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**COMMISSION STAFF WORKING DOCUMENT**

**First Flood Risk Management Plans - Member State: France**

*Accompanying the document*

**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND  
THE COUNCIL**

**on the implementation of the Water Framework Directive (2000/60/EC) and the Floods  
Directive (2007/60/EC)  
Second River Basin Management Plans  
First Flood Risk Management Plans**

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## Acronyms

APSFR	Areas of Potential Significant Flood Risk
CBA	Cost-Benefit Analysis
EEA	European Environment Agency
FD	Floods Directive
FHRM	Flood Hazard and Risk Map
FRMP	Flood Risk Management Plan
NGO	Non-Governmental Organisation
NWRM	Natural Water Retention Measures
PFRA	Preliminary Flood Risk Assessments
PoM	Programme of Measures
RBD	River Basin District
RBMP	River Basin Management Plan
SEA	Strategic Environmental Assessment
UoM	Unit of Management
WFD	Water Framework Directive
WISE	Water Information System for Europe

## Introduction

The Floods Directive (FD) (2007/60/EC) requires each Member State (MS) to assess its territory for significant risk from flooding, to map the flood extent, identify the potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity in these areas, and to take adequate and coordinated measures to reduce this flood risk. By the end of 2011, Member States were to prepare Preliminary Flood Risk Assessments (PFRAs) to identify the river basins and coastal areas at risk of flooding (Areas of Potential Significant Flood Risk – APSFRs). By the end of 2013, Flood Hazard & Risk Maps (FHRMs) were to be drawn up for such areas. On this basis, Member States were to prepare Flood Risk Management Plans (FRMPs) by the end of 2015.

This report assesses the FRMPs for France<sup>1</sup>. It assesses the FRMPs and MS reporting to the European Commission in 2016. Its structure follows a common assessment template used for all Member States. The report draws on two main sources:

- Member State reporting to the European Commission on the FRMPs<sup>2</sup> as per Articles 7 and 15 of the FD: this reporting provides an overview of the plans and details on their measures.
- Selected FRMPs: due to the high number of FRMPs prepared in France, the assessment has focused on a selected set of five plans. The FRMPs selected are<sup>3</sup>:
  - Scheldt (FRA)
  - Adour-Garonne (FRF)
  - Rhine (FRC)
  - Rhône (FRD)
  - La Réunion (FRL)

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<sup>1</sup> The present Member State reports reflect the situation as reported by each Member State to the Commission in 2016 or 2017 and with reference to FRMPs prepared earlier. The situation in the MSs may have altered since then.

<sup>2</sup> Referred to as “Reporting Sheets” throughout this report. Data must be reported in a clear and consistent way by all Member States. The format for reporting was jointly elaborated by the Member States and the Commission as part of a collaborative process called the “Common Implementation Strategy”: [http://ec.europa.eu/environment/water/water-framework/objectives/implementation\\_en.htm](http://ec.europa.eu/environment/water/water-framework/objectives/implementation_en.htm)  
Whereas a key role of the Commission is to check compliance with EU legislation, the Commission also seeks information to allow it to determine whether existing policies are adequate. It also requires certain information to create a European-wide picture to inform the public.

<sup>3</sup> The full names of each UoM are provided in the main text of the report.

The Units of Management (UoMs) have been selected to cover different geographical areas of mainland France and one of its overseas departments<sup>4</sup>. The selection also covers transboundary aspects: three of UoMs are declared to be part of transboundary UoMs (Rhine, Scheldt, Adour-Garonne).<sup>5</sup>

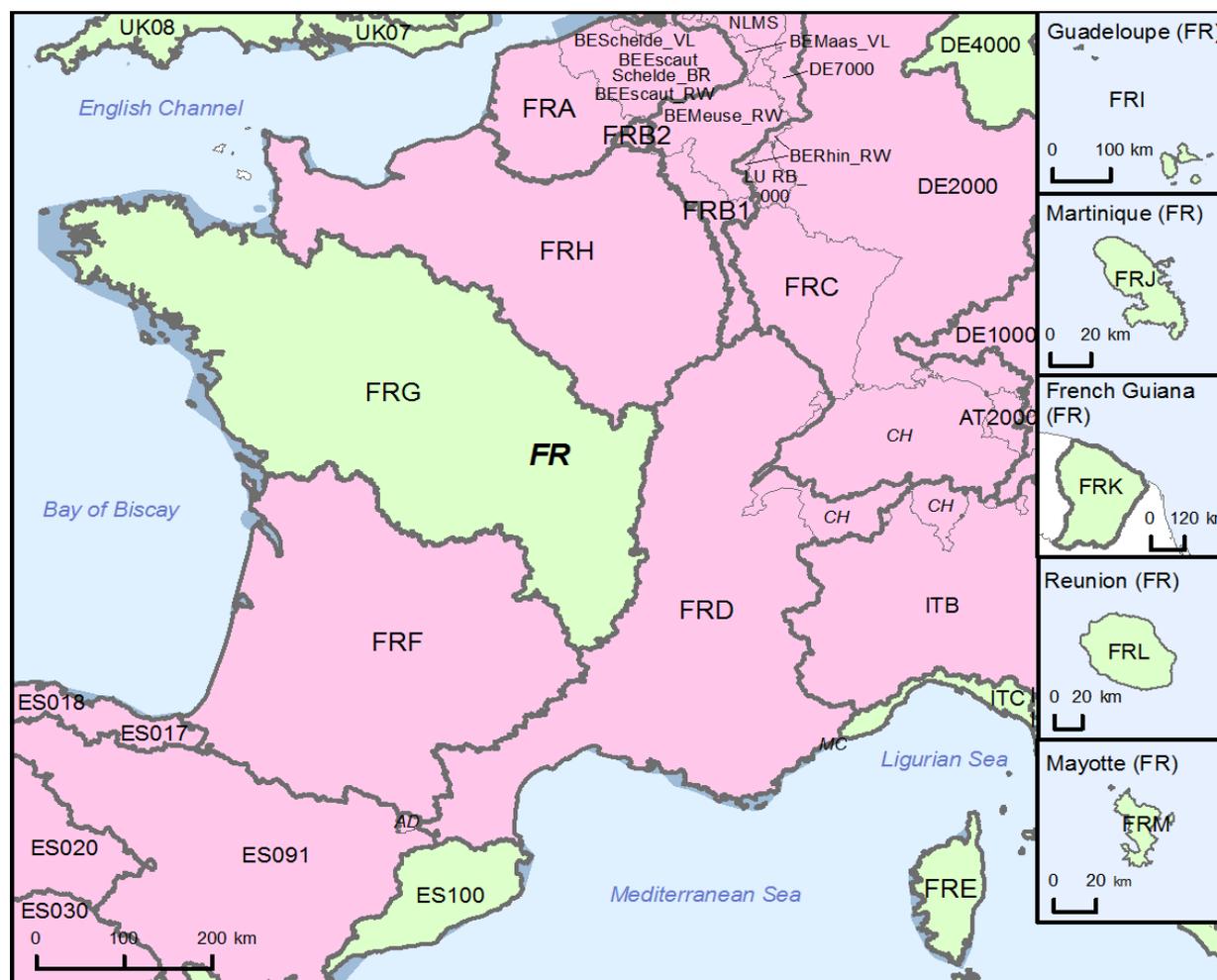
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<sup>4</sup> Based on previous assessments (including the first RBMPs) it was likely that France would have applied a common methodology for its FRMPs. This was indeed the case: The assessment found that France applied a common approach in the five FRMPs assessed, for example with common national objectives and UoM-specific objectives linked to measures, following a hierarchical approach. Some differences were seen, for example in the extent of detail provided on local flood plans.

<sup>5</sup> Although France has not indicated the Rhone UoM (FRD) as part of a transboundary UoM, it extends into Switzerland and Italy.

# Overview

**Figure 1** Map of Units of Management/River Basin Districts



- International River Basin Districts (within European Union)
- International River Basin Districts (outside European Union)
- National River Basin Districts (within European Union)
- Countries (outside European Union)
- Coastal Waters

Source: WISE, Eurostat (country borders) as presented in the 2012 RBMP assessment reports

Under the Floods Directive, France has designated 14 units of management (UoMs) in mainland France and in its overseas departments. These 14 UoMs correspond to the 14 river basin districts (RBDs) designated under the Water Framework Directive (WFD). France has prepared a flood risk management plan (FRMP) for each of its UoMs<sup>6</sup>.

<sup>6</sup> In addition, France has identified a Local Flood Risk Strategy for each APSFR. This report refers to the local strategies but does not assess them.

The FRMPs were approved by order (*arrêté*) of the Basin Coordinating Prefect for each UoM. The specific dates vary: for example, among the five FRMPs assessed, the plan for La Réunion (FRL) was approved in October 2015<sup>7</sup> and the plan for Rhône-Méditerranée (FRD) in December 2015<sup>8</sup>.

The table below gives an overview of all UoMs in France, including the UoM code, the name, and the number of APSFRs reported. It also shows if all documents required for each UoM were submitted to the European Environment Agency's (EEA) WISE<sup>9</sup> – the FRMP as a PDF and the reporting sheet as an XML. France did not upload the FRMP files to WISE, and instead provided a document with a list of the internet links for each FRMP<sup>10</sup>. For the assessment the plans were obtained via the web site indicated below the table.

**Table 1** *Overview of UoMs in France*

UoM	Name	Number of APSFRs	XML reported	PDF Reported
FRA	Escaut, Somme, et cours d'eau côtiers de la Mer de la Manche et de la Mer du Nord	10	Yes	No
FRB1	Meuse	4	Yes	No
FRB2	Sambre	1	Yes	No
FRC	Rhin	8	Yes	No
FRD	Rhône et cours d'eau côtiers méditerranéens	31	Yes	No
FRE	Cours d'eau de la corse	3	Yes	No
FRF	Garonne, Adour, Dordogne, Charente et cours d'eau côtiers charentais et aquitains	18	Yes	No
FRG	Loire et cours d'eau côtiers vendéens et bretons	20	Yes	No
FRH	Seine et cours d'eau côtiers normands	16	Yes	No
FRI	Cours d'eau de la Guadeloupe	2	Yes	No
FRJ	Cours d'eau de la Martinique	1	Yes	No
FRK	Fleuves et cours d'eau de la Guyane	1	Yes	No
FRL	Cours d'eau de la Réunion	6	Yes	No
FRM	Cours d'eau de Mayotte	1	Yes	No
<b>TOTAL</b>		<b>122</b>	<b>14</b>	<b>0</b>

<sup>7</sup> See:

<sup>8</sup> See:

<sup>9</sup> See: <http://rod.eionet.europa.eu/obligations/603/deliveries?id=603&tab=deliveries&d-4014547-p=1&d-4014547-o=2&d-4014547-s=3>

<sup>10</sup> France informed subsequently that some FRMP links changed in September 2017.

The FRMPs can be downloaded via the following web page<sup>11</sup>:

- <https://www.ecologique-solidaire.gouv.fr/prevention-des-inondations>

## Overview of the assessment

The table below gives an overview of the evidence found during the assessment of the FRMPs. The following categorisation was used for the column concerning evidence:

- **Evidence to the contrary:** An explicit statement was found stating that the criterion was not met.
- **No evidence:** No information found to indicate that the criterion was met.
- **Some evidence:** Reference to the criterion is brief and vague, without a clear indication of the approach used for the criterion. Depending on the comment in the adjacent column, “some evidence” could also be construed as “weak evidence”.
- **Strong evidence:** Clear information provided, describing an approach followed in the FRMP to address the criterion.

**Table 2** *Overview of the evidence found during the assessment of the FRMPs*

Criterion	Evidence	Comments
<b>FRM objectives have been established</b>	Strong evidence	The five FRMPs assessed cite three flood risk management objectives set at national level and also present their own objectives. All the FRMPs assessed identify sub-objectives under each of their objectives.
<b>FRM objectives relate to...</b>		
...the reduction of potential adverse consequences	Strong evidence	The national objectives include: "to increase safety of affected persons" and to "stabilise and reduce the costs of flood damages".
...to the reduction of the likelihood of flooding	Some evidence	Of the five FRMPs assessed, only the plan for Adour-Garonne contains an objective directly linked to reduction in the likelihood of flooding. In addition, several objectives, including those for spatial planning (found in all five FRMPs assessed), and their sub-objectives and actions seek to reduce the

<sup>11</sup> Note: this web page of the Ministry for the Ecological and Inclusive Transition contains links to FRMP pages at RBD level.

