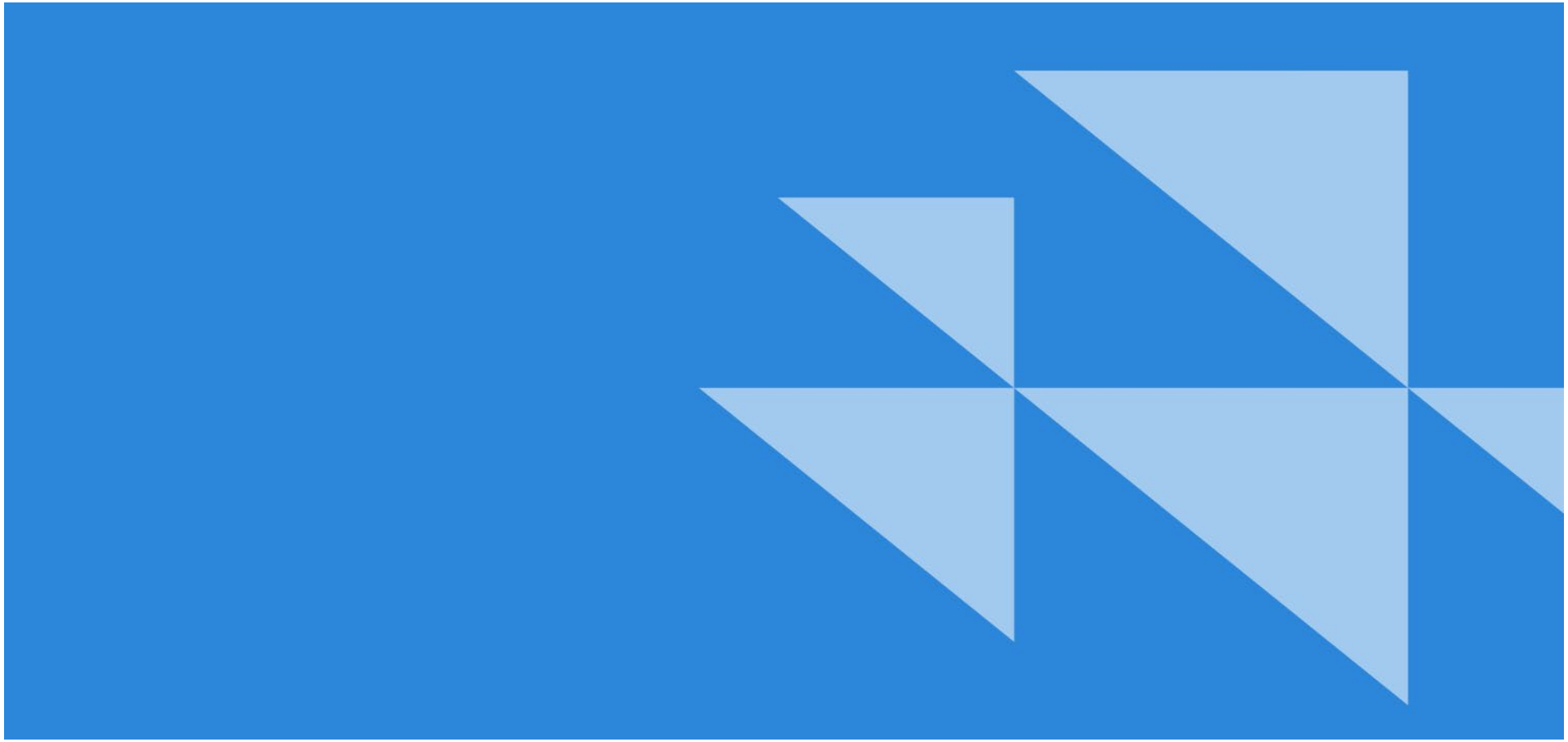
CDP Water Security Questionnaire 2018



W0 Introduction module

Introduction

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

Bayer is a Life Science company with a more than 150-year history and core competencies in the areas of health care and agriculture. With our innovative products, we are contributing to finding solutions to some of the major challenges of our time. With life expectancy continuing to rise, we improve quality of life for a growing population by focusing our research and development activities on preventing, alleviating and treating diseases. We are also making an important contribution to providing a reliable supply of high-quality food, feed and plant-based raw materials. Our goal is to create value for our customers, stockholders and employees, while also strengthening the company's earning power. We are committed to operating sustainably and addressing our social and ethical responsibilities. Employees with a passion for innovation enjoy excellent development opportunities at Bayer. All this goes to make up our corporate purpose – Science for a better life.
Our corporate values guide us in our daily activities. Represented by the acronym **LIFE** (Leadership, Integrity, Flexibility and Efficiency), these values apply to everyone at Bayer and are firmly integrated into our global performance management system. Our value culture ensures a common identity throughout the enterprise across national boundaries, management hierarchies and cultural differences.

The Bayer Group is a life science company with three divisions – Pharmaceuticals, Consumer Health and Crop Science – and the Animal Health business unit, which are also our reporting segments. Our corporate functions, Business Services and the service company Currenta, of which Bayer holds 60%, support the operational business. In 2017, the Bayer Group comprised 237 consolidated companies in 79 countries throughout the world. Bayer's interest in Covestro AG stood at 24.6% as at the end of the reporting period. Therefore, Covestro is no longer a reportable segment.

As in our previous CDP reports, we are reporting according to the operational control approach to provide an accurate picture of Bayer's life science businesses. Covestro and Currenta are therefore not included in this year's CDP report as we do not exercise full operational control over these businesses.

Certain statements contained in this report may constitute "forward-looking statements". Actual results could differ materially from those projected or forecasted in the forward-looking statements. Factors that could cause actual results to differ materially include those discussed in Bayer's public reports (available on the Bayer website www.bayer.com). Bayer assumes no obligation to update the information in this communication, except as otherwise required by law. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date.

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

Start date	End date
Reporting year: 01/01/2017	12/31/2017

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

Country
Belgium
Brazil
China
Costa Rica
Germany
India
Indonesia
Japan
Mexico
Republic of Korea
Spain
Thailand
Turkey
United States of America

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

Currency
EUR

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

Companies, entities or groups over which operational control is exercised

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

No

W1 Current state

Dependence

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

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Vital	DIRECT USE: The PRIMARY USE of FRESH WATER is for cooling purposes, the production process and irrigation of field and greenhouses for seed production. Clean water is a limiting factor for our production and THUS considered essential. E.g. if the water has a high concentration of salts, it will not be appropriate for cooling purposes due to its corrosive characteristics to pipes. The PRIMARY USE IN THE SUPPLY CHAIN is for raw material/ product supply. Looking downstream, e.g. at Crop Science's customers, FRESHWATER is PRIMARILY USED for irrigation in agriculture. It is THUS considered vital since it could impede raw material / product supply and/or hamper the use of our crop science products. We expect our FUTURE DEPENDENCY IN DIRECT AND INDIRECT OPERATIONS to remain the same BECAUSE freshwater will remain vital for our production and the irrigation of fields with our current strategy, to ensure the provision of raw materials and products and the use of our products by our customers.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Not very Important	DIRECT USE: The PRIMARY USE of NON-FRESH WATER i.e. recycled water is for cooling purposes, through the reuse of treated wastewater or steam condensate recovery as process water and irrigation of fields and greenhouses for our seeds production. In general, it has neutral importance for our direct use. However, we selected "IMPORTANT" BECAUSE some of our sites are located in water scarce regions: Here the reuse of water is gaining importance. INDIRECT USE: Usually surface or municipal water is used along the value chain e.g. for irrigation in agriculture and THUS NON-FRESH WATER is NOT PRIMARILY USED and considered "not very important". Moreover, brackish and produced water are not material for Bayer. We expect our FUTURE DEPENDENCY IN DIRECT AND INDIRECT OPERATIONS to remain the same BECAUSE we are expecting a similar water availability situation across our sites as today based on current forecasts and we expect our suppliers and customers to continue using surface or municipal water.

Company-wide water accounting

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

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM "BaySIS". BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water

		parameters and to initiate corrective actions.
Water withdrawals – volumes from water stressed areas	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM “BaySIS”. BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
Water withdrawals – volumes by source	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM “BaySIS”. BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
Water withdrawals quality	26-50%	METHOD AND FREQUENCY: We do not monitor the quality of our water withdrawals via our central Bayer Site Information System “BaySIS”, BECAUSE the relevant regulations related to water withdrawal quality requirements differ widely. Therefore, this aspect is monitored directly at our sites. According to GMP (Good Manufacturing Practice), all of our Health Care sites have to analyze the incoming water. Therefore, all water withdrawals are CONTINUOUSLY analyzed whenever water is withdrawn to decide whether there needs to be a treatment before it can be used. Usually, water parameters are measured via online measurements. Adherence to legal regulations is checked regularly e.g. through our internal HSE Audits which take place every 3 years.
Water discharges – total volumes	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM “BaySIS”. BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
Water discharges – volumes by destination	76-99%	METHOD AND FREQUENCY: We monitor our water discharges by destination to ensure that all releases to the environment are within the local legal requirements and that no high contaminated waste water is released to the environment. As the local regulations differ widely the water discharge volumes are generally monitored directly at our sites via CONTINUOUS ONLINE MONITORING, each time that water is discharged. Often, the online monitoring system is directly connected to the monitoring system of the local authorities. Control measurements are conducted by the local authorities at least TWICE PER YEAR. Internally, adherence to legal regulations is checked regularly in our internal HSE Audits which take place every 3 years.
Water discharges – volumes by treatment method	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM “BaySIS”. BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
Water discharge quality – by standard effluent parameters	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM “BaySIS”. BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water

		parameters and to initiate corrective actions.
Water discharge quality – temperature	76-99%	METHOD AND FREQUENCY: As the local regulations differ widely, in general, water discharge temperatures are monitored directly at our sites via CONTINUOUS ONLINE MONITORING, each time that water is discharged. Often, the online monitoring system is directly connected to the monitoring system of the local authorities. Control measurements are conducted by the local authorities at least TWICE PER YEAR. Internally, adherence to legal regulations is checked regularly in our internal HSE Audits which take place every 3 years.
Water consumption – total volume	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM "BaySIS". BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
Water recycled/reused	100%	METHOD AND FREQUENCY: This aspect is monitored ANNUALLY via our central BAYER SITE INFORMATION SYSTEM "BaySIS". BaySIS is a company-wide monitoring tool with direct access for the individual sites. The system encompasses automated controls and different workflows that have to be followed to ensure data quality. In BaySIS, all sites that are considered environmentally relevant according to pre-defined parameters ANNUALLY report water-related key performance indicators BECAUSE we consider them important for our environmental management. Therefore we regularly monitor these indicators, which allow us to set respective targets in sites with relevant water parameters and to initiate corrective actions.
The provision of fully-functioning, safely managed WASH services to all workers	76-99%	Health and safety of our employees are very important aspects for Bayer. As highlighted in our Water Position, we use our local presence to support projects providing access to clean water and sanitation to our employees and the communities in which we operate. By end of 2017, we signed the "WASH at the workplace" pledge of the WBCSD. METHOD AND FREQUENCY: We constantly monitor and assess our HSE performance including the existence of fully-functioning WASH services through our audits worldwide, according to ANNUAL HSE Audit programs as defined on a risk-based approach. All our production sites provide fully-functioning WASH services to all workers, and we estimate these sites to represent over 95% of Bayer's total water usage. Since our operations include many small Crop Science farming sites worldwide and audits are conducted on a random basis, we are not able to guarantee 100% coverage.

