

**Module: Introduction****Page: W0. Introduction****W0.1****Introduction**

**Please give a general description and introduction to your organization.**

The Novartis Mission:

We want to discover, develop and successfully market innovative products to prevent and cure diseases, to ease suffering and to enhance the quality of life. We also want to provide a shareholder return that reflects outstanding performance and to adequately reward those who invest ideas and work in our company.

The Novartis Healthcare Portfolio:

We believe our portfolio best meets the varied and often complex needs of patients and societies. Novartis is positioned to lead in innovation, partner with others and offer solutions to patients across a broad healthcare spectrum. In addition, a diverse portfolio reduces financial risk, bringing greater value to those who invest in our company. Our unique portfolio focuses on science-based healthcare sectors that are growing rapidly, reward innovation, and enhance the lives of patients.

Novartis is the only company with leading positions in each of these key areas:

- Pharmaceuticals: innovative patent-protected medicines
- Alcon: global leader in eye care with surgical, ophthalmology and consumer products
- Sandoz: affordable, high-quality generic medicines and biosimilars
- Consumer Health: self-medication products and treatments for animals
- Vaccines and Diagnostics: vaccines and diagnostic tools to protect against life-threatening diseases

Since Novartis was created in 1996 - when only 45% of net sales came from healthcare - the company has shifted focus to fast-growing areas of healthcare. Our strategy is to provide healthcare solutions that address the evolving needs of patients and societies worldwide.

Novartis People:

With more than 115 000 associates in 140 countries worldwide. Novartis associates share a vision of a better today and tomorrow for patients – a vision that drives our growth and success. The greatest job satisfaction for our associates is the knowledge that they improve the quality of life for patients with increasing precision and efficiency through breakthrough science and innovation. Our performance-oriented culture and responsible approach attract top experts in all areas – research and development, marketing and sales, finance and administration. Our talented associates have made us a global leader in healthcare. Novartis is committed to rewarding the people who invest ideas and work in our company.

Environmental and Social Sustainability:

Novartis believes that careful stewardship of natural resources, particularly tight control of greenhouse gas emissions and energy efficiency, is not only important for the Group but critical for society and future generations.

Social and environmental sustainability is an integral part of our strategy. Novartis strives to make efficient use of natural resources and to minimize the environmental impacts of its activities and products over their entire life cycle. Health, safety and environmental impacts are assessed to ensure that the benefits of

new products, processes and technologies outweigh remaining risks.

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**W0.2****Reporting year**

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

Period for which data is reported
Wed 01 Jan 2014 - Wed 31 Dec 2014

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**W0.3****Reporting boundary**

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

Companies, entities or groups over which operational control is exercised

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**W0.4****Exclusions**

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

No

W0.4a

**Exclusions**

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion

**Further Information**

**Module: Current State**

**Page: W1. Context**

W1.1

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

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital for operations	Important	While pharmaceutical manufacturing is not very water intensive, access to good quality freshwater is vital for production processes. Where not sufficient, water is additionally cleaned or even sterilized depending on the required use in the process or in liquid products, such as injectables or eye care products. A number of Novartis sites (e.g. in Switzerland, Austria, India or the US) use large quantities of water to cool their production processes, their data centers or for comfort cooling. At these sites quantity and temperature of the water is crucial rather than quality. If not sufficiently available, mechanical chilling could replace water cooling, however, would increase energy costs &

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
			GHG emissions. Access to clean water is also important at all our sites for the health of our workforce who use sanitary water for their hygiene. Availability of freshwater along the supply chain is also important to ensure the quality of materials and availability of energy.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	Recycled or reclaimed water is used at several Novartis sites located in areas of water scarcity, such as at our Vision care site in Johns Creek, Georgia, US or our pharmaceutical production sites in Navi Mumbai, India. Overall water recycling is 23.1% compared to total water used. An assessment of the materials supply chain has been conducted with respect to water footprint (TruCost 2011) to determine the importance of water on the materials supply chain. This showed that the energy supply chain in particular is water intensive.

