

# Welcome to your CDP Water Security Questionnaire 2020

## W0. Introduction

### W0.1

#### **(W0.1) Give a general description of and introduction to your organization.**

At BASF, we create chemistry for a sustainable future. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. The approximately 117,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world.

As of 2019, BASF's activities have been grouped into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. In 2019, BASF posted sales of €59.3 billion and income from operations before special items of approximately €4.5 billion. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information on BASF is available on the internet at <http://www.basf.com>

The company purpose "we create chemistry for a sustainable future" has embedded sustainability even further within the company. Within the journey of contributing to a more sustainable future, water was identified as a key topic for BASF. Increasing world population, the change in consumer behaviour and increasing demand for higher standards of living all characterize the importance of water stewardship.

BASF is also committed to the Sustainable Development Goals of the United Nations, which comprise the goal to ensure availability and sustainable management of water and sanitation for all (SDG 6 – Clean Water and Sanitation).

To promote water stewardship and to increase BASF's resilience towards this resource we pursue the goal of establishing sustainable water management at all sites in water stress areas and at all Verbund sites by 2030 by applying the European Water Stewardship (EWS) standard. After introducing the standard at our European sites in 2013, we started the global implementation and in 2019 we introduced the standard at eight additional sites. In 2015, external audit awarded us with the gold-level certification for our extensive application of the EWS standard and water management at the production site in Tarragona, Spain. Our Verbund site in Ludwigshafen received the EWS standard gold-level certification in 2014.

In order to prevent unanticipated emissions and the pollution of surface or groundwater, we create water protection strategies for our production sites as part of the Responsible Care initiative. The wastewater protection plans involve evaluating wastewater in terms of risk and drawing up suitable monitoring approaches. We use audits to check that these measures are being implemented and complied with.

Based on the findings of IPCC AR5 (and subsequent studies e.g. Aqueduct Water Risk Atlas by WRI), we analyzed all BASF Verbund sites worldwide in terms of future water stress. Consequential, we do not expect climate change to have a significant impact on the water supply at these sites in the near future.

We use our eco-efficiency analysis to evaluate products and processes with respect to their emissions to water and their consumptive water use.

We have just recently implemented the AWARE (Available WAtER REmaining) Water Assessment methodology into our eco-efficiency analysis. The Aware Methodology is the WULCA consensus characterization model for water scarcity footprints: assessing impacts of water consumption based on available water remaining (AWARE). BASF assesses its value to society - economic, social and environmental benefits and costs - in monetary terms using PwC's TIMM method. The scope includes the supply chain (tier 1 to tier n), own operations and customer industries. With regard to water, emissions and consumption are integrated.

Using the Sustainable Solution Steering® method BASF conducted sustainability assessments of its entire product portfolio. Products and solutions related to € 2.3 billion in sales make a particular contribution to water improvements in the value chain.

With these initiatives and projects, among others, BASF is able to use its expertise and innovation to find sustainable solutions to growing water related issues, such as scarcity or quality, worldwide.

Forward-Looking Statements:

This document may contain forward-looking statements. These statements are based on current estimates and projections and currently available information. Future statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. We do not assume any obligation to update the forward-looking statements contained in this report.

## W-CH0.1a

**(W-CH0.1a) Which activities in the chemical sector does your organization engage in?**

- Bulk organic chemicals
- Bulk inorganic chemicals
- Specialty organic chemicals
- Specialty inorganic chemicals

## W0.2

**(W0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date
Reporting year	January 1, 2019	December 31, 2019

## W0.3

**(W0.3) Select the countries/areas for which you will be supplying data.**

Algeria  
Argentina  
Australia  
Bahrain  
Belgium  
Brazil  
Canada  
Chile  
China  
Colombia  
Czechia  
Denmark  
Egypt  
Finland  
France  
Germany  
India  
Indonesia  
Ireland  
Italy  
Japan  
Kazakhstan  
Malaysia  
Mexico  
Netherlands  
New Zealand  
Norway  
Panama  
Peru  
Poland  
Puerto Rico  
Republic of Korea  
Romania  
Russian Federation  
Saudi Arabia  
Singapore  
Slovakia  
South Africa  
Spain  
Sweden  
Switzerland  
Taiwan, Greater China  
Thailand

- Turkey
- United Arab Emirates
- United Kingdom of Great Britain and Northern Ireland
- United States of America
- Viet Nam

## W0.4

**(W0.4) Select the currency used for all financial information disclosed throughout your response.**

EUR

## W0.5

**(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.**

Other, please specify

Worldwide production sites of BASF SE, its fully consolidated subsidiaries (emissions included in full), and proportionally consolidated joint operations (emissions disclosed pro rata according to BASF's interest

## W0.6

**(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?**

Yes

## W0.6a

**(W0.6a) Please report the exclusions.**

Exclusion	Please explain
Administrative sites (e.g. sales offices)	BASF only reports water inputs/outputs for its production sites. The water inputs/outputs from its various administrative sites are not collected since their contribution to BASF's total water inputs/outputs is not significant (<0.1%)
Associated/affiliated companies over which BASF has significant influence but does not have financial control (so-called B-companies) or from subsidiaries that are considered to be immaterial from a BASF point of view (so-called C-companies)	The contribution of the water inputs/outputs from BASF's B- and C- companies to BASF's total water inputs/outputs is not significant (< 2%). Thus, they are not collected and reported.

## W1. Current state

### W1.1

**(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.**

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Important	<p>Primary use in direct operations: Coolant (86%), also as solvent or cleaning agent, and product input.</p> <p>Rationale: Many of our products rely on freshwater as product or process input, with strict quality parameters. With impure water, product quality is severely affected/efforts for water pre-treatment rise. 2019, 83% of water withdrawal was from surface water/freshwater sources. Hence, freshwater availability is considered vital for operations.</p> <p>Future: At this time, we expect no significant changes in importance, as core processes and product lines will remain. Future shifts in product portfolio could alter this status.</p> <p>Primary use in indirect operations: Many suppliers are chemical factories and use water as coolant and solvent.</p> <p>Rationale: Water use heavily depends on sector/product. For instance, hydrocarbons require lots of process steam and cooling water. Other products are less dependent on freshwater. Therefore, the availability is important, but not in all cases vital for operations in our supply chain.</p> <p>Future: At this time, we expect no significant changes of dependency in our supply chain, as core groups of procured materials will remain. Future shifts in product portfolio could alter this status.</p>
Sufficient amounts of	Vital	Important	Primary use in direct operations: Mainly cooling.

<p>recycled, brackish and/or produced water available for use</p>			<p>Rationale: 1% of withdrawal was from brackish/seawater in 2019: a significant share that cannot be readily replaced by other sources. We recirculate water as much as possible, to withdraw less.</p> <p>Future: At this time, we expect no significant changes, as use of brackish water depends on availability/local conditions. Use of recycled water may be increased to decrease freshwater dependency.</p> <p>Primary use in indirect operations: Mainly coolant (brackish), solvent (recycled).</p> <p>Rationale: Use and importance of brackish/recycled water depends on process, availability and local conditions. Therefore, this aspect is important, but not in all cases vital for operations.</p> <p>Future trends: At this time, we expect no significant changes in water dependency in our supply chain, as core groups of procured materials will remain in place. However, future shifts in the product portfolio could alter this status. Use of recycled water or reuse of wastewater may be increased due to limited freshwater supply.</p>
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## W1.2

**(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?**

	% of sites/facilities/operations	Please explain
<p>Water withdrawals – total volumes</p>	<p>100%</p>	<p>BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for total</p>

		volumes of water withdrawals. Data in the REHSA is updated annually.
Water withdrawals – volumes by source	100%	BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for volumes of water withdrawals by sources. Data in the REHSA is updated annually.
Water withdrawals quality	76-99	BASF collects quality data on a local site level. It is not part of the REHSA (Reporting EHS Application) but carried out according to site specific processes and guidelines, where required. Therefore, we assume coverage of 100% of relevant sites, or a slightly lesser degree of coverage if all sites are taken into account. Depending on the use of the withdrawn water, salinity may be monitored to control corrosion of the cooling system or contamination with bacteria for drinking water and product purposes. Withdrawals quality is monitored taking into account the type of withdrawal, e.g. there are specific criteria for sea water withdrawals (e.g. chlorine content, turbidity, temperature, pH) etc. The frequency of monitoring varies according to local requirements for the production process – in some cases, a continuous monitoring is in place. In other cases, monitoring is updated in regular intervals, e.g. annually.
Water discharges – total volumes	100%	BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and

		the database is audited externally. 100% of BASF production sites are monitored for total volumes of water discharges. Data in the REHSA is updated annually.
Water discharges – volumes by destination	100%	BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for volumes of water discharges by destination. Data in the RCDB is updated annually.
Water discharges – volumes by treatment method	100%	BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for volumes of water discharges by treatment method. Data in the REHSA is updated annually.
Water discharge quality – by standard effluent parameters	100%	ASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for quality by standard effluent parameters. Data in the REHSA is updated annually.

<p>Water discharge quality – temperature</p>	<p>76-99</p>	<p>BASF collects discharge temperature data on a local site level. It is not part of the REHSA (Reporting EHS Application) but carried out according to site specific processes and requirements. Time intervals vary depending on requirements, and can also be continuous. In some cases, we also monitor/calculate not only temperature amounts but also heat input to e.g. surface water bodies. Therefore, we assume coverage of 100% of relevant sites (i.e. all sites with discharges of cooling water), or a slightly lesser coverage if all sites are taken into account.</p>
<p>Water consumption – total volume</p>	<p>100%</p>	<p>BASF collects data on water consumption at each site in a global database named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. 100% of BASF production sites are monitored for total volumes of water consumption. Data are updated annually.</p>
<p>Water recycled/reused</p>	<p>100%</p>	<p>BASF collects data on water supply, water use, and water discharge at site level in a global database, named REHSA (Reporting EHS Application). Data entry and maintenance have precise reporting requirements. Training sessions are conducted to ensure that the same data standards are implemented around the world. We publicly report the information for the entire company in the annual BASF report and the database is audited externally. 100% of BASF production sites are monitored for water recycled and reused. Data in the RCDB is updated annually.</p>
<p>The provision of fully-functioning, safely managed WASH services to all workers</p>	<p>100%</p>	<p>BASF signed the “Pledge for Access to Safe Water, Sanitation and Hygiene at the Workplace” (WASH) of the World Business Council for Sustainable Development (WBCSD). By signing the pledge, BASF strengthened its commitment to provide access to water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees. The Department Corporate Health Management</p>

		<p>is responsible for the management of occupational health and general Health topics of BASF employees, and the coordination and auditing of occupational medicine in 100 % of BASF production sites worldwide. Part of this responsibility are the topics sanitation and hygiene at the workplace. Sites are audited on a regular basis - 5 year interval if no negative findings were identified, or more frequently in case of findings. Audit results and action items are tracked in an audit database. We performed 15 audits in 2019 and 15 Health Performance Control visits</p>
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## W1.2b

**(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?**

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	1,717,000	Lower	<p>Total amount of water withdrawn was somewhat lower due to lower withdrawals mainly at our Verbund site in Antwerp due to lower production.</p> <p>Future trends: At this time, we expect no significant changes in total water withdrawal, as core groups of procured materials will remain in place. However, further extension of our facilities or a future change in product portfolio could alter this status.</p>
Total discharges	1,509,000	Lower	<p>Total amount of water discharged was somewhat lower due to lower withdrawals and due to uncertainties in measurement of once through cooling water discharge in open channels at site Ludwigshafen.</p> <p>Future trends: At this time, we expect no significant changes in total water discharges, as core groups of procured materials will remain in place. However, higher production, further extension of our facilities or a future change in product portfolio could alter this status.</p>

Total consumption	61,000	Lower	<p>Water consumption is the sum of all water that has been withdrawn and incorporated into products, waste, evaporated, consumed by humans or livestock, polluted to a point of being unusable by others, and therefore not released back to surface water, groundwater, third party over the course of the reporting period. At BASF water consumption is mainly due to evaporation in recirculating cooling processes. A smaller fraction is incorporated into products or consumed by other processes. Water consumption in 2019 was lower than in 2018 due to less evaporation in cooling processes. Water evaporated in cooling processes and water consumed in production processes is aggregated from local measurements whereas water in products on group level is calculated from the average water content of the volume sales. The figures do not balance using basic calculation “Withdrawals = Consumption + discharges” due to measurement uncertainties for discharged cooling water in open channels.</p> <p>Future trends: At this time, we expect no significant changes in total water consumption, as core groups of procured materials will remain in place. However, higher production / further extension of our facilities or a future change in product portfolio could alter this status.</p>
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## W1.2d

**(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.**

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	1-10	About the same	WRI Aqueduct	In 2019, around 28% of our production sites were located in water stress areas. These accounted for 1% of BASF’s total water abstraction. Water consumption in water stress areas (as defined by Aqueduct

				<p>3.0) accounted for around 14% of our total water consumption and was primarily attributable to evaporation in cooling processes. All our sites have to report their water withdrawal (see question W 1.2). We previously defined water stress areas as areas in which 60% or more of the water available is used by industry, household, and agriculture. From 2019 onward, we will expand our definition of water stress areas in accordance with the new Global Reporting Initiative (GRI) standards. In the future, we will report on water stress areas as regions in which 40% or more of available water is used (baseline water stress). Our assessment is now based on the on Aqueduct 3.0 (WRI, 2019) which uses new water data and has a higher resolution than the Pfister tool used before. All our sites have to report their water withdrawal (see question W 1.2). Based on the results, we can filter water data to show only withdrawals for the sites in water stress areas. The evaluation of sites located in water stress areas is updated at the end of each Calendar Year. The evaluation is conducted centrally for all sites by water experts in our corporate Environmental Protection unit.</p> <p>Explanation of change: In 2019 water withdrawal by the sites in water stress areas was 1% (1.2% in 2018) of BASFs total withdrawal. The difference is not significant and is due to the</p>
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					change in the tool that was used to determine sites in water stress areas from Pfister to Aqueduct 3.0.
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## W1.2h

**(W1.2h) Provide total water withdrawal data by source.**

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	1,433,000	Higher	<p>Fresh surface water (=water from rivers, lakes, collected and used rainwater) is the most important source for water supply. All our sites are either metering the abstracted volume of water or the supplied volume of water. The most important used freshwater is river water for once-through cooling at our site in Ludwigshafen. Water is taken from the river and discharged back into it after use, without having contact to chemicals. The increase in freshwater withdrawal was mainly for increased once-through and decreased recirculating cooling at our Ludwigshafen site (last year: 1409000 megaliters).</p> <p>Future trends: Since the proportion of once-through cooling and recirculating cooling flow is dependent on weather situation and influenced by the water energy nexus, volumes of abstracted surface water may vary from year to year. Also, water withdrawal in our</p>

				operations is affected by production output due to cooling water use, it may decrease also to a certain extent with changing production.
Brackish surface water/Seawater	Relevant	192,000	Lower	<p>Abstracted brackish water is metered and brackish water has a relevant share within BASF's overall water withdrawals. Most of the brackish water is withdrawn and discharged at our site in Antwerp, located near the sea. The brackish water is taken from the harbor and discharged back after use in a recirculating cooling system. The decrease in brackish water withdrawal was mainly for decreased cooling purposes (last year: 246000 megaliters).</p> <p>Future trends: Since water withdrawal in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p>
Groundwater – renewable	Relevant	68,000	About the same	<p>Abstracted groundwater is metered. The groundwater water has a rather small, but relevant share within BASF's overall water withdrawals, especially for higher quality water requirements. We do not yet distinguish between renewable and non-renewable groundwater supply in our BASF REHSA database, but most groundwater supply comes from renewable resources. The amount is roughly the same as last year, which</p>

