

Mainstreaming of adaptation to climate change into the ESI Funds 2014-2020

ANNEX B - COUNTRY SUMMARIES



DG CLIMA

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CONTENTS

1	Overview of ESIF support for adaptation in each of the Member States	11
2	Austria	13
2.1	Adaptation framework and priorities	13
2.2	ESIF support for climate change adaptation	14
2.3	Adaptation framework compared with actual ESIF adaptation actions	16
Annex	Overview of programmes with support for climate change adaptation	18
3	Belgium	23
3.1	Adaptation framework and priorities	23
3.2	ESIF support for climate change adaptation	24
3.3	Adaptation framework compared with actual ESIF adaptation actions	27
Annex	Overview of programmes with support for climate change adaptation	28
4	Bulgaria	33
4.1	Adaptation framework and priorities	33
4.2	ESIF support for climate change adaptation	34
4.3	Adaptation framework compared with actual ESIF adaptation actions	37
Annex	Overview of programmes with support for climate change adaptation	38
5	Croatia	45
5.1	Adaptation framework and priorities	45
5.2	ESIF support for climate change adaptation	46

5.3	Adaptation framework compared with actual ESIF adaptation actions	48
Annex	Overview of programmes with support for climate change adaptation	50
6	Cyprus	55
6.1	Adaptation framework and priorities	55
6.2	ESIF support for climate change adaptation	56
6.3	Adaptation framework compared with actual ESIF adaptation actions	59
Annex	Overview of programmes with support for climate change adaptation	60
7	Czech Republic	63
7.1	Adaptation framework and priorities	63
7.2	ESIF support for climate change adaptation	64
7.3	Adaptation framework compared with actual ESIF adaptation actions	67
Annex	Overview of programmes with support for climate change adaptation	68
8	Denmark	73
8.1	Adaptation framework and priorities	73
8.2	ESIF support for climate change adaptation	74
8.3	Adaptation framework compared with actual ESIF adaptation actions	76
Annex	Overview of programmes with support for climate change adaptation	77
9	Estonia	79
9.1	Adaptation framework and priorities	79
9.2	ESIF support for climate change adaptation	80
9.3	Adaptation framework compared with actual ESIF adaptation actions	83
Annex	Overview of programmes with support for climate change adaptation	84
10	Finland	87
10.1	Adaptation framework and priorities	87
10.2	ESIF support for climate change adaptation	88
10.3	Adaptation framework compared with actual ESIF adaptation actions	90
Annex	Overview of programmes with support for climate change adaptation	92

11	France	97
11.1	Adaptation framework and priorities	97
11.2	ESIF support for climate change adaptation	98
11.3	Adaptation framework compared with actual ESIF adaptation actions	101
Annex	Overview of programmes with support for climate change adaptation	103
12	Germany	113
12.1	Adaptation framework and priorities	113
12.2	ESIF support for climate change adaptation	114
12.3	Adaptation framework compared with actual ESIF adaptation actions	117
Annex	Overview of programmes with support for climate change adaptation	118
13	Greece	125
13.1	Adaptation framework and priorities	125
13.2	ESIF support for climate change adaptation	126
13.3	Adaptation framework compared with actual ESIF adaptation actions	129
Annex	Overview of programmes with support for climate change adaptation	130
14	Hungary	137
14.1	Adaptation framework and priorities	137
14.2	ESIF support for climate change adaptation	138
14.3	Adaptation framework compared with actual ESIF adaptation actions	141
Annex	Overview of programmes with support for climate change adaptation	142
15	Ireland	149
15.1	Adaptation framework and priorities	149
15.2	ESIF support for climate change adaptation	150
15.3	Adaptation framework compared with actual ESIF adaptation actions	152
Annex	Overview of programmes with support for climate change adaptation	153
16	Italy	157
16.1	Adaptation framework and priorities	157
16.2	ESIF support for climate change adaptation	158

16.3	Adaptation framework compared with actual ESIF adaptation actions	161
Annex	Overview of programmes with support for climate change adaptation	162
17	Lithuania	171
17.1	Adaptation framework and priorities	171
17.2	ESIF support for climate change adaptation	172
17.3	Adaptation framework compared with actual ESIF adaptation actions	174
Annex	Overview of programmes with support for climate change adaptation	175
18	Luxembourg	179
18.1	Adaptation framework and priorities	179
18.2	ESIF support for climate change adaptation	179
18.3	Adaptation framework compared with actual ESIF adaptation actions	182
Annex	Overview of programmes with support for climate change adaptation	183
19	Latvia	185
19.1	Adaptation framework and priorities	185
19.2	ESIF support for climate change adaptation	186
19.3	Adaptation framework compared with actual ESIF adaptation actions	188
Annex	Overview of programmes with support for climate change adaptation	189
20	Malta	193
20.1	Adaptation framework and priorities	193
20.2	ESIF support for climate change adaptation	194
20.3	Adaptation framework compared with actual ESIF adaptation actions	197
Annex	Overview of programmes with support for climate change adaptation	198
21	The Netherlands	201
21.1	Adaptation framework and priorities	201
21.2	ESIF support for climate change adaptation	202
21.3	Adaptation framework compared with actual ESIF adaptation actions	205
Annex	Overview of programmes with support for climate change adaptation	206

22	Poland	211
22.1	Adaptation framework and priorities	211
22.2	ESIF support for climate change adaptation	212
22.3	Adaptation framework compared with actual ESIF adaptation actions	215
Annex	Overview of programmes with support for climate change adaptation	216
23	Portugal	223
23.1	Adaptation framework and priorities	223
23.2	ESIF EU support for climate change adaptation	224
23.3	Adaptation framework compared with actual ESIF adaptation actions	227
Annex:	Overview of programmes with EU support for climate change adaptation	228
24	Romania	233
24.1	Adaptation framework and priorities	233
24.2	ESIF support for climate change adaptation	234
24.3	Adaptation framework compared with actual ESIF adaptation actions	237
Annex	Overview of programmes with support for climate change adaptation	238
25	Spain	245
25.1	Adaptation framework and priorities	245
25.2	ESIF support for climate change adaptation	246
25.3	Adaptation framework compared with actual ESIF adaptation actions	249
Annex	Overview of programmes with support for climate change adaptation	250
26	Sweden	257
26.1	Adaptation framework and priorities	257
26.2	ESIF support for climate change adaptation	258
26.3	Adaptation framework compared with actual ESIF adaptation actions	260
Annex	Overview of programmes with support for climate change adaptation	261
27	Slovakia	265
27.1	Adaptation framework and priorities	265
27.2	ESIF support for climate change adaptation	266

27.3	Adaptation framework compared with actual ESIF adaptation actions	268
Annex	Overview of programmes with support for climate change adaptation	269
28	Slovenia	275
28.1	Adaptation framework and priorities	275
28.2	ESIF support for climate change adaptation	276
28.3	Adaptation framework compared with actual ESIF adaptation actions	278
Annex	Overview of programmes with support for climate change adaptation	280
29	The United Kingdom	285
29.1	Adaptation framework and priorities	285
29.2	ESIF support for climate change adaptation	286
29.3	Adaptation framework compared with actual ESIF adaptation actions	289
Annex	Overview of programmes with support for climate change adaptation	290

1 Overview of ESIF support for adaptation in each of the Member States

Annex B provides an overview of how climate change adaptation has been programmed in the European Structural and Investment Funds (ESIF) in each of the 28 Member States (MS). It consists of 28 country overviews that describe national adaptation frameworks and Union support for adaptation in the ESI Funds. Overall information on climate action, particularly mitigation, can be found in the Conclusions Report under the main DG CLIMA Mainstreaming project contract.

Each country overview presents in its first section the national adaptation framework and priorities of the Member State and how climate change adaptation is addressed in the Partnership Agreement and the ESIF programmes covered under it. Key information also includes main climate adaptation objectives that are addressed in the programmes, outline of programmes, Priority Axes (PAs), Investment Priorities (IPs), Intervention Fields (IFs), specific objectives and actions dedicated to adaptation, as well as horizontal principles used in the programmes, where relevant to adaptation.

The adaptation framework for each country has been described based on the national/regional/sectoral adaptation strategies presented in Climate-ADAPT platform, the Partnership Agreements and with inspiration from the State-of-Play reports.

Union support for climate change adaptation per fund and per TO/UP has been estimated in section 2 of the country overviews. Table 4 contains detailed information on the 'Actions to be supported' and 'Horizontal principles on sustainable development' for those ERDF/CF/ESF OPs with climate adaptation support. In the Member States with many ERDF/CF/ESF programmes – namely Germany, Spain, France, Italy and Poland – the country overviews list all the programmes with support for adaptation and provide more detailed information only on the top three programmes with the largest support for adaptation. Table 6 provides a similar overview for the ETC programmes that the respective countries are involved in (and where there is a contribution to climate change adaptation).

In terms of calculating the Union support for adaptation, EU ESIF expenditure for climate change adaptation in ERDF/CF/ETC consists of IF087 and IF100. *EU ESIF expenditure supporting both adaptation and/or mitigation* consists of IF021, IF065, IF085 and IF086. For EAFRD, the climate relevant UPs and FAs comprise 3b, 4a-c, and 6b. There, the climate change adaptation is, for the purpose of this study, defined by Union support allocated to Focus Area 3b, 5a, and 6b. Supporting both adaptation and mitigation are FA 4a, 4b, and 4c.

Finally, in the third section, the national adaptation framework is compared with foreseen actions under ESIF and any major shortcomings or discrepancies are commented on.

2 Austria

2.1 Adaptation framework and priorities

In Austria, a National Adaptation Strategy (NAS) was adopted in 2012, and it has the objective to mitigate the negative consequences of climate change on the environment, society, and economy, while fully utilising any opportunities that may emerge. The adoption of the NAS is intended to strengthen natural, social, and technological adaptive capacities. As a nationwide framework for the alignment of necessary adaptation measures, the strategy aims to bring together relevant actors, support cooperative action, and facilitate the use of synergies through cooperation wherever possible. It seeks to provide recommendations in each of the various areas and identify linkages for all the actors challenged with implementation. In accordance with the precautionary principle, the strategy attempts to lay a foundation for forward-looking action with regard to future climate change impacts and to foster successful implementation.

The NAS foresees adaptation action in 14 different areas: agriculture, forestry, water resources and water management, tourism, energy, construction and housing, protection from natural hazards, disaster risk management, health, ecosystems/biodiversity, transportation infrastructure, spatial planning, business/industry/trade and cities.⁽¹⁾

Looking at the Partnership Agreement, climate adaptation is only addressed in the EAFRD programme through the maintenance and recovery of endangered species and habitats. Furthermore, improved pasture management, non-productive investments and knowledge-raising activities shall counteract the decrease in biodiversity in agricultural, forest and natural biotopes.

The application of the horizontal principle of sustainable development is rather generic in the Partnership Agreement. The agreement describes two levels where sustainable development will be considered. The first level refers to the Strategic Environmental Assessment and details aspects of improving this process.

¹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/austria>.

Specifically, the coordination of different public authorities is mentioned in this respect. The second level is at the programme level, where different actions are described – selection of projects along resource-efficient parameters, avoiding investments with negative environmental or climate impact, implementing life cycle cost models, and increased use of green public procurement. The Partnership Agreement refers to existing measures and tools in this respect. With regard to the avoidance of investments with negative environmental impact, no definite implementation methodology has been outlined and no specific selection criteria have been specified.

2.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽²⁾ in Austria for the 2014-2020 period amounts to EUR 4.9 billion. Of this amount, EUR 3.0 billion is allocated for climate action.⁽³⁾ Out of the total ESIF Union support for Austria, 5.6 % (or EUR 165.2 million) is marked for climate change adaptation. An additional EUR 2.57 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Austria for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁴⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	165.2	165.2
Climate change adaptation and/or climate change mitigation	17.4	-	2,557.3	2,574.6

Table 2 presents the thematic concentration of the adaptation support. The largest pure adaptation support is foreseen in EAFRD through TO4, and in parts of TO5. No pure adaptation is planned for the ERDF, though supportive adaptation can be found in TO4. The bulk of supportive adaptation action is, however, found in TO6 under the EAFRD.⁽⁵⁾

² ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

³ For climate change mitigation and for climate change adaptation

⁴ CF is not aimed at Austria.

⁵ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 2.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6	TO9
Climate change adaptation, ERDF/CF	-	-	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	16.6	-	0.8	-
Climate change adaptation, EAFRD	3.1	0.4	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	2,557.3	-

2.2.1 Climate change adaptation in ERDF

Austria has one ERDF programme, which does not foresee pure climate adaptation, but only supportive action. In the programme, however, supportive adaptation can be found in measures that address research activities on climate adaptation (IF065) and the protection and enhancement of biodiversity and green infrastructure (IF 85). It should be noted that the specific objective under IF 65 has climate mitigation as the primary objective, which may indicate that the planned actions have no relevance for climate adaptation.

2.2.2 Climate change adaptation in EAFRD

Austria has programmed one National Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Austrian EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	0.4	-	-	-	3.1	161.7
Climate change adaptation and/or climate change mitigation	-	852.4	852.4	852.4	-	-

As can be seen, the bulk of climate change adaptation action in the Austrian EAFRD programme is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and water use efficiency (UP5a).

Most climate change adaptation can be found in measures M10, M13, M11, and M07, respectively. The main focus of actions under the key climate measure M10 lies on the protection of the environment through improved soil, water, and fertiliser management through, for example, restrictions on fertiliser use, green covers or the cultivation of soils prone to leaching. Climate change adaptation is also prominently found in measures on areas with natural constraints, M13. Actions under this measure aim to enhance biodiversity through maintaining extensive agricultural practices and the reduction of soil erosion. The main theme of actions

under M11 is the deployment of organic agriculture, which addresses biodiversity, and soil and water management through for example reduced pesticide and fertiliser inputs and more environmentally friendly practices. Actions under M07 achieve climate adaptation through local rural development plans and the enhancement of biotopes.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

2.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 7 million, of which EUR 0.7 million (10 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regards to adaptation, the OP identifies the need to address the natural hazards arising from climate change and the need to adapt aquaculture through a diversification of production methods, of which the former is covered by a national disaster fund.

2.2.4 Climate change adaptation in ESF

Austria has one ESF programme with a total ESF Union support of EUR 442.1 million, of which 7.1 million (1.6 %) is allocated to climate action. This is above the EU average of 1.4 %. The ESF programme does not directly target climate change adaptation, due to the nature of the programme. Climate adaptation is, however, considered through the horizontal principle of sustainable development.

2.2.5 Climate change adaptation in ETC

Austria is part of 8 European Territorial Cooperation (ETC) programmes with allocation to adaptation. Tables 6-1 and 6-2 in the annex list all the programmes and present detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg AT-DE (Bavaria), Interreg AT-CZ and Danube. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Austria is not available.⁶⁾

2.3 Adaptation framework compared with actual ESIF adaptation actions

The Austrian NAS sets out a wide range of thematic areas for climate change adaptation. However, the Partnership Agreement does not recognise this range of opportunities, as sectors such as tourism, energy, construction and housing, health, transportation infrastructure, spatial planning, business/industry/trade and cities have not been addressed, although the ESIF provides opportunities in most

⁶ The total Union support for the eight programmes Austria is involved in amounts to EUR 849.6 million, out of which EUR 26.4 million is allocated for adaptation.

of them. Following the logic of the NAS, climate adaptation should also be found in the ERDF programme. The NAS hence seems to take climate change adaptation a considerable step further than the Partnership Agreement.

Looking at the actions foreseen in the Austrian RDP, the main themes of adaptation relate to local development strategies, which are determined at a local level, and actions that address biodiversity and soil and water management. Furthermore, adaptation also occurs in the EMFF through the use of a national disaster fund.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

The ERDF OP in Austria does not include interventions on climate adaptation

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014AT06RDNP001	National	M01, M02, M04, M07, M08, M10, M11, M12, M13, M15, M16, M19

Table 6-1 and Table 6-2 show all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to support sound water management. Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. Support risk management plans for cultural and natural heritage sites exposed to climate change. 	<p>Numerous aspects of sustainable development common to all PAs and IPs including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.</p>
						6c	2.2. Foster sustainable use of natural and cultural heritage and resources		
						6d	2.3. Foster the restoration and management of ecological corridors		

								<ul style="list-style-type: none"> Improved strategic frameworks and developed specific solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region Integrated management of habitats, protection and recolonisation of endogenous species, control of invasive species, raising awareness on sustainable land use, etc. 	
2014TC16 RFCB004	Interreg AT-DE - Austria (Bayern-Österreich)	CB	2	Environment al preservation and protection and promotion of resource efficiency	85, 86, 87	6c	<p>SZ 3. Valorisation of natural and cultural heritage with a focus on sustainable tourism development</p>	<ul style="list-style-type: none"> establish and intensify Cross-border cooperation and networks with the aim of increasing accessibility of cultural and natural heritage formulation of cross border sustainable tourism concepts specifically for national parks, nature reserves and other protected areas; investments for tourist valorisation of protected areas and of tangible and intangible cultural assets networking of activities regarding sustainable tourism, particularly on the subjects of nature, culture, health Preparatory studies and analyses as a basis for the preparation and implementation of projects with sustainable regional development focus on tourism, cultural and natural heritage 	<p>In the horizontal principle 'sustainable development' the programme specifically mentions climate change mitigation and adaptation, disaster resilience and risk prevention and management as selection criteria'. The programme foresees the involvement of experts in the application selection process. Apart from mentioning climate change mitigation and adaptation synergies with no specific interventions are described how to assure the better implementation of climate change adaptation and mitigation.</p>
						6d	<p>SZ 4. Enhancement of biodiversity through management of protected areas, biodiversity partnerships, biodiversity and soil conservation projects</p>	<ul style="list-style-type: none"> Establishment of Cross-border management and supervision structures for protected areas and the development of related concepts for networking of protected areas; Creation of monitoring and information systems as well as specialized databases (e.g. area monitoring) Activities to improve knowledge of ecosystems and ecosystem services in the region, measures for knowhow ex-change and awareness building; Habitat, soil and wildlife conservation projects in Cross-border areas with the aim of promoting the natural dynamics of the biodiversity in protected areas, Development of joint projects in the fields of water, natural experience and natural protection, agriculture, forestry, including their implementation; 	

2014TC16 RFCB002	(Interreg V-A) AT-CZ	CB	2	Environment and Resources	85, 86, 87	6c	2a: Valorisation of the cultural and natural heritage of the common region in a sustainable way	<ul style="list-style-type: none"> Information measures and small scale investment in public touristic infrastructure (e.g. information boards, visitor guidance systems), aiming at the soft/sustainable utilisation of cultural and natural sites ; Improvement of transport infrastructure, including roads, cycle tracks and foot paths, ensuring the public accessibility of existing cultural and natural heritage sites. Investments in green infrastructure, i.e. natural and landscape elements that contribute to the prevention of flooding and/or water retention (such as floodplain restoration, wetlands, re-naturalizing rivers and river banks, disaster risk assessment and management), adaptation to climate change or the mitigation of negative effects (incl. measures to deal with droughts) Coordinated preparation and/or implementation of NATURA 2000 and other concepts for protected areas and other measures supporting the preservation of biodiversity Preparation and implementation of joint Cross-border mechanisms like research, studies, strategies, plans, coordinated management approaches, awareness raising and educational activities and other structural cooperative measures in the field of nature, landscape and river protection and utilization Realization of cooperation pilot projects for testing and implementing innovative technologies and approaches to improve environmental protection in a joint region (e.g. waste management) Innovative Cross-border projects that focus on energy efficiency including implementation of low-energy solutions (management plans, pilot actions, know-how and good practice transfer etc.) Research, studies, strategies, plans and other mechanisms realized across borders to promote innovative technologies and approaches in the field of environmental protection and resource efficiency 	<p>In the section of sustainable development, the CP clearly identifies that at the operational level, the following aspects will be considered in programme implementation: - Selection of investment projects in view of highest resource efficiency and sustainability - Prevention of investments with considerable negative environmental and climate effects - Develop a long-term perspective when comparing life cycle costs of various investment options - Increased use of sustainable procurement (green public procurement). These provisions are adequate in the context of a CBC Programme.</p>
						6d	2b: Increase of ecological stability and improvement of ecosystem services		
						6f	2c: Fostering the utilisation of eco-innovative potential of the region		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e
2014TC16RFCB052	Interreg IT-AT	CB	3	Institutions	87	11b
2014TC16RFCB054	Interreg SI-AT	CB	3	Enhancing Institutional Capacity and an Efficient Public Administration	87	11b
2014TC16RFCB010	Interreg AT-HU	CB	2	Protecting the environment and promoting resource efficiency (TO06)	21, 85, 86, 87	6d
2014TC16RFCB024	Interreg DE-AT-CH-LI (Alpenrhein-Bodensee-Hochrhein)	CB	2	Environment, energy and transport	85, 86, 87	4c, 6e

3 Belgium

3.1 Adaptation framework and priorities

In 2010, Belgium adopted its National Adaptation Strategy (NAS). The strategy describes the main climate change impacts, the existing adaptation responses, a roadmap to a future National Adaptation Plan (NAP) and some policy guidelines for an adapted future. The Strategy pursues the improvement of the communication and consistency between the adaptation activities. A draft National Adaptation plan (2015-2020) is under finalisation. This plan identifies specific adaptation measures that need to be taken at a national level in order to strengthen cooperation and develop synergies between different entities on adaptation.

The regional and federal governments have adopted or are finalising, each in their own area of competence, adaptation plans.

Climate change will affect multiple sectors. Different sectoral and cross-sectoral adaptation measures have been identified at the national, federal and regional levels. The identification of key sectors was based on risk and vulnerability assessments, as well as competence sharing between the different entities in Belgium. Priority on adaptation is not set out between sectors, but priorities within the sectors are discussed. Sectors involved in adaptation are agriculture, biodiversity, built environment, coastal areas, crisis management, development cooperation, energy, environment, fisheries, forests, health, infrastructures, industry & services, international security, research, tourism, transport, and water management.⁽⁷⁾

The Belgian Partnership Agreement does not present an analysis at a national level of disparities, development needs and growth potentials with reference to the EU2020 objectives, (such as the target of investing 3 % of the EU's GDP in Research & Development and innovation), the National Reform Plan (NRP), Country Specific Recommendations (CSR), the thematic objectives (TO) or

⁷ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/belgium>

territorial challenges. Instead, climate challenges are formulated for each region (i.e. Wallonia, Flanders and Brussels Capital Region). Hence, the Partnership Agreement reflects regional differences in development needs. In the Walloon region, the economic crisis, urban development and coherence between the different policy levels are the main concerns. Flanders focusses on urban development, labour market needs and energy policy. The Brussels Capital Region unfolds a socio-economic paradox: good economic performance that is in contrast with high poverty and unemployment rates and social exclusion.

Looking at the Partnership Agreement, the objective is to support investment for adaptation to climate change, including eco-system based approaches and promoting investment to address specific risks and ensuring resilience. Climate change adaptation is mainly addressed in an urban context and in a more indirect manner (e.g. under TO4). The types of challenges addressed are: green areas, green-blue infrastructure, collection of rainwater, and climate adaptive spaces to reduce the socio-economic costs of climate adaptation and to increase biodiversity.

Belgium pays particular attention to the implementation of the different dimensions of sustainable development (social, economic and environmental) in its public policies under both, federal and regional, levels. Belgium is also attentive to the application of the 'polluter pays' principle. Risk prevention, risk management and sustainable procurement should be integrated into all policies, measures and co-financed actions as far as possible.

The Brussels Capital Region additionally puts forward adaptation (to extreme weather events) as a horizontal policy objective. Although Flanders reported that a competitive and sustainable economy is part of overarching strategies and plans, it is not explained in much detail how this will be achieved.

3.2 ESIF support for climate change adaptation

Union support under the ESI Funds ⁽⁸⁾ in Belgium for the 2014-2020 period amounts to EUR 2.7 billion. Of this amount, EUR 569.3 million is allocated for climate action.⁽⁹⁾ Out of the total ESIF Union support for Belgium, 1 % (or EUR 28.1 million) is marked for climate change adaptation. An additional EUR 234.4 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Belgium for ERDF and EAFRD.

⁸ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁹ For climate change mitigation and for climate change adaptation

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽¹⁰⁾	EAFRD	Total for adaptation
Climate change adaptation	5.6	-	22.4	28.1
Climate change adaptation and/or climate change mitigation	14.2	-	220.2	234.4

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support for ERDF and for EAFRD is foreseen through T05⁽¹¹⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	5.6	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	13.7	0.5	-	-
Climate change adaptation, EAFRD	-	-	1.3	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-		220.2

3.2.1 Climate change adaptation in ERDF

Belgium has 3 ERDF programmes, of which 1 has a direct allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on the programme with climate adaptation support.

Climate change adaptation needs are addressed in PA4 (promoting sustainable urban development, under TO5). The types of challenges addressed are: green areas, green-blue infrastructure and collection of rainwater, climate adaptive spaces to reduce the socio-economic costs of climate adaptation, and to increase biodiversity.

3.2.2 Climate change adaptation in EAFRD

Belgium has programmed a total of 2 Rural Development Programmes (RDP), covering Flanders and Wallonia. Table 3 below indicates the climate change adaptation allocations in the Belgium EAFRD programmes.

¹⁰ CF is not aimed at Belgium.

¹¹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 3.2.5 of this chapter.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	1.3				-	21.2
Climate change adaptation and/or climate change mitigation	-	73.4	73.4	73.4	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b) and water use efficiency (UP5a). Most climate change adaptation can be found in measures M10, M04, M11, and M13, respectively. The main focus of actions under the key climate measure M10 (which is supportive for climate action that can support both adaptation and mitigation by nature) lies on encouraging a number of farming practices with special attention for climate change adaptation issues such as biodiversity, water quality, and conservation objectives within the framework of the Natura 2000 and erosion reduction.

When looking at measures that purely address climate change adaptation, we can see that measure M17 in UP3b supports weather insurance to improve the internal risk management of companies and make them less dependent on financial support coming from the Disaster Relief Fund. Measures M07, M16 and M19 in UP6b are aiming at strengthening the environmental quality and vitality in rural areas (Natura 2000), supporting the establishment of 'operational groups' and stimulate cooperation between rural and urban agriculture with a special focus for renewable energy and 'local food'.

Furthermore, the bulk of climate change adaptation action in the Belgium EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programmes with support for climate action.

3.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 41.7 million, of which EUR 9.3 million (22.3 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP relies on the national legislation in general, especially on the Water Act and the sustainability prerequisites. The importance of the National Disaster Fund and its possible engagement is brought up.

3.2.4 Climate change adaptation in ESF

Belgium has four ESF programmes, of which two programmes include YEI. Total ESF Union support amounts to EUR 949.7 million, of which 14.1 million (1.5 %) is allocated to climate action. This is slightly above the EU average of 1.4 %. The

ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for example aiming to incorporate the principle of sustainable development by giving priority to investments that are energy- and resource-efficient and by promoting green jobs.

3.2.5 Climate change adaptation in ETC

Belgium is part of four European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg FR-BE-NL-UK, North Sea and Interreg BE-FR. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Belgium is not available.⁽¹²⁾

3.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Belgian Partnership Agreement are in line with the NAS and the NAP. The Partnership Agreement's expected results are on the prevention of problems in the field of living conditions in the cities (e.g. water management in green and public areas) for ERDF, and on restoring, preserving and enhancing ecosystems and resilience for EAFRD.

For Flanders, climate actions should be in line with the Flemish adaptation plan, which should act as a framework for further actions. In the Walloon region, no reference is made to regional adaptation strategies or other relevant action plans (e.g. National Energy Efficiency Action Plans and the National Renewable Energy Action Plan). The objectives and results, as described in the Partnership Agreement, are further addressed and specified in the adopted programmes.

¹² The total Union support for the four programmes Belgium is involved in amounts to EUR 990.0 million, out of which EUR 78.5 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014BE16RFOP002	OP Flanders	4	Promoting sustainable urban development	87	5a	4.1.1 Promotion of green areas, blue infrastructure and climate adaptive space	Realisation of high quality climate adaptive public space by creative and/or management measures for green areas and water, such as: <ul style="list-style-type: none"> - development of parks as socio-economic and climate adaptive lever; - green and climate adaptive transformation of industrial sites; - creation of high quality climate adaptive public spaces; - development of green areas and blue infrastructure in the inner city and surrounding area; - collection of rainwater and water buffers; and - elevation of quays as a control measure 	The OP refers to the second Flemish Strategy for Sustainable development (29 April 2011) containing a long-term vision for a sustainable society. The description does not specifically include how climate change adaptation is taken into account with respect to the prioritization of operations for support.

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014BE06RDRP001	Flanders	M01, M02, M04, M07, M08, M10, M11, M16, M17, M19
2014BE06RDRP002	RDP (Regional) Wallonia	M01, M07, M10, M11, M12, M13, M16, M19

Table 6-1 and Table 6-2 show all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB038	Interreg FR-BE- NL-UK (Two seas)	CB	3	Adaptation to climate change	87	5a	3.1. Improve the ecosystem-based capacity of 2 Seas stakeholders to climate change and its associated water management-	<ul style="list-style-type: none"> Design of strategies to optimize coastal zones integrated management and take account of climate change in economic development areas; Joint measures (e.g. infrastructure planning tools) integrated tools and technical solutions (e.g. soil management, coastal defence lines or concepts (e.g. managed realignment)) aiming at protecting built-up areas (e.g. urban areas) and coast lines against erosion/flooding 	According to section 8 of the CP, the sustainable development principle will be taken into consideration in the set of selection criteria. No reference is made to climate change.

							related effects.	<ul style="list-style-type: none"> through the promotion and implementation of nature and ecosystem-based solutions; Measures jointly dealing with loss of biodiversity and climate change; Set-up of a better coordination for prevention of floods (water management, flood risk techniques, awareness-raising on flood) Investments for the prevention and protection against floods 	
2014TC16 RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	Demonstrate new and/or improved methods for improving the climate resilience of target sites	<ul style="list-style-type: none"> Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the programme will provide opportunities for: <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	The programme describes a comprehensive approach to pursuing sustainable development. It is stated that during project development projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.
						6d	Develop new methods for the long-term sustainable management of North Sea ecosystems		
2014TC16 RFCB044	Interreg BE-FR (Wallonie-Vlaanderen)	CB	3	Protecting and enhancing the environment through an integrated management of	21, 85, 86, 87	5b	OS6. Natural, technological, industrial risk management and management of emergency situations	<ul style="list-style-type: none"> Support actions against the risks of flooding and climate change / Campaign to inform the public on natural hazards and industrial pollution / Intensification of disaster exercises and the coordination of Cross-border emergency plan / Encouraging measures to prevent industrial and technological risks 	The CP takes into account climate change mitigation and adaptation in operation selection in terms of eligibility and prioritization for support. Moreover, each submitted project will be evaluated on its

				transboundary resources		6c	OS4. Enhance and develop creative, innovative and sustainable Cross-border heritage through tourism	<ul style="list-style-type: none"> Supporting more integrated water management 	impact on sustainable development, based on a repository where three objectives will be assessed in a qualitative way. Those three objectives are: 'climate change and protection of the atmosphere', 'preservation of biodiversity, management of environments and resources', 'responsible production and consumption methods'.
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Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN006	North West Europe	TN	2	Low carbon (to facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions)	65, 87	4e, 4f, 7c

4 Bulgaria

4.1 Adaptation framework and priorities

The main challenges addressed are connected with water management, the processing and reuse of household waste, protection of biodiversity and Natura 2000 sites, improving the air quality, and managing the risk from floods and landslides.

The Ministry of Environment and Water is the central body coordinating the adaptation policy-making process, and is leading in preparing a National Adaptation Strategy (NAS). The NAS will be a package of strategic documents, a set of a risk and vulnerability assessments and a number of other documents with sectoral measures and economic analysis. Taking into account that developing such strategic documents is subject to substantial expertise and significant data collection, it was adopted in a stepwise approach.

As a first step, the framework document 'National climate change risk and vulnerability assessment for the sectors of the Bulgarian economy' was prepared, which was finalized in 2014. The framework document shall serve as a basis for the further development of a National Adaptation Strategy.⁽¹³⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through the EAFRD (16.4 % of the budget of TO5) and CF (Prevention and management of risk from floods and landslides, TO 5). Under the EAFRD, actions are envisaged protect biodiversity and Natura 2000 areas in rural regions (TO5). Specific efforts will be put towards afforestation and prevention from fires. Some funds from the ERDF (TO6) will also be engaged in the protection of biodiversity and Natura 2000 sites. Although the budget for adaptation measures is insufficient to target all areas and regions (based on the identified disparities and needs identified in the Partnership Agreement), it will be focused on those areas which face the highest risks or cover large agglomerations and populations.

¹³ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/bulgaria>.

The principles of sustainable development takes into consideration both environmental protection and climate change mainstreaming in an equal manner. This is backed by a number of strategic documents and the respective Guidelines for the integration of Environmental Policy and Climate Change Policy into the ESIF. This guarantees the application of a unified, systematic and coordinated approach in the implementation of projects that will contribute to a larger extent to the achievement of the objectives of those policies through a structured dialogue between all stakeholders. Key elements include the 'polluter pays' principle, together with the Expanded Producer Responsibility approach. Focus is put on the future active application of 'green' public procurement as well.

Adaptation objectives aim on investments for prevention and management of the risk from climate change and building administrative capacity for climate change adaptation.

Expected results through ERDF and CF are:

- › reduced risk of landslides, floods and drought;
- › establishment of a National centre for water management in real time;
- › built capacity to conduct effective and efficient policy of adaptation to climate change, prevention and risk management; and
- › implementation of the targets for reducing greenhouse gas emissions according to the European legislation.

For EAFRD, expected results are:

- › the development of crops resilient to climate change;
- › increased share of agricultural land under agri-environmental practices; reduced risk of floods and droughts.

4.2 ESIF support for climate change adaptation

Union support under the ESI Funds ⁽¹⁴⁾ in Bulgaria for the 2014-2020 period amounts to EUR 9.9 billion. Of this amount, EUR 2.6 billion is allocated for climate action.⁽¹⁵⁾ Out of the total ESIF Union support for Bulgaria, 3.8 % (or EUR 372.7 million) is marked for climate change adaptation. An additional EUR 852.4 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Bulgaria for ERDF and EAFRD.