## W1.2

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

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	Total water input volumes and volumes by sources are reported on a quarterly basis by all production, research & development and major administration facilities under Novartis operational control.
Water withdrawals- volume by sources	76-100	The following water input by source indicators (where relevant) are reported quarterly, together with the total volumes as stated above: - Water purchased from external suppliers - Water drawn from aquatic environment - Water collected from rain - Water input as ingredient of raw materials - Water input from other sources
Water discharges- total volumes	76-100	Total water output (discharge) volumes and volumes by destination are reported on a quarterly basis by all production, research & development and major administration facilities under Novartis operational control.
Water discharges- volume	76-100	The following water output (discharge) by source indicators (where relevant) are reported quarterly,

Water aspect	% of sites/facilities/operations	Please explain
by destination		together with the total volumes as stated above: - Water returned, released directly to aquatic environment - Water returned, discharged via treatment - Water lost, evaporated from cooling / heating systems - Water output as product ingredient - Water output to other destination
Water discharges- volume by treatment method	76-100	Water discharge by treatment method indicators, in addition to the ones listed in the previous line, are not collected and reported on a global level. These are only considered at local level where relevant.
Water discharge quality data- quality by standard effluent parameters	76-100	Water quality data is reported on a yearly basis by all production and research & development facilities under Novartis operational control. Water quality data is not collected from administration sites as this data is considered not relevant compared to the data from manufacturing and R&D sites. The following water quality indicators are reported (where relevant): - Total Suspended Solids (TSS) Load - Chemical Oxygen Demand (COD) Load - Nitrogen Load - Phosphate Load All manufacturing facilities also monitor effluent load of active pharmaceutical ingredients (APIs) in their water streams, using a risk-based approach.
Water consumption- total volume	76-100	Total volume of water consumption is reported on a quarterly basis by all production, research & development and major administration facilities under Novartis operational control. The following water use indicators are reported (where relevant): - Water used for cooling (Cooling Water) - Water used for other non-contact purposes - Water used in processes and for washing - Water used for sanitary purpose (Sanitary Water) - Water used in boilers - Water used for other purposes - Water re-used / recycled
Facilities providing fully-functioning WASH services for all workers	76-100	Due to the nature of our operations, where cleanliness and sterile working conditions are extremely important, we ensure that fresh water is available for cleaning, washing, sanitary services and for drinking purposes at all facilities under Novartis operational control. We do not explicitly expect facilities to confirm this within our reporting systems.

**W1.2a**

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

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	0	Not applicable	Novartis reports the quantities of water abstracted from the aquatic environment, but not distinguish between surface water and groundwater. The majority of water abstracted from the environment is from groundwater sources or from river side-beds.
Brackish surface water/seawater	0	Not applicable	Novartis does not collect data for this specific source.
Rainwater	64	Higher	Rainwater is collected and stored for e.g. irrigation or use of lower requirements such as sanitary flushing.
Groundwater - renewable	64258	Lower	Novartis reports the quantities of water abstracted from the aquatic environment, but not distinguish between surface water and groundwater. The majority of water abstracted from the environment is from groundwater sources or from river side-beds. Novartis does not differentiate between renewable and non-renewable groundwater sources.
Groundwater - non-renewable	0	Not applicable	Novartis reports the quantities of water abstracted from the aquatic environment, but not distinguish between surface water and groundwater. The majority of water abstracted from the environment is from groundwater sources or from river side-beds. We do not differentiate between renewable and non-renewable groundwater sources.
Produced/process water	71	Higher	Includes purchased process water and water from "other sources"
Municipal supply	31246	Lower	At many places, in particular at all small administrative sites, Novartis does not operate own wells, but uses water from municipal supply.
Wastewater from another organization	0	Not applicable	Novartis does not collect data for this specific source.
Total	95638	Lower	Cooling water (primarily freshwater from groundwater sources or river-beds) can be withdrawn in large quantities and is returned in similar volumes to its original source nearby with negligible losses or variation in quality.

**W1.2b**

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

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface water	75181	Lower	Novartis reports the quantities of water discharged to the aquatic environment, but not the exact destination. While some quantities may be discharged back to groundwater sources, it is assumed that the majority of non-contaminated cooling water is discharged to fresh surface water bodies.
Brackish surface water/seawater	0		Novartis does not collect data for this specific destination.
Groundwater	0		Novartis reports the quantities of water discharged to the aquatic environment, but not the exact destination. While some quantities may be discharged back to groundwater sources, it is assumed that the majority of non-contaminated cooling water is discharged to fresh surface water bodies.
Municipal treatment plant	17384	Lower	At many places, in particular at all small administrative sites, Novartis does not operate own treatment plants, but uses municipal plants for waste water treatment.
Total	92565	Lower	The total quantity of water discharges does not include additional water losses from Novartis facilities due to evaporation from heating and cooling systems (1349ML), water in products (122ML) and irrigation (951ML).