				<p>was at 66000 megaliters.</p> <p>Future trends: At this time, we expect no significant changes in groundwater water withdrawal in our operations, as core groups of procured materials will remain in place. However, future shifts in the product portfolio could alter this status.</p>
Groundwater – non-renewable	Not relevant			
Produced/Entrained water	Not relevant			
Third party sources	Relevant	24,000	About the same	<p>Third party source is mainly drinking water from municipal suppliers (23000 megaliters). Wastewater from another organization accounts for about 1000 megaliters. Supplied volumes are metered. They represent a rather small share of our overall withdrawals, but the relevance is constituted by the dependence on and interrelations with external stakeholders. The amount is virtually constant compared to the 2018 figures (24000 megaliters).</p> <p>Future trends: At this time, we expect no significant changes in withdrawal from third party sources regarding drinking water. The amount of wastewater from other organization is expected to increase.</p>

## W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	1,309,000	Lower	<p>Rationale for relevance: Fresh surface water is the most important source for water supply. Most of the water is used for once-through cooling at our site in Ludwigshafen. The water is taken from the river and is given back to it after use without having contact to chemicals.</p> <p>The volume of discharged water is measured. By volume, fresh surface water is the most important destination of discharge. The decrease in discharge was mainly due to measurement uncertainties of cooling water discharge in open channels at our Ludwigshafen site (last year: 1344000 megaliters).</p> <p>Future trends: Since water discharge in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p>
Brackish surface water/seawater	Relevant	178,000	Lower	<p>Rationale for relevance: Some sites are located nearby the coast and brackish water or the sea is the destination for discharge. The volume of discharged water is measured. By volume, brackish water and sea water are the second most important destinations of discharge.</p> <p>Comparison to last year: The lower discharge into brackish water is the result of lower cooling water discharge at the site in</p>

				<p>Antwerp (last year: 239000 megaliters).</p> <p>Future trends: Since water discharge in our operations is affected by production output due to cooling water use, it may increase to a certain extent with growing production.</p>
Groundwater	Relevant	1,000	Lower	<p>Rationale for relevance: Water discharge via soil to water beneath the soil surface or water discharge into isolated geological formations. This represents a rather small share of our overall discharges, but the relevance is constituted by the potential ecological implications.</p> <p>The volume of discharged water is measured. Comparison to last year: The level is much lower than the previous year (10000 megaliters) because of the cut-off of Wintershall.</p> <p>Future trends: At this time, we expect no significant changes in discharges to groundwater.</p>
Third-party destinations	Relevant	21,000	About the same	<p>Rationale for relevance: This includes mainly water treated in a wastewater treatment plant (WWTP) which is not operated by BASF - municipal and private owned WWTP and a small fraction (&lt;1%) of water send to others for further use. Third party destinations represent a rather small share of our overall discharges, but the relevance is constituted by the dependence on and interrelations with external stakeholders.</p> <p>The volume of water discharged to</p>

				<p>third parties is measured.</p> <p>Comparison to last year: The amount is within the same range as the 2018 figures (21000 megaliters). Future trends: At this time, we expect no significant changes in discharges to third party sources.</p>
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### W-CH1.3

**(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?**

Yes

### W-CH1.3a

**(W-CH1.3a) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.**

**Product type**

Bulk organic chemicals

**Product name**

Ethylene

**Water intensity value (m3)**

0.39

**Numerator: water aspect**

Freshwater consumption

**Denominator**

m3

**Comparison with previous reporting year**

Lower

**Please explain**

Why volumes change/anticipated future trends: We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 4 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, re-cooled water volume is increased, which results in higher consumption

+ water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated. Use of metrics /strategy to manage intensities: The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices and pumping capacity. We seek to limit re-cooling + save energy, thus also reduce calculated water intensities. On site level, the recirculation rate/water intensity is a central parameter to plan future demand of cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO2 emissions. Since 86% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO2 emissions. These optimization criteria are integrated in daily operations and part of the strategy of reaching BASF's climate goal.

**Product type**

Bulk organic chemicals

**Product name**

Propylene

**Water intensity value (m3)**

0.39

**Numerator: water aspect**

Freshwater consumption

**Denominator**

m3

**Comparison with previous reporting year**

Lower

**Please explain**

Why volumes change/anticipated future trends: We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 4 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, re-cooled water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated. Use of metrics /strategy to manage intensities: The more water is recirculated (and partially

evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices and pumping capacity. We seek to limit re-cooling + save energy, thus also reduce calculated water intensities. On site level, the recirculation rate/water intensity is a central parameter to plan future demand of cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions. Since 86% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated in daily operations and part of the strategy of reaching BASF's climate goal.

**Product type**

Bulk organic chemicals

**Product name**

Benzene

**Water intensity value (m<sup>3</sup>)**

0.11

**Numerator: water aspect**

Freshwater consumption

**Denominator**m<sup>3</sup>**Comparison with previous reporting year**

Lower

**Please explain**

Why volumes change/anticipated future trends: We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 4 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, re-cooled water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated. Use of metrics /strategy to manage intensities: The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water

consumption and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices and pumping capacity. We seek to limit re-cooling + save energy, thus also reduce calculated water intensities. On site level, the recirculation rate/water intensity is a central parameter to plan future demand of cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO<sub>2</sub> emissions. Since 86% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO<sub>2</sub> emissions. These optimization criteria are integrated in daily operations and part of the strategy of reaching BASF's climate goal.

**Product type**

Bulk organic chemicals

**Product name**

Ammonia

**Water intensity value (m3)**

0.75

**Numerator: water aspect**

Freshwater consumption

**Denominator**

m<sup>3</sup>

**Comparison with previous reporting year**

Higher

**Please explain**

Why volumes change/anticipated future trends: We define water consumption as water not returned to its original environment (includes evaporated water, water contained in products and consumed as part of chemical reactions). Water intensities at BASF plants are vastly different depending on location (even for the same product). Our largest sites in Ludwigshafen and Antwerp were chosen as examples for 4 major products. Hot summers can lead to less fresh water available and higher river water temperatures. In such periods, re-cooled water volume is increased, which results in higher consumption + water intensities. Shutdowns + testing of equipment can also lead to higher water consumption. Hence, volumes change continuously and cannot be anticipated. Use of metrics /strategy to manage intensities: The more water is recirculated (and partially evaporated/consumed), the more electricity for pumping is needed, representing a cost factor, and causing GHG emissions. The recirculated water portion of the cooling water cycle is continuously monitored to maintain an optimum of emissions, water consumption and once-through cooling mode. The main parameters determining the optimum are regulatory constraints (max. effluent temp., receiving water body temp., max. freshwater intake), electricity prices and pumping capacity. We seek to limit re-

cooling + save energy, thus also reduce calculated water intensities. On site level, the recirculation rate/water intensity is a central parameter to plan future demand of cooling capacities and is part of the long-term development strategy of the sites. Our central environmental goal is to reduce CO2 emissions. Since 86% of the water withdrawn is used for cooling purposes, a reduction of re-cooling with reduced power demand for pumps reduces water intensities (lower evaporation from cooling towers) and CO2 emissions. These optimization criteria are integrated in daily operations and part of the strategy of reaching BASF's climate goal.

## W1.4

### (W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

Yes, our customers or other value chain partners

## W1.4a

### (W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

#### Row 1

#### % of suppliers by number

1-25

#### % of total procurement spend

26-50

#### Rationale for this coverage

Since our supplier base currently comprises more than 75 000 tier 1 suppliers, including raw material suppliers, providers of technical goods and services and logistics operations, focusing our third-party evaluations on the most relevant is crucial.

Selection: We define relevant suppliers as those showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks) and our purchasers' assessments with focus on responsible supply of goods and services as well as environmental and social standards. We also use further sources of information to identify relevant suppliers (TfS).

Incentivization: Our buyers integrate the results of the evaluations into their supplier management. The sustainability results can be used in bonus malus schemes and as awarding criterion. Suppliers may be excluded from participating in tenders because of poor sustainability evaluation results.

#### Impact of the engagement and measures of success

Information requested: In online assessments, suppliers are requested to report on water use, management procedures, wastewater handling and existence of a water

policy. In on-site audits, water policies, reports, protection concepts for wastewater effluents, containment measures and water-related impact reduction practices are examined.

Use of information: Suppliers' performance in these areas impacts their evaluation result. If we identify potential for improvement, we support suppliers in developing measures to fulfil our standards, such as providing training on environmental topics. We conduct another review according to a defined timeframe based on the sustainability risk measured.

Measure of success: We analyze the relevant spend we cover with evaluations (status 2019: 81%) and track the percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation (status 2019: 52%). We have set ourselves the goal to increase this percentage to 80% by 2025.

#### **Comment**

Spend calculated according to International Financial Reporting Standards (IFRS).

## **W1.4b**

### **(W1.4b) Provide details of any other water-related supplier engagement activity.**

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#### **Type of engagement**

Incentivizing for improved water management and stewardship

#### **Details of engagement**

Water management and stewardship is integrated into supplier evaluation processes

#### **% of suppliers by number**

1-25

#### **% of total procurement spend**

26-50

#### **Rationale for the coverage of your engagement**

Since our supplier base currently comprises more than 75 000 tier 1 suppliers, including raw material suppliers, providers of technical goods and services and logistics operations, focusing our third-party evaluations on the most relevant is crucial. We define relevant suppliers as those showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks) and our purchasers' assessments. We also use further sources of information to identify relevant suppliers, such as evaluations from TfS. Many of the most water-stressed countries according to the WRI (World Resources Institute) 2019 ranking are also considered as potentially bearing high risks according to our approach. When analyzing alternative suppliers, buyers can access evaluation reports on the suppliers' sustainability performance. Buyers are encouraged and trained to integrate available evaluation results into awarding processes and business decisions.

### Impact of the engagement and measures of success

The sustainability third-party evaluations are used as a tool for supplier risk management and continuous improvement. They provide a direct supplier performance indicator which can be positively influenced, e.g. by proving implementation of water management measures and policies, correct use of water and safe handling of wastewater, and by holding certifications like ISO 14001 (45% of assessed suppliers in 2019 vs. 34% in 2018).

As a measure of success, we analyse the relevant spend we cover with evaluations (status 2019: 81%) and track the percentage of evaluated suppliers that improve their sustainability performance upon re-evaluation (status 2019: 52%). The audits conducted over the past few years have identified some deviations, for example in waste and wastewater management, whereas follow-up assessments in 2019 found, for example, that wastewater was treated properly. This shows the positive effect of our evaluation and supplier engagement program.

### Comment

Spend calculated according to International Financial Reporting Standards (IFRS).

## W1.4c

### (W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

**Integrated partners:** We integrate sustainability information on BASF and its products in day-to-day business with our customers.

**Method/strategy:** We use a range of sustainability tools to support interaction with customers: lifecycle assessment tools (Eco-Efficiency Analysis, SEEBALANCE®, AgBalance™) or tools for systematic analysis of the sustainability landscape in a value chain. Exact intensity and modus of interaction (e.g. one-to-one meetings, workshops, joint projects, seminars) is customer dependent.

**Prioritization:** Our engagement with customers essentially covers our entire customer base. Findings from our sustainability tools allow us to identify hot spots; prioritization for working with specific customers is primarily driven by our divisions based on opportunities. We have segmented our portfolio regarding contribution to sustainability (including reduction of water use), using the Sustainable Solution Steering® method. Products with substantial sustainability contribution in the value chain are classified as Accelerators. We **measure success** of these Accelerators by their sales volume (2019 sales of €15 billion).

We also undertake sector specific engagements: For instance, via our Agricultural Products division, we engage with selected agricultural **customers, networks, initiatives and also local water utilities**.

**Method and strategy:** Partnerships to jointly develop and disseminate best management practices to reduce water use and pollution. This can apply to optimized product use of e.g.

herbicides, technical innovations like mulch films, optimized irrigation practices or alternative cultivation techniques like dry-seed rice.

**Prioritization:** Partners must be influencers in strategic value chains (crop-specific) and willing to cooperate with industry. Success is measured by number of touchpoints with value chain players (e.g. number of engaged farmers or advisors), as well as Agricultural Products product sales within these value chains.

## W2. Business impacts

### W2.1

**(W2.1) Has your organization experienced any detrimental water-related impacts?**

No

### W2.2

**(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?**

Yes, fines

### W2.2a

**(W2.2a) Provide the total number and financial value of all water-related fines.**

Row 1

**Total number of fines**

3

**Total value of fines**

74,000

**% of total facilities/operations associated**

1

**Number of fines compared to previous reporting year**

Higher

**Comment**

Water-related fines are historically on a low level. In 2019, the number slightly increased.

### W2.2b

**(W2.2b) Provide details for all significant fines, enforcement orders and/or other penalties for water-related regulatory violations in the reporting year, and your plans for resolving them.**

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**Type of penalty**

Fine

**Financial impact**

10,000

**Country/Area & River basin**

Turkey

Other, please specify

Marmara

**Type of incident**

Effluent limit exceedances

**Description of penalty, incident, regulatory violation, significance, and resolution**

Environmental authorities charged BASF a fine on the premise that wastewater samples exceeded limits.

Resolution: In the aftermath BASF tested the wastewater thoroughly. As BASF tests show, all water samples were in order. As a result, the fine had to be paid but is being disputed.

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**Type of penalty**

Fine

**Financial impact**

40,000

**Country/Area & River basin**

China

Yangtze River (Chang Jiang)

**Type of incident**

Effluent limit exceedances

**Description of penalty, incident, regulatory violation, significance, and resolution**

Environmental authorities charged BASF a fine for exceeding limits of pH and COD. Our analysis confirmed this. As reason for the exceeding, a malfunction in the wastewater treatment facility could be identified.

Resolution: The issue with the wastewater treatment facility of BASF has been rectified. Tests show that the facility is now working again as intended.

**Type of penalty**

Fine

**Financial impact**

24,000

**Country/Area & River basin**

Brazil

Rio Paraiba

**Type of incident**

Effluent limit exceedances

**Description of penalty, incident, regulatory violation, significance, and resolution**

Environmental authorities charged BASF a fine for exceeding the limit for acute toxicity. All data point to a mixup of the samples by the authorities. Both the treated wastewater and the raw wastewater were tested and the test results showing exceeded values are corresponding to raw wastewater data.

Resolution: BASF is contesting the fine. In the past 4 years BASF invested 14 million € in updating the treatment plant to the latest technology. An exceedance of the toxicity limit cannot be traced back to any technical reason.