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

Water aspect	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	25,263	Much lower	Please note that all our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together (W (25,263) ≠ D (10,293) + C (9,874). In 2017, our water withdrawals were much lower compared with the previous reporting year, due to the sale of the steam production plant and reduced production activities at our site in Institute, USA. Therefore, less cooling water was needed and water withdrawals declined. Due to the planned acquisition of Monsanto, we expect water volumes from all sources to rise IN THE FUTURE.
Total discharges	10,293	About the same	Please note that all our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together (W (25,263) ≠ D(10,293) + C(9,874). In 2017, total discharges stayed more or less at the same level as in the previous reporting year. There was a small reduction due to a change in production and the outsourcing of three intermediate products at one of our sites which led to a reduction in the production wastewater. Due to the planned acquisition of Monsanto, we expect water discharges to rise IN THE FUTURE.
Total consumption	9,874	Lower	Please note that all our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together (W (25,263) ≠ D(10,293) + C(9,874). In 2017, total consumption was lower compared with the previous reporting year, since water withdrawals were much lower, partly because of reduced cooling water needs. Therefore, total consumption was lower. Due to the planned

			acquisition of Monsanto, we expect water consumption to rise IN THE FUTURE.

(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.

% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain
6.1	Higher	WBCSD Global Water Tool	Due to the high reduction of our total water withdrawals, especially in sites without water scarcity, the percentage of water sourced from water stressed regions has increased, even though the absolute volume also decreased. To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS. From BaySIS, we mapped the total water use to each site that was located in a water-scarce region according to the WBCSD Water Tool analysis and defined those sites as “large user”, which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%) and are thus relevant for our water-risk analysis.

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

Source	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	11,575	Much lower	Water withdrawal from FRESH SURFACE WATER IS RELEVANT as it is VITAL for cooling purposes, production processes as well as irrigation of fields and greenhouses for seed production. Clean water is a limiting factor for our production and THUS considered essential. E.g. if the water has a high concentration of salts, it will not be appropriate for cooling purposes due to its corrosive characteristics to pipes. All our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together. In 2017, our water withdrawals from fresh surface water decreased due to the sale of the steam production plant and reduced production activities at our site in Institute, USA. Therefore, less cooling water was needed and water withdrawals from surface water declined. Due to the planned acquisition of Monsanto, we expect water volumes to rise IN THE FUTURE.
Brackish surface water/seawater	Not relevant			As in previous years, brackish surface water was NOT RELEVANT in 2017 BECAUSE we do not use brackish surface water in our operations. As described above, brackish water is not suitable for our production. E.g. if the water has a high concentration of salts, it will not be appropriate for cooling purposes due to its corrosive characteristics to pipes. This is also the reason WHY (non-) usage is consistent with the previous year and is expected to stay the same for our operations IN THE FUTURE.
Groundwater – renewable	Relevant	7,740	About the same	Groundwater is RELEVANT BECAUSE we have own deep wells in many sites for our own water supply. All our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together. In 2017, our water withdrawals from groundwater stayed more or less at the same level as last year. We achieved a small reduction due to the improvement in equipment and a change in production processes, thus reducing the use of groundwater. Due to the planned acquisition of Monsanto, we expect water volumes to rise IN THE FUTURE.
Groundwater – non-	Not relevant			As in previous years, non-renewable groundwater was NOT RELEVANT in 2017 BECAUSE we do not use non-renewable groundwater in our operations. We do not have any sites in regions with non-renewable

renewable				groundwater acquifers. This is also the reason WHY (non-) usage is consistent with the previous year and is expected to stay the same for our operations IN THE FUTURE.
Produced water	Not relevant			As in previous years, produced water was NOT RELEVANT in 2017 BECAUSE we do not use produced water in our operations. We only extract very small volumes of produced water from our raw materials. The volumes are therefore not significant enough to be used for production. This is also the reason WHY (non-) usage is consistent with the previous year is the same and is expected to stay the same for our operations IN THE FUTURE.
Third party sources	Relevant	5,948	Higher	Water from third party sources is RELEVANT BECAUSE we withdraw water from third parties for drinking water in most sites. In addition, water from third party sources is used for production. All our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together. In 2017, our withdrawals from third party sources increased due to the opening of a new plant in China and increased water usage for microbiology and cooling towers in Germany. Due to the planned acquisition of Monsanto, we expect water volumes to rise IN THE FUTURE.

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

Destination	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	626	Lower	After careful analysis, some of our wastewater is categorized as environmentally safe according to official provisions and is returned to the natural water cycle without treatment. Water discharges to fresh surface water are RELEVANT in few sites where water can be directly returned to the natural water cycle without treatment (after being tested and categorized as environmentally safe). Some 50% of all water used by Bayer is cooling water that is only heated in this process and does not come into contact with products. It can be returned to the water cycle without further treatment in line with the relevant official permits. The amount of water discharged to fresh surface water decreased in 2017 due to lower precipitation and improvement of equipment leading to less water usage and therefore less wastewater. Due to the planned acquisition of Monsanto, we expect water discharges to fresh surface water to rise IN THE FUTURE.
Brackish surface water/seawater	Not relevant			As in previous years, discharges to brackish surface water/ seawater are NOT RELEVANT BECAUSE we do not discharge water to brackish surface water from our operations. This is also the reason WHY discharges are the same compared to the previous year.
Groundwater	Not relevant			As in previous years, discharges to groundwater are NOT RELEVANT BECAUSE only very small amounts of wastewater that are categorized as environmentally safe according to official provisions are leaching to groundwater. These amounts are not significant and are therefore included in the discharges to fresh surface water.
Third-party	Relevant	9,667	About the same	Water discharges to third-party destinations are RELEVANT as the water is discharged to treatment plants before it can be led back to the environment. All wastewater is subject to strict controls before it is discharged into the various disposal channels. 75.9% of Bayer's wastewater

destinations				worldwide was purified in wastewater treatment plants (Bayer or third-party facilities). Following careful analysis, the remaining volume was categorized as environmentally safe according to official provisions and returned to the natural water cycle. In 2017, the amount of water discharged to third-party destinations stayed at a similar level. There was a small reduction due to the change in the production plan at one of our sites which led to a reduction in the production wastewater and the outsourcing of three intermediate products. Due to the planned acquisition of Monsanto, we expect water discharges to third-party destinations to rise IN THE FUTURE.

(W1.2j) What proportion of your total water use do you recycle or reuse?

% recycled or reused	Comparison with previous reporting year	Please explain
Less than 1%	About the same	i) CHANGE TO PREVIOUS YEAR: In 2017 water withdrawals decreased due to the sale of the steam production plant and reduced production activities at our site in Institute, USA. In the same period, the amount of recycled or reused water decreased. This is mainly due to the fact that one of our sites stopped delivering wastewater for reuse to another organization since they do not need the water anymore. Overall, the amount of recycled or reused water compared to total water withdrawals stayed below 1%, as in the previous year. Therefore, we have selected “About the same” as comparison with previous reporting year. ii) IMPACT: Where possible we recycle or reuse water in order to reduce our fresh water consumption. The various forms of recycling include closed cooling cycles, reuse of treated wastewater and recirculation of steam condensates as process water. iii) FUTURE TREND: Due to the planned acquisition of Monsanto, the amount of recycled and reused water will increase.

Value-chain engagement

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

- Yes, our suppliers
- Yes, our customers or other value chain partners

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

% of suppliers by number	% of total procurement spend	Rationale for this coverage	Impact of the engagement and measures of success	Comment

1-25%	26-50	i) HOW AND WHY THEY WERE SELECTED: Bayer requests more than 2% of its suppliers (ca. 1,995 out of 93,330), representing ca. 35% of the total procurement spend, to report on water management. BECAUSE IT IS NOT FEASIBLE to assess all 93,330 suppliers, they are selected based on COUNTRY AND BUSINESS CATEGORY RISKS AND STRATEGIC IMPORTANCE (e.g. in terms of procurement spend and long-term collaboration prospects). ii) HOW SUPPLIERS ARE INCENTIVIZED TO REPORT: Special clauses in our standard supply contracts request suppliers to comply with the sustainability requirements defined in our Supplier Code of Conduct. Suppliers receive access to trainings and extensive information material, e.g. on responsible use of water, as offered by capability building conferences and information platforms from “Together for Sustainability” (TfS) and the “Pharmaceutical Supply Chain Initiative” (PSCI), where Bayer is a member.	The TYPE OF INFORMATION requested includes HSE and sustainability aspects, e.g. water consumption or water reduction programs. During on-site audits the suppliers’ water management is also checked. Wherever evaluation results are unsatisfactory, the INFORMATION IS USED to develop improvement measures. In the event of critical results, Bayer requests the suppliers to rectify the identified weaknesses within an appropriate period of time based on specific action plans. To MEASURE THE SUCCESS, we set ambitious targets and measure success in terms of target fulfillment, e.g. our target to evaluate all strategically important suppliers by the end of 2017 (target achievement: 99.5%). SUCCCESS IS also MEASURED through re-assessments or follow-up audits. Our regular monitoring shows that in 2017 348 of our 679 suppliers evaluated have improved their sustainability performance.	

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

Type of engagement	Details of engagement	% of suppliers by number	% of total procurement spend	Rationale for the coverage of your engagement	Impact of the engagement and measures of success	Comment
• Incentivizing for improved water management and stewardship	• Water management and stewardship is integrated into supplier evaluation processes	• 1-25	• 26-50	Bayer regards adherence to sustainability standards within its supply chain as an important lever for minimizing risks. This is WHY sustainability clauses are in our electronic ordering systems and standard supply contracts. The sustainability clause requests all suppliers to comply with the sustainability requirements defined in our Supplier Code of Conduct and authorizes Bayer to conduct EVALUATIONS AND ON-SITE AUDITS, if necessary. BECAUSE it is not feasible to assess all 93,330 suppliers, suppliers are selected based on country and business category risks and strategic importance. TO FURTHER INCENTIVIZE suppliers to participate in the engagement, suppliers receive access to trainings and extensive information material, e.g. on responsible use of water, as offered by capability building conferences and information platforms from TfS and PSCI.	OUTCOMES OF THE ENGAGEMENT: In the event of a critical sustainability performance, Bayer requests suppliers to rectify identified weaknesses within an appropriate period of time based on specific action plans. We do not only build supplier capabilities, but also minimize procurement-specific risks and ensure smooth production processes through these requirements. HOW SUCCESS IS MEASURED: Our regular monitoring shows that in 2017 348 of our 679 suppliers evaluated have improved their sustainability performance.	
• Innovation & collaboration	• Educate suppliers about water stewardship and collaboration	• Less than 1%	• 1-25	RATIONALE: We offer our suppliers a wide range of development and dialogue opportunities on sustainability. Within the scope of our supplier sustainability evaluations, we have identified a country risk particularly for China and India. DESCRIPTION OF ENGAGEMENT: In this connection, we carried out intensive	OUTCOMES OF THE ENGAGEMENT: Through the supplier capability trainings and audits, Bayer improves the suppliers’ awareness and know-how regarding water-related activities. Through this kind of education, suppliers get an improved understanding of Bayer’s sustainability requirements and thereby are able to better	Furthermore, the PSCI website also provides a resource library with water-related

				workshops and training courses in India for our local procurement personnel. In China, Bayer used its Supplier Day 2017 to communicate its sustainability requirements. In 2017, we also conducted supplier training and workshops in China and India in cooperation with PSCI and TfS. The PSCI Sustainability webinar offers additional advanced training modules for our suppliers. One PSCI sustainability webinar deals with the management of active pharmaceutical ingredients (API) in wastewater. Through Bayer's Health, Safety and Environment (HSE) audits, suppliers are also educated regarding specific findings, among others about water stewardship.	carry out their water management. HOW SUCCESS IS MEASURED: Bayer is keeping track of the suppliers' sustainability performance. In the event of a critical sustainability performance, Bayer requests suppliers to rectify identified weaknesses within an appropriate period of time based on specific action plans. 150 attendees representing more than 70 suppliers from member companies participated at the Supplier Capability Training of PSCI in May 2017. In addition, the PSCI webinar on how to manage APIs in wastewater received more than 3,000 views.	information for suppliers.

