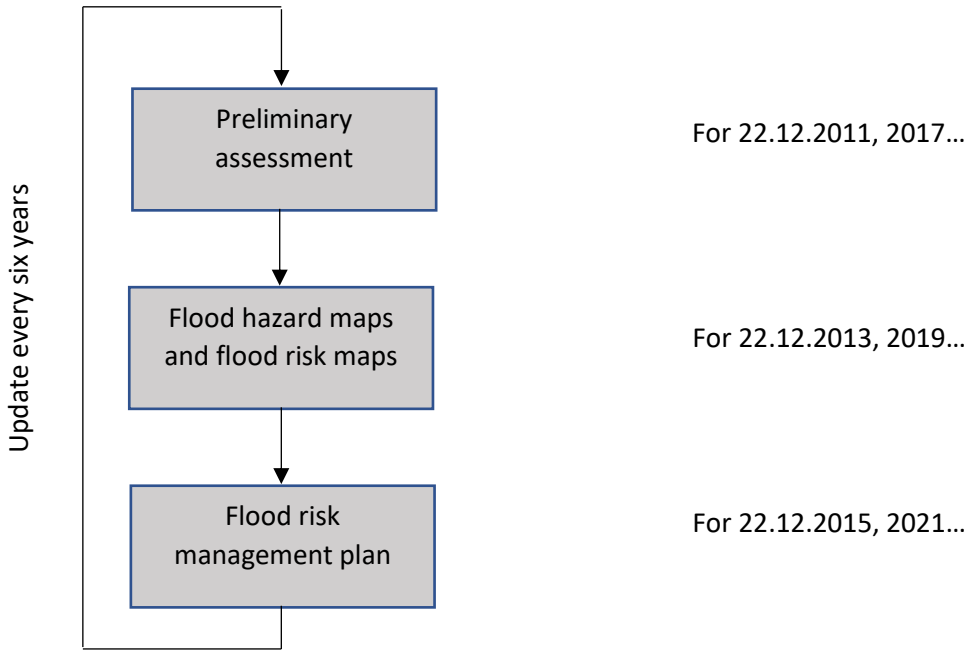
International Meuse Commission

Flood Risk Management Directive: Report on the exchange of information prior to the review and, if necessary, the updating of flood risk maps in the international Meuse River basin district

Foreword

In accordance with Article 14 of Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks (Flood Risk Management Directive - FRD), the **States and Regions, Parties to the International Meuse Commission** have carried out an assessment and updated the report of 19.12.2013 "Flood risk maps - Report on the prior exchange of information" (**Minond/13-6def**).

Updated every six years:



In accordance with Article 14 of the FRD, the **States and Regions** have reviewed and updated **the areas of potential significant flood risk identified under Art. 5 of the FRD** by the end of 2018. **The IMC report on the review and, if necessary, update of the preliminary assessment was published on 21.03.2019. The international coordination of the selected areas in the international Meuse district is documented in the report Minond/18-9def**. For these areas, the States and Regions must, in accordance with Article 14 of the FRD, review or update flood hazard maps and flood risk maps by 22 December 2019 in accordance with Article 6 of the FRD.

The FRD provides in Article 6(2) that for areas identified under Article 5 which are shared by several Member States, the preparation of these maps must be "*subject to prior exchange of information between the Member States concerned*".

The updated report includes:

- The list of rivers that has been updated in accordance with the IMC **Minond/18-9def** report including the scenarios used on both sides of the border
- A short description per State or Region indicating which sources are considered, which scenarios have been selected or whether climate change has been taken into account
- The updated map

Regarding the IMC, the exchange of information within the framework of the implementation of the FRD was carried out on rivers crossing the administrative border between two Member States or Regions or whose longitudinal axis constitutes a border between two Member States or Regions of the Meuse IRBD.

The exchange of information required by article 6 paragraph 2 of the FRD within the framework of the update of the flood hazard maps and the flood risk maps foreseen by article 14 paragraph 2 of the FRD was carried out within the Meuse IRBD according to the procedure described in figures n°1 and 2.