Criterion	Evidence	Comments
...to non-structural initiatives	Strong evidence	likelihood of flooding. Several objectives at APSFR level within the FRMPs assessed refer to the reduction of flood risk and of the likelihood of flooding.  All five FRMPs assessed include objectives for sustainable spatial planning and for better knowledge related to flood risks.
<b>FRM objectives consider relevant potential adverse consequences to...</b>		
...human health	Strong evidence	A common national objective, cited in each of the FRMPs assessed, is to increase safety of affected persons.
...economic activity	Strong evidence	A common national objective is to stabilise the costs of flood damages in the short term, and to diminish them in the medium term.
...environment	Some evidence	Although the objectives in the five FRMPs assessed do not refer directly to environmental protection, environmental aspects are mentioned in the objectives of all five of the FRMPs assessed.
...cultural heritage	Some evidence	In some of the FRMPs assessed, the objectives include a reference to the protection of cultural heritage.
<b>Measures have been...</b>		
...identified	Strong evidence	France has reported 601 individual measures and 47 aggregated measures (for a total of 648 measures). The measures reported cover all aspects of flood risk management: prevention, protection, preparedness and recovery and review (in addition, France reported 'no action' and 'other' measures).
...prioritised	Some evidence	France has reported the priority of all measures. Nonetheless, for some UoMs, all measures are given the same priority. The FRMPs assessed provide little information on priorities or on methodologies for their determination.
<b>Relevant aspects of Article 7 have been taken into account such as...</b>		
...costs & benefits	Some evidence	While the five FRMPs assessed refer to cost-benefit analysis (CBA), it is not clear if this has been carried out for the included measures or if

Criterion	Evidence	Comments
		this will be applied in the future <sup>12</sup> .
...flood extent	Strong evidence	There is evidence in the FRMPs assessed that flood extent has been considered: for example, in all five UoMs, APSFRs have been formally designated with a delineation of the flood extent, and local flood risk strategies are prepared for these areas.
...flood conveyance	No evidence	No reference was found in the FRMPs assessed to the consideration of flood conveyance routes <sup>13</sup> .
...water retention	Strong evidence	All five FRMPs assessed set out natural water retention measures. For example, the Rhone FRMP (FRD) contains an action to restore the natural functioning of environments to allow the reduction of floods and floods from sea water. Similarly, the Scheldt FRMP (FRA) contains an action to conserve and restore natural flood zones.
...environmental objectives of the WFD	Strong evidence	Natural water retention measures are included in all five FRMPs assessed, while France's reporting under the WFD indicates that in all UoMs, WFD Article 4.7 was applied for flood infrastructure.
...spatial planning/land use	Strong evidence	All five FRMPs assessed set an objective to put in place sustainable spatial planning. Moreover, France has reported spatial planning measures in all of its UoMs.
...nature conservation	Strong evidence	France's reporting sheets indicate that implementation will support nature conservation. Moreover, four of the FRMPs assessed provide specific indications where nature conservation was taken into account.
...navigation/port infrastructure	Some evidence	Two of the five FRMPs assessed make a brief reference that they shall take into consideration navigation and port infrastructure in specific actions: this is the case for the Scheldt (FRA) and Rhine (FRC) FRMPs.

<sup>12</sup> France clarified subsequently that a cost and benefit analysis is applied at project level.

<sup>13</sup> France subsequently informed that this information is provided at the project level.

Criterion	Evidence	Comments
...likely impact of climate change	Strong evidence	France's national strategy for flood risk management highlights the increase in flood risks due to climate change, focusing on sea-level rise; some of the FRMPs assessed also refer to increased flood risks, in particular related to sea-level rise: the plans for the Scheldt, FRA, and Adour-Garonne, FRF. All the FRMPs assessed state that climate change is considered in the design of measures.
<b>Coordination with other countries ensured in the RBD/UoM</b>	Some evidence	The reporting sheet for the Scheldt (FRA) and the RBMP for the Rhine (FRC) refer to coordination with neighbouring Member States via the respective international river basin committees. The FRMP for the Rhone (FRD) refers to coordination with Switzerland and Italy. Information was not found on coordination with Spain or Andorra in the FRMP for the Adour-Garonne (FRF).
<b>Coordination ensured with WFD</b>	Strong evidence	All the FRMPs assessed outline the articulation between the Floods Directive and the WFD.
<b>Active involvement of interested parties</b>	Strong evidence	All FRMPs indicate a range of stakeholders, in particular different government bodies, that were actively involved via the Basin Committees and other mechanisms.

## Good Practices

The assessment identified the following good practices in the French FRMPs assessed.

**Table 3** *Good practices in the French FRMPs*

Topic area	Good practices identified
Setting of objectives for the management of flood risk.	All five FRMPs assessed have a coherent, hierarchical approach from national to UoM objectives and then to lines of action and local strategies. All five FRMPs assessed include objectives to address flood risks in spatial planning.
Planning/implementing of measures and their prioritisation for the achievement of objectives.	France has reported spatial planning measures in all of its FRMPs. All five FRMPs assessed include NWRMs.

Topic area	Good practices identified
Consideration of climate change in the FRMPs assessed.	France's national flood risk strategy refers to climate change and all five FRMPs assessed include measures that address potential climate impacts or call for their study <sup>14</sup> .
Flood risk governance.	For each FRMP, a range of government bodies as well as some non-governmental stakeholders were involved in the preparation, under the aegis of the Basin Committee.  France has developed flood risk plans at APSFR level that translate FRMP objectives into local goals and actions.

## Areas for further development

The assessment identified the following areas for further development in the French FRMPs assessed.

**Table 4** *Areas for further development in the French FRMPs*

Topic area	Areas for further development identified
Integration of previously reported information	The FRMPs assessed provide limited details on the prior steps: They include only limited information on APSFRs and describe only briefly the methodology followed for the RFRA and FHRM steps. Some internet links in the plans assessed do not work. <sup>15</sup>
Setting of objectives for the management of flood risk.	The objectives (national and UoM) are not measurable and specific <sup>16</sup> .
Planning/implementation of measures and their prioritization for the achievement of objectives.	The information provided in the FRMPs on their measures are not specific and measurable.  The FRMPs do not provide information on the cost of measures or potential sources of funding <sup>17</sup> .  The approach to prioritisation is not clear: France has reported all measures in some UoMs with the same priority, and the FRMPs assessed do not provide an indication how priorities were set.  The FRMPs assessed provide limited information on monitoring

<sup>14</sup> France noted subsequently that the FHRMs for coastal flooding take into account the impact of sea level rise due to climate change, both the short term and the long term (100 years) impact. France, it was also noted, added a map for coastal APSFRs to take into account the long term impact of climate change.

<sup>15</sup> This appears to be due to government reorganisation that impacted internet addresses.

<sup>16</sup> France subsequently described these objectives as strategic. As noted above, France's FRMPs are articulated via strategies for individual APSFRs and then local action programmes.

<sup>17</sup> France subsequently informed that the implementation of FRMPs is mainly done through financial programmes called PAPI (*programmes d'actions de prévention des inondations*). PAPIs contain very detailed actions, with detailed time schedules and cost and financing elements. During the last two years (2016 and 2017), around EUR 367,5 million have been invested from different sources of funding, including EUR 155 million from the "*fonds de prévention des risques naturels majeurs*", which is a national fund dedicated to natural risk prevention.

Topic area	Areas for further development identified
	progress, indicators or a baseline, though it is indicated that these will be developed early in the implementation period on the basis of work at national level.
Consideration of climate change in the FRMPs assessed.	While all of the FRMPs assessed make references to climate change, these references focus on sea level rise; effects such as changes in precipitation, are not addressed in the FRMPs. Moreover, the FRMPs do not refer to the national adaptation strategy.
Use of CBA in the FRMPs assessed.	The FRMPs provide little information on cost/benefit analysis and it is unclear if it was applied or in what circumstances it will be used <sup>18</sup> .

## Recommendations

Based on the reported information and the FRMPs assessed, the following recommendations are made to enhance flood risk management (not listed in any particular order):

- The FRMPs should provide more detailed information on the prior steps, including summary maps and text regarding the APSFRs and references where they can be accessed. It is also important to ensure that FRMPs are continuously available to all concerned and the public in an accessible format, including digitally.
- To be able to assess progress, objectives should include specific and measurable elements to the extent possible (including a baseline) and a clear link between measures and objectives and between higher and lower level objectives should be maintained.
- The FRMPs should provide greater information on measures (which should become more concrete), including costs and funding sources, details on location and information on prioritisation and on monitoring progress.
- Further details should be provided on potential impacts of climate change and on how these are addressed in the measures. Coordination between FRMPs and national climate change adaptation strategies should be ensured or elaborated upon.
- The FRMPs should clarify the use, methodology and outcomes of CBA.

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<sup>18</sup> France subsequently informed that cost and benefit analysis is applied at project level.

# 1. Scope of the assessment and sources of information for the assessment

## 1.1 Reporting of the FRMPs

France has reported 14 FRMPs, one for each UoM. The FRMPs themselves, however, were not uploaded to the European Environment Agency's (EEA) WISE, instead, web links were provided in a separate document.

France did not make use of Article 13.3 of the Floods Directive, which allowed Member States to make use of previous flood risk management plans for the 1<sup>st</sup> cycle (provided their content is equivalent to the requirements set out in the Directive).

## 1.2 Assessment of the FRMPs

The UoMs have been selected to cover different geographical areas of mainland France and also one of the overseas departments. Based on previous assessments (for example, for the first cycle of RBMPs) it was likely that France applies a common methodology for its FRMPs<sup>19</sup>. The selection also covers transboundary aspects: three of UoMs are declared to be part of transboundary UoMs (Rhine, Scheldt and Adour-Garonne); France has not indicated the Rhone UoM (FRD) as part of a transboundary UoM nevertheless, the river basin extends into Switzerland and Italy.

The table below summarises the five UoMs selected for the assessment:

**Table 5** *UoMs assessed in France*

UoM code	UoM Name
FRA	Scheldt, Somme and coastal waters of the Channel and the North Sea ( <i>Escaut, Somme, et cours d'eau côtiers de la Mer de la Manche et de la Mer du Nord</i> )
FRC	Rhine
FRD	Rhone and Coastal Mediterranean ( <i>Rhône et cours d'eau côtiers Méditerranéens</i> )
FRF	Adour, Garonne, Dordogne, Charente and coastal waters of Aquitaine ( <i>Garonne, Adour, Dordogne, Charente et cours d'eau côtiers charentais et aquitains</i> )
FRL	La Réunion ( <i>Cours d'eau de la Réunion</i> )

For legibility, this report refers to FRA as the Scheldt UoM, FRD as the Rhone UoM, FRF as the Adour-Garonne UoM and FRL as the La Réunion UoM.

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<sup>19</sup> The assessment found that France indeed applied a common approach in the five FRMPs assessed, for example with common national objectives and UoM-specific objectives, following a hierarchical approach. Some differences exist, for example in the extent of detail provided on local flood plans.

## 2. Integration of previously reported information

### 2.1 Conclusions drawn from the preliminary flood risk assessment

The conclusions of the PRFA are presented in the five FRMPs assessed. In all FRMPs assessed, there are summary maps showing areas of potential significant flood risk (APSFRs). Nor do the FRMPs describe the methodology employed for the PFRA step.<sup>20, 21</sup>

The five FRMPs assessed provide links to maps of the APSFRs. At the time of the assessment, however (August 2018), three of the five links still worked, those for the Rhone, for La Réunion and for Scheldt:

- Rhone (FRD):  
<http://www.rhone-mediterranee.eaufrance.fr/gestion/inondations/cartes.php>;
- La Réunion (FRL):  
<http://www.reunion.developpement-durable.gouv.fr/cartographie-des-risques-sur-les-r299.html>
- Scheldt (FRA):  
<http://www.nord-pas-de-calais.developpement-durable.gouv.fr/?Cartographie-des-TRI>

For the other two FRMPs assessed, maps of the APSFRs can be found on the following web pages:

- Rhine (FRC):  
<http://www.grand-est.developpement-durable.gouv.fr/evaluation-preliminaire-des-risques-d-inondation-r6726.html>
- Adour-Garonne (FRF):  
<http://www.occitanie.developpement-durable.gouv.fr/consulter-l-evaluation-preliminaire-du-risque-d-a19519.html>

Information was not found in the FRMPs regarding the treatment of conveyance routes in the PFRA.

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<sup>20</sup> FRMP FRA, p.2; FRMP FRG, p.44; FRMP FRC, p.11; FRMP FRD, p.16; FRMP FRL, p.9.

<sup>21</sup> France subsequently noted that the PFRA methodology is described in the specific PFRA documents.

### **2.1.1 Coordination with neighbouring Member States on shared RBDs/UoMs**

The identification of flood risk areas has been coordinated with neighbouring Member States in the FRMP for the Rhine (FRC)<sup>22</sup> and for the Scheldt (FRA) via the International Scheldt Commission<sup>23</sup>. The FRMP for the Rhone (FRD) discusses coordination and information exchange with Switzerland and Italy but does not refer specifically to activities in the PFRA (or FHRM) stages<sup>24</sup>. Information was not found in the FRMP regarding international coordination for the Adour-Garonne (FRF), which includes catchments shared with Spain.

### **2.1.2 Information how the PFRA was used in the development of the FHR maps**

There is no information available in the FRMPs or the reporting sheets for any of the five UoMs assessed regarding the ways which the PFRA was used in developing the FHRMs.<sup>25, 26</sup>

## **2.2 Presentation of Flood Hazard and Risk Maps (FHRMs) in the FRMPs**

Links to the flood hazard and flood risk maps have been presented in all the five FRMPs assessed; examples of the maps themselves are not reproduced within the FRMPs. For the Scheldt (FRA), Rhone (FRD) and La Réunion (FRL), the FHRM maps can be viewed via the same links as those for maps of the APSFRs (see above). For the Rhine and Adour-Garonne, the following links provide the FHRMs:

- Rhine (FRC):

<http://www.grand-est.developpement-durable.gouv.fr/territoires-a-risques-importants-d-inondation-tri-r6724.html>

- Adour-Garonne (FRF):

<http://www.occitanie.developpement-durable.gouv.fr/la-cartographie-des-tri-sur-le-bassin-adour-a20590.html>

The FHRMs identify floods from fluvial sources and, in some of the FRMPs, seawater floods in coastal and transitional waters. Other sources of flooding, including pluvial, are not shown in the FHRMs or indicated in the FRMPs: the maps do not include groundwater floods or

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<sup>22</sup> FRMP FRC, p. 21.