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

PARTNERS: Crop Science is engaging with participants in the food chain such as farmers, the processing industry, exporters and dealers.
METHOD & STRATEGY: The central element is the BayG.A.P. service program via which Bayer TRAINS growers so that they can successfully implement good agricultural practices. Our TRAININGS teach farmers how to use crop protection products effectively and safely. The majority took place as part of customer events. Additional courses were conducted in cooperation with partners, e.g. local, regional and international associations. To strengthen customer centricity along the entire value chain, Crop Science is intensifying its DIRECT COOPERATION with farmers and the food value chain. The goal is to develop integrated solutions for sustainable agriculture to safeguard and increase yields and to improve the quality of harvested produce. Bayer is also reinforcing its support for sustainable agriculture with Bayer ForwardFarming - a knowledge platform to demonstrate sustainable agriculture in practice. We advise our customers and recommend biological remediation systems such as Phytobac™ to prevent discharges into water bodies of crop protection active ingredients. We are also collaborating with external partners on the development of a digital geo information system for water protection in agriculture.
PRIORITIZATION: Bayer focuses on training activities in countries where there are no statutory requirements or certification for users regarding the safe handling of crop protection products.
MEASURES: We track the reach of our trainings and partnerships. In 2017, >1 mio farmers worldwide received safety training from Bayer. Crop Science has initiated >500 food chain partnership initiatives in >40 countries. >300 growers worldwide have been trained with BayG.A.P. (expected to rise to 10,000 by end of 2020). 30 growers from India obtained the G.A.P. Letter of Conformance. Phytobac is tested in numerous EU countries with >4,600 systems installed.

W2 Business impacts

Recent impacts on your business

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

No

Compliance impacts

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

No

W3 Procedures

Risk identification and assessment procedures

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

Yes, water-related risks are assessed

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

Value chain stage	Coverage	Risk assessment procedure	Frequency of assessment	How far into the future are risks considered?	Type of tools and methods used	Tools and methods used	Comment
Direct operations	Full	• Water risks are assessed as part of an enterprise risk management framework	• Six-monthly or more frequently	• 6 to 10 years	• Tools on the market • Enterprise Risk Management • International methodologies • Databases • Other	• WBSCD Global Water Tool • WRI Aqueduct • Ceres Aqua Gauge • ISO 31000 Risk Management Standard • IPCC Climate Change Projections • FAO/AQUASTAT • Internal company methods • External consultants	Water is integrated into our company-wide risk management process together with other non-financial risks. We assess risks using a long-term perspective, e.g. likelihood of occurrence based on a period of 10 years. Risks are monitored continuously by the risk owners while the risk portfolio is reviewed twice a year by the Bayer Risk Committee. Environmental risks are reviewed as part of the HSE management system and internal audits. Water KPIs are monitored in our central site database BaySIS.
Supply Chain	Full	• Water risks are assessed as part of an enterprise risk management framework	• Six-monthly or more frequently	• 6 to 10 years	• Tools on the market • Enterprise Risk Management • International methodologies • Databases • Other	• WBCSD Global Water Tool • WRI Aqueduct • Ceres Aqua Gauge • ISO 31000 Risk Management Standard • IPCC Climate Change Projections • FAO/AQUASTAT • Internal company methods • External consultants • Other, please specify: EcoVadis, On-site audits	We verify our suppliers' adherence to Bayer's Code of Conduct through continuous supplier assessments and audits. Among others, this allows us to identify water-related supply chain risks. We receive additional results via audits and assessments of suppliers which are shared with us via the "Together for Sustainability" initiative and the "Pharmaceutical Supply Chain Initiative".
Other stages of the value chain	• Full	• Water risks are assessed as part of an enterprise risk management framework	• Six-monthly or more frequently	• 6 to 10 years	• Enterprise Risk Management • Databases • Other	• ISO 31000 Risk Management Standard • Regional government databases • Other, please specify: BI Tool	Our ERM also includes downstream risks. The risks are integrated into our company-wide ERM using the same process and time horizon stated in the first row. In addition, an internal Stewardship (STW) tool is used to identify areas of concern related to water quality. STW is developing water protection tools in order to promote Best Management Practices in Agriculture. Major goal is to reduce non target transport of pesticides (valid for a broad range of product categories) into water bodies.

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

Contextual issue	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Water withdrawals, use and discharges (including quality parameters) are measured at site level and monitored annually in our central Bayer Site Information System "BaySIS" (tool/method: internal company methods). BaySIS allows analyses across several dimensions, e.g. water use, withdrawals and discharges by geography or divisions/sites. Additionally, we have identified the sites in water-scarce regions applying the water stress measurement method of the WRI, included in the WBCSD Global Water Tool.
Water quality at a basin/catchment level	Relevant, always included	Water withdrawals and use including quality parameters as well as discharge quality are measured at site level and monitored annually in our central Bayer Site Information System "BaySIS" (tool/method: internal company methods). BaySIS allows analyses across several dimensions, e.g. water use, withdrawals and discharges by geography or divisions/sites. Additionally, we have identified the sites in water-scarce regions applying the water stress measurement method of the WRI, included in the WBCSD Global Water Tool.
Stakeholder conflicts concerning water resources at a basin/catchment level	Not relevant, included	We consider this issue not relevant BECAUSE in the last years no relevant stakeholder conflicts concerning water resources at local level have been identified: They have neither been reported via our Bayer Site Information System (BaySIS) which requests information from all sites on incidents, including e.g. community complaints, nor via our annual water questionnaire which we have sent out to our sites in water-scarce regions (tool/method: internal company methods). As we are consciously managing and monitoring our water use and quality parameters at site level, we currently do not expect this issue to become relevant in the future.
Implications of water on your key commodities/raw materials	Not relevant, included	This issue is not relevant BECAUSE at the moment water quantity and quality meet our current demands without materially impacting the environment. However, we are conscious of the importance of water for our business and, with a preventive approach, we analyze in detail the most relevant water-related aspects for our business. Regarding the supply of raw materials, our Supplier Code of Conduct (SCoC) and our Sustainability Contract Clause are the main strategy to protect us against sustainability related supplier risks, e.g. it contains aspects related to water management and responsible water use. The SCoC is an important component for supplier selection and evaluation like sustainability online assessments and on-site audits. In 2017, Bayer requested more than 2% (ca. 1,995 out of 93,330) suppliers, representing ca. 35% of the total procurement spend, to report on water management. Through partnerships, we further drive those topics. Supplier evaluation was conducted by a leading web-based service provider of sustainability performance evaluations (EcoVadis) for sustainability performance monitoring. Besides, the main initiatives in which we foster the engagement with suppliers and their evaluation in relation to sustainability topics are "Together for Sustainability" and the "Pharmaceutical Supply Chain Initiative". Based on these regular evaluations and projections, we currently do not expect this issue to become relevant in the future.
Water-related regulatory frameworks	Relevant, always included	The regulatory framework and changes in regulation are taken into account in our risk management system (tool/method: internal company methods), as well as in the analysis made by our HSE and sustainability managers (internal company methods). At a local level, these aspects are also factored in our internal assessments at the production sites (e.g. in the context of their ISO 14001 certifications) and included in HSE audits.
Status of ecosystems and habitats	Relevant, always included	The assessment of ecosystems and habitats is an important task of the environmental managers at our sites (tool/method: internal company methods). In 2016, we updated the comparison of the geographical coordinates of our production sites against those of internationally recognized protected areas (e.g. ASEAN Heritage, Barcelona Convention, UNESCO-MAB Biosphere Reserve). We identified three sites that are within a radius of three kilometers from such areas. These are the Blesbokspruit protected areas in South Africa, Moreton Bay in Australia and Reserva Costa Atlantica de Tierra del Fuego (Atlantic Coast of "Land of Fire") in Argentina. None of the sites examined is directly located in any of the named protected areas. Bayer Real Estate, Bayer's strategic business partner for real estate and facility management, established a global real estate database, which includes, among others, information on protected areas within 10 km from each site. This information is based on a comparison of the geographical coordinates against internationally recognized protected areas as well as information provided directly by the individual sites.

Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	HSE and sustainability managers constantly assess our HSE performance incl. water related aspects and fully-functioning WASH services through our audits at our sites worldwide (tool/method: internal company methods). With Bayer's signature under the WASH at the Workplace Pledge of the WBCSD (World Business Council For Sustainable Development), Bayer has committed itself to implementing access to safe water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in all premises under our control.
Other contextual issues, please specify		

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

Stakeholder	Relevance & inclusion	Please explain
Customers	Relevant, always included	We consider customers as relevant BECAUSE they have a significant impact on the success of our business. The water-related RISK considered is a potential decrease in customer satisfaction, for example if product delivery was delayed due to water-related issues. Such a delay could be due to a shut-down of production due to an extreme water scarcity or if the quality of the water withdrawn is not high enough for our production. For instance, if the water has a high concentration of salts, it will not be appropriate for cooling purposes due to its corrosive characteristics to pipes. METHOD OF ENGAGEMENT: We analyze needs and satisfaction as well as complaints by our customers, and thus foster partnership-based cooperation and dialogue with them. For example, every two years Crop Science conducts customer surveys through their country organizations according to a standardized process, aiming to make the dialogue more target group- and region-specific. Furthermore, Bayer will conduct a new stakeholder survey and materiality analysis in 2018 including customers. This will be used to define new Group targets.
Employees	Relevant, always included	Employees are relevant in water risk assessment BECAUSE clean water, sanitation and hygiene are important for us as mentioned in our water position. Furthermore they play a crucial role in determining our overall water consumption. The key employee-related RISK factor considered in our water-related risk assessments is a potential decline in employee satisfaction, which we assess through a Group-wide Employee Survey, being conducted about every two years. For example, satisfaction could be impacted if the access to safe water, sanitation and hygiene (WASH) was not provided at certain sites, thus cutting across Bayer's signature under the WASH at the Workplace Pledge of the WBCSD (World Business Council For Sustainable Development). Signing the pledge reflects our commitment to ensure WASH access for all employees in all premises under our control. METHOD OF ENGAGEMENT: We assess employees' satisfaction with Bayer as an employer with the help of institutionalized feedback discussions and the Group-wide Employee Survey, which is usually conducted about every two years. Bayer's score of 79% on the Employee Engagement Index in the 2017 survey – collated from responses to questions about satisfaction, loyalty, advocacy and pride – was eight percentage points above the global benchmark of the provider IBM. Furthermore, Bayer will conduct a new stakeholder and materiality analysis in 2018. This enables us to monitor the effectiveness of our activities and make any necessary improvements. We also have several initiatives to create awareness for water use and consumption among employees. For example in 2017, our site in Ansung, South Korea, conducted employee awareness campaigns about water use in order to reduce water consumption. Within this awareness campaign employees were trained in the sustainable use of water.
Investors	Relevant, always included	We consider investors as relevant in our risk assessment BECAUSE water related risk and opportunities could have an impact on their investment decisions as the main RISK considered. For example, our investor base comprises investors that require Bayer to report on its sustainability performance, incl. topics such as water. Not meeting our investors' expectations could negatively impact their investment decision. We continued our open communication with sustainability-oriented investors, analysts and rating agencies worldwide in 2017. The focus of capital market participants was on business ethics, reputation and the future sustainability strategy. Other important subjects included product stewardship and safety, access to medicines and our responsibility toward the

