

**Module: Introduction****Page: W0. Introduction****W0.1****Introduction****Please give a general description and introduction to your organization**

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 114,000 employees at the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized in five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of more than €58 billion in 2016. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available online on our homepage, [www.basf.com](http://www.basf.com).

BASF has subsidiaries in more than eighty countries and supplies products to a large number of business partners in nearly every part of the world. We operate 6 Verbund sites and 352 additional production sites worldwide. Our Verbund site in Ludwigshafen is the largest integrated chemical complex in the world that belongs to a single company. The number and quality of our patents attest to our power of innovation and long-term competitiveness. We filed around 850 new patents worldwide in 2016. For the eighth time in succession, we headed the rankings in the Patent Asset Index in 2016 - a method which compares patent portfolios industry-wide. This once again underscores BASF's power of innovation.

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.

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 2025 by applying the European Water Stewardship (EWS) standard. After introducing the standard at our European sites in 2013, we furthered its implementation in China and North and South America in 2015 and it is being continued in 2016. In 2015, external audit awarded us once again 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. To further improve

the assessment of the environmental impact category "consumptive water use" we are currently integrating the AWARE (Available WATER REmaining) Water Assessment methodology into our eco-efficiency analysis. 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 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.

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## W0.2

### Reporting year

**Please state the start and end date of the year for which you are reporting data**

Period for which data is reported
Fri 01 Jan 2016 - Sat 31 Dec 2016

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## W0.3

### Reporting boundary

**Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported**

Other: BASF Group's scope of consolidation for its financial reporting comprises BASF SE, with its headquarters in Ludwigshafen, Germany, and all of its fully consolidated material subsidiaries. Joint operations are proportionally consolidated. Shares in joint ventures and associated companies are accounted for, if material, using the equity method in the BASF Group Consolidated Financial Statements.

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## W0.4

## Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

### W0.4a

## Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
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.
BASF acquired the business of Chemetall from Albemarle Corp., Charlotte, North Carolina only on December 14, 2016, and the ongoing business integration process did not allow for immediate inclusion of relevant Chemetall data from mid December until end of the year for the reporting year 2016 already.	Due to the short time period Chemetall belonged to BASF in 2016 the water inputs/outputs of the newly acquired business can also be considered not relevant in comparison to BASF overall (<2% contribution).

## Further Information

**Module: Current State**

**Page: W1. Context**

### W1.1

Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital for operations	Important	We use water as a coolant, solvent and cleaning agent, as well as to produce our products. 95 % of our water supply is taken from surface/brackish water, 4% from groundwater and 1 % from drinking water. BASF is committed to a responsible water use along the entire value chain. BASF has a broad range of different products like basic chemicals, polymers, coatings, solvents or performance products and customers in nearly every industry. The amounts of freshwater needed across the value chain heavily depends on the product and on the sector. For instance, the production of basic chemicals such as hydrocarbons produced in our Steamcracker require high amounts of process steam and of water for cooling purposes. Many of our suppliers are chemical factories with similar requirements and the primary use of water as a solvent or as a coolant.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital for operations	Important	We recirculate water as much as possible in order to withdraw less from supply sources. 85% of the water use is for cooling purposes, 15% is for production. Depending on availability and local conditions, we also use brackish water. In 2016, reusable wastewater from third parties amounted to 1 Mm3 . BASF is committed to a responsible water use along the entire value chain. The amount of recycled or brackish water needed across the value chain heavily depends on the product and on the sector. Water for cooling is vital for production. For instance, brackish water is one of the cooling water sources in our production site in Antwerp. Many of our suppliers are chemical factories with similar requirements and the primary use of water as a solvent or as a coolant.

**W1.2**

For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not

Water aspect	% of sites/facilities/operations	Please explain
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Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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 withdrawals.
Water withdrawals- volume by sources	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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.
Water discharges- total volumes	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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.
Water discharges- volume by destination	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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.
Water discharges- volume by treatment method	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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.
Water discharge quality data- quality by standard effluent parameters	76-100	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). 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.

Water aspect	% of sites/facilities/operations	Please explain
Water consumption- total volume	76-100	For the calculation on corporate level, we use the water balance data. For the evaporation loss we assume 1.5% of the recirculated cooling water. We calculate a water consumption value at production site level individually for each site. 100% of BASF production sites are monitored for total volumes of water consumption.
Facilities providing fully-functioning WASH services for all workers	76-100	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 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 regularly basis (30 audits in 2016 and 16 Health Performance Control visits).

#### W1.2a

**Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations**

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	1360000	Lower	Fresh surface water is the most important source for water supply. 36000 megaliters less than in 2015 (of which 34000 were saved at our Ludwigshafen site through increased reuse of cooling water).
Brackish surface water/seawater	200000	About the same	No significant change.
Rainwater	0	Not applicable	Not relevant at global scale, rainwater collection at few sites.
Groundwater -	66000	Lower	We do not yet distinguish between renewable and non-renewable groundwater supply in our

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
renewable			BASF Responsible Care database, but most groundwater supply comes from renewable resources. Lower water withdrawal is mainly due to divestitures.
Groundwater - non-renewable	0	Not applicable	We do not yet distinguish between renewable and non-renewable groundwater supply in our BASF Responsible Care database, but most groundwater supply comes from renewable resources.
Produced/process water	0	Not applicable	Produced/process water not a relevant withdrawal source
Municipal supply	21000	About the same	Municipal supply is mainly drinking water.
Wastewater from another organization	2000	About the same	Erroneous reporting of wastewater use by a site in Brazil and rounding differences result in a higher reported volume, which is kept here to ensure consistency with already reported figures and total sums. Actually, there is only a slight increase of the use of wastewater from other organizations in Tarragona. Correct value should be the same as last year.
Total	1649000	Lower	Total amount of water withdrawn was slightly reduced because of efficiency improvements; also BASF divested parts of the business which used considerable amounts of water.

#### W1.2b

**Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations**

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface water	1428000	About the same	Fresh surface water is the most important source for supply as well as for discharge. Small increase is result of uncertainty in measurement

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Brackish surface water/seawater	187000	About the same	Some sites are located nearby the coast and brackish water is the destination for discharge.
Groundwater	11000	About the same	Water discharge via soil to water beneath the soil surface or water discharge into isolated geological formations.
Municipal/industrial wastewater treatment plant	18000	About the same	Includes all water treated in a wastewater treatment plant (WWTP) which is not operated by BASF - municipal and private owned WWTP.
Wastewater for another organization	0	Not applicable	Not relevant at global scale
Total	1644000	About the same	Total amount of water discharged was slightly increased due to uncertainties in measurements especially of discharge into rivers

#### W1.2c

**Water consumption: for the reporting year, please provide total water consumption data, across your operations**

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
134000	Higher	Water consumption is defined as "the amount of water that is used but not returned to its original source" (definition ISO 14046). For the evaporation loss we assume 1.5% of the recirculated cooling water. The calculation of water incorporated into products on global level results in a slight increase of consumed water.

#### W1.3

**Do you request your suppliers to report on their water use, risks and/or management?**

Yes

**W1.3a**

**Please provide the proportion of suppliers you request to report on their water use, risks and/or management and the proportion of your procurement spend this represents**

<b>Proportion of suppliers %</b>	<b>Total procurement spend %</b>	<b>Rationale for this coverage</b>
1-25	1-25	With our sustainability-oriented supply chain management, we contribute to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our specifications. We count on reliable supply relationships and want to make our suppliers' contribution to sustainable development transparent. BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. The evaluation process is simplified for both suppliers and TfS member companies with globally uniform questionnaires. In TfS evaluations, suppliers are requested to provide information on the implementation of water policies, wastewater discharge, protection concepts for wastewater effluents, containment measures and water-related impact reduction. Suppliers' performance in these areas positively impacts their evaluation result (incentive to report). Using TfS evaluations and data, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. We drive these processes through a sustainability oriented IT tool. Suppliers with an elevated sustainability risk are identified using risk matrices and required to carry out a sustainability performance check.