¹⁴ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁵ For climate change mitigation and for climate change adaptation

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	-	66.7	306.0	372.7
Climate change adaptation and/or climate change mitigation	75.1	35.7	741.5	852.4

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through T04 as pure adaptation and T06 as supportive adaptation.⁽¹⁶⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	66.7	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	14.2	-	-	96.7
Climate change adaptation, EAFRD	-	79.8	0.1	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	741.5

4.2.1 Climate change adaptation in ERDF and CF

Bulgaria has five ERDF programmes, of which one programme has an allocation to climate change adaptation. Table 4 in the Annex provides more detailed overview on the programme with climate adaptation support. There, adaptation is primarily addressed through T05 (EUR 66.7 million) in PA4 'Prevention and management of risk from floods and landslides'. The main climate adaptation IFs selected is IF087.

The OP identifies the main climate challenges, such as combating floods and landslides in a number of areas facing higher risks, battling water scarcity, and improving Natura 2000 sites with focus on preserving biodiversity.

4.2.2 Climate change adaptation in EAFRD

Bulgaria has programmed one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Bulgarian EAFRD programme.

¹⁶ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 4.2.5 of this chapter.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	0.1	-	-	-	79.8	226.1
Climate change adaptation and/or climate change mitigation	-	247.2	247.2	247.2	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b) and water use efficiency (UP5a). Most climate change adaptation can be found in measures M07, M04, and M19 respectively. Actions under measure M07 generally aim at connecting rural areas, quality of services, demographic structure, and entrepreneurship. The main focus of actions under the key climate measure M04 lies on the loss of endemic species. The main theme of actions under M19 is to address social isolation, poverty, unemployment, lack of qualification, and environment degradation. Links to climate action are not explicitly made.

Furthermore, the bulk of climate change adaptation action in the Belgium EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

4.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 88.1 million, of which EUR 11.9 million (13.5 %) is designated for climate action. This is under the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need to transition to an ecological and sustainable fishery.

4.2.4 Climate change adaptation in ESF

Bulgaria has three ESF programmes, one of which includes YEI. Total ESF Union support amounts to EUR 1.3 billion, of which 19.6 million (1.5 %) is allocated to climate action. This is above the EU average of 1.4 %. Due to the nature of the ESF programmes, it does not directly target climate change adaptation. However, some of the actions indirectly support climate adaptation, for instance, by supporting training in energy efficiency, renewables, waste and water management, and for the administration in risk management.

4.2.5 Climate change adaptation in ETC

Bulgaria is part of four European Territorial Cooperation (ETC) programmes with allocations to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg BG-RO, Interreg BG-EL and Danube. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Bulgaria is not available.⁽¹⁷⁾

4.3 Adaptation framework compared with actual ESIF adaptation actions

The Bulgarian NAS is still under development, which makes it difficult to make a comparison with the foreseen climate adaptation actions under the Bulgarian Partnership Agreement.

The climate adaptation actions foreseen under the ERDF and EAFRD are mostly in line with the Partnership Agreement. The Partnership Agreement takes climate change mainstreaming into consideration throughout the whole document as a horizontal priority. The foreseen adaptation measures are in full compliance with the identified disparities and needs in a number of national analytical and programming documents, which have been incorporated in the design of the PA in an efficient manner. Thus, synergies between the programmes and regions targeted by ESIF interventions have been ensured.

It seems, however, that in the EAFRD programme the measures with the most climate adaptation action do not seem to have a strong focus on reducing the risk of floods and droughts. Furthermore, the EMFF OP identifies the adaptation need to identify the need to transition to an ecological and sustainable fishery. However, it is not clear from the programme whether any actions supporting adaptation are foreseen.

¹⁷ The total Union support for the four programmes Bulgaria is involved in amounts to EUR 556.4 million, out of which EUR 38.3 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014BG16M1 OP002	Operational programme 'Environment'	4	Prevention and management of risk from floods and landslides	87	5ii	1 Increasing the protection and preparedness for adequate response of the population in case of floods	<ul style="list-style-type: none"> › Establishment of a national real time system for water management › Introduction of solutions for the prevention and management of flood risks, including ecosystem-based solutions › Implementation of studies and evaluations in relation to the second Flood Risk Management Plans › Implementation of demonstration/pilot projects and information campaigns › Implementation of geo-protective measures and activities in registered landslide areas to curb and monitor landslide processes 	The environmental policy and policy on climate change have been integrated in the design of the OP in a sufficient manner. The MA of the OP has taken into consideration the Guidelines for mainstreaming the environmental policy and the climate change policy into the funds of the Cohesion Policy, the Common Agricultural Policy and the Common Fisheries Policy for the period 2014-2020, as well as the Position paper on Integration of biodiversity and Natura 2000 in partnership agreements and operational programmes 2014-2020 developed by the ENEA-MA Working Group.
					5ii	2 Improving protection of the population from landslides		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014BG06RDNP001	Rural Development Programme (National)	M01, M02, M04, M07, M08, M10, M11, M12, M13, M15, M16, M19

Table 6-1 and Table 6-2 show all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB021	Interreg RO-BG	CB	3	A safe region	87	5b	SO 3.1 To improve joint risk management in the Cross-border area	<ul style="list-style-type: none"> Increasing co-ordination and efficient reactions of the authorities in the emergency situations caused by natural disasters (flood, fire, heat waves, earthquakes, storms), setting up common rules/legislation on deforesting and construction in the areas affected by natural and anthropic hazards; setting-up and integrating harmonized standards and systems for better forecasting and managing natural and anthropic hazards in the CBC area (flood, earthquake, fire, storms), including preparing/updating hazard maps and ecosystem-based solutions (for floodplains, wetland preservation, forest management) setting up of harmonised integrated 	The programme acknowledges the importance of considering sustainable development as a horizontal principle throughout all axes, with a particular focus on PA2 (A green region), focusing on the management of natural resources. In the

								<p>tools for risk prevention and mitigation (including detection, early warning and alert systems, risk mapping and assessment)</p> <ul style="list-style-type: none"> • creation of joint structures for urgent, unexpected situations (including highly specialized response units/civil protection modules), and development of small-scale regional level Cross-border infrastructure in the field of emergency preparedness (e.g. transport accidents, disasters, etc.), including in cases of weather-related risks (such as storms, extreme temperature events, forest fires, droughts, floods) and geophysical risks (such as landslides, earthquakes) • elaborating of joint detailed maps and data bases indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services; exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the Cross-border area (including training and learning programmes, community-based training initiatives, bilingual maps, information sheets, brochures about natural and anthropic hazards) targeted at specific target groups (children/youth, development planners, emergency managers, local government officials, etc.) • land improving for regions with high and medium hazard risk level, preferably by nature-based ecosystem solutions (including: sanitation and reforestation of river banks, building green infrastructure flood and coastal defences, building flood and coastal defence (dikes, reservoirs), forestation/reforestation of non-permanent vulnerable land to torrential formations, reducing desertification tendencies and high drought risks, replanting floodplain forests) supporting and promoting Cross-border investments in the green infrastructure that helps reduce the risk and mitigate disasters (like systems for rainwater harvesting, reforestation) • Measuring/monitoring environmental parameters that are important for early warning and effective mitigation measures (e.g. emission levels, water purity, analysis of soil and water samples etc.), through the purchasing of common equipment and joint assessment of results. 	<p>projects' selection phase, there are specific requirements for the projects to meet the sustainability principle: avoiding investments that may have negative environment or climate externalities; promoting the use of green procurements and the reduction of waste generation; protection of air quality, resource efficiency, biodiversity and ecosystem; extended producer responsibility, but also the requirement that projects should be climate-neutral.</p>
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2014TC16 RFCB022	Interreg EL-BG	CB	2	A Sustainable and Climate adaptable Cross- Border area	21, 85, 86, 87	5b	3 To improve CB cooperation on flood risk management plans at river basin level. Reduce impacts from disasters.	<ul style="list-style-type: none"> Development of common standards to be applied on National flood risks management plans in order to plans be jointly coordinated in compliance with Directive 2007/60/EC; Adaptation (revision) of National flood risks management plans on commonly agreed standards in order to plans be jointly coordinated; Development of Strategies and action plans for flood risks management; Contribution to 'River Basin Management Plan' (Directive 2000/60/EC - Water policy) concerning jointly coordination in flood issues of international rivers; Capacity-building actions for flood risks; Specific actions in the field of education, information sharing, drills and training for local population for risk communication and raising the awareness of the population. General campaigns at national and local level to raise the level of preparedness; Risks and disaster management pilot actions for specific flood Cross-border risks Development of CB frameworks and platforms for the interoperability of existing databases and the integration of management approaches (hazard and risk assessment, planning methodologies, management plans, sustainability assessments, etc.) Development of joint strategies & procedures (and pilot applications of such) for sustainable management of resources, for the development of green infrastructure, for biodiversity protection, for landscape management and for the establishment of green corridors; Development (and pilot application) of joint negotiation, mediation, participation and conflict resolution models in the context of land use management with a view to protecting biodiversity; Design risk assessment & management models and strategies for CB protected areas CB frameworks and platforms for the interoperability of databases and the integration of management approaches in the areas of water management (pollution control and efficient use) CB eco-innovation partnerships and participation in European Innovation Partnerships in the areas of water management (pollution control and efficient use) Pilot applications or promotion/mainstreaming of existing innovative methods/technologies in the areas of water management (pollution control and efficient use) and joint development of new methods (i.e. adaptation of water management innovative methods to the CB area conditions, use of existing methods in other scientific fields for water management purposes, improvement of existing water management methods, etc.), including e.g. the use of forests and other areas with woody vegetation for ensuring water quality and quantity; Promoting 'green behaviour' campaigns in the areas of water management. 	Climate change aspects in relation to the sustainable development principle are described in Section 8 under the umbrella of environment but also in a more specific way. More specific aspects apply particularly for adopting to a green business model encompassing principles and practices such as resource sufficiency (e.g. sharing models, 'less is more', higher energy efficiency, higher levels of recycling), greater use of renewable energy and by implementing the concept of Eco-efficiency. There is a lack of specific criteria and it is mentioned in a general way that 'specific criteria will be included in order to ensure that no projects will produce negative impacts on the environment.'
						6d	5 To enhance the effectiveness of biodiversity protection activities		
						6f	6 To enhance water management		

2014TC16 M6TN001	Danube	TN	2	Environ ment and culture responsi ble Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to support sound water management. Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. Support risk management plans for cultural and natural heritage sites exposed to climate change. Improved strategic frameworks and developed specific solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region Integrated management of habitats, protection and recolonisation of endogenous species, control of invasive species, raising awareness on sustainable land use, etc. 	<p>Numerous aspects of sustainable development common to all PAs and IPs including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.</p>
						6c	2.2. Foster sustainable use of natural and cultural heritage and resources		
						6d	2.3. Foster the restoration and management of ecological corridors		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16M4TN003	Balkan-Mediterranean	TN	2	Environment	86, 87	6f

5 Croatia

5.1 Adaptation framework and priorities

Croatia acknowledges in its Sustainable Development Strategy (SDS) that adaptation to climate change is one of the main preconditions for achieving sustainability. However, Croatia has to date no national climate change adaptation strategy in place. The process of developing a National Adaptation Strategy (NAS) was initiated in 2014, and is expected to be completed by 2017.⁽¹⁸⁾

Activities to promote adaptation to climate change are defined within the framework of the Operational Programme (OP) Competitiveness and cohesion for the EU financial period 2014 – 2020. The funds will be used in accordance with the objectives and priorities identified within the framework of the future NAS. Until the adoption of the NAS, framework and preconditions for the activities of adaptation to climate change will be determined in accordance with the 6th National Communication by the UNFCCC. The same OP further envisages funding of activities related to the disaster risk management in accordance with the Disaster Risk Assessment (DRA).

Croatia's Partnership Agreement identifies the main need for climate change adaptation in the area of flood and disaster risk. According to the Partnership Agreement, climate adaptation shall be driven through investments in the ERDF and EAFRD programme. Under the ERDF, the foreseen actions include the monitoring and assessment of the impacts of climate change, improving public capacities and performance in disaster risk management, and gaining knowledge and public awareness about climate change. The foreseen actions under the EAFRD primarily aim at preserving biodiversity, improving the management and availability of water resources, investment in physical asset, measures on the agri-environment climate, civil-cultural works and organic farming.

¹⁸ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/croatia>

The horizontal principle of sustainable development is implemented as a guiding principle for selection criteria by applying strategic environmental impact assessments, environmental impact assessments, 'polluter pays' principle, climate proofing, green public procurement and resource efficiency.

5.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁹⁾ in Croatia for the 2014-2020 period amounts to EUR 10.7 billion. Of this amount, EUR 2.2 billion is allocated for climate action.⁽²⁰⁾ Out of the total ESIF Union support for Croatia, 17.8 % (or EUR 389.5 million) is marked for climate change adaptation. An additional EUR 667.1 million is allocated for actions that could contribute to 'climate change adaptation and/or climate change mitigation'.

Table 1 below shows the foreseen support for climate change adaptation in Croatia for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	215.4	-	174.1	389.5
Climate change adaptation and/or climate change mitigation	40.0	66.0	561.1	667.1

Table 2 presents the thematic concentration of this support. The largest adaptation support is foreseen in ERDF through TO5 and in EAFRD through TO5 as pure adaptation and TO6 as supportive adaptation.⁽²¹⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO5	TO6
Climate change adaptation, ERDF/CF	-	215.4	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	40.0	-	66.0
Climate change adaptation, EAFRD	-	59.4	-
Climate change adaptation and/or	-	-	561.1

¹⁹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

²⁰ For climate change mitigation and for climate change adaptation

²¹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 14.2.5 of this chapter.

climate change mitigation, EAFRD			
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5.2.1 Climate change adaptation in ERDF and CF

Croatia has one ERDF/CF programme, of which Table 4 in the Annex provides a more detailed overview on the climate adaptation support. The main climate adaptation IFs selected are IF087, IF065, IF086, IF085 and IF021, respectively. The OP addresses climate adaptation the main climate challenges such as floods, droughts, forest fires and erosion, and supports actions that minimise their impact. The adaptation actions focus on supporting investment for adaptation to climate change, including ecosystem-based approaches, establishing a system for climate change monitoring, forecasting and planning of climate change adaptation measures, increasing capacities and equipping for risk management on a national and regional level.

5.2.2 Climate change adaptation in EAFRD

Croatia has programmed one National Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Croatian EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	59.4	-	-	-	-	114.7
Climate change adaptation and/or climate change mitigation	-	187.0	187.0	187.0	-	-

As can be seen, the bulk of climate change adaptation action is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and risk prevention and management (UP3b).

Most climate change adaptation can be found in measures M13, M11, M10, and M07, respectively. Climate adaptation under M13 focuses on environmental measures which preserve biodiversity, improve water management and reduce soil erosion. M11 promotes the conversion to organic agricultural practices, which has positive effects of soil management and water management. The key climate measure M10 foresees the promotion of environmentally friendlier practices, with similar expected results as in M11. M07 targets for the development of rural areas with an exclusive focus on local rural development (UP6b). The main focus in this measure is to encourage farmers to seek insurance against economic losses resulting from damaged harvests.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

5.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 252.6 million, of which EUR 46 million (18.2 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP responds to the needs for eco-management, organic aquaculture, improved environmental monitoring practices and preserving biodiversity.

5.2.4 Climate change adaptation in ESF

Croatia has one ESF programme, which is combined with the YEI. Total ESF Union support amounts to EUR 1.6 billion, of which 4.7 million (0.3 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programme does not directly target climate change adaptation, due to the nature of the programme. Furthermore, the programme does not specify any details on its climate content, therefore nothing can be concluded about climate adaptation in this OP.

5.2.5 Climate change adaptation in ETC

Croatia is part of 6 European Territorial Cooperation (ETC) programmes with allocation to adaptation. Tables 6-1 and 6-2 in the annex lists all the programmes and present detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg IT-HR, Interreg SI-HR and Adriatic-Ionian. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Croatia is not available.⁽²²⁾

5.3 Adaptation framework compared with actual ESIF adaptation actions

Croatia currently does not have its NAS in place. Instead, the current climate adaptation framework is based on the 6th National Communication by the UNFCCC. Nevertheless, Croatia announces use of ESI funding in accordance with the priorities and objectives of the future NAS. Due to the absence of the NAS, a comparison with the actual ESI Funds adaptation actions is not possible.

The foreseen actions under each ESIF programme are in line with the indicated actions in the Partnership Agreement. The indicated actions under the ERDF are all addressed in the corresponding programme through improving, for example, flood protection, promoting awareness raising activities or strengthening public capacity for climate adaptation. Furthermore, the climate adaptation actions in the EAFRD fully respond to the Partnership Agreement through e.g. improved

²² The total Union support for the 6 programmes Croatia is involved in amounts to EUR 840.4 million, out of which EUR 57.2 million is allocated for adaptation.

biodiversity, water management, organic farming and investments in physical assets.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014HR16M1OP001	Competitiveness and Cohesion	5	Climate Change and Risk	87	5a	5a1. Improvement of climate change monitoring, forecasting and planning of adaptation measures	Climate adaptation is found under two IPs. Under IP5a, the supported actions will improve the quality and availability of research data on the impacts of climate change, strengthen the administrative and technical capacities of public institutions, raise awareness on national and local levels, and integrate climate change into the planning process (action plans at local levels, strategic and development documents, etc.). Under IP5b, the actions aim to promote risk awareness programmes, prepare projects in the sectors that deal with the most common disastrous events, improve the organisational capacity of all disaster protection and management organisations and the purchase and construction of disaster reduction/response equipment and infrastructure.	The horizontal principle of sustainable development will ensure that climate change adaptation is integrated across the programme, and that the capacity of national, regional and local administrations to develop and implement adaptation strategies will be strengthened.

					5b	5b1. Enhancement of the national disaster management systems		
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Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014HR06RDNP001	National	M01, M02, M04, M05, M07, M08, M10, M11, M13, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB042	Interreg IT-HR	CB	2	Safety and resilience	87	5a	Improving the climate change monitoring and planning of adaptation measures tackling specific effects in the cooperation area	<ul style="list-style-type: none"> Actions foreseen aim at improving the knowledge base, data and monitoring systems supporting adaptation capacity-and at increasing the capacity for planning of adaptation measures. Example of actions include: - adoption of downscaled climate data - setting up of common/ integrated/ harmonized monitoring and observing systems, model, spatial data infrastructures to improve the assessment and forecast capabilities, support the planning and design phase, promote the resilience to climate change; strengthening the capacity of public sector to develop and implement innovative services, incentives and financing schemes for increasing resilience to climate change; elaboration of strategic planning, action plans and other instruments for climate change adaptation Actions foreseen are aimed at improving monitoring of risks and at increasing the management capacity of the risk. The programme supports the establishment of better coordinated collective emergency planning and preparedness for flooding (water management, flood risk techniques, etc.) and other risks (i.e. fire etc.) as well as joint development and implementation of awareness raising actions and governance instruments. Furthermore the development or improvement of existing early warning and decision-making support systems are foreseen. 	<p>Applicants will have to demonstrate the contribution of the proposed operations to sustainable development, in line with the scope of each Priority Axis. When submitting proposals, they will be asked to describe how the foreseen project activities and impacts will ensure the sustainability principle. Applications will be evaluated taking into consideration climate protection and climate adaptation, or energy efficiency; operations that may have a significant negative environmental or climate impact will not be admitted. On the other hand, the Programme will support actions aimed at mitigating any negative effect on environment. In the implementation of the project activities the use of green public procurement will be encouraged, and the raising awareness of partners, beneficiaries and target groups on sustainability issues will be fostered.</p>
						5b	Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems		

2014TC16 RFCB029	Interreg SI-HR	CB	1	Integrated flood risk management in transboundary river basins	87	5b	1.1. Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems so harmonised actions are required.	<ul style="list-style-type: none"> Flood risk reduction in the transboundary Dragonja, Kolpa/Kupa, Sotla/Sutla, Drava, Mura and Bregana river basin 	The programme authorities will undertake actions throughout the programme lifecycle, to avoid or reduce environmentally harmful effects of interventions and ensure results in net social, environmental and climate benefits. Actions to be undertaken may include the following: 1) Directing investments towards the most resource-efficient and sustainable options; 2) Avoiding investments that may have a significant negative environmental or climate impact, and supporting actions to mitigate any remaining impacts; 3) Taking a long-term perspective when 'life-cycle' costs of alternative options for 4) investment are compared; 5) Increasing the use of green public procurement.
2014TC16 M4TN002	Adriatic- lonian	TN	2	Sustainable region	21, 85, 86, 87	6c	Promote the sustainable valorisation and preservation of natural and cultural heritage as growth assets in the Adriatic-lonian area	<ul style="list-style-type: none"> Actions foreseen include: - Transnational networks for sustainable cultural/natural tourism promotion; Diversified tourism products and innovative touristic services; Sustainable tourism models focusing on low carbon emissions, low ecological footprint and 'slow food' concepts. Actions foreseen include the development of cooperation projects on: Transnational frameworks and platforms for hazard and risk assessment, planning methodologies, management plans, sustainability and adaptation assessments etc. - development of implementation strategies, models and testing of pilot activities on risk management and climate change adaptation in terrestrial and aquatic environments; Transnational Special Spatial Plans (e.g. on RES, on tourism, on agriculture and forestry), Maritime Spatial Planning, Multiannual Fishery Management Plans and Integrated Coastal Zone Management Plans and Procedures; early warning systems for forecasting, managing and preventing natural and manmade hazards; exchange of best practices on civil protection, floods management, risk management, integrated and sustainable management of protected areas) 	The programme aims at improving and harmonizing environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience, risk prevention and management systems. In line with the principle of sustainable development, projects applications shall be evaluated using the following criteria: - positive effect on the environment, - Projects that have a potentially harmful effect on the environment will be excluded; environmental awareness consideration and compliance both within - efficiency in the use of resources (e.g. energy efficiency, renewable energy use, reduction of GHG emissions), management and recycling, reduction of PM and NO2, etc.). - development of green infrastructures; contribution to better awareness for the adaptation to climate change and risk prevention; Furthermore whether projects are directly concerned by sustainable development issues or not, they shall be invited to implement actions/take specific measures to reduce the environmental impact beneficiaries are requested to describe in their project proposals the efforts they will undertake to reduce the project's 'carbon footprint'. The SEA and the ex-ante evaluation provided inputs to ensure that the ADRION Programme respect the principle of sustainable development.
						6d	Enhance the capacity in tackling environmental vulnerability, fragmentation, and the safeguarding of ecosystem services in the Adriatic lonian area		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b, 6c, 6d
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e
2014TC16RFCB008	Interreg HU-HR	CB	2	Sustainable use of natural and cultural assets	85, 86, 87	6c, 6d

6 Cyprus

6.1 Adaptation framework and priorities

To tackle and adapt to the impacts of climate change, a substantial role can be attributed to the primary sector of the economy by addressing the management needs of water resources, and the protection and restoration of forests. Protecting the biodiversity of the country is a need which is connected both to strengthening sustainable development and the development of eco-tourist products.

The National Adaptation Plan (NAP) of Cyprus is the framework of action for the effective preparation and proofing of the country against the observed and expected changes in climate. The Adaptation Plan foresees approximately 250 measures, actions and practices that are required for the effective climate change adaptation of each of the eleven policy areas: water resources, soils, coasts, biodiversity, agriculture, forests, fisheries & aquaculture, public health, energy, tourism and infrastructure. For each of the abovementioned policy areas, Sectoral Adaptation Plans were prepared, including a set of adaptation measures that were prioritized.⁽²³⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through the EAFRD and CF, with proposed actions under TO5. The focus will be on specific adaptation actions within the framework of implementation of the national strategy for adaptation to climate change. The key thematic investment modules developed under the thematic objective are forestry measures (afforestation - creation of new woodland, prevention and restoration of damage to forests, investments improving the resilience and value of forests) and measures that promote adaptation and risk prevention. A series of measures is to be proposed by the national strategy for adaptation to climate change, with a particular focus on coastal zones and coastal erosion, which correlates directly with tourism, the largest sector of economic development in Cyprus. At the same time, promoting the adaptation strategy on biodiversity, health, energy and infrastructure is sought.

²³ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/cyprus>

- › Moreover, the proposed actions under TO6 related to water management and protection and restoration of biodiversity are also related to adaptation of climate change.
- › It is aimed for that the measures and actions that will be promoted for co-financing from ESIF 2014-2020 will be in line with the principles of sustainable development, including the conservation, protection and improvement of the quality of the environment, and the polluter-pays principle. In this context, the managing authorities of the funds will cooperate with the Department of Environment of the Ministry of Agriculture and Natural Resources, to record all the proposed actions of each fund that will help both environmental enhancement and to support the objectives of the EU Climate change strategy.

Expected results under the CF are the limitation of the impact of climate change on coastal erosion and enhancement of monitoring for the impacts of climate change and risk management. For the EAFRD, these are an increase of forest cover and combating desertification of the soil.

6.2 ESIF support for climate change adaptation

Union support under the ESI Funds ⁽²⁴⁾ in Cyprus for the 2014-2020 period amounts to EUR 874.4 million. Of this amount, EUR 192.3 million is allocated for climate action.⁽²⁵⁾ Out of the total ESIF Union support for Cyprus, 2.7 % (or EUR 23.5 million) is marked for climate change adaptation. An additional EUR 69.2 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Cyprus for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	-	10.0	13.5	23.5
Climate change adaptation and/or climate change mitigation	2.0	8.0	59.2	69.2

²⁴ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

²⁵ For climate change mitigation and for climate change adaptation

Table 2 presents the thematic concentration of the adaptation support. The largest support is foreseen in ERDF through T05 and in EAFRD through TO4 as pure adaptation and TO6 as supportive adaptation.⁽²⁶⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	10.0	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	-	10.0
Climate change adaptation, EAFRD	7.8	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	59.2

6.2.1 Climate change adaptation in ERDF and CF

Cyprus has one ERDF programme with an allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme with climate adaptation support.

There, adaptation is primarily addressed through TO5 (EUR 10.0 million) in PA3 'Reduction of carbon dioxide emissions and climate change adaptation'. The main climate adaptation IFs selected are IF087, IF086 and IF021. The OPs identify the main climate challenges by targeting action, regarding mainly coastal erosion but also water resources management, biodiversity and forests. Also, adaptation ranks high in RTD investment support due to the inclusion of climate-change sectors and technologies in the country's Smart Specialisation Strategy (S3).

6.2.2 Climate change adaptation in EAFRD

Cyprus has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Cypriot EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	7.8	5.7
Climate change adaptation and/or climate change mitigation	-	19.7	19.7	19.7	-	-

²⁶ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 5.2.5 of this chapter.

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address water use efficiency (UP5a) and local rural development (UP6b). Most climate change adaptation can be found in measures M04, M10, M07, and M19, respectively. The main focus of actions under the key climate measure M04 is to improve the economic and environmental performance (soil protection, water management, promotion RES energy efficiency, lack of infrastructure (irrigation, livestock) and support non-remunerative investments. Measure M10 has a focus on protection from water and soil degradation, enhancement of biodiversity, focus on intensive cultivation such as potatoes and citrus, and adoption of more environmentally friendly cultivation practices. Measure M07 aims to improve the quality of life in rural areas, mainly mountain areas, with no reference to climate change, and the lack of basic infrastructure in rural areas, while measure M19 is aiming to diversification of local economies, creation of employment and the lack of infrastructure in rural areas.

Furthermore, the bulk of climate change adaptation action in Cyprus EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex below provides more details on the content of the programme with support for climate action.

6.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 39.7 million, of which EUR 10.6 million (26.8 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP has identified the main issues in conservation and environmental status improvements, as well as the development and usage of novel technologies in fisheries and aquaculture businesses.

6.2.4 Climate change adaptation in ESF

Cyprus has one ESF programme that includes YEI. Total ESF Union support amounts to EUR 116.0 million, of which EUR 50.000 (0.04 %) is allocated to climate action. This is far below the EU average of 1.4 %. Due to the nature of the ESF programme, it does not directly target climate change adaptation. However, some of the actions indirectly support climate adaptation, for instance, climate change potential is described concerning training system adjustment, and employment opportunities coming from the energy and green sectors.

6.2.5 Climate change adaptation in ETC

Cyprus is part of two European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the Annex lists all the programmes and presents detailed information for the one Cross-border (CB) and one Transnational (TN) programme with an allocation to adaptation, namely Interreg EL-CY, and

Balkan-Mediterranean. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Cyprus is not available.⁽²⁷⁾

6.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate adaptation actions under the Cypriot Partnership Agreement are in line with the objectives and address the sectors identified in the NAP. The individual programmes mostly seem to be in line with the objectives as set out in the Partnership Agreement.

For EMFF, however, the adopted OP has not directly included or addressed any climate change-related aspects in its strategy description section. A synergy which is not well elaborated relates to climate-related skill improvement and training. It is also referred to in the Partnership Agreement that the potential for synergies with other EU funding instruments will be considered. A connection with climate change issues is mentioned broadly.

²⁷ The total Union support for the two programmes Cyprus is involved in amounts to EUR 74.3 million, out of which EUR 4.8 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014CY16M1OP001	Competitiveness and sustainable development	3	Reduction of carbon dioxide emissions and climate change adaptation	87	4iii	4iii1 Increasing energy savings in public buildings	Actions for improving the energy performance of housing and existing public buildings. Projects for the protection and the improvement of coastal zones by coastal erosion / Interventions to protect and improve biodiversity / Development of ICT systems for preventing and managing risks arising from climate change and extreme weather events	The OP provides for the following arrangements of relevance to climate action: involvement of and advice from bodies working in SD; SD integrated in the design of measures and operations; ensuring that selection criteria assesses projects on the basis of, among others climate change mitigation and adaptation.
					4iii	4iii2 Increasing saving energy in housing		
					5i	5.i.1 Reduction of impacts resulting from climate change, especially coastal erosion		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014CY06RDNP001	Cyprus RDP 2014-2020	M01, M04, M07, M08, M10, M11, M12, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB055	Interreg EL-CY	CB	3	Conservation and protection of the environment and risk prevention	21, 87	5b	3.1 Improvement of joint risk management actions against natural, technological and humanitarian disasters	<ul style="list-style-type: none"> Integrated systems - risk and disaster management plans, common or jointly elaborated, which will include the necessary resources and infrastructure for an area for the provision of appropriate disaster management services to citizens, and support of specialized units disaster response / civil protection modules; Investments in pilot projects and risk prevention applications and protection from disasters (e.g., creation of databases, institutions and mechanisms for exchanging information and developing joint strategies, action plans and management plans at regional and local level, developing ICT (ICT) tools such as Geographic Information Systems (GIS), detection and surveillance systems, early warning and alert, risk mapping and evaluation studies) Harmonised standards and systems in the area (including common definitions and assessment of emergency situations) for better 	According to Section 8 of the programme on sustainable development, the integration of the principle is taken into account during the development of the programme through: a) the parallel elaboration of the SEA with the aim of continuous enrichment of the program and proposing corrective actions until final submission and approval and b) the consultation of the SEA with the environmental authorities of the countries. Concerning the implementation of the programme, the sustainable development principle will be ensured through specifying the criteria for selecting the operations by

						6f	3.3 Improvement of Maritime Spatial Planning (MSP) and Coastal Zone Management	<p>anticipation and management of natural disasters; Educational support (training) to strengthen the capabilities of emergency response stakeholders, including volunteers and civil society.</p> <ul style="list-style-type: none"> Investments to promote Marine Spatial Planning [e.g. (a) drafting maritime spatial plans for mapping environmental features and productive activities (indicative extracting energy resources, areas for renewable energy, roads maritime transport routes submarine cables and pipelines, fishing areas, fish farming facilities, places protection of the marine environment etc.) and actions supporting the institutionalization process, (b) strengthening the research and development of materials, technologies and systems for mapping all the activities taking place in the sea area of the cross, etc.]; Exchange of good practices and networking for the implementation of Integrated Coastal Zone Management; Exchange of good practices and networking for the implementation of Integrated Coastal Zone Management. 	priority axis. These criteria will then be approved by the Monitoring Committee of the Program and included in the Management and Control System for monitoring interventions.
2014TC16 M4TN003	Balkan-Mediterranean	TN	2	Environment	86, 87	6f	2.2 Promote cooperation and networking aiming to introduce innovative technologies for efficient management of the waste sector, the soil and the water sector	<ul style="list-style-type: none"> Strategies and tools to reduce the use of resources, enhancing their efficiency and decoupling economic growth from resources consumption; Development of regional and inter-sectoral resource management plans to promote resource and energy efficiency, innovative environmental management geared to sustainable green/blue growth; Preparation of joint researches, studies, action plans, pilot tests and concrete management activities to promote innovative technologies in the field of resource and energy efficiency including the use of renewable energy sources; Shared applications' development for integrated marine/maritime planning and coastal management concerning efficient resources and energy management with a view to enhancing also employment opportunities. 	The CP consists of two priority axes; Priority Axis 1 is focusing on innovation, SME competitiveness and skills development. Climate change is considered in the context of resource efficiency, as a risk factor but also as a driver of sustainability and competitiveness. Priority Axis 2 is explicitly dedicated to environmental protection, resource efficiency, climate change adaptation and environmental management. In both cases climate change is not a major topic (except for mitigation under IP6f) but both Priority Axes indirectly also address climate change and sustainable development in the broader sense. For a Transnational CP, the horizontal principles adequately cover climate aspects.

7 Czech Republic

7.1 Adaptation framework and priorities

The National Adaptation Strategy (NAS) was prepared in line with the EU Strategy on adaptation to climate change and was adjusted to the specific conditions prevalent in the Czech Republic. The document was prepared in cooperation with a number of individual Ministries and organisations. Work was organised within several thematic working groups (e.g. agriculture, water, biodiversity, etc.) and coordinated by the Ministry of the Environment. The objective of the Adaptation Strategy is to reduce anticipated climate change impacts, adapt to these impacts, maintain good living conditions and develop economic potential for future generations.

The NAS includes observed climate change impacts and recommends appropriate adaptation measures, including their linkages to mitigation. Adaptation measures are proposed in the following areas: water regime in landscape and water management, agriculture, forest management, biodiversity and ecosystem services, urbanized landscape, health and hygiene, crisis situations, protection of the population and environment, tourism and recreation, transport, industry and the energy sector.⁽²⁸⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through the EAFRD, ERDF and CF. Adaptation objectives focus on environmental protection, including the improvement of air and water quality, and nature and landscape protection.