## W3. Procedures

### W-CH3.1

**(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?**

The Corporate EHS is responsible for identifying water pollutants globally. Corporate EHS is connected via cross-divisional and cross-regional teams around the world to exchange on ongoing legislative activities.

BASF assesses overall impact in terms of chronic and acute toxicity, coverage, persistence, bioaccumulation, etc. according to prevailing laws and regulations. Competent authorities, on a regular basis, check BASF's measurements and assessments and ensure the company's compliance with permitted emission levels.

Impacts considered: We identified and classified pollutants of global relevance. These are heavy metals (due to toxicity for humans and other organisms), and substances causing eutrophication (organic carbon, nitrogen, phosphorus), leading to reduced oxygen availability in water bodies and therefore can decimate water organisms and damage ecosystems. We continuously collect data of these pollutants in our Responsible Care Database globally. The BASF Global Requirement "Environmental Protection" requires that all production facilities conduct a Water Risk Assessment where applicable, including cooling water protection,

firefighting water retention and management of spillages and leakages, process wastewater, surface water and steam condensate. The protective measure to be implemented are determined depending on the probability of an event and the severity of its impact.

On site level, environmental impact classes have to be determined including volume and ecotoxicological/toxicological properties of substances handled in the plant (H-phrases as in safety data sheets) and the local conditions including type of receiving water body (river, lake, sea), size and water flow conditions, ecology, use of water body (drinking water, fishing etc.). The site/plant manager is responsible for conducting a Water Risk Assessment and implement measures. The local EHS-Function contributes expert knowledge for conducting Water Risk Assessments. The structured approach of the Water Risk Assessment is intended to identify all possible harmful events in a globally consistent manner. This enables BASF to exchange experiences and share learnings, thus continuously improving the environmental safety of its production sites. BASF's global audit team checks the Water Risk Assessment documentation of sites regularly and files shortcomings in a report to the Board of Directors.

Regarding our products, documentation and classification is following legal requirements and standards on international and market level, among others the UN Globally Harmonized System of Classification and Labelling of Chemicals.

The basic water-related impacts mentioned above (toxicity to humans and natural ecosystems, eutrophication) are also taken into account when assessing potential pollutants in the value chain. BASF is a founding member of "Together for Sustainability" (TFS), an initiative of the leading chemical companies. TFS evaluates the environmental performance of suppliers with audits, also taking into account wastewater prevention and treatment. Additionally, the specific potential impacts of our products are assessed in relation to the context, e.g. in the case of herbicides in agricultural applications. This typically applies to products which are distributed to end-consumers.

The largest portion of BASF's product portfolio consists of industrial products which are distributed for further processing in virtually all industries. Here, the focus of potential impacts on water is on the safety of transport of these industrial products to our industrial customers. We want our products to be safely loaded, transported, handled and stored. This is why we depend on reliable logistics partners, global standards and an effective organization. Our goal is to minimize risks along the entire transportation chain – from loading and transportation to unloading. Some of our guidelines for the transportation of goods which are hazardous to the aquatic environment go above and beyond national and international requirements. We have defined global guidelines and requirements for the storage of our products and regularly monitor compliance with these. We regularly assess the environmental risks of transportation and storing raw materials and sales products with high hazard potential using our global guideline. This is based on the guidelines of the European Chemical Industry Council (CEFIC). We also have binding global standards for load safety. We stipulate worldwide requirements for our logistics service providers and assess them in terms of safety and quality. Here, we have developed our own evaluation and monitoring tools and also use internationally approved schemes.

## W-CH3.1a

**(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.**

Potential water pollutant	Value chain stage	Description of water pollutant and potential impacts	Management procedures	Please explain
Nitrogen	Direct operations	Nitrogen is a common chemical element found in many molecules used in the chemical industry, e.g. ammonia, a building block of many chemical products (e.g. plastics, fertilizer). As such, traces of Nitrogen are typically contained in chemical industry wastewater. Nitrogen levels in wastewater can be reduced biologically (De-Nitrification) to meet regulatory standards. Total emissions of Nitrogen into the aquatic environment amounted to 3000 t in 2019 or about 90 g (value constant) of total Nitrogen per ton of sales product from the chemicals business. High nitrogen concentrations in aquatic ecosystems raise the level of nutrients, can cause algal blooms and lead to oxygen depletion. This eutrophication process may pose a threat to biodiversity and diminish life in aquatic environments. Loss of biodiversity can cause spiraling negative effects on interconnected ecosystems, e.g. bird	Compliance with effluent quality standards Other, please specify Responsible Care Management System	How the procedures selected manage the risks: The Responsible Care Management System (RCMS) triggers continuous improvements via many different measures in production plants and improvements in the wastewater treatment plants (WWTP); e.g. the site Guaratinguetá / BASF S.A. in Brazil increased the WWTP removal efficiency due to new biological tank. First steps of improvements are always taken on the plant level to reduce the emission of a pollutant. If this cannot be achieved, e.g. the production process has an intrinsic and unavoidable emission of the pollutant, end-of-pipe technologies are improved, e.g. by making changes to the wastewater treatment plant Measurement of results/success: BASF measures total emission of nitrogen across the group. As a result of the management activities under the RCMS, BASF group reduced nitrogen

		populations depending on fish for food.		emission from 4600 (t/a) in 2008 to 3000 (t/a) in 2019.
Heavy metals	Direct operations	The source of heavy metals in effluent are production processes using heavy metals as catalysts or raw materials (e.g. for the manufacture of battery materials, catalytic converters) and the production equipment itself. Steel is an alloy of iron and numerous metals to achieve certain properties (e.g. resistance to rust). Small amounts of these metals are released into the effluent through direct contact with process equipment, e.g. piping, pumps, distillation columns etc. These small releases added up to a total of 25 t in 2019, which translates into a heavy metal release into the aquatic environment of less than 750 mg per t of sales product from the chemicals business. Heavy metals can cause serious toxic effects on aquatic organisms, as they can absorb heavy metals directly from the water or indirectly from food chains.	<p>Compliance with effluent quality standards</p> <p>Measures to prevent spillage, leaching, and leakages</p> <p>Other, please specify</p> <p>Continuous improvement is an objective of the Responsible Care Management System (RCMS)</p>	<p>How the procedures selected manage the risks: The Responsible Care Management System (RCMS) triggers continuous improvements via many different measures in production plants and improvements in the wastewater treatment plants (WWTP). We have wastewater protection plans, in order to avoid unanticipated emissions in the environment, are introduced globally.</p> <p>Measurement of results/success: BASF measures total emission of heavy metals across the group. BASF group reduced heavy metal emission from 34 (t/a) in 2008 to 25 (t/a) in 2019.</p>

### W3.3

**(W3.3) Does your organization undertake a water-related risk assessment?**

Yes, water-related risks are assessed

### W3.3a

**(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.**

## Direct operations

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### Coverage

Full

### Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

### Frequency of assessment

Annually

### How far into the future are risks considered?

More than 6 years

### Type of tools and methods used

Tools on the market  
Enterprise Risk Management  
International methodologies  
Databases

### Tools and methods used

WRI Aqueduct  
COSO Enterprise Risk Management Framework  
Alliance for Water Stewardship Standard  
Other, please specify  
European Water Stewardship (EWS) standard; World Database on Protected Areas (WDPA); Community Advisory Panels (CAPs); Environmental Impact Assessment; Sustainability Assessment and Statement; Water stress too Aqueduct

### Comment

Most relevant risk fields that cover water-related risks for direct operations within the Enterprise Risk Management are "Plant availability", "Change in production quality", "Change in production cost", "Regulation", "Ecology and environmental protection". The risk management is informed by the tools listed.

## Supply chain

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### Coverage

Full

### Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

### Frequency of assessment

Annually

### How far into the future are risks considered?

More than 6 years

### Type of tools and methods used

Tools on the market

### Tools and methods used

Other, please specify

Risk matrix and Together for Sustainability evaluations, RepRisk; Maplecroft Risk Atlas; Procurement strategy template; investment decisions.; PwC TIMM Method

### Comment

Since our supplier base currently comprises more than 75 000 tier 1 suppliers, including raw material suppliers, providers of technical goods and services and logistics operations, focusing our third-party evaluations on the most relevant is crucial. We define relevant suppliers as those showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks) and our purchasers' assessments with focus on responsible supply of goods and services as well as environmental and social standards. We also use further sources of information to identify relevant suppliers, such as evaluations from TfS. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' social and environmental standards, which include water management. The evaluation process is based on third-party online assessments and/or on-site audits and is simplified by a globally uniform questionnaire. In addition, RepRisk provides us with ad-hoc information if any suppliers have been publicly observed in connection with negative sustainability incidents, including water-related aspects. Furthermore, the topic of water is an explicit component of BASF's sourcing strategies, because of its potential to drive sustainability. This means that, when elaborating a procurement strategy, Buyers are required to consider potential threats and opportunities related to water.

### Other stages of the value chain

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#### Coverage

Partial

#### Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

#### Frequency of assessment

Annually

#### How far into the future are risks considered?

More than 6 years

#### Type of tools and methods used

Tools on the market

International methodologies

#### Tools and methods used

Environmental Impact Assessment

Life Cycle Assessment

Other, please specify

Other: PwC TIMM Method, internal methods

### Comment

Product safety risks are considered as a dedicated risk field within the Enterprise Risk Management. This area covers potential harmful impacts by products on people and the environment. The risk management is informed by risk assessment for products, eco-efficiency and environmental impact analyses etc.

### W3.3b

**(W3.3b) Which of the following contextual issues are considered in your organization’s water-related risk assessments?**

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	<p>Why this issue is relevant: Having sufficient amounts of good quality freshwater available for use is vital for our operations: We use water as a coolant, solvent and cleaning agent, as well as to produce our products. In areas with limited water availability, monitoring of availability and quality is especially important. In 2019, around 28% of our production sites were located in water stress areas., e.g. eastern China and western United States. By applying the European Water Stewardship (EWS) standard (See “Other: EWS” in question W3.3a) at all sites in water stress areas and all Verbund sites by 2025, BASF analyses water availability, quality and water management, as well as potential issues regarding water discharges at local level. Currently, EWS Standards are implemented at 35,8% of relevant sites (2019). Around 1% of BASF’s total water supply was abstracted from these sites.</p> <p>How it is assessed/tools used: BASF collects data on a local site level according to site specific processes and guidelines and in cooperation with local authorities. Water availability and quality of withdrawals are monitored taking into account the type of withdrawal and specific criteria for e.g. sea water. The frequency of monitoring varies according to local requirements for the production processes and expected/typical fluctuations in quality and availability. At Ludwigshafen site for example, measuring stations take frequent readings of groundwater levels and determine sustainable withdrawal rates in cooperation with local authorities. At the same time, the quality of the groundwater is assessed for site specific parameters. At Ludwigshafen site, river water abstraction is continuously monitored by local authorities. As the main source for cooling water, river water quality parameters also include temperature to ensure a limited introduction of thermal energy into the river basin and limit withdrawals according to temperature and current water levels. Monitoring these parameters are critical to</p>

		a continuous control process to satisfy process demands while observing environmental and sustainability requirements.
Water quality at a basin/catchment level	Relevant, sometimes included	<p>Why this issue is relevant: Having sufficient amounts of good quality freshwater available for use is vital for operations: We use water as a coolant, solvent and cleaning agent, as well as to produce our products.</p> <p>How it is assessed/tools used: BASF collects data on a local site level according to site specific processes and guidelines and in cooperation with local authorities. Water availability and quality of withdrawals are monitored taking into account the type of withdrawal and specific criteria for e.g. sea water. The frequency of monitoring varies according to local requirements for the production processes and expected/typical fluctuations in quality and availability. At Ludwigshafen site for example, measuring stations take frequent readings of groundwater levels and determine sustainable withdrawal rates in cooperation with local authorities. At the same time, the quality of the groundwater is assessed for site specific parameters. At Ludwigshafen site, river water abstraction is continuously monitored by local authorities. As the main source for cooling water, river water quality parameters also include temperature to ensure a limited introduction of thermal energy into the river basin and limit withdrawals according to temperature and current water levels. Monitoring these parameters are critical to a continuous control process to satisfy process demands while observing environmental and sustainability requirements. Also, by applying the European Water Stewardship (EWS) standard (See “Other: EWS” in question W3.3a) at all sites in water stress areas and all Verbund sites by 2025 BASF analyses water availability, quality and water management, as well as potential issues regarding water discharges at local level. Currently, EWS Standards are implemented at 35,8% of relevant sites (2019).</p>
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	<p>Why this issue is relevant: In order to systematically detect the potential for stakeholder conflicts concerning water resources, we have identified all of our production sites within a water stressed area – We have expanded our definition of water stress areas to all areas in which more than 40% of available water is used by industry, household and agriculture (previous definition: more than 60% of available water). In 2019, around 28% of our production sites were located in water stress areas. Around 1% of BASF’s total water supply was abstracted from these sites. By 2030, we want to introduce sustainable water management at all sites in water stress areas and at our Verbund sites, covering 93% of BASF’s entire 2017 water</p>

		<p>abstraction. We achieved 35.8% of this goal in 2019. The value decreased compared to 2018 (50%), since we 1.) expanded our definition of water stress and therefore 2.) increased the number of sites included in the water target, which reduces the previous implementation level of BASF's water target accordingly. In our sustainable water management, we consider the quantitative, qualitative and social aspects of water use.</p> <p>How it is assessed/tools used: To be aware of conflicts we provide transparent communication about our activities and are open to critical questions. As we recognize our particular responsibility toward our production sites' neighbors, we discuss current issues with them e. g. in Community Advisory Panels (See Other: Community Advisory Panels (CAPs) in question W3.3a) which is e.g. also a requirement of the EWS. A Community Advisory Panel (CAP) consists of individuals who live near or around a production facility and who represent the fabric of a community which may be affected by a production site. BASF is represented with a member of site management. The CAP meets regularly to discuss issues of mutual interest. It is a forum for open dialogue between local citizens and plant management. By encouraging a two-way flow of information, we hope to enhance communication with the communities in which we operate. They address i.a. issues that may not be covered by regulatory procedures and go beyond legal issues. CAPs cover all concerns of BASF's stakeholders with the goal of timely information on current developments. In 2016/2017 we developed new globally applicable requirements for CAPs. The minimum requirements are oriented towards grievance mechanisms outlined in the U.N. Guiding Principles for business and human rights.</p>
<p>Implications of water on your key commodities/raw materials</p>	<p>Relevant, always included</p>	<p>Why issue is relevant: Our more than 75 000 Tier 1 suppliers play a significant role in value creation at our company. We work in long-term partnership with companies from different industries around the world. They supply us with raw materials, chemicals, investment goods and consumables, perform a range of services and are innovation partners. We acquired raw materials, goods and services for our own production worth approx. €34.5 billion in 2019. Our sustainability-oriented supply chain management contributes to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our requirements. Due to the size and scale of our supplier portfolio, our suppliers are evaluated based on risk, including both country and industry-specific risks.</p>