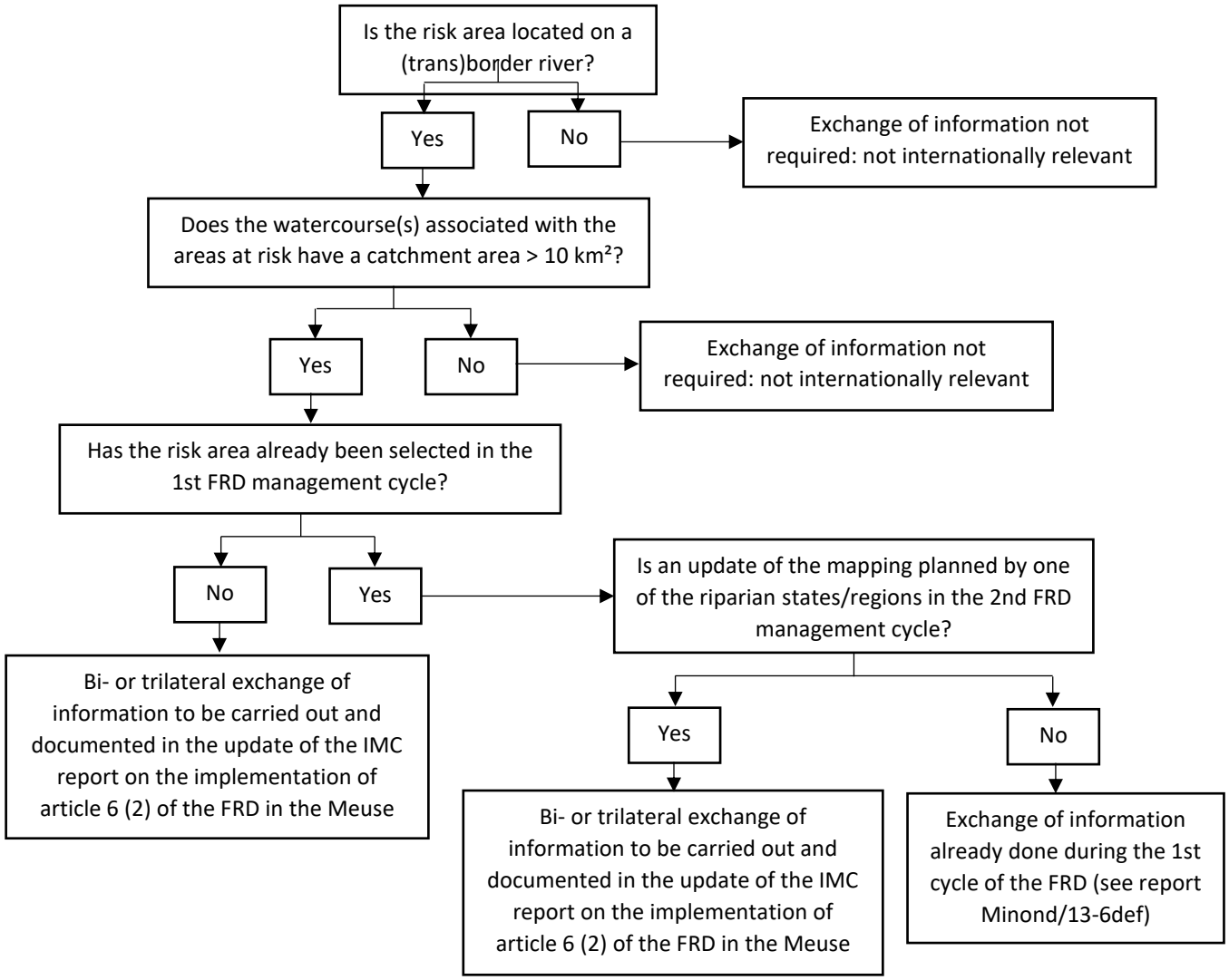


Figure 1: Decision-making structure for the exchange of information in the international Meuse River basin district under article 6 paragraph 2 of the FRD

The Contracting Parties to the IMC, are solely responsible for reporting to the European Commission on the implementation of the FRD. In this context, the IMC provides a platform for the exchange of information and the coordination required at the level of the Meuse IRBD. It provides the States and Regions with jointly developed products (reports, maps, etc.) for the implementation of the FRD.

To this end, this summary report, the overview map (**Minond/19-22**) and the table (**Minond/19-9**) will be used by the States/Regions to document the prior exchange of information under Article 6 Paragraph 2 of the FRD, which was carried out bilaterally between the parties concerned **at the level of the (trans)border watercourses subject to flood hazard and flood risk mapping**.

Figure 2 summarises the work sharing within the Meuse IRBD for the preliminary exchange of information in accordance with Article 6 paragraph 2 of the FRD and the preparation of this report.

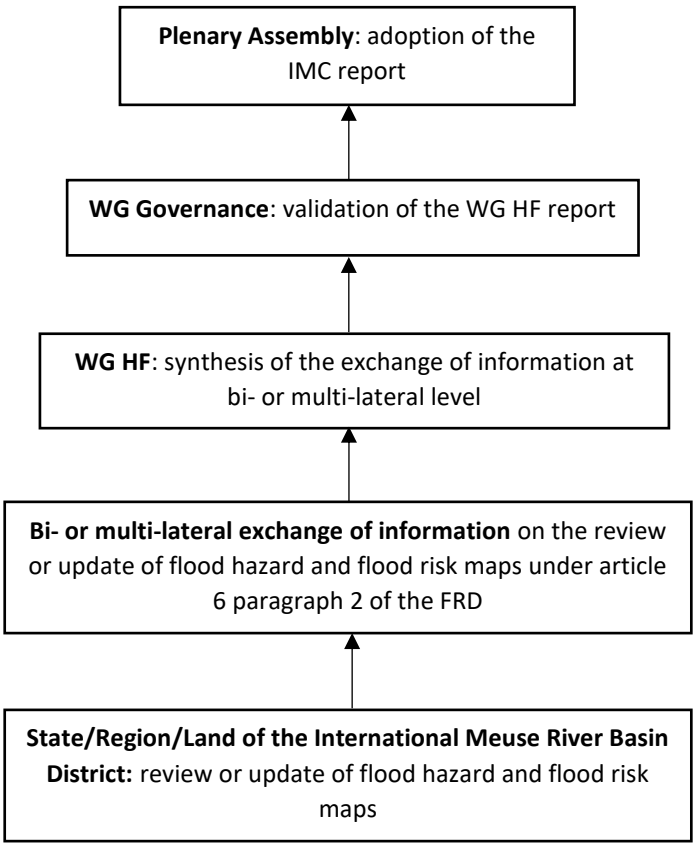


Figure 2: Coordination within the IMC for the exchange of information under Article 6 paragraph 2 of the FRD