**W1.3b**

**Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management**

Primary reason	Please explain
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**W1.4**

**Has your organization experienced any detrimental impacts related to water in the reporting year?**

No

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**W1.4a**

Please describe the detrimental impacts experienced by your organization related to water in the reporting year

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
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**W1.4b**

Please choose the option below that best explains why you do not know if your organization experienced any detrimental impacts related to water in the reporting year and any plans you have to investigate this in the future

Primary reason	Future plans
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**Further Information**

**Module: Risk Assessment**

**Page: W2. Procedures and Requirements**

**W2.1**

**Does your organization undertake a water-related risk assessment?**

Water risks are assessed

**W2.2**

**Please select the options that best describe your procedures with regard to assessing water risks**

Risk assessment procedure	Coverage	Scale	Please explain
Comprehensive company-wide risk assessment	Direct operations and supply chain	All facilities and suppliers	BASF has chosen an integrated enterprise risk management (ERM) approach because of the importance of a consistent risk management for different topics, the advantages through identification of overlaying or interdependent risks and better manageability compared to separate risk assessments. As part of ERM, BASF has established a specific company-wide process to effectively identify, assess, and manage risks and opportunities associated with environmental topics including water. ERM is based on the integrated framework provided by COSO. Water is part of our Responsible Care Management System that comprises the global rules, standards and procedures for

Risk assessment procedure	Coverage	Scale	Please explain
			environment, health and safety including the assessment of water risks at site level. Integral part of our procurement sustainability risk management process is the assessment of our suppliers regarding their sustainability performance, including water. We pursue a risk-oriented approach with clearly defined follow-up processes. We have developed risk matrices to identify suppliers with a high sustainability risk. We have integrated water criteria and different water scenarios into our processes for investment decisions as well as in our processes for capital expenditures for property, plant and equipment. This will enable decisions based on a comprehensive evaluation of the risks and opportunities related to water.

### W2.3

Please state how frequently you undertake water risk assessments, at what geographical scale and how far into the future you consider risks for each assessment

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Every two years	Country	3 to 6 years	To identify challenges at an early stage we accomplish materiality analysis assessment with external support at regular intervals (every 3 -4 years). Water is identified as one out of eight identified key material aspects. In 2017 we started a project to change this materiality assessment process to a more continuous process. The objective is that scoping for relevant topics will be done throughout the year and the topics material to BASF will be harvested on an annual basis.
Six-monthly or more frequently	Country	1 to 3 years	The Enterprise Risk Management is a specific company-wide process to effectively identify, assess, and manage risks and opportunities associated with environmental topics including water. The Board is informed twice per year with the Report Summary.
Six-monthly or more frequently	Facility	3 to 6 years	The Responsible Care Management System is the framework for our voluntary commitments regarding environmental topics. Regular audits help ensure that standards are met.
Annually	River basin	3 to 6 years	Identification of production sites located in water stressed regions is made on an annual basis.
Annually	Facility	3 to 6 years	Use of European Water Stewardship standard at production sites in water stressed regions to evaluate

Frequency	Geographic scale	How far into the future are risks considered?	Comment
			water risks. After introducing the standard at our European sites in 2013, we furthered its implementation in China and North and South America in 2015 and it is being continued in 2016. By 2025, 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 water abstraction. We achieved 42.6% of this goal in 2016.
Annually	Country	3 to 6 years	Suppliers with an elevated sustainability risk are assessed on a regular basis to check their sustainability performance. The scope of the assessment may differ from production site level to legal entity or group level in a given country. We use our risk-based approach to evaluate suppliers with an elevated sustainability risk at least every five years.

#### W2.4

**Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?**

Yes, evaluated over the next 5 years

#### W2.4a

**Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?**

At BASF, we create chemistry for a sustainable future. We have strategically embedded sustainability into our company as a significant driver for growth. Our sustainability management has three responsibilities: minimizing risks, taking advantage of business opportunities and establishing relationships with our stakeholders based on trust. We use the materiality analysis to constantly enhance our sustainability management. Water has been identified as one of the major sustainability challenges.

This has been confirmed again by an update of the materiality analysis in 2013, showing that "water" is one out of eight key material aspects for BASF. A strategic evaluation process built upon this in 2015 and 2016 to define new focus topics along the value chain.

How to deal with water quality as well as water quantity is therefore an important part of our strategy, e.g. possible water shortages at production sites can impact

business operations and cause higher costs.

As a consequence we adapted our strategy to deal with these risks.

Water is integrated into the development and implementation of our business units' strategies and research projects.

With our approach Sustainable Solution Steering we evaluate the sustainability performance (including all water related topics) of our product portfolio. This detailed analysis and transparent classification allow us to both improve individual solutions and steer the entire portfolio to ensure long-term business growth.

We have integrated water criteria into our processes for investment decisions. This will enable decisions, which are based on a comprehensive evaluation of the risks and opportunities related to water availability and water quality.

At sites where water scarcity could hinder the expansion of production capacities, preventive actions (reduce, reuse, recycle) are evaluated and implemented.

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#### W2.4b

What is the main reason for not having evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy, and are there any plans in place to do so in the future?

Main reason	Current plans	Timeframe until evaluation	Comment
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#### W2.5

Please state the methods used to assess water risks

Method	Please explain how these methods are used in your risk assessment
Life Cycle Assessment Maplecroft Global Water Security Risk Index WBCSD Global Water Tool	To assess water related risks BASF aims to cover various value chain elements, of which each one requires efficient and dedicated methods. The operational scope covers our own worldwide activities, a large part of our supply chain and also the

Method	Please explain how these methods are used in your risk assessment
<p>WRI Aqueduct            Other: PwC's TIMM Tool, TfS "Together for Sustainability" (EcoVadis assessments, TfS audits by third party audit companies), European Water Stewardship (EWS) Standard, Water Stress Index quantification by Pfister et. Al. 2009, Community Advisory Panels (CAPs), Responsible Care (RC), Enterprise Risk Management, Integrated Biodiversity Assessment Tool (IBAT); ESCHER methodology by PwC, internal company knowledge.</p>	<p>downstream value chain. Integration on company level is reached through Enterprise Risk Management as the overarching framework for risk assessment. Why methods were selected: Suppliers with an elevated sustainability risk are identified using risk matrices. To set up these matrices, several parameters are used and external service providers are engaged. To identify ESG issues (including water) in particular countries, we use the global risk analyst Verisk Maplecroft (<a href="http://www.maplecroft.com">www.maplecroft.com</a>). Once identified, suppliers with an elevated sustainability risk are required to carry out a sustainability performance check, e.g. EcoVadis assessments and TfS audits. PwC's TIMM tool assesses value to society - economic, social and environmental benefits and costs - in monetary terms including supply chain, own operations and customer industries. Responsible Care (RC) Management System comprises global rules, standards and procedures for environmental and health protection. EWS standard - evaluate the water situation &amp; increase the resilience of BASF's production sites in water stress areas. ERM – company-wide process to identify, assess, and manage risks and opportunities. Pfister &amp; WBCSD global Water Tool are used to identify production sites in water stress areas. WRI Aqueduct helps to understand where and how water risks and opportunities are emerging worldwide. Community advisory panels aim to promote open exchange between citizens and our site management with the goal of strengthening trust in our activities. We used IBAT for a basic, location-based risk screening on biodiversity.</p>

**W2.6**

**Which of the following contextual issues are always factored into your organization's water risk assessments?**

Issues	Choose option	Please explain
<p>Current water availability and quality parameters at a local level</p>	<p>Relevant, included</p>	<p>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. BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible</p>

Issues	Choose option	Please explain
		Care® Database (RCDB). It is filled with data from all BASF sites around the world. By applying the European Water Stewardship (EWS) standard (See “Other: EWS” in question W2.5) at all sites in water stress areas and all Verbund sites by 2025 BASF analyses water availability and water management at local level.
Current water regulatory frameworks and tariffs at a local level	Relevant, included	Water withdrawals and wastewater discharges comply with national, state and local regulations and permit authorization. BASF environmental and advocacy experts are engaged in constant dialogue with stakeholders including local authorities (See “internal company knowledge” in question W2.5). Contractual agreements with authorities on reduced abstractions during periods of extreme weather conditions (high temperatures) are in place. We do participate in partnerships at watershed level which focus on sustainable water management e. g. ICPR International Commission for the Protection of the Rhine.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	To be aware of conflicts we provide transparent communication about our activities and take on critical questions. We have a particular responsibility toward our production sites’ neighbours, and discuss current issues with them e. g. in Community Advisory Panels (See “Other: Community Advisory Panels (CAPs) in question W2.5). A Community Advisory Panel (CAP) 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 common issues of mutual interest. It is a forum for open and honest dialog between citizens and plant management. By encouraging a two-way flow of information, we hope to enhance communication with the communities in which we operate. In 2016 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.
Current implications of water on your key commodities/raw materials	Relevant, included	BASF is committed to multiple-source sourcing in order to address certain risks such as quality issues, availability and price volatility of raw materials. Within BASF Procurement, a dedicated team handles single-source situations (See “internal company knowledge” in question W2.5 ).
Current status of ecosystems and habitats at a local level	Relevant, included	In 2015, we investigated our production sites around the world to discover which are located near internationally protected areas. We did not discover any impact of our activities on biodiversity in these protected areas. To do so, we used the Tool IBAT (See “Other: IBAT” in question W2.5). If there are indications of changing circumstances, we will re-assess these issues regularly on the individual site level. We also routinely investigate ecosystem-related topics in the planning of any new location.
Current river basin management plans	Relevant, included	We factor current river management plans into our risk assessments to be aware of potential limitations and opportunities that may arise. This is also part of the European Water Stewardship (EWS) standard set down by the European Water Partnership, which we use at our Verbund sites and our sites in water stressed regions. (See “Other: EWS” in question W2.5)
Current access to fully-functioning WASH services for all employees	Relevant, included	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