<sup>23</sup> Reporting sheet for the Scheldt FRMP (FRA).

<sup>24</sup> FRMP FRD, p. 18.

<sup>25</sup> Reporting sheet for FRA; reporting sheet for FRG; reporting sheet for FRC; reporting sheet for FRD; reporting sheet for FRL.

<sup>26</sup> France subsequently noted that the methodology to develop the FHRM is described in *circulaire* of 16 July 2012: [http://circulaire.legifrance.gouv.fr/pdf/2012/08/cir\\_35706.pdf](http://circulaire.legifrance.gouv.fr/pdf/2012/08/cir_35706.pdf)

floods from artificial water bearing structures. In addition, floods from no specific sources, as well as floods originating from more than one source of flooding, have not been identified<sup>27</sup>.

### **2.2.1 Maps for shared flood risk areas**

While the FRMPs for the Scheldt (FRA) and the Rhine (FRC) refer to coordination with neighbouring Member States, as indicated above they do not provide information on shared flood risk areas or coordination specifically on mapping<sup>28, 29</sup>.

### **2.2.2 Conclusions drawn from the flood hazard and flood risk maps**

According to the reporting sheets and all five FRMPs assessed:

- The FHRMs were used to set priorities and identify priority locations for flood risk management (e.g. properties and other assets, economic activities) in the FRMPs. France has formally designated APSFRs and the FHRM work and has developed local flood risk strategies for each APSFR.
- The FHRMs were used in the public participation process (see section 7).
- Measures have been defined based on the FHRMs.

## **2.3 Changes to the APSFRs or other Flood Risk Areas**

The FRMP assessment looked for information on changes in the identification of APSFRs since December 2011, or in the FHRMs since December 2013, indicated in the FRMP. No indications were found in the FRMPs assessed<sup>30</sup>.

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<sup>27</sup> The assessment of France's PFRA noted that, while the analysis of historic floods considered all sources of flooding, projections of future floods only covered fluvial and seawater sources. European Commission, Assessment of data and information reported by Member States on their Preliminary Flood Risk Assessments and identification of Areas of Potentially Significant Flood Risk under the Floods Directive Member State Report: [FR] - [France]. Available at:

[http://ec.europa.eu/environment/water/flood\\_risk/pdf/pfra\\_reports/PFRA%20Report%20-%20FR.pdf](http://ec.europa.eu/environment/water/flood_risk/pdf/pfra_reports/PFRA%20Report%20-%20FR.pdf)

<sup>28</sup> FRMP FRA; FRMP FRC.

<sup>29</sup> France subsequently remarked that there are no transboundary APSFRs.

<sup>30</sup> France subsequently informed that there were updates to the FHRMs in October 2014, July 2015, and May 2017.

## 2.4 Areas for further development in the earlier assessment of the flood hazard and risk maps

The FHRM assessment identified the following areas for further development for France<sup>31</sup>:

- France reported differences in the number of APSFRs identified in the PFRA and those reported in the FHRMs<sup>32</sup>.
- According to Article 6(2), the preparation of FHRMs for APSFRs shared with other Member States shall be subject to prior exchange of information between Member States concerned. No information was reported for some UoMs<sup>33</sup> on shared international flood risk areas<sup>34</sup>.
- According to Art. 6(4)(b), Member States shall report for each probability scenario the flood extent and the water depths or level, as appropriate. Some UoMs (FRA, FRB1, FRB2 and FRC) do not show water depth/level in their FHRMs.
- According to Art.6(5)(a), flood risk maps shall show the potential adverse consequences associated with flood scenarios in terms of number of inhabitants affected. Some UoMs (FRG and FRJ) did not report the number of inhabitants affected.
- According to Article 6(5)(c) Member States should report potentially affected protected areas identified in annex IV (i) (iii) and (v) to Directive 2000/60/EC: respectively, drinking water abstraction areas, recreation and bathing waters, and areas for the protection of habitats and species including Natura 2000 sites.
- Climate change was not included in the analysis<sup>35</sup>.
- There are no potential adverse consequences on the environment displayed in the maps: that is, no UoMs indicate potential adverse consequences on Protected Areas from medium probability fluvial floods.
- Concerning coastal floods, some UoMs (FRD and FRF) did not report water depth/level as per Article 6(4).

None of these points are explicitly addressed within the FRMPs assessed or the reporting sheets. However, a review of maps indicates that numbers of inhabitants are shown for FRG, though not for FRJ; water depth/levels are now shown in the FHRMs.

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<sup>31</sup> For the FHRM assessment, please see: European Commission, Assessment of Flood Hazard and Flood Risk Maps – Member State Report: FR France, 2014. Available at:

[http://ec.europa.eu/environment/water/flood\\_risk/pdf/fhrm\\_reports/FR%20FHRM%20Report.pdf](http://ec.europa.eu/environment/water/flood_risk/pdf/fhrm_reports/FR%20FHRM%20Report.pdf)

<sup>32</sup> France subsequently noted that one APSFR was missing in the reporting for APSFRs (2012-2014), however it was added in the update of the reporting of FHRMs in May 2017.

<sup>33</sup> Specifically for the Rhine (FRC), Scheldt (FRA), Meuse (FRB1), and Sambre (FRB2).

<sup>34</sup> There are none, according to France.

<sup>35</sup> France subsequently indicated that coastal flooding is incorporated in the maps.

## 2.5 Good practices and areas for further development

The following **good practice** was identified:

- The methodology for the development of the FRMP itself is well described in a clear way.

The following **areas for further development** were identified:

- The FRMPs assessed provide limited details on the prior steps: they included only limited information on the APSFRs and describe only briefly the methodology followed. Some internet links in the FRMPs assessed do not work.

### 3. Setting of Objectives

#### 3.1 Focus of objectives

The objectives in the five FRMPs assessed are defined at three levels: national, UoM and also at the local/APSFR level.

The FRMPs refer to the following three objectives set at national level<sup>36</sup>:

- Improve the safety of populations exposed;
- Stabilise in the short term and reduce in the long term the costs of damages linked to floods;
- Strongly reduce the period for returning to normal in stricken territories.

The FRMPs assessed each set five objectives. While the objectives vary across the plans, all five FRMPs assessed contain an objective for sustainable spatial planning: for the Adour-Garonne (FRF), for example, the objective is the following: Sustainably manage territories, better taking into account the risk of flooding with the goal of reducing vulnerability.

All five FRMPs assessed include an objective to improve information. For the Scheldt plan (FRA), the objective is to: Improve knowledge of flood risks and the sharing of knowledge, to inform decisions and make actors aware of their responsibilities.

The five FRMPs assessed also have objectives on governance. The Rhine FRMP (FRC), for example, calls for promoting cooperation among actors. Other objectives seen include strengthening the resilience of the territory. The plan for La Réunion (FRL), for example, calls for reducing current vulnerability and increasing the flood resilience of the territory.

The five FRMPs assessed also indicate more detailed objectives under their five main ones. This is the case, for example, for the Rhone (FRD) FRMP, where one of the main objectives is to better address flood risk in planning and to reduce the cost of damages; there are also three sub-objectives, for example to improve knowledge about territorial vulnerabilities, reduce these vulnerabilities and respect principles for territorial planning adapted to flood risk.

Moreover, for each APSFR identified, a local flood risk management strategy is to be prepared<sup>37</sup>. Elements of these local strategies are presented in the FRMPs: for example, the Scheldt (FRA) and Rhine (FRC) FRMPs present the objectives for each of the UoM's APSFRs.

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<sup>36</sup> The national objectives are set in the National strategy for flood risk management (*stratégie nationale de gestion des risques d'inondation*), May 2014, available at (October 2014 version):

<sup>37</sup> These local strategies are not reviewed here.

In the Scheldt FRMP, four objectives are identified for the Lys APSFR; the first calls for actions to manage risk and protect urbanised areas, preserve and protect flood plains and retain water upstream.

Consequently, in the FRMPs assessed:

- The objectives aim to reduce the adverse consequences of floods in all five FRMPs;
- The objectives aim to reduce the likelihood of flooding in one of the five FRMPs: the plan for the Adour-Garonne, for example, calls improving the management of protection works against flooding. In addition, several sub-objectives and actions seek to reduce the likelihood of flooding (as seen above in the example of an objective for the Lys APSFR in the Scheldt FRMP).
- The objectives refer to non-structural initiatives in all five FRMPs assessed.

### **3.2 Specific and measurable objectives**

In France, objectives are neither specific nor measurable<sup>38</sup>.

Nonetheless, it is clear which measures are allocated to which objectives, as the FRMPs contain a hierarchy of objectives and then for each, an identification of actions to be taken, i.e. measures (called *dispositions* in the plans). However, it cannot be assessed from the information available how much the measures will contribute to achievement of each FRMP objective.

### **3.3 Objectives to reduce adverse consequences from floods**

The national objectives and the objectives of all the FRMPs assessed seek to reduce adverse consequences from floods. As noted above, the national objectives refer to the safety of persons and the costs of flood damages. Environmental aspects are mentioned in the objectives set for some of the FRMPs assessed. In some of the FRMPs assessed, the objectives include a reference to the protection of cultural heritage.

### **3.4 Objectives to address the reduction of the likelihood of flooding**

Of the five FRMPs assessed, only the plan for Adour-Garonne contains an objective directly linked to the reduction in the likelihood of flooding. In addition, several objectives, including those for spatial planning, and their sub-objectives and actions, seek to reduce the likelihood of

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<sup>38</sup> France subsequently described these objectives as strategic.

flooding. The objectives for several APSFRs in the FRMPs assessed refer to the reduction of flood risk<sup>39</sup> and of the likelihood of flooding.

### **3.5 Process for setting the objectives**

The objectives are based 1) on the national objectives and policy and 2) on an assessment of the basin. The FRMPs take into consideration current knowledge of sea level rise and include measures to study in more detail climate change effects on a regional scale.

The FRMPs do not provide detail on the process for determining their objectives; however, they do refer to discussions within commissions under the Basin Committees and to flood risk pilot groups that bring together government bodies and other stakeholders (see section 7).

### **3.6 Good practices and areas for further development regarding setting objectives**

The following **good practices** were identified:

- All five FRMPs assessed have a coherent, hierarchical approach from national to UoM objectives and then to sub-objectives and lines of action.
- All five FRMPs assessed include objectives to address flood risks in spatial planning.
- France has developed flood risk plans at APSFR level, that translate FRMP objectives into local goals and actions.

The following **area for further development** was identified:

- The objectives at national and UoM levels are not specific or measurable.

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<sup>39</sup> The assessment adopts the generally accepted definition of risk as a product of consequence times likelihood, thereby also in alignment with Art. 7(2) of the FD.

## 4. Planned measures for the achievement of objectives

France has reported a total of 601 individual measures and 47 aggregated<sup>40</sup> measures across all 14 UoMs, for a total of 648 measures<sup>41</sup>.

The measures cover all four aspects of flood risk management: prevention, protection, preparedness and recovery and review (in addition, France reported ‘no action’ and ‘other’ measures). France has reported some measures to more than one measure type (see Annex B for an overview of the measure types): when reporting for each measure type is counted, there are a total of 743 individual and 47 aggregated measures, for a total of 790 (this implies double-counting). Across the four measure aspects:

- 313 prevention measures are reported (40% of the 790 measures)
- 155 protection measures (20%)
- 181 preparedness measures (23%)
- 51 recovery and review measures (6%)

In addition, France has reported 81 ‘other’ measures (10%) and three ‘no action’ measures (less than 1%).

The number of measures per UoM ranges from 23 (in the Mayotte UoM, FRM) to 135 in the Seine UoM (FRH). For the five FRMPs assessed, while the number of measures varies, the shares across the measure aspects remain more or less similar to the national average (one difference is that La Réunion, FRL contains a lower share of protection measures than the other UoMs assessed and a higher share of preparedness measures):

- Scheldt (FRA): prevention: 17 (35%), protection: 12 (24%), preparedness: 8 (16%), Recovery: 5 (10%), other: 7 (14%)
- Adour-Garonne (FRf): prevention: 16 (33%), protection: 13 (27%), preparedness: 11 (22%), Recovery: 6 (12%), other: 3 (6%);
- Rhine (FRC): prevention: 18 (38%), protection: 10 (21%), preparedness: 14 (30%), Recovery: 1 (2%), other: 4 (9%);

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<sup>40</sup> The Reporting Guidance mentions “Measures can be reported as individual measures (recommended for major projects) or aggregated measures,…” and also notes that measures may be comprised of “many individual projects”. European Commission, Guidance for Reporting under the FD (2007/60/EC), 2013, pp. 54-58.