The EAFRD addresses adaptation of agriculture and forestry to the expected climatic phenomena by increasing the potential of agricultural and forest ecosystems, minimizing adverse climate impacts through water use efficiency and retaining water in the landscape, preventing water and wind erosion and suitable grass management methods. Furthermore, flood protection based, in particular, on

²⁸ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/czech-republic>

increasing the water retention ability of the landscape, slowing down natural draining of water by using suitable agri-environmental and climatic operations, and adaptation measures in forests. The ERDF and CF target improved prevention and reduced environmental risks.

The horizontal principle of sustainable development includes some key principles such as: polluter pays, precaution, prevention, minimizing emissions harmful to health, effective management of resources, biodiversity and ecosystem prevention and climate protection.

7.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽²⁹⁾ in the Czech Republic for the 2014-2020 period amounts to EUR 24.0 billion. Of this amount, EUR 5.5 billion is allocated for climate action.⁽³⁰⁾ Out of the total ESIF Union support for the Czech Republic, 0.7 % (or EUR 173.3 million) is marked for climate change adaptation. An additional EUR 1.76 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in the Czech Republic for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	120.4	6.9	46.1	173.5
Climate change adaptation and/or climate change mitigation	250.2	30.7	1,482.5	1,763.4

Table 2 presents the thematic concentration of the adaptation support. The largest support is foreseen in ERDF through T05 and in EAFRD through TO6 as supportive adaptation.⁽³¹⁾

²⁹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

³⁰ For climate change mitigation and for climate change adaptation

³¹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 6.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	127.4	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	102.7	-	-	178.2
Climate change adaptation, EAFRD	-	-	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	1,482.5

7.2.1 Climate change adaptation in ERDF and CF

The Czech Republic has seven ERDF programmes, of which two programmes have allocations to climate change adaptation.

Table 4 in the Annex provides a more detailed overview on the two programmes with climate adaptation support. There, adaptation is primarily addressed through TO5 (EUR 127.4 million) in PA1 ‘Improvement of water quality and reduction of flood risks’ and ‘Competitive, accessible and safe regions’. The main climate adaptation IFs selected are IF087, and IF021. The OPs identify the main climate challenges such as anti-flood protection and risk management, and the modernisation of the Integrated Rescue System on the national level.

7.2.2 Climate change adaptation in EAFRD

The Czech Republic has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Czech EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	46.1
Climate change adaptation and/or climate change mitigation	-	494.2	494.2	494.2	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas addressed under local rural development (UP6b). The only climate change adaptation can be found in measure M19. The main focus of actions under the key climate measure M19 is to support for LEADER ⁽³²⁾ local development (covering 66 % of the rural population).

³² The LEADER programme supports development of rural economies through a constructive interaction with the municipal and regional authorities and local actors.

Furthermore, the bulk of climate change adaptation action in the Belgium EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

7.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 31.1 million, of which EUR 1.3 million (4.1 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the Czech OP focusses on UP2 (Fostering environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based aquaculture), which is allocated 67% of the budget. Czech freshwater aquaculture is a relatively small activity, having limited climate change impact.

7.2.4 Climate change adaptation in ESF

The Czech Republic has three ESF programmes, of which one programme includes YEI. Total ESF Union support amounts to EUR 3.35 billion, of which 2.9 million (0.09 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes.

7.2.5 Climate change adaptation in ETC

The Czech Republic is part of six European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg DE-CZ (Saxony), Interreg CZ-PL, and Danube. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for The Czech Republic is not available.⁽³³⁾

³³ The total Union support for the six programmes the Czech Republic is involved in amounts to EUR 1.0 billion, out of which EUR 45.3 million is allocated for adaptation.

7.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Czech Partnership Agreement are mostly in line with the Czech Adaptation Strategy (CAS). However, it seems that some topics mentioned in the CAS are not mentioned specifically in the Partnership Agreement. These are forest management, biodiversity and ecosystem services, and urbanized landscapes.

The individual programmes are mostly in line with the objectives as set out in the Partnership Agreement. However, only two ERDF programmes contain adaptation-specific actions. There are possible adaptation actions in the remaining programmes, but these are not explicitly mentioned. The EMFF programme is not placed in a broader context of national climate measures. The implementation of measures under Natura 2000 is placed under the ERDF and EAFRD. The EMFF does not play an explicit role in relation to Natura 2000.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014CZ16M1OP002	Environment	1	Improvement of water quality and reduction of flood risks	21,87	5ii	SO 1.3 To ensure flood protection of urban areas	Dredging or increasing the retention potential of watercourses and adjacent floodplains, improving natural overflow; Storm water management in urban areas and its further use instead of accelerated drainage of sewers into watercourses; The restoration, construction and reconstruction or modernisation of water structures serving for flood protection; The stabilisation and remediation of slope instabilities that threaten health, property and	The OP provides for the following arrangements of relevance to climate action: principle of well-considered adoption of environmental commitments, and an ecosystem approach, principle of pollution (risk) minimisation at source and of substitution. Where technically possible and economically viable, products and services ought to be provided with as low material and energy requirements as possible, material and energy needs should be saturated by renewable sources.
					5ii	SO 1.4 To promote preventive flood protection measures		

					6ii	SO1.1: The reduction of water pollution and drinking water quality improvement	<p>safety on the basis of the 'Register of Slope Instabilities.'</p> <p>Analysis of runoff conditions, including suggestions for possible flood measures;</p> <p>Construction, expansion and improvement of warning, reporting, forecasting and alert systems at national level, digital flood plans;</p> <p>Construction of sewers, eliminating the causes of the excessive load of surface water by nutrients, construction, modernisation of wastewater treatment plants.</p>	
2014CZ16RFOP002	Integrated Regional Operational Programme	1	Competitive, accessible and safe regions	87	5b	SC1.3 Enhancing preparedness to address and manage risks and disasters	<p>Purchase of technical equipment for disasters, modernisation of IRS (Integrated Rescue System) training centres,</p> <p>Building and reconstructions of IRS stations, purchase of equipment for managing of new risks</p> <p>Public transport projects (e.g., transfer terminals), application of modern technologies in transport (e.g., intelligent transport systems),</p> <p>Measures contributing to the mitigation of negative impacts of transport (e.g., purchase of low-emissions vehicles)</p> <p>Transport safety projects development of bicycle transport</p>	The promotion of sustainable development has been improved in the adopted version of the OP. Climate action including other principles of sustainable development have been considered.
					7c	SC1.2 Increase in the share of sustainable forms of transport		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014CZ06RDNP001	Czech Republic - Rural Development Programme (National)	M01, M02, M08, M10, M11, M12, M13, M15, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB017	Interreg DE –CZ (Saxony)	CB	1	Supporting climate change adaptation, risk prevention and risk management	87	5b	5b1. Intensification of Cross-border use and performance (of joint risk management)	<ul style="list-style-type: none"> (1) Joint planning, joint data exchange and data provision measures (for disaster management services) and investments in flooding prevention, (2) investments in joint equipment for disaster prevention and management including information systems and communication platforms, (3) improved cooperation among rescue / emergency services through joint exercises, training, language skills improvement and awareness raising among the wider public. 	The CP strongly focuses on promoting ecological sustainability, with aspects on environmental protection, climate change adaptation, risk prevention and management being at the heart of the intervention strategy. The CP considers such on all four PAs and contributes to sustainable development and ecologic sustainability. Sustainable development is also applied as a 'horizontal criterion' during the selection of all operations and a specific assessment indicator will be used to appraise their environmental impact.

2014TC16 RFCB025	Interreg CZ-PL	CB	1	Join risk management	87	5b	1.1 Improving Cross-border responsiveness to emergency events and crisis situations	<ul style="list-style-type: none"> Investments in the development of joint or interconnected systems of prevention of risks, their monitoring, response to them and elimination of their impact. Investment measures aiming at increasing ability of rescue and security teams to intervene efficiently on both sides of the border. Joint professional training of rescue/security teams staff and crisis management teams focusing on improving Cross-border responsiveness. 	The principle of sustainable development is taken into account across the all priority axes implemented under the programme. With respect to all operations supported under the programme, measures have been designed to avoid or minimize negative impacts on the environment and ensure efficient use of resources. It is expected that some of the operations to be implemented under the programme PA1 (TO5) and PA2 (TO8) will produce positive effects in terms of sustainable development. Climate change issues have not been specifically address as the horizontal principles.
2014TC16 M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to support sound water management. Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. Support risk management plans for cultural and natural heritage sites exposed to climate change. Improved strategic frameworks and developed specific 	Numerous aspects of sustainable development common to all PAs and IPs including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.
						6c	2.2. Foster sustainable use of natural and cultural heritage and resources		
						6d	2.3. Foster the restoration and management of ecological corridors		

									solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region Integrated management of habitats, protection and recolonisation of endogenous species, control of invasive species, raising awareness on sustainable land use, etc.	
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Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis			Selected IFs	Selected IPs
CCI	Title	PT	No	Title			
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e	
2014TC16RFCB002	Interreg AT-CZ	CB	2	Environment and Resources	85, 86, 87	6c, 6d, 6f	
2014TC16RFCB009	Interreg DE-CZ (Bavaria)	CB	2	Preserving and protecting the environment and supporting resource efficiency	85, 86, 87	6d	

8 Denmark

8.1 Adaptation framework and priorities

In 2008, the Danish government launched the first Danish Adaptation Strategy (DAS) for a changing climate. The negative impacts of climate change will relate primarily to more frequent extreme rainfall, rising sea levels and more storms which can lead to flooding and damage infrastructure and buildings as well as more erosion along coasts.

Following a new government in 2011, an action plan for a climate-proof Denmark was launched in 2012. The action plan is based on the notion that a responsible climate policy reaches beyond the scope of merely limiting climate change in the long-term. It must also ensure currently necessary actions to adapt our society to an already changing climate. In 2012, the Minister for the Environment established a two-year task force on climate change adaptation. The mobile team offered guidance and facilitated collaboration between municipal authorities and other stakeholders in the field, for example with regards to preparing the municipal climate change adaptation plans. The portal also contains news, concrete cases of climate change adaptation and many interactive tools. A number of tools aimed at municipalities, enterprises and individuals, were made available in 2012. These tools can be used to assess risk from flooding e.g. rising sea level and to climate-proof buildings.⁽³⁴⁾

Looking at the Partnership Agreement, adaptation is mostly addressed in the EAFRD on investment in environmental technology. It also refers to initiatives within grassland, support to organic farming, and the reestablishment of forests.

Projects under the EAFRD will be planned to the largest possible extent to contribute to reduced emission and explore potential synergies. Projects under the EMFF will contribute indirectly through a positive influence on biodiversity.

³⁴ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/denmark>

8.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽³⁵⁾ in Denmark for the 2014-2020 period amounts to EUR 1.3 billion. Of this amount, EUR 572.7 million is allocated for climate action.⁽³⁶⁾ Out of the total ESIF Union support for Denmark, 1.4 % (or EUR 17.5 million) is marked for climate change adaptation. An additional EUR 438.9 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Denmark for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽³⁷⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	17.5	17.5
Climate change adaptation and/or climate change mitigation	11.5	-	427.4	438.9

Table 2 presents the thematic concentration of the adaptation support. The largest support is foreseen in ERDF through T01 and in EAFRD through TO6 as supportive adaptation.⁽³⁸⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO6
Climate change adaptation, ERDF/CF	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	11.5	-
Climate change adaptation, EAFRD	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	427.4

³⁵ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

³⁶ For climate change mitigation and for climate change adaptation

³⁷ CF is not aimed at Denmark.

³⁸ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 8.2.5 of this chapter.

8.2.1 Climate change adaptation in ERDF

Denmark has one ERDF programme, which does not contribute directly to climate adaptation. It does contribute on Intervention Fields that support both climate change adaptation and/or climate change mitigation. Only IF065 is selected, but the OP does not mention any adaptation issues directly.

8.2.2 Climate change adaptation in EAFRD

Denmark has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Danish EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	17.5
Climate change adaptation and/or climate change mitigation	-	142.5	142.5	142.5	-	-

As can be seen, the climate change adaptation action in the National RDP is foreseen in Focus Areas that address local rural development (UP6b). The only direct climate change adaptation can be found in measure M19. The main focus of actions under this key climate measure is on the support for LEADER⁽³⁹⁾ local development (Art 35 Regulation (EU) No 1303/2013).

Furthermore, the bulk of climate change adaptation action in Danish EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

8.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 208.4 million, of which EUR 25.1 million (12.1 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP targets the implementation of the Marine Strategy Framework Directive, Water Framework Directive, and Natura 2000 in Denmark. However, the OP clearly expresses that the EMFF programme is not considered to be the main instrument to implement climate strategy measures in Denmark. Overall, the programme will contribute to or address climate changes issues under the Union priorities, but the main instrument will be national programmes described in the Danish 'Mapping of climate changes – opportunities and challenge for action'.

³⁹ The LEADER programme supports development of rural economies through a constructive interaction with the municipal and regional authorities and local actors.

8.2.4 Climate change adaptation in ESF

Denmark has one ESF programme. Total ESF Union support amounts to EUR 197.0 million, with no allocation to climate action. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. It is specified in the OP that environmental and climate issues will be addressed in the ERDF OP.

8.2.5 Climate change adaptation in ETC

Denmark is part of one European Territorial Cooperation (ETC) programme with allocation to adaptation. Table 6 in the annex lists and presents detailed information for the Transnational (TN) programmes with an allocation to adaptation, namely North Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Denmark is not available.⁽⁴⁰⁾

8.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Danish Partnership Agreement are mostly in line with the DAS. However, it seems that the DAS goes a bit further: The adaptation in the Partnership Agreement mainly comes from the RDP. Following the logic of the DAS, which relates to topics like extreme rainfall, rising sea levels and more storms which could lead to flooding and damage to infrastructure and buildings as well as erosion along coasts, there should be more concrete actions in, for example, ERDF as well (related to spatial adaptation).

The Partnership Agreement with Denmark does mention Green Jobs as a target, and the ESF programme mentions the growth potential in the 'green economy' but without being specific and/or concrete. The overall target in the Partnership Agreement and OP are not directly tied to any specific green and/or climate agendas.

⁴⁰ The total Union support for the one programme Denmark is involved in amounts to EUR 167.3 million, out of which EUR 18.4 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

Table 4 is not relevant, no OPs are available that have selected IF087 or IF100

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014DK06RDNP001	National	M01, M04, M07, M08, M10, M11, M15, M19

Table 6 shows all ETC CPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	Demonstrate new and/or improved methods for improving the climate resilience of target sites	<ul style="list-style-type: none"> Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the programme will provide opportunities for: <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	The programme describes a comprehensive approach to pursuing sustainable development. It is stated that during project development projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.
				6d		Develop new methods for the long-term sustainable management of North Sea ecosystems			

9 Estonia

9.1 Adaptation framework and priorities

Estonia has not yet adopted its National Adaptation Strategy (NAS) on climate change adaptation. A process for developing the NAS started in 2013.

In 2015, the Government of the Republic of Estonia officially approved the proposal document of developing a national adaptation strategy and action plan (NAP) for Estonia. The NAS/NAP will be an independent policy document (development plan) including a comprehensive sectorial climate change impact analysis, including undertaking a climate change risks and vulnerability assessment, identification and description of adaptation options, assessments of adaptation options and forecasting costs and development of the actions for the adaptation options. The action plan to implement the adaptation strategy will be developed in parallel with the adaptation strategy itself. The NAS/NAP will be presented to the Government of the Republic of Estonia, to decide on its adoption, in June 2016

Topics that will be most likely addressed in the NAS are sustainable planning (urban, rural, coastal and other areas), health, and a sustainable bio-economy (sustainable production and processing systems that can produce more food, fibre and other bio-based products with fewer inputs and less impact).⁽⁴¹⁾

Looking at the Partnership Agreement, adaptation occurs mostly by allocating support to activities that aim at improved monitoring and response capacities to tackle consequences of extreme weather events, particularly forest fires and oil spills at sea. Climate change adaptation issues are addressed mainly within the priority axis 'Clean and diverse environment and efficient use of natural resources'. Support to the rehabilitation of the landscapes and habitats will increase the resilience of the biodiversity to climate change impacts as well as support to the restoration of the spawning grounds for commercial fish stocks.

⁴¹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/estonia>.

Horizontal principles are addressed to combine economic growth with the improvement of the environment. There are many laws and regulations aiming for sustainability, protection of biodiversity and environment. Mainstreaming climate change into legislation and practices is underway. Most of these acts and regulations build on the principle that the ‘polluter pays’. For each of the ESI funds, there is a focus on sustainability. ERDF programmes focus on resource efficiency, innovation and a transformation to a low-carbon economy. The ESF programme has the least focus on sustainability, but has a potential for the creation of ‘green jobs’ where education on improved energy savings and the protection of the environment are the main points. Within EAFRD, the focus is on the sustainable development of rural areas. Main themes support to agri-environmental measures, promoting organic agriculture, sustainable water management, reduction of GHG emission, and soil improvement. The EMFF programme concentrates on sustainability through resource efficiency and innovation and maintaining the sustainability and productivity of fish stocks.

9.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁴²⁾ in Estonia for the 2014-2020 period amounts to EUR 4.3 billion. Of this amount, EUR 925.0 million is allocated for climate action.⁽⁴³⁾ Out of the total ESIF Union support for Estonia, 0.4 % (or EUR 62.9 million) is marked for climate change adaptation. An additional EUR 469.1 million is allocated for actions that could contribute to ‘*climate change adaptation and/or climate change mitigation*’. Table 1 below shows the foreseen support for climate change adaptation in Estonia for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	-	30.3	32.6	62.9
Climate change adaptation and/or climate change mitigation	145.2	37.0	287.0	469.1

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through TO4 as pure adaptation and TO6 as supportive adaptation.⁽⁴⁴⁾

⁴² ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁴³ For climate change mitigation and for climate change adaptation

⁴⁴ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 9.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	30.3	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	145.2	-	-	37.0
Climate change adaptation, EAFRD	-	0.2	>0	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	287.0

9.2.1 Climate change adaptation in ERDF and CF

Estonia has one ERDF programme which also has an allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme.

There, adaptation is primarily addressed through TO5 (EUR 30.3 million) in PA8 'Green infrastructure and increased preparedness for emergencies'. The main climate adaptation IFs selected are IF087, IF085. The OP addresses adaptation by promoting investment to address specific risks like forest fires and flooding, ensuring disaster resilience and developing disaster management systems. Other relevant topics that contribute to the increased resilience are investments in the water sector and protecting and restoring biodiversity and soil and promoting ecosystem services, including Natura 2000 and green infrastructure.

9.2.2 Climate change adaptation in EAFRD

Estonia has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Estonian EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	>0	-	-	-	0.2	32.4
Climate change adaptation and/or climate change mitigation	-	95.7	95.7	95.7	-	-

As can be seen, the climate change adaptation action in the National RDP is foreseen in Focus Areas that address local rural development (UP6b). Most climate change adaptation can be found in measures M19 and M02 respectively. The main focus of actions under this key climate measure is on the support for

LEADER⁽⁴⁵⁾ local development (Art 35 Regulation (EU) No 1303/2013). The main theme of actions under M02 is related to advisory services, farm management and farm relief services.

Furthermore, the bulk of climate change adaptation action in the Estonian EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

9.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 101.0 million, of which EUR 17.3 million (17.1 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need for sustainable development. In order to achieve resource efficiency in the fisheries sector, contributions are made through, for example, fisheries and aquaculture processing measure and through the measures containing elements of innovation.

9.2.4 Climate change adaptation in ESF

Estonia has one ESF programme, which is a multifund programme. Total ESF Union support amounts to EUR 597.0 million, there is no support for any climate action. The ESF programme does not directly target climate change adaptation, due to the nature of the programme. There are no references to indirect effects, either.

9.2.5 Climate change adaptation in ETC

Estonia is part of one European Territorial Cooperation (ETC) programme with allocation to adaptation. Table 6 in the annex lists and presents detailed information for the Transnational (TN) programmes with an allocation to adaptation, namely Baltic Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Estonia is not available.⁽⁴⁶⁾

⁴⁵ The LEADER programme supports development of rural economies through a constructive interaction with the municipal and regional authorities and local actors.

⁴⁶ The total Union support for the one programme. Estonia is involved in amounts up to EUR 263.8 million, out of which EUR 2.6 million is allocated for adaptation.

9.3 Adaptation framework compared with actual ESIF adaptation actions

Since the NAS is not approved yet, it is difficult to assess whether the foreseen climate change adaptation measures under the Estonian Partnership Agreement are in line with the NAS. Looking at the potential topics that will be addressed, however, this seems to be the case.

Objectives mentioned in the Partnership Agreement are mostly addressed in the individual programmes. However, the ESF programme has potential for the creation of 'green jobs' wherein education on improved energy savings and the protection of the environment are the main points. This is not mentioned in the programme.

The Partnership Agreement addresses a development need on the halting of biodiversity loss and maintaining ecosystem services. In order to attain this, there is a need to increase the resilience of the ecosystems to climate change and systematically increase the capacity of relevant institutions to tackle emergencies born by extreme weather events. This is not specifically addressed in the programmes.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014EE16M3OP001	Operational Programme for Cohesion Policy Funding 2014-2020	8	Green infrastructure and increased preparedness for emergencies	85, 87	5ii	8.2. Increased response capacity to emergencies caused by climate change and pollution events	Increased preparedness capacity and early warning systems , reduced damage costs resulted by the extreme events, reduced GHG emission from forest fires	Sustainability as a horizontal principle is not addressed in this programme.
					6iii	8.1 Protected species and habitats with improved conditions	Goals of EU Birds and Habitat Directives are implemented, ecosystem services like carbon sequestration, flooding control, pollination services and delivering clean air are maintained.	

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014EE06RDNP001	National	M01, M02, M04, M08, M10, M11, M12, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b	2.1. 'Clear waters': To increase efficiency of water management for reduced nutrient inflows and decreased discharges of hazardous substances to the Baltic Sea and the regional waters based on enhanced capacity of public and private actors dealing with water quality issues	<ul style="list-style-type: none"> A wide set of measures reduced nutrient inflows and decreased discharges of hazardous substances. The activities concentrate on strategies, coastal spatial planning, developing and test innovative techniques and methods, management and monitoring systems, etc. Additionally, climate change is also described to have an impact on the environmental state of the Baltic Sea and the regional biodiversity. For instance, eutrophication might be aggravated even more as the measures applied today will be less efficient. More extreme weather conditions in a changing climate might cause technological accidents at e.g. onshore and offshore constructions (oil platforms and refineries), resulting in spills of hazardous substances into the sea waters. The acidity of river waters might also increase. Therefore, regional strategies on climate change adaption are to be seen as a measure to decreasing eutrophication. Enhancing the capacity of public and private actors to produce renewable energy from natural resources (e.g. wind, water, solar/geothermal sources, biomass from agriculture and forest, manure and aquatic resources) available in the region as well as waste. Developing incentive policies for increasing renewable energy production; Testing innovative green solutions on producing energy from renewable sources, including pilot investments; Evaluating and testing alternative technologies for energy recovery from waste (e.g. anaerobic digestion, incineration) Improving sustainable energy networks (e.g. development and reorganisation of smart and sea grids, virtual power plants, integration of storage) Demonstrating and implementing innovative renewable energy storage technologies and distribution patterns. 	-
						6g	2.2. 'Renewable energy': To increase production and use of sustainable renewable energy based on enhanced capacity in energy planning and supply		

10 Finland

10.1 Adaptation framework and priorities

The first policy document guiding climate change adaptation (Finland's National Strategy for Adaptation to Climate Change) was published in 2005. This seminal work has been revised and the new national adaptation framework has been described in the Government Resolution (20.11. 2014) of the National Climate Change Adaptation Plan 2022. The aim of the adaptation plan is for Finnish society to have the capacity to manage the risks associated with climate change and adapt to changes in the climate.

Based on this aim, the following objectives are set until the year 2022:

- › Adaptation has been integrated into the planning and activities of both the various sectors and their actors.
- › The actors have access to the necessary climate change assessment and management methods.
- › Research and development work, communication and education and training have enhanced the adaptive capacity of society, developed innovative solutions and improved citizens' awareness on climate change adaptation.⁽⁴⁷⁾

Looking at the Partnership Agreement, the main progress is expected in developing risk awareness and risk management. This includes the identification of appropriate adaptation measures in key sectors and efforts to implement them. One of the most important topics is identified in the EAFRD on improved soil structure and water management to cope with likely consequences of climate change. The Partnership Agreement sees potentials in innovations and entrepreneurship as well as continuous learning that would help Finland to tackle the challenges and achieve sustainable growth.

⁴⁷ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/finland>.

The other horizontal policy objectives beside sustainable development refer to skill demands as well as social innovations. Under these, climate change is not referred to explicitly, but embedded in the foreseen changes in the economy.

10.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁴⁸⁾ in Finland for the 2014-2020 period amounts to EUR 3.8 billion. Of this amount, EUR 2.0 billion is allocated for climate action.⁽⁴⁹⁾ Out of the total ESIF Union support for Finland, 1.8 % (or EUR 66.6 million) is marked for climate change adaptation. An additional EUR 1.68 billion is allocated for actions that could contribute to 'climate change adaptation and/or climate change mitigation'.

Table 1 below shows the foreseen support for climate change adaptation in Finland for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁵⁰⁾	EAFRD	Total for adaptation
Climate change adaptation	6.7	-	59.9	66.6
Climate change adaptation and/or climate change mitigation	80.7	-	1,600.8	1,681.4

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T01 and in EAFRD through TO6 as supportive adaptation.⁽⁵¹⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	T01	TO3	TO4	TO6
Climate change adaptation, ERDF/CF	6.7	-	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	5.0	75.6	-
Climate change adaptation, EAFRD	-	-	-	-
Climate change adaptation and/or	-	-	-	1,600.8

⁴⁸ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁴⁹ For climate change mitigation and for climate change adaptation

⁵⁰ CF is not aimed at Finland.

⁵¹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 12.2.5 of this chapter.

climate change mitigation, EAFRD				
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10.2.1 Climate change adaptation in ERDF

Finland has 2 ERDF programmes, of which one programme has allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme. There, adaptation is primarily addressed through TO1 (EUR 6.7 million) in PA2 ‘Developing and using new knowledge and skills’. The main climate adaptation IFs selected are IF087, and IF065. The OP However, does not identify any adaptation actions, except for mentioning that it will be an issue for the future. This money could be seen as a reserve for potential adaptation issues that will arise.

10.2.2 Climate change adaptation in EAFRD

Finland has programmed 2 Rural Development Programmes (RDP), both are regional programmes (Mainland and Åland Islands). Table 3 below indicates the climate change adaptation allocations in the Finnish EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	59.9
Climate change adaptation and/or climate change mitigation	-	533.6	533.6	533.6	-	-

As can be seen, the climate change adaptation action in the National RDP is foreseen in Focus Areas that address local rural development (UP6b). Most climate change adaptation can be found in measures M19 and M07 from the Mainland programme.

The Åland Islands programme is relatively small (<1 % of all adaptation support in Finland), but gives the impression that a significant share of these funds are being used for climate-related measures. However, in reality practically none of the listed measures will have any role in addressing climate policy issues in rural areas. The main focus of actions under the key climate measure M19 lies on general community action, including encouragement of mitigation actions through energy efficiency, use of renewables and carbon sequestration, with indirect links to climate-change awareness raising. Measure M07 aims at investments related to rural villages and activities, including investments improving energy efficiency and use of renewable energy sources.

Furthermore, the bulk of climate change adaptation action in the Finland EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

10.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 74.4 million, of which EUR 20.9 million (28.1 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, climate change issues are dealt with under the different Union Priorities. As such, the fisheries sector in Finland is so small that it plays an insignificant role in the national climate policy, but the needs identified under the different Union Priorities refer to national climate measures with respect to, for example, fuel efficiency and adaptation to climate change.

10.2.4 Climate change adaptation in ESF

Finland has 2 ESF programmes. Total ESF Union support amounts to EUR 499.8 million, of which 61.3 million (12.3 %) is allocated to climate action. This is far above the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. The Mainland programme mentions there is only indirect support, but actions are not specified.

10.2.5 Climate change adaptation in ETC

Finland is part of three European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the one Cross-border (CB) and 2 Transnational (TN) programmes with an allocation to adaptation, namely Interreg SE-FI-NO (Nord), Baltic Sea, and Northern Periphery and Arctic. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Finland is not available.⁽⁵²⁾

10.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Finnish Partnership Agreement are mostly in line with Finland's National Strategy for Adaptation to Climate Change (NAS). However, it seems that the NAS goes a bit further. Where the NAS explicitly mentions an objective of 'improved citizens' awareness on climate change adaptation', the Partnership Agreement makes no specific mention of this.

⁵² The total Union support for the three programmes Finland is involved in amounts to EUR 356.0 million, out of which EUR 6.1 million is allocated for adaptation.

The Partnership Agreement sees potential in innovation and entrepreneurship as well as continuous learning that would help Finland to tackle challenges and achieve sustainable growth. The individual programmes are in line with the Partnership Agreement, which mentions adaptation actions in a very generic manner. There is potential support for adaptation through ESF, but where the funds are already reserved through IF087, there are no direct or indirect actions as of yet.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014F116M2O P001	Sustainable growth and jobs 2014-2020 - Structural Funds Programme of Finland	2	Developing and using new knowledge and skills	65, 87	1a	4.1 Developing research, skill and innovation clusters based on regional strengths	Support for regional innovative investments, demonstration activities, commercialisation, environmentally friendly resource-efficient solutions (climate change not specifically identified) The development, piloting and commercialisation of innovations that mitigate climate change, improve the state of the environment and enhance the sustainable use of natural resources. The main beneficiaries are enterprises but a wide range of public and private organisations that carry out the RDI activities can be supported Three areas are emphasised: 1) energy and	The programme take a broad view of sustainability and includes climate change concerns in the concept by arguing that significantly reduced GHG-emissions is a necessary step in achieving sustainable development. A low-carbon, resource-efficient and environmentally sustainable economy is a guiding vision for the programme. Sustainability and smartness of cities are also emphasised and actions to reduce the carbon footprint of cities are therefore prioritised.
					1b	5.1 Strengthening innovation activities of enterprises		

					4f	3.2 Developing solutions for renewable energy and energy efficient solutions	resource efficiency 2) renewable energy and 3) low carbon strategies. The support can be directed to RDI activities for different sectors such as community structure and buildings, transport, industry, energy generation and consumption, the public or private service sector or households. Support can also be provide for awareness raising in urban areas.	
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Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014FI06RDRP001	Mainland	M01, M02, M04, M07, M10, M11, M13, M16, M19
2014FI06RDRP002	Åland Islands	M02, M10, M11, M13, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b	2.1. 'Clear waters': To increase efficiency of water management for reduced nutrient inflows and decreased discharges of hazardous substances to the Baltic Sea and the regional waters based on enhanced capacity of public and private actors dealing with water quality issues	<ul style="list-style-type: none"> A wide set of measures reduced nutrient inflows and decreased discharges of hazardous substances. The activities concentrate on strategies, coastal spatial planning, developing and test innovative techniques and methods, management and monitoring systems, etc. Additionally, climate change is also described to have an impact on the environmental state of the Baltic Sea and the regional biodiversity. For instance, eutrophication might be aggravated even more as the measures applied today will be less efficient. More extreme weather conditions in a changing climate might cause technological accidents at e.g. onshore and offshore constructions (oil platforms and refineries), resulting in spills of hazardous substances into the sea waters. The acidity of river waters might also increase. Therefore, regional strategies on climate change adaption are to be seen as a measure to decreasing eutrophication. Enhancing the capacity of public and private actors to produce renewable energy from natural resources (e.g. wind, water, solar/geothermal sources, biomass from agriculture and forest, manure and aquatic resources) available in the region as well as waste. Developing incentive policies for increasing renewable energy production; Testing innovative green solutions on producing energy from renewable sources, including pilot investments; Evaluating and testing alternative technologies for energy recovery from waste (e.g. anaerobic digestion, incineration) Improving sustainable energy networks (e.g. development and reorganisation of smart and sea grids, virtual power plants, integration of storage) Demonstrating and implementing innovative renewable energy storage technologies and distribution patterns. 	-
						6g	2.2. 'Renewable energy': To increase production and use of sustainable renewable energy based on enhanced capacity in energy planning and supply		

2014TC16 RFTN004	Northern Periphery and Arctic	TN	4	Protecting, promoting and developing cultural and natural heritage	85, 87	6c	4. Increased capacity of remote and sparsely populated communities for sustainable environmental management.	<ul style="list-style-type: none"> • Actions include development and transfers of best-practice models and solutions for 'up-skilling' local authorities and community groups, support new organisational models, decision-making tools, new governance concepts and models for protection and promotion of national and cultural heritage. 	The Programme includes descriptions on how horizontal criteria can address climate change concerns with related activities. It specifically addresses the topics of resources and energy management in the context of changing environment under PA3 and PA4 of the CP. It further lists activities that will apply to all projects under the Programme. e.g. to investments towards resource-efficient and sustainable options, increase green public procurement, to avoid investments that may have negative environmental and climate impact, give priority to environmental friendly transport options, greater use of renewable energy, implementation of eco-efficiency and resource sufficiency etc.
2014TC16 RFCB032	Interreg SE-FI- NO (Nord)	CB	3	Culture and Environment	85, 86, 87	6d	Improved conservation of natural environments.	<ul style="list-style-type: none"> • Actions are to improve and maintain the conservation status of the region's natural environments of soil, air and water by creating, developing and implementing new Cross-border approaches to conservation and restoration of natural areas and its habitat. There are no climate-related activities. 	The horizontal principles make general references to sustainable development and climate change: It refers to that climate, energy and environment challenges are transboundary and environmental status of the program area is very much dependent on the actions taken within the EU and internationally. Within the Programme, there will be a number of projects directly aimed at contributing to a better environment but the North Programme should also take into account the horizontal criterion for sustainable development even if it is not the programme's main purpose. This will be done in the selection and implementation of projects that have the goal of sustainable growth.
					6g	Public sector knowledge and expertise on green growth and resource efficiency have increased in the region.			