Issues	Choose option	Please explain
		<p>appropriate level of standard for all employees. 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 regularly basis. Tasks and responsibilities are defined in the Corporate Health Management Requirement (See “internal company knowledge” in question W2.5).</p>
<p>Estimates of future changes in water availability at a local level</p>	<p>Relevant, included</p>	<p>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. We pursue the goal of establishing sustainable water management at all Verbund sites and all our sites in water stress areas by 2025 by applying the European Water Stewardship (EWS) standard set down by the European Water Partnership (See “Other: EWS” in question W2.5). Part of this evaluation is the current and future water availability at local level.</p>
<p>Estimates of future potential regulatory changes at a local level</p>	<p>Relevant, included</p>	<p>Water withdrawals and wastewater discharges comply with national, state and local regulations and permit authorizations. To identify and evaluate the future potential of regulatory changes of sustainability issues including water, BASF environmental and advocacy experts are actively involved in external networks like business associations and we engage in constant dialogue with our stakeholders including competent authorities. (See “internal company knowledge” in question W2.5) We do participate in partnerships at watershed level that focus on sustainable water management e. g. ICPR International Commission for the Protection of the Rhine.</p>
<p>Estimates of future potential stakeholder conflicts at a local level</p>	<p>Relevant, included</p>	<p>It is important for us to establish relationships with our stakeholders based on trust to be aware of possible conflicts. We provide transparent communication about our activities and take on critical questions. We have a particular responsibility toward our production sites’ neighbours, and discuss current issues with them e. g. in Community Advisory Panels. A Community Advisory Panel (CAP) 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 common issues of mutual interest. It is a forum for open and honest dialog between citizens and plant management. By encouraging a two-way flow of information, we hope to enhance communication with the communities in which we operate. In 2016 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. (See “Other: Community Advisory Panels (CAPs)” in question W2.5)</p>
<p>Estimates of future implications of water on your key commodities/raw materials</p>	<p>Relevant, included</p>	<p>BASF strives to increase its resilience to water risks along the value chain. Therefore, BASF assesses the impact of its operations on society in monetary terms, using PwC’s TIMM methodology (See “Other: PwC’s TIMM tool” in question W2.5). The 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. 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</p>

Issues	Choose option	Please explain
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	<p>water risks are a highly location-specific.</p> <p>In 2015, we investigated our production sites around the world to discover which are located near internationally protected areas. We did not discover any impact of our activities on biodiversity in these protected areas. To do so, we used the Tool IBAT (See "Other: IBAT" in question W2.5). If there are indications of changing circumstances, we will re-assess these issues regularly on the individual site level. We also routinely investigate ecosystem-related topics in the planning of any new location. BASF has established a network of sustainability farms in Europe, where we cooperate with professional farmers and independent experts to investigate how modern agriculture can go hand-in-hand with measures to support the environment, local wildlife and plant species.</p>
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	<p>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. We have integrated water criteria and different water scenarios into our processes for investment decisions as well as in our processes for capital expenditures for property, plant and equipment. This will enable decisions, which are based on a comprehensive evaluation of the risks and opportunities related to water. 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. We do not expect climate change to have an (substantial) impact on the water supply at these sites in the near future. See "WRI Aqueduct" in question W2.5)</p>
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	<p>Scenario analysis of potential regulatory and or tariff changes is integrated into our processes for investment decisions as well as in our processes for capital expenditures for property, plant and equipment. To be aware of water stress development in the future that will influence regulatory and tariff changes at local level we use publicly available tools to evaluate water stress at local level. (See "WBCSD Global Water Tool" in question W2.5)</p>
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included	<p>BASF wants to further increase resilience to water risks at the production sites. We have integrated scenarios about stakeholder expectations regarding water into our processes for investment decisions. With CAPs we discuss future stakeholder expectations at local level. (See "Community advisory panels" in question W2.5). A Community Advisory Panel (CAP) 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 common issues of mutual interest. It is a forum for open and honest dialog between citizens and plant management. By encouraging a two-way flow of information, we hope to enhance communication with the communities in which we operate. In 2016 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>
Scenario analysis of implications of water on your key commodities/raw materials	Relevant, included	<p>BASF wants to further increase resilience to water risks in the supply chain. Studies to identify water consumption hotspots and water scarcity risks within the supply chain are conducted. They use the ESCHER methodology (See "Other: ESCHER tool" in question W2.5) and consider future scenarios regarding water.</p>

Issues	Choose option	Please explain
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, included	Scenario analysis of potential changes to ecosystems and habitats is integrated into our process for investment decisions. Our Responsible Care managers estimate the impacts associated with new plants on the habitats and ecosystems at site level. (See "Other: Responsible Care Management" in question W2.5)
Other	Relevant, included	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB). It is filled with data from all BASF sites around the world. By applying the European Water Stewardship (EWS) standard (See "Other: EWS" in question W2.5) at all sites in water stress areas and all Verbund sites by 2025 BASF analyses water availability and water management at local level.

## W2.7

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Relevant, included	The trust of customers and consumers is essential for the success of BASF. 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. 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.
Employees	Relevant, included	Our employees are fundamental to achieving the goals of our "We create chemistry" strategy. 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. The methods used to promote increasing awareness towards environmental topics and continuous improvement of operational management includes trainings of our employees.
Investors	Relevant, included	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

Stakeholder	Choose option	Please explain
		<p>topics including water and BASF’s approach towards these. In a SRI field trip to our Ludwigshafen site and a SRI conference in Paris, the discussions with ~20 investors was among other topics also on water. In addition, one section of our SRI capital market story covers water topics. This presentation is available on our website.</p>
Local communities	Relevant, included	<p>A fixed component of our sustainability management is continuous exchange with our stakeholders. We provide transparent communication about our activities and take on critical questions. We have a particular responsibility toward our production sites' neighbours, and discuss current issues with them in Community Advisory Panels. A Community Advisory Panel (CAP) 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 common issues of mutual interest. It is a forum for open and honest dialog between citizens and plant management. By encouraging a two-way flow of information, we hope to enhance communication with the communities in which we operate. In 2016 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. Another example: With the Creator Space™ format we collaborate with partners on challenges such as water accessibility in Mumbai.</p>
NGOs	Relevant, included	<p>A fixed component of our sustainability management is continuous exchange with our stakeholders including NGOs. For instance, together with the EWP (European Water Partnership) we worked on criteria and indicators for sustainable water management. BASF is a member of AWS (Alliance for Water Stewardship) that gives us the opportunity to be part of the future development of the AWS system and to learn their expectations. We conduct regular materiality analyses (to be updated every three to four years) including stakeholder concerns.</p>
Other water users at a local level	Relevant, included	<p>We do participate in partnerships at watershed level that focus on sustainable water management. The dialog 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 www.iksr.org) CUACSA (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. A BASF employee is member of the “Junta de Govern”. Regularly meeting of the “Junta de Govern in 2017 are 3 times. The meeting of the “Junta General” is two times per year. There are additional meetings of the “Commisio Operativo” (see meeting calendar at www.cuacsa.org).</p>
Regulators	Relevant, included	<p>Water withdrawals and wastewater discharges have to comply with national, state and local regulations and permit authorizations. 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.</p>
River basin management authorities	Relevant, included	<p>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. 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,</p>

Stakeholder	Choose option	Please explain
		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> ) CUACSA (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. A BASF employee is member of the "Junta de Govern". Regularly meeting of the "Junta de Govern in 2017 are 3 times. 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> ).
Statutory special interest groups at a local level	Relevant, included	We do participate in partnerships at watershed level that focus on sustainable water management. For instance, in Tarragona we work together with companies in the industry area and with the local community.
Suppliers	Relevant, included	With our sustainability-oriented supply chain management, we contribute to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our specifications. In accordance with BASF's Supplier Code of Conduct, we expect our suppliers to minimize their 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. BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. We drive these processes through a sustainability oriented IT tool. Suppliers with an elevated sustainability risk are identified using risk matrices and required to carry out a sustainability performance check. In TfS evaluations, suppliers are requested to provide information on the implementation of water policies, wastewater discharge, protection concepts for wastewater effluents, containment measures and water-related impact reduction. Suppliers' performance in these areas positively impacts their evaluation result.
Water utilities at a local level	Relevant, included	BASF expects their suppliers to minimize their impact on biodiversity, climate change and water scarcity, according to the BASF Supplier Code of Conduct. 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.
Other	Relevant, included	The trust of customers and consumers is essential for the success of BASF. 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. 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.