<sup>41</sup> The information reported to WISE was the starting point for the assessment in this section. The majority of the statistics presented are based on processing of information reported to WISE. Assuming that the Member States accurately transferred the information contained in their FRMPs to the reporting sheets (the sheets are the same for all Member States and are not customisable) and barring any errors in the transfer of this information to WISE arising from the use of interfacing electronic tools, these statistics should reflect the content of the FRMPs

- Rhône (FRD): prevention: 20 (38%), protection: 10 (19%), preparedness: 15 (29%), Recovery: 6 (12%), other:6 (12%);
- La Réunion (FRL): prevention: 31 (36%), protection: 10 (11%), preparedness: 31 (36%), Recovery: 5 (6%), other:7 (8%).

The 47 aggregated measures were reported only in one of the 14 UoMs, Martinique (FRJ), which was not among the five assessed. While only aggregated measures are reported for this UoM, only individual measures are reported for the other 13 UoMs in France<sup>42</sup>.

#### **4.1 Cost of measures**

France did not report any information about the costs for the measures, nor was information found in the five FRMPs assessed<sup>43</sup>.

#### **4.2 Funding of measures**

Neither the reporting sheets nor the FRMPs provide information about sources of funding for the measures. Some of the FRMPs – for example for the Adour-Garonne (FRF) and La Réunion – refer to sources of funding for past floods plans and for flood actions under the first cycle of RBMP: EU funds are mentioned, as well as national financing and (for La Réunion), regional financing<sup>44, 45</sup>.

#### **4.3 Measurable and specific (including location) measures**

In the FRMPs, measures (called ‘dispositions’) are presented at a strategic level (not specified to specific locations, but as actions across the UoM and formulated in a generic way). None of the FRMPs assessed include a clear and explicit description of the measures with regard to:

- What they are trying to achieve,
- Where they are to be achieved,
- How they are to be achieved, and
- By when they are expected to be achieved.

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<sup>42</sup> Neither the FRMPs nor France’s reporting indicate how individual and aggregated measures were defined.

<sup>43</sup> France subsequently informed that the implementation of FRMPs is mainly done through financial programmes (called PAPI - *Programmes d’actions de prévention des inondations*). PAPIs contain very detailed actions, with a detailed time schedule and cost and financing elements. During the last two years (2016 and 2017), around EUR 367.5 million has been invested, with different sources of funding, including EUR 155 million from the “*Fonds de prévention des risques naturels majeurs*”, which is a national fund dedicated to natural risk prevention.

<sup>44</sup> FRMP FRF, p. 20; FRMP FRL, pp. 33, 35, 40.

<sup>45</sup> As noted above, France subsequently informed that FRMPs are implemented via the PAPI, which in turn are financed in large part from a national fund dedicated to risk prevention.

None of the five FRMPs assessed contained a list of measures with further details.

In its reporting sheets, France provided information for the location of all measures; however, this was an open field and it has not been possible to categorise the responses given.

#### **4.4 Measures and objectives**

It is not clear how measures will contribute to the achievement of objectives, nor clear by how much they will contribute. It is also not clear whether the objectives will be achieved when all measures are completed, also as the measures themselves are not specific or measurable. As there is a lack of details on the measures (where, when, what...), it is not possible to assess progress against the objectives.

#### **4.5 Geographic coverage/scale of measures**

For the majority of the measures (602 out of 790), France did not provide information about the geographic coverage. For the remaining measures, the geographic coverage was reported as the code of the UoM. The UoM was reported as the geographic coverage for all measures in the UoM FRA, FRC, FRD, FRG; and for some of the measures in UoM FRL (about 50%).

#### **4.6 Prioritisation of measures**

France provided information for the priority of all measures:

- In total, 381 measures (48% of 790 measures) are indicated as critical priority;
- 18 measures are indicated as very high priority (2%);
- 44 measures are indicated as high priority (6%);
- 344 measures are indicated as moderate priority (44%);
- And 3 measures, low priority (less than 1%).

For three UoMs – Corsica (FRE), Seine and Normandy (FRH) and Guyana (FRK) – France reported all measures as having critical priority. For five UoMs (including three of the five assessed here) France reported all measures as having moderate priority: Scheldt (FRA), Meuse (FRB1), Sambre (FRB2), Rhine (FRC) and Rhone (FRD).

For the other two FRMP assessed, the priorities are quite different:

- For the Adour-Garonne (FRF), 96% of measures are critical priority and the remaining 4%, moderate priority;
- For La Réunion (FRL), for example, 45% of measures are of critical priority; 20% of very high priority; 15% of high priority and 20% of moderate priority.

Only one of the FRMPs – for La Réunion (FRL) – provides this information, indicating the priorities for each measure (this plan lists the measures and their priorities in an annex). It is reported in the other FRMPs and in the reporting sheets only that the measures are all seen as having priority as they are associated or related to identified flood risk areas.

None of the five FRMPs assessed describe methods for setting priorities. The different FRMPs refer to the use of cost/benefit analysis, without providing further information on criteria and methods.<sup>46</sup> The FRMPs do not indicate, however, if CBA has been used to prioritise measures<sup>47</sup>.

France did not report any information about the timetable of the measures. None of the five FRMPs assessed provide information on the timetable of their measures, though they state that measures are being defined with input from the regions.

#### **4.7 Authorities responsible for implementation of measures**

France reported that the RBD/UoM authority (the Prefect Coordinator of the respective river basin) is responsible for implementing the FRMPs.

The FRMPs themselves are to be implemented mainly through local flood risk management strategies (*Stratégies Locales de Gestion des Risques d’Inondation*) at the APSFR level, implemented by municipalities, inter-municipal structures and other government bodies through programmes called PAPI (*Programmes d’actions de prévention des inondations*).

#### **4.8 Progress of implementation of measures**

France reported the progress of all measures:

- Two measures have been completed (<1% of all measures reported for France);
- For 202 measures, construction is ongoing (26% of the 790 measures);
- For 341 measures, progress is ongoing (43% of the total);
- 241 measures have not started yet (31%).

There are significant differences between the UoMs assessed in terms of progress of measures. All the measures for the Rhine (FRC) and Rhone (FRD) UoMs are reported as ‘progress ongoing’. For both the Scheldt (FRA) and the Adour-Garonne (FRF), just over 50% of measures were reported as ‘construction ongoing’. However, for La Réunion (FRL), 72% of measures are reported as ‘not started’.

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<sup>46</sup> FRMP FRA, p.25; FRMP FRC, p.45; FRMP FRD, p.59; FRMP FRG, p.40; FRMP FRL, p12.

<sup>47</sup> France subsequently informed that cost and benefit analysis is applied at project level.

## 4.9 Measures taken under other Community Acts

Member States have been asked to report on other Community Acts under which each measure has been implemented.

Under other Community Acts, France reported 114 measures (14% of the total of 790): for all of these France identified either the WFD (for 87 measures) or, for 27 measures in the Seine UoM/RBD (FRH), the RBMP<sup>48</sup>.

## 4.10 Specific groups of measures

France has reported **spatial planning measures** in all UoMs: specifically, measures to prevent development in flood-prone areas are found in all (measure type M21<sup>49</sup>).

Each of the five FRMPs assessed contains an objective for sustainable spatial planning (see section 3), along with actions to achieve the objective. For example, the Rhone FRMP (FRD) has an action to avoid the increase of vulnerability through the orientation of urban development outside risk zones (FRMP *disposition* 1-6). A similar measure is seen in the Scheldt FRMP (FRA) to orient urban development of territories outside of flood zones and ensure attention to exposed receptors in urban planning documents.

**Natural water retention measures (NWRMs)** have been planned in all five FRMPs assessed. For example, the Rhone FRMP (FRD) contains an action to restore the natural functioning of environments to allow the reduction of floods and floods from sea water (*disposition* 2-6). Similarly, the Scheldt FRMP (FRA) contains an action to conserve and restore natural flood zones.

**Measures that specifically consider nature conservation:** the FRMPs for the Scheldt (FRA), Rhine (FRC), La Réunion (FRL) and Rhone (FRD) state that nature conservation was taken into consideration: for example, the Scheldt FRMP contains an action to halt the disappearance and degradation of coastal wetlands and natural areas and preserve, maintain and protect their functionality.

Similar detail was not found in the FRMP for Adour-Garonne (FRF), though its reporting sheets – and indeed those for all of France’s UoMs – contain a general reference that implementation will support nature conservation.<sup>50</sup>

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<sup>48</sup> In French, the Schéma directeur d'aménagement et de gestion des eaux (SDAGE).

<sup>49</sup> Prevention, Avoidance, Measure to prevent the location of new or additional receptors in flood prone areas, such as land use planning policies or regulation.

<sup>50</sup> Chapter "Summary of the Flood Extent" in the reporting sheets of the assessed FRMPs.

Some, but not all of the five FRMPs assessed make a brief reference that they shall take into consideration **navigation and port infrastructure**: this is the case for actions in the Scheldt (FRA) and Rhine (FRC) FRMPs<sup>51</sup>.

No reference has been found in the five FRMPs assessed to **dredging** to increase the river channel capacity and its ability to convey water for flood alleviation purposes.

#### **4.11 Recovery from and resilience to flooding**

The role of insurance policies is not discussed in any of the five FRMPs assessed. There is also no information provided with regard to the type of insurance available or to be developed for areas that could potentially flood<sup>52</sup>.

#### **4.12 Monitoring progress in implementing the FRMP**

Neither the FRMPs nor the reporting sheets provide information on the process for monitoring the progress of implementation.

France's reporting sheets state that progress indicators will be developed from 2016 onwards. Further information is provided in four of the five FRMPs: for example, the Scheldt FRMP (FRA) mentions that indicators will be prepared at UoM level by the Floods Commission of the Artois-Picardie Basin (*Commission inondation du Bassin Artois-Picardie*). The Rhine FRMP (FRC), for example, explains that indicators to follow the implementation of the Plan will be identified early in the implementation cycle on the basis of the indicators set out in the national strategy for flood risk management (the strategy identifies a set of indicators to be used to follow the progress of its implementation and that of the FRMPs and lower-level plans that address flood risk<sup>53</sup>). The Rhine FRMP moreover notes that work will be carried out at national level to define a baseline for flood risk management. The FRMPs for the Adour-Garonne (FRF) and for La Réunion (FRL) also refer to indicators; however, no information was found in the FRMP for the Rhone, FRD.

#### **4.13 Coordination with the Water Framework Directive**

The table below shows how the development of the FRMP has been coordinated with the development of the second River Basin Management Plan of the WFD.

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<sup>51</sup> Reporting sheets, chapter "Summary of the Flood Extent". It is noted that inland water navigation is not relevant on La Reunion (FRL).

<sup>52</sup> France subsequently clarified the absence of discussion regarding insurance is due to the existence of a national insurance system.

<sup>53</sup> National strategy for flood risk management (*stratégie nationale de gestion des risques d'inondation*), May 2014, available at (October 2014 version):

**Table 7** *Coordination of the development of the FRMP with the development of the second River Basin Management Plans of the WFD*

	FRA	FRC	FRD	FRF	FRL
Integration of FRMP and RBMP in a single plan					
Joint consultation of draft FRMP and RBMP	✓	✓	✓	✓	✓
Coordination between authorities responsible for developing FRMPs and RBMPs	✓	✓	✓	✓	✓
Coordination with the environmental objectives in Art. 4 of the WFD		✓	✓	✓	
The objectives of the Floods Directive were considered in the preparation of the RBMPs <sup>a</sup>	✓	✓	✓	✓	✓
Planning of win-win and no-regret measures in FRMPs					
The RBMP PoMs includes win-win measures in terms of achieving the objectives of the WFD and Floods Directive, drought management and NWRMs <sup>a</sup>	✓	✓	✓	✓	✓
Permitting or consenting of flood risk activities (e.g. dredging, flood defence maintenance or construction) requires prior consideration of WFD objectives and RBMPs <sup>54</sup>					
Natural water retention and green infrastructure measures have been included	✓	✓	✓	✓	✓
Consistent and compliant application of WFD Article 4.7 and designation of heavily modified water bodies with measures taken under the FD e.g. flood defence infrastructure <sup>a</sup>	✓	✓	✓	✓	✓
The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, have been adapted to take into account WFD Environmental Objectives					
The use of sustainable drainage systems, such as the construction of wetland and porous pavements, have been considered to reduce urban flooding and also to					

<sup>54</sup> France subsequently clarified that environmental authorisation is required for flood risk work permits.

	FRA	FRC	FRD	FRF	FRL
contribute to the achievement of WFD Environmental Objectives					

Notes: <sup>a</sup> based on MS reporting under the WFD

In each UoM/RBD, both the FRMPs and RBMPs are managed under the Basin Committee and the Prefect coordinator of the basin. The FRMP for the Scheldt (FRA) provides a schematic representation of the relationship and coordination between the WFD and FD management. The other FRMPs do not contain this scheme but describe the administrative relationships between the WFD and FD. The FRMP for the Rhine (FRC) refers to a national guidance document on the FRMP and FD on the competence areas of the Flood Directive and the Water Framework Directive<sup>55</sup>.

It is mentioned in all FRMPs that joint consultation has taken place of the FRMP and RBMP. The coordination between the FRMPs and the environmental objectives set out in Art. 4 of the WFD is being done.

#### 4.14 Good practices and areas for further development with regard to measures

The following **good practices** were identified:

- France has reported the existence of spatial planning measures in all of its FRMPs.
- All five FRMPs assessed include NWRMs.

