have designed our buildings to be sustainable and green. Roofs and facades are covered with plants as much as possible, in combination with solar panels where possible. This has a cooling effect and collects rain, but is also good for animals and insects, contributes to clean air and absorbs greenhouse gases. In addition, when constructing and renovating buildings, we take animals into account by adding nesting or hibernation spaces to the building: in other words, we build **nature-inclusively**. Especially on the edges of towns and villages, buildings are built to fit in with the landscape. It is the norm to design gardens and balconies as green oases with lots of plants and flowers.



More masses of water run through our cities and towns, such as canals and wadis, and these masses are connected to each other and to rivers. This allows water to flow, benefiting water quality and health. These urban **green-blue arteries** make the city a more comfortable place to live, not only for humans but also for insects and animals. Nature and greenery is available for all residents within a ten-minute walk. Space previously taken up by cars for driving and parking, has been repurposed and is now used for nature. We find our way around the city by public transport, by footpaths and by cycle paths. We have allotments and other forms of urban agriculture. All the greenery in cities and villages contributes to biodiversity, thanks to nature-friendly management, and we are in constant contact with water because of our environment. As a result, we are also aware of the importance of water, which is reflected in our behaviour.



Drought and heat stress

While persistent drought and water shortages are relatively new problems for the Netherlands, this is not the case for many countries and cultures on this planet. Where the Netherlands has much to contribute internationally in the fight against water, we, in turn, have much to learn on how to arm ourselves against drought, and how to deal with water shortages. In 2040, we will no longer build as if we only have cold winters and moderate summers, as this is no longer the case due to climate change. Where possible we place as much greenery as possible on our roofs and streets for heat control purposes. We also choose other (circular) building materials that store less heat such as wood, and **reflective materials** with a white or other light colour.28 When designing buildings, we take into account the creation of good **transit options**. **Water-efficient plumbing** is the standard, saving a lot of water.35 We collect rainwater centrally in the neighbourhood. When there is a surplus of rainwater, we use it for watering gardens in hot periods, but we stop doing this as soon as there is no longer a surplus. We do not ever use drinking water for that purpose.

Living with the water

Climate change has made it increasingly difficult to keep all areas in the Netherlands dry at all times. In areas where flooding still occurs in extreme situations, we have adapted the buildings accordingly. Residents have the option of installing bulkheads to hold back water during moments of high water levels. By assigning a ***climate label i***n addition to the existing energy label, it is clear to residents what risks they may face in their living environment. In areas where the risk of high water levels is greatest, we choose to live partly or even completely on the water. An example of this can be found in the Dutch city Maasbommel, situated in the floodplains of the Meuse. Here **amphibious houses** have been built that can move with the water level. In places where there is less protection from the coast such as around port areas, we choose to build **floating houses**.

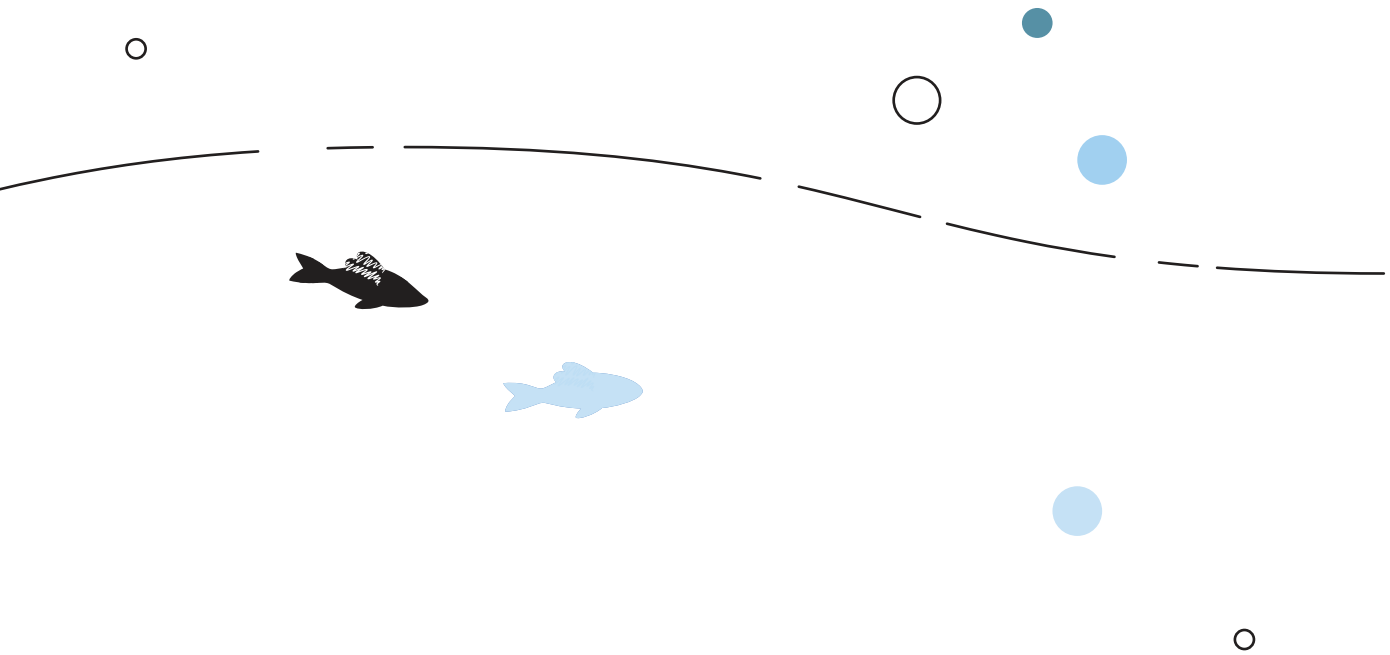


Conclusion

When we take the effects of climate change into account, it becomes clear that the Netherlands' current water policy will be unable to protect us from the water in 2040. Rising sea levels and excess water from the rivers are no longer the only danger. We must also learn to deal with prolonged drought, salinisation, and declining water quality. By using water carelessly and linearly, and allowing ourselves to be overly guided by economic gain, we exacerbate the effects of climate change. We are disrupting water's natural cycle, extracting it from the ground, affecting biodiversity, and polluting water. The consequences are becoming increasingly visible and palpable. The transition to a sustainable way of dealing with water has been underway for some time: the government program Ruimte voor de Rivier (Space for the Rivers) is a good example of how things can be done differently. However, the change is not happening fast enough: it is time for the transition to sustainable water policy to gain momentum.

A different policy strategy, a systemic solution, requires a clear dot on the horizon. We need to think from a future perspective, and to be bold in doing so. We can no longer reason exclusively from the present, but need to have the courage to ask how we want to deal with water in 17 years' time, to then determine what we can do in the here and now to make that vision of the future a reality.

Like the Dutch Youth Climate Agenda 3.0, the Dutch Youth Water Vision is not only an invitation to conversation, but above all a call to action. The choices we make now shape the future. Let us make the choices that will make the Netherlands more liveable, equitable and sustainable than ever in 2040.



Sources and notes

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