Please choose the option that best explains why your organisation does not undertake a water-related risk assessment

Primary reason	Please explain
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#### Further Information

**Module: Implications**

**Page: W3. Water Risks**

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#### W3.1

**Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?**

Yes, direct operations only

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#### W3.2

**Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk**

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. We understand substantive change to be any event that can negatively impact the achievement of our short-term operational or long-term strategic 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. If a risk is identified which could have an impact on earnings of more than €10 million, it must be immediately reported to the

Board of Executive Directors.

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 cause 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 (water stress index according to Pfister et al.)
- Determining whether these sites are considered strategic and account for high sales volume (>1 % of BASF's global sales volume)

Sites that satisfy both criteria are considered to face a risk and hence have the potential to cause substantive changes to our business.

### W3.2a

Please provide the number of facilities\* per river basin exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure; and the proportion of company-wide facilities this represents

Country	River basin	Number of facilities exposed to water risk	Proportion of company-wide facilities that this represents (%)	Comment
United States of America	Brazos River	1	Less than 1%	Freeport is one of BASF's six Verbund sites and is located in a water stressed area. The site is a leading producer of basic chemicals, intermediates and fiber intermediates, with 25 plants and more than 770 employees.
China	Yangtze River (Chang Jiang)	1	Less than 1%	Shanghai BASF Polyurethane Company Limited (SBPC) is located in a water stressed area. The site has four manufacturing plants.

### W3.2b

For each river basin mentioned in W3.2a, please provide the proportion of the company's total financial value that could be affected by water risks

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected	Comment
United States of America	Brazos River	% global production volume	1-5	In the event of reduced water availability the volume of production could be negatively affected.
China	Yangtze River (Chang Jiang)	% global production volume	1-5	In the event of reduced water availability the volume of production could be negatively affected.

### W3.2c

Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	Brazos River	Physical-Increased water scarcity	Higher operating costs	The supply, treatment, transportation and recooling of water is associated with a high energy demand resulting in increased operating costs.	>6 years	Probable	Low-medium	Other: Implementation of Water Stewardship Standard	The implementation of the water stewardship standard requires moderate personnel costs (0,5 FTE), which are not significant in relation to overall	Implementation of Water Stewardship Standard to assess the water situation and prioritize further actions if necessary e.g. infrastructure development. The costs of the response

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
									operational expenses at the facility.	strategy were estimated at a very moderate level due to the fact that it can built on our established Responsible Care® Management System and the experience of an EHS expert team at the site. If necessary measures are identified, e.g. infrastructure investments. The costs depend on the kind of the measure.
China	Yangtze River (Chang Jiang)	Physical-Increased water scarcity	Plant/production disruption leading to reduced output	In the event of reduced water availability the volume of production could be negatively affected.	>6 years	Unlikely	Low-medium	Other: Implementation of Water Stewardship Standard	The implementation of the water stewardship standard requires moderate personnel costs (0,5 FTE) which are	Implementation of Water Stewardship Standard to assess the water situation and prioritize further actions if necessary e.g.

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
									not significant in relation to overall operational expenses at the facility.	infrastructure development. The costs of the response strategy were estimated at a very moderate level due to the fact that it can be built on our established Responsible Care® Management System and the experience of an EHS expert team at the site. If necessary measures are identified, e.g. infrastructure investments. The costs depend on the kind of the measure.

W3.2d

Please list the inherent water risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
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W3.2e

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
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W3.2f

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	BASF sources its raw materials worldwide. The partial disruption of supply of a specific material due to water related issues is an identified, but non-substantial risk. Part of our response strategy is the reduction of the number of single source products and the management concept of supplier selection in geographically diverse areas. The assessment of our suppliers' sustainability performance is an integral part of our procurement sustainability risk management process. We identify the sustainability risk on a

Primary reason	Please explain
	<p>yearly basis. We pursue a risk-oriented approach with supplier assessments and audits worldwide on a regularly basis and clearly defined follow-up processes. We have developed risk matrices that help us identify suppliers with a high sustainability risk given their respective country. For this purpose, we use the service provider Maplecroft that computed ESG rating of countries. Furthermore, the service provider RepRisk provides us with information if any suppliers have been observed in connection with negative sustainability incidents. BASF is a founding member of "Together for Sustainability" (TfS) an initiative of leading chemical companies for the global standardization of supplier evaluations and audits. This initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards.</p>

W3.2g

Please choose the option that best explains why you do not know if your organization is exposed to water risks that could generate a substantive change in your business operations, revenue or expenditure and discuss any future plans you have to assess this

Primary reason	Future plans
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Further Information

Page: W4. Water Opportunities

W4.1

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

W4.1a

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
Company-wide	Other: 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.	Using the Sustainable Solution Steering® method BASF conducted sustainability assessments (also with regard to water) of its entire product portfolio. In 2016, our so-called Accelerators that offer a substantial sustainability contribution in the value chain generated about 27.2% of total BASF sales. Products and solutions related to € 2 billion in sales make a particular contribution to water improvements in the value chain. We want to increase the proportion of “Accelerator” products in the long term: in other words, products that contribute particularly to sustainability in the value chain, and are characterized by, on average, higher growth rates and profitability. To realize this BASF identifies future opportunities continuously. A systematic strategic approach is carried out by our central Science Relations & Innovation Management department. The operating units and R&D departments identify opportunities on a project basis. Intensive exchange with our customers and partners from industry and science leads to the identification of market trends and opportunities. Specific target: We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers	1-3 years	We aim to increase the number of Accelerator solutions to 28% by 2020 in order to further improve the sustainability contribution made by BASF and its customers.
Company-wide	Sales of new products/services	BASF established a market facing business unit combining all products for the water industry to position itself as a leading provider for water treatment chemicals. BASF is working on development of new products and technologies for all relevant water treatment segments. Exact statements on the financial implications cannot be made. Nevertheless, scenario	1-3 years	Development of new products and technologies for all relevant water treatment segments.

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		<p>techniques respecting uncertainties and probabilities of success enable us to generate a possible range of outcomes. Concerning our R&amp;D investments in Water Chemicals, in 2020 we expect €50 million of our turnover and €11 million of our EBITDA from innovations that have been in the market for less than 5 years. Case study for newly introduced Sokalan® RO 3500: 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® RO 3500 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.</p>		
Company-wide	Other: Water purification: drinking water, wastewater and sludge treatment.	<p>Water scarcity and a growing demand for water will force a shift from conventional water sources (e.g. ground and surface water) to desalination and water reuse combined with an efficient use of water. The need for cutting-edge water treatment technologies are providing new opportunities for BASF's broad portfolio of water chemicals. Our solutions are used in industrial and municipal water treatment to purify raw water, to protect cooling towers, boilers and desalination plants from scale and corrosion and to treat wastewater to enable water reuse. In 2016. The ZETAG® flocculant technology (cationic polyacrylamide flocculants) are used in the sludge thickening and dewatering process of municipal and industrial wastewater treatment plants.</p>	Current-up to 1 year	Zetag® ULTRA has a positive effect on the carbon footprint of the treatment facility, as it leads to higher cake solids reducing reduce the energy required for transporting and disposing at a landfill or can be incinerated as fuel to generate energy