The following **areas for further development** were identified:

- The information provided in the FRMPs on their measures are not specific and measurable;
- The FRMPs do not provide information on the cost of measures or potential sources of funding.
- The approach to prioritisation is not clear: France has reported all measures in some UoMs with the same priority. The FRMPs assessed do not provide an indication how priorities were set.
- The FRMPs assessed provide limited information on the process to monitor progress, on possible indicators and a baseline, though it is indicated that these will be developed early in the implementation period on the basis of work at national level.

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<sup>55</sup> FRMP FRC, p. 15.

## 5. Consideration of climate change

France's national strategy for flood risk management refers to climate change, warning that sea level rise and storms could increase coastal flooding and moreover that climate impacts could be particularly strong in overseas departments<sup>56</sup>. France addressed coastal flooding in its FHRMs<sup>57</sup>.

All FRMPs assessed refer to climate change impacts, again mainly in terms of the impacts linked to the change of sea level: this is seen, for example in the Scheldt FRMP (FRA). The Rhone FRMP (FRD) provides information on the timeframe within which climate impacts were considered (year 2100). The five FRMPs assessed do not refer to the national Climate Change Adaptation Strategy, nor the follow-up Plans<sup>58</sup>. In general, the FRMPs assessed make few references to climate change and have not addressed this topic in depth. Moreover, their references focus on sea level rise; climate effects on land, such as changes in precipitation, are not addressed in the FRMPs<sup>59</sup>.

All FRMPs assessed contain measures that refer to climate change. The Scheldt FRMP (FRA) reports that the results of studies on sensitivity of streams to flooding from sea-level rise have been included in the design of measures. Measures in the Rhone FRMP (FRD) and the Adour-Garonne FRMP (FRF) will study the impacts of sea level rise in the coastal areas. The Rhine FRMP (FRC) includes a provision that local flood risk plans should take into account climate impacts on safety margins. The FRMP for La Réunion calls for states that additional further research is required to assess the future impact of climate change on flooding and also for public awareness programmes on climate change to integrate information on the impacts on flooding phenomena.

### 5.1 Good practices and areas for further development concerning climate change

The following **good practice** was identified:

- France's national flood risk strategy refers to climate change and all FRMPs assessed include measures that address potential climate impacts or call for their study.

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<sup>56</sup> The national objectives are set in the National strategy for flood risk management (*stratégie nationale de gestion des risques d'inondation*), May 2014

<sup>57</sup> France subsequently noted that the FHRMs for coastal flooding take into account the short term impact of climate change (+20 cm) and include an additional map taking into account long term climate change (+60 cm).

<sup>58</sup> France adopted a national strategy for adaptation to climate change in 2006, then a first national adaptation plan in 2011. The government's 2016 roadmap for ecological transition provides the broad lines for the plan's revision.

<sup>59</sup> France subsequently explained that this is because the FRMPs are based on information available at the time.

The following **area for further development** was identified:

- The FRMPs assessed make few references to climate change and have not addressed this topic in depth. These references focus on sea level rise; climate effects such as changes in precipitation, are not addressed in the FRMPs. Moreover, the FRMPs do not refer to the French national climate change adaptation strategy.

## 6. Cost-benefit analysis

The five FRMPs assessed refer to CBA for future actions; the FRMPs and the reporting sheets do not, however, indicate if CBA has been used for the preparation of the plans, for example for the selection or prioritisation of measures.

The FRMP Rhine, for example, mentions that measures are required to undergo a cost/benefit analysis<sup>60</sup> but does not provide further information on the methods; it is therefore unclear if cost benefit analysis has been used in the preparation of the plan and its actions<sup>61</sup>.

The FRMP for the Rhone (FRD) refers to several actions to be taken related to cost/benefit analysis: for example, it calls on local administrations to assess the potential costs of flood damages; it also calls for local strategies to address coastal erosion and indicates that the choice of interventions should be made considering cost/benefit analysis<sup>62</sup>.

No information was found in the reporting sheets or the FRMPs assessed indicating whether the methods used or planned will consider possible multi-benefits of measures, nor if they will be used to assess measures with transnational effects.

### 6.1 Good practices and areas for further development

The following **area for further development** has been identified:

- The FRMPs provide little information on cost/benefit analysis and it is unclear, from the documents accessed, if it was applied or in what circumstances it will be used.

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<sup>60</sup> FRMP Rhine FRC, p.11.

<sup>61</sup> France informed subsequently that CBA is applied at project level – and the methodology is detailed in: <https://www.ecologique-solidaire.gouv.fr/sites/default/files/Th%C3%A9ma%20-%20Analyse%20multicrit%C3%A8re%20des%20projets%20de%20pr%C3%A9vention%20des%20inondations%20-%20Guide.pdf>

<sup>62</sup> FRMP FRD, pp. 47, 59.

## 7. Governance including administrative arrangements, public information and consultation

### 7.1 Competent authorities

Based on the FRMPs and the information provided in the reporting sheets, the Competent Authorities and the Units of Management identified for the Floods Directive have not changed. France has not reported new information to WISE since 2011.

### 7.2 Public information and consultation

The table below shows how the public and interested parties were **informed** in the five UoMs assessed concerning the draft FRMPs. Information on how the consultation was actually carried out and which stakeholders participated<sup>63</sup> is presented in the rest of the section<sup>63</sup>:

**Table 8** *Methods used to inform the public and interested parties of the FRMP*

	FRA	FRC	FRD	FRF	FRL
Media (papers, TV, radio)	✓	✓	✓	✓	✓
Internet	✓	✓	✓	✓	✓
Digital social networking					
Printed material					
Direct mailing					
Invitations to stakeholders	✓	✓	✓	✓	✓
Local Authorities					
Meetings					

*Source: FRMPs*

Public consultation via Internet was organised in all five UoMs, and the draft FRMPs were provided as downloads on national websites and on the web sites of the UoM authorities.

The table below shows how the actual **consultation** was carried out:

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<sup>63</sup> Based on the reporting sheets and the FRMPs assessed.

**Table 9** *Methods used for the actual consultation*

	FRA	FRC	FRD	FRF	FRL
Via Internet	✓	✓	✓	✓	✓
Digital social networking					
Direct invitation	✓	✓	✓	✓	✓
Exhibitions					
Workshops, seminars or conferences					
Telephone surveys					
Direct involvement in drafting FRMP					
Postal written comments/ Direct mailing (post)					

*Source: FRMPs*

The public and stakeholders could submit comments via internet. Direct stakeholders were informed and invited via direct invitation.

The table below shows how the **documents** for the consultation were provided:

**Table 10** *Methods used to provide the documents for the consultation*

	All UoMs assessed
Downloadable	✓
Direct mailing (e-mail)	
Direct mailing (post) <sup>64</sup>	
Paper copies distributed at exhibitions	
Paper copies available in municipal buildings (town hall, library etc.)	
Paper copies at the main office of the competent authority	✓

*Source: FRMPs*

The documents were downloadable via the internet sites of both the national government and the river basin administrations. For example, the draft FRMP Rhone was available at:

- [www.sauvonsleau.fr](http://www.sauvonsleau.fr)
- [www.rhone-mediterranee](http://www.rhone-mediterranee) and
- [eaufrance.fr/gestion/inondations](http://eaufrance.fr/gestion/inondations).

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<sup>64</sup> France subsequently informed that documents for the consultation were provided by direct mailing for some of the FRMPs.

### 7.3 Active involvement of Stakeholders

The table below shows the groups of **stakeholders** that have been actively involved in the development of the five FRMPs assessed:

**Table 11** *Groups of stakeholders*

	All UoMs assessed
Civil Protection Authorities such as Government Departments responsible for emergency planning and coordination of response actions	✓
Flood Warning / Defence Authorities	✓
Drainage Authorities	✓
Emergency services	✓
Water supply and sanitation	✓
Agriculture / farmers	✓
Energy / hydropower	
Navigation / ports	
Fisheries / aquaculture	
Private business (Industry, Commerce, Services) <sup>65</sup>	
NGOs including nature protection, social issues (e.g. children, housing)	✓
Consumer Groups	
Local / Regional authorities	✓
Academia / Research Institutions	
Other*	✓

Note: \* In France, ‘other’ refers to the Water Agencies.

The following common approach has been applied in the five UoMs assessed: from 2013, stakeholders and relevant authorities were involved in the planning process under the Basin Committees. This included municipalities, other territorial actors involved in planning (*acteurs de l'aménagement du territoire*) such as local and inter-municipal authorities, the Water Agencies in the UoMs (e.g. the Artois-Picardy Water Agency for the Scheldt FRMP). Other stakeholders involved include NGOs and agriculture representatives.

The table below shows the **mechanisms** used to ensure the active involvement of stakeholders:

**Table 12** *Mechanisms used to ensure the active involvement of stakeholders*

	FRA	FRC	FRD	FRF	FRL
Regular exhibitions					
Establishment of advisory groups					
Involvement in drafting	✓	✓	✓	✓	✓

<sup>65</sup> France subsequently informed that private businesses were actively involved in the development of some FRMPs.

	FRA	FRC	FRD	FRF	FRL
Workshops and technical meetings	✓				
Formation of alliances					
Information days					
Other *	✓	✓	✓	✓	✓

Note: \* “Other” in France refers to involvement via the Basin Committees

In parallel to the consultation procedure of the measures, the regional environment management authorities contacted stakeholders directly for their comments on the draft plan. The information available does not indicate how this was organised. The three major stakeholder groups in this step were flood warning/defence authorities, drainage authorities and local/regional authorities.

The FRMPs were prepared under the Basin Committees. The FRMPs for the Scheldt (FRA), Rhone (FRD) and Adour-Garonne (FRF) state that the UoM’s Basin Committee created a Floods Commission: for the Adour-Garonne, the Commission included regional and local government bodies (including inter-municipal structure), civil society and government authorities. The FRMP for the Rhine (FRC) instead indicates a Working Group on Floods was created under the Basin Committee: the members listed include local governments, the chamber of agriculture of the Lorraine Region and insurance company representatives. For La Réunion (FRL), a ‘pilot committee’ was created for the implementation of the Floods Directive and this committee designated a group for the preparation of the FRMP, including representatives from the State and the Region, from the General Council of the Region, the Association of Mayors, the Basin Committee, municipalities and inter-municipal structures.

#### 7.4 Effects of consultation

No information was found in the five FRMPs assessed, or in France’s reporting sheets, on how consultation and the active involvement of stakeholders affected the FRMPs. Detailed information on public consultation and the active involvement of stakeholders as well as on how inputs from the consultation influenced the plans are mentioned in an accompanying document called the “*déclaration environnementale*” available on the web pages for the FRMPs<sup>66</sup>.

#### 7.5 Strategic Environmental Assessment

All five FRMPs assessed underwent an SEA procedure.

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<sup>66</sup> For example, the document for the Rhone (FRD) FRMP is available at: [http://www.rhone-mediterranee.eaufrance.fr/docs/dir-inondations/pgri/20151207\\_DeclarationEnv-PGRI-RM-VF.pdf](http://www.rhone-mediterranee.eaufrance.fr/docs/dir-inondations/pgri/20151207_DeclarationEnv-PGRI-RM-VF.pdf)

For the Rhone FRMP, the SEA report (*Evaluation Environnementale du PGRI*) is indicated as a separate document that is part of Vol. 1 of the plan itself<sup>67</sup>. The other FRMPs assessed do not include references to their SEAs. All SEA documents are available online<sup>68</sup>.

## 7.6 Good practices and areas for further development regarding governance

The following **good practice** was identified:

- For each FRMP, a range of government bodies as well as some non-governmental stakeholders were involved in preparation, under the aegis of the Basin Committee.

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<sup>67</sup> Available at: <http://www.rhone-mediterranee.eaufrance.fr/gestion/inondations/pgri.php>.

<sup>68</sup> For the Scheldt FRMP (FRA), for example: <http://consultation.eau-artois-picardie.fr/docs/PGRI-EvaluationEnvironnementale.pdf>

For the Rhine (FRC): <http://www.grand-est.developpement-durable.gouv.fr/plans-de-gestion-des-risques-d-inondation-pgri-des-a15509.html>

For the Rhone (FRD): <http://www.rhone-mediterranee.eaufrance.fr/gestion/inondations/pgri.php>

For the Adour-Garonne (FRF): <http://www.occitanie.developpement-durable.gouv.fr/le-plan-de-gestion-des-risques-d-inondation-pgri-a22197.html>

For La Réunion (FRL): <http://www.reunion.developpement-durable.gouv.fr/plan-de-gestion-du-risque-d-inondation-pgri-r300.html>

## Annex A: Supplementary tables and charts on measures

This Annex gives an overview of the data on measures provided by France in the reporting sheets. These tables and charts were used for the preparation of section 4 on measures.

### Background & method

This document was produced as part of the assessment of the Flood Risk Management Plans (FRMPs). The tables and charts below are a summary of the data reported on measures by the Member States and were used by the Member State assessor to complete the questions on the Flood measures. The data are extracted from the XMLs (reporting sheets) reported by MS for each FRMP, and are split into the following sections:

- **Measures overview** – Tabulates the number of measures for each UoM;
- **Measure details: cost** – Cost & Cost explanation;
- **Measures details: name & location** – Location & geographic coverage;
- **Measure details: authorities** – Name of responsible authority & level of responsibility;
- **Measure details: objectives** – Objectives, Category of priority & Timetable;
- **Measure details: progress** – Progress of implementation & Progress description;
- **Measure details: other** – Other Community Acts.