Prior exchange of information under Article 6(2) of the FRD in the Meuse IRBD

Below follows a short contribution by State or Region on the applied working method, comparable to the Art. 4 and 5 report.

The preliminary exchange of information on the national flood hazard maps for areas with a high potential for flood risk took place bilaterally between the neighbouring States and Regions.

Germany

The recommendations for the preparation of flood hazard and flood risk maps developed by the federal/state working group on Water (LAWA) provide a uniform basis for the preparation of flood hazard and flood risk maps in Germany. These recommendations have resulted in uniform maps, in terms of content and design, which fit together across State borders.

The maps in North Rhine-Westphalia refer to floods caused by surface waters. No maps for other types of floods such as heavy rainfall or emerging groundwater were produced. The maps are prepared for the following three scenarios:

- Low probability flood and extreme event scenarios,
- Medium probability flood (for events that statistically occur at least every 100 years)
- High probability flood (HQ10 or HQ20)

The following steps are foreseen to produce the flood hazard maps:

- Generation and compilation of basic data (e.g. topographic data, precipitation and level data, topography, terrain elevation model data, land uses, roughness)
- Determination of flood flows for the three scenarios using hydrological models
- Determination of flood areas, depths and flow velocities using hydraulic models (generally non-stationary 2D)

The flood hazard maps present scenarios as they may occur under current conditions. By using current hydrological data, the effects of climate change that have already occurred are incorporated into the maps. Future developments can be considered in flood risk management plans, as far as they can be estimated.

Flood risk maps are drawn up on the basis of flood hazard maps for the same flood scenarios. These maps should not only show the inherent flood hazards (flood extent), but also flood-related adverse effects, i.e:

- the (indicative) number of potentially affected inhabitants
- the type of economic activities in the potentially affected area
- installations according to in Annex I of Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control, IED Directive), and potentially affected protected areas referred to Annex IV, point 1(i), (iii) and (v) of Directive 2000/60/EC;
- impacts on cultural heritage

The maps are coordinated with the specialised public (districts and municipalities, water authorities) before publication.

Luxembourg

Luxembourg has started to update the Flood Hazard maps and Flood Risk maps for the new water bodies of the Meuse River Basin selected in 2018 (Chiers).

The draft maps are available on the following website: https://www.geoportail.lu/.

The water level maps were produced based on 1D and 2D hydraulic models or from a linear interpolation method of the modelling results.

The following hypotheses were used for the different scenarios:

- frequent flood = HQ10,
- average flood = HQ100,
- extreme flood = 1.4 x HQ100.

The section of the Chiers located outside the Luxembourg national territory was not mapped.

Flanders

Flanders produces flood hazard and flood risk maps for floods of different origins:

- fluvial floods: river floods, including channels with natural inflow
- Coastal floods: sea floods
- Pluvial floods: floods caused by heavy rainfall, including lack of capacity of the stormwater system, both urban and rural

Flood hazard maps are maps that describe the "physical properties" of floods, such as flood extent, water depths and flow velocities. Flood risk maps are the maps that show the consequences for people, ecology, economy and cultural heritage. The maps are produced for three scenarios:

- Low probability floods (T1000) or extreme event scenarios (text),
- medium probability flood (T100)
- high probability flood (T10)

In Flanders, as many models as possible are used to draw up the flood hazard maps. A combination of models is used for this purpose; hydrological models, statistical models and hydrodynamic models:

- Flood hazard maps are drawn up using detailed 2D semi-dynamic models with hydrological data. The exceedance frequency maps are produced by using either a synthetic heavy rainfall method with related statistical analysis (T10, T100, T 1000) or a historical heavy rainfall selection method with related statistical analysis (only for T10 and T100). For the models of the latter group, an extreme heavy rainfall without a statistical return period is simulated for the low probability flood map (e.g. the most extreme historical heavy rainfall factor).
- Flood hazard maps for the coast are drawn up by combining an average tidal run with a synthetic storm surge (storm duration 45 hours). The maximum storm surge coincides with high tide. The height of the storm surge is chosen so that the maximum flood corresponds to the desired return period (statistically determined from measured water levels). The erosion of the foreshore, beach as well as the sea and land side of the coastal protection system due to wave action are also calculated. A breach may occur in case of insufficient (residual) resistance. Maps were only drawn up for T100 (medium probability) and T1000 (low probability). T10 is not considered for the coast as no floods occur for this return period.