		<p>How it is assessed/tools used: BASF is a founding member of the Together for Sustainability (TfS) initiative for the global standardization of supplier evaluations and auditing. Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. The evaluation result can be positively influenced, e.g. by proving implementation of water management policies, correct use of water and safe handling of wastewater, and by holding relevant certifications. A total of 81 raw material supplier sites were audited on sustainability standards on our behalf in 2019. We also received sustainability assessments for 537 suppliers from an external service provider. BASF strives to increase its resilience to water risks along the whole value chain and thus assesses both current and emerging risks. BASF assesses the impact of its business activities on society in monetary terms, using PwC’s TIMM methodology (see "Others" in W3.3a). General scopes include the supply chain (tier 1 to tier n), own operations and customer industries. Water consumption hotspots and water emissions within the supply chain/along the value chain are considered and therefore all three stages of the value chain. Results show that the main risks are in the area of water consumption upstream (China, India) and downstream (Asia Pacific, Africa, North America). Measuring and expressing our impact on society in monetary terms improves the understanding of the relevance of specific environmental impacts (including water) and their interdependencies along the different levels of our value chain. The assessments reinforce that water risks are a highly location specific.</p>
<p>Water-related regulatory frameworks</p>	<p>Relevant, always included</p>	<p>Why this issue is relevant: Water withdrawals and wastewater discharges must comply with national, state and local regulations and permit authorizations. It is BASF’s ground rule that the company is following all applicable laws and regulations. We closely monitor current and emerging regulations and issues in order to facilitate a timely adaption process to changing legal requirements and e.g. initiate necessary investments.</p> <p>How it is assessed/tools used: BASF’s environmental and advocacy experts are engaged in constant dialogue with business associations and other stakeholders including local authorities (See “internal company methods” in question W3.3a) to be up to date regarding regulatory developments. Arrangements exist for specific situations. For example, contractual agreements with authorities on reduced abstractions during periods of extreme weather conditions (high temperatures) are in place. On the international level, BASF</p>

		<p>participates in partnerships at watershed level which focus on sustainable water management e. g. ICPR (International Commission for the Protection of the Rhine).</p>
<p>Status of ecosystems and habitats</p>	<p>Relevant, always included</p>	<p>Why this issue is relevant: Biodiversity is the foundation for numerous ecosystem services, for example air quality, climate, pollination, water purification and soil formation. We as a chemical company depend on ecosystem services and have an impact on them.</p> <p>How it is assessed/tools used: For new production sites, Environmental Impact Assessments (EIA) are conducted to assess the impact of construction and production activities on ecosystems and habitats. These EIAs are conducted by an external and independent third party. Part of our internal approval process for investment projects at BASF is a sustainability statement, which assesses the potential impacts of the project on ecosystems and habitats by sustainability experts within the company. We investigated our production sites in water risk areas and our integrated manufacturing sites (Verbund sites) to establish which of these are located near internationally protected areas. To do so, we used the World Database on Protected Areas (WDPA, <a href="https://www.iucn.org/theme/protected-areas/our-work/qualityand-effectiveness/world-database-protected-areas-wdpa">https://www.iucn.org/theme/protected-areas/our-work/qualityand-effectiveness/world-database-protected-areas-wdpa</a>) to identify biodiversity risks (See “Other: WDPA” in W3.3a) We did not discover any impact of our activities on biodiversity in these protected areas. If there are indications of changing circumstances, we will re-assess these issues regularly on the individual site level. BASF expects its suppliers to assess the potential impact of site operations on designated protected areas or ecosystems and therefore considers these issues beyond direct operations also upstream (inter alia as measure of risk management). During TfS on-site audits, suppliers are therefore specifically required to evaluate their impact on the immediate environment by relying on external data or their own measurements. This includes water-related risks, such as groundwater contamination, leakages and wastewater disposal. Not having assessed impacts on ecosystems or having a detrimental impact on biodiversity can lead to a negative finding in the audit report and requires the supplier to implement corrective actions.</p>
<p>Access to fully-functioning, safely managed WASH</p>	<p>Relevant, always included</p>	<p>Why this issue is relevant: BASF signed the “Pledge for Access to Safe Water, Sanitation and Hygiene at the Workplace” (WASH) of the World Business Council for Sustainable Development (WBCSD). By signing the pledge, BASF</p>

<p>services for all employees</p>		<p>strengthened its commitment to provide access to water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees.</p> <p>How it is assessed/tools used: The Department Corporate Health Management is responsible for the management of occupational health and general Health topics of BASF employees, and the coordination and auditing of occupational medicine in BASF group companies worldwide. Part of this responsibility are the topics sanitation and hygiene at the workplace. Sites are audited on a regular basis – 5-year interval if no negative findings were identified, or more frequently in case of findings. Audit results and action items are tracked in an audit database. We performed 15 audits in 2019 and 15 Health Performance Control visits. Tasks and responsibilities are defined in the Corporate Health Management Requirement (See “internal company methods” in question W3.3a).</p>
<p>Other contextual issues, please specify</p>	<p>Not considered</p>	

### W3.3c

**(W3.3c) Which of the following stakeholders are considered in your organization’s water-related risk assessments?**

	<p><b>Relevance &amp; inclusion</b></p>	<p><b>Please explain</b></p>
<p>Customers</p>	<p>Relevant, always included</p>	<p>Reason for inclusion: The trust of customers and consumers is essential for the success of BASF, which is why they are considered a very relevant stakeholder. We are obliged to safeguard their health when using our products. Safety of use instructions and precautionary measures must be aligned with local customs, application technologies and expertise available. BASF’s customer portfolio ranges from major global customers and medium-sized regional businesses to local workshops. We align our business models and sales channels with the respective customer groups and market segments.</p> <p>Risk example: We consider potential water related risks from inappropriate product use by our customers. This could apply, for example, to products from our BASF Agriculture Solutions portfolio, like crop protection chemicals, that could affect freshwater bodies if used or disposed of improperly.</p>

		<p>Method of engagement: We ensure uniformly high standards for product stewardship worldwide and offer our customers training in the safe use of our products e.g. for several herbicides we developed instructions for water protection to enable our customers to easily and reliably optimize the use of our product. For example, for the herbicide Bentazon® we have developed instructions for water protection in the European Union, which enable our customers to easily and reliably optimize the use considering the respective composition of the ground and the time of application. Another example is the training of farmers: Typically, 50 to 90 percent of pesticide pollution in ground and surface water comes from point pollution sources in agriculture - for example, spillages, incorrect cleaning of spraying equipment or illegal disposal of leftover spray solutions. These incidents can be avoided by following Good Agricultural Practices. As a company, BASF continues to inform and train farmers on general best management practices for water protection by providing information and training material to advisors and farmers. In addition to general water protection measures, BASF defines and promotes specific use requirements for relevant products, such as reduced maximum application rates or use restrictions in vulnerable areas.</p>
<p>Employees</p>	<p>Relevant, always included</p>	<p>Reason for inclusion: Our employees are fundamental to achieving the goals of our “We create chemistry” strategy. They are therefore deemed a relevant stakeholder and included in our water-related risk assessment. In keeping with our corporate strategy, we integrate sustainability including water topics into our day-to-day business. Our employees work in interdisciplinary teams on innovative processes and products for a sustainable future. Our innovative strength lies in our global team of highly qualified employees with various specializations Production efficiency and/or quality, as well as production/employee safety at the BASF production sites may be affected by a lack of awareness regarding water-related topics. That may include the improper handling of harmful substances, or the inefficient use of water resources.</p> <p>Method of engagement: The methods used to promote increasing awareness towards environmental topics and continuous improvement of operational management include trainings of our employees, and a rigid quality and process management, in which potential water-related risks for and through employees are identified in a systematic manner. Our Code of Conduct, which has to be acknowledged by all employees, specifies basic principles and rules for behavior also in the field of Protection of Environment, Health and Safety.</p>

		<p>We particularly encourage our employees to actively and promptly seek guidance if in doubt. They can consult their managers, dedicated specialist departments, such as the Legal department, and company compliance officers. We have also set up more than 50 external hotlines worldwide that our employees can use – including anonymously – to report potential violations of laws or company guidelines. All hotlines are also open to the public. Each concern is documented according to specific criteria, properly investigated in line with standard internal procedures and answered as quickly as possible. The outcome of the investigation as well as any measures taken are documented accordingly and included in internal reports.</p>
<p>Investors</p>	<p>Relevant, always included</p>	<p>Reason for inclusion: As a global industry leader, BASF is expected by investors to act proactively on the challenges of water-related issues. Including them in our water-related risk assessment is therefore crucial: If major investors perceive BASF business activities to be misaligned with the growing global momentum to act against water insecurity, this will pose a reputational risk to the company that can ultimately lead to a reduced market valuation. Moreover, there is potential risk of exclusion from thematic funds based on ESG criteria.</p> <p>Method of engagement: We are in close dialog with the capital market and rating agencies. We conduct roadshows and attend conferences across Europe to also meet with socially responsible investors (SRI). At these events, we discuss various sustainability topics including water and BASF’s approach towards these. BASF creates and updates a dedicated presentation for responsible investors. Furthermore, we embedded the most relevant ESG topics in BASF’s capital market story as one of the three main chapters. In our communication material, we present a comprehensive range of KPIs with the corresponding goals, history, current status, projects and the wider context to show links and interdependencies. The messages of our ESG communication are developed in a well-established collaboration of the IR team with the sustainability strategy unit. In 2019, Investor Relations was closely involved in the implementation of the steering tools for the nonfinancial goals of BASF’s corporate strategy.</p> <p>Furthermore, we have an SRI section on the top navigation level of BASF’s IR website. We also use Twitter and Stocktwits to inform the financial community about sustainability topics. In addition, one section of our SRI story covers water topics. This presentation is available on our website.</p>

		<p>In 2019, our integrated roadshow concept (ESG and mainstream) on IR level met high interest in London, Montreal, Toronto and Boston. Furthermore, we almost doubled our engagement with experts in dedicated ESG telephone conferences, roadshows, conferences and investor visits compared to 2018. BASF presented at ESG conferences and roadshows in Paris, Zurich, Frankfurt and Amsterdam. In total, we recorded more than 100 interactions with investors on sustainability topics.</p>
<p>Local communities</p>	<p>Relevant, sometimes included</p>	<p>Reason for inclusion: As a company in the chemical industry, we are aware of the particular responsibility we have towards the local communities around our sites, due to which we consider them being a relevant stakeholder. Negative impacts on water security of local communities by BASF’s facilities could arise, for example, through unsustainable water use practices or insufficient effluents management. In accordance with our sustainability strategy &amp; environmental policies, we take appropriate measures to prevent any such impacts, and thus preserve BASF’s license to operate.</p> <p>Method of engagement: We aim at engaging openly with our neighbors in various forms of neighborhood dialogs. Our different tools for community relations depend on the specific site context, among them Community Advisory Panels. Mostly used at larger production sites, a Community Advisory Panel is a continuous, long-term discussion forum for open dialog. It consists of a group of individuals who live near or around a chemical facility and who represent the fabric of their community. The CAP meets regularly to discuss issues of mutual interest. It is a forum for open and honest dialog between citizens and site management. Our global internal requirements for Community Advisory Panels have been developed based on the UN Guiding Principles for Business and Human Rights for grievance mechanisms. The goal is to provide the community with the opportunity for direct involvement, while allowing us to better address the local expectations. We can only be successful if we enjoy the trust and support of our neighbors. To be able to assess our impact on local communities, we keep track of our environmental data via our Responsible Care Database, including water discharges and water use at all production sites. In 2019, CAP discussed BASF’s plans to improve resilience against low water levels in the Rhine river. The low water level had a serious impact on BASF’s production in 2018 and an indirect impact on the local community concerned about employment and future development.</p>

<p>NGOs</p>	<p>Relevant, sometimes included</p>	<p>Reason for inclusion: If NGOs should come to believe that BASF is not fully transparent and cooperative about water-related issues, e.g. contamination events, this could lead to reputational damages for BASF, which is why they are considered a relevant stakeholder. Also, BASF selects the sustainability topics it publicly reports on based on the materiality principle. We include stakeholder feedback and concerns, a. o. from NGOs, into the materiality analyses which we conduct on a regular basis (every three to four years).</p> <p>Method of engagement: Continuous exchange with our stakeholders including NGOs is guided by a defined organizational unit within our sustainability management. Together with NGOs, namely the EWP (European Water Partnership) as well as the global AWS (Alliance for Water Stewardship), we developed criteria and indicators for sustainable water management. The membership in the Alliance for Water Stewardship also gives us the opportunity to better understand the other members' expectations, including NGOs, on a continuous basis. Example from our Ludwigshafen site (headquarter) for our transparency and dialogue with NGOs: We always publish a press release if an incident involving water contamination above a certain threshold happens. NGOs can subscribe to these press releases and are thus informed automatically.</p>
<p>Other water users at a basin/catchment level</p>	<p>Relevant, sometimes included</p>	<p>Reason for inclusion: BASF is highly interested in maintaining a cooperative relationship with other water users at basin/catchment level. This helps to address and avoid any potential conflicts regarding water use, pricing etc. Also, if water users act out of common interests, policy-related or technological improvements can be advanced quicker and more sustainably.</p> <p>Method of engagement: We do participate in partnerships at watershed level that focus on sustainable water management. The dialogue with different stakeholders helps us to learn their expectations. BASF employees are participating as industry representative e. g. in the ICPR (International Commission for the Protection of the Rhine). The ICPR consist of representatives of all the states along the course of river Rhine, of environmental organizations, drinking water producers, shipping, hydroelectric power generators etc. There is a yearly plenary meeting, regularly meetings of the strategy group (2 times a year) and meetings of the multiple working groups (about 2-5 times per year each of the groups) (see also <a href="http://www.iksr.org">www.iksr.org</a>) Further we are engaged with CUACSA</p>

		<p>(Comunitat d'Usuaris d'Aigües de la Cubeta de Sant Andreu de la Barca). CUACSA is the group of water users in the "Sant Andreu de la Barca" river basin in Spain. A BASF employee is member of the "Junta de Govern". The meeting of the "Junta General" is two times per year. There are additional meetings of the "Commissio Operativo" (see meeting calendar at <a href="http://www.cuacsa.org">www.cuacsa.org</a>).</p>
Regulators	Relevant, always included	<p>Reason for inclusion: Water withdrawals and wastewater discharges have to comply with national, state and local regulations and permit authorizations. BASF is highly interested in maintaining a cooperative relationship with regulators. This helps to address and avoid any potential conflicts regarding water use, pricing etc. It also allows BASF to anticipate future trends and regulations, thus avoiding uncertainty in this area.</p> <p>Method of engagement: To identify and evaluate the future potential of regulatory changes of sustainability issues including water we are actively involved in external networks like business associations. We engage in constant dialogue with our stakeholders including local authorities. BASF is convinced that trust must be built through transparency and cooperation. This requires a long-term engagement with regulators to improve environmental conditions based on a consensus of priorities and taking into account the interests of each party. On a political level, BASF is active in all concerned associations to play an active role in the development of laws and rules. The political process (especially in Germany and the EU) depends on a constructive exchange between all stakeholders, including NGOs and industry with the goal of developing feasible compromises. BASF is typically in the role of a technical advisor to contribute possible measures within the framework of an industrial enterprise, while NGOs focus on protection goals to be achieved. This exchange is extremely important for BASF since NGOs typically reflect the expectations of large portions of the population. These expectations vis-à-vis our operations and products are to be analyzed and integrated in our business strategy, leading to the development of better technologies and solutions.</p>
River basin management authorities	Relevant, sometimes included	<p>Reason for inclusion: We do participate in partnerships at watershed level that focus on sustainable water management. The dialog with different stakeholders, including river basin management authorities, helps us to learn their expectations. This helps to address and avoid any potential conflicts regarding water use, volume allocation, pricing etc. It also allows BASF to anticipate future trends and regulations, thus avoiding uncertainty in this area.</p>