#### W1.2c

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

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
19807	Lower	The quantity reported here includes the total volume of water sent to treatment (17384ML) and additional water losses from Novartis facilities due to evaporation from heating and cooling systems (1349ML), water in products

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
		(122ML) and irrigation (951ML). The vast majority of water used at Novartis is for cooling purposes (75181ML) and is returned uncontaminated to the aquatic environment.

**W1.3**

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

No

**W1.3a**

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

Proportion of suppliers %	Total procurement spend %	Rationale for this coverage

**W1.3b**

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

Primary reason	Please explain
Reporting implementation in progress	A basic supply chain analysis on water footprint was conducted in 2011 to assess key areas of relevance. We recognize that water abstracted in the supply chain is important, and have considered a new water abstraction and water risk study in 2015. Water-related risks (scarcity and water treatment / effluent risks) are a regular part of HSE audits conducted at supplier sites. The supplier audit concept that Novartis is using follows a risk-based approach, focusing on high risk countries (i.e. India, China, Latin America) and high risk sectors (i.e. chemicals, active ingredients, packaging materials).

**W1.4**

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

No

**W1.4a**

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

Country	River basin	Impact indicator	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy

**W1.4b**

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

Primary reason	Future plans
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**Further Information**

**Module: Risk Assessment**

**Page: W2. Procedures and Requirements**

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**W2.1**

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

Water risks are assessed

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**W2.2**

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

Risk assessment procedure	Coverage	Scale	Please explain
Water risk assessment undertaken independently of other risk assessments	Direct operations	All facilities	Novartis evaluates water usage at all sites each year using the WBCSD Global Water Tool. The focus of our evaluation is primarily on water availability rather than water quality, as the majority of our manufacturing sites have water purification equipment to address water quality issues. The top-ten sites located in areas of future potential water scarcity or extreme scarcity by water usage were required in 2013 to undertake a water audit, determine their water flows, evaluated water saving opportunities, and

Risk assessment procedure	Coverage	Scale	Please explain
			to issue a water reduction target. In addition, access to water must be incorporated into the sites risk portfolio if relevant. In 2014 the top-10 water scarce sites have reported water savings of 22% and 8 additional sites were audited and/or have applied water saving measures.

### W2.3

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

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Annually	River basin	>6 years	Using the water WRI scarcity indicator on "water availability per capita in 2025" to assess each facilities level of water scarcity considers future developments for the water shed in which these facilities are located.
Annually	River basin	>6 years	Access to water is included in the annually updated risk portfolios of sites located in water scarce or extreme scarce areas.

### W2.4

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

Yes, evaluated over the next 10 years

### W2.4a

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

Water risks from water scarcity was not considered a material risk on the success of Novartis' growth strategy, due to the fact that respective consequences are limited to few individual sites located in water scarce areas, the currently still very low financial implications related to water risks and the possibilities to avoid/mitigate these risks by alternative ways (e.g. cooling by mechanical chilling instead of water cooling).

W2.4b

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

Main reason	Current plans	Timeframe until evaluation	Comment
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W2.5

**Please state the methods used to assess water risks**

Method	Please explain how these methods are used in your risk assessment
Life Cycle Assessment WBCSD Global Water Tool WRI water stress definition	Life-cycle assessment considering water impacts have been undertaken on an ad hoc basis for various Novartis products and in an overall material supply chain study (2011). Access to water is included on the annually updated risk portfolios of sites located in water scarce or extreme scarce locations. To assess its risks related to water scarcity Novartis is using the WBCSD Global Water Tool on a yearly basis. Using the water WRI scarcity indicator on "water availability per capita in 2025" to assess water risks at individual sites allows to consider future developments.