11 France

11.1 Adaptation framework and priorities

France is highly exposed to climate-related risks such as floods, erosion, forest fires and droughts, which will affect various regions and economic sectors, including agriculture, forestry, tourism and fisheries (among others). In order to address these challenges, France has developed a National Adaptation Strategy (NAS), which is further transposed into a National Adaptation Plan (NAP) with a five-year implementation period.

The NAP prioritises 250 concrete measures covering 20 thematic areas of the plan: cross-cutting actions, health, water, biodiversity, natural hazards, agriculture, forests, aquaculture and others. At the regional level, 26 Regional Schemes on Climate, Air and Energy (SRCAE) with region-specific foci on adaptation measures have been developed. The financial support under the NAP is expected to be used for adaptation in the agriculture, human health, water and coastal areas sectors. As identified by the mid-term implementation report, NAP adaptation support was used so far to involve departments in charge of adaptation in preparing the French Partnership Agreement on the use of ESI Funds for 2014-2020 programming period.⁽⁵³⁾

The French Partnership Agreement outlines the country's strategic objectives and investment priorities with regard to adaptation. The adaptation objectives aim to improve water management and reduce the vulnerability of regions to natural risks and the effects of climate change.

Under the Partnership Agreement, climate change adaptation is mainly tackled through ERDF and EAFRD. The ERDF support will focus on protection of territories and population from climate-related risks (such as droughts, floods and erosion). It will do so through the development of early warning and detection systems, and through communication, information and awareness-raising actions. As for EAFRD,

⁵³ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/france>

it will support the reduction of the use of pesticides, the prevention of soil erosion and the increasing adaptation capacity of ecosystems (for instance through crop diversification). The support will also aim at reducing the rate of conversion of agricultural and natural lands into urban areas fourfold.

Regarding the horizontal principle of sustainable development, the Partnership Agreement identifies the fight against climate change as one of the five objectives. Furthermore, long-term projects (2030 and beyond) will be subject to an environmental investigation, including regarding their current and future impact on climate. The implementation of regional and local climate change adaptation strategies will also be supported.

11.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁵⁴⁾ in France for the 2014-2020 period amounts to EUR 26.3 billion. Of this amount, EUR 9.8 billion is allocated for climate action.⁽⁵⁵⁾ Out of the total ESIF Union support for France, 3.8 % (or EUR 1 billion) is marked for pure climate change adaptation. An additional EUR 6.6 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in France for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁵⁶⁾	EAFRD	Total for adaptation
Climate change adaptation	202.5	-	829.8	1,032.3
Climate change adaptation and/or climate change mitigation	260.6	-	6,360.3	6,620.9

Table 2 below presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through TO4 and TO5 as pure adaptation and TO6 as supportive adaptation.⁽⁵⁷⁾ It is also worth noting that supportive adaptation actions in the ERDF are foreseen under TO6, TO1, TO4, TO2, TO3 and TO5.

⁵⁴ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁵⁵ For climate change mitigation and for climate change adaptation

⁵⁶ CF is not aimed at France.

⁵⁷ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 13.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO2	TO3	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	-	-	202.5	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	97.3	3.0	2.5	19.1	1.8	137
Climate change adaptation, EAFRD	-	-	-	179.7	247.4	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	-	-	6,360.3

11.2.1 Climate change adaptation in ERDF

France has seven pure ERDF programmes, 27 ERDF and seven ERDF/ESF programmes, of which 16 programmes (12 ERDF/ESF and four ERDF) have allocations to climate change adaptation. Table 4 in the Annex provides an overview on all programmes with climate adaptation support, with a more detailed focus on the three programmes with the largest allocation to adaptation (Languedoc-Roussillon, Nord-Pas de Calais and Aquitaine).

Climate change adaptation is primarily addressed through TO5 (EUR 202.5 million). However, the adaptation supportive allocation is also made to TO6, TO1, TO4, TO2, TO3 and TO5. It is worth noting that the PAs containing adaptation naming and description are quite diverse and reflect the focus areas of the programmes. For instance, ERDF OP Loire allocates support to adaptation in PA1 'Increase the resiliency of the territory to floods risks, whereas ERDF/ESF OP Aquitaine allocates to PA4 ' Ecological and energy transition '.

The main climate adaptation IFs selected are IF087, IF100, IF065, IF085 and IF021. It is clear that the predominant adaptation topic in all OPs is flooding, both river and coastal. Many of the OPs focus on risk management and prevention of flooding, enhancing and preserving biodiversity, raising awareness and strengthening knowledge on climate change.

11.2.2 Climate change adaptation in EAFRD

There are a total of 27 Rural Development Programmes (RDPs), one National RDP and one National Framework under the EAFRD in France. The table below indicates the climate change adaptation allocations for each relevant Focus Area (FA).

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	247.4	-	-	-	179.7	402.6
Climate change adaptation and/or climate change mitigation	-	2,120.1	2,120.1	2,120.1	-	-

As is evident, the French RDPs have a very strong focus on climate change adaptation through actions dedicated to the ecosystem, i.e. biodiversity (UP4a), water management (UP4b), and soil management (UP4c), which are not exclusively related to climate change adaptation. Most concrete climate change adaptation is found in the local development in rural areas (UP6b), which focuses on building the resilience of local communities. Notably, France dedicates one of the highest shares of climate action to risk prevention and management (UP3b) among all Member States.

In terms of measures, most climate change adaptation is found in M13, M10 and M11, respectively. 22 RDPs contain measures under M13 and exclusively address issues that relate to environmental problems naturally constrained areas face. The primary issue addressed under this measure relates to the preservation of biodiversity and in parts water management. Measures on the agri-environment climate (M10) can be found in 26 RDPs, and address ecosystem-related issues. The typical issues addressed aim to strengthen the resilience of agricultural systems, which has repercussions on biodiversity, soil erosion, and water protection and preservation. Actions under M11 are included in 26 RDPs and aim at the conversion to organic farming. As in the case of the previous measures, actions address biodiversity, soil management and water management. Based on the most important climate change adaptation measures in France, the actions primarily focus on the ecosystem. The issue of risk prevention is mostly addressed by the National RDP through compensation of farmers for production losses from climate hazards. The issue of water use efficiency does not receive a major degree of attention and is predominantly covered through investments in physical assets (M04), which is though only addressed by 13 RDPs.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

11.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 588 million, of which EUR 88.8 million (15.1 %) is designated for climate action. This is below the average share of 17.7 %. With regard to adaptation, the OP identifies the need to improve knowledge on marine ecosystems (in relation with both fisheries and aquaculture) and preservation of marine biodiversity (reducing unwanted catches, management of protected areas).

11.2.4 Climate change adaptation in ESF

France has five pure ESF, one YEI, 27 ERDF and seven ERDF/ESF programmes. Total ESF Union support (including ESF support in the multifunds) amounts to EUR 5.5 billion, of which 131 million (2.4 %) is allocated to climate action. This is above the EU average of 1.4 %.

The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting employment and development of skills in the sectors indirectly related to climate change adaptation (water and waste, protection of biodiversity).

11.2.5 Climate change adaptation in ETC

France is part of 14 European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocations to adaptation, namely Interreg FR-BE-NL-UK (Two Seas), Interreg IT-FR (Maritime), and North West Europe. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for France is not available.⁽⁵⁸⁾

11.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the French Partnership Agreement are in line with the National Adaptation Strategy (NAS) and National Adaptation Plan (NAP). Furthermore, the financial support under the NAP was used for involving departments in charge of adaptation in preparing the Partnership Agreement. The Partnership Agreement's strategic objectives to improve water management and reduce the vulnerability of regions to natural risks and the effects of climate change are further reflected in the expected results under ERDF and EAFRD in the Partnership Agreement.

Climate adaptation actions foreseen under the ERDF and EAFRD are also in line with both the NAP and the French Partnership Agreement. Around half of all ERDF programmes⁽⁵⁹⁾ for France allocate Union support for climate adaptation purposes. Specifically, many of the OPs focus on risk management and prevention of flooding, enhancing biodiversity, raising awareness and strengthening knowledge. In the EAFRD, there is a strong focus on adaptation through actions dedicated to increasing the capacity of ecosystems (biodiversity, water and soil management).

⁵⁸ The total Union support for the 14 programmes France is involved in amounts to EUR 2.1 billion, out of which EUR 172.8 million is allocated for adaptation.

⁵⁹ France has 7 pure ERDF programmes and 27 ERDF/ESF programmes, of which 16 programmes (12 ERDF/ESF and 4 ERDF) have support for adaptation

Furthermore, the EMFF OP identifies the adaptation-related need to improve knowledge about marine ecosystems and preservation of marine biodiversity, but it is not clear from the programme whether any actions supporting this need will be foreseen.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014FR16M0OP006	Languedoc-Roussillon	4	Preserve and enhance the value of the territory and its resources so as to contribute to sustainable growth	85, 87	5b 6d	5b11. Reduce flood and coastal risks to preserve the population and economic activities 6d13. Preserving biodiversity by restoring green and blue corridors	Specific building and planning works for flood and coastal risks; anticipation and crisis management; development of awareness-raising; preserving and enhancing biodiversity and functionality of environments and their contribution to economic activities (f.e. physical restoration of rivers; restoration of degraded environments, monitoring of habitats and species; fight against upstream pollution of aquatic environments and ensure their preservation)	Sustainable development is integrated across the OP. Two smart specialisation fields are dedicated to the protection of the environment (water and energy transition). For instance, PA4 supports the prevention and management of climate-related risks. The OP mentions that monitoring indicators specifically dedicated to environmental concerns will be implemented to ensure that they are taken into account in the projects supported.

2014FR16M0OP012	Nord-Pas de Calais	4	Improve the regional adaptation capacity to cope with change while improving the attractiveness and the visibility of Nord-Pas-de-Calais	85, 87	5a	1 - OS 1. Guarantee protection of the population concerned by flood risks by supporting protection of biodiversity and adapting the land use	Support actions related to reinforcement, modernisation and creation of flood-risks protection projects, management plan of labelled nature sites, restoration of greenways and blueways (f.e. investments related to preservation, restoration, development of biodiversity and natural and aquatic environments; research on ecosystems and their services)	Sustainable development is a central issue in the OP and across PAs. For instance, PA 3 and PA4 are entirely dedicated to this horizontal principles. Moreover, sustainable development is mainstreamed into research and innovation through smart specialisation, which targets eco-mobility, energy transition, recycling, etc. Trainings supported by the ESF will also focus on environmental and energy sectors. Furthermore, sustainable development monitoring will be ensured through an internal technical assistance on environmental issues.
					6c	2 - OS1. Preserve and develop the heritage and remarkable landscapes of Nord-pas-de-Calais as a support to social, environmental and economic transformation		
					6d	3 - OS 1. Restore and improve natural environments and reintroduce species		
					6d	4 - OS 2. Develop afforestation to preserve and restore biodiversity and adapt to climate change and emergent sickness related to trees		
2014FR16M0OP001	Aquitaine	4	Ecological and energy transition	85, 87	4a	4a1. Increasing the production of renewable energies derived from biomass, geothermic and marine resources.	Strengthening knowledge (studies, research) and elaboration of climate change adaptation and prevention strategies. Operational implementation of the adaptation strategies and action plans elaborated (works, warning systems). Actions to raise awareness	The managing authority will implement complementary measures to ensure that sustainable concerns will be taken into account in the projects elaboration process. Also, three eco-socio conditionalities will be implemented as selection criteria, according to the nature and the
					4b	4b2. Reduce companies' energy intensity.		

					4c	4c3. Increase energy efficiency to reduce final energy consumption in public buildings and housing.	<p>about natural risks and climate-change concerns. Preservation, restoration, management of major ecological continuities (in particular wetlands). Acquisition, sharing and dissemination of scientific knowledge on environments and species. Methodological and technical support for green and blue infrastructure. Education activities on the environment and sustainable development.</p>	<p>amount of the projects: an environmental quality requirement as regards buildings (not including technical premises) an energy-climate-water impact evaluation for the equipment; a compulsory sustainable development diagnosis for projects above 2 M€.</p>
				4e	4e4. Increase the use of sustainable means of transportation.			
				5a	5a5. Reduce the vulnerability of the populations that are the most exposed to flood risks, erosion-submersion and water pollution.			
				6d	6d7. Preserve and restore biodiversity and ecological continuities			

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs
CCI	Title	No	Title		
2014FR05M0OP001	Ile-de-France et Seine	10	Reduce vulnerability of interregional water basin of the Seine to weather events and preserve the river biodiversity	21, 85, 87	5a, 5b, 6d
2014FR05M2OP001	Guadeloupe et St Martin Etat	12	Allocation for outermost regions	100	5b
2014FR16M0OP004	Champagne-Ardenne	4	Preserve resources and prevent flood risks	85, 86, 87	5b, 6d
2014FR16M0OP007	Midi-Pyrénées et Garonne	11	Guarantee a sound planning and organise a natural and ecological renewal of the Garonne river	85, 87	5b
2014FR16M0OP008	Picardie	4	Deal with the natural and climatic risks and increase the value of the regional natural and landscaped resource	85, 87	5b, 6d, 6e
2014FR16M0OP009	Guadeloupe	4/8	Promote climate change adaptation and the prevention of risks/ Financial compensation for additional costs	87, 100	5b
2014FR16M2OP004	Corse	5	Preserving and highlighting environmental and cultural assets of the territory in a sustainable way	87	5b
2014FR16M2OP007	Lorraine et Vosges	4	Favour climate change adaptation, as well as prevention and management of risks	87	5b
2014FR16M2OP008	Pays de la Loire	5	Promoting the prevention and risks management and protecting the environment	85, 86, 87	5a, 6d
2014FR16RFOP001	Alpes	3	Develop the resilience of the territory and populations with regard to natural risk	65, 87	5b
2014FR16RFOP002	Loire	1	Increase the resiliency of the territory to flood risks	87	5b
2014FR16RFOP005	Rhône	1	Strengthen the capacity of the territory to cope with flood risks	87	5b
2014FR16RFOP007	Réunion	5/8	Reinforce risk prevention, resources management and heritage valorization/ Offset the extra costs related to outermost location	21, 85,87	5b, 6a, 7c

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014FR06RDNP001	National	M17
2014FR06RDRP001	Guadeloupe	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014FR06RDRP002	Martinique	M04, M05, M07, M08, M10, M11, M13, M19
2014FR06RDRP003	Guyane	M01, M02, M04, M07, M10, M11, M13, M16, M19
2014FR06RDRP004	Reunion	M01, M02, M04, M05, M07, M08, M10, M11, M13, M16, M19
2014FR06RDRP006	Mayotte	M02, M04, M07, M08, M10, M13, M16, M19
2014FR06RDRP011	Île-de-France	M04, M07, M08, M10, M11, M12, M16, M19
2014FR06RDRP021	Champagne-Ardenne	M01, M02, M04, M05, M07, M10, M11, M12, M13, M16, M19
2014FR06RDRP022	Picardie	M01, M02, M04, M07, M08, M10, M11, M12, M16, M19
2014FR06RDRP023	Haute-Normandie	M02, M04, M07, M08, M10, M11, M12, M16, M19
2014FR06RDRP024	Centre	M04, M05, M07, M10, M11, M12, M13, M19
2014FR06RDRP025	Basse-Normandie	M01, M02, M04, M07, M10, M11, M12, M13, M16, M19

2014FR06RDRP026	Bourgogne	M04, M07, M10, M11, M12, M13, M16, M19
2014FR06RDRP031	Nord-Pas-de-Calais	M04, M07, M08, M10, M11, M12, M15, M19
2014FR06RDRP041	Lorraine	M04, M05, M06, M07, M08, M10, M11, M12, M13, M16, M19
2014FR06RDRP042	Alsace	M01, M02, M04, M06, M07, M10, M11, M13, M16, M19
2014FR06RDRP043	Franche-Comté	M01, M02, M04, M07, M10, M11, M12, M13, M16, M19
2014FR06RDRP052	Pays de la Loire	M01, M02, M04, M07, M10, M11, M13, M19
2014FR06RDRP053	Bretagne	M01, M04, M07, M08, M10, M11, M12, M13, M19
2014FR06RDRP054	Poitou-Charentes	M04, M05, M07, M08, M10, M11, M12, M13, M19
2014FR06RDRP072	Aquitaine	M04, M07, M10, M11, M12, M13, M19
2014FR06RDRP073	Midi-Pyrénées	M04, M07, M10, M11, M12, M13, M19
2014FR06RDRP074	Limousin	M01, M04, M07, M10, M11, M12, M13, M16, M19
2014FR06RDRP082	Rhône-Alpes	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014FR06RDRP083	Auvergne	M01, M02, M04, M07, M10, M11, M12, M13, M19
2014FR06RDRP091	Languedoc-Roussillon	M01, M04, M07, M08, M10, M11, M12, M13, M16, M19
2014FR06RDRP093	PACA	M01, M04, M07, M08, M10, M11, M12, M13, M16, M19
2014FR06RDRP094	Corse	M01, M04, M05, M07, M08, M10, M11, M13, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB038	Interreg FR-BE-NL-UK (Two seas)	CB	3	Adaptation to climate change	87	5a	3.1. Improve the ecosystem-based capacity of 2 Seas stakeholders to climate change and its associated water management-related effects.	<ul style="list-style-type: none"> • Design of strategies to optimize coastal zones integrated management and take account of climate change in economic development areas; • Joint measures (e.g. infrastructure planning tools) integrated tools and technical solutions (e.g. soil management, coastal defence lines or concepts (e.g. managed realignment)) aiming at protecting built-up areas (e.g. urban areas) and coast lines against erosion/flooding through the promotion and implementation of nature and ecosystem-based solutions; • Measures jointly dealing with loss of biodiversity and climate change; • Set-up of a better coordination for prevention of floods (water management, flood risk techniques, awareness-raising on flood) • Investments for the prevention and protection against floods 	According to section 8 of the CP, the sustainable development principle will be taken into consideration in the set of selection criteria. No reference is made to climate change.

2014TC16 RFCB033	(Interreg V-A) IT-FR - Italy-France (Maritime)	CB	2	Preserving and improving natural and cultural resources and managing risks	85, 87	5a	5A.1. Enhancing the capacity of public administrations to prevent and manage risks related to climate change.	<ul style="list-style-type: none"> Governance initiatives aiming at strengthening the competences of public entities towards adaptation to risks, including the definition of joint action plans, exchange of best practices and the establishment of joint intervention plans in case of flooding as well as monitoring networks for coastal erosion issues. Investments for the development and enhancement of joint early warning alert systems (including joint adaptation action plans) especially focused on flooding events and fires. Investments for small scale infrastructures preventing risks (coastal erosion, wild fires and hydrogeological risks) through environment friendly approaches (e.g. soil bioengineering measures). Joint governance actions for the management and development of natural and cultural heritage through an integrated approach (including pilot projects fostering sustainability and accessibility of related tourist infrastructures). 	<p>The principle of sustainable development and specifically the climate change aspect is well addressed throughout the CP and considered horizontally among projects implementation. Operations including reduction of GHG emissions, renewable energy use and measures for energy efficiency will be awarded. The beneficiaries will have to provide details on the contributions of the projects towards the horizontal principles (including sustainable development) and consequently:</p> <ul style="list-style-type: none"> Initiatives with potential negative effects on the environment will not be eligible; Operations fostering preservation, improvement and recovery of existing resources will be favoured respect to those with neutral effects; Interventions contributing to an efficient use of resources (e.g. energy efficiency, renewable energy use, reduction of GHG emissions, waste and waste water management, etc.) will be prioritized; Operations contributing to the creation or adherence to environmental networks (under IP6c) will have a bonus in the evaluation process. Furthermore beneficiaries shall consider: <ul style="list-style-type: none"> Video-conferences in order to avoid trips Printing documents on FSC certified paper Green procurement procedures Make use of short supply chains in the implementation of projects Fostering sensibility towards environmental sustainability Promoting activities reducing the consumption of energy and natural resources.
						6c	6C.1. Improving the capacity of public administrations to preserve and develop natural and cultural heritage features of the area.		

2014TC16 RFTN006	North West Europe	TN	2	Low carbon	65, 87	4e	SO2. To facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions in NWE	<ul style="list-style-type: none"> Implementation of emerging or existing low carbon, energy or climate protection strategies (localised energy generation and supply, distribution and efficiency management, or other means of reducing carbon emissions at a territorial level and their delivery): new financial schemes, new governance arrangements, technologies, and innovative approaches. Analysis, testing, demonstration and implementation of solutions that integrate mitigation and adaptation measures (reduction in GHG emissions and reduction in risk) e.g. innovative approaches such as Water Sensitive Urban Design (WSUD), optimised water distribution and CO2 neutral maintenance of adaptation measures. Implementing and adopting zero/low carbon technologies in enterprises and industrial production processes; particularly those relating to energy generation and/or energy reductions/efficiency; Delivering and roll out of emerging energy technologies; Implementing of joint zero/low carbon technology demonstration schemes and facilities, including fab labs and R&D/testing facilities; Ensuring that new energy solutions are feasible (for example, finding ways for bioenergy production to not negatively impact on agricultural or water resources). Pilot or demonstration actions to bring in-reach technologies or emerging solutions for low carbon transportation (e.g. new forms of propulsion systems) closer to public use; Testing and demonstrating low carbon transport solutions in real life conditions, such as low carbon or zero-carbon rolling stock, vehicles using alternative fuels, increasing levels of e-mobility; Developing, implementing and evaluating efficient traffic management solutions, such as seamless transport, smart mobility, IT systems, last mile concepts or services, journey planning tools, where these lead to real reductions of GHG emissions 	<p>According to section 8, climate change is covered in several PAs. PA2 focuses on low carbon strategies, including climate change mitigation and adaptation measures, and sustainable and low-carbon transport, reducing GHG emissions. Environmental needs and challenges are also addressed in PA3, which improves environmental protection and resource/material efficiency, reduces air pollution in the NWE area and reduces and reuses waste. Additionally, innovation in the NWE Programme strategy also includes eco-innovation: innovation that contributes to sustainable development of NWE. Project proposals are only eligible if the project objectives and activities do not conflict with the principles of sustainable development. However, no reference is made to climate-related selection criteria in section 8.</p>
						4f	SO3. To facilitate the uptake of low carbon technologies, products, processes and services in sectors with high energy saving potential, to reduce GHG emissions in NWE		
						7c	SO4. To facilitate the implementation of Transnational low-carbon solutions in transport systems to reduce GHG emissions in NWE		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFCB040	Interreg FR-UK (Manche-Channel)	CB	3	Enhance the attractiveness of territories within the FCE area	85, 87	6d
2014TC16RFCB034	Interreg FR-IT (ALCOTRA)	CB	2	A better managed environment - Increase of the resilience of the territory	87	5a, 5b
2014TC16RFCB006	Interreg ES-FR-AD (POCTEFA)	CB	2	Promoting climate change adaptation, risk prevention and management	87	5a, 5b
2014TC16RFTN007	South West Europe	TN	4	Promoting climate change adaptation, risk prevention and management	87	5b
2014TC16RFTN008	Caribbean Area	TN	3, 4	Strengthen the capacity to respond to natural hazards	87	5b
2014TC16RFCB044	Interreg BE-FR (Wallonie-Vlaanderen)	CB	3	Protecting and enhancing the environment through an integrated management of transboundary resources	21, 85, 86, 87	5b, 6c
2014TC16RFTN002	Atlantic Area	TN	3	Strengthening the Territory's resilience to risks of natural, climate and human origin (TO5)	65, 87	5b
2014TC16RFCB051	Interreg FR (Mayotte/Comores/Madagascar)	CB	2	-	87	9a
2014TC16RFTN009	Indian Ocean Area	TN	5, 6	Strengthen collective capacities for climate change adaptation, risks prevention and management (CB/TN)	87	5b
2014TC16RFCB043	Interreg FR (St. Maarten)	CB	2	-	87	5b

12 Germany

12.1 Adaptation framework and priorities

In 2008, Germany adopted the Strategy for Adaptation to Climate Change (DAS), which lays the foundation for a medium-term process to progressively identify the effects of climate change, assess the risks, and develop and implement adaptation measures. To underpin this strategy with specific actions, the DAS was followed by the 'Adaptation Action Plan of the German Adaptation Strategy' (APA) in relation to climate change adopted in 2011.⁽⁶⁰⁾ The action plan commits to concrete steps in the further development and implementation of the DAS. It follows an integrated approach, which takes account of the interactions between sectoral and regional activities and strives to anchor the consideration of the possible impacts of climate change across all relevant policies.

The DAS addresses a wide range of areas that cover human health, the building sector, water management, coastal and marine protection, soil, biodiversity, agriculture, forestry, fishing, energy, financial services, transport, trade and industry, tourism, spatial planning and civil protection.

In the German Partnership Agreement, adaptation approaches focus on empowering natural and populated areas to sustain the negative impacts of climate change (especially through flood protection), strengthening biodiversity, urban measures (green infrastructure, ventilation corridors), making former mining areas more resilient and developing regional strategies. All concrete adaptation action is foreseen under the ERDF and EAFRD.

The Partnership Agreement requires programmes to implement the horizontal principle of sustainable development especially by accompanying measures in the implementation that are appropriate to avoid or minimise potential adverse environmental impacts, particularly in the areas of climate and resource use. Institutions proven to be reliable in the previous funding period will be continued

⁶⁰ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/germany>

and developed further (e.g. environmental offices, contact points, environmental groups, advisory boards, etc.). The application of environmental management systems can be supported by the programmes. It is recommended that, in the context of the individual programmes, the German Sustainability Code should be taken into account in its further implementation. Regarding the selection principles, the Partnership Agreement requires the different programmes to pay respect to the horizontal principle of sustainable development (as well as regarding funding levels, evaluation and monitoring), but the principles and criteria are not specifically described in the PA.

12.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁶¹⁾ in Germany for the 2014-2020 period amounts to EUR 27.8 billion. Of this amount, EUR 9.1 billion is allocated for climate action.⁽⁶²⁾ Out of the total ESIF Union support for Germany, 16 % (or EUR 1.5 billion) is marked for climate change adaptation. An additional EUR 4.8 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Germany for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁶³⁾	EAFRD	Total for adaptation
Climate change adaptation	478.3	-	986.3	1,464.6
Climate change adaptation and/or climate change mitigation	290.5	-	4,533.2	4,823.7

Table 2 presents the thematic concentration of this support. The largest adaptation support is foreseen in ERDF through TO5 and EAFRD through TO5 as pure adaptation and TO6 as supportive adaptation.⁽⁶⁴⁾

⁶¹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁶² For climate change mitigation and for climate change adaptation

⁶³ CF is not aimed at Germany.

⁶⁴ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 7.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6	TO9
Climate change adaptation, ERDF/CF	-	84.4	377.9	16.0	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	170.3	62.3	-	57.5	0.4
Climate change adaptation, EAFRD	-	7.8	126.9	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	4,533.2	-

12.2.1 Climate change adaptation in ERDF

Germany has 16 ERDF programmes, including one ERDF/ESF programme, of which seven programmes have allocations to climate change adaptation. Table 4 in the Annex provides an overview on all programmes with climate adaptation support with a more detailed focus on the three programmes with the largest allocation to adaptation. Overall, adaptation is addressed through TO5 to the greatest extent. The main climate adaptation IFs selected are IF087, IF085 and IF065 respectively. Flood management and protection is addressed by the majority of the OPs, while other adaptation topics receive less attention, such as the development of local adaptation plans or the protection of ecosystems and biodiversity. The main actions supported will include inter alia the construction of flood protection systems, flood management plans, measures against waterlogging, renaturation of water courses, and green (urban) infrastructures.

12.2.2 Climate change adaptation in EAFRD

Germany has programmed a total of 13 Rural Development Programmes (RDP), one national Framework, and one Rural Network Programme. Table 3 below indicates the climate change adaptation allocations in the German EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	126.9	-	-	-	7.8	851.6
Climate change adaptation and/or climate change mitigation	-	1,511.1	1,511.1	1,511.1	-	-

As can be inferred from the table, the bulk of climate change adaptation action in the German EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions on local rural development (UP6b) and risk management and prevention (UP3a).

Most climate change adaptation can be found in measures M10, M11, M13, and M07, respectively. The main focus of actions under the key climate measure M10 lies on the enhancement of biodiversity, soil management and water management. For some RDPs, additional actions foresee the introduction of cover crops to avoid soil erosion and the introduction of buffer zones. Much climate change adaptation can also be found in the promotion of organic agriculture (M11), which has the benefits of enhanced biodiversity, soil management and water management. The benefits are the same in each RDP, given that the measure is about the promotion of organic practices. The main theme of actions under M13 is to address environmental problems that constrained areas face, which include issues like soil erosion, biodiversity, water management and extreme weather resilience. Under M07, the main themes address an improved state of the environment (biodiversity, soil, water). In some cases, also flood protection measures, afforestation and local development strategies are planned.

Table 5 below provides more details on the content of the programme with support for climate action.

12.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 216.6 million, of which EUR 56.8 million (25.8 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP reacts to the pressure on natural resources, the need to adapt to changing opportunities, and changing sensibility of the ecosystems.

12.2.4 Climate change adaptation in ESF

Germany has 17 ESF programmes, of which one is ERDF/ESF. Total ESF Union support amounts to EUR 7.2 billion, of which 157 million (2.2 %) is allocated to climate action. This is above the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, 2 of the programmes contain actions which indirectly support climate adaptation, through the promotion of voluntary ecological years or green jobs.

12.2.5 Climate change adaptation in ETC

Germany is part of fourteen European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg DE-CZ, Interreg DE-NL and North Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Germany is not available.⁽⁶⁵⁾

⁶⁵ The total Union support for the 14 programmes Germany is involved in amounts to EUR 2.3 billion, out of which EUR 92.4 million is allocated for adaptation.

12.3 Adaptation framework compared with actual ESIF adaptation actions

The German adaptation strategy, DAS, foresees climate change adaptation in a wide range of areas. The climate adaptation content of the Partnership Agreement further addresses a wide range of areas specified in the DAS, and foresees actions in the most common areas of climate change adaptation, i.e. soil and water management, flood prevention, biodiversity, agriculture, fishing, and in parts also forestry and spatial planning.

When comparing the actions in the ESIF programmes, all the indicated actions are accommodated to the greatest extent. However, not every regional programme addresses all issues, which has the implication that not all issues are addressed in each region. For example, flood protection is explicitly dealt with in merely four OPs. At the same time, it needs to be underlined that not all adaptation needs are equally applicable to all regions. Based on the contents of the individual programmes, the majority of the areas specified in the DAS are addressed. However, climate adaptation could have been more mainstreamed through the consideration of further aspects like transport or human health.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014DE16RFOP 012	Sachsen	4	Risk prevention	87	5b	11: Support better flood protection	The actions contain investments to the implementation of flood risk management plans (flood protection construction measures, measures on development of river systems). The actions fulfil the requirements of the EC Flood Directive and are further developed and implemented in national (inter-state) and international cooperation.	Climate change adaptation related issues and risk prevention are stated as integral part aspect of the principle of sustainable development. This principle is to be taken into account during the implementation of all actions. It should be integrated in the concrete regulations and guidelines for funding. The OP leaves the concrete definition of climate change adaptation related implementation principles to future regulations and guidelines, and further does not define any minimum criteria.
2014DE16RFOP 013	Sachsen-Anhalt	5	Promoting climate change adaptation, risk prevention and risk management	87	5a	12: Protection against damages caused by floods and waterlogging	The supported actions have a twofold thematic focus. Under IP 5a, flood protection plans (e.g. dikes, technical facilities, executive and supervisory personnel) and measures against waterlogging (to reduce the rising risks for buildings and infrastructures associated with climate change) are indicated.	The principle of sustainable development is used as a guiding principle throughout the OP, which is based on the strategy of sustainability and the climate protection programme 2020 for Sachsen-Anhalt. The concrete definition of the way and extent climate change adaptation is to be incorporated in project selection to the

					5b	13: Protection against the aftereffects of mining increased by climate change	Under 5b, measures aim to reduce the threats and risks of former mining activities, which are increased by the impacts of climate change. The actions include evaluating the risks, planning measures and investments in renovating the former mining facilities. A main focus is drainage of underground mines, embankments on opencast mining holes.	future regulations and guidelines, and no minimum criteria are specified.
2014DE16RFOP 015	Thüringen	4	Risk management and prevention, environment protection and promotion of sustainable resource use	85, 86, 87	5b	SZ11: improvement of flood protection – risk management in Thuringia	Under 5b, actions focus on the renovation, construction and planning of flood protection operations (which may include ecosystem based approaches), based on the regional flood protection programme or a similar plan. Actions under 6d include investments in near-natural watercourses; reconstructions to improve watercourse structure; development of watercourse strategies and management plans for watercourse-related development; improvement of the planning fundamentals for NATURA 2000 areas; renaturation and linking of natural habitats related to watercourses, and in urban areas to establish green infrastructures and near urban recreation spaces.	Climate adaptation is clearly incorporated as a relevant aspect of sustainable development. It refers to the regional strategy for sustainable development. Several tools ensure the integration of sustainable development during implementation and execution of the OP. A range of tools will be applied throughout project selection and operation. Among others, tools are: a) Assessment and evaluation of project's suitability with sustainable development, which is not yet defined, but will take into account the recommendations from the SEA. b) Environment-specific monitoring will be used to identify needs to fund studies and if necessary develop action plans. c) Qualification actions will sensitize employees on all levels for the horizontal principle.
					6d	SZ12: Rehabilitation of near-natural eco systems focused on watercourses and river areas		

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs
CCI	Title	No	Title		
2014DE16RFOP002	Bayern	4	flood protection	87	5a
2014DE16RFOP003	Berlin	4	Sustainable urban development	85, 87	6e
2014DE16RFOP004	Brandenburg	3	Promoting the reduction of CO2 emissions in all economic sectors	87	4e
		4	Integrated development of urban and rural areas	85, 87	6e
2014DE16RFOP009	Nordrhein-Westfalen	3	Promoting the reduction of CO2 emissions	65, 87	4e

Table 5 below shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014DE06RDRP003	Baden Württemberg	M01, M02, M04, M07, M08, M10, M11, M12, M13, M16, M19
2014DE06RDRP004	Bavaria	M04, M07, M10, M11, M13, M19
2014DE06RDRP007	Berlin + Brandenburg	M02, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014DE06RDRP010	Hesse	M07, M08, M10, M11, M13, M16, M19
2014DE06RDRP011	Mecklenburg Pomerania	M01, M02, M04, M05, M07, M08, M10, M11, M12, M15, M19
2014DE06RDRP012	Lower Saxony + Bremen	M01, M04, M05, M07, M10, M11, M13, M16, M19
2014DE06RDRP015	Nordrhein-Westfalen	M07, M08, M10, M11, M12, M13, M16, M19
2014DE06RDRP017	Rhineland-Palatinate	M01, M02, M04, M05, M07, M10, M11, M16, M19
2014DE06RDRP018	Saarland	M04, M07, M10, M11, M12, M13, M19
2014DE06RDRP019	Sachsen	M01, M04, M07, M08, M10, M11, M13, M16, M19
2014DE06RDRP020	Sachsen-Anhalt	M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M19
2014DE06RDRP021	Schleswig-Holstein	M02, M04, M05, M07, M10, M11, M12, M13, M16, M19
2014DE06RDRP023	Thuringia	M01, M02, M07, M08, M10, M11, M13, M15, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16RFCB017	Interreg DE (Saxony)C Z	CB	1	Supporting climate change adaptation, risk prevention and risk management	87	5b	5b1. Intensification of Cross-border use and performance (of joint risk management)	(1) Joint planning, joint data exchange and data provision measures (for disaster management services) and investments in flooding prevention, (2) investments in joint equipment for disaster prevention and management including information systems and communication platforms, (3) improved cooperation among rescue / emergency services through joint exercises, training, language skills improvement and awareness raising among the wider public.	The CP strongly focuses on promoting ecological sustainability, with aspects on environmental protection, climate change adaptation, risk prevention and management being at the heart of the intervention strategy. The CP considers such on all four PAs and contributes to sustainable development and ecologic sustainability. Sustainable development is also applied as a 'horizontal criterion' during the selection of all operations and a specific assessment indicator will be used to appraise their environmental impact.
2014TC16RFCB023	Interreg DE-NL	CB	2	Socio-cultural and territorial cohesion in the programme area	87	11b	11b1. Reducing the barrier-effect of borders for citizens and institutions	This axis explicitly foresees under the main theme no.2 'Nature, landscape and environment' a support of climate change adaptation-relevant actions. These are projects on climate risk assessment, risk prevention and risk management.	Support is provided to operations on environmental protection, biodiversity preservation, climate change adaptation, disaster resilience and risk prevention / management. Furthermore, the CP also defines specific selection criteria which ensure that projects with an adverse environmental impact are not supported.