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		<p>Optimizing the dewatered biosolids is essential to maintain the sustainability and efficiency of the process. Higher cake solids reduce the energy required for transporting and disposing at a landfill. If the cake is dry enough it can be incinerated as fuel to generate energy. In consequence the separation process is tailored, cost-effective and efficient. The MAGNAFLOC® LT coagulant / flocculant technology is used for potable water treatment applications for the clarification of raw surface waters. The SOKALAN® antiscalant portfolio for thermal desalination and reverse osmosis applications is preventing scale in desalination and water reuse processes and is allowing efficient operations and minimizing maintenance outages.</p>		
Company-wide	Sales of new products/services	<p>Further development of the technologies transferred. Continuing to seek valuable partnerships. In 2011, BASF acquired the ultrafiltration specialist inge GmbH, which broadened BASF's technology base and helped to expand its market position in water treatment business. inge GmbH secured a major contract in 2013 for participating at a major desalination project in Ghana. The plant can provide 60,000 cubic meter of drinking water per day for approximately 500,000 people in the Teshie-Nungua region.</p>	Current-up to 1 year	Ultrafiltration specialist inge GmbH broadened BASF's technology base
Company-wide	Other: Water use: cooling water, boiler water, process water, agriculture, household water	<p>Create synergies between equipment and chemicals; help our customer to implement solutions for water recycling, reuse, savings and drinking water treatment. BASF strives for growth by expanding production capacities for more sustainable products such as the chelating agent Trilon®M, which is used as an alternative to phosphates in dishwasher detergents. BASF dishwashing tab based on TRILON®, improves the cleaning effect of detergents and cleaning agents and has an excellent ecological profile. TRILON® has emerged as the preferred alternative to phosphate in modern, high-performance, ecological dishwashing detergents. The outstanding eco-toxicological profile of</p>	1-3 years	Trilon®M is used as an alternative to phosphates in dishwasher detergents.

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		TRILON® has been confirmed by extensive long-term studies. TRILON® is a global market standard for sustainable cleaning solutions.		
China	Innovation	The need for cutting-edge water treatment technologies are providing new opportunities for BASF's broad portfolio of water chemicals. Our solutions are used in industrial and municipal water treatment to purify raw water, to protect cooling towers, boilers and desalination plants from scale and corrosion and to treat wastewater to enable water reuse. BASF started up a production plant for water treatment chemicals in Nanjing, China, at the end of 2012. In addition, BASF has converted its manufacturing facilities from copper based acrylamide to the own developed bio-acrylamide process, a precursor to polyacrylamide flocculants with investments in Europe, North America and China. Further capacity expansion projects for polyacrylamide are under construction or under investigation in all regions to underpin BASF's leading position to allow our customers to comply with stricter regulatory standards globally.	Current-up to 1 year	Strengthen production capacities
Company-wide	Sales of new products/services	In the field of plant biotechnology, BASF has been collaborating with Monsanto since 2007 to develop higher-yielding crops and crops that are more resistant to adverse environmental conditions such as drought. By 2030, it is estimated that the global market for seeds and plant biotechnology will be worth in excess of US\$30 billion. We anticipate growing license revenues from our partner by expansion of Genuity® DroughtGard® drought-tolerant corn hybrids, the first-ever drought biotech trait, introduced in 2013.	>6 years	In the field of plant biotechnology, we have been collaborating with Monsanto since 2007 to develop higher yielding crops and crops that are more resistant to adverse environmental conditions such as drought.
Company-wide	Innovation Sales of new products/services	Development of products to meet customers' demand for eco-friendly and cost-saving products. ELASTOPAVE® is a novel approach to the construction of paths, open spaces and roads surfaces. The ground is not sealed and can breathe because the porous covering surface is water permeable. Applications are	Current-up to 1 year	Elastopave® mixed with gravel or stones can be used to construct a stable water permeable surface

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		walkways, parking areas, patios, pedestrian zones or for private use. E.g. this has been used in Fujian, Henan, Yunnan, Chongqing, and Guizhou (China) to create "sponge cities".		
Company-wide	Innovation	BASF develops innovative products for agriculture, which help farmers to grow crops more efficiently, while reducing environmental pressures. Plants need nitrogen to grow and they absorb it, for example, in the form of ammonium from fertilizers and liquid manure. In soil, however, ammonium is converted into nitrate after a certain period of time, thereby also generating the greenhouse gas nitrous oxide. The ammonium stabilizer DMPP, the main component in BASF's fertilizer additive Vizura®, inhibits this process. Fertilizers with DMPP can serve plants more efficiently and can reduce the amount of needed fertilizer or liquid manure. As a result, nitrous oxide emissions are reduced by an average of 50 percent. At the same time, groundwater contamination with nitrate is also reduced.	1-3 years	Vizura® reduces nitrate leaching to groundwater
Company-wide	Improved water efficiency Innovation Other: Products and technologies help to address the mining industries water challenges and make an essential contribution to reaching water savings	Development of water-saving products to meet customers' demand for eco-friendly and cost-saving products. Water plays a significant role in most mining processes. Our Rheomax® technology is used in mining to separate solids from water when treating overburden. Rheomax® DR offers superior flocculating performance compared to conventional benchmark flocculants. Rheomax® DR is effective for many different kinds of ores, creating more robust aggregates. More water can be recovered at the thickener and be reverted back in the process. Less fresh water is needed for the operation and impact on local water availability can be reduced. Beyond that, Rheomax® DR shows strong performance also in saline environments and enables the use of sea water in mines' processes. The volume of wastewater to be discharged is reduced, and as a consequence the residue footprint is diminished. CCD washing efficiency	Current-up to 1 year	Providing solutions to use and recovery of water for the mining industry.

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		<p>is increased and recovery of leached metal is improved. Energy can be saved due to reduced pumping pressure. Savings in the cost of recovery or replenishment of process water can be achieved. Rheomax® ETD can recover more than 80% of process water, compared with the industry standard of 75%. The mining industry can therefore reduce the land footprint needed to store overburden and – because of the faster rate of soil drainage – can begin sooner with renaturation. We aim to increase our sales of Rheomax® ETD by more than 10% every year through 2020.</p>		
Other: Asia	<p>Improved water efficiency Innovation Other: Integrated solution to improve water efficiency and reduce emissions to water</p>	<p>Development of products and processes to help tanners fulfill latest ecological legislations and cost savings. Where required, to tap on synergies between the leather chemicals unit and the water solutions unit to provide integrated solutions for complex challenges on emissions to water. Chemical waste released into water is a major environmental challenge for the tanning industry in Asia. To address this need, BASF has developed DryFast – a unique beam house innovation that provides improved efficiency and reduces water use. The new process reduces water usage by up to 60%, and produces cleaner effluents with sludge reduction by up to 50%. It also minimizes processing time, making DryFast a leading choice for tanners especially in fast growing regions.</p>	1-3 years	DryFast helps tanners to improve efficiency and reduce water use.
Company-wide	Innovation	<p>Create synergies between equipment and chemicals; help our customer to implement solutions for water recycling, reuse, savings and drinking water treatment. BASF has identified opportunities with respect to water and provides a range of products to meet current and future needs. The key drivers for future development are: increased global water stress, health protection and demand for sustainable solutions. To get drinking water in the high quality BASF is offering ultrafiltration modules based Multibore® membranes. Using UF enables the production of drinking water from</p>	1-3 years	Ultrafiltration modules enable production of drinking water from different water sources.

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		<p>surface water, well water and spring water. It can be used in the pretreatment of seawater in desalination plants, and as a treatment for wastewater. The 2016 introduced new UF module within the dizzer® XL series offers 80 m<sup>2</sup> of active filtration area and yields about 14% increase in output compared with the existing 70 m<sup>2</sup> version.</p>		

W4.1b

Please choose the option that best explains why water does not present your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
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W4.1c

Please choose the option that best explains why you do not know if water presents your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
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**Further Information**

**Module: Accounting**

**Page: W5. Facility Level Water Accounting (I)**

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**W5.1**

**Water withdrawals: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a**

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
Facility 1	United States of America	Brazos River	Freeport/ TX/ BASF Corporation	8443	About the same	Change is not substantive. High proportion of the water is used for cooling.
Facility 2	China	Yangtze River (Chang Jiang)	Shanghai/ Caojing/ SBPC/ BASF	1546	About the same	Change is not substantive. High proportion of the water is used for cooling. Slight increase in use of public drinking water due to a leakage in the supply pipeline.

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**Further Information**

**Page: W5. Facility Level Water Accounting (II)**

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**W5.1a**

**Water withdrawals:** for the reporting year, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.1

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
Facility 1	8362	0	0	0	0	0	81	0	Fresh surface water is the main water source. High proportion of the water is used for cooling.
Facility 2	1482	0	0	0	0	0	64	0	Fresh surface water is the main water source. High proportion of the water is used for cooling.