		environment, showing the importance of water-related issues, among other environmental topics, for their decisions. METHOD OF ENGAGEMENT: We include investors in our internal monitoring and assessments and we disclose the relevant information on water topics in our Annual Report and in our CDP Water Report as well as a part of other important sustainability ratings, e.g. Dow Jones Sustainability Index. Furthermore, we have regular dialogues with investors, analysts and rating agencies, and conduct roadshows and investor conferences as well as stockholder forums. We explain our strategy and implementation of our nonfinancial targets, and provide information on the most important fields of our sustainability activities, including water-related topics. In 2017, our investor relations (IR) activities once again centered around providing capital market participants with a continuous flow of information. We took part in 19 conferences in total last year, as well as seven roadshows and one field trip. New York, Boston, San Francisco, London, Paris, Zurich, Frankfurt, Stockholm, Copenhagen and Singapore were just some of the cities we went to.
Local communities	Relevant, always included	We consider local communities as relevant in our risk assessment BECAUSE the acceptance of the local community is key for the successful operation and the reputation of Bayer. Furthermore, local communities play a decisive role in the success of any investment project. The key RISK we consider is a potential loss of reputation and acceptance within the community, e.g. due to water withdrawals beyond annually renewable levels in the watershed or exceeded water pollution limits. METHOD OF ENGAGEMENT: Local communities are one of the stakeholder groups included in our regulatory and internal assessment through various methods of engagement. An important part of our stakeholder dialogue takes place in the direct vicinity of our sites. We are working on being recognized everywhere as a reliable partner and attractive employer that is aware of its social responsibility. In the case of investment projects for example, the involvement of the local community plays a decisive role in ensuring their success. In the communities near our production sites in particular, we keep an open dialogue between community members and local management, which is supported by the respective country organization. This dialogue includes personal discussions with citizens' initiatives, representatives of church communities and the regional press. This community dialogue is anchored in a globally valid corporate policy on site management. An example is our Crop Science site in Liberia, Costa Rica that shares its rainwater harvest experience with neighbors, e.g. school students from the surrounding area.
NGOs	Relevant, always included	We consider NGOs as relevant in our risk assessment BECAUSE they publicly comment on certain company matters which might impact our reputation and therefore potentially our business growth as the main RISK considered. For example, the topic of active ingredients in the (aquatic) environment is a key water-related issue discussed by NGOs. METHOD OF ENGAGEMENT: NGOs play a role in forming public opinions. For this reason, we have internally systemized collaboration with this stakeholder group. To this end, we look to understand the interests of NGOs, take their perspectives on board and enter into dialogue with the relevant experts. Exchange with different NGOs is communicated to the Board of Management and its content is thereby incorporated into our considerations. Bayer is also actively engaged in the U.N. Global Compact and its initiatives, the CEO Water Mandate and Caring for Climate, as well as the Global Compact LEAD network and local networks. All Bayer segments maintain open dialogue with the societal stakeholders of relevance to them and develop individual dialogue formats for this purpose. NGOs are INCLUDED in our risk assessment for specific topics such as pharmaceuticals in the environment. Here, an exchange among companies and NGOs is taking place in forums, industry initiatives (e.g. Pharmaceutical Supply Chain Initiative) and other exchange platforms. A social initiative where we worked with the NGO EFFORT in 2017 is Water, Agriculture, Sanitation and Hygiene (WASH), targeted at uplifting rural population across several regions in India. In Vietnam, we are engaging in a four-year project that aims at improving the living conditions of underprivileged people in the Mekong Delta region. Together with the NGO Anh Duong Community Development and Support Center we provide the communities with water purifying systems, among other activities.

Other water users at a basin/ catchment level	Relevant, always included	We consider other water users at a local level as relevant in our risk assessment BECAUSE they could have an impact on the water quality and quantity in a shared river basin as the main RISKS considered. For instance, if the water does not meet our quality requirements, e.g. having a high concentration of salts, it will not be appropriate for cooling purposes due to its corrosive characteristics to pipes. Moreover, if withdrawal rates from other water users go beyond annually renewable levels in the watershed, this could have an impact on the availability of water for our manufacturing purposes. METHOD OF ENGAGEMENT: We include other water users at a local level in our risk assessment and we continuously conduct comprehensive benchmarking and best practice analyses including other companies and competitors to identify risks and opportunities at a global and a local level. They were also included in our water assessment process for our 2017 water target. It is essential to Bayer to maintain an open and active dialogue with all our stakeholders, including water users that share the same water source. For example, our site in Liberia, Costa Rica, conducts meetings with their neighbors that use the same water sources.
Regulators	Relevant, always included	We consider regulators as relevant BECAUSE regulatory changes can have a significant impact on our business strategy. RISKS considered in 2017 include e.g. a change in withdrawal limits that could pose a risk to our investment decisions or a change in emission limits in wastewater which could result in higher operating costs. METHOD OF ENGAGEMENT: The regulatory framework and changes in regulation are INCLUDED in our risk management system, as well as in the analysis made by our HSE and sustainability managers. At a local level, these aspects are also factored in our internal assessments at the production sites and included in HSE audits. At some sites, we also maintain periodical meetings with the authorities in order to follow potential changes in regulation. For example, in the United States Bayer participates in the East Bay Environmental Network in California, an alliance between businesses and city governments.
River basin management authorities	Relevant, always included	We consider river basin management authorities as relevant for all our sites BECAUSE authorities set thresholds for the quantity of water withdrawal and discharge and monitor water quality. With water being crucial for our production, a change in water withdrawal-, discharge- and emission limits could pose a RISK for our sites. METHOD OF ENGAGEMENT: The framework for the company's operations is determined by authorities, legislators and politicians through statutory regulations and licensing, for example. The dialogues Bayer is currently and in 2017 pursuing with authorities and ministries at local, national and international level include targeted discussions with political decision-makers and active involvement in specialist workshops and cooperation projects. Bayer's active participation in political decision-making processes is explicitly sought by the key players involved. This also applies to river basin management authorities where we work, for instance, on the river basin management board of Jucar (Valencia/Spain).
Statutory special interest groups at a local level	Relevant, always included	We consider statutory special interest groups at a local level as relevant BECAUSE they have statutory RISKS aligned to ours such as a decline in water availability or quality. METHOD OF ENGAGEMENT: They are INCLUDED in our regulatory and internal assessments in 2017 and 2018. Our collaboration with these interest groups is important for best practice sharing for water-related issues and for the follow-up of regulations and lobbying activities. For example, in the United States Bayer participates in the East Bay Environmental Network in California, an alliance between businesses and city governments. In Germany, we actively participate in environmentally related working groups of the German Chemical Industry Association (VCI), as we also do on a European level with the European Chemical Industry Council (CEFIC). Another example is econsense, a German business network, which provides a dialogue platform and think tank to advance sustainable development in business, i.a. for the resource-efficient use of water. The Head of Corporate Sustainability and Business Stewardship at Bayer is Chairman of the econsense Board.
Suppliers	Relevant, always included	We consider suppliers as relevant in our risk assessment BECAUSE they can strongly impact our operations. Bayer aims at ensuring a sustainable supply chain management. Therefore our suppliers have to comply with the Supplier Code of Conduct that also addresses a responsible water management. For example, key RISKS considered in our Supplier assessments include their adherence to water-related regulation, for example with regard to discharge parameters and withdrawal limits and reputational aspects. METHOD OF ENGAGEMENT: Water use, risks and management aspects are covered through suppliers' sustainability performance monitoring and by HSE audits. For example, this is achieved through on-site audits by external independent audit partners, Bayer auditors as well as online assessments carried out by a leading web-based platform for sustainability monitoring (EcoVadis) in 2017. Wherever the evaluation results, e.g. related to water topics, are unsatisfactory, corrective measures are defined together with our suppliers, thus ensuring they observe environmental standards in the future. Regularly conducted follow-up audits and re-assessments enable Bayer to continually observe the environmental development of our suppliers and to initiate appropriate countermeasures in a timely manner.

		In 2017, Bayer requested more than 2% (ca. 1995 out of 93,330 suppliers worldwide), representing ca. 35% of the total procurement spend, to report on water management. Through partnerships, we further drive those topics. Supplier evaluation was conducted by the leading web-based service provider of sustainability performance evaluations (EcoVadis) for sustainability performance monitoring. Besides, the main initiatives in which we foster the engagement with suppliers and their evaluation in relation to sustainability topics are "Together for Sustainability" and the "Pharmaceutical Supply Chain Initiative".
Water utilities at a local level	Relevant, always included	We consider water utilities/suppliers at a local level as relevant in our risk assessment BECAUSE they can strongly impact our operations e.g. through supply bottlenecks or major price fluctuations. As water is a limiting factor for our production, these RISKS are always factored in to our assessments, also in 2017. METHOD OF ENGAGEMENT: Bayer minimizes procurement-specific risks for goods and services of strategic importance, such as supply bottlenecks or major price fluctuations, through long-term contracts and active supplier management. In this way we ensure both the company's global competitiveness and smooth production processes. For example, Bayer verifies the observance of sustainability requirements by our suppliers through online assessments and on-site audits. Water utilities/suppliers at a local level are also included into water-related questions in the risk assessments. Furthermore, our sites are in regular contact with their water suppliers.
Other stakeholder, please specify		

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

1) We use the WBCSD Tool, Ceres or AQUASTAT BECAUSE they help us identifying sites with water risks and are suggested by credible stakeholders. Internal methods e.g. discussions with the sites are used IN ORDER TO control the relevance of the results for Bayer. Our company-wide ERM covers non-financial risks related to our direct operations and the value chain. We integrate audits and web-based monitoring in our SUPPLY CHAIN MANAGEMENT BECAUSE it offers a standardized assessment for an extensive scope of suppliers.
2) Tools are APPLIED COMPANY-WIDE e.g. the WBCSD tool to ALL SITES. In this process, 7 sites at risk were identified in 2017. Looking at our suppliers, we request >2% (ca. 35% of total procurement spend) to report on water management. Because it is not feasible to assess all 93,330 suppliers, suppliers are selected based on country and business category risks and strategic importance. In addition to the assessments of EcoVadis, on-site audits are conducted by external auditors.
3) RESPONSE PROCESS: The risk owners decide on a targeted risk level based on a cost-benefit analysis and define a risk management strategy as well as risk management measures. These include risk avoidance, risk reduction, risk transfer and risk acceptance. We address site-level risks e.g. flooding through our local crisis organization. We have implemented early warning systems, ensure continuous reporting and carry out regular crisis simulation exercises. Business Continuity Management assesses such risks and defines appropriate measures together with the responsible specialist units. Supplier online assessments and audits are analyzed and documented in order to define improvement measures in case of unsatisfactory results. Bayer requests the suppliers to rectify the identified weaknesses based on specific action plans.
4) TIMESCALE: Water is integrated into our risk assessment using a LONG-TERM PERSPECTIVE, e.g. likelihood of occurrence is calculated based on a period of 10 YEARS.

W4 Risks and opportunities

Risk exposure

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

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

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

i. Bayer defines a risk as having a substantive financial impact, if the identified risk is relevant for the respective risk owner and/or function. With regard to our Product Supply Function, a potential impact of €7 million Cash Flow is regarded to be substantive and monitored in the database.
INDICATORS/THRESHOLDS:
Risks are evaluated using estimates of likelihood of occurrence, potential impact and/or relevance for external stakeholders.
1) Likelihood of occurrence is assessed on a scale ranging from very unlikely (<10%), unlikely (10%-30%), possible (30-50%), likely (50-70%), very likely (>70%) over a period of 10 years.
2) For risks that can be evaluated financially, potential impact is determined on a scale from moderate (> €150-250 million), medium (> €250-750 million), significant (> €750-1,500 million), major (> €1,500-2,500 million) to severe (> €2,500 million). A qualitative assessment of damages is based on criteria such as the impact on our strategy or reputation, the potential loss of stakeholder confidence, and the potential violation of sustainability principles. The highest rating – qualitatively or quantitatively – determines the overall assessment. Risks are classified as high, medium or low to assess their materiality regarding the overall risk portfolio.
The DEFINITION APPLIES to our direct operations. Risks are REVIEWED in our risk management system, incl. risks from seasonal fluctuations, natural disasters or actives in the environment. For EXAMPLE, actives in the environment have been assessed qualitatively with regard to sustainability principles and stakeholder confidence.

ii. In addition, sites that are located in water-scarce regions and are “large water users” are DEFINED to have the potential to have a substantive impact on the business with regard to water-related risks.
INDICATORS/THRESHOLDS:
1) The “Annual Renewable Water Supply per Person” (1995 and projection for 2025) from the WBCSD Water Tool has been used to measure if a site is located in a water-scarce region (threshold: <1,700 m3/person/year).
2) In BaySIS, we monitor the annual water use of all environmentally relevant sites. We define them as “large user” when they use >0.1% of our total water use.