W2.6

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

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included for some facilities/suppliers	The level of water stress is determined based on the WRI water stress definition. Access to water is included on the risk portfolios of sites located in water scarce or extreme scarce locations.
Current water regulatory frameworks and tariffs at a local level	Relevant, included for some facilities/suppliers	Regulatory frameworks are considered in the risk portfolios of sites located in water scarce or extreme scarce locations.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included for some facilities/suppliers	Stakeholder conflicts, if any, are considered in the risk portfolios of sites located in water scarce or extreme scarce locations.
Current implications of water on your key commodities/raw materials	Relevant, not yet included	A basic supply chain analysis on water footprint was conducted in 2011 to assess key areas of relevance.
Current status of ecosystems and habitats at a local level	Relevant, included for some facilities/suppliers	Aspects of ecosystems and habitats (e.g. Humber sanctuary for our Chemical Operations site in Grimsby) are considered if relevant.
Current river basin management plans	Relevant, included for some facilities/suppliers	Current river basin management plans are considered at some Novartis locations - particularly those in Southern California, India, Turkey and Spain.
Current access to fully-functioning WASH services for all employees	Not relevant, explanation provided	Due to the nature of our operations, where cleanliness and sterile working conditions are extremely important, we ensure that fresh water is available for cleaning, washing, sanitary services and for drinking purposes at all facilities under Novartis operational control. We do not explicitly expect facilities to confirm this within our reporting systems.
Estimates of future changes in water availability at a local level	Relevant, included for some facilities/suppliers	Using the water WRI scarcity indicator on "water availability per capita in 2025" considers future developments. Access to water is included on the risk portfolios of sites located in water scarce or extreme scarce locations.
Estimates of future potential regulatory changes at a local level	Relevant, included for some facilities/suppliers	Using the water WRI scarcity indicator on "water availability per capita in 2025" considers future developments. Access to water is included on the risk portfolios of sites located in water scarce or extreme scarce locations.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included for some facilities/suppliers	Using the water WRI scarcity indicator on "water availability per capita in 2025" considers future developments. Access to water is included on the risk portfolios of sites located in water scarce or extreme scarce locations.
Estimates of future implications of water on your key commodities/raw materials	Relevant, included for some facilities/suppliers	A basic supply chain analysis on water footprint was conducted to assess key areas of relevance. However, this can only provide limited information on future developments.

Issues	Choose option	Please explain
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Not relevant, explanation provided	Aspects of ecosystems and habitats (e.g. Humber sanctuary) are considered if relevant. However, this can only provide limited information on future developments.
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included for some facilities/suppliers	Local water availability assessments are undertaken at several Novartis facilities. Such assessments are particularly important at anti-infective manufacturing facilities where vast quantities of cooling water are used in order to save energy.
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included for some facilities/suppliers	Local water cost assessments are undertaken at several Novartis facilities. Such assessments are particularly important at anti-infective manufacturing facilities where vast quantities of cooling water are used in order to save energy. Due to the quantities of water involved, any increases in water charges could affect the economic viability of the facilities.
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included for some facilities/suppliers	Stakeholder conflicts concerning water resources at assessed at a local level at some facilities; particularly the anti-infective manufacturing facilities.
Scenario analysis of implications of water on your key commodities/raw materials	Relevant, not yet included	A basic supply chain analysis on water footprint was conducted to assess key areas of relevance.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Not relevant, explanation provided	Aspects of ecosystems and habitats (e.g. Humber sanctuary) are considered if relevant. However, this can only provide limited information on future developments.
Other	Not evaluated	

## W2.7

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

Stakeholder	Choose option	Please explain
Customers	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water saving activities and related water risks in its annual non-financial reporting (sustainability reporting) and in local environmental reports.
Employees	Relevant, included for	Associates can contribute to water efficiency through their own daily habits (e.g. on the use of sanitary

Stakeholder	Choose option	Please explain
	some facilities/suppliers	water). Programs to engage associates in water savings are implemented at water scarce sites such as in Batam, Indonesia; Navi Mumbai, India; and La Jolla, California.
Investors	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water saving activities and related water risks in its annual non-financial reporting (sustainability reporting) and in local environmental reports.
Local communities	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water saving activities and related water risks in its annual non-financial reporting (sustainability reporting) and in local environmental reports.
NGOs	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water saving activities and related water risks in its annual non-financial reporting (sustainability reporting) and in local environmental reports.
Other water users at a local level	Relevant, included for some facilities/suppliers	At its water scarce location in Jamshoro, Pakistan, for example, Novartis provides water from the factory to the local community.
Regulators	Relevant, included for some facilities/suppliers	Regulators may be factored into water risk assessments undertaken at some Novartis manufacturing facilities.
River basin management authorities	Relevant, included for some facilities/suppliers	River basin management authorities may be factored into water risk assessments undertaken at some Novartis manufacturing facilities.
Statutory special interest groups at a local level	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water savings activities in its annual non-financial reporting (sustainability reporting) and its local environmental reports (e.g. EMAS Reports).
Suppliers	Relevant, included	An assessment of the supply chain has been conducted to determine the relevance of the water footprint of the materials supply chain.
Water utilities/suppliers at a local level	Relevant, included for some facilities/suppliers	Novartis informs stakeholders on its water savings activities in its annual non-financial reporting (sustainability reporting) and its local environmental reports (e.g. EMAS Reports).
Other	Not evaluated	