**W5.2**

**Water discharge:** for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
Facility 1	5964	About the same	Change is not substantive. Before discharge water is treated through different

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
			methods depending on type and degree of contamination.
Facility 2	804	About the same	Change is not substantive.

#### W5.2a

Water discharge: for the reporting year, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.2

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
Facility 1	5585	0	0	379	0	
Facility 2	0	774	0	29	0	Leakage in drinking water supply pipeline

#### W5.3

Water consumption: for the reporting year, please provide water consumption data for all facilities reported in W3.2a

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
Facility 1	3794	Lower	Consumption mainly attributed to evaporation losses during recirculating cooling. Consumption was lower because the site returned to normal recirculation rate in the cooling process.
Facility 2	742	About the same	Change is not substantive. Consumption mainly attributed to evaporation losses during closed-circuit cooling.

#### W5.4

**For all facilities reported in W3.2a what proportion of their water accounting data has been externally verified?**

Water aspect	% verification	What standard and methodology was used?
Water withdrawals- total volumes	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water withdrawals- volume by sources	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water discharges- total volumes	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water discharges- volume	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG

Water aspect	% verification	What standard and methodology was used?
by destination		Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water discharges- volume by treatment method	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water discharge quality data- quality by standard effluent parameters	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'
Water consumption- total volume	76-100	BASF Group Consolidated Financial Statements and the Management's Report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and approved free of qualification, covering also statements and figures pertaining to sustainability. The audit was conducted using the International Standard of Assurance Engagements 3000 and 3410. KPMG AG Wirtschaftsprüfungsgesellschaft procedures also included e.g.: Reviewing the consistency of GRI G4 in-accordance option 'Comprehensive'

**Further Information**

**Module: Response**

**Page: W6. Governance and Strategy**

**W6.1**

**Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?**

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Board of individuals/Sub-set of the Board or other committee appointed by the Board	Scheduled - twice per year	

**W6.2**

**Is water management integrated into your business strategy?**

Yes

**W6.2a**

**Please choose the option(s) below that best explains how water has positively influenced your business strategy**

Influence of water on business strategy	Please explain
Alignment of public policy positions with water stewardship goals	Our company is committed to the sustainable use of water resources. Water withdrawals and wastewater discharges comply with national, state and local regulations and permit authorities. We pursue the goal of establishing sustainable water management at all Verbund sites and all sites in water stress areas by 2025 applying the European Water Stewardship (EWS) standard set down by the European Water Partnership. To align our water stewardship goals with public policy positions we do participate in partnerships at watershed level, such as ICPR International Commission for the Protection of the Rhine.
Establishment of sustainability goals	We have published a number of corporate global goals to support BASF's company purpose "We create chemistry for a sustainable future". To promote water stewardship at our production sites we have expanded the goal: Establish sustainable water management at all Verbund sites and all sites in water stress areas by 2025 applying the European Water Stewardship (EWS) standard set down by the European Water Partnership.
Greater due diligence	The evaluation of opportunities and risks including the topic water already plays a significant role during the assessment of potential acquisition targets. Detailed analysis and quantification are conducted as part of due diligence.

Influence of water on business strategy	Please explain
Introduction of water management KPIs	BASF collects data on water supply, water use, and water discharge at site level in a global database, named Responsible Care® Database (RCDB) to systematically measure progress. 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.
Investment in staff/training	Our employees' individual development is important to us. We want to recognize and promote talent early on, and our life-long learning concept provides the basis for remaining the best team and meeting the various challenges of the market. In Mumbai, India, our employees shaped a jamming session on responsible water consumption within the Creator Space™ events 2015.
Water resource considerations are factored into location planning for new operations	We have integrated water criteria into our processes for investment decisions as well as in our processes for capital expenditures for property, plant and equipment. This will enable decisions, which are based on a comprehensive evaluation of the risks and opportunities related to water.
Water resource considerations are factored into new product development	With our approach Sustainable Solution Steering we evaluate the sustainability performance (including all water related topics) of our product portfolio. This detailed analysis and transparent classification allow us to both improve individual solutions and steer the entire portfolio to ensure long-term business growth.
Water resource considerations are factored into new market exploration	Chemistry significantly contributes to innovative water treatment solutions. Enhancing innovation: to strengthen the business and to foster its leading market position BASF is working on the development of new products and technologies for all relevant water treatment segments. BASF is continuously building up internal R&D capacities and external networks with key players in the water industry. For example, we have expanded in size and personnel our desalination lab in Singapore in 2017, a country which is planning to use up to 30% of desalinated water to meet its water needs until 2060.
Publicly demonstrated our commitment to water	We show our commitment to sustainable water use in international partnerships and initiatives. As a member of the European Water Partnership (EWP), we played a decisive role in the development of the European Water Stewardship (EWS) standard, a voluntary industry standard. BASF co-developed and tested this water stewardship approach for agriculture. We are a member of the WBCSD Water Group. BASF hosted a globally travelling Creator Space to connect experts, makers, initiatives and products to discover solutions together. The discussion in Mumbai, India was about the possibilities to improve access to safe affordable water through change in technology, policy and behaviour.
Water is factored into procurement directives	Water is a topic of importance for BASF and is therefore part of BASF's Supplier Code of Conduct, which clearly describes and communicates the expectations towards our supplier's sustainability performance. Our General Conditions of Purchase include a reference to our expectations and requirements with regards to environmental, social and governance standards. There is a dedicated Guideline on Sustainability Risk Management in Procurement which is applicable worldwide. Furthermore, various cross-references to sustainability (including water) are made in the overarching Procurement Guideline of the BASF Group.
Greater supplier diversification	BASF is committed to multiple-source sourcing in order to address certain risks including water-related topics. Our aim is to reduce the number of single-source products. Additionally, BASF selects its suppliers in geographically diverse areas.
Greater supplier engagement	In 2016, we continued our collaborations in China and Brazil to instruct suppliers on sustainability standards. We have developed a training program for China with East China University of Science&Technology in Shanghai. In Brazil, we are pursuing the same approach together with the Espaco Eco Foundation. Through these cooperations, 267 suppliers received

Influence of water on business strategy	Please explain
	<p>training in 2016. As a result of the country-related risks identified in S.America and Asia, we queried around 2100 suppliers in 2016 on their commitment to the values of our Supplier Code of Conduct. Furthermore, our buyers are encouraged to incorporate BASF's Supplier Code of Conduct into their communications with suppliers, for example in strategic supplier dialogs and in regular supplier meetings. When required to go through a TFS sustainability evaluation suppliers are examined against a series of Environmental, Social and Governance (ESG) standards, including water-related policies. The TFS sustainability evaluations raise transparency in the supply chain and enable BASF's further engagement with suppliers. Positive evaluation results enable suppliers to become better partners for BASF. Our active engagement with individual suppliers has a positive impact on our water and wastewater management. For instance, by joining forces with one of our industrial water treatment providers and several peers, we achieved an improvement in the input and automation of the biological treatment unit to avoid overdosing of chemicals.</p>
Tighter supplier performance standards	<p>As a founding member of the chemical industry initiative "Together for Sustainability" (TfS), BASF engages in dialogs with suppliers to continuously improve the working and environmental conditions in global supply chains including social as well as environmental aspects of water. As an outcome, the initiative's members conducted a total of 1773 sustainability assessments and 241 audits in 2016. The score in TfS evaluations provides a supplier performance indicator. It can be positively influenced by reporting on water stewardship policies and procedures.</p>

**W6.2b**

**Please choose the option(s) below that best explains how water has negatively influenced your business strategy**

Influence of water on business strategy	Please explain
Increased capital expenditure	<p>Our goal of reducing unanticipated emissions to water has driven increased capital expenditures into wastewater treatment facilities and analytical instrumentation. At our sites in Ludwigshafen, Germany, and Geismar, Louisiana, we invested on expanding online wastewater monitoring in order to detect unanticipated emissions at an even earlier stage. These new monitoring systems allow us to track and analyze relevant pollutants even more quickly and reliably, and to take measures if necessary. We were also able to further optimize the performance of the wastewater treatment facilities at our Kuantan site in Malaysia. Additionally, we invested in the construction of a new recooling facility at our Ludwigshafen site, allowing us to meet growing coolant demand with reused water. At our Freeport site, a new ammonia plant will be using municipal wastewater as process water for production, thus reducing the demand for fresh water.</p>