The DEFINITION also APPLIES to our direct operations. Metrics and thresholds are REVIEWED continuously, incl. external resources/research, internal discussions with experts and an internal review process at site/divisional level.
EXAMPLE: Applying these thresholds to all environmentally relevant sites worldwide, 7 Bayer sites were identified based on 2017 data as having the potential to have a substantive impact on the business as they are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are defined as “large water users” (>0.1% of Bayer’s total water use).

iii. Suppliers have the potential to have a SUBSTANTIVE IMPACT on the business if they are classified as strategically important or potential high-risk suppliers.

INDICATORS/THRESHOLDS:
1) Strategically important suppliers are defined as suppliers that have a major influence on business, incl. procurement spend and long-term collaboration prospects (3-5 years).
2) The risk definition for potential high-risk suppliers is based on country and business category risks.
The DEFINITION APPLIES to our entire supply chain. Data are REVIEWED and updated continuously. Strategically important and potentially high-risk suppliers’ sustainability performance, incl. water-related aspects, is evaluated via assessments and on-site audits.
EXAMPLE: By 2020, Bayer aims to evaluate all those suppliers with a significant procurement spend (> €1 million p.a.) that are regarded as potentially high-risk suppliers due to their combined country and category risk. Within the scope of our supplier sustainability evaluations, we have identified a country risk particularly for China and India. In this connection, we carried out intensive workshops and training courses in India both for our local procurement personnel and for external auditors of the Pharmaceutical Supply Chain Initiative (PSCI). In China, Bayer used its Supplier Day 2017 to communicate its sustainability requirements. In 2017, we also conducted supplier training and workshops in China and India in cooperation with PSCI and Together for Sustainability (TfS).

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

Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
7	1-25	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as “large user” which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%).

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

Country	River basin	Number of facilities exposed to water risk	% company-wide facilities this represents	% company's total global revenue that could be affected	Comment
China	Yongding He	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as "large user" which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
Brazil	Other, please specify: GHAASBasin3457	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as "large user" which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
United States of America	Sacramento River – San Joaquin River	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as "large user" which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
Indonesia	Other, please specify: GHAASBasin1666	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as "large user" which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
Turkey	Other, please specify: GHAASBasin4114	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as "large user" which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on

					market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
Mexico	Santiago	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as “large user”, which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.
India	Other, please specify: GHAASBasin3349	1	1-25	Unknown	To identify the sites in water-scarce regions we have applied the water stress measurement method of the World Resources Institute (WRI), included in the WBCSD Global Water Tool. We analyzed all sites which are considered environmentally relevant and thus monitored in BaySIS and defined those sites as “large user”, which used more than 0.1% of our total water use. In this process 7 sites were identified which are located in a water-scarce region (annual renewable water supply per person below 1,700 m3/person/year) and are large water users (more than 0.1%). Bayer divisions operate global production networks with multiple production steps for a single product across different sites (internal and external). Bayer produces more than 35,000 products in more than 80 own production sites. Depending on market and customer demands productions have individual back up and flexibility strategies. Revenue contribution of individual sites can therefore not directly be allocated.

Water-related risks and response

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

Risk 1, Part 1

Country	River basin	Type of risk	Primary risk driver	Primary potential impact	Company-specific description	Time-frame	Magnitude of potential impact	Likelihood
India	Other, please specify: GHAAS Basin3349	Reputation & Markets	Increased stakeholder concern or negative stakeholder feedback	Brand damage	Pollution due to chemical residues in water is a general problem in several countries, e.g. in India, and not a specific Bayer problem. This circumstance might be picked up by the media or NGOs, drawing public attention to the topic. EFFECT ON BAYER: With the zero liquid discharge strategy of the Indian government this risk is especially relevant in India. Not meeting the wastewater quality norms would lead to a stoppage of production by the State Pollution Control Board. Our facilities in India installed on-line analyzers for monitoring critical parameters at the final ETP outlet, which are linked to the Pollution Control Board server with live data up-load and automatically shut off the discharge valve in case of exceeding the limits. Thus, we see no risk of discharging any waste water not meeting the norm. However, we believe that there is a reputational risk related to water pollution in India. If the topic receives high media coverage, this could affect our brand	More than 6 years	Low	About as likely as not

					image, even if our own production wastewaters are not affected. METHOD TO IDENTIFY IMPACT: We thoroughly analyze Bayer's exposure to risks incl. water via our ERM, which reviews the risk portfolio twice a year. Pollution due to water discharges has not been identified as a risk. Based on internal discussions with the Corporate Health, Safety and Environment Dpt. (HSE) and our 2017 global water risk assessment, we identified a low reputational risk with brand damage as primary impact.			

Risk 1, Part 2

Primary risk driver	Potential financial impact	Explanation of financial impact	Primary response to risk	Description of response	Cost of response	Explanation of cost of response
Increased stakeholder concern or negative stakeholder feedback	86,000,000	CALCULATION APPROACH: Brand damage could have an impact on our stock price. For example, we estimated an impact of a 0.1% decrease of our stock price, which would affect the company's market capitalization by around €86 million based on year-end 2017 market capitalization. TIMESCALE: As financial markets can react quickly, we assume a short-term timescale for this effect.	Engage with local communities	Bayer is actively engaged in a continuous dialogue with stakeholders including e.g. employees, customers, neighbors, NGOs, politicians and the general public. We are actively participating in stakeholder panels at river-basin level ranging from the participation in community panels, e.g. in Muskene, USA, to the initiation of a river basin panel by our site in Quart de Poblet, Spain. In India, we are actively participating in the Industry forum of the Estate. Waste management incl. water and wastewater are part of the agenda points for various site level meetings and interactions. The site conducts trainings on the subject as part of the ISO 14001 activities. Every employee from each level takes part and contributes to the subject and improvement measures. To create awareness for water management, various boards are displayed at prominent locations across the site. Furthermore, we take action to ensure the correct application of our products. Other relevant actions are the comprehensive monitoring systems at this site to ensure appropriate reaction times and risk management responses. The entire volume of the generated industrial waste is pumped to the ETP for treatment through a ground pipeline. There is a holding capacity of more than 10 days between receipt of generated process waste water in the ETP and discharge after biological treatment and final discharge. This provides ample scope for action even in worst case scenario of failure in treatment process.	0	There are no specific costs related to this response strategy as the above measures are part of the normal operating procedures and HSE management at our sites.

Risk 2, Part 1

Country	River basin	Type of risk	Primary risk driver	Primary potential impact	Company-specific description	Time-frame	Magnitude of potential impact	Likeli-hood
Other, please specify:	Other, please specify: all EU -basins	Regulatory	Tighter regulatory standards	Constraint to growth	EXPLANATION: Increasing requirements for the use of crop protection, pharmaceutical or chemical products under existing and upcoming EU Directives may lead to restrictions in some uses and an increasing need for measures to reduce the concentration of	4-6 years	Low	Likely

All countries in the EU					respective active ingredients mainly in surface water. This might impact individual Bayer products. EFFECT ON BAYER: In a worst-case scenario, active ingredients might be prohibited in certain uses representing a constraint to growth for Bayer. DETAILS ON METHOD FOR IDENTIFYING THE PRIMARY IMPACT: The risk was analyzed as part of our company-wide Enterprise Risk Management (ERM) evaluating the risk with regard to likelihood of occurrence (on a 5-step scale as described in question 4.1a) and impact. As the impact could not be evaluated financially, it was evaluated qualitatively in terms of reputation and sustainability and found to be low.			

Risk 2, Part 2

Primary risk driver	Potential financial impact	Explanation of financial impact	Primary response to risk	Description of response	Cost of response	Explanation of cost of response
Tighter regulatory standards	0	During our risk assessment, it was concluded that the primary potential impact cannot be evaluated financially. Following our risk analysis method, the risk was evaluated qualitatively with regard to reputational effects and sustainability and was classified as risk with low impact. Timescale: Our ERM takes a long-term perspective e.g. likelihood of occurrence is calculated based on a period of 10 years.	Engage with regulators/ policymakers	Active pharmaceutical ingredients can enter the environment through human or animal excreta, through improper disposal or during production. Surface waters are particularly relevant here. For their own active ingredients, Pharmaceuticals and Consumer Health carry out ecotoxicological investigations of pharmaceutical residues and degradation products to assess the potential environmental impact of these products. In connection with the approval process for human and veterinary pharmaceuticals in Europe and the United States, an environmental risk assessment takes place for all new active ingredients. Furthermore, to our knowledge, the existing concentrations of individual active pharmaceutical ingredients in drinking water do not have any relevant adverse effects on human health. On the basis of its report on mixtures of active pharmaceutical ingredients in drinking water published in 2017, the WHO currently does not identify any immediate health risks and consequently sees no need to act in the short term. To further guarantee the safety of drinking water resources partly against the background of a potential increase in the use of pharmaceuticals, the WHO recommends that this issue be observed comprehensively over a longer period of time. Bayer is actively participating in the stakeholder dialogue.	3,650,000	As Bayer's EU lobbying work also included water-related discussions, we added the costs incurred at our liaison offices in Europe in 2017 to estimate the costs of our engagement with policy makers in the EU: Including human resources, material and project expenses, the costs incurred at our liaison offices totaled approximately €1.35 million in Berlin, Germany and €2.3 million in Brussels, Belgium. The costs represent 2017 costs and are recurring each year.

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

Risk 1, Part 1

Country	River basin	Stage of value chain	Type of risk	Primary risk driver	Primary potential impact	Company-specific description	Timeframe	Magnitude of potential impact	Likeli-hood

Other, please specify: Developing countries	Other, please specify: Several basins in developing countries	Supply chain	Reputation & markets	Negative media coverage	Company brand damage	EXPLANATION: Low enforcement of wastewater standards for pharmaceutical or chemical suppliers especially in developing countries could potentially lead to incidences of increased respective concentrations in environmental water bodies and potentially in drinking water. EFFECT ON BAYER: If such incidences occur and are picked up by (social) media or NGOs, they impose a reputational risk for the entire industry, including Bayer. DETAILS ON METHOD FOR IDENTIFYING THE IMPACT: The risk was analyzed as part of our company-wide Enterprise Risk Management (ERM) evaluating the risk with regard to likelihood of occurrence (on a 5-step scale as described in question 4.1a) and impact. As the impact could not be evaluated financially, it was evaluated qualitatively and found to be low.	1-3 years	Low	More likely than not

Risk 1, Part 2

Primary risk driver	Potential financial impact	Explanation of financial impact	Primary response to risk	Description of response	Cost of response	Explanation of cost of response
Negative media coverage	0	During our risk assessment, it was concluded that the potential impact on reputation cannot be evaluated financially. Following our risk analysis method, the risk was evaluated qualitatively and was classified as risk with low impact. TIMESCALE: Our ERM takes a long-term perspective e.g. likelihood of occurrence is calculated based on a period of 10 years.	Other, please specify: Engage with suppliers	Our Supplier Code of Conduct (SCoC) and our Sustainability Contract Clause are the main strategy to protect us against sustainability related supplier risks, e.g. it contains aspects related to water management and responsible water use. The SCoC is an important component for supplier selection and evaluation like sustainability online assessments and on-site audits. In 2017, Bayer requested more than 2% (ca. 1995 out of 93,330 suppliers), representing ca. 35% of the total procurement spend, to report on water management. Through partnerships, we further drive those topics. Supplier evaluation was conducted by a leading web-based service provider of sustainability performance evaluations (EcoVadis) for sustainability performance monitoring. Besides, the main initiatives in which we foster the engagement with suppliers and their evaluation in relation to sustainability topics are “Together for Sustainability” and the “Pharmaceutical Supply Chain Initiative”.	360,000	To estimate the reported costs we summed up the membership fees for the two supplier initiatives and the interface to EcoVadis. In 2017 we spend more than USD 110,000 for membership fees for supplier initiatives and EcoVadis and about € 250,000 on initiatives related to the engagement with suppliers and their assessment and audits in relation to sustainability topics, including water.