2014TC16RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	Demonstrate new and/or improved methods for improving the climate resilience of target sites	<ul style="list-style-type: none"> • Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. • New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the programme will provide opportunities for: <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats • The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	The programme describes a comprehensive approach to pursuing sustainable development. During project development, projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.
						6d	Develop new methods for the long-term sustainable management of North Sea ecosystems		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 84, 87	6b, 6g
2014TC16M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b, 6c, 6d
2014TC16RFCB004	Interreg AT-DE	CB	2	Environmental preservation and protection and promotion of resource efficiency	85, 86, 87	6c, 6d
2014TC16RFCB009	Interreg DE (Bavaria) CZ	CB	2	Preserving and protecting the environment and supporting resource efficiency	85, 86, 87	6d
2014TC16RFCB011	Interreg DE (Brandenburg) – PL	CB	4	Integration of the population and administrative cooperation	87	11b
2014TC16RFCB018	Interreg PL – DE (Saxony)	CB	4	The partnership and institutional capacity	87	11b
2014TC16RFCB019	Interreg DE (MV/BB) – PL	CB	1	Nature and Culture	85, 87	6c, 6d
			4	Cross-border cooperation	87	11b
2014TC16RFCB023	Interreg DE-NL	CB	2	Socio-cultural and territorial cohesion in the programme area	87	11b
2014TC16RFCB024	Interreg DE-AT-CH-LI	CB	2	Environment, energy and transport	85, 86, 87	4c, 6e
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e
2014TC16RFTN006	North West Europe	TN	2	Low carbon (to facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions)	65, 87	4e, 4f, 7c

13 Greece

13.1 Adaptation framework and priorities

The Ministry of Reconstruction of Production, Environment & Energy (MRPEE) is the competent authority for coordinating actions on climate change and works towards both mitigation and adaptation to the implications of climate change, as well as the enhancement of mechanisms and institutions for environmental governance. In this capacity, the MRPEE is responsible for the identification of climate change impacts, the planning and coordination of adaptation measures and policies, and the establishment and preparation of a national adaptation strategy.

The National Strategy for Adapting to Climate Change (NAS) is currently under development and was expected to be completed by the end of 2015.⁽⁶⁶⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through the ERDF/CF and EAFRD.

The adaptation objectives are to:

- › promote interventions aimed at adapting to climate change impacts, as well as enhance the resilience of the built and natural environments to the damage associated with climate change;
- › promote priority integrated strategies, actions, measures, supply of equipment for the prevention, protection, rehabilitation and risk management and natural disasters or unforeseen causes;
- › support the mapping and addressing of specific environmental problems associated with either natural hazards or anthropogenic pollution;
- › promote habitat management practices of the Natura 2000 network, as well as green infrastructure;
- › promote the field of agriculture, adapting to climate change interventions in both crop species and cultivation of existing species; and
- › promote education and awareness raising of the population, volunteers and civil protection personnel in the prevention and management of risk.

⁶⁶ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/greece>

Expected results for the ERDF/CF:

- › improving infrastructure and public sector human resources Disaster Management;
- › increased preparedness for natural disasters;
- › information, awareness for the prevention and management of risks (e.g. earthquakes, floods, etc.) and adaptation to climate change;
- › reducing the impact of climate change, risks and natural disasters or unforeseen causes in the natural and human environment; and
- › Improve quality and quantity of the immediate response to risk management.

Expected results for the EAFRD:

- › conservation, restoration and enhancement of natural, forest and agricultural ecosystems including those within Natura 2000 areas through investments and actions that improve the resilience of agricultural, forestry and natural ecosystems to the new conditions created by climate change;
- › reducing the impact of climate change on agriculture, through tailored genetic resources and appropriate agricultural practices; and
- › reduction of areas with a high risk of degradation.

The approach to sustainable development addresses the issues of climate change mitigation and adaptation mainly by means of a thematic / sectoral focus. Additionally, there is reference to horizontal issues, such the 'polluter pays' Principle, Environmental Impact Assessments, Strategic Environmental Assessments, Green Procurement and Environmental Standards. For these, there is no specific reference to climate change mitigation and adaptation and they seem to be incorporated in a generally environmental perspective.

13.1.1 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁶⁷⁾ in Greece for the 2014-2020 period amounts to EUR 20.4 billion. Of this amount, EUR 5.3 billion is allocated for climate action.⁽⁶⁸⁾ Out of the total ESIF Union support for Greece, 5.2 % (or EUR 1.05 billion) is marked for climate change adaptation. An additional EUR 2.16 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Greece for ERDF and EAFRD.

⁶⁷ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁶⁸ For climate change mitigation and for climate change adaptation

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	250.6	98.2	704.3	1,053.1
Climate change adaptation and/or climate change mitigation	130.1	48.8	1,985.0	2,163.8

Table 2 presents the thematic concentration of this support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through TO4 and TO5 as pure adaptation and TO6 as supportive adaptation.⁽⁶⁹⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO2	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	-	348.8	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	67.2	0.5	1.6	1.6	108.0
Climate change adaptation, EAFRD	-	-	512.1	16.0	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	-	1,985.0

13.1.2 Climate change adaptation in ERDF and CF

Greece has 17 ERDF programmes, of which 13 programmes have allocations to climate change adaptation. Table 4 in the Annex provides a more detailed overview on the top three programmes with the largest climate adaptation support and lists all remaining 10 OPs with adaptation. There, adaptation is primarily addressed through TO5 (EUR 348.8 million) in PA5 'Promoting climate change adaptation, risk prevention and management' and PA11 'Implementation of Strategies for Climate Change Adaptation, Risk Prevention and Risk Management'. The main climate adaptation IFs selected are IF087, IF085 and IF086. The OPs identify the main climate challenges and actions to reduce the risk and environmental impacts of forest fires, to develop integrated plans against natural disasters and floods, to strengthen civil protection mechanisms, and to create a framework of protection and promotion of biodiversity. This is done mainly through systematic planning and mapping of required actions, enhancement of the prevention, mitigation and adaptation policies in selected sectors, the development of adequate tools and systems and awareness and training on the integration of

⁶⁹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 10.2.5 of this chapter.

adaptation in all sectors, including the participation of citizens, enterprises, institutions and administration.

13.1.3 Climate change adaptation in EAFRD

Greece has programmed one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Greek EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	16.0	-	-	-	512.1	176.3
Climate change adaptation and/or climate change mitigation	-	661.7	661.7	661.7	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address water use efficiency (UP5a), and local rural development (UP6b). Most climate change adaptation can be found in measures M04, M19, and M16 respectively. The main focus of actions under the key climate measure M04 lies on improving the economic environment, water management, energy efficiency, livestock, and support non-productive investments for environmental objectives. The main theme of actions under M19 is on maintaining agricultural, food, potential contribution to adaptation aiming at diversification of the local economy, creation of employment and the lack of infrastructure in rural areas. Actions under M16 aim to enhance the links between agriculture and research, increase of productivity, biodiversity, better water and soil management, and food quality and safety.

Furthermore, the bulk of climate change adaptation action in the Greek EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

13.1.4 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 388.8 million, of which EUR 75.0 million (19.3 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP will contribute to the enhancement of marine protected areas and marine Natura 2000 sites.

13.1.5 Climate change adaptation in ESF

Greece has 17 ESF programmes, of which one ESF programme includes YEI. Total ESF Union support amounts to EUR 3.38 billion, of which no money is

allocated to climate action. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. There is no mention of actions that indirectly support climate adaptation.

13.1.6 Climate change adaptation in ETC

Greece is part of four European Territorial Cooperation (ETC) programmes with allocations to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg EL-BG, Interreg EL-CY and Adriatic-Ionian. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Greece is not available.⁽⁷⁰⁾

13.2 Adaptation framework compared with actual ESIF adaptation actions

Since the NAS is not approved yet, it is difficult to assess whether the foreseen climate change adaptation measures under the Greek Partnership Agreement are in line with the NAS.

Objectives as described in the Partnership Agreement are mostly addressed in the individual programmes. However, where the Partnership Agreement has an objective to 'promote education and awareness raising of the population, volunteers and civil protection personnel in the prevention and management of risk', this is not a returning topic in any of the ESF programmes. Nevertheless, these topics are partially covered in the ETC programmes. One of the needs, as described in the Partnership Agreement, aims for the regeneration of the economy as a consequence of the economic crisis by reinstating and upgrading the country's productive and social structure and by creating and safeguarding sustainable jobs. This is to be accomplished through the development of an extrovert, innovative, competitive and driven entrepreneurship, focusing on strengthening social cohesion and sustainable development principles.

⁷⁰ The total Union support for the four programmes Greece is involved in amounts to EUR 268.0 million, out of which EUR 25.9 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014GR16M1OP001	Transport infrastructure, environment and sustainable development	11	Implementation of Strategies for Climate Change Adaptation, Risk Prevention and Risk Management	87	5i	PA11/SO18 Increase adaptability to climate change	Studies on the impacts and adaptation to climate change National Action Plan for the management of fluorinated gases that harm the ozone layer Actions increasing the resilience of ecosystems, biodiversity and forests Development and Application of Flood Risk Management measures	The horizontal principle on sustainability is well addressed. There is reference to the major relevant EU Directives and the implications for the selection of operations especially for the cases where an EIA is necessary. The results of the SEA are taken into account in evaluating the environmental performance of the OP via the Annual Reports Environmental Monitoring while, where necessary, the operations shall be examined on climate compatibility, to avoid climate impacts.
					5ii	PA11/SO19: Prevention, management and restoration of flood damages		
2014GR16M2OP	Central	5	Promoting climate change adaptation, risk prevention and	87	5a	5a1. Promoting	Strengthen structures and infrastructures for civil-protection and risk management	The main effort is given (ref. section 11.1) through the SEA process which integrates environmental impact improvement

002	Macedonia		management			investments related to the prevention and adaptation for the Mediterranean area	for water resources and coastal zone systems, as well as Investments in prevention and tackling fires (implementation of River Basin Management Plans, Flood protection plans, etc.)	measures. Also, specific references are made to thematic criteria in sections 2.A.6.2.
2014GR16M2OP012	Attica	5	Promotion of climate change adaptation and of risk prevention and management	85, 86, 87	5a	5.a.1. Reduction of the impacts of flooding from climate change effects in the environment	Infrastructures and actions to prevent floods River Basin Management Plans National forest management Fire Service actions Networks for cyclists, disabled and the elderly, creation of pathways in forest areas, projects for preventing erosion of coastal areas	The Attica OP includes IPs that are associated to sustainable development principles, i.e. environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster and risk prevention and management.

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority Axes		Selected IFs	Selected IPs
CCI number	Title	No	Title		
2014GR16M2OP003	Thessaly	3	Protecting the environment – Shift to an environment friendly economy	21, 85, 86, 87	4c, 4e, 5a, 6a, 6b, 6d, 6e
2014GR16M2OP004	Epirus	2	Environmental protection and sustainable development	21, 86, 87	4c, 4e, 5b, 6b, 6d, 6e

2014GR16M2OP005	Western Greece	2	Environmental Protection, transition to an eco-friendly economy	86, 87	4c, 4e, 5a, 5b, 6d
2014GR16M2OP006	Western Macedonia	5	Promoting adaptability to climate change, risk prevention and management	87	5b
2014GR16M2OP007	Continental Greece	5	Promoting climate change adaptation, risk prevention and management	87	5a, 5b
2014GR16M2OP008	Peloponnesus	3	Protection of the environment - Transition to an environment friendly economy	21, 86, 87	4c, 5a, 6a, 6b, 6d, 6e
2014GR16M2OP010	North Aegean	3	Protection of the environment and resources and transition to a climate-friendly economy, with sufficient resources for development, employment and the fight against climate change	21, 86, 87	4c, 5a, 6b, 6d, 6e
2014GR16M2OP011	Crete	2	Sustainable development, Environmental upgrade and facing climate change impacts in Crete	21, 65, 85, 86, 87	4c, 4f, 5b, 6d, 6e
2014GR16M2OP013	South Aegean	2	Sustainable development and resource efficiency	21, 86, 87	4c, 5b, 6b, 6d, 6e
2014GR16M2OP014	Eastern Macedonia-Thrace	2	Making the region more attractive as a business location and people	21, 86, 87	4a, 4c, 5b, 6b, 6e, 7b

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014GR06RDNP001	Greece - RDP (National)	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Select ed IFs	Select ed IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB022	Interreg EL-BG	CB	2	A Sustainable and Climate adaptable Cross- Border area	21, 85, 86, 87	5b	3 To improve CB cooperation on flood risk management plans at river basin level. Reduce impacts from disasters.	<ul style="list-style-type: none"> Development of common standards to be applied on National flood risks management plans in order to plans be jointly coordinated in compliance with Directive 2007/60/EC; Adaptation (revision) of National flood risks management plans on commonly agreed standards in order to plans be jointly coordinated; Development of Strategies and action plans for flood risks management; Contribution to 'River Basin Management Plan' (Directive 2000/60/EC - Water policy) concerning jointly coordination in flood issues of international rivers; Capacity-building actions for flood risks; Specific actions in the field of education, information sharing, drills and training for local population for risk communication and raising the awareness of the population. General campaigns at national and local level to raise the level of preparedness; Risks and disaster management pilot actions for specific flood Cross-border risks 	Climate change aspects in relation to the sustainable development principle are described in Section 8 under the umbrella of environment but also in a more specific way. More specific aspects apply particularly for adopting to a green business model encompassing principles and practices such as resource sufficiency (e.g. sharing models, 'less is more', higher energy efficiency, and higher levels of recycling), greater use of renewable energy and by implementing the concept of Eco-efficiency. There is a lack of specific criteria and it is mentioned in a general way that 'specific criteria will be included in order to ensure that no projects will produce negative impacts on the environment.'
						6d	5 To enhance the effectiveness of biodiversity protection activities	<ul style="list-style-type: none"> Development of CB frameworks and platforms for the interoperability of existing databases and the integration of management approaches (hazard and risk assessment, planning methodologies, management plans, sustainability assessments, etc.) Development of joint strategies & procedures (and pilot applications of such) for sustainable management of resources, for the development of green infrastructure, for biodiversity protection, for landscape management and for the establishment of green corridors; Development (and pilot application) of joint negotiation, mediation, participation and conflict 	

						6f	6 To enhance water management	<p>resolution models in the context of land use management with a view to protecting biodiversity; Design risk assessment & management models and strategies for CB protected areas</p> <ul style="list-style-type: none"> Climate change aspects in relation to the sustainable development principle are described in Section 8 under the umbrella of environment but also in a more specific way. More specific aspects apply particularly for adopting to a green business model encompassing principles and practices such as resource sufficiency (e.g. sharing models, 'less is more', higher energy efficiency, and higher levels of recycling), greater use of renewable energy and by implementing the concept of Eco-efficiency. There is a lack of specific criteria and it is mentioned in a general way that 'specific criteria will be included in order to ensure that no projects will produce negative impacts on the environment.' 	
2014TC16 RFCB055	Interreg EL-CY	CB	3	Conservation and protection of the environment and risk prevention	21, 87	5b	3.1 Improvement of joint risk management actions against natural, technological and humanitarian disasters	<ul style="list-style-type: none"> Integrated systems - risk and disaster management plans, common or jointly elaborated, which will include the necessary resources and infrastructure for an area for the provision of appropriate disaster management services to citizens, and support of specialized units disaster response / civil protection modules; Investments in pilot projects and risk prevention applications and protection from disasters (e.g., creation of databases, institutions and mechanisms for exchanging information and developing joint strategies, action plans and management plans at regional and local level, developing ICT (ICT) tools such as Geographic Information Systems (GIS), detection and surveillance systems, early warning and alert, risk mapping and evaluation studies) Harmonised standards and systems in the area (including common definitions and assessment of emergency situations) for better anticipation and management of natural disasters; Educational support (training) to strengthen the capabilities of emergency response stakeholders, including volunteers and civil society. Investments to promote Marine Spatial Planning [e.g. (a) drafting maritime spatial plans for mapping environmental features and productive activities (indicative extracting energy resources, areas for renewable energy, roads maritime transport routes submarine cables and pipelines, fishing areas, fish farming facilities, places protection of the marine environment etc.) and actions supporting the institutionalization process, (b) strengthening the research and development of materials, technologies and systems for mapping all 	<p>According to Section 8 of the programme on sustainable development, the integration of the principle is taken into account during the development of the programme through: a) the parallel elaboration of the SEA with the aim of continuous enrichment of the program and proposing corrective actions until final submission and approval and b) the consultation of the SEA with the environmental authorities of the countries. Concerning the implementation of the programme, the sustainable development principle will be ensured through specifying the criteria for selecting the operations by priority axis. These criteria will then be approved by the Monitoring Committee of the Program and included in the Management and Control System for monitoring interventions.</p>
						6f	3.3 Improvement of Maritime Spatial Planning (MSP) and Coastal Zone Management		

								the activities taking place in the sea area of the cross, etc.]; Exchange of good practices and networking for the implementation of Integrated Coastal Zone Management; Exchange of good practices and networking for the implementation of Integrated Coastal Zone Management.	
2014TC16 M4TN002	Adriatic-Ionian	TN	2	Sustainable region	21, 85, 86, 87	6c	Promote the sustainable valorisation and preservation of natural and cultural heritage as growth assets in the Adriatic-Ionian area	<ul style="list-style-type: none"> • Actions foreseen include: - Transnational networks for sustainable cultural/natural tourism promotion; Diversified tourism products and innovative touristic services; Sustainable tourism models focusing on low carbon emissions, low ecological footprint and 'slow food' concepts. • Actions foreseen include the development of cooperation projects on: - Transnational frameworks and platforms for hazard and risk assessment, planning methodologies, management plans, sustainability and adaptation assessments etc. - development of implementation strategies, models and testing of pilot activities on risk management and climate change adaptation in terrestrial and aquatic environments; Transnational Special Spatial Plans (e.g. on RES, on tourism, on agriculture and forestry), Maritime Spatial Planning, Multiannual Fishery Management Plans and Integrated Coastal Zone Management Plans and Procedures; early warning systems for forecasting, managing and preventing natural and manmade hazards; exchange of best practices on civil protection, floods management, risk management, integrated and sustainable management of protected areas) 	The programme aims at improving and harmonizing environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience, risk prevention and management systems. In line with the principle of sustainable development, projects applications shall be evaluated using the following criteria: - positive effect on the environment, - Projects that have a potentially harmful effect on the environment will be excluded; environmental awareness consideration and compliance both within - efficiency in the use of resources - development of green infrastructures; contribution to better awareness for the adaptation to climate change and risk prevention; Furthermore whether projects are directly concerned by sustainable development issues or not, they shall be invited to implement actions/take specific measures to reduce the environmental impact beneficiaries are requested to describe in their project proposals the efforts they will undertake to reduce the project's 'carbon footprint'. The SEA and the ex-ante evaluation provided inputs to ensure that the ADRION Programme respect the principle of sustainable development.
						6d	Enhance the capacity in tackling environmental vulnerability, fragmentation, and the safeguarding of ecosystem services in the Adriatic Ionian area		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16M4TN003	Balkan-Mediterranean	TN	2	Environment	86, 87	6f

14 Hungary

14.1 Adaptation framework and priorities

The first revision of the National Climate Change Strategy (NCCS) mandated by the Climate Change Act 2007 was finished in 2013 and has been submitted to the Hungarian Parliament. The revised version determines the timeline of the strategy from 2014 to 2025, with an outlook to 2050. The National Adaptation Strategy (NAS) and the Low Carbon Development Strategy will be adopted as part of the second NCCS. This will provide further information on climate change science, observations and sectoral impact assessments. In this connection, a robust metadata base, called the National Adaptation Geographical Information System (NAGIS) is currently in progress.

The new NAS of Hungary will be adopted by the Hungarian Parliament in 2016. Following adoption, the strategy will be elaborated by the Climate Change Action Plan, after which it will be possible to report on the implementation of – and progress on – the goals of the strategy. The current NCCS contains projections and incentives concerning adaptation in the following sectors:

- › Natural environment
- › Health
- › Water management
- › Agriculture, crop and livestock management, forest management
- › Regional development
- › Human/built environment

The revised NCCS will further develop adaptation in the fields of regional development, urban planning, green infrastructure, critical infrastructure and tourism.⁽⁷¹⁾

Looking at the Partnership Agreement, preparedness for extreme situations to reduce risk is in the forefront. The main areas of climate change adaptation in

⁷¹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/hungary>

EAFRD include integrated water basin management to enhance flood protection and maintain agricultural production. CF includes reconstruction, and establishment of water structures will improve drainage and irrigation potentials alike. Best practices in risk assessment, establishment of a knowledge base, monitoring systems and water saving technologies in agriculture will support efficient adaptation.

The main adaptation objective is to increase flood protection safety and forming a multi-purpose, integrated water management system, and the development of the adaptation potential of agriculture.

The Partnership Agreement emphasises that throughout the implementation of programmes sustainability should be supported. Efficient use of resources, maintenance of biodiversity, and environmental awareness are focal points of planning and implementation in the areas of transport, energy, spatial and urban development and industry. Specific climate change and sustainability principles i.e. the principles of 'prevention', 'polluter pays', green procurement, etc. are identified for programming, project selection and implementation. Data collection and monitoring systems are envisaged based on the OP SEA reports. In terms of climate change, it is stated that adaptation actions have to be incorporated in project implementation, and the transboundary nature of climate resilience is emphasised in terms of risk management and ecosystems.

14.1.1 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁷²⁾ in Hungary for the 2014-2020 period amounts to EUR 25.0 billion. Of this amount, EUR 5.8 billion is allocated for climate action.⁽⁷³⁾ Out of the total ESIF Union support for Hungary, 4 % (or EUR 1.01 billion) is marked for climate change adaptation. An additional EUR 1.06 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Hungary for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	12.1	762.7	233.0	1,007.8
Climate change adaptation and/or climate change mitigation	108.8	-	954.0	1,062.7

⁷² ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁷³ For climate change mitigation and for climate change adaptation

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through TO4 and TO5 as pure adaptation and TO6 as supportive adaptation.⁽⁷⁴⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	5.6	757.1	12.1
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	-	108.8
Climate change adaptation, EAFRD	34.0	38.4	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	954.0

14.1.2 Climate change adaptation in ERDF and CF

Hungary has seven ERDF programmes, of which two programmes have allocations to climate change adaptation. Table 4 in the Annex provides a more detailed overview on the programmes with climate adaptation support.

Adaptation is primarily addressed through TO5 (EUR 757.1 million) in PA1 'Adaptation to climate change impacts'. The main climate adaptation IFs selected are IF087, IF085 and IF021. The OPs identify the main climate challenges such as water retention, flood management interventions, enhancing disaster control capacity and raising the awareness of the population. Other themes considered relevant are enhancement of biodiversity and safeguarding natural habitats; interrelating with flood management, river basin interventions, and small-scale water management developments; infrastructure upgrading or building are envisaged to adapt to extreme rainfall events in towns attributed to climate change.

⁷⁴ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 15.2.5 of this chapter.

14.1.3 Climate change adaptation in EAFRD

Hungary has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Hungarian EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	38.4	-	-	-	34.0	160.6
Climate change adaptation and/or climate change mitigation	-	318.0	318.0	318.0	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b), farm risk prevention (UP3b) and water use efficiency (UP5a).

Most climate change adaptation can be found in measures M07, M19, M04, and M17. The main focus of actions under the key climate measure M07 lies in land use and infrastructure in rural settlements and peripheries. Measure M19 has a focus on rural development land use and alleviates adaptation issues. Actions under this measure M04 relate to horticulture, water management, innovation, food processing land use, and energy efficiency. The main theme of actions under M17 are agriculture and horticultural (risk management) land use.

Furthermore, the bulk of climate change adaptation action in the Hungary EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

14.1.4 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 39.1 million, of which EUR 5.5 million (14.1 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the importance of the National Disaster Fund and its possible engagement.

14.1.5 Climate change adaptation in the ESF

Hungary has five ESF programmes, one of which includes YEI. Total ESF Union support amounts to EUR 4.7 billion, of which no support is allocated to climate action. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, e.g. educational programmes cover climate-related issues like the climate resilience of infrastructure.

14.1.6 Climate change adaptation in ETC

Hungary is part of five European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg HU-RO, Interreg HU-HR and Danube. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Hungary is not available.⁽⁷⁵⁾

14.2 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Hungarian Partnership Agreement are mostly in line with the NAS. However, since the revised version is still to be approved, there might be issues that are to be covered. Where the NAS also has a focus on health related issues, the Partnership Agreement does not emphasize this.

The individual programmes also seem to be in line with the objectives and expected results as presented in the Partnership Agreement.

Hungary is exposed to floods and droughts alike, therefore construction and improvement of flood protection systems – efficient, transnational river basin management – is a key issue in adapting to climate change by preventing inundation or retaining water (TO5). Climate change awareness of the population and enterprises should be improved. Looking at the ESF programmes, there are potentially adaptation actions through educational programmes, even though there is no allocation for climate action in the programme.

⁷⁵ The total Union support for the five programmes Hungary is involved in amounts to EUR 777.5 million, out of which EUR 19.1 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014HU16 M1OP001	Environmental and Energy Efficiency	1	Adaptation to climate change impacts	87	5i	5i1. Provide basis for climate change adaptation, prevent natural disasters	Development of data and knowledge bases relating to water management and the impacts of climate change (continuous development of global and regional models requires the improvement of domestic long-term climate forecasting capacities). Promoting effective adaptation by the development and implementation of regional and local climate strategies with the involvement of local communities. Successful implementation of climate strategies is subject to extensive awareness raising, authentic information of target groups which are among the actions envisaged. Improving surface and groundwater conditions and carrying out operations required for sustainable management of water resources (preparing and implementing projects that contain also measures stated in the River Basin Management Plan), construction and upgrading of structures for water retention, and supporting water ecosystem based developments are envisaged	In addition to the direct climate and environment related objectives of the PAs it is ensured in selection that the operations with the highest contribution to the horizontal principle of sustainability. Also the OP provides detailed information on the specific actions that will be undertaken to promote the horizontal principle of sustainable development in planning (involvement of competent authorities), selection or monitoring (setting up Horizontal Monitoring Committee, Working Group

					<p>5i2. Improving the conditions required for the sustainable management of water resources</p>	<p>to improve the conditions for sustainable management of water supply in correspondence with investments under the Rural Development Programme. Improving resilience against damages caused by water include construction of flood control facilities, water bed rehabilitation especially in the Tisza basin. Infrastructure developments to ensure water supply of water habitats are also supported. Development of water management in hilly areas is also a focus; construction of water storage facilities including construction of new reservoirs and refurbishment of existing ones for reducing flood peaks. Also, water drainage interventions are planned for more balanced distribution and enabling potential use of runoff water. Increase the efficiency of interventions by preventive measures and enhancing reaction capacities. In terms of prevention, a metering system is envisaged a prerequisite of successful risk assessment and interventions; Developing a proactive and complex risk assessment system/network; Developing and updating the risk signaling systems; Improvement of responsiveness is another component in enhancing efficiency.</p>	<p>that approves selection criteria too).</p>
				<p>5i3. Improve protection against damages of floods</p>			
			5ii	<p>5ii4. Higher-quality disaster management in order to enhance the personal and property safety of residents</p>			

		5	Promoting energy efficiency and the use of renewable energy sources	87	4i	4i1. Increasing the use of renewable energy sources	Promoting green electricity production to the grid based on renewable sources (establishment of power plants - particularly co-generation plant - using renewable energy source to produce electricity and feed it directly to the grids). The following renewable technologies are planned to be supported: use of biomass, biogas production, geothermal energy, solar energy, hydro energy. Energy efficiency upgrading of buildings combined with the use of renewable energy sources Energy efficiency development of district heating and heat supply systems based on renewable energy sources Awareness raising programmes Support to smart grids in order to ensure the flexibility of the electricity system	
					4iii	4iii4. Increasing energy efficiency and promoting the use of renewable energy sources		
2014HU16 M2OP001	Territorial and settlement development	2	Business-friendly, population preserving settlement development	21, 85, 87	6e	2.A Promoting businesses and maintaining population through settlement development actions	Three areas of interventions include business stimulating and attractive urban environment, development of environmental infrastructure and awareness raising actions. Projects that promote climate friendly urban spaces like recreation areas, public green surfaces with water sparing irrigation, enhanced biodiversity as well as brownfield rehabilitation are supported. The second area has more climate focus while the training actions motivate target groups and ensure better internalization of environment and climate approach. Adaptation to the effects of climate change is enhanced by actions in urban rainwater drainage in areas where runoff flood risks are higher. Action also include waste recycling, incineration for heat supply and landfill reclamation that contribute to climate-friendly urban environment.	CC related issues were widely integrated as horizontal principles into programming, project selection and the monitoring of project implementation. To ensure the enforcement of the horizontal principles the Horizontal Monitoring Committee and Horizontal Workgroup will be set up.