## W2.8

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

Primary reason	Please explain

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**Further Information****Module: Implications****Page: W3. Water Risks**

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**W3.1**

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

No

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**W3.2**

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

Large quantities of water are used at several Novartis sites in Europe to cool buildings or production processes. Novartis encourages the use of water for cooling at these sites where water is abundant, no contamination is possible and water can be returned to the aquatic environment without treatment, because it saves significant quantities of energy and associated GHG emissions.

In the unlikely event that the fermentation plants in Italy, Slovenia, Spain and Austria could no longer abstract cooling water from the aquatic environment, the use of mechanical chillers would be required to cool the production processes, which would result in significantly higher operating costs (estimated between 10 and 20%) through increased energy usage and significantly higher GHG emissions (also between 10 and 20%). This would be considered substantive change to the organization.

The unavailability of water at a site located in a water stressed or scarce area would be less substantive as production could be relatively easily shifted to another Novartis site located in an area of water abundance (e.g. from Spain or Italy to Austria) in the course of restructuring production capacities.

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**W3.2a**

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

Country	River basin	Number of facilities	Proportion of total operations exposed to risk within river basin (%)	Comment
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**W3.2b**

Please provide the proportion of financial value that could be affected at river basin level associated with the facilities listed in W3.2a

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected within the river basin	Comment
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**W3.2c**

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

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

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

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

W3.2e

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

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	Risks exist and are considered at operating locations with scarce or extreme scarce water availability. However, they are financially not material. Total group water costs for 2014 were USD 53 million, i.e. below 0.5% of operating cost. Water costs are monitored on annual basis from all sites. Several sites may additionally face water scarcity in the mid-to long-term future due to expected climate change impacts. This could increase water costs, which are currently minimal (<0.5% of total operational costs).

W3.2f

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

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	An assessment of the supply chain has been conducted to determine the relevance of the water footprinting of the materials supply chain. Sectors such as energy, chemicals and pulp & paper were identified as most exposed to water risks. New more specific assessment of water risks are being considered and will be conducted in 2015 or 2016. The impact of water related risks on the supply chain may influence cost of materials and cost of energy in the medium- to long-term future. An estimated 10% increase in overall energy cost would amount to USD 30-40 million for the entire Novartis Group, which currently has total energy cost of USD 387 million. Water risk related energy cost increase would however only impact water scarce areas and thus be less critical.

W3.2g

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

Primary reason	Future plans
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Further Information

Page: W4. Water Opportunities

W4.1

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

Yes

W4.1a

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

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Please explain
Company-wide	Increased brand value Improved community relations Increased shareholder value Improved water efficiency Social licence to operate	Potential business opportunities are reduced water and energy costs, improved risk management strategies for managing water usage, easier compliance with potentially stricter water legislation, increasing investments from environmentally conscious investors and increased appreciation from current and future Novartis personnel on environmental achievements at Novartis.	4-6 years	Novartis strives to be among the most admired companies in all aspects of our operations. The Novartis Annual Report and Corporate Responsibility Report are two means by which we inform internal and external stakeholders of our water strategy and performance. In addition, local sustainability reports containing details of local water management initiatives are also produced at many sites or organizational units. Novartis also provides additional data directly to the sustainable investment community via yearly surveys.
India	Cost savings Improved community relations Improved water efficiency Social licence to operate	Since 2006, between 2500 and 4500 m3 of rainwater were collected every year during monsoon seasons at our production facilities in Navi Mumbai, India, representing between 3% and 8% of the sites' total water consumption. Additionally, the sites recycle between 17% and 28% of its on-site treated water effluents for gardening. The water savings program, including water audit, water flowchart, setting a water savings target and implementing water saving projects was implemented in the years between 2006 and 2014. Additional measures are considered in future years.	1-3 years	Novartis-Sandoz manufacturing sites in Navi Mumbai, India are located in a water scarce area and thus are obliged to save water where possible to maintain their good reputation and license to operate. rain water harvesting and water recycling are therefore part of the sustainability programs of the respective sites.
Turkey	Cost savings Improved water efficiency Social licence to operate	Potable water savings: Potable water used at the Sandoz Final Dosage Form (FDF) production site Gebze 2 in Turkey is pre-treated using an ozone sanitization system. In an effort to save water, the site facility team is now collecting drains from its reverse osmosis system, backwashing and sampling waters in a separate tank and bringing them back for reuse to the potable water pre-treatment process.	1-3 years	The project saves 7 800 cubic meters or 12% of the total amount of water used at the site annually, totaling USD 35 000 in savings.