Influence of water on business strategy	Please explain
Impacts on other sustainability KPIs	<p>The supply, treatment, transportation and recooling of water is associated with a high energy demand. We employ various means in our efforts to keep this as low as possible. We are constantly working to optimize our energy consumption and the amount of water we use, and to adapt to the needs of our business and the environment. We have decreased our specific water use in recent years, for instance, by intensively re-circulating water. However, we do not want the re-circulation of water to result in an increase in energy use, for instance when the water has to be re-cooled, or in other negative impacts on the environment. Re-cooling re-circulated water, for example, has a greater energy demand and results in higher CO2 emissions compared with the preparation of such water through the operation of water works. Therefore, increasing the amount of recycled water is challenging our climate protection goal 2020 (to reduce greenhouse gas emissions per metric tonnes of sales products (-40%) relative to 2002). However, for example, with technical measures and optimized operating methods such as improved pump networks, we have been able to reduce the specific energy use of our cooling water supply at our Ludwigshafen site.</p>

W6.2c

Please choose the option that best explains why your organization does not integrate water management into its business strategy and discuss any future plans to do so

Primary reason	Please explain

W6.3

Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes

**W6.3a**

**Please select the content that best describes your water policy (tick all that apply)**

Content	Please explain why this content is included
Publicly available Company-wide Performance standards for direct operations Performance standards for supplier, procurement and contracting best practice Commitment to customer education Incorporated within group environmental, sustainability or EHS policy Acknowledges the human right to water, sanitation and hygiene	BASF's company-wide water policy is publicly available and demonstrates the commitment to responsible water use in our production sites, water catchment areas as well as along the entire value chain. Part of the policy is BASF's Responsible Care Management System (RCMS) to ensure environmental and health protection for direct operations as well as for the value chain. It comprises global rules, standards and procedures e.g. to use water as sparingly as possible and to further reduce emissions to water. Component of RCMS are EHS documents that apply throughout the BASF Group and cover EHS topics directly linked to water. To indicate also the social and health aspects BASF's water policy acknowledges the human right to water and sanitation, in line with our BASF Group's Position on Human Rights. Our water policy includes performance standards for supplier, procurement and contracting best practice to secure BASF's raw materials supply and boost suppliers awareness. In accordance with BASF's Supplier Code of Conduct, we expect our suppliers to minimize their impact on biodiversity, climate change and water scarcity. Part of our water policy is the commitment to customer education, within our product stewardship strategy. We support our customers in the safe handling and use of our chemicals e.g. for several herbicides we developed instructions for water protection to enable customers to easily and reliably optimize the use of our product.

**W6.4**

**How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting year compare to the previous reporting year?**

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes

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**Further Information**

**Page: W7. Compliance**

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**W7.1**

**Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?**

No

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**W7.1a**

Please describe the penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
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**W7.1b**

What proportion of your total facilities/operations are associated with the incidents listed in W7.1a?

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**W7.1c**

Please indicate the total financial impacts of all incidents reported in W7.1a as a proportion of total operating expenditure (OPEX) for the reporting year. Please also provide a comparison of this proportion compared to the previous reporting year

Impact as % of OPEX	Comparison to last year
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**Further Information**

**Page: W8. Targets and Initiatives**

**W8.1**

**Do you have any company wide targets (quantitative) or goals (qualitative) related to water?**

Yes, targets and goals

**W8.1a**

**Please complete the following table with information on company wide quantitative targets (ongoing or reached completion during the reporting period) and an indication of progress made**

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
Other: Assessing	Water	We want to introduce sustainable water management at 100% of	Other: % of	2010	2025	42.6%

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
and implementing sustainable Water management	stewardship	our production sites in water stress areas and at all Verbund sites by 2025. We pursue this by applying the European Water Stewardship (EWS) standard. In total, around 23% of our production sites were located in water stress areas in 2016. We introduced the standard at our European sites in 2013 and furthered its implementation in China and North and South America in 2015 and it is being continued in 2016.	production sites that implemented EWS			

#### W8.1b

Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress
Providing access to WASH in workplace	Other: Promote and maintain the health, well-being and productivity of all employees.	In 2013, 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 the commitment to provide access to water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in 100% of our facilities.	The Occupational Medicine and Health Protection Department is responsible for the management of occupational health 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. All sites are audited regularly. The fulfilment of this goal is a continuous process. In 2016, 30 occupational medicine and health protection audits and 16 Health Performance Control visits were performed.
Strengthen links with local community	Other: Protect licence to operate	An important part of our sustainability management is continuous exchange with our stakeholders. We have a particular responsibility toward our production sites’ neighbours, and discuss current issues with them in Community Advisory Panels. These panels aim to	In 2016 we developed global recommendations for the Community Advisory Panel system to strengthen the CAPs serving as a human rights grievance mechanism. These mechanisms have been developed according to U.N. Guiding Principles for business and human rights .

Goal	Motivation	Description of goal	Progress
		<p>promote open exchange between citizens and our site management with the goal of strengthening trust in our activities.</p>	
<p>Educate customers to help them minimize product impacts</p>	<p>Other: Stakeholder engagement</p>	<p>In order to ensure that our products pose no risk to people or the environment when they are used responsibly and in the manner intended, we provide extensive information on our chemical sales products to our customers and the public with safety data sheets. We also offer our customers training in the safe use of our products and keep them informed early on of any changes in regulations. We seek active involvement in several water protection networks and initiatives that provide expertise and promote best practices for all professional users of pesticides.</p>	<p>We have a global database in which we maintain and evaluate continuously updated environmental, health and safety data for our substances and products. With our global goals for risk assessment, we are supporting the implementation of initiatives such as the Global Product Strategy (GPS) of the International Council of Chemical Associations (ICCA). GPS is establishing worldwide standards and best practices to improve the safe management of chemical substances. In order to facilitate public access to information, we are participating in the setup of an ICCA online portal that provides more than 4,600 GPS safety summaries. In addition, we are also involved in workshops and training seminars in developing countries and emerging markets. In 2016 for example, we conducted training sessions for chemical industry representatives on GPS in China, India and Kenya. Another example: BASF is a part of the new "OSR Herbicides? Think Water" Campaign launched in 2016 by the Voluntary Initiative, a UK based programme which promotes responsible pesticide use.</p>
<p>Engagement with suppliers to help them improve water stewardship</p>	<p>Recommended sector best practice</p>	<p>Support suppliers to improve their sustainability performance (including water-related topics). Join forces with other companies (e.g. TfS initiative) to raise awareness and drive improvements in our supply chains. Cooperate with stakeholders (e.g. CPCIF, ECUST, Espaco Eco Foundation) to increase the positive impact of our action.</p>	<p>The TfS initiative's members conducted a total of 1,773 sustainability assessments and 241 audits in 2016. The score in TfS evaluations provides a supplier performance indicator, which can be positively influenced by reporting on water stewardship policies and procedures. TfS membership has tripled since the initiative was founded; there were 19 members in 2016. This multiplying effect has a positive impact on our global supply chains. We conducted a Supplier Day in Mumbai, India, in 2016 as part of the TfS initiative. TfS also provided training to suppliers at the annual China Petroleum and Chemical Industry Federation (CPCIF) Conference in Shanghai, China, in order to strengthen awareness for sustainability in the region. In 2016, we continued our collaborations in China and Brazil to instruct suppliers on sustainability</p>