- The method of direct precipitation modelling is used to draw up the flood hazard maps (T10, T100, T1000). A model is designed for this purpose by applying specific rainfall profiles ("hyetograms") on each cell of a regular two-dimensional grid (based in this case on the digital elevation model of Flanders) with a spatial resolution of 2 by 2 metres, where the water runoff is simulated on this grid. This method therefore simulates the runoff of water on the ground and identifies the flow paths for water as well as flooded areas.

Flood risk maps are drawn up on the basis of flood hazard maps. Flood risk maps are those mapping the consequences for people, ecology, economy and cultural heritage. The Flemish risk maps include:

- the indicative number of inhabitants potentially affected,
- the type of economic activity in the potentially affected area,
- polluting installations and potentially affected protected areas,
- particular facilities at risk (hospitals, care institutions, etc.),
- linear infrastructure; roads, railways and bus routes,
- critical infrastructures (energy and water supply, fire brigade, civil protection, ...)

In addition, 4 types of damage and risk maps are drawn up using a specific GIS tool:

- Economic impacts
- Social impacts
- Ecological impacts
- Impacts on cultural heritage

The maps are drawn up for both current climate and future climate up to 2050. All maps will be published through a portal.

France

In France, there was no update of the maps produced in the 1st cycle of the FRD implementation.

The maps and presentation reports are available at the following links:

- http://www.grand-est.developpement-durable.gouv.fr/cartographie-des-surfaces-inondables-des-tri-a15506.html (Meuse River Basin)
- http://www.hauts-de-france.developpement-durable.gouv.fr/?Cartographie-des-TRI (Sambre river basin)

As a reminder, the preliminary information exchange concerns areas of potential significant flood risk (art. 5 of the FRD) of:

- the Chiers at Longwy on the border with Luxembourg and Belgium (Wallonia)
- the Meuse between Sedan and Givet on the border with Belgium (Wallonia)
- the Sambre from Leval to Jeumont on the border with Belgium (flood risk areas (French: TRI) of Maubeuge)

Wallonia

The drawing up of the flood hazard maps is based on a methodology approved by the Walloon government and in accordance with the preparation of the flood hazard map, a reference tool for the delivery of advice concerning the issue of permits in Wallonia.

The flood hazard maps produced for Wallonia concern floods due to embankment and runoff events. They are drawn up on a scale of 1/10000 for the following scenarios:

- Scenario T025 with a return period of 25 years
- Scenario T050 with a return period of 50 years
- T100 scenario with a return period of 100 years
- Text scenario with an extreme return period.

For the river floods component of these maps, different data sources are used:

- hydrological statistics
- results of hydraulic modelling
- field observations
- the results of the hydro pedological method
- the geological Holocene layer.

Flood areas could thus be delimited. Climate change is considered through the extreme scenario included in the flood hazard maps.

For the part of these maps relating to floods due to runoff events, the data sources used and input into a hydrological model are:

- digital field model
- soil types and land use
- local rainfall statistics.

This allowed the generation of runoff axes and the calculation of peak flows.

Given the different data sources available, it was necessary to define integration rules in order to draw up coherent and reproducible maps. Automated procedures were developed for this purpose.

The flood risk maps consist of the flood hazard areas for each scenario and the hazard receptors (issues) identified for these impacts. The hazard receptors or issues are social, economic, environmental and heritage.

Before their publication and approval by the Walloon Government, these maps are subject to environmental impact assessment and public consultation.

Netherlands

For primary flood protection facilities, the Netherlands moved in 2017 from a standardisation based on the exceeding frequency of water levels to a standardisation based on the probability of floods. In the second cycle of the FRD, the Netherlands decided to draw up maps for protected areas based on currently available flood probabilities. This is in contrast to the first cycle of the FRD, when the protected areas were based on the standard probability of water levels being exceeded. The reason for this change is that the maps drawn up under the FRD should make citizens aware of the risk they are currently facing.

Given the high protection level offered by the primary flood protection facilities in the Netherlands, 4 maps are developed that clearly describe the entire range of flood probabilities from 1/10 to 1/10,000 per year. The first three maps correspond to flood probabilities of the order of magnitude of 1/10, 1/100 and 1/1000 per year. The additional 4th map shows a scenario of an exceptional event (corresponding to the maximum conceivable) with a flood probability of the order ≤ 1/10,000 per year.

Based on the preliminary risk assessment and the identification of areas with a significant flood risk, the Netherlands produce maps showing floods from rivers and lakes (fluvial), coastal floods (sea water) and navigation channels (Artificial Water Bearing Infrastructure).

The entire coastline of the Meuse basin is within the national borders of the Netherlands, and the impact of North Sea water levels, including the impact that a possible rise in sea level could have on the water levels of the Meuse, is limited to the Netherlands. Therefore, storm surges are not considered here. However, this information is of course available in the Dutch flood hazard maps and flood risk maps.

The maps show the current situation based on the latest information. Based on flows calculated with KNMI climate scenarios, extreme flows will increase and for example, a flood scenario that occurs every 100 years today will occur more frequently in the future. The Netherlands takes climate change into account in its flood risk management measures.