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Please explain
United States of America	Climate change adaptation Cost savings Improved water efficiency Social licence to operate	Saving water by retrofitting irrigation nozzles: In 2014, at the Alcon headquarters in Fort Worth, Texas, the facility management team changed the spray system to irrigate gardens and green areas at the site to precision irrigation nozzles.	1-3 years	So far, a total of 9 000 nozzles with a reduced flow rate of 30% have been installed on four irrigation zones on the campus, resulting in an annual saving of 30 000 cubic meters of water or 2% of the site's total water usage. The investment in the new system will be paid back in less than 2 years.

#### W4.1b

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

Primary reason	Please explain
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#### W4.1c

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

Primary reason	Please explain
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**Further Information**

**Module: Accounting**

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

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W5.1

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

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain the change if substantive
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**Further Information**

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

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W5.1a

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

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
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**W5.2**

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

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain the change if substantive
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**W5.2a**

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

Facility reference number	Fresh surface water	Municipal Treatment Plant	Seawater	Groundwater	Comment
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**W5.3**

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

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain the change if substantive
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**W5.4**

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

Water aspect	% verification	What standard and methodology was used?
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**Further Information**

**Module: Response**

**Page: W6. Governance and Strategy**

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**W6.1**

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

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Individual/Sub-set of the Board or other committee appointed by the Board	Scheduled-quarterly	Health, Safety Environment Steering Committee (HSE SteCom) is responsible for authorizing & sponsoring environmental strategy including water. The committee is chaired by the Head of Corporate Responsibility who reports directly to the CEO. HSE SteCom meets 3 times a year and comprises the executive heads of all Novartis Divisions and the head Corporate Health Safety Environment (CHSE). The Novartis water strategy is managed by the Head Environment & Energy within CHSE. Performance on environmentally relevant aspects, including water use and savings program are part of management reporting on quarterly basis.

**W6.2**

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

No

**W6.2a**

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

Influence of water on business strategy	Please explain
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**W6.2b**

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

Influence of water on business strategy	Please explain
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**W6.2c**

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

Primary reason	Please explain
Water does not pose a substantive risk to the business strategy	Access to water at some sites located in water scarce or extreme scarce areas is a local business risk; however, production or research operation at these sites could relatively easily be transferred to other Novartis locations if necessary. Water costs (USD 53 million for the entire Group or <0.5% of operating costs) are marginal compared to other costs factors. Water consumption and water costs are monitored regularly and are included in the regular reporting to management on HSE issues.

**W6.3**

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

Yes

**W6.3a**

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

Content	Please explain why this content is included
Publicly available Company-wide Performance standards for direct operations Incorporated within group environmental, sustainability or EHS policy	The efficient use and conservation of water, as well as minimizing emissions to water, are explicitly mentioned in the Novartis HSE Policy, which is available to the public: <a href="http://www.novartis.com/downloads/corporate-responsibility/resources/HSE-Policy_March-1-2014_English.pdf">http://www.novartis.com/downloads/corporate-responsibility/resources/HSE-Policy_March-1-2014_English.pdf</a>

**W6.4**

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

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
0	-5.7	Operational costs for water supply and treatment decrease by 5.7% in 2014 compared to 2013. The reduction is a result of many small changes at multiple locations, primarily at the water scarce sites, who have implemented water savings programs. The top-10 water impact sites of Novartis, chosen for the water savings program in 2014 have implemented water saving projects for 22% of their 2010 baseline year water impact.