Risk 2, Part 1

Country	River basin	Stage of value chain	Type of risk	Primary risk driver	Primary potential impact	Company-specific description	Timeframe	Magnitude of potential impact	Likeli-hood

China	Other, please specify: Jiangsu province, e.g. Guan river	Supply chain	Regulatory	Other, please specify: Non-adherence to wastewater standards	Supply chain disruption	EXPLANATION: Environmental issues in the area of Jiangsu impact chemical parks in Jiangsu. This could lead to total shut downs of chemical parks, implying that locally based companies are being shut down. In the past the environmental issues were often linked to wastewater problems. EFFECT ON BAYER: In case chemical parks and locally based companies are shut down, risk of supply interruption arises. Bayer's suppliers might not be able to supply Bayer with the ordered materials/products. DETAILS ON METHOD FOR IDENTIFYING THE IMPACT: Through an assessment of location risk and supply impact, Bayer evaluates the final risk (low, medium, high) and establishes a mitigation plan to take actions.	Current up to 1 year	High	Likely

Risk 2, Part 2

Primary risk driver	Potential financial impact	Explanation of financial impact	Primary response to risk	Description of response	Cost of response	Explanation of cost of response
Other, please specify: Non-adherence to wastewater standards	0	Bayer does not distinguish whether the interruption of supply is due to environmental reasons or due to other incidences which a supplier might encounter. Thus, we cannot state the financial impact at this point.	Other, please specify: Change of suppliers	Bayer mitigates such supply chain risk by switching to other suppliers with higher regulations. Furthermore, Bayer mitigates supply chain risks by diversifying the supplier base of currently 93,330 suppliers in 2017 and is therefore reducing the dependency on a few selected suppliers. There are only a few cases where Bayer relies on a single source of supply. In addition, Bayer makes sure that buffer stocks are able to absorb an interruption of supply, in case a supplier is shut down.	0	There are no extra costs for our response strategy as this is part of our overall supplier strategy.

Water-related opportunities

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

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

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

Type of opportunity	Primary water-related opportunity	Company-specific description & strategy to realize opportunity	Estimated timeframe for realization	Magnitude of potential financial impact	Potential financial impact	Explanation of financial impact
Products and services	Increased sales of existing products/ services	The agricultural business is strongly tied to water and weather phenomena. The OPPORTUNITY is Crop Science's excellent position to offer products and services that support improved cultivation techniques and thus improve water management in agriculture. The STRATEGY TO REALIZE this opportunity is to offer education to farmers and to promote water-saving cultivation systems. The IMPLEMENTATION of the strategy is already in place. Crop Science is offering farmer trainings and promotes water-saving cultivation systems. For EXAMPLE, in the U.S., conservation tillage is already used in 90% of cotton cultivation. These conservation tillage practices improve rainfall uptake and retention capacity of the soil. Moreover, with the Digital Farming approach and our expanding Smallholder Farming Initiative we promote innovations along the value chain, e.g. helping farmers to enhance their water efficiency in countries such as India and Ghana. Examples of Digital Farming solutions are spraying tools and auto-steering or GPS-controlled tractors. Furthermore, in July 2017, Bayer and the Israeli company Netafim Ltd. joined forces to enhance the application of crop protection products through drip irrigation systems. The new approach called DripByDrip will enable farmers to water their fields and apply crop protection products in a more targeted way. Key focus countries are Vietnam, Spain and Mexico. We expect the solutions to be launched some time after the closing of the Monsanto acquisition.	>6 years	High	7,400,000,000	FINANCIAL IMPLICATIONS apply to Crop Science as a whole affecting sales of €9.58 billion in 2017 of which crop protection has a major impact with €7.4 billion (Fx, portf. adj.). For Crop Science, we see sales coming in at more than €9.5 billion. This corresponds to a mid-single-digit percentage increase on a currency- and portfolio-adjusted basis. We expect to increase EBITDA before special items by a mid-to high-single-digit percentage (currency adjusted: mid-teens percentage increase).Our offerings of products/services helping farmers to use water more efficiently are contributing to this growth.
Markets	Increased brand value	In Europe, Crop Science has the OPPORTUNITY to increase brand value and secure the social license to operate. The STRATEGY TO REALIZE THE OPPORTUNITY is our involvement in a European Project (TOPPS) to protect the environment and ensure sustainable use of crop protection products. THE STRATEGY HAS ALREADY BEEN IMPLEMENTED, FOR EXAMPLE: As part of this project, we have participated in campaigns about "Protect water from diffuse sources": Moreover, we are taking part as a pilot company in a program to promote the implantation of Riparian vegetative Buffer Strips (RVBSs). This	Current – up to 1 year	Unknown	0	FINANCIAL IMPLICATIONS: Not quantifiable as brand value increase is hard to quantify.

		is part of the sustainable agriculture initiative of the ECPA (European Crop Protection Association) and contributes to the overall aim of protecting water from potential negative impacts of plant protection product use. In the HSE Department of our site in Quart de Poblet, we have a periodic system of communication that includes campaigns for water saving. Every month we send environmental and safety messages by mailing and through informative panels. Our ForwardFarms are living examples of how sustainable agriculture is being practiced; the responsible use of water is a crucial part of it. Bayer expanded the network of Forward Farms in 2017 to include Brazil and Argentina.				

W5 Facility-level water accounting

Facility-level water accounting

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

Facility reference number	Facility name (optional)	Country	River basin	Latitude	Longitude	Total water withdrawals (megaliters/ year) at this facility	Comparison of withdrawals with previous reporting year	Total water discharges (megaliters/ year) at this facility	Comparison of discharges with previous reporting year	Total water consumption (megaliters/ year) at this facility	Comparison of consumption with previous reporting year	Please explain
Facility 1	Beijing	China	Yongding He	39.79543	116.50612	64	Much higher	17	Lower	17	Lower	Water withdrawals increased due to a new production plant that opened on site and installation of a new rainwater collector. Water discharges decreased since part of the existing production plant did not run all year.
Facility 2	Belford Roxo (Bayer Crop Science)	Brazil	Other: GHAASBasin3457	-22.76714	-43.390021	178	Much lower	62	Much lower	127	About the same	In 2017, the decommissioning of the former Bayer

												MaterialScience plant at Belford Roxo was finished. Therefore, total water withdrawals and total water discharges decreased. Also, less wastewater was discharged due to a reduction in production.
Facility 3	Berkeley	United States of America	Sacramento River – San Joaquin River	37.858401	-122.2953	421	Higher	307	Much higher	307	Much higher	Water withdrawals, discharges and consumption increased in 2017 due to a new quality control building which was completed.
Facility 4	Cimanggis	Indonesia	Other: GHAASBasin1666	-6.392125	106.89066	67	About the same	22	Much higher	22	Much higher	Water discharges and consumption differ from the previous reporting year due to an improvement in the data acquisition method on site. Due to the rather low baseline for water discharges and consumptions at the site, the comparison to the previous year results in a much higher discharge and consumption level.
Facility 5	Istanbul	Turkey	Other: GHAASBasin4114	41.020566	28.911398	26	Lower	26	Lower	26	Lower	In 2017, water withdrawals, consumption and discharges decreased. The deviations from last year values still lie within the range which we consider as usual due to variations in production.
Facility 6	Lerma	Mexico	Santiago	19.288831	-99.535877	67	Higher	63	Higher	63	Higher	In 2017, water withdrawals, consumption and discharges increased. The deviations from last year values still lie within the range which we consider as usual due to variations in production.
Facility 7	Vapi	India	Other:	20.37057	72.934301	528	Higher	236	Much higher	236	Much higher	In 2017, water

			GHAASBasin3349									withdrawals, consumption and discharges increased due to an increase in the production volume.

Comment for W5.1

All our water withdrawal data includes cooling water. This is why total water withdrawal is higher than water consumption and discharges taken together.

(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

Facility reference number	Facility name	Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Brackish surface water/seawater	Groundwater (renewable)	Groundwater (non-renewable)	Produced water	Third party sources	Comment
Facility 1	Beijing	16	0	0	0	0	48	
Facility 2	Belford Roxo (Bayer Crop Science)	128	0	0	0	0	50	
Facility 3	Berkeley	0	0	0	0	0	421	
Facility 4	Cimanggis	0	0	48	0	0	19	
Facility 5	Istanbul	0	0	0	0	0	26	
Facility 6	Lerma	0	0	67	0	0	0	
Facility 7	Vapi	11	0	0	0	0	517	

(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

Facility reference number	Facility name	Fresh surface water	Brackish surface water/Seawater	Groundwater	Third party destinations	Comment
Facility 1	Beijing	0	0	0	17	
Facility 2	Belford Roxo (Bayer Crop Science)	0	0	0	62	
Facility 3	Berkeley	0	0	0	307	
Facility 4	Cimanggis	6	0	0	16	
Facility 5	Istanbul	4	0	0	22	
Facility 6	Lerma	0	0	0	63	
Facility 7	Vapi	0	0	0	236	

(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.

Facility reference number	Facility name	% recycled or reused	Comparison with previous reporting year	Please explain
Facility 1	Beijing	2-10%	Much lower	The volume of water recycled or reused stayed at the same level. However, since total water withdrawals at the site increased due to the start of a new production plant, the percentage of water recycled or reused declined.
Facility 2	Belford Roxo (Bayer Crop Science)	None	Much lower	Due to a reduction in the production volume less water was reused or recycled. Also, the site stopped the delivery of wastewater for reuse to another organization since the organization's demand has become obsolete.
Facility 3	Berkeley	2-10%	Much lower	The amount of water recycled on-site is highly dependent on the quality of the water the site receives from its third party water supplier. Therefore, the amount of recycled water varies from year to year.
Facility 4	Cimanggis	None	About the same	We do not recycle or reuse water at this site.

Facility 5	Istanbul	None	About the same	We do not recycle or reuse water at this site.
Facility 6	Lerma	None	About the same	We do not recycle or reuse water at this site.
Facility 7	Vapi	Less than 1%	Much lower	Due to changes in production processes which included wastewater recycling the amount of water reused on site declined in 2017.

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

Water aspect	% verified	What standard and methodology was used?
Water withdrawals – total volumes	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water withdrawals – volume by source	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water withdrawals – quality	Not verified	Information on the quality of water withdrawals is not included in the Bayer Integrated Annual Report 2017 and thus not verified by the auditor Deloitte as part of their limited assurance.
Water discharges – total volumes	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water discharges – volume by destination	Not verified	Information on the volume by destination of water discharges is not included in the Bayer Integrated Annual Report 2017 and thus not verified by the auditor Deloitte as part of their limited assurance.
Water discharges – volume by treatment method	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water discharge quality – quality by standard effluent parameters	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water discharge quality – temperature	Not verified	Information on the temperature of water discharge quality is not included in the Bayer Integrated Annual Report 2017 and thus not verified by the auditor Deloitte as part of their limited assurance.

Water consumption – total volume	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.
Water recycled/reused	76-100	Standard: ISAE 3000; Methodology: The auditor Deloitte has verified water data as part of the limited assurance for the Bayer Integrated Annual Report 2017, incl. the following procedures: recording of systems and processes for collection, analysis, validation and aggregation of data and their documentation on a sample basis; site visits; analytical procedures. Scope: Global: Water data is measured at site level and monitored annually at global level in our central Bayer Site Information System.

W6 Governance

Water policy

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

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

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

Scope	Content	Please explain
Company-wide	• Description of business dependency on water • Description of business impact on water • Description of water-related performance standards for direct operations • Description of water-related standards for procurement • Reference to international standards and widely-recognized water initiatives • Company water targets and goals • Commitment to align with public policy initiatives, such as the SDGs • Commitments beyond regulatory compliance • Commitment to water-related innovation • Commitment to stakeholder awareness and education • Commitment to water stewardship and/or collective action • Acknowledgement of the human right to water and sanitation • Recognition of environmental linkages, for example, due to climate change	The Bayer Water Position is COMPANY-WIDE BECAUSE water is a GLOBAL topic and we classify water as one of our main environmental aspects. In our purpose “Bayer: Science For A Better Life” we promise innovative solutions to global economic, ecological and social challenges. The availability of fresh water is a growing concern around the world and thus represents such a challenge. Also, water is essential for us as a manufacturing company. THIS IS WHY our Water Position covers the content highlighted here securing our business and license to operate. EXAMPLE: As water is a major rate-limiting factor for agriculture, we include our commitment to ensure the supply of food through WATER-EFFICIENT PRODUCTS AND FARMING TECHNIQUES. E.g. in 2017 Bayer and Netafim joined forces to enhance the application of CPPs through drip irrigation systems. We include our commitment to CUSTOMER EDUCATION e.g. skills building for farmers BECAUSE we see this as part of our product stewardship responsibilities.