		<p>Method of engagement: BASF is highly interested in maintaining a cooperative relationship with river basin management authorities. BASF employees are participating as industry representatives e. g. in the ICPR (International Commission for the Protection of the Rhine). The ICPR consist of representatives of all the countries along the course of river Rhine, of environmental organizations, drinking water producers, shipping, hydroelectric power generators etc. There is a yearly plenary meeting, regular meetings of the strategy group (2 times a year) and meetings of the multiple working groups (about 2-5 times per year each of the groups) (see also <a href="http://www.iksr.org">www.iksr.org</a>). A major issue of ICPR is the international coordination of pollution events caused by, e.g. ship accidents. BASF contributes expertise and hardware (vehicles, boats, trucks etc.) to work closely together with river authorities to mitigate negative impacts. BASF is part of a network of chemical companies which actively supports the authorities in case of accidents (TUIS.org). BASF is also a co-signatory of the German Federal Ministry of Transport's "Low water on the Rhine" action plan, which aims to improve shipping conditions on the Rhine over the coming next years with various measures. Further we are engaged with CUACSA (Comunitat d'Usuaris d'Aigües de la Cubeta de Sant Andreu de la Barca) which is the group of water users in the "Sant Andreu de la Barca" river basin in Spain. A BASF employee is member of the "Junta de Govern", which has regular meetings several times per year. These meetings of "river basin stakeholders" also address protection measures to be developed, e.g. areas to be dedicated for re-naturalization to serve as retention areas (flood control).</p>
<p>Statutory special interest groups at a local level</p>	<p>Relevant, sometimes included</p>	<p>Reason for inclusion: BASF is highly interested in maintaining a cooperative relationship with special interest groups. This helps to address and avoid any potential conflicts regarding water use, pricing etc. We can only be successful if we enjoy the trust and support of our neighbors. Negative impacts on water security of local stakeholders by BASF's facilities could arise, for example, through unsustainable water use practices or insufficient effluents management. In accordance with our sustainability strategy &amp; environmental policies, we take appropriate measures to prevent any such impacts, and thus preserve BASF's license to operate.</p> <p>Method of engagement: We do participate in partnerships at watershed level that focus on sustainable water management. For instance, in Tarragona we work together with other</p>

		companies in the industry industrial area, with a special interest group of local agricultural water users (“Irrigantes”) and with the local community.
Suppliers	Relevant, always included	<p>Reason for inclusion: In our holistic approach towards water-related risk management, our suppliers are one of the pillars of supply chain resilience and therefore an important building block of our operations. As a matter of fact, any risks emerging from the supply chain could potentially have negative impacts on our business. Risks likely to happen are e.g. potential supply interruptions due to insufficient water management that could ultimately affect BASF’s business continuity. Another example is insufficient effluents protection at BASF’s suppliers, which might pose a potential threat to local communities and ecosystems and could eventually put BASF’s reputation for effective supply chain sustainability management at risk. In BASF’s Supplier Code of Conduct, we expect our suppliers to minimize their negative impact on biodiversity, climate change and water scarcity. Suppliers’ engagement is key to integrate sustainability as a key topic in their long-term business relationship with us.</p> <p>Methods of engagement: Due to the size and scale of our supplier portfolio, our suppliers are evaluated based on risk, including both country and industry-specific risks. We define relevant suppliers as those showing an elevated sustainability risk potential as identified by our risk matrices and purchasers’ assessments. We also use further sources of information to identify relevant suppliers such as evaluations from the Together for Sustainability (TfS) initiative. In our third-party sustainability online assessments, suppliers are requested to report on water use, water mgmt. procedures and wastewater handling. Existence of a water policy is another important element of the assessment. In TfS on-site audits, suppliers’ internal water policies, reports, protection concepts for wastewater effluents, containment measures and water-related impact reduction practices are examined against standard procedures for water and wastewater management. In 2019, the 22 members of the initiative conducted a total of 4,197 sustainability assessments and 309 audits. TfS has developed training for suppliers that already have a sustainability rating but have potential for improvement e.g. in environmental topics. In 2019, more than 200 participants attended the sustainability training in China.</p>
Water utilities at a local level	Relevant, sometimes included	Reason for inclusion: Water providers at the local level are considered a relevant stakeholder as they often tap directly into the same water basin as BASF operations and may also be affected by BASF’s wastewater in case of an accident or

		<p>malfunction. If water withdrawal by one of our sites exceeds a sustainable volume on a local level, this could lead to direct risks through interruptions of water supply for BASF, and to indirect risks through long term depletion of water resources, stakeholder conflicts and reputational damages. BASF expects their suppliers to minimize their impact on biodiversity, climate change and water scarcity, according to the BASF Supplier Code of Conduct. Therefore, integrated in the procurement strategy is the sustainable water abstraction and discharge of third parties at local level.</p> <p>Method of engagement: The topic is addressed in dialogs with local water utilities. In addition, part of the European Water Stewardship Standard, which we implement at our Verbund sites and at sites in water-stressed regions, is the dialog with the water utilities regarding sustainable water supply: in the course of successfully implementing the standard at a location, it is required to assess the provenance of water with the local water utility to identify and act on possible risks. An example is our production site in Tarragona, Spain, where water management issues are crucial to discuss with the local water utility to prevent water shortages. This includes fair water distribution to all stakeholders and increasing water availability through wastewater recycling.</p>
Other stakeholder, please specify	Not considered	Risk example: We consider potential water related risks from inappropriate product use by our customers. This could apply, for example, to products from our BASF Agriculture division.

### W3.3d

**(W3.3d) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.**

BASF’s primary tool is our Enterprise Risk Management (ERM). It serves as aggregation, assessment & monitoring framework for risks to Corporate level, covering direct operations, upstream & downstream value chain. Most relevant risk fields that cover water-related risks for direct operations within the ERM are “Plant availability”, “Change in production quality”, “Change in production cost”, “Regulation”, “Ecology and environmental protection”. The risk management is informed by other tools are used on operational level to determine & analyze risk factors, depending on value chain stage:

Direct operations:

**Tools used:** We use the Aqueduct tool developed by WRI (World Resources Institute) to determine which production sites are located in water stressed areas. In the planning of new sites and plant extensions, an Environmental Impact Assessment (EIA) is used to assess plant impact on environment.

**Rationale:** WRI tool provides a clear global data basis & is easily applied. EIA is an internationally accepted standard tool.

**Coverage/implementation:** WRI: Including all worldwide production sites, implemented centrally by Corporate EHS.

**How outcome informs decision-making:** Sites in risk areas need to adopt the European Water Stewardship Standard. Within this management system, appropriate responses to specific risks are derived and decided upon on facility level. EIA: Necessary infrastructure investments above a certain level have to be approved on Corporate level. A sustainability assessment including water topics must be included.

Supply chain:

**Tools used:** We use the “Together for Sustainability” (TfS) evaluation program, which is based on third-party online assessments and on-site audits. The service provider RepRisk provides us with ad-hoc information if our medium/high-risk suppliers have been publicly observed in connection with negative sustainability incidents, including water-related aspects.

**How risks are classified:** For the composition of risk matrices that are used to identify our high-risk suppliers, we use, i.a., water-related risk indices from the service provider Verisk Maplecroft which offer a perspective on the complexities of the global risk landscape and the challenges it presents to businesses. When elaborating a procurement strategy, Buyers are required to consider potential threats and opportunities related to environmental topics including water.

**Rationale and practical implementation:** Using TfS evaluations, we pursue a risk-oriented approach with clearly defined follow-up processes. In the third-party sustainability online assessments, suppliers are requested to report on water use, water mgmt. procedures and wastewater handling. Existence of a water policy is another important element of the assessment. In TfS on-site audits, suppliers' internal water policies, reports, protection concepts for wastewater effluents, containment measures and water-related impact reduction practices are examined against standard procedures for water and wastewater management. Subsequently a total of 81 raw material supplier sites were audited on sustainability standards on our behalf in 2019. We also received sustainability assessments for 537 suppliers from an external service provider. As a risk response to our providers' performance levels, we train our suppliers on sustainability topics and help them to improve. In Brazil, we trained employees from 81 suppliers on topics such as how the United Nations' Sustainable Development Goals (SDGs) can be implemented. We trained employees from 49 suppliers in 2019 as part of a local partnership with the East China University of Science and Technology in Shanghai.

**Coverage:** We select suppliers from our global supplier portfolio, consisting of more than 75,000 Tier 1 suppliers, over all business units for our evaluations, which are based on risk, including both country and industry-specific risks. We define relevant suppliers as those showing an elevated sustainability risk potential as identified by our risk matrices and our purchasers' assessments.

**Timescale:** We have defined a risk response process with clearly defined follow-up processes. Every five years or more frequently, based on current and evolving risk & performance level.

**How outcome informs decision-making:** If we identify improvement potential, we support suppliers in developing measures to fulfil our standards, (e.g. providing training on environmental topics). We conduct another review according to a defined timeframe based on the sustainability risk measured. BASF reserves the right to discontinue any business relationship for non-adherence to international principles, failure to correct violations, or for displaying patterns of non-compliance with these standards, as a measure of risk control and

mitigation. In addition to the outcome of the process, negative news from RepRisk can have an impact in supplier relationship management. Depending on the reported information, individual follow-up measures are taken.

## W4. Risks and opportunities

### W4.1

**(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes, both in direct operations and the rest of our value chain

### W4.1a

**(W4.1a) How does your organization define substantive financial or strategic impact on your business?**

Water is an element of BASF's risk management, which identifies and evaluates opportunities and risks as early as possible to take appropriate measures in order to seize opportunities and minimize risks. The aim is to avoid risks that pose a threat to BASF's continued existence and to make improved managerial decisions to create lasting value.

**Definition:** We understand risk to be any event that can negatively impact the achievement of our short-term operational or long-term strategic goals. We define opportunities as potential successes that exceed our defined goals. In order to effectively measure and manage identified opportunities and risks, we quantify these in terms of probability and economic impact in the event they occur. We use statistical methods to aggregate opportunities and risks into risk factors. This way, we achieve an overall view of opportunities and risks at a portfolio level, allowing us to take effective measures for risk.

**Metrics / thresholds:** A specific risk or opportunity is considered as having a substantive impact if the resulting deviation from planned earnings exceeds €2 million. We have further defined the magnitude of impact to be linked to the following net financial implications for BASF's EBIT: High = more than €100 million, Medium-high = €10-100 million, Medium = €2-10 million, Low-medium = less than €2 million and Low = insignificant. If a new risk is identified that could have an impact on earnings of more than €10 million or bears reputational risks, it must be immediately reported to the Board of Executive Directors.

**Probability of occurrence:** Financial impacts will only be considered where a risk or opportunity has a probability of occurrence of at least 1% or the potential to threaten BASF's license to operate. The method for estimation of probability depends on the nature of the risk or opportunity. In case that statistical data about the occurrence of the risk/opportunity are available (e.g. knowledge about return periods of weather events), such information will be the basis for calculation of likelihoods. If no such statistical relationship can be relied on (e.g. when assessing the probability of implementation of certain policy measures), likelihood will be

subject to expert estimates. We classify probabilities as follows: low = less than 30%, medium = 30-70%, high = more than 70%.

Depending on the nature of the risk or opportunity, different methods for quantification are considered. In case of a clear understanding about the direction of change driven by the risk/opportunity, the effects will be quantified based on expert assessments about the potential level of change and cause-effect-relationships. If the direction of change is unclear, i.e. the effect can be positive or negative and thus represents a volatility/uncertainty, a case-specific probability distribution over the impact range is estimated.

**Scope:** The mentioned definitions and thresholds apply regardless to where in the value chain the risk/event is located, i.e. direct operations, supply chain, customers etc.

**Example:** For BASF's direct operations, main causes for substantive change related to water are an interruption or a significant reduction of production. To identify sites that potentially have substantive change to their business due to water risks, we use a screening process as follows (reviewed annually):

- Identifying sites located in water stressed areas (118 sites globally in 2019, our assessment is based on Aqueduct 3.0 (WRI, 2019))
- Determining sites which are considered strategic and account for high sales volume (BASF's 5 Verbund (=integrated) sites in Freeport (USA), Geismar (USA), Antwerp (BE), Ludwigshafen (GE), and Kuantan (MY))
- Sites that satisfy one of these criteria are considered to face a risk and hence have the potential to cause substantive changes to our business.

## W4.1b

**(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?**

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	2	Less than 1%	In total 28% of our production sites are located in water stress areas according to Aqueduct 3.0. The site in Freeport is associated with risks that have a potential substantive financial impact. The site in Ludwigshafen is exposed to supply chain related risks that have a potentially substantive financial impact.

## W4.1c

**(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?**

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**Country/Area & River basin**

United States of America

Brazos River

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

Less than 1%

**% company's total global revenue that could be affected**

1-10

**Comment**

The site in Freeport is associated with water stress related risks that have a potential substantive financial impact.

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**Country/Area & River basin**

Germany

Rhine

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

Less than 1%

**% company's total global revenue that could be affected**

1-10

**Comment**

The site in Ludwigshafen is exposed to supply chain related risks that have a potential substantive financial impact.

## W4.2

**(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

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**Country/Area & River basin**

United States of America

Brazos River

**Type of risk & Primary risk driver**

Physical  
Increased water scarcity

### Primary potential impact

Increased operating costs

### Company-specific description

Specific risk for our Freeport plant is constituted by several drivers: Higher municipal and industrial demand in the area is expected for the next decades. This could result in an increased competition of different users for the existing water sources (river water, ground water) and an increased price for water in the future. Production in 2019 remained at about the 2018 level, but water demand increased by ~12%. This is due to increased production of a dispersions plant, where water is part of the product and higher production volumes necessarily and directly drive up water demand. The higher water demand could be balanced by increased groundwater volumes. In the future, alternative sources for water may need to be considered as well as internal efficiency measures. Possible alternative sources are municipal waste water (only small quantities available), ground water from wells (preferred option, but availability could be insufficient in case of high production growth), and sea water (most abundant, but water desalination is the most energy intensive option). Our analyses show that 5 % of annual withdrawal of the site might have to be substituted by desalinated water if other alternative sources are not sufficiently available. Using this option would result in significantly higher operating costs.

Secondary effects: Besides higher operating costs, the increased use of desalination and therefore higher energy demand, would in turn have a potential negative impact on the carbon footprint of our Freeport plant and run against reaching BASF's climate goal.