On the basis of the reporting guidance (which in turn is based on the Floods Directive)<sup>69</sup>, not all fields are mandatory, and, as such, not all MS reported information for all fields.

Some of the fields in the XMLs could be filled in using standardised answers – for example, progress is measured via the categories set out in the Reporting Guidance. This means that producing comprehensive tables and charts required little effort. For many fields, however, a free data format was used. For some Member States, this resulted in thousands of different answers, or answers given in the national language.

In such situations, tables and charts were developed using the following steps:

- A first filter is applied to identify how many different answers were given. If a high number of different answers are given, MS assessors were asked to refer to the raw data when conducting the assessment, and this Annex does not reflect these observations.
- If a manageable number of answers are given, obvious categories are identified, and raw data sorted.

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<sup>69</sup><http://icm.eionet.europa.eu/schemas/dir200760ec/resources>

- Measures missing information may be assigned categories based on other fields (for example, if the level of Responsibility Authority is missing, the information may be obvious from the field “name of Responsible Authority”).
- Measures where obvious categories cannot be defined based on other available information (as in the example above on the name of the Responsible Authority), are categorised as “no information”.

## Types of measures used in reporting

The following table<sup>70</sup> is used in the reporting on the types of measures. Each type of measures is coded as an M-number. Measures are grouped in an ‘aspect’.

<b>NO ACTION</b> M11: No Action	<b>PREPAREDNESS</b> M41: Flood Forecasting & Warning M42: Emergency response planning M43: Public Awareness M44: Other preparedness
<b>PREVENTION</b> M21: Avoidance M22: Removal or relocation M23: Reduction M24: Other prevention	<b>RECOVERY &amp; REVIEW</b> M51: Clean-up, restoration & personal recovery M52: Environmental recovery M53: Other recovery
<b>PROTECTION</b> M31: Natural flood management M32: Flow regulation M33: Coastal and floodplain works M34: Surface Water Management M35: other protection	<b>OTHER MEASURES</b> M61: Other measures

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<sup>70</sup> Guidance for Reporting under the Floods Directive (2007/60/EC):  
<https://circabc.europa.eu/w/browse/a3c92123-1013-47ff-b832-16e1caaaf9a>

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**Table A1 - Total number of measures**

Number of individual measures	601
Number of individual measures including measures which have been allocated to more than one measure type	743
Number of aggregated measures	47
Number of aggregated measures including measures which have been allocated to more than one measure type	47
Total number of measures	648
Total number of measures including measures which have been allocated to more than one measure type	790
Range of number of measures between UoMs including measures which have been allocated to more than one measure type (Min-Max)	23 – 135
Average number of measures across UoMs including measures which have been allocated to more than one measure type	56

**Table A2 - Number of individual measures per measure type and UoM**

	No action	Prevention				Protection					Preparedness				Recovery and review			Other	Grand Total
	M11	M21	M22	M23	M24	M31	M32	M33	M34	M35	M41	M42	M43	M44	M51	M52	M53	M61	
FRA		2	1	1	13	5	2	1	2	2	3	1	1	3	2	1	2	7	49
FRB1		8		5	5	2			5	3	3	3	6	2	1			4	47
FRB2		2		1	13	5	2	1	2	1	3	1	1	3	2	1	2	7	47
FRC		8		5	5	2			5	3	3	3	6	2	1			4	47
FRD		7		4	9	2	2	4	1	1	2	5	4	4			1	6	52
FRE		12		3	6	5	1		1	2	7	5	1	2			1	6	52
FRF		3		5	8	8	2			3	2	4	3	2	2	2	2	3	49
FRG		9	1	9	10		1	1		4	1	3	6	8	3		1	16	73
FRH		18	18	20	19	7	6	8	2		1	5	11		6	7	1	6	135
FRI		3		5	8	9	3				4	2	5				1	9	49
FRK		2		3	10	2		1	2	1	2	2	3	1			1	3	33
FRL	3	3	1	7	20			3	1	6	8	4	18	1	3		2	7	87
FRM		2	3	1	2	1		1	2	1	2	1	2				2	3	23
<b>Grand Total</b>	<b>3</b>	<b>79</b>	<b>24</b>	<b>69</b>	<b>128</b>	<b>48</b>	<b>19</b>	<b>20</b>	<b>23</b>	<b>27</b>	<b>41</b>	<b>39</b>	<b>67</b>	<b>28</b>	<b>20</b>	<b>11</b>	<b>16</b>	<b>81</b>	<b>743</b>

	No action	Prevention				Protection					Preparedness				Recovery and review			Other	Grand Total
	M11	M21	M22	M23	M24	M31	M32	M33	M34	M35	M41	M42	M43	M44	M51	M52	M53	M61	
Average per UoM	<1	6	2	5	10	4	1	2	2	2	3	3	5	2	2	1	1	6	57

Notes: The total includes measures assigned to more than one measure type. Note also that all UoMs have individual measures except for Martinique (FRJ), which is not represented in this table.

*Table A3 - Number of aggregated measures per measure type and UoM*

	Prevention				Protection		Preparedness		Recovery and review			Other	Grand Total
	M21	M22	M23	M24	M31	M34	M41	M43	M51	M52	M53	M61	
FRJ	3	1	3	6	14	4	3	3	1	1	2	6	47
<b>Grand Total</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>14</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>47</b>

Notes: The total includes measures assigned to more than one measure type. Note also that only Martinique (FRJ) has aggregated measures and only this UoM is represented in this table.

*Table A4 - Total number of measures (aggregated and individual) per measure type and UoM, including duplicates*

	No action	Total	Prevention		Total	Protection		Total	Preparedness		Total	Recovery & review		Total	Other		Total	Grand Total
	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		
FRA				17	17		12	12		8	8		5	5		7	7	49
FRB1				18	18		10	10		14	14		1	1		4	4	47
FRB2				16	16		11	11		8	8		5	5		7	7	47
FRC				18	18		10	10		14	14		1	1		4	4	47
FRD				20	20		10	10		15	15		1	1		6	6	52
FRE				21	21		9	9		15	15		1	1		6	6	52
FRF				16	16		13	13		11	11		6	6		3	3	49

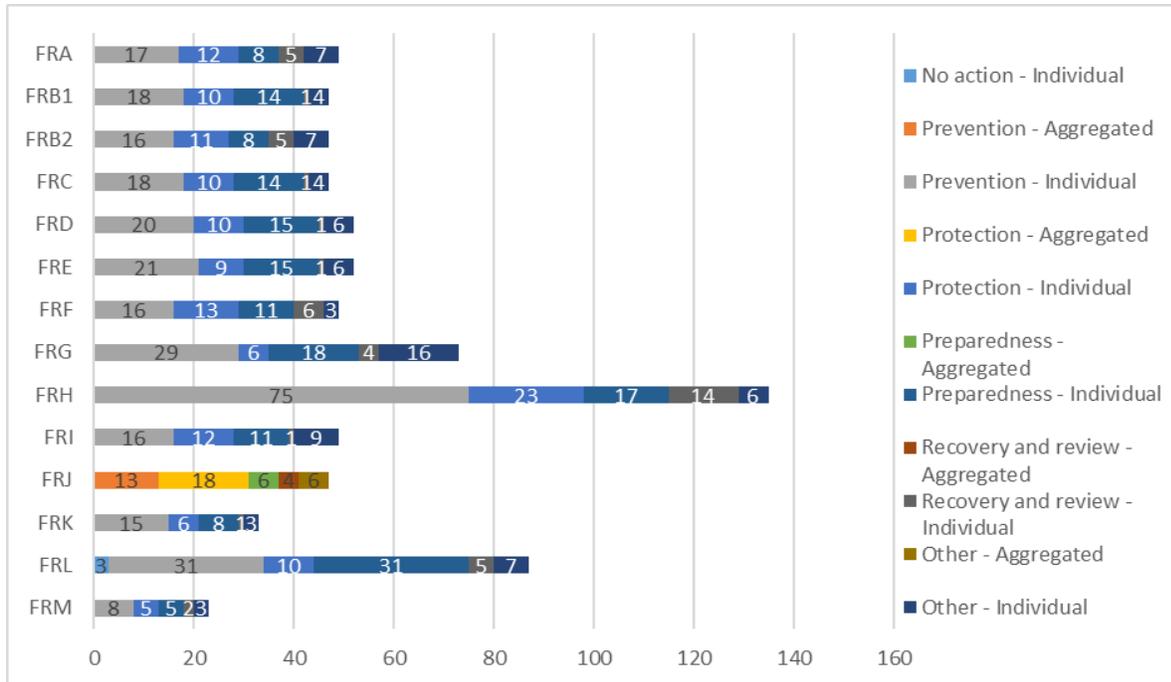
	No action	Total	Prevention		Total	Protection		Total	Preparedness		Total	Recovery & review		Total	Other		Total	Grand Total
	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		Agg.	Indiv.		
FRG				29	29		6	6		18	18		4	4		16	16	73
FRH				75	75		23	23		17	17		14	14		6	6	135
FRI				16	16		12	12		11	11		1	1		9	9	49
FRJ			13		13	18		18	6		6	4		4	6		6	47
FRK				15	15		6	6		8	8		1	1		3	3	33
FRL	3	3		31	31		10	10		31	31		5	5		7	7	87
FRM				8	8		5	5		5	5		2	2		3	3	23
<b>Grand Total</b>	<b>3</b>	<b>3</b>	<b>13</b>	<b>300</b>	<b>313</b>	<b>18</b>	<b>137</b>	<b>155</b>	<b>6</b>	<b>175</b>	<b>181</b>	<b>4</b>	<b>47</b>	<b>51</b>	<b>6</b>	<b>81</b>	<b>87</b>	<b>790</b>
<b>Average per UoM</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>1</b>	<b>21</b>	<b>22</b>	<b>1</b>	<b>10</b>	<b>11</b>	<b>&lt;1</b>	<b>13</b>	<b>13</b>	<b>&lt;1</b>	<b>3</b>	<b>4</b>	<b>&lt;1</b>	<b>6</b>	<b>6</b>	<b>56</b>

Notes: Individual measures (Indiv.) and aggregated measures (agg.)

The total includes measures assigned to more than one measure type.

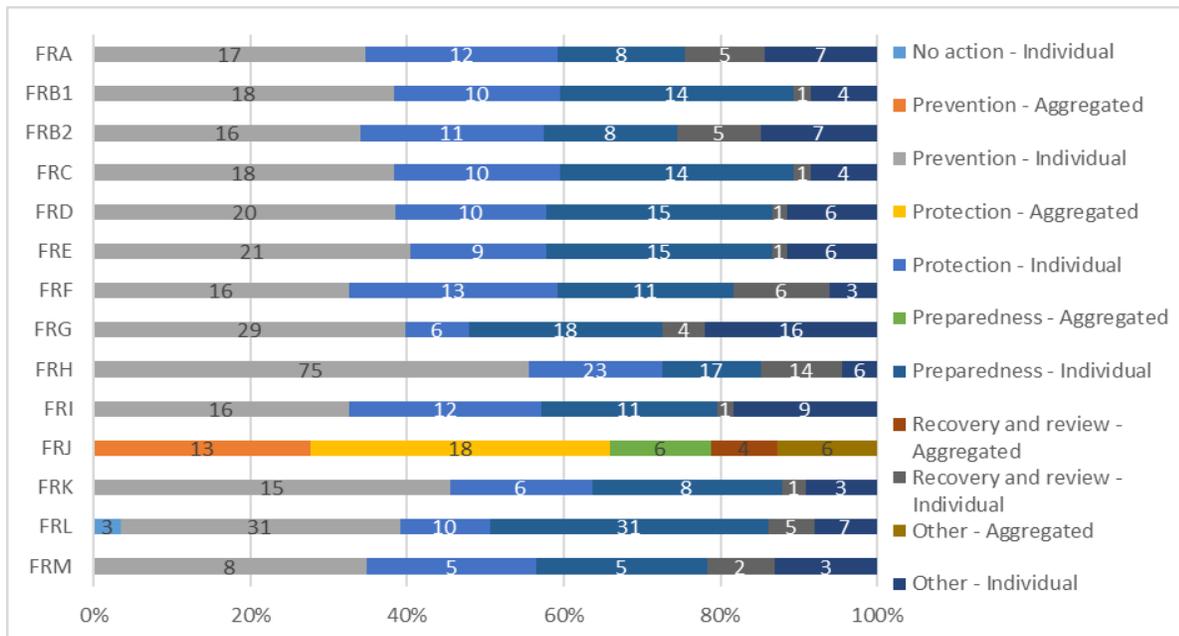
The information in Table A4 is visualised in Figures A1 and A2 below:

**Figure A1 - Number of total measures (individual and aggregate) by measure aspect**



Notes: The total includes measures assigned to more than one measure type.

**Figure A2 - Share of total measures (aggregated and individual) by measure aspect**



Notes: The total includes measures assigned to more than one measure type.

## **Measure details: cost**

Member States were requested to report information on:

- Cost (optional field);
- Cost explanation (optional field).

France did not report any information in the reporting sheets about the costs or cost explanation of measures

## **Measure details: name & location**

Member States were requested to report information on the following:

- Location of implementation of measures (mandatory field);
- Geographic coverage of the impact of measures (optional field).