					4c	6.E Improving energy efficiency and share of renewables in buildings owned by the municipalities in cities with county rights	Energy efficiency improvements of municipality buildings, rehabilitation of heating systems, insulation and applying renewable energy sources for heating, modernization of lighting systems, installation of solar systems (photovoltaic, collectors) implementation of complex regional energy programmes relying on local energy sources, development of municipality SEAPs investments to promote public transport (bus lanes, bus stops) in cities, development of P+R and B+R lots and transport nodes, intelligent information systems, to promote public transport, on-demand suburban passenger transport service systems, procurement of energy saving vehicles, development of regional mobility plans, transport developments for intermodality with the slow-city approach, lay emphasis on cycle transport Supporting the development of the environmental infrastructure (adaptation to the effects of climate change), increasing and improving green surfaces in cities including flood- and rainwater protection, creating climate-friendly urban environment, enhancing environmental consciousness through training, actions	
		6	Sustainable urban development in cities with county rights	21, 85, 87	4e	6.D Promoting sustainable public mobility		
					6e	2.A Promoting businesses and maintaining population through settlement development actions		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014HU06RDNP001	Hungary – RDP (National)	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M17, M19

Table 6-1 and Table 6-2 show all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB008	Interreg HU- HR	CB	2	Sustainable use of natural and cultural assets	85, 86, 87	6c	2.1. Convert the region's natural and cultural heritage to tourism attractions with income generating capabilities	<ul style="list-style-type: none"> Environmentally friendly investment in local access roads, green corridors, ferry crossings, foot-, bicycle and riding paths. Joint actions – including trainings, seminars, other events for sharing best practices - to promote environmental consciousness Actions to promote environmentally friendly ways of tourism; Development of the cycling infrastructure. Joint management/action plans and studies for the conservation of key species and habitats Data collection and monitoring activities and developing systems aiming to support biodiversity, water management and soil protection, sustainable land use, etc. Small scale investment in infrastructure necessary for protecting or managing natural and semi-natural habitats, ecosystems or landscapes ('green infrastructure') Integrated management of water bodies Awareness-raising, education and training on sustainable land use Capacity building actions of organizations in charge of nature conservation and water management 	Environmental sustainability and resource efficiency are claimed to be applied as horizontal principles in all measures of the programme including the selection of projects. Projects with the highest resource efficiency and sustainability are to be selected and those with negative environmental and climate effects have to be eliminated. Green public procurement is expected to be applied. Operations supporting climate change mitigation (including reduction of GHG emission) and promoting climate adaptation will be preferred. Compliance with the requirements set out in Annex III of the Energy Efficiency Directive (2012/27/EU) is a criteria when a project involves purchasing products.
						6d	2.2. Restoring the ecological diversity in the border area		

2014TC16 RFCB049	Interreg HU- RO	CB	5	Improve risk- prevention and disaster management	87	5b	SO5/b. Improved Cross-border disasters and risk management	<ul style="list-style-type: none"> • Development and implementation of harmonized standards and systems for better forecasting and natural / anthropogenic risk management in the Cross-border area • Land improvement for regions with high and average hazard natural risk level Setting up the harmonized and integrated tools for risk prevention and mitigation in order to provide a joint response to emergency situations • Development of regional level Cross-border infrastructure in the field of emergency preparedness • Exchange of experience on efficient risk prevention and management in the Cross-border area • Awareness-raising activities targeted at specific groups • Elaboration of detailed maps and data bases indicating natural and technological risks • Purchasing special vehicles, equipment and materials for public emergency response services • Purchasing equipment for measuring /monitoring environmental parameters • Development of common strategies, action plans on risk prevention and risk management • Establishing common rules/legislation and protocols related to risk prevention and disaster management 	The programme acknowledges the importance of considering sustainable development as a horizontal principle during the programme and project implementation but with a focus on environmental protection rather than climate change adaptation and mitigation. Thus, in the implementation of sustainable development principle, indicators referring to climate change mitigation and adaptation should be considered: e.g. promoting the use of green procurements and the reduction of waste generation; energy efficiency indicators; biodiversity and ecosystems indicators, regulations on investments in areas of risk of climate-related hazards (floods, storms etc.).
2014TC16 M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> • Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. • Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to 	Numerous aspects of sustainable development common to all PAs and IPs (including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the

						6c	2.2. Foster sustainable use of natural and cultural heritage and resources	<p>support sound water management.</p> <ul style="list-style-type: none"> • Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. • Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. • Support risk management plans for cultural and natural heritage sites exposed to climate change. • Improved strategic frameworks and developed specific solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region Integrated management of habitats, protection and re-colonisation of endogenous species, control of invasive species, raising awareness on sustainable land use, etc. 	<p>highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.</p>
					6d	2.3. Foster the restoration and management of ecological corridors			

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e
2014TC16RFCB010	(Interreg V-A) AT-HU - Austria-Hungary	CB	2	Protecting the environment and promoting resource efficiency (TO06)	21, 85, 86, 87	6d

15 Ireland

15.1 Adaptation framework and priorities

The Irish National Climate Change Adaptation Framework (NCCAF) aims to ensure that an effective role is played by all stakeholders in putting in place an active climate change adaptation policy regime. A two-phase approach was proposed that overlaps. In the first phase, the focus is on building the knowledge base and developing capacity. The aim here is to identify climate change risk and vulnerability to climate change, based on potential impacts relative to current adaptive capacity. The second phase involves the development and implementation of sectoral and local adaptation plans. The approach being taken to plan development is in line with the EU Adaptation Planning guidelines. Due account will be taken of the EU Strategic Environmental Assessment (SEA) and the Habitats Directives. The NCCAF includes actions on several sector levels: water, emergency planning, marine, agriculture, forestry, biodiversity, flood defence, and other less crucial sectors.⁽⁷⁶⁾

The Irish Partnership Agreement does not specifically recognise climate adaptation development needs and growth potentials. However, the need for a sustainable development of the environment and fisheries sector is acknowledged. The Partnership Agreement specifies actions that address climate adaptation, which are exclusively found in the EAFRD programme through measures that match TO5 and TO6. In relation to TO5, adaptation is mainly intended for more efficient livestock production, reduced soil erosion, and the introduction of riparian buffer zones. For TO6, the intended measures aim at improved nutrient management practices, the preservation of biodiversity and water quality. Furthermore, the EMFF is intended to include measures that assist the sustainable development of fisheries and aquaculture.

For all actions, the 'polluter pays' principle will be given full consideration in the design and implementation of programme interventions where relevant. The Irish

⁷⁶ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/ireland>

Government’s sustainable development framework 'Our Sustainable Future – A Framework for Sustainable Development for Ireland', will identify and prioritise policy areas and mechanisms where a sustainable development approach will add value and enable continuous improvement of quality of life for current and future generations and set out clear measures, responsibilities and timelines in an implementation plan.

15.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁷⁷⁾ in Ireland for the 2014-2020 period amounts to EUR 3.2 billion. Of this amount, EUR 2.0 billion is allocated for climate action.⁽⁷⁸⁾ Out of the total ESIF Union support for Ireland, 2.3 % (or EUR 74.7 million) is marked for climate change adaptation. An additional EUR 1.59 billion is allocated for actions that could contribute to 'climate change adaptation and/or climate change mitigation'. Table 1 below shows the foreseen support for climate change adaptation in Ireland for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁷⁹⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	74.7	74.7
Climate change adaptation and/or climate change mitigation	-	-	1,590.4	1,590.4

Table 2 presents the thematic concentration of this support. Adaptation support is only foreseen in EAFRD through TO5 as pure adaptation and TO6 as supportive adaptation.⁽⁸⁰⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO5	TO6
Climate change adaptation, ERDF/CF	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	-
Climate change adaptation, EAFRD	11.9	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	1,590.4

⁷⁷ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁷⁸ For climate change mitigation and for climate change adaptation

⁷⁹ CF is not aimed at Ireland.

⁸⁰ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 16.2.5 of this chapter.

15.2.1 Climate change adaptation in ERDF

Ireland has one ERDF programme, which neither addresses pure adaptation nor supportive adaptation.

15.2.2 Climate change adaptation in EAFRD

Ireland has programmed one National Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in that programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	11.9	-	-	-	-	62.8
Climate change adaptation and/or climate change mitigation	-	530.1	530.1	530.1	-	-

As can be seen, the bulk of climate change adaptation action is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and risk management (UP3b).

Most climate change adaptation can be found in measures M10, M13, M19, and M04, respectively. The actions under key climate measure M10 address more environmentally friendly practices, with the aim to preserve biodiversity and improve water management. Other areas with a high share of climate change adaptation can be found in measures on areas with natural constraints (M13). The objective is to promote sustainable farming practices these areas, which has repercussions on biodiversity, soil management, and water management. Furthermore, pure adaptation is found in M19, where community-led local development strategies are financed. Based on the decentralised nature of those actions, no concrete adaptation content is specified. Actions under M04 plan investments in physical assets with the objective of improving the state of ecosystems. Also, the indicated actions foresee concrete climate adaptation through improved farm risk management and prevention.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

15.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 147.6 million, of which EUR 28.9 million (19.6 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need to adapt the fisheries sector to the change of fish species availability and the appropriateness of aquaculture to climate change impacts such as sea level rise.

15.2.4 Climate change adaptation in ESF

Ireland has one ESF programme combined with the YEI. Total ESF Union support amounts to EUR 464.3 million, of which nothing is allocated to climate action. This is below the EU average of 1.4 %. Climate change adaptation themes are thus non-existent in this programme.

15.2.5 Climate change adaptation in ETC

Ireland is part of three European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the three Transnational (TN) programmes that have an allocation to adaptation, namely North West Europe, Atlantic Area, and Northern Periphery and Arctic. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Ireland is not available.⁽⁸¹⁾

15.3 Adaptation framework compared with actual ESIF adaptation actions

Based on the indicated sector levels, the NCCAF is an adaptation framework that addresses climate change adaptation in a wide range of areas. The Partnership Agreement addresses only a few sectors of the NCCAF and the strategy goes far beyond what is foreseen in the Partnership Agreement, which is further reflected in the individual programmes. The resemblance of the Partnership Agreement with the NCCAF is hence on the lower end of the scale.

When comparing the NCCAF with the actual adaptation contents of the ESIF programmes, a considerable range of areas is not addressed. Climate adaptation is limited to two programmes (EAFRD and EMFF), which address water, marine, agriculture and biodiversity, and to a small extent also flood defence. The bulk of adaptation action is found in measures that address biodiversity, soil management and water management. Pure adaptation action is focused on local development strategies and, to a smaller degree, risk management. The Irish programmes address the most important themes of climate adaptation, but could utilise the ESIF's potential to mainstream climate adaptation across all sectors significantly more.

⁸¹ The total Union support for the three programmes Ireland is involved in amounts to EUR 586.4 million, out of which EUR 23.2 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

The ERDF OP in Ireland does not include interventions on climate adaptation

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014IE06RDNP001	Ireland - Rural Development Programme (National)	M01, M02, M04, M07, M10, M11, M12, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFTN006	North West Europe	TN	2	Low carbon	65, 87	4e	SO2. To facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions in NWE	<ul style="list-style-type: none"> Implementation of emerging or existing low carbon, energy or climate protection strategies (localised energy generation and supply, distribution and efficiency management, or other means of reducing carbon emissions at a territorial level and their delivery): new financial schemes, new governance arrangements, technologies, and innovative approaches. Analysis, testing, demonstration and implementation of solutions that integrate mitigation and adaptation measures (reduction in GHG emissions and reduction in risk) e.g. innovative approaches such as Water Sensitive Urban Design (WSUD), optimised water distribution and CO2 neutral maintenance of adaptation measures. Implementing and adopting zero/low carbon technologies in enterprises and industrial production processes; particularly those relating to energy generation and/or energy reductions/efficiency; Delivering and roll out of emerging energy technologies; Implementing of joint zero/low carbon technology demonstration schemes and facilities, including fab labs and R&D/testing facilities; Ensuring that new energy solutions are feasible (for example, finding ways for bioenergy production to not negatively impact on agricultural or water resources). Pilot or demonstration actions to bring in-reach technologies or emerging solutions for low carbon transportation (e.g. new forms of propulsion systems) closer to public use; Testing and demonstrating low carbon transport solutions in real life conditions, such as low carbon or zero-carbon rolling stock, vehicles using alternative fuels, increasing levels of e-mobility; Developing, implementing and evaluating efficient traffic management solutions, such as seamless transport, smart mobility, IT systems, last mile concepts or services, journey planning tools, where these lead to real reductions of GHG emissions 	<p>According to section 8, climate change is covered in several PAs. PA2 focuses on low carbon strategies, including climate change mitigation and adaptation measures, and sustainable and low-carbon transport, reducing GHG emissions. Environmental needs and challenges are also addressed in PA3, which improves environmental protection and resource/material efficiency, reduces air pollution in the NWE area and reduces and reuses waste. Additionally, innovation in the NWE Programme strategy also includes eco-innovation: innovation that contributes to sustainable development of NWE. Project proposals are only eligible if the project objectives and activities do not conflict with the principles of sustainable development. However, no reference is made to climate-related selection criteria in section 8.</p>
						4f	SO3. To facilitate the uptake of low carbon technologies, products, processes and services in sectors with high energy saving potential, to reduce GHG emissions in NWE		
						7c	SO4. To facilitate the implementation of Transnational low-carbon solutions in transport systems to reduce GHG emissions in NWE		

2014TC16 RFTN002	Atlantic Area	TN	3	Strengthening the Territory's resilience to risks of natural, climate and human origin (TO 5)	87	5b	Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems	<ul style="list-style-type: none"> The actions to be supported will aim to strengthen the capacity and systems of the Atlantic Area for the management of risks deriving from climate change and human activities. 	The concept of sustainable development adopted Atlantic Area Programme by emphasizing climate change concerns, particularly in relation to resource efficiency (water and energy), reduction of greenhouse gas emissions, mobility, urban development, protection of ecosystems and the green economy aiming at contributing to ensure a balance between economic development activities and environmental protection.
2014TC16 RFTN004	Northern Periphery and Arctic	TN	4	Protecting, promoting and developing cultural and natural heritage	85, 87	6c	4. Increased capacity of remote and sparsely populated communities for sustainable environmental management.	<ul style="list-style-type: none"> Actions include development and transfers of best-practice models and solutions for 'up-skilling' local authorities and community groups, support new organisational models, decision-making tools, new governance concepts and models for protection and promotion of national and cultural heritage. 	The Programme includes descriptions on how horizontal criteria can address climate change concerns with related activities. It specifically addresses the topics of resources and energy management in the context of changing environment under PA3 and PA4 of the CP. It further list activities that will apply to all projects under the Programme. e.g. to investments towards resource-efficient and sustainable options, increase green public procurement, to avoid investments that may have negative environmental and climate impact, give priority to environmental friendly transport options, greater use of renewable energy, implementation of eco-efficiency and resource sufficiency etc.

16 Italy

16.1 Adaptation framework and priorities

Italy is facing severe climate change challenges such as erosion, flooding, desertification, drought and landslide, which will impact various regions and economic sectors. To address these challenges, the Italian Ministry for Environment, Land and Sea (IMELS) has developed a National Adaptation Strategy (NAS).

The NAS provides a national vision for climate change adaptation by identifying relevant national sectors and by proposing a set of adaptation actions for these sectors.⁽⁸²⁾ The main identified vulnerabilities of micro/macro sectors to climate change are: water resources, desertification, soil degradation and drought, hydrogeological risk, biodiversity and ecosystems, health, forestry, agriculture, aquaculture, marine fishery, energy, coastal zones, tourism, urban settlements and critical infrastructures. Furthermore, the Alps and Apennines mountain areas, together with the Po river basin, are prioritised in the NAS.

Regarding sub-national strategies, some regional initiatives have been already taken and can significantly contribute to the implementation of the NAS. For instance, the Lombardy Region has led the knowledge base to identify adaptation measures to climate change with several projects (e.g. Kyoto Lombardy and the Integrated Program of Risk Prevention Lombardy).

The Italian Partnership Agreement outlines the country's strategic objectives and investment priorities with regard to climate change adaptation. These objectives aim at supporting investment for adaptation and promoting investment to address specific risks, restoring, preserving and enhancing ecosystems related to agriculture and forestry, preventing soil erosion, and improving water management.

⁸² More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/countries/italy>

Under the Partnership Agreement climate change adaptation is mainly addressed through ERDF and EAFRD. The focus is on hydro-geological risk and coastal erosion through structural initiatives and soil management initiatives, as well as on desertification through efficient use of water resources in farming. Investments in lesser developed regions will also be linked with previous investments in water and waste managing systems. A second theme is biodiversity (Special Areas of Conservation and Natura 2000 sites) and preservation of environment, which will be linked to the aim of exploiting the national heritage of natural resources, cultural assets and landscapes to develop environmental and cultural tourism.

The horizontal principle of sustainable development is integrated in all ESI Funds through the polluter-pays principle.

16.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁸³⁾ in Italy for the 2014-2020 period amounts to EUR 41.5 billion. Of this amount, EUR 9.9 billion is allocated for climate action.⁸⁴ Out of the total ESIF Union support for Italy, 3.8 % (or EUR 1.56 billion) is marked for climate change adaptation. An additional EUR 3.7 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Italy for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁸⁵	EAFRD	Total for adaptation
Climate change adaptation	693.4	-	864.8	1,558.2
Climate change adaptation and/or climate change mitigation	122.6	-	3,598.6	3,721.2

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through TO5 and in EAFRD through TO5 and TO4.⁽⁸⁶⁾

⁸³ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁸⁴ For climate change mitigation and for climate change adaptation

⁸⁵ CF is not aimed at Italy.

⁸⁶ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 17.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	693.4	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	21.7	100.9
Climate change adaptation, EAFRD	243.1	339.0	
Climate change adaptation and/or climate change mitigation, EAFRD			3,598.6

16.2.1 Climate change adaptation in ERDF

Italy has 21 pure ERDF programmes and eight ERDF/ESF programmes, of which 11 have allocation to climate change adaptation. Table 4 in the Annex provides an overview on all programmes with support for climate adaptation with a detailed focus on top three programmes with the largest support.

In the 11 ERDF programmes, adaptation is primarily addressed through TO5 (EUR 693.4 million) and TO6 as supporting climate change adaptation and/or mitigation. The main climate adaptation IFs selected are IF087, IF085 and IF086.

The main focus of the OPs is on mitigation of hydrogeological risks such as floods, landslides, coastal erosion, and supporting and strengthening green infrastructure and ecosystem services linked to Natura 2000 sites. Actions such as enhancing resilience and development of effective management systems will be supported under the OPs.

16.2.2 Climate change adaptation in EAFRD

Italy has programmed a total of 21 Rural Development Programmes (RDP), one National RDP, and one Rural Network Programme. Table 3 below indicates the climate change adaptation allocations in the Italian EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	339	-	-	-	243.1	282.7
Climate change adaptation and/or climate change mitigation	-	1,199.5	1,199.5	1,199.5	-	-

As can be seen, the bulk of climate change adaptation action in the Italian EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under risk prevention and management (UP3b). Actions that target water use efficiency (UP5a) and local rural development (UP6b) receive a similarly sized share.

Most climate change adaptation is found in measures M10, M11 and M13, respectively. Actions under the key climate measure M10 (agri-environment climate) are indicated by 18 RDPs, and primarily target sustainable crop and livestock management practices and genetic conservation, next to the classic topics of biodiversity, water preservation, and soil management/erosion. M11 targets at the conversion to organic farming practices and is used in 19 RDPs. The expected results under this measure are predominantly more sustainable management systems, which improve biodiversity, the degree of water conservation and the quality of water management. 18 RDPs foresee actions in naturally constrained areas (M13), of which most interventions contain sustainable agricultural methods and the maintenance of the local territory to preserve biodiversity, improve soil management and reduce hydrogeological risks through avoiding soil desertification. Risk prevention and management (UP3b) is addressed in Italy through educative measures (M01, M02) on risk prevention, and M05 on the ex-post restoration of production. All climate action on risk management is, however, in the National RDP (M17). The issue of water use efficiency (UP5a) is addressed through educative measures (M01, M02) as well as investments in physical assets (M04). Table 5 provides more details on the content of the programmes with support for climate action.

16.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 537.3 million, of which EUR 94 million (17.5 %) is designated for climate action. This is a bit below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, no actions are foreseen in the programme.

16.2.4 Climate change adaptation in ESF

Italy has 20 pure ESF, eight ERDF/ESF programmes and one YEI programme. Total ESF Union support amounts to EUR 9.5 billion, of which 277.7 million (3 %) is allocated to climate action. This is well above the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting education on risk management and prevention (Lombardia OP) or training on mountain area management including hydro-geological risks monitoring and prevention (Valle d'Aosta OP).

16.2.5 Climate change adaptation in ETC

Italy is part of nine European Territorial Cooperation (ETC) programmes with allocations to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg IT-FR (Maritime), Interreg IT-HR and Adriatic-Ionian.

Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Italy is not available.⁽⁸⁷⁾

16.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation actions under the Italian Partnership Agreement are in line with the NAS and sub-national strategies. The Partnership Agreement's strategic objectives to support investment for adaptation and promote investment to address specific risks, restoring, preserving and enhancing ecosystems, preventing soil erosion, and improving water management are further reflected in the expected results under the ERDF and EAFRD there.

The climate adaptation actions foreseen under the ERDF and EAFRD are also in line with both the NAS and the Partnership Agreement. 11 ERDF and ERDF/ESF programmes⁽⁸⁸⁾ for Italy allocate Union support to climate change adaptation. More specifically, many of the OPs focus on mitigation of hydrogeological risks such as floods, landslides, coastal erosion, and supporting and strengthening green infrastructure and ecosystem services linked to Natura 2000 sites. In the EAFRD, there is a strong focus on adaptation through actions dedicated to increasing capacity of ecosystems (biodiversity, water and soil management). However, the EMFF programme does not foresee adaptation actions.

⁸⁷ The total Union support for the nine programmes Italy is involved in amounts to EUR 1.2 billion, out of which EUR 93.8 million is allocated for adaptation.

⁸⁸ Italy has 21 pure ERDF programmes and eight ERDF/ESF programmes, of which 11 have allocations to climate change adaptation

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014IT16RFOP007	Campania	5	Prevention of natural and anthropic risks	85, 87	5a	Reducing hydrogeological risks and coastal erosion	Interventions foreseen will focus on reducing risks from rivers flooding (including re-naturalization initiatives) and on avoiding landslides. Coastal erosion will also be addressed through coastal replenishment initiatives and naturalization of coastal areas (including rivers). Actions foreseen support the creation, strengthening and management of green infrastructures and ecosystem services linked to Natura 2000 sites reducing climate change effects.	The environmental authority will guarantee the inclusion and consideration of technical and managing tools for the sustainability of operations such as:- monitoring of the environmental aspects and identification of positive and negative effects of interventions on the environment; the assessment of the overall impact of the programme on the environment; compliance with the SEA findings; proposal of correction measures in order to achieve the sustainable development objectives; introducing GPP principles wherever possible;

2014IT16RFOP 016	Sicilia	5	Climate change adaptation, risk prevention and management	85, 87	5b	Reducing hydrogeol ogical risks and coastal erosion	The following actions will be financed under this specific objective: - mitigation of hydrogeological risks (floods, landslides, coastal erosion) pilot integrated projects in areas particularly at risks through green engineering techniques -creation, maintenance and naturalization of blue and green infrastructures in order to provide ecosystem services fostering climate change adaptation (e.g. river restoration, flood prevention infrastructures, buffer ecosystems, green infrastructures in urban areas increasing rain water absorption) - monitoring networks for risks prevention and warning - establishment of public buildings as strategic operation centers for risks management	The OP will directly contribute to the regional sustainable strategy especially through the implementation of pertinent actions under TO5 (increasing resilience against hydrogeological risks and coastal erosion), TO4. TO6 and TO7. Furthermore TO1 and TO3 will indirectly contribute to a more sustainable development. Selection criteria for operations will consider mitigation and adaptation to climate change as bonus in the evaluation process. A more efficient use of resources, the reduction of GHG emissions will especially be awarded.
2014IT16M2OP 002	Puglia	6	Adaptation to climate change, risk prevention and management	87	5b	Reducing hydrogeol ogical risks and coastal erosion	Reduced risks related to natural disasters such as landslides and floods by enhancing resilience and developing effective management systems	Environmental aspects of the OP are linked to climate change adaptation initiatives under TO5 and to a more efficient management of water and natural resources as well as waste management initiatives under TO6. The region has approved the Green public procurement action plan and will therefore apply its principles throughout the OP considering the adoption of minimum environmental criteria requirements.

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs
CCI	Title	No	Title		
2014IT16M2OP006	Calabria	5	Risks prevention	85, 87	5b
2014IT16RFOP010	Lazio	5	Hydrogeological risk prevention	87	5b
2014IT16RFOP015	Sardegna	5	Environment conservation and risks prevention	87	5b
2014IT16RFOP011	Liguria	5/6	Territorial safeguarding/ Cities	87	5b, 2c, 4c, 4e, 5b
2014IT16RFOP005	Bolzano	4	Land safeguarding	87	5b
2014IT16RFOP004	Abruzzo	5	Reducing hydrogeological risks	87	5b
2014IT16RFOP013	Marche	5	Promoting climate change adaptation, risk prevention and management	87	5b
2014IT16RFOP021	Veneto	5	Seismic and hydraulic risk	87	5b

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014IT06RDNP001	National RDP	M04, M10, M16, M17
2014IT06RDRP001	Abruzzo	M01, M02, M04, M05, M07, M08, M10, M11, M13, M16, M19
2014IT06RDRP002	Bolzano	M01, M04, M07, M08, M10, M11, M13, M19
2014IT06RDRP003	Emilia-Romagna	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP004	Friuli-Venezia Giulia	M01, M02, M04, M07, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP005	Lazio	M01, M02, M04, M05, M07, M10, M11, M13, M19
2014IT06RDRP006	Liguria	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP007	Lombardia	M01, M02, M04, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP008	Marche	M01, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M19
2014IT06RDRP009	Piemonte	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M19
2014IT06RDRP010	Toscana	M01, M02, M04, M05, M07, M08, M10, M11, M13, M15, M16, M19
2014IT06RDRP011	Trento	M01, M02, M04, M07, M08, M10, M11, M13, M16, M19
2014IT06RDRP012	Umbria	M01, M02, M04, M05, M07, M10, M11, M12, M13, M16, M19
2014IT06RDRP013	Valle d'Aosta	M01, M04, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP014	Veneto	M01, M02, M04, M05, M07, M08, M10, M11, M13, M16, M19

2014IT06RDRP015	Molise	M02, M04, M07, M08, M10, M11, M13, M19, M01
2014IT06RDRP016	Sardegna	M01, M02, M04, M05, M07, M10, M11, M13, M15, M16, M19
2014IT06RDRP017	Basilicata	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M16, M19
2014IT06RDRP018	Calabria	M01, M02, M04, M05, M07, M08, M10, M11, M13, M16, M19
2014IT06RDRP019	Campania	M01, M02, M04, M05, M07, M08, M10, M11, M13, M15, M16, M19
2014IT06RDRP020	Puglia	M04, M05, M08, M10, M11, M16, M19
2014IT06RDRP021	Sicilia	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB033	Interreg IT-FR (Maritime)	CB	2	Preserving and improving natural and cultural resources and managing risks	85, 87	5a	5A.1. Enhancing the capacity of public administrations to prevent and manage risks related to climate change.	<ul style="list-style-type: none"> Governance initiatives aiming at strengthening the competences of public entities towards adaptation to risks, including the definition of joint action plans, exchange of best practices and the establishment of joint intervention plans in case of flooding as well as monitoring networks for coastal erosion issues. Investments for the development and enhancement of joint early warning alert systems (including joint adaptation action plans) especially focused on flooding events and fires. Investments for small scale infrastructures preventing risks (coastal erosion, wild fires and hydrogeological risks) through environment friendly approaches (e.g. soil bioengineering measures). Joint governance actions for the management and development of natural and cultural heritage through an integrated approach (including pilot projects fostering sustainability and accessibility of related tourist infrastructures). 	<p>The principle of sustainable development and specifically the climate change aspect is well addressed throughout the CP and considered horizontally among projects implementation. Operations including reduction of GHG emissions, renewable energy use and measures for energy efficiency will be awarded. The beneficiaries will have to provide details on the contributions of the projects towards the horizontal principles (including sustainable development) and consequently:</p> <ul style="list-style-type: none"> Initiatives with potential negative effects on the environment will not be eligible; Operations fostering preservation, improvement and recovery of existing resources will be favoured respect to those with neutral effects; Interventions contributing to an efficient use of resources (e.g. energy efficiency, renewable energy use, reduction of GHG emissions, waste and water management, etc.) will be prioritized; Operations contributing to the creation or adherence to environmental networks (under IP6c) will have a bonus in the evaluation process. Furthermore beneficiaries shall consider: <ul style="list-style-type: none"> Video-conferences in order to avoid trips Printing documents on FSC certified paper Green procurement procedures Make use of short supply chains in the implementation of projects Fostering sensibility towards environmental sustainability Promoting activities reducing the consumption of energy and natural resources.
						6c	6C.1. Improving the capacity of public administrations to preserve and develop natural and cultural heritage features of the area.		

2014TC16 RFCB042	Interreg IT-HR	CB	2	Safety and resilience	87	5a	Improving the climate change monitoring and planning of adaptation measures tackling specific effects in the cooperation area	<ul style="list-style-type: none"> • Actions foreseen aim at improving the knowledge base, data and monitoring systems supporting adaptation capacity-and at increasing the capacity for planning of adaptation measures. Example of actions include: - adoption of downscaled climate data - setting up of common/ integrated/ harmonized monitoring and observing systems, model, spatial data infrastructures to improve the assessment and forecast capabilities, support the planning and design phase, promote the resilience to climate change; strengthening the capacity of public sector to develop and implement innovative services, incentives and financing schemes for increasing resilience to climate change; elaboration of strategic planning, action plans and other instruments for climate change adaptation • Actions foreseen are aimed at improving monitoring of risks and at increasing the management capacity of the risk. The programme supports the establishment of better coordinated collective emergency planning and preparedness for flooding (water management, flood risk techniques, etc.) and other risks (i.e. fire etc.) as well as joint development and implementation of awareness raising actions and governance instruments. Furthermore the development or improvement of existing early warning and decision-making support systems are foreseen. 	<p>Applicants will have to demonstrate the contribution of the proposed operations to sustainable development, in line with the scope of each Priority Axis. When submitting proposals, they will be asked to describe how the foreseen project activities and impacts will ensure the sustainability principle. Applications will be evaluated taking into consideration climate protection and climate adaptation, or energy efficiency; operations that may have a significant negative environmental or climate impact will not be admitted. On the other hand, the Programme will support actions aimed at mitigating any negative effect on environment. In the implementation of the project activities the use of green public procurement will be encouraged, and the raising awareness of partners, beneficiaries and target groups on sustainability issues will be fostered.</p>
						5b	Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems		

2014TC16 M4TN002	Adriatic-Ionian	TN	2	sustainable region	21, 85, 86, 87	6c	Promote the sustainable valorisation and preservation of natural and cultural heritage as growth assets in the Adriatic-Ionian area	<ul style="list-style-type: none"> • Actions foreseen include: - Transnational networks for sustainable cultural/natural tourism promotion; Diversified tourism products and innovative touristic services; Sustainable tourism models focusing on low carbon emissions, low ecological footprint and 'slow food' concepts. • Actions foreseen include the development of cooperation projects on: - Transnational frameworks and platforms for hazard and risk assessment, planning methodologies, management plans, sustainability and adaptation assessments etc. - development of implementation strategies, models and testing of pilot activities on risk management and climate change adaptation in terrestrial and aquatic environments; Transnational Special Spatial Plans (e.g. on RES, on tourism, on agriculture and forestry), Maritime Spatial Planning, Multiannual Fishery Management Plans and Integrated Coastal Zone Management Plans and Procedures; early warning systems for forecasting, managing and preventing natural and manmade hazards; exchange of best practices on civil protection, floods management, risk management, integrated and sustainable management of protected areas) 	The programme aims at improving and harmonizing environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management systems across the partner's countries. In line with the principle of sustainable development, projects applications shall be evaluated using the following criteria: - positive effect on the environment, - Projects that have a potentially harmful effect on the environment will be excluded; environmental awareness consideration and compliance both within - efficiency in the use of resources (e.g. energy efficiency, renewable energy use, reduction of GHG emissions), management and recycling, reduction of PM and NO2, etc.). - development of green infrastructures; contribution to better awareness for the adaptation to climate change and risk prevention; Furthermore whether projects are directly concerned by sustainable development issues or not, they shall be invited to implement actions/take specific measures to reduce the environmental impact beneficiaries are requested to describe in their project proposals the efforts they will undertake to reduce the project's 'carbon footprint'. Finally, the SEA and the ex-ante evaluation provided inputs to ensure that the ADRION Programme respect the principle of sustainable development.
						6d	Enhance the capacity in tackling environmental vulnerability, fragmentation, and the safeguarding of ecosystem services in the Adriatic Ionian area		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis			Selected IFs	Selected IPs
CCI	Title	PT	No	Title			

2014TC16RFCB034	Interreg IT- FR (ALCOTRA)	CB	2	A better managed environment - Increase of the resilience of the territory	87	5a
2014TC16RFCB037	Interreg IT-MT	CB	3	Preserving the environment and promoting an efficient use of resources	85, 86, 87	6d
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c
2014TC16RFCB052	Interreg IT-AT	CB	3	Institutions	87	11b
2014TC16RFCB035	Interreg IT-CH	CB	2	Promoting natural and cultural heritages	21, 85, 87	6c
2014TC16RFCB036	Interreg IT-SI	CB	4	Enhancing capacity building and Cross-border governance	87	11a

17 Lithuania

17.1 Adaptation framework and priorities

Lithuania faces major climate change challenges, where the most vulnerable part of Lithuania is the Baltic Sea region. The main risks are attributed to flooding and erosion of the coastal area. Climate change will also affect other vulnerable regions and economic sectors such as agriculture, soil, forestry, ecosystems, biodiversity, landscape, water resources, energy, transport, industry and public health.

The Lithuanian climate change adaptation strategy is defined in the National Climate Change Management Strategy (2013-2050). The goal is to reduce vulnerability of the natural ecosystems and national economy sectors by implementing measures for maintaining and increasing their resilience to climate change, and ensuring favourable conditions for social life and economic activities.⁽⁸⁹⁾

The Lithuanian Partnership Agreement outlines the country's strategic objectives and investment priorities with regard to adaptation. Adaptation objectives focus on 1) Monitoring, studying and assessment of the impacts of climate within the Lithuanian territory and in separate regions; 2) Capacity building for the management of climate change-induced disasters; and 3) Protection of air quality.

Climate change adaptation is mainly tackled through EAFRD and ERDF. In the agricultural sector, adaptation is primarily addressed through risk management and afforestation measures (35 % of Lithuania's forest cover). Regarding ERDF, the main priority areas identified are water and soil management, restoration and preservation of biodiversity, Natura 2000 areas, as well as development of monitoring, identification, early warning systems, strengthening abilities to manage emergencies, improving crises communication and response. Another important theme with regard to climate change adaptation is the Baltic Sea Region within the framework of EU Strategy for the Baltic Sea Region (EUSBSR), which foresees

⁸⁹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/lithuania>

cooperation among the countries in the region and coordination activities with regard to climate change adaptation.

Regarding horizontal principles, the sustainable development is addressed in each of the Operational Programmes, However, no climate action is mentioned among horizontal policy objectives.

17.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁹⁰⁾ in Lithuania for the 2014-2020 period amounts to EUR 8.4 billion. Of this amount, EUR 2.1 billion is allocated for climate action.⁽⁹¹⁾ Out of the total ESIF support for Lithuania, 2.1 % (or EUR 177.9 million) is marked for climate change adaptation. An additional EUR 502.1 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Lithuania for ERDF, CF and EAFRD.

Table 1 Overview of Union ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	4.1	104.8	69.0	177.9
Climate change adaptation and/or climate change mitigation	-	70.9	431.2	502.1

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in CF and EAFRD through T05 as pure adaptation and T06 as supportive adaptation.⁽⁹²⁾

⁹⁰ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

⁹¹ For climate change mitigation and for climate change adaptation

⁹² These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 18.2.5 of this chapter.

Table 2 Overview of EU ERDF/CF & EAFRD with support for climate change adaptation support per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	108.9	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	-	70.9
Climate change adaptation, EAFRD	-	5.9	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	431.2

17.2.1 Climate change adaptation in ERDF and CF

Lithuania has one national ERDF, CF and ESF programme on structural assistance. Climate change adaptation is mainly addressed in the CF (EUR 104.8 million) through TO5 in PA5 'Environment protection, sustainable use of natural resources and adaptation to climate change'. Adaptation is primarily supported through IF087, IF085, IF086 and IF021. The main actions foreseen in the OP are development of early warning and information system, preservation and restoration of habitats and water management. Table 4 in the Annex provides a more detailed overview on the programme level.

17.2.2 Climate change adaptation in EAFRD

Table 3 below provides an overview of climate change adaptation support in EAFRD programme in Lithuania. The country has one National Rural Development Programme (RDP). The main actions supported are water and soil management, resilience building in ecosystems/biodiversity. Table 5 in the Annex provides more details on the content of the programme with support for climate action.