Method: 1. Assessment of current & future water demand vs. availability at the site (source e.g. Aqueduct) 2. Investigation of additional water sources and intensive internal re-use. 3. Economic assessment of alternative water supply options. Depending on global economic development we continuously update our expected water demand taking multiple options into consideration.

### Timeframe

4-6 years

### Magnitude of potential impact

Medium-low

### Likelihood

Likely

### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

### Potential financial impact figure (currency)

400,000

**Potential financial impact figure - minimum (currency)****Potential financial impact figure - maximum (currency)****Explanation of financial impact**

We calculated assumed additional operational costs for water desalination to cover a part of the site's water supply. Factors used to determine the relevant share of water supply are the higher water demand expected in the area in the future, as well as improved efficiency of existing facilities, not taking into account potential extensions of the site. In this scenario, 5 % of total annual water withdrawal volume of the site could be affected and might have to be substituted by desalinated water if we are not able to balance this using alternative sources. We estimated additional costs per m<sup>3</sup> of desalinated water based on industry reference values. Time horizon: Yearly impact, will manifest after establishment of alternative water supply (i.e. within 4-6 years, as described above).

**Primary response to risk**

Secure alternative water supply

**Description of response**

We are optimizing our infrastructure planning to secure a reliable water supply (taking into account alternative water sources) while minimizing additional operational and investment costs. This involves the in-depth assessment of current and future water situation in the Freeport Area; of BASF's current and future water requirements to define the scale and layout of required infrastructure. All options are evaluated, i.e. seawater desalination, increased well use, expanding existing supply contracts and/or sourcing municipal wastewater as a raw material. These evaluations are regular process steps in the course of assessing site development projects. This is accompanied by the specific implementation planning to tap additional water withdrawal sources (e.g. investment in desalination infrastructure; investment partnerships with other industrial plants in the Freeport area). In the long run the aforementioned measures can help maintaining freshwater supply security, also for other users.

**Cost of response**

150,000

**Explanation of cost of response**

The costs of the response strategy (infrastructure planning) were estimated at a moderate level due to the fact that the site is near the sea and desalination is an easy to realize option. Infrastructure planning requires mainly personnel resources. We calculate the required resources as 1 FTE, at an estimated cost of 150 000 € per FTE. Infrastructure planning costs are not significant in relation to overall operational expenses at the facility. This is a recurring cost position.

## W4.2a

**(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

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### Country/Area & River basin

Germany  
Rhine

### Stage of value chain

Supply chain

### Type of risk & Primary risk driver

Physical  
Drought

### Primary potential impact

Supply chain disruption

### Company-specific description

Production at BASF's largest site Ludwigshafen depends on the adjacent river Rhine in two ways: (a) withdrawal of water mainly for cooling purposes, (b) transportation of raw materials and final products via barges (about 40% of all raw materials that are transported to or from the location are transported over the river). Based on extreme weather / Rhine water level conditions experienced at the site over the last decades, like the drought and heatwave of 2003 and the flood in 2013, the robustness of site operations for such events was increased over the years by various measures (e.g. pump systems for low water level, adapted management plans, options to switch mode of transport, rebalance production across the global portfolio of assets). Additionally, BASF had assessed physical risks from climate change for the site in 2015 and concluded that significant changes in the risk of extreme weather events will materialize beyond 2050 and that the existing adaptation measures are therefore still appropriate. However, in 2018, the site experienced an exceptional drought and heat, which caused an extremely long and intense phase of low river water levels and very high water-temperatures during the peak of the heatwave. As a consequence, high water temperature was limiting cooling capacity and low water levels were limiting transport by barge. The existing measures were insufficient to mitigate all impacts, which ultimately led to decreased production capacity and a negative earnings impact of around €250 million mainly due to missing transport capacities for raw materials.

The event raised the question whether global warming has already changed the likelihood of occurrence and/or intensity of extreme weather events at the site such that it has become vulnerable, even with the existing countermeasures designed to mitigate the impact of historically observed weather extremes at the site. The question is at the edge of current climate research and therefore results are subject to large uncertainties.

For Ludwigshafen, extended analyses in cooperation with external partners indicated that an increased risk from more frequent and intense extreme weather events with the previously described impacts cannot be excluded.

**Timeframe**

1-3 years

**Magnitude of potential impact**

High

**Likelihood**

Very unlikely

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

250,000,000

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

The figure represents the negative earnings impact due to limited production capacity (i.e. the delta between planned and realized production) at the Ludwigshafen site in 2018, which was triggered by extreme weather in the respective year (low water level limiting transport as primary impact, high water temperature limiting cooling capacity as secondary impact) and is considered as an estimate for impact of similar future events.

**Primary response to risk**

Upstream

Other, please specify

Increase supply chain resilience (local storage, alternative transport modes)

**Description of response**

In 2019, we included Climate Resilience in the central strategic goals of the Ludwigshafen site (Zukunftsbild Werk Ludwigshafen). By this, major projects are challenged if they contribute to climate resilience. Additionally, we initiated several specific, targeted measures to increase the resilience of the Ludwigshafen site against potentially more frequent and prolonged phases of very high water-temperature and very low water levels. Progress and status of these projects are reported bi-annually directly to site management, which is located below the board-level. Apart from partly already realized immediate measures, several strategic measures are planned: Development of an own type of ship together with partners, expanding pipelines for alternative supply, and further expansions of our cooling capacity to increase climate resilience at our Ludwigshafen site in the coming years. BASF is also a co-signatory of the German Federal Ministry of Transport's "Low water on the Rhine" action plan, which

aims to improve shipping conditions on the Rhine over the next years with various measures.

In 2019 immediate measures comprised an early warning system for low water levels, making loading stations more flexible, time chartering ships with high load capacities in case of low water, expanding and optimizing central re-cooling plants as well as the development of new digital tools to optimize cooling water flows. As a result, we now have longer usability of waterway as mode of transport and higher flexibility to switch between different modes of transport, preventing bottlenecks in logistics. Central re-cooling plants make production more independent of water temperatures of river Rhine.

### Cost of response

20,000,000

### Explanation of cost of response

Explanation of cost: The figure represents the total costs of immediate measures planned and initiated from 2019 till 2021 to increase the resilience of the Ludwigshafen site and can be attributed 50% each, to measures regarding logistics and expansion of cooling capacity.

## W4.3

### (W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

## W4.3a

### (W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

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#### Type of opportunity

Products and services

#### Primary water-related opportunity

Other, please specify

Increase the proportion of products that contribute particularly to sustainability in the value chain, and are characterized by, on average, higher growth rates and profitability.

#### Company-specific description & strategy to realize opportunity

Using the Sustainable Solution Steering method BASF conducted sustainability assessments (also with regard to water) of its entire product portfolio. We achieved our previous goal of increasing the proportion of sales from Accelerator products to 28% by 2020 at the end of 2019 (proportion of sales in 2019: 28.9%\*).

Consideration and realization of opportunity: Accelerator products make a substantial sustainability contribution in the value chain. This is why we will pursue a new ambitious

goal from 2019 onward: We aim to make sustainability an even greater part of our innovation power and achieve €22 billion in Accelerator sales by 2025. To achieve this goal, we will deeply integrate Sustainable Solution Steering into the research and development pipeline, in business strategies as well as in merger and acquisition projects. In 2019 products and solutions related to € 2 billion in sales made a particular contribution to water improvements in the value chain. This signifies that the potential of the Accelerator approach is already being realized.

An example of an Accelerator product specifically in the “water” area is Formic Acid. Here a global market was developed to replace other chemicals for runway and road de-icing. Formic Acid features excellent biodegradability, reducing wastewater treatment costs and the environmental burden. A growing acceptance has the potential to positively impact water scarcity and pollution.

### **Estimated timeframe for realization**

Current - up to 1 year

### **Magnitude of potential financial impact**

High

### **Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

### **Potential financial impact figure (currency)**

2,000,000,000

### **Potential financial impact figure – minimum (currency)**

### **Potential financial impact figure – maximum (currency)**

### **Explanation of financial impact**

In 2019, our so-called Accelerators that offer a substantial sustainability contribution in the value chain generated about 28.9% of total BASF sales. Products and solutions related to € 2 billion in sales per year make a particular contribution to water improvements in the value chain. This signifies that the opportunity is already being realized.

### **Type of opportunity**

Products and services

### **Primary water-related opportunity**

Sales of new products/services

### **Company-specific description & strategy to realize opportunity**

Consideration and realization of opportunity: In 2019, BASF finalized the integration of its water chemicals business in a Joint Venture (JV) with SOLENIS. BASF owns 49% of

the new JV and is not marketing water chemicals directly anymore. However, the JV opens new opportunities for BASF with better market access and a broader range of technologies/products. BASF has mid- and longterm supply contracts with SOLENIS, which also cover (as an example) the Sokalan RO brands.

Case study for water treatment product Sokalan® RO3500: Situation: Growing demand of water reuse via reverse osmosis (RO) causing different scales and decreasing efficiency of RO systems. Task: Development of a multifunctional antiscalant performing at a variety of reused water qualities. Action: In 2016 BASF launched a multifunctional antiscalant with Sokalan® RO3500. Less scale formation leading to improved plant efficiencies, reduced cleaning cycles and enhanced overall performance of RO plants. Compared to commonly used phosphonate-based chemistry Sokalan® RO3500 is not causing eutrophication to water bodies. Result: BASF product portfolio further enhanced by addressing the need for differentiated chemistry to enable water reuse. With the launch BASF is fostering its position as a leading provider for water chemicals.

#### **Estimated timeframe for realization**

1 to 3 years

#### **Magnitude of potential financial impact**

Medium-high

#### **Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

#### **Potential financial impact figure (currency)**

50,000,000

#### **Potential financial impact figure – minimum (currency)**

#### **Potential financial impact figure – maximum (currency)**

#### **Explanation of financial impact**

For 2020 we had prognosed €50 million of our annual turnover and €11 million of our annual EBITDA from innovations derived from BASF's Water Chemicals portfolio launched since 2015. This estimate was derived based on the previous development of the respective revenues, and an outlook regarding market potentials. This gives an idea of the business perspective for the new the Joint Venture with SOLENIS from 2019 onward.

## **W5. Facility-level water accounting**

### **W5.1**

**(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.**

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**Facility reference number**

Facility 1

**Facility name (optional)**

Freeport/ TX/ BASF Corporation

**Country/Area & River basin**

United States of America

Brazos River

**Latitude**

29.004413

**Longitude**

-95.393282

**Located in area with water stress**

No

**Total water withdrawals at this facility (megaliters/year)**

10,256

**Comparison of total withdrawals with previous reporting year**

Higher

**Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes**

8,661

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

1,344

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

251

**Total water discharges at this facility (megaliters/year)**

6,693

**Comparison of total discharges with previous reporting year**

About the same

**Discharges to fresh surface water**

6,356

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

337

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

4,094

**Comparison of total consumption with previous reporting year**

About the same

**Please explain**

Change is not substantive. Water consumption is mainly from evaporation in cooling systems.

---

**Facility reference number**

Facility 2

**Facility name (optional)**

Ludwigshafen SE

**Country/Area & River basin**

Germany  
Rhine

**Latitude**

49.494739

**Longitude**

8.433164

**Located in area with water stress**

No

**Total water withdrawals at this facility (megaliters/year)**

1,351,477

**Comparison of total withdrawals with previous reporting year**

Lower

**Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes**

1,330,535

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

19,454

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

1,488

**Total water discharges at this facility (megaliters/year)**

1,198,286

**Comparison of total discharges with previous reporting year**

About the same

**Discharges to fresh surface water**

1,198,286

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

8,267

**Comparison of total consumption with previous reporting year**

About the same

**Please explain**

Change is not substantive. Water consumption is mainly from evaporation in cooling systems.

**W5.1a**

**(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?**

**Water withdrawals – total volumes**

---

**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water withdrawals total and by source.

**Water withdrawals – volume by source**

---

**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including water withdrawals total and by source.

**Water withdrawals – quality**

---

**% verified**

Not verified

**Water discharges – total volumes**

---

**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also Statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and by destination/treatment method.

**Water discharges – volume by destination**

---

**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and by destination/treatment method.

### **Water discharges – volume by treatment method**

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**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures – including water discharges total and by destination/treatment method.

### **Water discharge quality – quality by standard effluent parameters**

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**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor's procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including quality by standard effluent parameters.

### **Water discharge quality – temperature**

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**% verified**

Not verified

### **Water consumption – total volume**

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**% verified**

76-100

**What standard and methodology was used?**

BASF Management's Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was

conducted in accordance with ISAE 3000 and 3410. Auditor’s procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including quality by standard effluent parameters.

**Water recycled/reused**

**% verified**

76-100

**What standard and methodology was used?**

BASF Management’s Report was audited and approved free of qualification, covering also statements and figures pertaining to sustainability. Audit with limited assurance was conducted in accordance with ISAE 3000 and 3410. Auditor’s procedures included detailed document audits of all water indicators reported by all worldwide locations for the purpose of composing aggregated company figures - including amounts of water recycled/reused.

**W6. Governance**

**W6.1**

**(W6.1) Does your organization have a water policy?**

Yes, we have a documented water policy that is publicly available

**W6.1a**

**(W6.1a) Select the options that best describe the scope and content of your water policy.**

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-	BASF's company-wide water policy (WP) demonstrates the commitment to responsible water use at all our production sites, water catchment areas as well as along the entire value chain. Rationale for scope: Part of the policy is BASF’s Responsible Care Management System (RCMS) encompassing environmental and health protection for direct operations and our value chain. It comprises global rules, standards, and procedures. Components of RCMS are EHS documents that apply throughout the group and cover, among others, the following water topics: (i) Dependency: Since water is needed for the chemical production we are committed to its responsible use along the entire value chain.