### **Location of measures**

France provided information about the location of all measures, however, this was an open question, and as such, numerous different responses were given. It was thus not practical to aggregate the information.

### **Geographic coverage**

For the majority of the measures (602) France did not provide information about the geographic coverage. For the remaining measures the geographic coverage was reported as the code of the UoM. The UoM was reported as the geographic coverage for all measures in the following UoMs: Meuse (FRB1), Rhine (FRC) and Mayotte (FRM). The UoM was indicated as the geographic coverage for some of the measures in the following UoMs: Adour-Garonne (FRF), Guadeloupe (FRI) and La Réunion (FRL).

## **Measure details: objectives**

Member States were requested to report information on:

- Objectives linked to measures (optional field, complementary to the summary provided in the textual part of the XML);
- Category of priority (Conditional, reporting on either ‘category of priority’ or ‘timetable’ is required);

- Timetable (Conditional, reporting on either ‘category of priority’ or ‘timetable’ is required).

## Objectives

The Guidance Document indicates that for each measure, an “Explanation of how the measure contributes to the objectives” can be provided (this is an optional field).

France provided information about the objectives of all measures, however, this was an open question, and as such, numerous different responses were given. It was thus not practical to aggregate the information.

## Category of priority

France provided information for the priority of all measures. The following categories are used in the reporting sheet:

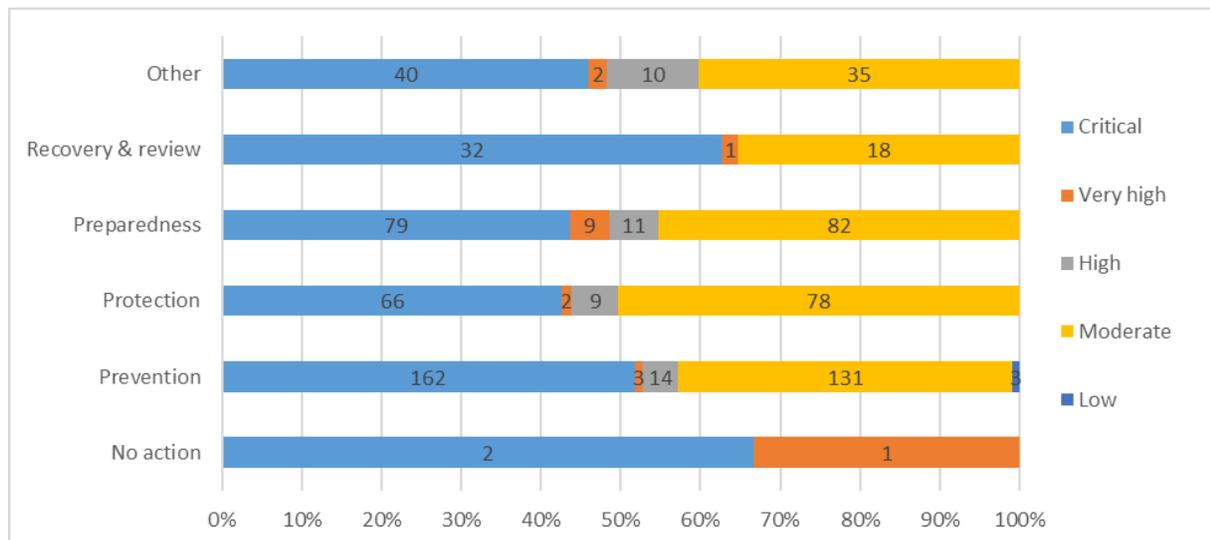
- Critical;
- Very high;
- High;
- Moderate;
- Low.

*Table A5 - Category of priority by measure aspect*

	Critical	Very high	High	Moderate	Low	Grand Total
No action	2	1				3
Prevention	162	3	14	131	3	313
Protection	66	2	9	78		155
Preparedness	79	9	11	82		181
Recovery & review	32	1		18		51
Other	40	2	10	35		87
<b>Grand Total</b>	<b>381</b>	<b>18</b>	<b>44</b>	<b>344</b>	<b>3</b>	<b>790</b>

Notes: The total includes measures assigned to more than one measure type.

**Figure A3 - Visualisation of Table A5: Category of priority by measure aspect**



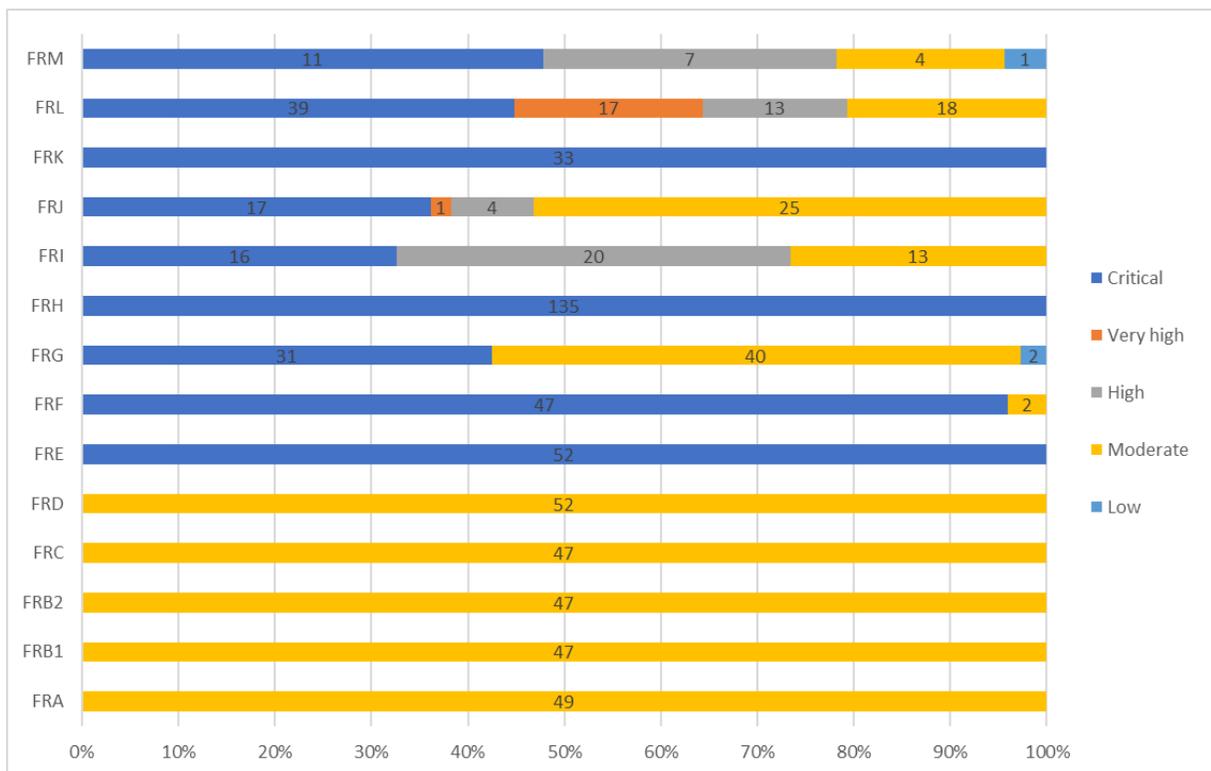
Notes: The total includes measures assigned to more than one measure type.

**Table A6 - Category of priority by UoM**

	Critical	Very high	High	Moderate	Low	Grand Total
FRA				49		49
FRB1				47		47
FRB2				47		47
FRC				47		47
FRD				52		52
FRE	52					52
FRF	47			2		49
FRG	31			40	2	73
FRH	135					135
FRI	16		20	13		49
FRJ	17	1	4	25		47
FRK	33					33
FRL	39	17	13	18		87
FRM	11		7	4	1	23
<b>Grand Total</b>	<b>381</b>	<b>18</b>	<b>44</b>	<b>344</b>	<b>3</b>	<b>790</b>
<b>Average per UoM</b>	<b>27</b>	<b>1</b>	<b>3</b>	<b>25</b>	<b>&lt;1</b>	<b>56</b>

Notes: The total includes measures assigned to more than one measure type.

**Figure A4 - Visualisation of Table A6: Category of priority by UoM**



Notes: The total includes measures assigned to more than one measure type.

### Timetable

France did not report any information in the reporting sheets about the timetable of the measures.

### Measure details: authorities

Member States were requested to report information on:

- Name of the responsible authority (optional if ‘level of responsibility’ is reported);
- Level of responsibility (optional if ‘name of the responsible authority’ is reported).

France reported this information for all measures. The level of responsibility for all measures is the ‘RBD/UoM authority’: based on the indications in the FRMPs assessed, the responsible authority for all measures is, therefore, the Prefect Coordinator of the respective river basin. The responsible Prefect Coordinator of the Basin (PCB) for the measures in each UoM is presented in the following table.

**Table A7 - Responsibility by UoM**

	PCB of Adour-Garonne	PCB of Artois-Picardie	PCB of Corse	PCB of Guadeloupe	PCB of Guyane	PCB of Loire-Bretagne	PCB of Martinique	PCB of Mayotte	PCB of Réunion	PCB of Rhin-Meuse	PCB of Rhône-Méditerranée	PCB of Seine-Normandie	Grand Total
FRA		49											49
FRB1										47			47
FRB2		47											47
FRC										47			47
FRD											52		52
FRE			52										52
FRF	49												49
FRG						73							73
FRH												135	135
FRI				49									49
FRJ							47						47
FRK					33								33
FRL									87				87
FRM								23					23
<b>Grand Total</b>	<b>49</b>	<b>96</b>	<b>52</b>	<b>49</b>	<b>33</b>	<b>73</b>	<b>47</b>	<b>23</b>	<b>87</b>	<b>94</b>	<b>52</b>	<b>135</b>	<b>790</b>

Notes: The total includes measures assigned to more than one measure type. PCB refers to the Prefect Coordinator of the Basin (i.e. le *préfet coordonnateur de bassin*).

Measure details: progress

Member States were requested to report information on:

- Progress of implementation of measures (mandatory field) – this is a closed question whose responses are analysed below;
- Progress description of the implementation of measures (optional field) – this is an open text question for which not all MS reported and whose answers are not analysed here.

France reported information about the progress of implementation of the measures. The progress of implementation was reported as<sup>71</sup>:

- COM (completed);
- OGC (ongoing construction);
- POG (progress ongoing);
- NS (not started).

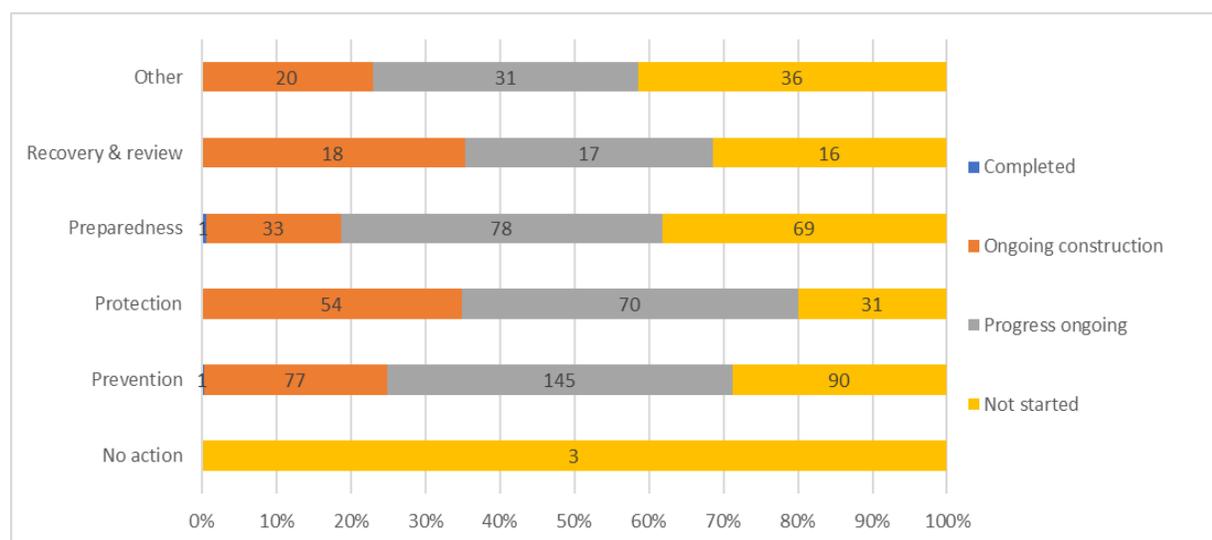
A full definition of these terms can be found at the end of this section.

**Table A8 – Progress of implementation by measure aspect**

	Completed	Ongoing	Progress ongoing	Not started	Grand Total
No action				3	3
Prevention	1	77	145	90	313
Protection		54	70	31	155
Preparedness	1	33	78	69	181
Recovery &		18	17	16	51
Other		20	31	36	87
<b>Grand Total</b>	<b>2</b>	<b>202</b>	<b>341</b>	<b>245</b>	<b>790</b>

Notes: The total includes measures assigned to more than one measure type.