	• Other, please specify: water efficiency in agriculture	

Board oversight

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

Yes

(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.

Position of individual	Please explain
Chief Sustainability Officer (CSO)	The highest level of responsibility for water-related issues lies with the member of the Board of Management responsible for Human Resources, Technology and Sustainability. As CSO he carries responsibility for the Group-wide Sustainability Program incl. water-related targets and measures. RATIONALE: Sustainability incl. sustainable water management is part of Bayer's corporate strategy. Thus BOARD-LEVEL oversight was appointed. The CSO is one of 3 corporate directors on the board. The position was selected to ensure that water-related risks and opportunities are identified AT GROUP-LEVEL and water-related targets and measures are driven across all relevant sites Group-wide. As the same Board member is RESPONSIBLE FOR TECHNOLOGY, WATER SAFETY AND EFFICIENCY INITIATIVES CAN GO HAND IN HAND. The CSO is the superior of the Head of Corporate Health, Safety, Sustainability. Relevant topics in the field of sustainability incl. water-related topics are discussed during their regular meetings.

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

Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Scheduled - some meetings	• Monitoring implementation and performance • Overseeing acquisitions and divestiture • Overseeing major capital expenditures • Providing employee incentives • Reviewing and guiding annual budgets • Reviewing and guiding business plans • Reviewing and guiding major plans of action • Reviewing and guiding risk management policies • Reviewing and guiding strategy • Reviewing and guiding corporate responsibility strategy	i) WHO BRIEFS ON WHAT: Water-related strategic decisions are brought up in board discussions by the Head of Corporate Health, Safety, Sustainability (CHS) or the CSO as needed. The CHS Head informs the board about environmental KPIs incl. water-related KPIs and target achievement in the context of the annual Board meeting dedicated to the approval of our Annual Report (AR). The CSO and the CFO are informed several times by the AR taskforce during the reporting cycle from Aug to Feb. The Head of CHS monthly reports HSE KPIs to the CSO. ii) CONTRIBUTION TO BOARD OVERSIGHT: The governance mechanisms selected contribute to an informed view of the Board on water-related issues and ensure a coherent and Group-wide response, if needed. Examples: Through the reporting of water-related KPIs, the Board can ensure a Group-wide response in case of any deviations of water parameters from the required values. Through the integration of water-related issues in major investment decisions, the regular review of water-related risks, and the integration of water-related issues in the review of strategic decisions or R+D priorities, the Board can ensure e.g. an adequate inclusion of water risks and opportunities in our

	• Reviewing innovation/R&D priorities • Setting performance objectives	business, sustainability or risk management strategy. E.g. all capital expenditures above €10 million undergo an ecological assessment; CAPEX above €20 million go into the Board. An example in 2017 was the decision to sign the WASH Pledge as part of our Sustainability strategy.

Management responsibility

(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on water-related issues	Please explain
Chief Sustainability Officer (CSO)	Both assessing and managing water-related risks and opportunities	More frequently than quarterly	POSITION: The CSO reports to the CEO and is the superior of the Head of Corporate Health, Safety and Sustainability (CHS). The CSO also sponsors the Sustainable Development Committee (SDC) as the highest management-level decision making body with responsibility for water. REPORTING NATURE: The SDC, meeting quarterly, endorses water-related targets, which are then approved by the Board. Target achievement is reported ANNUALLY to the Board. In addition, in REGULAR JOUR FIXES, the CSO and CHS Head discuss operational topics in the field of sustainability, incl. water issues. Additionally, as important matters arise, they are brought up in board discussions. DUTIES: The CSO is responsible for the Group-wide Sustainability Program incl. water. The SDC proposes water-related initiatives, management systems and corporate policies. RESULTS REPORTING: Results are reported to the Board e.g. through the annual target reporting or approval process for targets.

Public policy engagement

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

- Yes, trade associations
- Yes, funding research organizations

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

i) PROCESS: Bayer`s organizational processes are designed to ensure a common approach for all direct and indirect engagement activities, consistent with our water policy - across divisions and geographies. An important instrument for ensuring the alignment of our engagement activities

with our overall water commitments is Bayer's Public and Governmental Affairs Committee (PGA Committee). The PGA Committee is Bayer's political think tank and political liaison that helps the company maintaining its license to operate. It coordinates the political work (incl. work on water-related issues) for Bayer AG and meets regularly. The PGA Committee is chaired by the Head of Public and Governmental Affairs and is sponsored by Bayer's CEO. Furthermore, it consists of top managers from the Corporate Center and the divisions. Experts from the Corporate Sustainability & Business Stewardship department are invited as needed to contribute with their expertise-based advocacy work to the discussions involving water-related issues. The involvement of these representatives in the PGA Committee ensures the consideration of our overall water policy in Bayer's political activities.
ii) ACTION IN CASE OF INCONSISTENCY: This process ensures that there are no inconsistencies in our corporate advocacy actions. If the Corporate Sustainability & Business Stewardship department discovers inconsistency in local advocacy actions, the department would raise them with the country head.

W7 Business strategy

Strategic plan

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

Aspect of strategic business plan	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	11-15	i) ISSUES INTEGRATED: Through the establishment of sustainability goals we included water-related topics into our long-term non-financial business objectives (e.g. in supplier management or resource efficiency). For instance, we set the target to establish a water management at all sites in water-scarce regions focusing on issues such as wastewater standards and water efficiency. ii) HOW ISSUES ARE INTEGRATED: Within its Corporate Health, Safety and Sustainability Roadmap, Bayer sets specific goals to operationalize its objectives, including goals to assess and mitigate the risk of soil/ground water contamination at all sites worldwide, and standards for wastewater emissions. This way, sustainability is integrated into our long-term business objectives, leading to projects with sustainability and business relevance. The development of non-financial goals CHANGED the awareness of the importance of sustainability within the company for securing Bayer's license to operate. The Supplier Code of Conduct also addresses a responsible water management by Bayer's suppliers. By evaluating our suppliers we minimize potential risks in our supply chain and show our suppliers the importance of water in general, but also for Bayer in particular. iii) RATIONALE FOR TIME HORIZON: Bayer is currently developing new non-financial targets with a time horizon until 2030 IN ORDER TO align our goals with the UN Sustainable Development Goals.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	i) ISSUES: Water resource considerations such as the development of drought-tolerant plant varieties are factored into new product development and therewith have an IMPACT on our strategy for achieving long-term business objectives. Water-related issues to achieve our Water Position include e.g. KPIs on water emissions or projects, which provide access to clean water and sanitation to the communities in which we operate impacting our acceptance in the community. ii) HOW ISSUES ARE INTEGRATED: By including water resource considerations into our innovation strategy they influence our product development and improvements in resource efficiency. The OUTCOME is the rollout of new products and services and

			thus the realization of new sales potentials. E.g., Bayer developed and offers hybrid rice seeds that withstand abiotic and biotic stress like drought and salinity. This helps increasing yields significantly and consequently improving livelihoods in countries like Vietnam that are struck by weather-related calamities. The introduction of water KPIs has allowed us to implement improvement mechanisms, e.g. leading to cost saving opportunities due to improved resource efficiency. For our employees we signed the WBCSD WASH Pledge, ensuring access to safe water, sanitation and hygiene for all employees in all premises under our control. iii) RATIONALE FOR TIME HORIZON: We chose 11-15 BECAUSE the horizon for breeding and trait development projects in our R+D is usually 10+ years.
Financial planning	Yes, water-related issues are integrated	11-15	i) ISSUES: Water issues integrated into financial planning, e.g. investment decisions, especially include water use and emissions into water. ii) HOW ISSUES ARE INTEGRATED: Water resource considerations are factored into location planning for new operations IMPACTING our investment decisions. According to Bayer's Ecological Assessment of new Investments Guideline, all investments above €10 million must be evaluated with regard to their environmental impact. The assessment includes both a product and process evaluation. The process evaluation assesses the impacts of the new investment projects on organisms and the local environment which are specific to the location and the facility (e.g. water use and emissions into water). The OUTCOME is an improved risk assessment at site level to secure long-term investments. As mentioned above, water resource considerations are factored into new product development and have an IMPACT on the rollout of new products and services and therefore the realization of new sales potentials. For instance, Bayer developed and offers hybrid rice seeds that withstand abiotic and biotic stress like drought and salinity. This helps increasing yields significantly and consequently improving livelihoods in countries like Vietnam that are struck by weather-related calamities. iii) RATIONALE FOR TIME HORIZON: We chose 11-15 BECAUSE the horizon for investments in breeding and trait development projects is usually 10+ years.

Capex/Opex

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

Water-related CAPEX (+/- % change)	Anticipated forward trend for CAPEX (+/- % change)	Water-related OPEX (+/- % change)	Anticipated forward trend for OPEX (+/- % change)	Please explain
0	0	0	0	Currently, we assume that our expenditures concerning environmental (incl. water)-related issues have stayed at a similar share over the last few years. According to Bayer's Ecological Assessment of New Investments Guideline, all investments above €10 million must be evaluated with regard to their environmental impact. The assessment includes both a product and process evaluation. The process evaluation assesses the impacts of new investment projects on organisms and the local environment which are specific to the location and the facility (e.g. water use and emissions into water).

W7.3 Scenario analysis

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

Use of climate-related scenario analysis	Comment
Yes	

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

No

Water pricing

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

Does your company use an internal price on water?	Please explain
No, but we are currently exploring water valuation practices	Bayer has analyzed the possibility to introduce an internal price of water in 2017 as a possible tool to favor green investments. We have come to the conclusion that an internal price on water is currently not meaningful for Bayer. Rationale: Attributing financial value to the materiality of water risk is an emerging field. Upon make-or-buy assessments, internal water prices can bias the profitability of investments, thereby leading to unjustified outsourcing. In addition, due to specifics of our business, an internal price on water is not meaningful for Bayer and hence not a preferred tool to favor green investments.

W8 Targets

Targets and goals

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

Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
• Company-wide targets and goals • Activity level specific targets and/or goals • Site/facility specific targets and/or goals	• Targets are monitored at the corporate level • Goals are monitored at the corporate level	In the context of setting its non-financial group targets, Bayer assesses its water performance in a holistic way since 2013. This includes, for example, the analysis of water parameters such as water use, quality and discharge, the identification of sites threatened by water scarcity using the WBCSD Global Water Tool™ as well as the analysis of site-specific water projects and accompanying initiatives in the local communities where we are active. As water is a local issue, we recognized the need to handle water targets at a local level. Our sites therefore set SITE-SPECIFIC TARGETS that fit to their individual water situation. Besides, as a result of our corporate analysis, we also set a GROUP-WIDE TARGET to establish a water management at 100% of sites in water-scarce areas by 2017. This is to ensure that all of these sites have implemented water management processes and develop site-specific measures and targets. Using a monitoring tool developed by Bayer, the corporate CHS function annually analyzes the site data including a site-specific risk review and progress analysis. During the non-financial target setting process we also analyzed possibilities to set ACTIVITY SPECIFIC TARGETS or goals. Following individual functional analyses, dedicated company-wide supplier targets and goals were set related to our supplier engagement activities, focusing on improving their sustainability management including water. With the successful target attainment to have water management established at all sites in water-scarce areas by 2017 and facing the merger with Monsanto, Bayer plans to conduct a stakeholder survey and materiality analysis in 2018 to inform the development of new corporate water-related goals with a time horizon until 2030 to align them with the UN Sustainable Development Goals.