Table 3 Overview of EAFRD Union support for climate change adaptation

Union support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	5.9	-	-	-	-	63.1
Climate change adaptation and/or climate change mitigation	-	303.0	30.6	97.6	-	-

17.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to a modest EUR 63.4 million, of which EUR 10.1 million (15.9 %) is designated for climate action. This is below the average share of 17.7 %. Climate change adaptation is not directly addressed in the programme, however, the OP aims at improving data collection, control and enforcement to help determine the state of marine environment.

17.2.4 Climate change adaptation in the ESF

There is no ESF specific programme in Lithuania, but there is one multifund programme in combination with ERDF and CF, which was presented in section 2.1. ESF Union support in Lithuania amounts to EUR 1.1 billion. There is no allocation to climate action.

17.2.5 Climate change adaptation in ETC

Lithuania is part of two European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the Cross-border (CB) and Transnational (TN) programme with an allocation to adaptation, namely Interreg LV-LT, and the Baltic Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Lithuania is not available.⁽⁹³⁾

17.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Lithuanian Partnership Agreement are in line with the National Climate Change Management strategy. The identified vulnerable regions and economic sectors such as agriculture, soil, forestry, ecosystems, biodiversity, landscape and water resources are supported under the Partnership Agreement through financial allocation to EAFRD and ERDF. Furthermore, the specific focus is devoted to the Baltic Sea Region linking it to the EUSBSR.

The climate adaptation actions foreseen under the ERDF and EAFRD are also in line with both the national strategy and the Partnership Agreement. For instance, under EAFRD, climate change adaptation support will focus on afforestation and it will contribute to the national objective of at least 35 % of the Lithuanian territory forest cover. However, the EMFF does not directly support climate change adaptation and it does not address specifically the needs of the Baltic Sea region, one of the most vulnerable regions to climate change.

⁹³ The total Union support for the two programmes Lithuania is involved in amounts to EUR 318.8 million, out of which EUR 3.9 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objectives	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014LT16MAOP001	Structural Assistance	5	Environment protection, sustainable use of natural resources and adaptation to climate change	21, 85, 86, 87	5a 5i 6ii 6iii	5a1. Reduction of losses caused by climate change Not applicable 5i1. Reduction of losses caused by climate change 6ii2. Enhance the access to water supply and wastewater management services and system management efficiency 6iii1. Improve the status of local flora and fauna species, habitats and landscape	Investments for upgrade and development of warning and information systems about threats and rescue operations. Preservation and restoration of habitats. Water resource management and improvement of the status of surface water, development and renovation of the drinking water supply.	Climate change is one of the numerous strategic goals and objectives for Lithuania's sustainable development. Selection criteria will be based on climate action, e.g. the higher evaluation will be granted to projects that apply additional criteria of sustainability, including biodiversity, energy efficiency and resource efficiency.

					6iv	6iv1. Reduction the levels of particulate matter in air and the risk of ground pollution with chemical materials for health and environment		
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Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014LT06RDNP001	National Rural Development programme	M01, M02, M04, M07, M08, M10, M11, M12, M13, M15, M16, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b	2.1. 'Clear waters': To increase efficiency of water management for reduced nutrient inflows and decreased discharges of hazardous substances to the Baltic Sea and the regional waters based on enhanced capacity of public and private actors dealing with water quality issues	<ul style="list-style-type: none"> A wide set of measures reduced nutrient inflows and decreased discharges of hazardous substances. The activities concentrate on strategies, coastal spatial planning, developing and test innovative techniques and methods, management and monitoring systems, etc. Additionally climate change is also described to have an impact on the environmental state of the Baltic Sea and the regional biodiversity. For instance, eutrophication might be aggravated even more as the measures applied today will be less efficient. More extreme weather conditions in a changing climate might cause technological accidents at e.g. onshore and offshore constructions (oil platforms and refineries), resulting in spills of hazardous substances into the sea waters. The acidity of river waters might also increase. Therefore, regional strategies on climate change adaption are to be seen as a measure to decreasing eutrophication. Enhancing the capacity of public and private actors to produce renewable energy from natural resources (e.g. wind, water, solar/geothermal sources, biomass from agriculture and forest, manure and aquatic resources) available in the region as well as waste. Developing incentive policies for increasing renewable energy production; Testing innovative green solutions on producing energy from renewable sources, including pilot investments; Evaluating and testing alternative technologies for energy recovery from waste (e.g. anaerobic digestion, incineration) Improving sustainable energy networks (e.g. development and reorganisation of smart and sea grids, virtual power plants, integration of storage) Demonstrating and implementing innovative renewable energy storage technologies and distribution patterns. 	
						6g	2.2. 'Renewable energy': To increase production and use of sustainable renewable energy based on enhanced capacity in energy planning and supply		

2014TC16 RFCB027	Interreg LV-LT	CB	1	Sustainable and clean environment through cooperation	21, 85, 86, 87	6c	To increase number of visitors to the Programme area through improving and developing cultural and natural heritage objects, services and products	<ul style="list-style-type: none"> • Preservation and sustainable improvement of cultural and natural heritage sites; • Development and promotion of joint, innovative and sustainable services; • Raising of awareness 	OP sets some of the sustainability horizontal principles. The main focus area is resource-efficient development, smart conservation, efficient use and management of natural resources, including also promotion and contribution to climate change mitigation and adaptation. All projects will be asked to demonstrate their contributions to the principle of sustainability: either in economic, social, ecological or cultural dimensions. Project selection criteria concerning sustainable development will be developed in the programme manual.
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18 Luxembourg

18.1 Adaptation framework and priorities

In 2011, Luxembourg's Council of Ministers adopted a National Adaptation Strategy on Climate Change (NAS), which prioritizes biodiversity, water, agriculture and forestry and provides a framework for adaptation to the impacts of climate change in Luxembourg. The 2011 strategy will be revised and updated, and should recommend concrete measures, mostly in those areas that are the most impacted by higher and erratic rainfalls, as well as by river flow regimes: drinking water, agriculture, viticulture, energy, navigation, health and other domains. This revision is planned for 2016.

The Partnership Agreement foresees climate change adaptation in the agricultural sector, and thus the EAFRD. In order to strengthen its resilience and to stay profitable, actions in the agriculture sector aim at protection of the soils against erosion due to heavy rainfall and its livestock and crops against extreme heat. Overall, no climate change adaptation is intended under TO5, rather it is in TO6 instead.

The horizontal principle on sustainable development in the Partnership Agreement lists in general those, in the preparation of the programmes, all included measures are in line with European environmental legislation. For each of the ESI funds, there is a focus on sustainability. In the execution phase, environmental impact is said to be taken into account during the selection, follow-up and monitoring of projects. Additionally, a mechanism to ensure the implementation of the 'polluter pays' principle has been established

18.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽⁹⁴⁾ in Luxembourg for the 2014-2020 period amounts to EUR 140.1 million. Of this amount, EUR 75.1 million is allocated for

⁹⁴ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

climate action.⁽⁹⁵⁾ Out of the total ESIF Union support for Luxembourg, 2 % (or EUR 2.7 million) is marked for climate change adaptation. An additional EUR 62.4 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Luxembourg for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽⁹⁶⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	2.7	2.7
Climate change adaptation and/or climate change mitigation	0.4	-	62.1	62.4

Table 2 presents the thematic concentration of the adaptation support. No TO with direct climate change adaptation content is identified. However, supportive adaptation is to the greatest seen in TO6 under the EAFRD, and to a small degree in TO1 under ERDF.⁽⁹⁷⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO6
Climate change adaptation, ERDF/CF	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	0.4	-
Climate change adaptation, EAFRD	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	62.1

18.2.1 Climate change adaptation in ERDF

Luxembourg has one ERDF programme, which does not include any climate adaptation content. Supportive action is found under IF 65, TO1, which focuses on research, development and innovation in areas of the low carbon economy and resilience to climate change. However, the content of the corresponding Specific Objective focuses on climate change mitigation.

⁹⁵ For climate change mitigation and for climate change adaptation

⁹⁶ CF is not aimed at Luxembourg.

⁹⁷ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 19.2.5 of this chapter.

18.2.2 Climate change adaptation in EAFRD

Luxembourg has programmed one national rural development programme (RDP). Table 3 below indicates the climate change adaptation allocations in that RDP.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	2.7
Climate change adaptation and/or climate change mitigation	-	20.7	20.7	20.7	-	-

As can be seen, the bulk of climate change adaptation action in the Luxembourg RDPs is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by a small allocation to local rural development (UP6b).

Most climate change adaptation can be found in measures M10, M13, and M19. The main focus of actions under the key climate measure M10 lies on the implementation of environmentally friendly practices with improved water and fertiliser management as the primary objective. The main theme of actions under M13 is to address environmental problems that arise from intense farming practices. These two measures account for the greatest support for climate adaptation by far. The only measure with a pure climate adaptation focus is M19, where specific actions are determined by local action groups (LAGs).

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

18.2.3 Climate change adaptation in EMFF

Luxembourg is the only Member State that has not programmed an EMFF OP.

18.2.4 Climate change adaptation in ESF

Luxembourg has one ESF programme. Total ESF Union support amounts to EUR 20.1 million, of which 2 million (10 %) is allocated to climate action. This is above the EU average of 1.4 %. The ESF programme does not directly target climate change adaptation, due to the nature of the programmes. However, the actions under the relevant Specific Objectives indirectly support climate adaptation by supporting promotion of green jobs.

18.2.5 Climate change adaptation in ETC

Luxembourg is part of one European Territorial Cooperation (ETC) programme with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the Transnational (TN) programme with an allocation to adaptation, namely North West Europe. Due to the nature of ETC

programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Luxembourg is not available.⁽⁹⁸⁾

18.3 Adaptation framework compared with actual ESIF adaptation actions

In light of the current revision of the NAS, the alignment of neither the ESIF programmes nor the Partnership Agreement can be assessed. Based on the expected recommendations of the outcome of the revision, the adaptation content in the Partnership Agreement does not address the areas of energy, navigation and health.

Overall, the adaptation content in the individual ESIF programmes is limited to the environment and agriculture, and is thus not completely aligned with areas expected to be addressed by the revised NAS. The alignment between the Partnership Agreement and the ESIF programmes is strong, and all indicated areas are addressed. For example, the EAFRD RDP gives attention to reinforcing ecosystems and resilience to climate change, which was also indicated in the Partnership Agreement.

⁹⁸ The total Union support for the programme Luxembourg is involved in amounts to EUR 396.1 million, out of which EUR 16.5 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

The ERDF programme does not include any action under IF 87 or 100.

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014LU06RDNP001	National	M10, M11, M12, M13, M19

Table 6 shows all ETC CPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFTN006	North West Europe	TN	2	Low carbon	65, 87	4e	SO2. To facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions in NWE	<ul style="list-style-type: none"> Implementation of emerging or existing low carbon, energy or climate protection strategies (localised energy generation and supply, distribution and efficiency management, or other means of reducing carbon emissions at a territorial level and their delivery): new financial schemes, new governance arrangements, technologies, and innovative approaches. Analysis, testing, demonstration and implementation of solutions that integrate mitigation and adaptation measures (reduction in GHG emissions and reduction in risk) e.g. innovative approaches such as Water Sensitive Urban Design (WSUD), optimised water distribution and CO2 neutral maintenance of adaptation measures. Implementing and adopting zero/low carbon technologies in enterprises and industrial production processes; particularly those relating to energy generation and/or energy reductions/efficiency; Delivering and roll out of emerging energy technologies; Implementing of joint zero/low carbon technology demonstration schemes and facilities, including fab labs and R&D/testing facilities; Ensuring that new energy solutions are feasible (for example, finding ways for bioenergy production to not negatively impact on agricultural or water resources). Pilot or demonstration actions to bring in-reach technologies or emerging solutions for low carbon transportation (e.g. new forms of propulsion systems) closer to public use; Testing and demonstrating low carbon transport solutions in real life conditions, such as low carbon or zero-carbon rolling stock, vehicles using alternative fuels, increasing levels of e-mobility; Developing, implementing and evaluating efficient traffic management solutions, such as seamless transport, smart mobility, IT systems, last mile concepts or services, journey planning tools, where these lead to real reductions of GHG emissions 	According to section 8, climate change is covered in several PAs. PA2 focuses on low carbon strategies, including climate change mitigation and adaptation measures, and sustainable and low-carbon transport, reducing GHG emissions. Environmental needs and challenges are also addressed in PA3, which improves environmental protection and resource/material efficiency, reduces air pollution in the NWE area and reduces and reuses waste. Additionally, innovation in the NWE Programme strategy also includes eco-innovation: innovation that contributes to sustainable development of NWE. Project proposals are only eligible if the project objectives and activities do not conflict with the principles of sustainable development. However, no reference is made to climate-related selection criteria in section 8.
						4f	SO3. To facilitate the uptake of low carbon technologies, products, processes and services in sectors with high energy saving potential, to reduce GHG emissions in NWE		
						7c	SO4. To facilitate the implementation of Transnational low-carbon solutions in transport systems to reduce GHG emissions in NWE		

19 Latvia

19.1 Adaptation framework and priorities

In Latvia, climate change has consequences for various areas of economic activity, social life and welfare. The main risks are attributed to flooding, erosion of the coastal area, storms, droughts and hot weather. The projected impact will either directly or indirectly affect agriculture, forestry, water resources and fisheries, energy, transport infrastructure, construction and building sector, biodiversity, health, social impacts, economy and private sector.

Currently, the country is developing a National Adaptation Strategy (NAS) including 'Identification of Scientific Data, and Measures for Adapting to Changing Climate, Impact and Cost Evaluation'.⁽⁹⁹⁾ Furthermore, the climate change adaptation policy is practically incorporated into all sectorial policies as well as at all levels (e.g. in Environmental Policy, Health Programme for Latvia 2014-2020, Coastal Spatial Development Programme 2014-2020). With regard to flood risk and management for Latvia, the impact assessment for Daugava river basin is almost complete (EU Directive 2007/60/EC).

The Latvian Partnership Agreement outlines the country's strategic objectives and investment priorities with regard to adaptation. Adaptation objectives focus mainly on implementation measures to reduce risks for flooding and coastal erosion.

Climate change adaptation is mainly tackled through ERDF and EAFRD. The expected results under the ERDF will be: reduced population affected by flooding and reduced flood risks in protected hydro areas. In the EAFRD, it is not clear from the Partnership Agreement which adaptation actions will be supported.

Regarding horizontal principles, reduction of climate and environmental risks has been identified as criteria to assess the implementation of sustainable development under the Partnership Agreement. One of the mandatory selection criteria will be

⁹⁹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/countries/latvia>

positive long-term effect on implementation of horizontal policy, where the ‘polluter pays’ principle and green procurement will be taken into account.

19.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁰⁰⁾ in Latvia for the 2014-2020 period amounts to EUR 5.6 billion. Of this amount, EUR 1.3 billion is allocated for climate action.⁽¹⁰¹⁾ Out of the total ESIF Union support for Latvia, 1.6 % (or EUR 91.4 million) is marked for climate change adaptation. An additional EUR 476.9 million is allocated for actions that could contribute to ‘climate change adaptation and/or climate change mitigation’.

Table 1 below shows the foreseen support for climate change adaptation in Latvia for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	65.8	-	25.6	91.4
Climate change adaptation and/or climate change mitigation	13.1	50.7	413.2	476.9

Table 2 presents the thematic concentration of adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in CF through TO6 as supportive adaptation. In EAFRD, adaptation support is expected through TO5 as pure adaptation and TO6 as supportive adaptation.⁽¹⁰²⁾

¹⁰⁰ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁰¹ For climate change mitigation and for climate change adaptation

¹⁰² These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 20.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO3	TO5	TO6
Climate change adaptation, ERDF/CF	-	65.8	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	2.4	10.7	50.7
Climate change adaptation, EAFRD	-	4.1	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	413.2

19.2.1 Climate change adaptation in ERDF and CF

Latvia has one national 'Growth and Employment' ERDF/CF/ESF/YEI programme and allocates support to climate change adaptation. Table 4 in the Annex provides a more detailed overview of the programme. There, adaptation is addressed through TO5 in PA5 'Environmental protection and resource efficiency'. Adaptation is not primarily focus of the programme, thus the only actions addressed are reduction of flooding risks in urban and rural areas and coastal erosion.

19.2.2 Climate change adaptation in EAFRD

Latvia has one national RDP and EUR 25.6 million is allocated to adaptation. Table 3 below indicates the adaptation allocations by Union Priorities in the National RDP.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	4.1	-	-	-	-	21.5
Climate change adaptation and/or climate change mitigation	-	137.7	137.7	137.7	-	-

As can be seen, the National RDP allocates financial support to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and risk prevention and management (UP3b).

Most of the support for climate change adaptation can be found in measures M13, M11, M10 and M19, respectively. The main focus of actions under the key climate measure M13 lies on compensation payments for agricultural land with different fertility rates. However, no link to climate change adaptation is provided in the measure description. M11 supports organic farming and M10 addresses the implementation of environmentally friendly practices and an improvement of biodiversity.

Table 5 in the Annex provides more detail description of the National RDP.

19.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 139.9 million, of which EUR 15.4 million (11 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need for local initiatives in coastal areas to ensure increase of availability and use of environmental resources and to reduce consequences of climate change (e.g. to limit coastal erosion).

19.2.4 Climate change adaptation in ESF

Latvia has no pure ESF programme, only one ERDF/CF/ESF/YEI that is presented in Section 20.2.1.

19.2.5 Climate change adaptation in ETC

Latvia is part of two European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the one Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg LV-LT, and Baltic Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Latvia is not available.⁽¹⁰³⁾

19.3 Adaptation framework compared with actual ESIF adaptation actions

The NAS is currently under development, therefore it is difficult to make a comparison with the foreseen climate change adaptation actions under the Latvian Partnership Agreement.

The Partnership Agreement objectives focus mainly on implementation measures to reduce risks for flooding and coastal erosion. The expected results under ERDF in the Partnership Agreement are in line with the actions foreseen under the Growth and Employment Operational Programme for Latvia. More specifically, the programme addresses reduction of flooding risks in urban and rural areas and coastal erosion. However, with regard to EAFRD, it is not clear which adaptation actions will be supported under the National RDP. Thus, the RDP could improve the description of actions foreseen to support climate change adaptation.

¹⁰³ The total Union support for the 2 programmes Latvia is involved in amounts to EUR 318.8 million, out of which EUR 3.9 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014LV16MAOP001	Growth and Employment	5	Environmental protection and resource efficiency	21, 85, 86, 87	5a	5.1.1. Prevent flood and coastal erosion risk hazard in urban areas	Erosion reduction measures; runoff and rain water drainage infrastructure; reconstruction of hydraulic structures. Target groups are territories under flood risks and coastal erosion. Habitat and species protection recovery measures; reconstruction and new construction of infrastructure according to the nature conservation plans and species and habitat protection plans.	OP addresses the sustainable development principle. Green procurement rules will be applied for specific products and services. OP foresees that five years after implementation, information, including also about GHG emissions from beneficiaries will be collected. For public infrastructure projects also 'polluter pays' principle will be applied.
						5.1.2. Reduce flooding risks in rural areas		
					6ii	5.3.1. Develop and improve the quality of water supply and sewerage systems and ensure access to such systems		
						6iii		
					5.4.2. Ensure environmental monitoring control system and timely environmental risk prevention, as well as public participation in environmental management			

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014LV06RDNP001	National RDP	M01, M02, M05, M08, M10, M11, M12, M13, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b	2.1. 'Clear waters': To increase efficiency of water management for reduced nutrient inflows and decreased discharges of hazardous substances to the Baltic Sea and the regional waters based on enhanced capacity of public and private actors dealing with water quality issues	<ul style="list-style-type: none"> A wide set of measures reduced nutrient inflows and decreased discharges of hazardous substances. The activities concentrate on strategies, coastal spatial planning, developing and test innovative techniques and methods, management and monitoring systems, etc. Additionally climate change is also described to have an impact on the environmental state of the Baltic Sea and the regional biodiversity. For instance, eutrophication might be aggravated even more as the measures applied today will be less efficient. More extreme weather conditions in a changing climate might cause technological accidents at e.g. onshore and offshore constructions (oil platforms and refineries), resulting 	-

						6g	<p>2.2. 'Renewable energy': To increase production and use of sustainable renewable energy based on enhanced capacity in energy planning and supply</p>	<p>in spills of hazardous substances into the sea waters. The acidity of river waters might also increase. Therefore, regional strategies on climate change adaption are to be seen as a measure to decreasing eutrophication.</p> <ul style="list-style-type: none"> • Enhancing the capacity of public and private actors to produce renewable energy from natural resources (e.g. wind, water, solar/geothermal sources, biomass from agriculture and forest, manure and aquatic resources) available in the region as well as waste. • Developing incentive policies for increasing renewable energy production; • Testing innovative green solutions on producing energy from renewable sources, including pilot investments; • Evaluating and testing alternative technologies for energy recovery from waste (e.g. anaerobic digestion, incineration) • Improving sustainable energy networks (e.g. development and reorganisation of smart and sea grids, virtual power plants, integration of storage) • Demonstrating and implementing innovative renewable energy storage technologies and distribution patterns. 	
2014TC16 RFCB027	Interreg LV-LT	CB	1	Sustainable and clean environment through cooperation	21, 85, 86, 87	6c	<p>To increase number of visitors to the Programme area through improving and developing cultural and natural heritage objects, services and products</p>	<ul style="list-style-type: none"> • Preservation and sustainable improvement of cultural and natural heritage sites; • Development and promotion of joint, innovative and sustainable services; • Raising of awareness 	<p>OP sets some of the sustainability horizontal principles. The main focus area is resource-efficient development, smart conservation, efficient use and management of natural resources, including also promotion and contribution to climate change mitigation and adaptation. All projects will be asked to demonstrate their contributions to the principle of sustainability: either in economic, social, ecological or cultural dimensions. Project selection criteria concerning sustainable development will be developed in the programme manual.</p>

20 Malta

20.1 Adaptation framework and priorities

The National Climate Change Adaptation Strategy (NAS) was published and adopted by the Government of Malta in 2012. It seeks to identify recommendations in various sectors that are vulnerable to climate change such as water, agriculture, infrastructure, building, human health and tourism. It addresses financial impacts as well as sustainability issues.

The NAS identifies the principal strategic climate impacts likely to affect Malta. Some of the actions delineate measures to be taken on the designs of buildings, which should be improved. The NAS also highlights specific issues for improvements, such as that Malta cannot continue to rely exclusively on active cooling to counter the effects of poor building design. On water, which plays an integral part on climate adaption, the NAS highlights the fact that despite the limited resources of the Islands and the importance of water for a healthy future, the prevailing attitude amongst the population in general and target stakeholders specifically, have largely not resulted in a culture which perceives water as a valuable and precious, finite resource. The NAS encourages the commercial and industrial sectors to build reservoirs and other rainwater catchment measures to re-use captured water and to recycle grey water for non-potable purposes, as well as introduce efficient water use technologies by introducing incentive schemes.

Malta has adopted the Climate Action Act, 2015 (CAP 543) to streamline Malta's commitments on climate change on both main fronts of climate action, namely mitigation and adaption in a legally binding way. This Act aims to instil ownership across the board to fine-tune effective climate action and governance. Specifically, on adaptation, the Climate Action Act, 2015 (CAP 543) dictates the process to conduct periodic reviews and update the National Adaptation Strategy. It also

foresees including information on climate change’s actual and projected impacts.⁽¹⁰⁴⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through EAFRD, with a focus on improved soil management, improved sustainable water management, and improved presentation and conservation of genetic resources. Climate change adaptation is also addressed in CF through infrastructure expenditures. Finally, ESF has a focus on generating green jobs, and capacity building for stakeholders on climate change.

Sustainable development is outlined a horizontal policy objective in the Partnership Agreement through air quality, sustainable water management, climate change mitigation and adaptation. A holistic approach in addressing climate change during the 2014-2020 programming period, both in terms of infrastructural requirements to ensure that infrastructure is climate proofed, as well as other, softer measures including studies, simulation models, campaigns and the promulgation of new practices in agriculture and indigenous research, will be adopted.

20.1.1 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁰⁵⁾ in Malta for the 2014-2020 period amounts to EUR 827.9 million. Of this amount, EUR 174.4 million is allocated for climate action.⁽¹⁰⁶⁾ Out of the total ESIF Union support for Malta, 1.4 % (or EUR 11.9 million) is marked for climate change adaptation. An additional EUR 68.8 million is allocated for actions that could contribute to 'climate change adaptation and/or climate change mitigation'.

Table 1 below shows the foreseen support for climate change adaptation in Malta for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	-	-	11.9	11.9
Climate change adaptation and/or climate change mitigation	6.0	23.5	39.3	68.8

¹⁰⁴ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/malta>.

¹⁰⁵ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁰⁶ For climate change mitigation and for climate change adaptation

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in EAFRD through TO4 as pure adaptation and TO6 as supportive adaptation.⁽¹⁰⁷⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	-	29.5
Climate change adaptation, EAFRD	8.7	0.8	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	39.3

20.1.2 Climate change adaptation in ERDF and CF

Malta has two ERDF programmes, neither of which contributes directly to climate adaptation. One programme (*Fostering a competitive and sustainable economy to meet our challenges*) contributes in Intervention Fields that can support both climate change adaptation and/or climate change mitigation. IF021, IF085 and IF086 are selected. For adaptation purposes, the R&I strategy aims at identifying capacity-building for climate change adaptation to be able to develop innovative infrastructure and observe and monitor the impact of climate change and to find ways to adapt to it. The strategy also emphasises the need for rural development, urban regeneration by ameliorating the urban environment, and actions to tackle and adapt to biodiversity loss and environmental protection of both natural and cultural heritage that could be negatively affected by climate change.

20.1.3 Climate change adaptation in EAFRD

Malta has programmed one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Maltese EAFRD programme.

¹⁰⁷ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 21.2.5 of this chapter.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	0.8	-	-	-	8.7	2.4
Climate change adaptation and/or climate change mitigation	-	13.1	13.1	13.1	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address water use efficiency (UP5a) and local rural development (UP6b).

Most climate change adaptation can be found in measures M04, M16, M19, and M01. The main focus of actions under the key climate measure M04 lies in the investment in physical assets to support farm investment, including non-productive elements. Measure M16 has a focus on co-operation (formation of partnerships). Involved sectors are agriculture, forestry, food, energy, and water. The main theme of actions under M19 is support for LEADER⁽¹⁰⁸⁾ local development. Actions under measure M01 focus on knowledge transfer and information.

Furthermore, the bulk of climate change adaptation action in the Malta EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

20.1.4 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 22.6 million, of which EUR 4.5 million (19.9 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP refers to the NAS in terms of identifying localised impacts.

20.1.5 Climate change adaptation in ESF

Malta has one ESF programme. Total ESF Union support amounts to EUR 99.5 million, there is no expenditure allocated to climate action. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, the support to research on energy, climate change and environmental related issues can be related not only to mitigation but also adaptation. Otherwise, no further reference is made to climate adaptation measures.

¹⁰⁸ The LEADER programme supports development of rural economies through a constructive interaction with the municipal and regional authorities and local actors.

20.1.6 Climate change adaptation in ETC

Malta is part of one European Territorial Cooperation (ETC) programme with allocation to adaptation. Table 6 in the annex lists the programme and presents detailed information for the Cross-border (CB) programme with an allocation to adaptation, namely Interreg IT-MT. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Malta is not available.⁽¹⁰⁹⁾

20.2 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Maltese Partnership Agreement are mostly in line with the NAS. However, where the NAS has a strong focus on the preservation of water, this aspect is only dealt with directly in the Partnership Agreement through EAFRD.

When looking at the individual ESIF programmes, however, the ERDF/CF programme does cover water preservation through investments and innovation as well, but not very explicitly. Where the Partnership Agreement mentions green job opportunities, the ESF programme itself does not mention this very clearly.

The Maltese Partnership Agreement recognises the main development needs and growth potential of the Maltese islands, particularly in terms of the environment, especially waste and water, climate change and energy requirements. It also outlines the importance of investing in human capital through focusing on education and the labour market.

¹⁰⁹ The total Union support for the one programme Malta is involved in amounts to EUR 44.0 million, out of which EUR 5.1 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

Table 4 is not relevant, no OPs available that have selected IF087 or IF100

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014MT06RDNP001	National Rural Development Programme	M01, M02, M04, M08, M10, M11, M13, M16, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB037	Interreg IT-MT	CB	3	Preserving the environment and promoting an efficient use of resources	85, 86, 87	5b	<ul style="list-style-type: none"> Pilot project for climate change mitigation and adaptation (with a focus on hydrogeological risk and coastal erosion and on protection of Natura 2000 sites network) - Creation of small scale infrastructures (including green and blue infrastructures) to monitor, prevent and adapt to marine hazard and to study and observe marine and weather conditions of the area; installation of ICT based monitoring systems for risks related to natural and anthropic events; development of shared management systems for sea-linked catastrophic events to increase resilience capacity of the area. Initiatives aiming at the recovery of terrestrial habitats with high international value and at improving ecosystems status linked to Natura 2000 sites; Initiatives reducing the impacts of invasive species on biodiversity; Monitoring and control actions of invasive species, of seabed and of ecosystems structure and functioning; Joint initiatives of awareness raising for a more sustainable use of natural resources (including development of environmental information centres) Initiatives sustaining the development of infrastructures and of observation and access points (also through ICT tools) on critical natural features. 	<p>The managing authority in cooperation with the environmental authorities and with the involvement of experts (also in the field of climate change) will develop specific selection criteria for operations taking into account the contribution of projects towards a sustainable development. The monitoring committee will also promote the use of tele-conferences for meetings and the use of green public procurement tools. The template of the application form for operations to be financed will include a specific section highlighting the consideration and contribution towards sustainable development covering aspects such as: - contribution of the operation to face the negative effects of climate change - contribution of the operation in providing useful tools for risks prevention - contribution towards an efficient use of resources (including the reduction of GHG emissions) implementation of green infrastructures - promotion of traineeships, training and employment opportunities contributing to the sustainable development of the area.</p>	
						6d			Halting the loss of land and sea biodiversity by maintaining and restoring ecosystems and protected areas.

21 The Netherlands

21.1 Adaptation framework and priorities

The main challenges for the Netherlands are flooding and freshwater supply.

The development of adaptation policies follows two parallel, interacting tracks: 1) the formulation of a new comprehensive and integrated National Adaptation Strategy (NAS), and 2) the implementation of the Delta Programme, which re-evaluates water management in the light of long-term sustainable development and climate change. Both the development of the NAS and the Delta Programme are nationwide programmes. This implies a leading role of the national government, involving provinces, municipalities and regional water boards and seeking input from social organizations and the business community.

In 2009 the Dutch provinces signed an agreement with the national government to mainstream climate adaptation into spatial planning. Today most provinces have written climate adaptation action programmes. Priorities are 'no regret' options and mainstreaming climate adaptation into water management, spatial planning, nature policy, agriculture and economic policy. For spatial planning, a specific engagement programme has been set up to stimulate regional and local policy makers, institutes and businesses to create climate proof and water resilient cities from the year 2020. Applicants can receive funds to implement this ambition by joining the programme and can sign a letter of intent to indicate they are willing to adapt to climate change. The engagement programme focusses on capacity-building and mainstreaming spatial adaptation.

Next to these programmes, specific sector (infrastructure, nature, health etc.) adaptation measures are in the process of being created or are already being implemented.⁽¹¹⁰⁾

¹¹⁰ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/netherlands>.

Looking at the Partnership Agreement, adaptation is mostly addressed through EAFRD. Important actions are to increase the resilience of the natural environment by recovering, retaining and improving biodiversity in Natura 2000 areas, nature areas, and agricultural land with a high nature value, and to promote water use efficiency and flood risk mitigation by investing in rainwater buffers and weirs, water management, conserving drainage-systems, and wet buffer zones in rural areas.

Adaptation objectives aim for the recovery of biodiversity and promotion of efficient water use. Results are expected on improvement of biodiversity in agriculture and nature areas, especially in Natura 2000 areas. Investments are expected to be made in rainwater buffers and weirs, water management, conserving drainage systems and wet buffer zones.

The Netherlands strives to combine economic growth with the improvement of the environment. There are many laws and regulations on the topics of sustainability, protection of biodiversity, environment, and climate change. Most of these acts and regulations build on the principle that the ‘polluter pays’, i.e. if there is any form of pollution, the polluter is the one to take preventive measures (or to compensate). For each of the ESI Funds there is a focus on sustainability. ‘Sustainability’ is one of the five selection criteria for project initiatives in the ERDF programme. The ESF programme has only a minimal focus on sustainability, but pays strong attention to the creation of ‘green jobs’, where education on improved energy savings and the protection of the environment are main points.

21.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹¹¹⁾ in the Netherlands for the 2014-2020 period amounts to EUR 1.7 billion. Of this amount, EUR 522.5 million is allocated for climate action.⁽¹¹²⁾ Out of the total ESIF Union support for the Netherlands, 1.3 % (or EUR 21.9 million) is marked for climate change adaptation. An additional EUR 408.2 million is allocated for actions that could contribute to ‘*climate change adaptation and/or climate change mitigation*’.

Table 1 below shows the foreseen support for climate change adaptation in the Netherlands for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽¹¹³⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	21.9	21.9
Climate change adaptation and/or climate change mitigation	50.3	-	357.9	408.2

¹¹¹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹¹² For climate change mitigation and for climate change adaptation

¹¹³ CF is not aimed at the Netherlands.

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in EAFRD through TO5 as pure adaptation and TO6 as supportive adaptation.⁽¹¹⁴⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	50.3	-	-
Climate change adaptation, EAFRD	-	5.9	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	357.9

21.2.1 Climate change adaptation in ERDF

The Netherlands has four ERDF programmes, of which none contributes directly to climate adaptation. Three programmes contribute on Intervention Fields that can support both climate change adaptation and/or climate change mitigation. Only IF065 is selected. The OPs do not mention any adaptation issues directly, but instead refer to the national Delta Programme for Flood Risk Protection and Freshwater Supply.

21.2.2 Climate change adaptation in EAFRD

The Netherlands has programmed one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Dutch EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	5.9	-	-	-	-	16.0
Climate change adaptation and/or climate change mitigation	-	119.3	119.3	119.3	-	-

¹¹⁴ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 22.2.5 of this chapter.