Results of the information exchange

The following table from the IMC report[1] – article 5 of the FRD - on the identification of areas of potential significant flood risk in the Meuse international river basin district, shows an overview of the (trans)border rivers with a catchment area of more than 10 km². These areas have either been selected by the States/Regions under Article 5 paragraph 1 or are linked to areas selected under Article 5 paragraph 1. The table indicates the hydrological assumptions associated with the flood hazard maps of the (trans)boundary watercourses of the Meuse international river basin district for the different flood scenarios as defined in Article 6 paragraph 3 of the FRD.

This table documents the coordination of the creation of flood hazard maps on the scale of the Meuse international river basin district.

The attached map documents the status of the exchange of information prior to drawing up the flood hazard maps.

The main course of the Meuse and its major tributaries are represented using the following legend:

➢ watercourses (sections) not requiring mapping according to Article 6 of the FRD (grey)

➢ watercourses (sections) requiring mapping according to Article 6 of the FRD without obligatory prior exchange of information under Article 6(2) of the FRD (blue)

➢ (Trans)boundary watercourses with obligatory prior exchange of information under Article 6(2) of the FRD (green)

[1] Document Minond/12-2def

Overview of the information exchange: Comparison table of flow assumptions associated with the flood scenarios provided for in Article 6(3)

	State-Region / Hydrological station / Reference point		High probability flood		Medium probability flood (probable return period ≥ 100 years)		Low probability flood or extreme event scenarios		Comments on the exchange of information
			HQ10 / HQ30 / other		*HQ100 / HQ 200 / other*		*HQ1000 / other*		
Name of the watercourse	**Upstream**	**Downstream**	**Upstream**	**Downstream**	**Upstream**	**Downstream**	**Upstream**	**Downstream**	
Chiers	**FR** / Longwy	WL	71 m^3/s (Q_{10}) or (Q_{30})	?	128 m^3/s (Q_{100})	?	166 m^3/s (Q_{100}) +30%	?	Data for the Chiers at Longwy from the Chiers flood hazard atlas (BCEOM, 2007)
Meuse	**FR** / Chooz-Graviat Station	**WL** / French-Belgian border	(Q_{10}) or (Q_{30})	1356 m^3/s (Q_{25})	1572 m^3/s (Q_{100})	1645 m^3/s (Q_{100})	2043 m^3/s (Q_{100} +30%)	2140 m^3/s (Q_{100}+30%)	Data on the Meuse at Chooz from the FRFP of 28/10/1999.
Sambre	**FR** / Hautmont Station at Maubeuge	**WL** / Solre	120 m^3/s (*) (Q_{10})	148 m^3/s (Q_{25})	180 m^3/s (*) (Q_{100})	172 m^3/s (Q_{100})	Not applicable (mapping according to hydromorphological method)	Not applicable (mapping based on recent alluvium right-of-way)	(*) Provisional data for the Sambre at Maubeuge
Geer / Jeker (*)	**WL /** Eben Emael or Kanne	**VL**	16,47 m^3/s (Q_{25})	T_{10}	17,54 m^3/s (Q_{100})	T_{100}		T_{1000}	a model used
Rigole d'Awans / Ezelbeek	**WL**	**VL**		T10		T100		T1000	No flow monitoring station
Exhaure d'Ans / Beek (*)	**WL**	**VL**		T_{10}		T_{100}		T_{1000}	No flow monitoring station
Berwinne / Berwijn (*)	**WL /** Dalhem	**VL**	60,05 m^3/s (Q_{25})	T_{10}	105,82 m^3/s (Q_{100})	T_{100}		T_{1000}	a model used
Le Biek (affl. Voer) / De Beek (zijrivier Voer)	**WL**	**VL**		T_{10}		T_{100}		T_{1000}	No flow monitoring station
Gulp	**WL**	**VL**		T10		T100		T1000	
Meuse / Maas	**WL /** Lixhe	**NL**	2726 m3/s (Q25)	2302 m3/s (Q10)	3115 m3/s (Q100)	3224 m3/s (Q100)	4060 m3/s (Q100+30%)	3862 m3/s (Q1000)	