**Further Information**

**W7.1**

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

Yes, not significant

**W7.1a**

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

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
Holly Springs, North Carolina, USA	Fine	Conditions outlined in the site's wastewater permit were violated due to an omitted sample in 2013. This resulted in a one-time fine levied by the control authority.	1	145	USD(\$)	Procedures have been put in place to ensure all water samples are submitted as require by the local regulator.
Spartan in Johannesburg, South Africa	Fine	Wastewater discharge non-compliance: pH effluent water limit 10 - 10.1 was measured.	1	249	USD(\$)	Procedures have been initiated to regularly monitor effluent parameters and to correct pH more frequently.
Changshu, China	Fine	Fine is issued by local EPB due to COD being over the limit for discharged waste water.	1	17605	USD(\$)	The site has implemented the following measures in agreement with the local authorities: 1. Improve equipment reliability, ensure that back-up pumps are available 2. Improve operating capability of WWTP operators, deliver training with specific topic of quick response in terms of equipment failure

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
						3. Review and improve current SOP in terms of system upset operation, response and recovery 4.Keep regular work contact and maintain communication with regulators

**W7.1b**

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

2.3%

**W7.1c**

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

Impact as % of OPEX	Comparison to last year
0.00	No change

**Further Information**

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**W8.1**

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

Yes, targets and goals

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**W8.1a**

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

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
Other: Water savings relative to water footprint at top-10 sites with highest water footprint and water scarcity	Water stewardship	Implement water saving programs at the top-10 sites with highest water footprint and water scarcity: Each site has set a min. 10% water saving target.	Other: % Water savings relative to water footprint (water that needs cleaning and water lost)	2010	2015	100%
Other: Apply water management program	Water stewardship	Implement water management measures (water audit, water flowchart, setting savings target and implement water saving projects) at 10 additional water scarce sites	Other: number of sites who were included in the target	2013	2014	80%

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**W8.1b**

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

Goal	Motivation	Description of goal	Progress
Other: Active water management program at water scarce sites	Water stewardship	Conduct water audits, determine water flows, evaluate and implement water saving opportunities	Several sites have implemented water savings and water recycling projects and achieved substantial water savings. (Examples: Alcon Batam, Indonesia reduced water usage by 12%; Sandoz Turbhe in India reduced water usage by 27% and Sandoz Gebze 1 in Turkey reduced water usage by 42% between the years 2010 and 2014).

W8.1c

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

Further Information

**Module: Linkages/Tradeoff**

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

W9.1

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

Yes

W9.1a

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

Environmental issues	Linkage or trade-off	Policy or action
Greenhouse Gas Emissions	Trade-off	Cooling water usage: Several Novartis sites in Austria, Italy, Spain and Slovenia use large quantities of water from river side banks to cool their production processes and additional sites in e.g. Switzerland use cooling water from a nearby river for comfort cooling of offices and groundwater to cool data centers. At these sites the quantity and temperature of the water is crucial rather than the quality. Mechanical chillers could provide cooling instead of using free cooling with water and thus reduce the use of cooling water; however, this would increase energy use, energy costs and energy-related GHG emissions significantly. We estimate that energy and related GHG emissions would increase be 20-30% at these sites, if water could not be available anymore for cooling.
Energy	Linkage	New water treatment technology: In 2014, a new wastewater treatment technology based on fine-bubble diffused aeration was installed at the chemical synthesis site for Active Pharmaceutical Ingredients (APIs) of Novartis Pharma in Ringaskiddy, Ireland. The new technology is more energy efficient and more effective in the decomposition of pollutants. This has led to significant reductions in the emissions of key pollutant parameters: Total Suspended Solids, Chemical and Biochemical Oxygen Demand and Total Nitrogen were reduced by 62 to 88%. The new technology can be readily retrofitted to other facilities that use an aerobic wastewater treatment process (incorporating activated sludge) and can be scaled in size for multiple plants and various capacities. The new technology also offers the potential to reduce discharges of residual APIs to the environment. Many of these substances adsorb onto activated sludge – more of which is now retained in the wastewater treatment plant to be subsequently removed as a solid for incineration.

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**Further Information**

**Module: Sign Off**

**Page: Sign Off**

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**W10.1**

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

Name	Job title	Corresponding job category
Dr. Markus Lehni	Novartis Group Global Head Environment and Energy	Environment/Sustainability manager

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#### W10.2

**Addressing water risks effectively, in many instances, requires collective action. CDP would like to support you in finding potential partners that are also working to tackle water challenges in the river basins you report against. Please select if your organization would like CDP to transfer your publicly disclosed risk and impact drivers and response strategy data from questions W1.4a, W3.2b, W3.2c, W4.1a and W8.1b to the United Nations Global Compact Water Action Hub.**

Yes

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#### Further Information

CDP