		<p>recognized water initiatives</p> <p>Company water targets and goals</p> <p>Commitment to align with public policy initiatives, such as the SDGs</p> <p>Commitments beyond regulatory compliance</p> <p>Commitment to water-related innovation</p> <p>Commitment to stakeholder awareness and education</p> <p>Commitment to water stewardship and/or collective action</p> <p>Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p>	<p>(ii) Impact: BASF’s production sites impact water through the introduction of thermal energy (cooling water) and the emissions of pollutants.</p> <p>(iii) Performance standards: BASF’s production sites adhere to local, regional / national laws and regulations. Internal global standards are set by our RCMS.</p> <p>(iv) Standards for procurement: Our Supplier Code of Conduct expects suppliers e.g. to use resources efficiently, apply energy-efficient, environmentally friendly technologies, reduce emissions to water, and minimize impacts on biodiversity and water scarcity.</p> <p>(v) International standards and (public policy) water initiatives: We set globally applicable standards according to the European Water Stewardship (EWS) initiative. Further we aligned the policy content with the UN SDGs, focusing on those issues where BASF can make a significant contribution (e.g. human right to water and sanitation, climate protection, sustainable consumption and production, fighting hunger). We are also member of the global organization Alliance for Water Stewardship (AWS) and signed the Pledge for Access to Safe Water, Sanitation and Hygiene at the Workplace (WASH).</p> <p>(vi) Beyond regulatory compliance: Our standards fulfill or exceed existing laws and regulations and take globally recognized principles into account (e.g. UNGC principles, Responsible Care Global Charter).</p> <p>(viii) Innovation: The RCMS includes the core requirement of constantly reviewing performance, improving processes, implementing measures, checking their effectiveness at production sites and links respective incentives to it.</p> <p>(ix) Environm. linkages/Climate change: We want to achieve CO2-neutral growth until 2030 (keeping total GHG emissions from our production sites and our energy purchases stable at the 2018 level while growing production volumes).</p>
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## W6.2

**(W6.2) Is there board level oversight of water-related issues within your organization?**

Yes

## W6.2a

**(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual	Please explain
Director on board	<p>How responsibility is related to water issues: One member of our Board of Directors, responsible for Environment, Health and Safety, has the overall responsibility for water issues. The head of BASF’s Environment, Health and Safety unit, who has oversight for water topics at BASF, reports directly to this Board member. BASF’s Corporate Sustainability Board (CSB) is BASF’s central steering committee for sustainable development, including water. It is comprised of selected heads of business and corporate and functional units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability goals and approves corporate position papers on sustainability topics – including those related to water topics.</p> <p>Example for water-related decision: Board level decisions were made in 2019 to further improve BASF’s resilience to low water levels of the Rhine river, which significantly affected Ludwigshafen site in 2018. These decisions included investments in unaffected logistics carriers and the possibility of falling back on unaffected sites within our global Verbund. BASF implemented a package of measures including the development of an early warning system for low water levels, making loading stations more flexible and time chartering ships with high load capacities in the case of low water.</p>
Director on board	<p>A Board member chairs BASF’s Corporate Sustainability Board (CSB), which is BASF’s central steering committee for sustainable development, including water. It is comprised of selected heads of business, corporate units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability goals and approves corporate position papers on sustainability topics including those related to water.</p>

## W6.2b

**(W6.2b) Provide further details on the board’s oversight of water-related issues.**

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance	How Board oversight is constituted: Our Management Board reviews at least annually major water-related topics like, for instance: - Water-related risks and opportunities – Target performance - Budgets for functions and business units involved in

		<p>Overseeing acquisitions and divestiture</p> <p>Overseeing major capital expenditures</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p> <p>Reviewing and guiding corporate responsibility strategy</p> <p>Reviewing innovation/R&amp;D priorities</p> <p>Setting performance objectives</p>	<p>water-related topics - Progress on specific measures supporting BASF's sustainability strategy In addition, depending on need, the following topics are addressed: - Investment decisions - Requests for approval of specific action plans, e.g. new R&amp;D initiatives. This range of topics ensures that oversight over water issues are covered from both an operational and a market-driven perspective, that the appropriate strategic decisions are made, and that BASF meets its own commitments.</p> <p>Release of water-related information: The board also approves what is released regarding relevant water-related information, including to CDP. Extensive information on the use of water including data concerning emissions and sustainable water management are publicly available in our corporate report and approved by the board.</p> <p>Example of how selected mechanisms contribute to the board's oversight of water issues: Through the monitoring of implementation and performance against water-related targets like the establishment of EWS standards at all Verbund sites and sites in water stress areas (monitored in regular environmental audits), the Management Board can keep track of the progress of water stewardship efforts, and thus the company's efforts to tackle water-related challenges. In case of a clear underperformance, the Board is then able to initiate corrective measures or re-align operational priorities.</p> <p>Who briefs the Board: A Board member, responsible for Environment, Health and Safety, has the overall responsibility for water topics. This board member is briefed by the head of the corporate EHS unit (environment, health and safety), who is accountable for water issues. Another Board member chairs BASF's Corporate Sustainability Board (CSB), which is BASF's central steering committee for sustainable development, including water topics. It is comprised of selected heads of business and corporate units as well as of the regions. The CSB monitors the implementation of the sustainability strategy and cross-divisional initiatives, defines sustainability</p>
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			goals and approves corporate position papers on sustainability topics.
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### W6.3

**(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).**

**Name of the position(s) and/or committee(s)**

Other C-Suite Officer, please specify  
Member Board of Directors in charge of EHS

**Responsibility**

Both assessing and managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

Quarterly

**Please explain**

Corporate structure and reporting line: The head of the Corporate Unit Environment, Health and Safety (EHS) has the highest overall governance responsibility for water topics below Board of Directors (BoD) and reports directly to a member of the BoD. Reports focus e.g. on investments (spec. in water stress areas), strategic topics, improvement options etc. Meetings of the Corporate Sustainability Board (CSB) (chaired by another board member) and direct meetings/jour fixes with other BoD members ensure a regular reporting to Board level.

Water-related responsibilities: Water issues are addressed regularly in the context of immediate relevance, strategic implications and investment projects. The EHS unit defines requirements for the Responsible Care Management System (in agreement with BoD), oversees monitoring process, and integrates major global functions in preparing decisions of the CSB on water topics, such as corporate environmental goal setting, controlling and reporting, etc.

### W6.4

**(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	Incentives for members of Board of Directors are directly connected to target achievement. Specific Sustainable Water Management achievements are part of BASF's corporate goals, Accountability for

	target achievement lies with the member of the executive board who is in charge of corporate EHS.
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## W6.4a

**(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?**

	Role(s) entitled to incentive	Performance indicator	Please explain
Monetary reward	Other C-suite Officer  Member Board of Directors in charge of EHS	Other, please specify  Implementation of European Water Stewardship standard	<p>BASF published a goal regarding Sustainable Water Management. Failure to reach the goal due to management oversight results in a lower bonus payout. The bonus reduction depends on many factors such as degree of direct accountability, total bonus value, reduction in relation to performance in other fields/achievement of other goals. For the water sustainability goal, target achievement is measured and published in the corporate report.</p> <p>Details on the indicator chosen: Our goal is to introduce sustainable water management at all production sites in water stress areas and at our major Verbund sites by 2030 (as described under W8.1a), covering 93% of BASF's total water abstraction. We pursue this by applying the European Water Stewardship (EWS) standard.</p> <p>Rationale for the indicator chosen/threshold of success: In total, around 28% of our production sites were located in water stress areas in 2019. To avoid any negative impacts and secure the future operations of our sites, we chose to implement a comprehensive water management following the EWS standard at 100% of these sites, plus our Verbund sites. We achieved 35.8% of this target in 2019. BASF executives at all involved levels, including the production sites managers, are expected to contribute to this publicly announced target.</p>

<p>Non-monetary reward</p>	<p>Board/Executive board</p>	<p>Other, please specify Implementation of European Water Stewardship standard</p>	<p>Details on the indicator chosen: Our goal is to introduce sustainable water management at all production sites in water stress areas and at our major Verbund sites by 2030 (as described under W8.1a), covering 93% of BASF’s total water abstraction. We pursue this by applying the European Water Stewardship (EWS) standard.</p> <p>Rationale for the indicator chosen/threshold of success: In total, around 28% of our production sites were located in water stress areas in 2019. To avoid any negative impacts and secure the future operations of our sites, we chose to implement a comprehensive water management following the EWS standard at 100% of these sites, plus our Verbund sites. We achieved 35.8% of this target in 2019. BASF executives at all involved levels, including the production sites managers, are expected to contribute to this publicly announced target.</p>
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## W6.5

**(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?**

- Yes, direct engagement with policy makers
- Yes, trade associations

## W6.5a

**(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?**

**Process:** The **Board of Directors** is regularly informed on the status of topics or sustainability assessments, makes decisions on these with strategic relevance, and monitors the implementation of strategic plans and target achievement. As central steering committee for sustainable development the **Corporate Sustainability Board** supports the Board and discusses operational matters. It is comprised of the heads of our business / corporate units and regions. Board of Directors In 2013 we established an external independent **Stakeholder Advisory Council**, comprising of international experts from academia and society who discuss issues with the Board.

Reporting directly to the Board, eight **Corporate Center units** are responsible for defining governance and developing steering processes of the Group. The **Corporate EHS** unit is responsible for monitoring and steering environmental performance, (e.g. global target on

sustainable water management). This unit is connected to worldwide cross-divisional and - regional teams to exchange on activities, align positions to ensure consistency and to engage with local / regional colleagues to ensure activities fit the corporate strategy.

**Inconsistency mgmt.:** Inconsistencies in positioning are discovered early through a multi-level approach of discussions and exchanges. If inconsistencies prevail, issues are escalated to a higher level along with proposals to resolve them. This process ensures evaluation of political and operational considerations.

## W6.6

### (W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

 BASF\_Report\_2019.pdf

 p. 24-28 (“Our Strategy”); p. 36-41 (“Integration of Sustainability”); p. 102-104 (“Supplier Management”); p. 116-120 (“Energy and climate protection”); p. 121-122 (“Climate protection with carbon management”); p. 124-126 (“Water”); p. 139-147 (“Opportunities and Risks”)

## W7. Business strategy

### W7.1

#### (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	> 30	Water issues integrated: Enabling access to clean water for people, securing and reducing water requirements for food production and industry etc., reducing and avoiding water contamination, using water responsibly in water-stress areas, preserving ecosystems and biodiversity on land and under water. Why & how they are integrated: Our strategy provides direction for how we develop BASF and secure and extend our competitive position. To tackle the issues above, we constantly work on improving our products, processes and water management. An integral part is improving water management at our production sites through the implementation of an incentivized investment initiative in efficiency projects on plant level (Operational Excellence Program - OPEX). Also, on the strategic level, we are committed to contribute to the

			<p>achievement of the Sustainable Development Goals: More and more people need access to food, water, energy, raw materials, housing and healthcare, while the Earth's resources are limited.</p> <p>Explanation of chosen time horizon: Our corporate purpose "We create chemistry for a sustainable future" indicates the long-term perspective that BASF takes on matters surrounding sustainability and is not limited to a defined time horizon but involves the livelihoods and well-being of all future generations, as well as the preservation of ecosystems in the long term. Strategies also cover investment into assets and sites which have &gt;40-year time horizon in the Chemical Industry.</p>
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	<p>Issues integrated: Water use/stewardship and avoidance of pollution within our own operations/water risk management; water-related impacts of our products regarding water efficiency, possible contaminations (product stewardship); reduction of emissions to water and reduced impact on water scarcity within supply chain.</p> <p>Why &amp; how they are integrated : We defined sustainability focus areas within our corporate strategy. These formulate the commitments with which BASF positions itself and how it aims to meet the growing challenges along the value chain: – We source responsibly – We produce safely for people and the environment – We produce efficiently – We value people and treat them with respect – We drive sustainable products and solutions. For sustainable water management (SWM), the long-term objective is apparent in the 2030 goal of introducing SWM at all water stressed production sites and all Verbund sites. This necessitates a continuous commitment to target achievement and regular tracking/reporting of key performance parameters. We integrate these factors into our long-term steering processes to ensure societal acceptance &amp; realize business opportunities.</p> <p>Time horizon: Horizon of &gt;10 years as it exceeds operational planning horizons within BASF. It gives strategic orientation on our goal and commitment to enhancing sustainability within our operations, the supply chain, industries and sectors we serve, and also to contributing to the SDGs; with a time horizon until 2030.</p>

Financial planning	Yes, water-related issues are integrated	11-15	<p>Water issues integrated: Revenue targets for products with a contribution to sustainability (e.g. enabling higher resource efficiency and water conservation/ water resource protection in the value chain).</p> <p>Why &amp; how they are integrated: We segmented our portfolio regarding the contribution of our more than 50,000 specific product applications to sustainability (including reduction of water use), using the Sustainable Solution Steering method. Products with a substantial sustainability contribution in the value chain are classified as Accelerators. We aim to achieve €22 billion in total Accelerator sales by 2025 (2019: €15 billion, +5% comp. to 2018). In 2019, sales of Accelerator products related to water issues amounted to €2 billion. Across business segments, detailed planning exists regarding the development of innovative products. We anticipate higher demand for products, which are e.g. directed towards water conservation. Our innovation pipeline e.g. in the Agricultural Solutions segment comprises products with launch dates between 2020 and 2030. With a peak sales potential of €3.5 billion, the pipeline includes innovations from all business areas.</p> <p>Explanation of chosen time horizon: Horizon of &gt;10 years as it exceeds operational planning horizons within BASF. It gives strategic orientation on our goal and commitment to enhancing sustainability within the industries and sectors we serve. Also, strategic planning on segment level usually encompasses these time horizons.</p>
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## W7.2

**(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?**

Row 1

**Water-related CAPEX (+/- % change)**

102

**Anticipated forward trend for CAPEX (+/- % change)**

32

**Water-related OPEX (+/- % change)**

**Anticipated forward trend for OPEX (+/- % change)**

**Please explain**

We do not track water related OPEX on a group level.

To strategically incentivize investments in efficiency improvements, water savings being among these, BASF set up the Operational Excellence Initiative “OPEX”. Here, business units can apply for corporate funds to support measures that may not be cost efficient without these. The corporate funds consist of mandatory payments by the business units, which can reclaim their contributions in the form of incentives for efficiency measures. This is part of the efficiency improvement strategy of BASF to continuously make better use of resources. The number provided here for CAPEX reflects investments in water-related projects, funded from this initiative. BASF incentivizes investments by plant management in efficiency projects. This analysis is based on more than 1000 water related projects since 2013 for forward trend and on about 300 water related projects implemented in 2018 and 2019 for change compared to the previous year.

**W7.3**

**(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?**

	Use of climate-related scenario analysis	Comment
Row 1	Yes	Circular economy will become a key contributor to a low-carbon economy, transforming value chains and decoupling growth and resource consumption. The aim of the scenario analysis was to evaluate the impact in more detail. The three formulated scenarios differed in the level of international policy response and action on circular economy, driven by climate change.: The scenarios were applied to three major customer industries of BASF (automotive, construction, consumer goods; about 50% of total sales). For each scenario, key drivers of change were identified and underpinned by a set of assumptions about direction and magnitude of change. Considering the findings regarding the potential impact of circular economy on BASF business, we promoted the establishment of strategic partnerships in this area. In January 2019, BASF co-founded the Alliance to End Plastic Waste (AEPW) together with other companies from along the value chain.