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

Target reference number	Category of target	Level	Primary motivation	Description of target	Quantitative metric	Baseline year	Start year	Target year	% achieved	Please explain
Target 1	Other, please specify: Water management	Company-wide	Water stewardship	As pointed out in our Global Water Position, Bayer aims at protecting water resources and improving water-use-efficiency both within the company and beyond. A very important step for Bayer regarding the systematic integration of water management into the business has been the definition of new Bayer targets in 2013, incl. the company-wide target of establishing a water management at 100% of sites in water-scarce areas by 2017.	Other, please specify: % of sites w/ water mgmt in scarce areas	2013	2013	2017	100	In 2017, our target to establish water management at all sites in water-scarce areas was achieved. As water is a local issue, our individual sites have set local targets. This is part of our water management goal defined by Bayer's global water position. To continue the systematic integration of water

				We used the WBCSD Global Water Tool™ (WRI indicator: annual renewable water supply) to identify all Bayer sites located in regions affected or threatened by water shortage. Of all identified sites, we analyzed the yearly site data pertaining to water use, quality and source, water-relevant risk management, strategies, targets and initiatives. We used this information to develop site-specific measures to introduce and improve water management.						management into business, Bayer will conduct a new stakeholder survey and materiality analysis in 2018. This will be used to define new Group targets.
Target 2	Supplier engagement	Company-wide	Water stewardship	As pointed out in our Global Water Position, Bayer aims at protecting water resources and improving water-use-efficiency both within the company and beyond. As part of our supplier management we have set the global Bayer Group target to evaluate 100% of strategically important suppliers by 2017. This target was defined to improve sustainability practices in our supply chain, to support us to define improvement measures together with our suppliers but also to help Bayer minimize risks beyond its own operations. This target is of high importance as Bayer wants to convey and ensure shared values with its key and strategic suppliers.	Other, please specify: % strategic suppliers evaluated	2013	2013	2017	100	Bayer's goal was to have evaluated all strategically important suppliers by the end of 2017. This group includes suppliers with a major influence on business in terms of, for example, procurement spend and long-term collaboration prospects (three to five years). All in all, 99.5% of these suppliers were evaluated in 2017, the missing coverage being due to fluctuations inherent in the business. The remaining evaluation has taken place in the first quarter of 2018. In comparison to the Annual Report, the number reported here was rounded to the next decimal. In addition, Bayer will conduct a new stakeholder survey and materiality analysis in 2018 to define new Group targets.
Target 3	Supplier engagement	Company-wide	Water stewardship	As pointed out in our Global Water Position, Bayer aims at protecting water resources and improving water-use-efficiency both within the company and beyond. As part of our supplier management we have set the global Bayer Group target to evaluate 100% of potentially high-risk suppliers with significant spend by 2020. This target was defined to improve sustainability practices in our supply chain, to support us to define improvement measures together with our suppliers but also to help Bayer minimize risks beyond its own operations. For Bayer, the minimization of reputational damage and costs as well as the risk of supply interruption plays an important role and emphasizes the importance of this goal.	Other: % high-risk suppliers evaluated	2013	2013	2020	93	By 2020, we aim to evaluate all those suppliers with a significant procurement spend (more than €1 million p.a.) that are regarded as potentially high-risk suppliers due to their combined country and category risk. Our target attainment as of 2017 was 93%. In the case of new suppliers of this type, Bayer reserves the right to review their sustainability performance through an online assessment or an on-site audit. Furthermore, Bayer will conduct a new stakeholder survey and materiality analysis in 2018 to define new Group targets.

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

Goal	Level	Motivation	Description of goal	Baseline year	Start year	End year	Progress
Other, please specify: Water pollution prevention	Company-wide	Risk mitigation	i) RATIONALE: To underline the commitments in Bayer's GLOBAL Water Position, Bayer defined COMPANY-WIDE pollution prevention objectives to match the scope of our Position: 1) We aim at setting global emission standards for wastewater and 2) at establishing one concept for the evaluation of Active Ingredients in manufacturing wastewater. ii) WHY IT IS IMPORTANT: With total discharges of 10,293 mega liters in 2017, water quality is very important for us. We aim to fulfill our company-wide goal by implementing local targets in accordance with the specific requirements of each division. E.g., the topic is very relevant in India due to the zero liquid discharge strategy of the government. Thus, our site has set local goals e.g. to improve the quality of effluent by reducing usage of acids and alkalis in the production process by 100 tons against 2016. iii) IMPLEMENTATION: We aim to minimize our emissions into wastewater. In 2017, most of our water emissions fell. We applied alternative means of disposing of product-containing wastewater such as incineration, distillation or chemical treatment. Bayer experts are working on the Pharmaceuticals in the Environment topic and are collaborating with other companies and organizations in external projects in this field, e.g. the Eco-Pharmaco-Stewardship initiative of European pharmaceutical associations. We have adopted the initiative's methods for the risk assessment of pharmaceutical traces in production wastewater as part of the concept	2013	2013	2019	i) INDICATORS: We track the progress in terms of concept development along predefined MILESTONES. We also set up global KPIs for both goals: 1) We establish KPIS ON EMISSION PARAMETERS, e.g. on nitrogen, TOC (total organic carbon) or phosphorous concentrations. 2) We measure the PERCENTAGE OF ACTIVE INGREDIENTS (AI) THAT HAVE PASSED THE RISK ASSESSMENT as key indicator to track the progress of the concept development. During the risk assessments we measure the AI CONCENTRATION LEVELS to decide on threshold values. ii) The THRESHOLD FOR SUCCESS is the successful establishment and company-wide implementation of the KPIs related to emissions standards and AI concentration levels. iii) PROGRESS: We have finalized the concept development and are currently writing the company-wide procedure to implement the concept. The next step for all sites is to conduct the AI risk assessment to decide on a threshold level.
Engagement with suppliers to help them improve water stewardship	Company-wide	Water Stewardship	RATIONALE: We have set the global goal to develop and establish a new sustainability standard for our supply base. According to Bayer's GLOBAL Water Position, Bayer aims at protecting water resources and improving water-use-efficiency both within the company AND BEYOND. With the Supplier Code of Conduct, Bayer aims at ensuring a sustainable supply chain management company-wide, which includes the responsible use of resources incl. water. WHY IT IS IMPORTANT: Together with the two supplier management targets, this goal was defined to strengthen our mutual understanding of how sustainability should be practiced in day-to-day business and to embed our sustainability expectations along the supply chain, to	2013	2013	2020	INDICATORS TO ASSESS PROGRESS: Implementation status. THRESHOLD FOR SUCCESS AND PROGRESS: This is not a goal which we can quantify, thus there are no quantitative indicators / thresholds in place. Being part of the TfS and PSCI initiative means being part of a community of industry leaders active in the field of sustainability. Together with them, Bayer is working on the objective to raise awareness on sustainability standards by initiating continuous improvements across sourcing markets and geographical areas, as well as promoting best practices. The sustainability standard for our suppliers is to be driven forward in tandem with relevant industry initiatives. We are currently working with Together for Sustainability (TfS) and

			support us to develop improvement measures together with our suppliers but also help Bayer minimize risks. The idea is to also raise the industry standard and develop the supply base to take it to a next level. IMPLEMENTATION: A new industry standard can only be achieved through considerable efforts of industry initiatives, which is why Bayer closely collaborates with several industry initiatives. Together with the industry initiatives Together for Sustainability (TfS) and the Pharmaceutical Supply Chain Initiative (PSCI), Bayer develops and continues to implement a program to assess, audit and improve sustainability practices within the global supply chains of the chemical industry. TfS aims to grow into a global standard for sustainable supply chains in the chemical industry.				the Pharmaceutical Supply Chain Initiative (PSCI).

W9 Linkages and tradeoffs

Managing linkages and tradeoffs

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?

Yes

(W9.1a) Describe the linkages or trade-offs and the related management policy or action.

Linkage/ trade-off	Type of linkage/tradeoff	Description of linkage/trade-off	Policy or action
Trade-off	Increased wastewater treatment	i) DESCRIPTION: One trade-off relates to water treatment technologies such as incineration. The higher the concentration of substances in water, the more energy-intensive the treatment. Different requirements regarding wastewater thresholds apply at our sites. The main energy consumption occurs in zero liquid discharge cases e.g. in India. The sites have programs to reduce emissions in water. Generated industrial waste is pumped to the ETP for treatment through a ground pipeline. Process changes to eliminate waste water streams include e.g. reductions in acids and alkalis by optimizing molar ratios with a reduction of 22 tons in 2017. ii) QUANTIFICATION: Ca. 700 kWh energy are needed to incinerate 1 ton of wastewater, e.g. in India with the governments zero liquid discharge strategy. iii) CHANGE IN 2017: Our energy consumption at one of our Indian sites increased by 15% since 2015. Apart from a general increase in production volume, this change can be attributed to wastewater treatment	i) ACTION: To some extent, we cannot prevent the trade-off as we need to conform to wastewater quality standards and legal requirements such as in the case of the Indian zero liquid discharge strategy. In many cases these are met through the application of complex and energy-intensive wastewater treatment technologies such as incineration as the safest approach to protect human health and the environment. At some sites, we use ozone oxidation or LOPROX® processes as a treatment technology. This process innovation reduces the incineration of water and results in fewer CO2 emissions. ii) INTEGRATION INTO STRATEGY: Our highest priority is to comply with legal requirements. In the case of the zero liquid discharge strategy in India, this means that we cannot pursue any actions to tackle the trade-off. However, as stated in our Sustainable Development Policy, we are committed to continually improving our ecological performance in accordance with the Global Charter Responsible Care. In our Bayer Water Position we also set principles concerning the responsible and sustainable use of water. We therefore evaluate each trade-off case by case in order to identify efficient treatment technologies, wherever possible. Appropriate risk assessments that include an evaluation of the trade-off wherever possible, will also be integrated in our new environmental protection Directive, which is currently under development.

W10 Verification

Verification of water information

(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?

Yes

(W10.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Total water withdrawals for all environmentally relevant sites worldwide	ISAE 3000	Total water withdrawals are described within Bayer's Integrated Annual Report, which is verified by the auditor Deloitte. Thus, they are included in the verification process.
W1 Current State	Water-related supplier engagement activities	ISAE 3000	Water-related supplier engagement activities are described within Bayer's Integrated Annual Report, which is verified by the auditor Deloitte. Thus, they are included in the verification process.
W1 Current State	Total recycled water for all environmentally relevant sites worldwide	ISAE 3000	The total amount of recycled water is included in Bayer's Integrated Annual Report, which is verified by the auditor Deloitte. Thus, it is included in the verification process.
W8. Targets	Water targets	ISAE 3000	Water targets are included in Bayer's Integrated Annual Report, which is verified by the auditor Deloitte. Thus, they are included in the verification process.
W8. Targets	Monitoring of water targets	ISAE 3000	The monitoring of water targets is included in Bayer's Integrated Annual Report, which is verified by the auditor Deloitte. Thus, they are included in the verification process.

W11 Signoff

Signoff

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

Further information for W2.2:

To identify and monitor water-related environmental or compliance issues, we reviewed answers provided by our sites for Bayer's Annual Report regarding the corresponding GRI indicators for environmental compliance as well as their answers in internal tools such as BaySIS, where we report compliance-related incidents such as "environmental incidents" and "transport incidents" with potential environmental impact. "Environmental incidents" are defined as incidents in the course of our business activities that result in the release of substances into the environment. Factors that determine whether there is a reporting obligation include, in particular, the nature and quantity of the substance, the amount of damage caused or any consequences for nearby residents. In accordance with our internal voluntary commitment, we report any leakage of substances with a high hazard potential from a quantity of 100 kg upward. "Transport incidents" include accidents that cause personal injury, significant damage to property, environmental impact through the release of substances, or leakage of hazardous materials. We record transport incidents using defined criteria. Assessment is based on the leaked load, graded according to the volume and hazardous material class, personal injury and blocked transportation routes. We take into account both our own chemical transport movements and those we commission and pay third parties to perform on our behalf. Based on this review, no relevant compliance incident related to water was identified. We further discussed this result with our HSE managers who confirmed the finding above.

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

Job title	Corresponding job category
Bayer AG Board Member for Human Resources, Technology and Sustainability	Director on board

Water Action Hub

(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

Yes