Goal	Motivation	Description of goal	Progress
			standards. We have developed a training program for China together with the East China University of Science and Technology (ECUST) in Shanghai. In Brazil, we are pursuing the same approach together with the Espaço Eco Foundation. Through these cooperations, 267 suppliers received training in 2016.
Sustainable agriculture	Recommended sector best practice	In order to help preserve biodiversity and natural resources using modern agriculture, BASF established a European farm network. Within this network, we are developing biodiversity promotion measures together with farmers with experts from science and nature conservation organizations. The goal is to grow the farm network into a global network by 2020.	Currently, there are more than 15 farms in the Farm Network, located in Germany, France, the UK, Italy, Poland and the Czech Republic showing how modern farming throughout Europe can help protect ecosystems. Also, the network now includes more than 30 partner organizations in eight countries. 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.
Watershed remediation and habitat restoration, ecosystem preservation	Risk mitigation	With the Mata Viva project in Brazil, BASF together with partners have worked for more than 25 years on the protection of water quality, the conservation of soil, and the creation of areas to preserve native vegetation and wild life. Realizing that education is the catalyst for long-term change the program developed an educational module aimed to promote environmental conservation and ownership of the concepts of sustainability, integrating society, economic development and biodiversity. Some of the program solutions are Agricultural Land Planning, Environmental Adaptation (Rural Environmental Registry, Mending Project changed and degraded areas, restoration, lectures, Legal Reserve compensation) and Biodiversity Studies.	From 2005 – 2016 the program was spread to 157 Brazilian cities and helped to restore more than 713 hectares of land by planting of more than 1 million seedlings of native trees. The educational module helped to train more than 2600 teachers, benefiting about 260,000 students. Since 2005 the program has been in the hands of the Espaço Eco foundation, set up by BASF in cooperation with the German government.
Providing access to WASH in local communities	Other: Improving Quality of Life in communities surrounding BASF sites	With the aim to completely eradicate open defecation and support the government's Swachh Bharat initiative, BASF and the non-profit organization Citizens Foundation for Better India are working to improve sanitation in the community surrounding BASF's production site in Dahej.	Residents of Dahej Village can now enjoy better sanitation with 230 new, clean household toilets in the community. The project also comprised of establishment of a waste management system for 561 households and the launch of an educational program to strengthen the community's awareness and capacities towards Water,

Goal	Motivation	Description of goal	Progress
			Sanitation and Hygiene (WASH) along with waste management.

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W8.1c

Please explain why you do not have any water-related targets or goals and discuss any plans to develop these in the future

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**Further Information**

**Module: Linkages/Tradeoff**

**Page: W9. Managing trade-offs between water and other environmental issues**

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W9.1

**Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?**

Yes

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W9.1a

**Please describe the linkages or trade-offs and the related management policy or action**

Environmental issues	Linkage or trade-off	Policy or action
Energy use	Linkage	Energy is needed to transport cooling water (our main use for water) at our BASF production sites. Water works provide cooling water for the site and have a significant energy requirement. This energy is consumed for operating the water works (pumping of cooling water) and operating cooling towers, which lower the temperature of recycled cooling water.
Use of energy and chemicals	Linkage	Over the last several years, a project has been initiated to investigate production plants at the BASF Ludwigshafen site one-by-one in order to identify optimization potential with respect to, for example, water use. Re-use of condensate: At BASF, the steam supply is provided through the heating and evaporation of de-mineralized water in chemical production plants with exothermic process as well as in our (primarily gas-fed) power plants. Through the use of this steam as a heating medium, large amounts of condensate (water between ~80-100°C) result. This condensate is typically cooled by mixing with river water and either first treated or returned directly to the Rhine River. However, at BASF this condensate is re-used in various ways. By reusing this water, the amount of de-mineralized water required is reduced. This saves production costs for de-mineralized water, such as energy and chemicals. Further, through such measures, the capacity of the current demineralization plant is sufficient allowing new investment to be delayed. Secondly, in addition to the re-use of this water, its heat capacity is very often used. For example, during the winter, this condensate preheats river water to its required inlet temperature for production of de-mineralized-water, which saves steam use. Both of the above benefits also have benefits in terms of reduced energy use.
Greenhouse gas emissions	Linkage	The emissions of BASF-operated wastewater plants of 258,000 t CO <sub>2</sub> in 2016 are accounted for in our Scope 1 or Scope 2 emissions, and reported in our response to the Investor CDP climate change Information Request. The CO <sub>2</sub> emissions from non-BASF operated wastewater treatment plants of 28,000 t CO <sub>2</sub> in 2016 are accounted for in Category 5 of Scope 3 emissions, and also reported in our response to the Investor CDP Information Request. The CO <sub>2</sub> emissions were calculated as follows based on a TOC (Total Organic Carbon) material balance. It is assumed that 30% of the influent organic carbon load is insoluble and inert as well as the non-biodegradable TOC in the effluent. It is also assumed that the 25% of the remaining biotreatable TOC is converted into biosludge during biotreatment. The residual TOC, which is about 50% of the total influent TOC, was converted into CO <sub>2</sub> . The CO <sub>2</sub> emissions were calculated from the residual TOC with a conversion factor of CO <sub>2</sub> /TOC=3.67.
Energy use	Trade-off	We have decreased our specific water use in recent years, for instance, by intensively re-circulating water. However, we do not want the re-circulation of water to result in an increase in energy use, for instance when the water has to be re-cooled, or in other negative impacts on the environment. Re-cooling re-circulated water, for example, has a greater energy demand and results in higher CO <sub>2</sub> emissions compared with the preparation of such water through the operation of water works. Therefore, increasing the amount of recycled water is challenging our climate protection goal 2020 (to reduce greenhouse gas emissions per metric tonnes of sales products (-40%) relative to 2002). Typically, re-cooling re-circulated water is needed during the summer months. Nonetheless, the catchment, processing and transport of water also require energy.
Energy use	Linkage	The need for cutting-edge water treatment technologies are providing new opportunities for BASF's broad portfolio of water chemicals. Our solutions are used in industrial and municipal water treatment to purify raw water, to protect cooling towers, boilers and desalination plants from scale and corrosion and to treat wastewater to enable water reuse. For example, our innovative flocculants enhance the solid/liquid separation of wastewater by increasing the sludge dryness. For every 1% of water removed from sludge 5% of transport costs are saved and this contributes to reduce CO <sub>2</sub> emissions. We manage these linkages by analyzing products and services using our Sustainable Solutions Steering® approach. By identifying key drivers and issues in

Environmental issues	Linkage or trade-off	Policy or action
		<p>our customers' industries, we are able to assess the sustainability contribution of each of our products in its specific application. Finally each solution is assigned to one of four categories (Accelerator, Performer, Transitioner, Challenged) according to its contribution to sustainability. Although different industries vary in their specific needs, we are able to cluster our Accelerator solutions into predefined universal sustainability benefits (e.g. resource efficiency). This detailed analysis and transparent classification allow us to both improve individual solutions and steer the entire portfolio. It also enables further integration of sustainability into our strategic, R&amp;D and customer support processes.</p>
Renewables resources	Trade-off	<p>Responsible resource procurement and management is an integral part of our strategy. However, cultivation of renewable resources creates a demand for water in the production area. In 2016, around 5.4% of the raw materials BASF purchased worldwide were from renewable resources. BASF further established its "biomass balance" method on the market (<a href="http://www.basf.com/biomassbalance">www.basf.com/biomassbalance</a>). This method uses renewable raw materials from certified sustainable production in place of fossil resources from the very beginning of the value chain in the existing Production Verbund. BASF uses two kinds of materials in the biomass balance approach: certified renewable resources and waste based raw materials. Renewable resources certification must suffice the Renewable Energy Directive – RED which is e.g. covered by the certification system ISCC (International Sustainability &amp; Carbon Certification). The Renewable Energy Directive e.g. includes criteria for water management, efficient water use, conservation, water quality, means for planning ecological water supply, identification of challenges, handling of challenges and monitoring. (<a href="http://www.aireg.de/de/red-richtlinie.html">http://www.aireg.de/de/red-richtlinie.html</a>) E.g. since 2013, we have provided our customers with 1,4-butanediol on a commercial scale using sugars as a renewable feedstock based on a licensing agreement with the company Genomatica Inc. Butanediol and its derivatives are used, for example, to manufacture plastics for the automotive and textile industries.</p>

**Further Information**

**Module: Sign Off**

**Page: Sign Off**

**W10.1**

**Please provide the following information for the person that has signed off (approved) your CDP water response**

Name	Job title	Corresponding job category
Michael Heinz	Member of the Board of Executive Directors, furthermore Industrial Relations Director and Site Director of Ludwigshafen	Board/Executive board

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## W10.2

**Please indicate that your organization agrees for CDP to transfer your publicly disclosed data regarding your response strategies to the CEO Water Mandate Water Action Hub.**

**Note: Only your responses to W1.4a (response to impacts) and W3.2c&d (response to risks) will be shared and then reviewed as a potential collective action project for inclusion on the WAH website.**

**By selecting Yes, you agree that CDP may also share the email address of your registered CDP user with the CEO Water Mandate. This will allow the Hub administrator to alert your company if its response data includes a project of potential interest to other parties using water resources in the geographies in which you operate. The Hub will publish the project with the associated contact details. Your company will be provided with a secure log-in allowing it to amend the project profile and contact details.**

Yes

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## Further Information

[CDP 2017 Water 2017 Information Request](#)