Gueule / Geul	**WL / Sippenaeken**	**NL / Cottessen**	39,10 m3/s (Q25)	39 m3/s (Q10)	57,89 m3/s (Q100)	62,30 m3/s (Q100)	92,43 m3/s (Q1000)	107,1 m3/s (Q1000)	Separate models in NL and WL
Gulp	**VL**	**NL**	T10	6 m3/s (Q10)	T100	13 m3/s (Q100)	T1000		No Q1000 model at the border
Gemeenschappelijke Maas / Grensmaas	**VL**	**NL** / Borgharen	2302 (Q_{10})	2302 (Q_{10})	3224 (Q_{100})	3224 (Q_{100})	3862 (Q_{1000})	3862 (Q_{1000})	Information exchange within the Vlaams Nederlandse Bilaterale Maascommissie A model used
Voer (*)	**VL**	**NL**	T_{10}	T_{10}	T_{100}	T_{100}	T_{1000}	T_{1000}	a model used
Jeker (*)	**VL**	**NL**	T_{10}	T_{10}	T_{100}	T_{100}	T_{1000}	T_{1000}	a model used
Itterbeek / Thornerbeek (*)	**VL** WIT012B (boundary node from the model)	**NL**	1,27 m^3/s (Q_{10})	1,27 m^3/s (Q_{10})	1,42 m^3/s (Q_{100})	1,42 m^3/s (Q_{100})	1,55 m^3/s (Q_{1000})	1,55 m^3/s (Q_{1000})	Coordination on the basis of flow data
Abeek - Grote Lossing/ Uffelsche beek	**VL**	**NL**	T10	5,5 m^3/s (Q_{10})	T100	7.9 m^3/s (Q_{100})	T1000	11,1 m^3/s (Q1000)	
Wurm / Worm	**DE-NL** border crossing	**DE-NL** border crossing	HQ_{20}	T_{20}	HQ_{100}	Q_{100}	$HQ_{extreme}$	T_{1000}	A model was used and a common cross-border map was produced For the second cycle a new model is used and therefore new data and maps will be made
Rodebach / Roode Beek	**DE-NL** border crossing	**DE-NL** border crossing	139,9 m^3/s (HQ_{20})	T_{10}	HQ_{100}	T_{100}	$HQ_{extreme}$	T_{1000}	A model was used and a common cross-border map was produced. Transboundary model used. The Netherlands made new calculations. This leads to slight adjustments of the flood risks on the Dutch side. On the German side, the flood risks calculated in the first cycle have not been adjusted. Germany has created new maps (new layout).

Kitschbach / Molenbeek	**DE-NL** border crossing	**DE-NL** border crossing	H=12,16 m (at HQ_{10})	T_{20}	HQ_{100}	T_{100}	$HQ_{extreme}$	$HQ_{extreme}$	A model was used and a common transboundary map was produced. No recalculations were made for the second cycle. Germany drew up new maps (new layout).
Rur / Roer	**DE-NL** border crossing (Stah)	**DE-NL** border crossing (Stah)	Q_{20}	125,5 m^3/s (T_{10})	HQ_{100}	180 m^3/s (T_{100})	$HQ_{extreme}$	290 m^3/s (T_{1000})	Dutch data were used and the initial conditions of the model were coordinated with those of the Dutch model for drawing up the maps on the German side
Niers	**DE-NL** border crossing (Goch)	**DE-NL** border crossing	30	H=12,16 m (at T_{10})	H=13,13 m (at HQ_{100})	H=13,13 m (at T_{100})	H=13,79 m (at $HQ_{extreme}$)	H=13,79 (at T_{1250}))	The water level of the Meuse is decisive at the German-Dutch border. This water level is the downstream condition for Germany

(*) For some small water courses, a different procedure was used because the reference points upstream and downstream of the border are not always located on or near the border, so that the water levels are not comparable.

For this reason, the coordination was carried out as follows:

- Voer, Jeker, Berwinne: for these rivers, a cross-border model was drawn up in the first round as part of the Interreg AQUADRA project; this forms the basis for the flood risk and flood hazard maps. Therefore, the coordination was done here by drawing up a cross-border model.

- Wurm, Rodebach, Kitschbach: As these three rivers partially form the border, no streamflow at this level can be indicated. However, the maps for these rivers were drawn up on the basis of a single model. Thus, the respective flows are identical on both sides of the border.

- Niers: the Niers on the German-Dutch side is located in the retention area of the Meuse. The water level of the Meuse was therefore taken into account as a decisive factor in the hydraulic calculation.