**Figure A5 - Visualisation of Table A8: Progress of implementation by measure aspect**



<sup>71</sup> Guidance for Reporting under the Floods Directive (2007/60/EC): <https://circabc.europa.eu/w/browse/a3c92123-1013-47ff-b832-16e1caaaf9a>

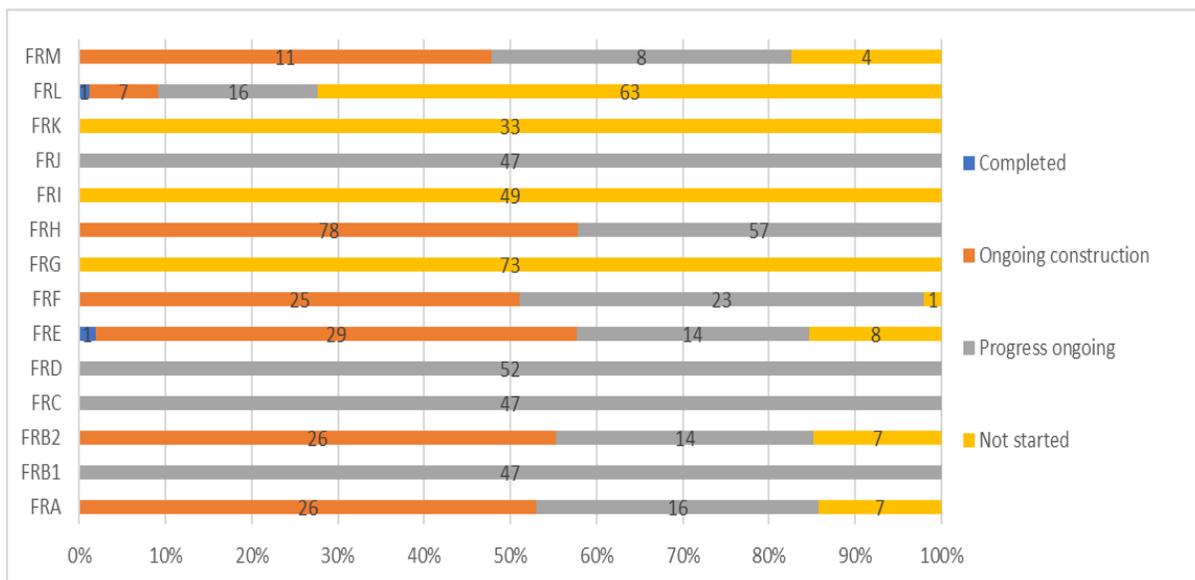
Notes: The total includes measures assigned to more than one measure type.

**Table A9 – Progress of implementation by UoM**

	Completed	Ongoing construction	Progress ongoing	Not started	Grand Total
FRA		26	16	7	49
FRB1			47		47
FRB2		26	14	7	47
FRC			47		47
FRD			52		52
FRE	1	29	14	8	52
FRF		25	23	1	49
FRG				73	73
FRH		78	57		135
FRI				49	49
FRJ			47		47
FRK				33	33
FRL	1	7	16	63	87
FRM		11	8	4	23
<b>Grand Total</b>	<b>2</b>	<b>202</b>	<b>341</b>	<b>245</b>	<b>790</b>
<b>Average per</b>	<b>0</b>	<b>14</b>	<b>24</b>	<b>18</b>	<b>56</b>

Notes: The total includes measures assigned to more than one measure type.

**Figure A6 - Visualisation of Table A9: Progress of implementation by UoM**



Notes: The total includes measures assigned to more than one measure type.

The categories describing the progress of measures are defined in the EU Reporting Guidance Document on the Floods Directive.

For **measures involving construction or building works** (e.g. a waste water treatment plant, a fish pass, a river restoration project, etc.):

- Not started (NS) means the technical and/or administrative procedures necessary for starting the construction or building works have not started.
- Progress on-going (POG) means that administrative procedures necessary for starting the construction or building works have started but are not finalised. The simple inclusion in the RBMPs is not considered planning in this context.
- On-going construction (OGC) means the construction or building works have started but are not finalized.
- Completed (COM) means the works have been finalised and the facilities are operational (maybe only in testing period in case e.g. a waste water treatment plant).

For **measures involving advisory services** (e.g. training for farmers):

- Not started (NS) means the advisory services are not yet operational and have not provided any advisory session yet.
- Progress on-going (POG) means the advisory services are operational and are being used. This is expected to be the situation for all multi-annual long/mid-term advisory services that are expected to be operational during the whole or most of RBMP cycle.
- On-going construction (OGC): Not applicable
- Completed (COM) means an advisory service that has been implemented and has been

finalised, i.e. is no longer operational. This is expected only for advisory services that are relatively short term or one-off, and which duration is time limited in relation to the whole RBMP cycle.

**For measures involving research, investigation or studies:**

- Not started (NS) means the research, investigation or study has not started, i.e. contract has not been signed or there has not been any progress.
- Progress on-going (POG) means the research, investigation or study has been contracted or started and is being developed at the moment.
- On-going construction (OGC): Not applicable
- Completed (COM) means the research, investigation or study has been finalised and has been delivered, i.e. the results or deliverables are available (report, model, etc.).

**For measures involving administrative acts** (e.g. licenses, permits, regulations, instructions, etc.):

- Not started (NS) means the administrative file has not been opened and there has not been any administrative action as regards the measure.
- Progress on-going (POG) means an administrative file has been opened and at least a first administrative action has been taken (e.g. requirement to an operator to provide information to renew the licensing, request of a permit by an operator, internal consultation of draft regulations, etc.). If the measure involves more than one file, the opening of one would mean already “ongoing”.
- On-going construction (OGC): Not applicable
- Completed (COM) means the administrative act has been concluded (e.g. the license or permit has been issued; the regulation has been adopted, etc.). If the measure involves more than one administrative act, “completed” is achieved only when all of them have been concluded.

## **Measure details: other**

Member States were requested to provide information on:

- Other Community Acts associated to the measures reported (optional field);
- Any other information reported (optional field).

France did not report ‘any other information’ for any of the measures. However, although France did not report any Community Acts associated for the majority of the measures (676), it reported common provisions with the WFD (2000/60/EC) for the remaining 114 measures. For 27 of these measures, France reported common provisions with the RBMPs<sup>72</sup>.

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<sup>72</sup> Specifically, under the Schéma directeur d'aménagement et de gestion des eaux (SDAGE).

**Table A10 – Other Community Acts by measure aspect**

	Common provisions with SDAGE under WFD	Common provisions with WFD
No action		
Prevention	14	7
Protection	11	67
Preparedness		1
Recovery & review		2
Other	2	10
<b>Grand Total</b>	<b>27</b>	<b>87</b>

Notes: The table includes measures assigned to more than one measure type.

The table includes only the 114 measures for which information about Other Community Acts associated is reported.

**Table A11 - Other Community Acts by UoM**

	Common provisions with SDAGE under WFD	Common provisions with WFD
FRA		7
FRB1		7
FRB2		5
FRC		7
FRD		
FRE		8
FRF		13
FRG		9
FRH	27	
FRI		
FRJ		21
FRK		6
FRL		
FRM		4
<b>Grand Total</b>	<b>27</b>	<b>87</b>
<b>Average per UoM</b>	<b>2</b>	<b>6</b>

Notes: The table includes measures assigned to more than one measure type.

The table includes only the 114 measures for which information about Other Community Acts associated is reported.

## Annex B: Definitions of measure types

**Table B1** *Types of flood risk management measures*<sup>73</sup>

	<b>No Action</b>
<b>M11</b>	No Action, No measure is proposed to reduce the flood risk in the APSFR or other defined area,
	<b>Prevention</b>
<b>M21</b>	Prevention, Avoidance, Measure to prevent the location of new or additional receptors in flood prone areas, such as land use planning policies or regulation
<b>M22</b>	Prevention, Removal or relocation, Measure to remove receptors from flood prone areas, or to relocate receptors to areas of lower probability of flooding and/or of lower hazard
<b>M23</b>	Prevention, Reduction, Measure to adapt receptors to reduce the adverse consequences in the event of a flood actions on buildings, public networks, etc...
<b>M24</b>	Prevention, Other prevention, Other measure to enhance flood risk prevention (may include, flood risk modelling and assessment, flood vulnerability assessment, maintenance programmes or policies etc...)
	<b>Protection</b>
<b>M31</b>	Protection Natural flood management / runoff and catchment management, Measures to reduce the flow into natural or artificial drainage systems, such as overland flow interceptors and / or storage, enhancement of infiltration, etc and including in-channel , floodplain works and the reforestation of banks, that restore natural systems to help slow flow and store water.
<b>M32</b>	Protection, Water flow regulation, Measures involving physical interventions to regulate flows, such as the construction, modification or removal of water retaining structures (e.g., dams or other on-line storage areas or development of existing flow regulation rules), and which have a significant impact on the hydrological regime.
<b>M33</b>	Protection, Channel, Coastal and Floodplain Works, Measures involving physical interventions in freshwater channels, mountain streams, estuaries, coastal waters and flood-prone areas of land, such as the construction, modification or removal of structures or the alteration of channels, sediment dynamics management, dykes, etc.
<b>M34</b>	Protection, Surface Water Management, Measures involving physical interventions to reduce surface water flooding, typically, but not exclusively, in an urban environment, such as enhancing artificial drainage capacities or though sustainable drainage systems (SuDS).
<b>M35</b>	Protection, Other Protection, Other measure to enhance protection against flooding, which may include flood defence asset maintenance programmes or policies
	<b>Preparedness</b>
<b>M41</b>	Preparedness, Flood Forecasting and Warning, Measure to establish or enhance a flood forecasting or warning system
<b>M42</b>	Preparedness, Emergency Event Response Planning / Contingency planning, Measure to establish or enhance flood event institutional emergency response planning

<sup>73</sup> Guidance for Reporting under the Floods Directive (2007/60/EC):  
<https://circabc.europa.eu/w/browse/a3c92123-1013-47ff-b832-16e1caaafc9a>

<b>M43</b>	Preparedness, Public Awareness and Preparedness, Measure to establish or enhance the public awareness or preparedness for flood events
<b>M44</b>	Preparedness, Other preparedness, Other measure to establish or enhance preparedness for flood events to reduce adverse consequences
<b>Recovery &amp; Review</b>	
<b>M51</b>	Recovery and Review (Planning for the recovery and review phase is in principle part of preparedness), Individual and societal recovery, Clean-up and restoration activities (buildings, infrastructure, etc), Health and mental health supporting actions, incl. managing stress Disaster financial assistance (grants, tax), incl. disaster legal assistance, disaster unemployment assistance, Temporary or permanent relocation , Other
<b>M52</b>	Recovery and Review, Environmental recovery, Clean-up and restoration activities (with several sub-topics as mould protection, well-water safety and securing hazardous materials containers)
<b>M53</b>	Recovery and Review, Other, Other recovery and review Lessons learnt from flood events Insurance policies
<b>Other</b>	
<b>M61</b>	Other

## Catalogue of Natural Water Retention Measures (NWRM)

NWRM cover a wide range of actions and land use types. Many different measures can act as NWRM, by encouraging the retention of water within a catchment and, through that, enhancing the natural functioning of the catchment. The catalogue developed in the NWRM project represents a comprehensive but non prescriptive wide range of measures, and other measures, or similar measures called by a different name, could also be classified as NWRM.

To ease access to measures, the catalogue of measures hereunder is sorted by the primary land use in which it was implemented: Agriculture; Forest; Hydromorphology; Urban. Most of the measures however can be applied to more than one land use type.

**Table B2** *List of NWRMs*

<b>Agriculture</b>	<b>Forest</b>	<b>Hydro Morphology</b>	<b>Urban</b>
A01 Meadows and pastures	F01 Forest riparian buffers	N01 Basins and ponds	U01 Green Roofs
A02 Buffer strips and hedges	F02 Maintenance of forest cover in headwater areas	N02 Wetland restoration and management	U02 Rainwater Harvesting
A03 Crop rotation	F03 Afforestation of reservoir catchments	N03 Floodplain restoration and management	U03 Permeable surfaces

<b>Agriculture</b>	<b>Forest</b>	<b>Hydro Morphology</b>	<b>Urban</b>
A04 Strip cropping along contours	F04 Targeted planting for 'catching' precipitation	N04 Re-meandering	U04 Swales
A05 Intercropping	F05 Land use conversion	N05 Stream bed re-naturalization	U05 Channels and rills
A06 No till agriculture	F06 Continuous cover forestry	N06 Restoration and reconnection of seasonal streams	U06 Filter Strips
A07 Low till agriculture	F07 'Water sensitive' driving	N07 Reconnection of oxbow lakes and similar features	U07 Soakaways
A08 Green cover	F08 Appropriate design of roads and stream crossings	N08 Riverbed material renaturalisation	U08 Infiltration Trenches
A09 Early sowing	F09 Sediment capture ponds	N09 Removal of dams and other longitudinal barriers	U09 Rain Gardens
A10 Traditional terracing	F10 Coarse woody debris	N10 Natural bank stabilisation	U10 Detention Basins
A11 Controlled traffic farming	F11 Urban forest parks	N11 Elimination of riverbank protection	U11 Retention Ponds
A12 Reduced stocking density	F12 Trees in Urban areas	N12 Lake restoration	U12 Infiltration basins
A13 Mulching	F13 Peak flow control structures	N13 Restoration of natural infiltration to groundwater	
	F14 Overland flow areas in peatland forests	N14 Re-naturalisation of polder areas	

Source: [www.nwrm.eu](http://www.nwrm.eu)