**W7.3a**

**(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?**

Yes

### W7.3b

**(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization’s response?**

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	Other, please specify  Internal climate-related scenarios	<p>Circular economy will become a key contributor to a low-carbon economy, transforming value chains and decoupling growth and resource consumption. Customer industries of BASF will be affected by this trend to a variable extent, and consequently the impact on BASF’s value generation will also vary. The aim of the scenario analysis was to evaluate the impact in more detail. The level of impact was assessed in three scenarios, for which the level of international policy response and action on circular economy, driven by climate change, is the central differentiator: (a) Base = business as usual, no change of regulation, (b) Moderate = known or expected changes of regulation lead to higher circularity, (c) Progressive = assuming more stringent regulation will force a much higher level of circularity. The scenarios were applied to three major customer industries of BASF (automotive, construction, consumer goods representing about 50% of total sales).</p> <p>Scenario results: Total BASF sales show significant upside potential in the moderate as well as in the progressive scenario. Construction trends have the strongest impact on</p>	<p>Reporting of results: Results were shared internally with representatives from operating divisions, which manage the SBUs, and relevant corporate units in the context of regular group meetings dedicated to sustainability topics. Reporting was limited to internal stakeholders.</p> <p>Integration of results into business objectives / strategy: Results informed the next steps of the internal process for developing a BASF position and strategy regarding circular economy. The strategic approach, including the findings from the scenario analysis, was finally presented to and approved by the Board of Directors.</p> <p>Example of how the results have directly influenced business objectives / strategy: Considering the findings regarding the potential impact of circular economy on BASF business, we promoted the establishment of strategic partnerships in this area. In January 2019, BASF co-founded the Alliance to End Plastic Waste (AEPW) together with other companies from along the value chain – from plastics producers and consumer goods manufacturers to waste disposal companies. The AEPW has over 40 members, who together aim to develop solutions that avoid the discharge of plastic waste into the environment,</p>

		<p>BASF sales in the moderate scenario, whereas automotive trends have the strongest impact on sales in the progressive scenario. The topic of resource consumption covers a range of resources, including water use. Water demand from primary production may be reduced due to higher circularity. Also, increased circular use of water may be a direct outcome.</p>	<p>especially the ocean. We also kicked off an internal scouting project to investigate selected business opportunities in more detail.</p>
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## W7.4

### (W7.4) Does your company use an internal price on water?

#### Row 1

#### Does your company use an internal price on water?

Yes

#### Please explain

Internal valuation/cost allocation: There is a site specific BASF internal price for provision of water as well as disposal of waste water depending on local conditions.

Cost calculation for new investments: We integrated a price for water and wastewater into our processes for investment decisions. It depends on current and future local situations based on a forecast of water availability and associated costs.

Valuation of external costs: BASF assesses its Value to Society in monetary terms using PwC's TIMM method. The scope includes supply chain (tier 1 to n), own operations and customer industries. With regard to water, emissions and consumption are integrated. To quantify and value the costs to society caused by emissions to water, inorganic and organic pollutants and nutrient discharges to water are taken into account. The calculated environmental impact depends on volume of corporate water consumption and respective local water stress level based on a water stress index (WSI).

## W8. Targets

### W8.1

#### (W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
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<p>Row 1</p>	<p>Company-wide targets and goals Site/facility specific targets and/or goals Brand/product specific targets and/or goals Basin specific targets and/or goals</p>	<p>Targets are monitored at the corporate level Goals are monitored at the corporate level</p>	<p>Setting of targets: Company-wide goals are proposed and elaborated by interdisciplinary working groups, making use of scenarios and risks identified with our risk analysis tools and decided upon by the BASF Board of Management.</p> <p>Monitoring of targets: Monitoring of water-related goals and targets is carried out via an established reporting process within our Responsible Care Management System (RCMS). Within the RCMS we want to make sure that relevant contextual factors are included. For this matter we maintain a dialogue with government institutions, associations, and other international organizations to keep requirements up to date and include contextual factors like the needs of other users in a basin. These factors are considered when goals are defined. The progress for all company-wide targets and goals is reported in the BASF Annual Report. For instance, we report on our goal to introduce sustainable water management at 100% of our production sites in water stress areas and at all Verbund sites by 2030. Facility-level targets and goals regarding water (e.g. incident avoidance) are agreed upon by the relevant corporate functions and monitored via the company-wide RCMS and/or HSE audits on facility level. Monitoring results are reported to the respective corporate functions and escalated up to the executive or board level, if required.</p> <p>Product level targets and goals related to water (for example product performance or product characteristics) are defined by the business units as a response to internal agendas and/or external requirements. They are monitored via business-level reporting. Important achievements are reported also to the Board of Management, and /or included in BASF corporate communications, e.g. the annual report.</p> <p>Basin specific targets and goals are set by stakeholder organizations, e.g. ICPR (International commission for the protection of the Rhine river basin), Comunidad de Irrigantes Tarragona (Ebro river basin), Programa Produtor de Agua Guaratingueta (Guaratingueta river basin). Strategies and improvement plans are developed in regular meetings. Targets, goals and KPIs are published on the respective websites.</p>
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## W8.1a

**(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.**

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### Target reference number

Target 1

### Category of target

Other, please specify

Assessing and implementing sustainable Water management

### Level

Company-wide

### Primary motivation

Water stewardship

### Description of target

Introduction of sustainable water management at 100% of our production sites in water stress areas and all Verbund sites by 2030. This covers all production sites equally in water stress areas and all large integrated sites group-wide. We pursue this by applying the European Water Stewardship (EWS) standard. In total, ca. 28% of our production sites were located in water stress areas in 2019. We introduced the standard at our European sites in 2013 and are fostering its implementation in China and North/South America. The Standard rests on 4 principles: sustainable water abstraction, maintaining good water quality, preserving conservation areas, ensuring continuous improvement processes. Implementation of the standard contributes to achieving water security, as it takes into account local conditions and aims to prevent and counter negative impacts on stakeholders and ecosystems (like increased water scarcity), by requesting detailed risk assessment and mandating appropriate responses.

### Quantitative metric

Other, please specify

% of production sites implementing EWS

### Baseline year

2019

### Start year

2019

### Target year

2030

### % of target achieved

35.8

### Please explain

From 2019 onward, we have expanded our definition of water stress areas to regions in which more than 40% (previously 60%) of available water is used by industry, household and agriculture. This definition is based on Aqueduct 3.0. In addition, our water target continues to take into account the sites that we identified as water stress sites in accordance with Pfister et al. (2009) prior to 2019 and Verbund sites. This increases the number of sites included in the water target and reduces the previous implementation level of BASF's water target accordingly. Thus, we have re-launched our target and extended the target year from 2025 to 2030. In 2019, BASF introduced sustainable water management at 8 additional sites (2018: 5). Further, the actual share and is recalculated annually, since locations get sold or new locations are bought every year, which affects the basis of the calculation (number of sites in water stress areas; sites which have introduced sustainable water management).

### Target reference number

Target 2

### Category of target

Product use-phase

### Level

Company-wide

### Primary motivation

Commitment to the UN Sustainable Development Goals

### Description of target

A significant lever for steering of BASF's product portfolio is the Sustainable Solution Steering method. BASF has conducted sustainability assessments and ratings for 96.3% of its company-wide product portfolio. We consider the products application in various markets and industries. Our so-called Accelerator products make a particular contribution to sustainability, as for instance enabling higher resource efficiency and water conservation / water resource protection in the value chain (and thus contributing to the overarching goal of achieving water security). We therefore aim to increase sales generated by Accelerator products to €22 billion by 2025. We changed the KPI from Accelerator sales as % of revenue to an absolute sales target to better reflect growth of the segment independent from fluctuating overall business performance.

### Quantitative metric

Other, please specify

Sales volume of Accelerator products in Euro

### Baseline year

2019

### Start year

2018

**Target year**

2025

**% of target achieved**

68

**Please explain**

We have achieved sales of €15 billion in 2019 (2018: €14,3 billion; +5%). In 2019, we achieved 68% of the target of reaching sales of Accelerator products of €22 billion by 2025. An active Accelerator portfolio management through acquisitions, divestitures and development of new products satisfying the Accelerator sustainability criteria is central to achieving our target.

**W8.1b**

**(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.**

**Goal**

Promotion of sustainable agriculture practices

**Level**

Business

**Motivation**

Recommended sector best practice

**Description of goal**

Description and implementation: BASF established a European farm network, to help preserve biodiversity and natural resources using modern agriculture. We are developing biodiversity, soil health and modern sustainable agriculture promotion measures in it together with farmers, experts from science and nature conservation organizations. The goal is to grow the farm network into a global network by 2021. Rationale for level chosen: This goal tackles issues touched by our Agricultural Solutions business segment, across all countries and activities within this segment. Importance: Biodiversity is the foundation for numerous ecosystem services, for example air quality, climate, pollination, water purification & soil formation. As a chemical company we depend on ecosystem services like water availability and quality (see W1.1) and have an impact on them. Protecting biodiversity is an important issue also addressed in the UN Sustainable Development Goals (SDGs). BASF contributes to achieving the SDGs and actively supports and implements projects to encourage protection of biodiversity at local level. Consequently, in 2016 we signed the Business and Biodiversity Pledge: We commit to deliver solutions for the conservation of biodiversity, its sustainable use, and the fair & equitable sharing of benefits from resources. That includes promoting awareness about values of biodiversity, acting as ambassadors for responsible stewardship of biodiversity, and regularly reporting on actions.

**Baseline year**

2008

**Start year**

2010

**End year**

2020

**Progress**

Progress: Currently, there are more than 20 farms in the Farm Network, located in Germany, France, the UK, Italy, Poland, Greece, the Netherlands and the Czech Republic showing how modern farming throughout Europe can help protect ecosystems and resources. Also, the network now includes more than 30 partner organizations in eight countries (indicator to assess progress). Independent experts evaluate the progress of each farm in the Farm Network. Data tracked includes the number of birds, pollinators, and other beneficial insects living on the farm. Water management measures and sustainable soil treatments are also carefully monitored. A different model with the same objectives is currently being pursued with farmers in USA ("living acres"). A cooperation is being pursued with IRRI on the Philippines to look at biodiversity in sustainable rice production.

Threshold for success: We see every new member of the Farm Network as a success for the promotion of sustainable agriculture. The achievement of our goal to establish a global network will be marked by extension of our activities to other continents outside of Europe. On the individual farm level, we hope to see clear improvements on the indicators mentioned above and the incorporation of new indicators, such as soil health. The unique conditions at each location contradicts the establishment of uniform thresholds.

**Goal**

Engagement with suppliers to help them improve water stewardship

**Level**

Company-wide

**Motivation**

Recommended sector best practice

**Description of goal**

Description and implementation: Our goal is to evaluate relevant suppliers (company-wide) regarding sustainability practices, including water management, and develop action plans for any necessary improvements. The evaluation process is based on third-party online assessments and/or on-site audits. If we identify potential for improvement, we support suppliers in developing measures to fulfil our standards.

Rationale for level chosen: Since our supplier base currently comprises more than 75 000 Tier 1 suppliers company-wide, focusing our third-party evaluations on the most

relevant is crucial. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices (including both country and industry-specific risks) and our purchasers' assessments. We also use further sources of information such as evaluations from Together for Sustainability (TfS).

Importance: As shown in W1.1, water availability and quality play an important role in our supply chain. The BASF Supplier Code of Conduct expects suppliers, inter alia, to use resources efficiently, apply energy-efficient, environmentally friendly technologies, reduce emissions to water, and minimize negative impacts on biodiversity and water scarcity. Our sustainability-oriented supply chain management also contributes to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our requirements.

### Baseline year

2019

### Start year

2019

### End year

2025

### Progress

Indicator to assess progress/threshold for success: We track the coverage of our supplier sustainability evaluations. By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend and will develop action plans where improvement is necessary. We will work towards having 80% of suppliers improve their sustainability performance upon re-evaluation. In addition, the global targets are embedded in the personal goals of persons responsible for procurement.

Progress: We actively promote sustainability in the supply chain. In 2019, 81% of the relevant spend had been evaluated. Of the suppliers re-evaluated in 2019, 52% had improved. In order to foster continuous supplier improvement, we conduct another review according to a defined timeframe based on the sustainability risk measured. BASF reserves the right to discontinue any business relationship for non-adherence to international principles, failure to correct violations, or for displaying patterns of non-compliance with these standards. We are making good progress in our journey towards reaching our 2025 goals.

### Goal

Promotion of sustainable agriculture practices

### Level

Company-wide

### Motivation

Corporate social responsibility

### Description of goal

Description of goal and implementation: We aim to ensure that palm oil raw materials come from sustainable, certified sources, and actively support the Roundtable on Sustainable Palm Oil (RSPO). Our goal is to only source RSPO certified palm oil and palm kernel oil by 2020, provided it is available on the market. This goal applies uniformly to all company parts and activities that use palm oil, and is driven by our central purchasing department. By 2025, this voluntary commitment will be expanded to include the most important intermediate products based on palm oil and palm kernel oil. Importance/rationale for coverage: Two of our key renewable raw materials are palm oil and palm kernel oil and their respective derivatives, which we mainly use to produce home and personal care ingredients and, to a lesser extent, food ingredients. Oil palm plantations can contribute significantly to deforestation, loss of biodiversity and climate change from the loss of peatland, and may also affect local water resources. We share the widespread concern about these challenges and are committed to reducing environmental impacts. Consequently, our company-wide BASF Palm Sourcing Policy has requirements for protecting and preserving forests and peatland, along with involvement of local communities in decision-making processes. Sourcing RSPO certified palm oil products significantly reduces these risks. Hence, the described goal contributes to the overarching goal of achieving water security.

**Baseline year**

2011

**Start year**

2015

**End year**

2020

**Progress**

Indicator to assess progress/threshold for success: We look at the share of RSPO certified products within the total palm and palm kernel oil procurement. In continuation of our commitment made in 2011, BASF's goal is to source 100% RSPO-certified sustainable palm oil and palm kernel oil by 2020.

Progress: In 2017, we published our first progress report (BASF Palm Progress Report) for greater transparency in the value chain (3rd in 2019). Based on the voluntary commitment to sustainably source palm oil products that we expanded in 2015, we were able to purchase large volumes of certified palm kernel oil in 2019 despite a difficult market environment. In 2019, we purchased 140,400 metric tons of certified palm kernel oil. Our share of RSPO-certified sustainable palm kernel oil amounted to approximately 83.5 % (2018: 70%). To involve smallholder farmers and improve their living conditions, BASF and Henkel have cooperated with the development organization Solidaridad since 2016 to provide training for around 5,500 farmers in Indonesia. To date, more than 2,000 smallholders have completed a training program as part of the Farmer Field School initiative. BASF also advanced the RSPO supply chain certification of its sites for cosmetic ingredients. In 2019, 24 production sites worldwide were RSPO certified. Moreover, we are stepping up our efforts to improve transparency and traceability in the supply chain. We were most recently able to trace 90% of our overall oil palm exposure.

## W9. Verification

### W9.1

**(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?**

Yes

### W9.1a

**(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?**

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Company-wide water accounting figures (withdrawals, discharges, consumption)	ISAE 3000	Statements and figures pertaining to sustainability in the Management’s Report and Consolidated Financial Statements of BASF’s Annual Report are audited. The audit with limited assurance was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting.
W8 Targets	Target and status for European Water Stewardship implementation	ISAE 3000	Statements and figures pertaining to sustainability in the Management’s Report and Consolidated Financial Statements of BASF’s Annual Report are audited. The audit with limited assurance was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting.

## W10. Sign off

### W-FI

**(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

**Forward-Looking Statements:**

This document may contain forward-looking statements. These statements are based on current estimates and projections and currently available information. Future statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. We do not assume any obligation to update the forward-looking statements contained in this report.

## W10.1

**(W10.1) Provide details for the person that has signed off (approved) your CDP water response.**

	Job title	Corresponding job category
Row 1	Member of the Board of Executive Directors furthermore Site Director of Ludwigshafen	Board/Executive board

## W10.2

**(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate’s Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

Yes