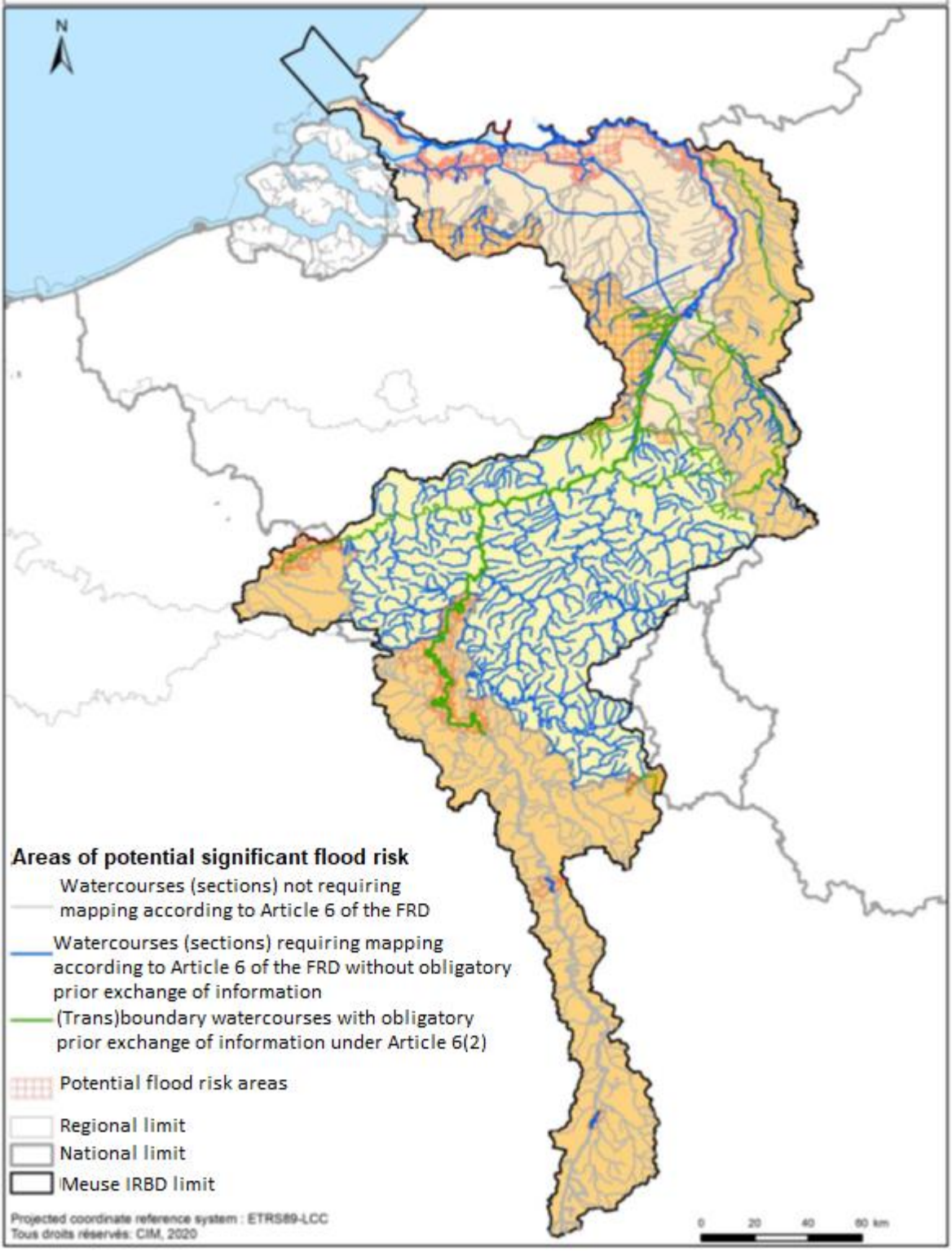
The table shows the return periods (Tx) or flows for a certain return period (HQx) for which the maps were produced.

Flood hazard and flood risk maps can be found at the following addresses:

FR	http://www.grand-est.developpement-durable.gouv.fr/cartographie-des-surfaces-inondables-des-tri-a15506.html (Meuse basin) http://www.hauts-de-france.developpement-durable.gouv.fr/?Cartographie-des-TRI (Sambre basin)
WL	http://geoportail.wallonie.be/cms/fr/sites/geoportail/home.html
VL	http://www.waterinfo.be/
NL	http://www.risicokaart.nl
DE	http://www.flussgebiete.nrw.de/index.php/HWRMRL/Risiko-_und_Gefahrenkarten
LU	https://www.geoportail.lu/

Implementation of the Flood Directive in the Meuse IRBD
Summary of information exchange and coordination under Article 6 of the FRD

13/03/2020



Exchange of information: Article 6 of the FRD (Minond/19-9)

Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle	Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle
FRANCE			**WALLONIA**		
La Chiers	Selected Longlaville Longwy, Mont St Martin and Rehon	No	La Chiers	Selected	Yes
Le ruisseau du Coulmy	Not selected	Not relevant	Le Cussigny	Selected (lower risk)	Yes
La Base Vire	Not selected	Not relevant	La Vire	Selected	Yes
Le Ton	Not selected	Not relevant	Le Ton	Selected	Yes
La Thonne	Not selected	Not relevant	La Thonne	Selected (lower risk)	Yes
La Marche	Not selected	Not relevant	Le Williers - La Marge	Selected (lower risk)	Yes
Le ruisseau de l'Aulnois	Not selected	Not relevant	La Tremble (à Muno)	Selected (lower risk)	Yes
La Goutelle	Not selected	Not relevant	La Goutelle (à Sugny)	Selected (lower risk)	Yes
La Semoy	Not selected	Not relevant	La Semois	Selected	Yes
Le ruisseau de Saint Jean (affluent Semoy)	Not selected	Not relevant	Le ruisseau de Saint Jean (affluent Semoy)	Selected (lower risk)	Yes
Ruisseau de Stol	Not selected	Not relevant	La Stole (affluent de la Hulle)	Selected (lower risk)	Yes
La Hulle	Not selected	Not relevant	La Hulle	Selected (lower risk)	Yes
La Houille	Not selected	Not relevant	Houille	Selected	Yes
Ruisseau de Scheloupe	Not selected	Not relevant	Ruisseau de Scheloupe	Selected (lower risk)	Yes
Le Massembre	Not selected	Not relevant	Le Massembre	Selected (lower risk)	Yes
La Meuse	Selected in Neufchâteau, Verdun, Thierville-sur-Meuse, Belleville-sur-Meuse and from Bazeilles to Givet	No	La Meuse	Selected	Yes
R. de Prailes	Not selected	Not relevant	R. de la Jonquière	Selected (lower risk)	Yes
Le Viroin	Not selected	Not relevant	Le Viroin	Selected	Yes
Ruiseau Deluve	Not selected	Not relevant	Ruisseau de Luve	Selected (lower risk)	Yes

Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle	Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle
Ruisseau d'Alyse	Not selected	Not relevant	L'Alisse (près de Fumay)	Selected (lower risk)	Yes
R. du Fond de Pernelle	Not selected	Not relevant	Forge du Prince (près de Bruly)	Selected (lower risk)	Yes
Eau noire	Not selected	Not relevant	Eau noire	Selected	Yes
R. de Sainte Anne	Not selected	Not relevant	Sainte Anne (Eau Noire)	Selected (lower risk)	Yes
Helpe majeure	Not selected	Not relevant	Helpe	Selected (lower risk)	Yes
Thure	Not selected	Not relevant	Thure	Selected	Yes
Hantes	Not selected	Not relevant	Hantes	Selected	Yes
Sambre	Selected from Leval to Jeumont	No	Sambre	Selected	Yes
FRANCE	**LUXEMBOURG**				
Chiers	Selected Longlaville Longwy, Mont St Martin et Rehon	No	Chiers	Selected	Yes
WALLONIA	**LUXEMBOURG**				
Chiers	Selected	Yes	Chiers	Selected	Yes
WALLONIA	**FLANDERS**				
Geer	Selected	Yes	Jeker	Selected	Yes
Rigole d'Awans	Selected (lower risk)	Yes	Ezelbeek	Selected	Yes
Exhaure d'Ans	Selected (lower risk)	Yes	Exhaure d'Ans / Beek	Selected	Yes
Berwinne	Selected	Yes	Berwijn	Selected	Yes
Le Biek (affl. Voer)	Selected (lower risk)	Yes	De Beek (zijrivier Voer)	Selected	Yes
Gulp	Selected (lower risk) NB: < 10 km²	Yes	Gulp	Selected	Yes
Iterbach	Selected (lower risk)	Yes	Iterbach	Not selected	Not relevant
Inde	Selected (lower risk)	Yes	Inde	Not selected	Not relevant
WALLONIA	**GERMANY**				
Vesdre	Selected	Yes	Weser	Not selected	Not relevant
Roer	Selected (lower risk)	Yes	Rur	Not selected	Not relevant

Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle	Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle
Schwalmbach	Selected (lower risk)	Yes	Perlenbach	Not selected	Not relevant
Olefbach	Selected (lower risk)	Yes	Olef	Not selected	Not relevant
WALLONIA	**NETHERLANDS**				
Meuse	Selected	Yes	Maas	Selected	Yes
Gueule	Selected	Yes	Geul	Selected	Yes
FLANDERS	**NETHERLANDS**				
Gemeenschappelijke Maas	Selected	Yes	Gemeenschappelijke Maas	Selected	Yes
Gulp	Selected	Yes	Gulp	Selected	Yes
Voer	Selected	Yes	Voer	Selected	Yes
Jeker	Selected	Yes	Jeker	Selected	Yes
Itterbeek / Witbeek	Selected	Yes	Thornerbeek	Selected	Yes
Abeek - Grote Lossing/ Uffelsche beek	Selected	Yes	Uffelsche beek	Selected	Yes
Zuid-Willemsvaart	Not selected	Not relevant	Zuid-Willemsvaart	Selected	Yes
Dommel	Selected	Yes	Dommel	Not selected	Not relevant
Mark	Selected	Yes	Boven Mark	Not selected	Not relevant
Merkske	Selected	Yes	Merkske	Not selected	Not relevant
Weerijsbeeb – Grote Aa	Selected	Yes	Aa of Weerijs	Not selected	Not relevant
Warmbeek	Selected	Yes	Tongelreep	Not selected	Not relevant
De Aa	Selected	Yes	Rovertsche Leij / De Aa	Not selected	Not relevant
Leyloop	Selected	Yes	Poppelsche Leij	Not selected	Not relevant
Kleine Aa – Wildertse Beek	Selected	Yes	Watermolenbeek	Not selected	Not relevant
GERMANY	**NETHERLANDS**				
Wurm	Selected	Yes	Worm	Selected	Yes

Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle	Name of the watercourse	Result of the selection according to Art. 5 of the FRD	Update of the mapping according to art.6 of the FRD of the 1st management cycle
Rodebach	Selected	Yes	Roode Beek/Geleenbeek	Selected	Yes
Kitschbach	Selected	Yes	Kitschbach	Selected	Yes
Rur	Selected	Yes	Roer	Selected	Yes
Niers	Selected	Yes	Niers	Selected	Yes
Nierskanal	Not selected. The risk area on the German side has been reduced and no longer extends to the Dutch border	Not relevant	Geldernsch Nieskanaal	Not selected, there is no risk on the Dutch course	Not relevant