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b) and farm risk prevention (UP3b). Most climate change adaptation can be found in measures M10, M04, and M19, respectively.

The main focus of actions under the key climate measure M10 is on the financial support for the national programme subsidising nature and landscape management by farmers. According to the new policy that comes into effect on 1 January 2016, support will only be given to collectives of farmers instead of individuals. A lot of climate change adaptation can also be found in measures on Investments in physical asset, M04. Actions under this measure generally aim on investments in agricultural holdings, infrastructure and programmatic approaches to help farmers make a transition towards agricultural production with less adverse impacts on nature, biodiversity and landscape. The main theme of actions under M19 is financial support to LEADER projects that implement community-led local development strategies and have innovation, environment and climate change as focus.

Furthermore, the bulk of climate change adaptation action in the Netherlands' EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

21.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 101.5 million, of which EUR 20.8 million (20.5 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but mostly indirectly. With regard to adaptation, the OP identifies the need to reduce the environmental impact of aquaculture through innovations in production technologies and certification. The identified needs regard (nano) plastics, collection of marine litter and underwater noise.

21.2.4 Climate change adaptation in ESF

The Netherlands has one ESF programme. Total ESF Union support amounts to EUR 487 billion, of which 0.45 million (0.1 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programme does not address adaptation directly. Climate action is seen as a possible side-effect of measures to stimulate participation in the labour market.

21.2.5 Climate change adaptation in ETC

The Netherlands is part of four European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg DE-CZ, Interreg DE-NL and North Sea. Due to the nature of ETC

programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for The Netherlands is not available.¹¹⁵⁾

21.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Dutch Partnership Agreement are mostly in line with the NAS and the implementation of the Delta Programme. However, it seems that the NAS and the Delta Programme go a bit further: The adaptation in the Partnership Agreement mainly comes from RDPs. Following the logic of the NAS, however, there should be more concrete actions in, for example, ERDF as well (related to spatial adaptation).

The Partnership Agreement has a strong focus on strengthening cooperative innovation between SMEs, knowledge institutions and government agencies at the regional level to increase competitiveness, jobs, and sustainability. Furthermore, for each fund there is a clear strategy and focus on the TO's.

Looking at the financial allocations for adaptation throughout the funds (see table 1), the PA describes concrete adaptation results for EAFRD. Within EAFRD, the focus is on the sustainable development of rural areas. Main themes are biodiversity, sustainable water management, and sustainable livestock production with a particular focus on reduced nitrate and phosphate emissions, climate change, and animal welfare. The EMFF programme concentrates on sustainability through innovation. Looking at the Intervention fields used in the ERDF programmes, there are potential adaptation-related actions. The PA However, does not specify this.

¹¹⁵ The total Union support for the four programmes the Netherlands is involved in amounts to EUR 1.0 billion, out of which EUR 78.6 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

Table 4 is not relevant, no OPs available that have selected IF087 or IF100

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014NL06RDNP001	National	M04, M10, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB038	Interreg FR-BE-NL-UK (Two seas)	CB	3	Adaptation to climate change	87	5a	3.1. Improve the ecosystem-based capacity of 2 Seas stakeholders to climate change and its associated water management-related effects.	<ul style="list-style-type: none"> Design of strategies to optimize coastal zones integrated management and take account of climate change in economic development areas; Joint measures (e.g. infrastructure planning tools) integrated tools and technical solutions (e.g. soil management, coastal defence lines or concepts (e.g. managed realignment)) aiming at protecting built-up areas (e.g. urban areas) and coast lines against erosion/flooding through the promotion and implementation of nature and ecosystem-based solutions; Measures jointly dealing with loss of biodiversity and climate change; Set-up of a better coordination for prevention of floods (water management, flood risk techniques, awareness-raising on flood) Investments for the prevention and protection against floods 	According to section 8 of the CP, the sustainable development principle will be taken into consideration in the set of selection criteria. No reference is made to climate change.
2014TC16 RFCB023	Interreg DE-NL	CB	2	Socio-cultural and territorial cohesion in the programme area	87	11b	11b1. Reducing the barrier-effect of borders for citizens and institutions (This SO is not climate-relevant, but it relates to the climate change-related actions that will be supported under this IP, see below).	<ul style="list-style-type: none"> This axis explicitly foresees under the main theme no.2 'Nature, landscape and environment' a support of climate change adaptation-relevant actions. These are projects on climate risk assessment, on risk prevention and risk management. The support to these projects is also registered under code 087 'Adaptation to climate change measures and prevention and management of climate-related risks e.g. erosion, fires, flooding, storms and drought, including awareness raising, civil protection and disaster management systems and infrastructures.' 	The CP provides support to operations in the fields of environmental protection and biodiversity preservation, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention / management. The CP-description clearly shows where the support for sustainable development and climate change mitigation and adaptation will occur under the two thematic Priority Axes. Furthermore, the CP also defines specific selection criteria which

									ensure that projects with an adverse environmental impact are not supported.
2014TC16 RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	Demonstrate new and/or improved methods for improving the climate resilience of target sites	<ul style="list-style-type: none"> Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the programme will provide opportunities for: <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	The programme describes a comprehensive approach to pursuing sustainable development. It is stated that during project development projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.
						6d	Develop new methods for the long-term sustainable management of North Sea ecosystems		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN006	North West Europe	TN	2	Low carbon (to facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions)	65, 87	4e, 4f, 7c

22 Poland

22.1 Adaptation framework and priorities

Poland adopted a National Adaptation Strategy (NAS) in 2013. The NAS indicates the objectives and directions of adaptation action in the most vulnerable sectors and areas in the period up to 2020: water management, agriculture, forestry, biodiversity and protected areas, health, energy, building industry, transport, mountain areas, coastal zone, spatial development and developed urban areas.⁽¹¹⁶⁾ The vulnerability of these sectors was identified on the basis of climate change scenarios developed for this strategy. At a regional and local level, the communes and municipal centres for crisis management are on the front line of defence against the negative impacts of climate change. They oversee emergency services, respond to floods and coordinate environmental protection actions. Policy instruments for implementing adaptation are to a very large extent still under development. Nevertheless, urban areas, agriculture, water and coastal areas have been identified as priority areas for implementing adaptation.

The Polish Partnership Agreement identifies the need for climate adaptation through actions on TO5 and TO6. Under TO5, the need for water management and flood prevention identified. The analysis under TO6 refers to incomplete or inefficient use of potentials and presents the needs in the field of forest management, land use, management of coastal zones, green infrastructure, improving the quality of the urban environment, including air quality. The indicated adaptation actions in the Partnership Agreement focus on a reduction of the sensitivity of areas and sectors vulnerable to climate change and the development of risk management systems (TO5). Furthermore, both a reduction of the pressure on the environment and a more efficient use of resources are indicated (TO6). The implementation of TO5 is foreseen through CF, ERDF and EAFRD. TO6 will be supported by the same funds with the addition of the EMFF.

¹¹⁶ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/poland>.

The horizontal principle of sustainable development foresees that the guiding principles of selection criteria take climate adaptation into account, therewith also mainstreaming adaptation into other areas not actively addressed, such as spatial planning and transport. At the level of both the programmes and projects, this should primarily consist of, among others:

- › seeking consensus between the strive to maximise the economic effect of the project and enhancing the efficient use of resources (e.g. energy, water and mineral resources), and reducing negative environmental impact;
- › aiming at closing raw material circulation, and maximisation of water and energy savings;
- › reducing pollution released into the environment, including in particular air and water, as early as at the stage of designing technological solutions;
- › spatial planning and infrastructural investments taking into account the need to adapt to climate change, environmental protection and resource savings, which in turn results in restricting urban sprawl.

The practical and measurable method of introducing the sustainable development principle in each operational programme consists of defining the minimum requirements, or possibly introducing the appropriate bonuses in the project selection criteria for all undertakings, as well as introducing environmental management systems. Examples of criteria related to sustainable development may be assigned to four main categories: rational resource management, reducing pressure on the environment, incorporation of environmental effects in management and raising the environmental awareness of society. These criteria should also apply to selection of non-environmental projects.

22.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹¹⁷⁾ in Poland for the 2014-2020 period amounts to EUR 86 billion. Of this amount, EUR 15.3 billion is allocated for climate action.⁽¹¹⁸⁾ Out of the total ESIF Union support for Poland, 1 % (or EUR 1.5 billion) is marked for climate change adaptation. An additional EUR 3.4 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Poland for ERDF/CF and EAFRD.

¹¹⁷ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹¹⁸ For climate change mitigation and for climate change adaptation

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	338.2	582.7	547.9	1,468.9
Climate change adaptation and/or climate change mitigation	551.5	173.0	2,647.3	3,371.8

Table 2 presents the thematic concentration of the adaptation support. The largest direct adaptation support is foreseen in ERDF as well as EAFRD through TO5. Supportive climate adaptation in the EAFRD is found through TO6, while the ERDF/CF also contains additional action under TO1 and TO6.⁽¹¹⁹⁾

Table 2 Overview of ERDF/CF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO5	TO6	TO9
Climate change adaptation, ERDF/CF	-	908.6	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	444.5	95.2	181.8	2.9
Climate change adaptation, EAFRD	-	106.4	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	2,647.3	-

22.2.1 Climate change adaptation in ERDF and CF

Poland has 20 ERDF programmes, of which one is combined with CF, and 16 with ESF. Of those programmes, 16 have allocations to climate change adaptation. Table 4 in the Annex provides more detailed overview on the programmes with climate adaptation support. There, adaptation is primarily addressed through TO5 (EUR 908.6 million). The main climate adaptation IFs selected are IF087, IF085 and IF021.

Most OPs recognise the risk of floods, and some also address droughts and forest fires. Furthermore, water conservation plays an important role in several OPs. The main actions supported, which directly address adaptation, will include inter alia the development and modernisation of flood protection infrastructure, investments in disaster management equipment, early warning and monitoring systems, improved control of watercourses and water retention systems.

¹¹⁹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 23.2.5 of this chapter.

22.2.2 Climate change adaptation in EAFRD

Poland has programmed one national Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Polish EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	106.4	-	-	-	-	441.6
Climate change adaptation and/or climate change mitigation	-	882.4	882.4	882.4	-	-

As can be seen, the bulk of climate change adaptation action in the Polish EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and risk prevention and management (UP3b).

Most climate change adaptation can be found in measures M13, M10, M11, and M07. The main theme of actions under M13 is to halt land abandonment, maintain agricultural production, and improve water management and erosion. The main focus of actions under the key climate measure M10 lies on the implementation of environmentally friendly practices through crop rotation strategies, the introduction of catch crops, fertilisation budgets, and the protection of perennial plants, biodiversity, soil and water. The objective under M11 is the conversion to organic agriculture, which has environmental benefits through enhanced biodiversity, and improved soil management and water management. As a major part of local rural development, M07, includes actions that improve rural water systems and the protection of natural & cultural heritage.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

22.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 531.2 million, of which EUR 107.5 million (20.2 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP foresees the adaptation of aquaculture species to warmer conditions and a reduction of the impact of fisheries on the marine environment.

22.2.4 Climate change adaptation in ESF

Poland has 17 ESF programmes, of which 16 are combined with ERDF, and one with YEI. Total ESF Union support amounts to EUR 22.2 billion, of which 5.8 billion (0.5 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate

adaptation, for instance, through supporting the employment of labour force in the green economy and enhancing the qualifications and competences for green jobs.

22.2.5 Climate change adaptation in ETC

Poland is part of seven European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg CZ-PL, Interreg PL-DE (Saxony), and Central Europe. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Poland is not available.⁽¹²⁰⁾

22.3 Adaptation framework compared with actual ESIF adaptation actions

The Polish Partnership Agreement does not address all areas of the NAS, and the NAS therefore goes a step further than the Partnership Agreement. Yet, the priority areas are to the greatest extent covered through the actions in the agreement and ESIF programmes. For example, the adaptation of urban areas through flood protection is covered through the Infrastructure and Environment OP. Overall, the identified needs and indicated actions under TO5 and TO6 are covered by most of the programmes, and the indicated funds are appropriately used.

To conclude, the ESIF actions in Poland match those indicated in the Partnership Agreement and the priority areas identified in the NAS. The mainstreaming potential of the ESIF has been widely used, especially through the actions in the ESF on the promotion of green jobs.

¹²⁰ The total Union support for the 14 programmes Poland is involved in amounts to EUR 1.3 billion, out of which EUR 34.7 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014PL16M1OP001	OP Infrastructure and Environment	2	Environment protection, including adaptation to climate change	21, 85, 86, 87,	5ii	5ii1. Greater amount of retained water and higher efficiency of identification and response to natural hazards and major accidents.	Under IP 5ii, the supported actions aim to develop/update strategic documents, improve flood safety and drought prevention, and protect against the effects of climate change in particularly sensitive areas. Parts of the actions include hard investments in storm water drainage networks, the protection of the sea coast, and early warning/monitoring systems. Under IP 6ii, eligible measures reduce water losses such as from wastewater. IP6iii address the protection of species and habitats through educational programmes and active involvement of citizens in environmental protection. Also, actions are found under IP6iv, which target the reclamation of polluted / degraded lands and the development of urban green areas.	The objectives related to climate change adaptation and prevention of climate change will be included in the expenditure monitoring system using the methodology of the EC (using the interventions categories system and the Rio markers system). Specific criteria for projects selection will be approved by the Monitoring Committee so as to implement the principle of sustainable development. Solutions to promote the efficient use of natural resources and energy and to promote a positive impact on the environment will be used as well.
					6ii	6ii.1 A larger number of people benefiting from improved municipal wastewater treatment system providing increased removal of nutrients.		
					6iii	6iii.1 Strengthened mechanisms for nature conservation.		
					6iv	6iv1. Halting the decline in area of green spaces in cities.		

2014PL16M2OP015	ROP 15 Wielkopolskie	4	Environment	85, 86, 87	5b	4b.1. Reduced risk of sudden and extreme natural phenomena	<p>In IP 5b, supported projects focus on water retention designs to reduce or stop the outflow of water and reduce flooding. Furthermore, support for the implementation of projects related to flood risk assessments, - management, flood warning, -rescue and - forecasting will be provided.</p> <p>For IP 6d, the investments focus on securing protected areas from excessive and uncontrolled pressure from tourism and related activities, utilising local natural resources, such as bike paths or trails.</p>	<p>The OP indicates that the climate adaptation and climate mitigation issues (e.g. resource efficiency, reducing pressure on the environment, consideration of the environmental effects of management, promotion of environmental attitudes) will be taken into account in operation selection (e.g. resource efficiency, eco-innovation, green jobs), in minimum requirements for different types of projects (e.g. exposed risk of investments in terms of extreme weather events), and in public procurement (green public procurement).</p>
					6d	6d1. Strengthened mechanisms for biodiversity protection in the region		
2014PL16M2OP003	ROP 3 Lubelskie	6	Environment protection, including adaptation to climate change	21, 87	5b	5b6. Increased flood safety in the region	<p>Under IP5b, the supported actions foresee the purchase of specialist equipment for voluntary fire brigades for an improved natural hazard management.</p> <p>Under IP 6b, the construction and modernisation of water supply systems, including systems to reduce water losses, and actions on a reduction of pollutant emissions into water ecosystems, are supported.</p>	<p>The issue of climate change adaptation will be taken into account in the spatial planning policy and will be monitored at each stage of the project life cycle. The project selection criteria will be elaborated at a later stage together with other implementing documents. Examples of criteria categories are provided: rational management of resources, reducing pressure on the environment, taking into account environmental effects in management and raising ecological awareness.</p>
					6a	6a6. Efficient system of selective waste collection based on regional installations		
					6b	6b6. Implementation of accession obligations in the field of wastewater management in agglomerations of 2 - 10 thousand population equivalent (pe)		

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs
CCI	Title	No	Title		
2014PL16M2OP001	ROP 1 Dolnośląskie	4	Resources & Environment	5b, 6a, 6b, 6c, 6d	21, 85, 87
2014PL16M2OP002	ROP 2 Kujawsko-Pomorskie	4	Environmentally-friendly Region	5b, 6a, 6b	21, 85, 87
2014PL16M2OP004	ROP 4 Lubuskie	4	Environment & Culture	5b, 6d	85, 87
2014PL16M2OP005	ROP 5 Łódzkie	5	Environmental protection	5b, 6d	85, 86, 87
2014PL16M2OP006	ROP 6 Małopolskie	5	Environmental protection	5b, 6b	21, 87
2014PL16M2OP007	ROP 7 Mazowieckie	5	Environment friendly economy	5b, 6d	85, 87
2014PL16M2OP008	ROP 8 Opolskie	4	Preventing threats	5b	87
2014PL16M2OP009	ROP 9 Podkarpackie	4	Protection of Natural Environment and Cultural Heritage	5b, 6d	85, 87
2014PL16M2OP011	ROP 11 Pomorskie	11	Environment	5b, 6d	85, 87
2014PL16M2OP012	ROP 12 Śląskie	5	Environmental Protection and Efficient Use of Resources	5b, 6d	85, 87
2014PL16M2OP013	ROP 13 Świętokrzyskie	4	Natural and cultural heritage	5b, 6d	85, 87
2014PL16M2OP014	ROP 14 Warmińsko-Mazurskie	5	Natural environment and resource efficiency	5b, 6b, 6d	21, 85, 86, 87
2014PL16M2OP016	ROP 16 Zachodniopomorskie	3	Environmental Protection and Climate Change Adaptation	5b, 6a, 6b	21, 87

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014PL06RDNP001	National RDP	M01, M04, M05, M07, M10, M11, M13, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB025	Interreg CZ-PL	CB	1	Join risk management	87	5b	1.1 Improving Cross-border responsiveness to emergency events and crisis situations	<ul style="list-style-type: none"> Investments in the development of joint or interconnected systems of prevention of risks, their monitoring, response to them and elimination of their impact. Investment measures aiming at increasing ability of rescue and security teams to intervene efficiently on both sides of the border. Joint professional training of rescue/security teams staff and crisis management teams focusing on improving Cross-border responsiveness. 	The principle of sustainable development is taken into account across the all priority axes implemented under the programme. With respect to all operations supported under the programme, measures have been designed to avoid or minimize negative impacts on the environment and ensure efficient use of resources. It is expected that some of the operations to be

									implemented under the programme PA1 (TO5) and PA2 (TO8) will produce positive effects in terms of sustainable development. Climate change issues have not been specifically address as the horizontal principles.
2014TC16 RFCB018	Interreg PL-DE (Saxony)	CB	4	The partnership and institutional capacity	87	11b	11b4. Intensification of institutional cooperation and partnership between citizens and institutions in all areas of public life for the development of borderland	<ul style="list-style-type: none"> (1) Cooperation in the area of countering threats and internal security (including cooperation in the field of risk prevention and other areas of public life, joint exercises, training, plans for fire protection, rescue and disaster protection, cooperation in the field of flood risk management, monitoring and creation of databases on the state of water in rivers, services cooperation in the field of fire protection, cooperation in the field of climate risk management (prevention of disasters related to climate change), (2) Cooperation in the field of administration and cooperation of citizens, (3) Cooperation in the field of ecology (including cooperation in the field of sustainable forest management, environmental protection, particularly in the field of nature conservation, forest protection, climate protection, pollution control, activities for implementation of the European Water Framework Directive, creation of environmental awareness by promoting behaviours consistent with the principles of sustainable management and use of environmental resources among inhabitants and tourists, activities for regeneration and maintenance of ecosystems, projects supporting competence development of institutions in the field of climate protection, climate risk management, green economy, energy efficiency, inventory of common areas in need of protection) 	The CP description argues that the principle of sustainable development will be observed at every stage (programming, implementation, monitoring and reporting, evaluation) of the Programme, including selection of operations, but the information on how it will be done is quite general. The description in this section indicates that CP takes into account issues related to climate change, as well as prevention and management in the event of disasters (PA4 - the partnership and institutional capacity: cooperation in the field of risk prevention, emergency joint activities: exercises, training, plans) and protection against disasters, in particular from natural disasters. General rules of 'green public procurement' will be taken into account during defining environmental criteria. The CP does not demonstrate that climate change mitigation and adaptation aspects are adequately taken into account in operation selection.

2014TC16 RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c	3.1. To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources	<ul style="list-style-type: none"> Developing and implementing integrated strategies and tools for the sustainable management of protected or environmentally highly valuable areas (e.g. biodiversity, landscapes, eco-systems, etc.) Developing and implementing integrated strategies and tools to sustainably use natural resources for regional development, thus avoiding potential use conflicts (e.g. with tourism, transport, industry, agriculture, energy, etc.) Developing and testing the application of innovative technologies and tools that facilitate effective integrated environmental management (e.g. remediation technologies, monitoring tools etc.) Developing and testing applications to improve the efficient management of natural resources in public institutions and enterprises Harmonising environmental management concepts and tools on the Transnational level to reduce negative climate change impacts on the environment and human life (e.g. adaptation measures) Developing and implementing strategies and tools (including innovative financing and investment models) to manage and improve environmental quality (air, water, waste, soil, climate) in functional urban areas Strengthening the capacity for environmental planning and management (e.g. participatory planning mechanisms and decision making processes) at the level of functional urban areas Developing and implementing integrated strategies, policies and tools to reduce land-use conflicts in functional urban areas (e.g. urban sprawl, shrinkage and fragmentation also in the view of social implications) Developing and implementing integrated strategies and pilot applications for the rehabilitation and reactivation of brownfield sites Developing concepts and implementing environmental pilot applications to support the development towards smart cities (e.g. ICT applications, environmental technologies) 	Climate change objectives being part of sustainable development policy are adequately taken into account in terms of operation selection.
						6e	3.3. To improve environmental management of functional urban areas to make them more liveable places		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFCB019	Interreg DE-PL (Mecklenburg-Western Pomerania/Brandenburg)	CB	1	Nature and Culture	85, 87	6c, 6d
			4	Cross-border cooperation	87	11b
2014TC16M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b, 6g
2014TC16RFCB011	Interreg DE-PL (Brandenburg)	CB	4	Integration of the population and administrative cooperation	87	11b
2014TC16RFCB012	Interreg PL-SK	CB	1	Protection and development of the Cross-border area's natural environment and cultural heritage	85, 86, 87	6c

23 Portugal

23.1 Adaptation framework and priorities

Portugal faces major vulnerabilities with regards to climate-related risks and insufficiencies in the protection of environmental values. Threats mentioned in the Partnership Agreement (PA) include coastal erosion, forest fires, floods, droughts, water scarcity and earthquakes.

The PA lists the overall adaptation framework, referring inter alia to the National Strategy for Adaptation to Climate Change (ENAAC - Estratégia Nacional de Adaptação às Alterações Climáticas), the National Plan for Climate Change 2020 (PNAC 2020 - Plano Nacional para as Alterações Climáticas), the National Risk Assessment 2004 (Avaliação Nacional de Risco 2014), the National Action Plan to Combat Desertification (Plano de Acção Nacional de Combate à Desertificação) and the National Plan for Protection Against Forest Fires (Plano Nacional de Defesa da Floresta Contra Incêndios). Also, additional sectoral planning documents were used in the preparation of the PA, aiming at increasing the resilience of the country, such as the sectoral plan for risk prevention and reduction (PSPRR), the national strategy for managing the Atlantic coast (ENGIZC), the action plan for the protection and enhancement of the littoral (PAPVL), the national strategy for the ocean (ENM), as well as specific climate change strategies for the Azores and Madeira.⁽¹²¹⁾

In terms of horizontal principles, the PA does not establish specific horizontal policy principles in the area of climate change, neither does it set specific horizontal principles for adaptation as part of its sustainable development policy objectives.

Adaptation objectives are addressed in the PA by adopting cross-cutting, sectoral and territorial measures to promote investments that enhance the national

¹²¹ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/portugal> and <http://www.apambiente.pt/index.php?ref=16&subref=81&sub2ref=118&sub3ref=391>

resilience to disturbances, crises, acute accidents and catastrophes, particularly with regards to: (1) coastal areas and populations; (2) knowledge of national, regional and local risks and the planning capacity to avoid mitigate and fight them.

The PA states that when planning for TO5, the expected results from support through the ERDF, CF and EAFRD include investment projects aiming to foster adaptation to climate change, including through ecosystems-based approaches, as well as more investments designed to fight specific risks and to ensure resilience to catastrophes.

23.2 ESIF EU support for climate change adaptation

EU support under the ESI Funds⁽¹²²⁾ in Portugal for the 2014-2020 period amounts to EUR 25.2 billion. Of this amount, EUR 5.1 billion is allocated for climate action.⁽¹²³⁾ Out of the total ESIF expenditure for Portugal, 3.8 % (or EUR 954.1 million) is marked for climate change adaptation. An additional EUR 1.47 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Portugal for ERDF, CF and EAFRD.

Table 1 Overview of total ESIF EU support for climate change adaptation

EU support in EUR million/Fund	ERDF	CF	EAFRD	Total for climate change adaptation
Climate change adaptation	21.8	394.0	538.3	954.1
Climate change adaptation and/or climate change mitigation	227.5	94.4	1,148.4	1,470.3

Table 2 below presents the thematic concentration of the support for adaptation.⁽¹²⁴⁾ The largest adaptation support is foreseen in ERDF and CF through TO5 and in EAFRD through TO4 and TO5.

¹²² ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹²³ For climate change mitigation and for climate change adaptation

¹²⁴ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 24.2.5 of this chapter.

Table 2 Overview of total ERDF/CF & EAFRD with EU support for climate change adaptation support per thematic objective

EU support in EUR million/TO	TO1	TO3	TO4	TO5	TO6
Climate change adaptation, ERDF/CF	-	-	-	415.8	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	218	5.8	-	-	98.1
Climate change adaptation, EAFRD	-	-	347.6	25.8	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	-	1,148.4

23.2.1 Climate change adaptation in ERDF and CF

Portugal has seven regional programmes, all of which combine ERDF and ESF. Additionally, one programme on competitiveness and internationalisation combines ERDF and CF with ESF. Furthermore, there is one national CF programme on sustainability and resource-use efficiency. EU support for climate change adaptation is only provided in two of these nine programmes: the national CF programme and the programme for Azores (cf. Table 4 in the Annex that provides more details on the two programmes).

Thus, Portugal has addressed climate change adaptation and TO5 through a centralised approach. The national OP on Sustainability and Resource Use Efficiency, with its targeted Priority Axis for adaptation, risk prevention and management is the key instrument for tackling climate change adaptation with the support of ERDF/CF.

Regarding the Azores programme, adaptation objectives are comprehensively addressed in this OP, but the funding allocated for climate change adaptation seems to be insufficient to match the climate change adaptation challenges of the region, in particular to bolster risk resilient infrastructures and systems and improve the preparedness of the communities.

23.2.2 Climate change adaptation in EAFRD

The table below provides an overview of EU support for climate change adaptation in EAFRD programmes in Portugal.

Table 3 Overview of EU EAFRD support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	25.8	-	-	-	347.6	164.8
Supporting climate change adaptation		382.8	382.8	382.8	-	

Table 5 in the Annex provides more details on the contents of the programmes with expenditure for climate action.

The focus of the RDP programmes in Portugal is mainly on water issues, as shown through the allocation to UP 4a and 5a. In terms of measures, Portugal mainly makes use of M04 (Madeira and Continente), M10 (all) and M13 (all). This is a fairly common programming approach in Mediterranean RDPs. M04 drives investments in new farm equipment, often delivering resource efficiency (water, fertilizers and energy). M10 is the key climate measure according to the Regulation, and is used in the vast majority of RDPs. In Portugal, M10 seems to have a twofold focus, at least for Azores and Madeira: Landscape conservation and restoration and conservation of genetic resources. Both of these can contribute to adaptation, but it is not clearly mentioned in the RDP text itself. For the Continental RDP, the emphasis on natural resources management seems somewhat clearer, and it could be expected to drive climate adaptation forward in the rural areas. M13 is quite generic as defined by the Regulation. Its climate adaptation contribution in the Portuguese case should be found in relation to conserving and promoting landscape types and historic and extensive agricultural or forest systems with little climate impact or low-resource use.

23.2.3 Climate change adaptation in EMFF

Total EMFF expenditures amount to a modest EUR 392 million, of which EUR 58.2 million is designated for climate action. This is below the average share of 17.7 %. Climate change adaptation is mainly promoted through UP1, UP2 and UP6. Portugal allocates 42 % of its EMFF expenditure to these three UPs compared to an EU average of 49 %. The main difference is due to a smaller relative allocation for UP2 (on aquaculture).

23.2.4 Climate change adaptation in ESF

There is one ESF specific programme in Portugal, and in addition to the 8 multifund programmes in combination with ERDF or ERDF/CF. ESF EU support in Portugal amounts to EUR 7.2 billion. Out of this amount, 3 % is allocated for climate action. This is in excess of the EU average of 1.4 %. The programmes do not provide explicit details as to whether climate change adaptation is to be addressed. However, it is interesting to note that the ERDF/CF/ESF programme on competitiveness and internationalisation (2014PT16M3OP001) allocates EUR 16 million for TO11, which is 21 % of the climate expenditure under this programme. Climate change adaptation is not strategically addressed by this national OP, since the OP on Sustainability and Resource Use Efficiency is dedicated to adaptation.

23.2.5 Climate change adaptation in ETC

Portugal is part of four European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg ES-PT (POCTEP), Interreg ES-PT (MAC), and South West Europe. Due to

the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Portugal is not available.⁽¹²⁵⁾

23.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Portuguese Partnership Agreement are in line with the ENAAC and the actions described in the adopted programmes. Threats mentioned in the Partnership Agreement (PA) include coastal erosion, forest fires, floods, droughts, water scarcity and earthquakes. These topics are all covered in the underlying programmes.

Objectives are consistent with the investment priorities of TO5 and are in line with EU's 2020 climate change adaptation and risk management objectives. Result indicators are generally consistent with the analysis of challenges and needs identified in the Partnership Agreement. However, it seems that there could be a stronger focus on development of knowledge.

A point of attention is that the CF programme '*Sustainability and Resource Use Efficiency*' is the only one that addresses adaptation in Portugal. Adaptation issues are not addressed in the regional OPs. This centralised approach used for the ERDF and CF can be beneficial through its potential as a catalyst. It can ensure that similar, and potentially mutually supportive initiatives be promoted throughout the country. However, the approach may at the same time entail the risk of limiting the focus to region-specific adaptation challenges and needs. The actual implementation of this priority axis will thus need to undergo careful monitoring by the European Commission in order to ensure that regional needs are appropriately balanced and addressed.

¹²⁵ The total Union support for the four programmes Portugal is involved in amounts to EUR 646.5 million, out of which EUR 41.8 million is allocated for adaptation.

Annex: Overview of programmes with EU support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014PT16CFOP001	Sustainability and Resource Use Efficiency	2	Promoting climate change adaptation, risk prevention and management	21, 85, 86, 87	5i	5i1. Strengthening capacities to adapt to climate change through the adoption and coordination of cross-sectoral, sectoral and territorial measures	Actions foreseen in the national strategy of adaptation to climate change are notably regional, inter-municipal, municipal and sectoral. Focus is on anti-desertification plans, promotion of green structures, research, information, and tools relevant to adaptation actions. Some specific actions focuses on coastal protection of areas under risk, forest fires, floods, and accidents and catastrophes.	The principle of sustainable development is horizontally assumed in the OP strategy with particular emphasis in the implementation of the 'polluter pays' principle, the promotion of green economy and the shift to low carbon economy.
					5ii	5ii1. Shoreline protection against risks, with particular emphasis on coastal erosion.		
						5ii2. Strengthening risks management capacities of the institutions involved, from the perspective of resilience.		
2014PT16M2OP004	Regional dos Açores	5	Climate change and risk management	21, 65, 85, 86, 87	5a	5.1.1. Strengthening risk knowledge and climate change adaptation capacities	Actions that contribute to increased capacity of public actors to prevent and address climate change impacts, improve prevention systems, and awareness raising campaigns to promote a culture of civil protection in terms of climate change. Specific topics include risks in coastal areas for the protection of people and assets, and interventions to address specific river basin risks.	To ensure the implementation of the sustainable development principles, operation selection includes, among other provisions, the possibility of benefiting from funding enhancement of projects contributing to efficient use of resources, the shift to low carbon economy and growth of the green economy.
					5b	5.2.1. Increase resilience capacity in situations of catastrophes		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

CCI	Title	Selected Measure
2014PT06RDRP001	Azores	M05, M08, M10 M11, M12, M13, M15, M17, M19
2014PT06RDRP003	Madeira	M04,M05, M08, M10, M11, M12, M13, M15, M16, M17, M19
2014PT06RDRP002	Continente	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M17, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB005	Interreg ES-PT (POCTEP)	CB	3	Promoting climate change adaptation, risk prevention and management	21, 85, 86, 87	5b 6c	5.B. Increase the territorial resilience to natural risks in the Cross-border cooperation space 6.C. Protect and valorise natural and cultural heritage as a support of the economic base of the Cross-border cooperation area	<ul style="list-style-type: none"> Shared infrastructure and equipment for the prevention and fight against forest fires and other natural disasters; modernisation of risk management systems; improve knowledge on risk (identification studies, risk mapping) raise public awareness about natural hazards; training on identified risks for personnel in order to improve their risk management capacity; initiatives and actions to promote the recovery and restoration of areas affected by natural disasters. Creation of Cross-border networks of natural and cultural spaces; management of tourism based on 	The programme aims to promote sustainable development, explicitly considering the environmental dimension as one of the basic pillars of strategy. Thus, the actions aimed at environmental conservation and sustainable use of natural resources has a significant presence in the planned measures, articulating a specific priority axis for this purpose. Furthermore, the most important environmental problems relate to the exposure of the area to various

						6d	6.D. Improve the protection and sustainable management of natural spaces	<p>common environmental resources; promotion of environmental tourism; promotion of traditional products coming from protected areas.</p> <ul style="list-style-type: none"> Joint management for the protection and conservation of Cross-border natural spaces; environmental awareness raising and training on the protection of natural resources in protected areas; connectivity of environmental infrastructure and services; scientific research on the protection and recovery and the use and sustainable management of natural resources; exchange of environmental information, support to networks and design of common programmes for environmental volunteering. Integrated planning of collective sustainable transport; promotion of systems of intelligent transport and sustainable mobility; joint management of the urban environment and green urban itineraries; development of sustainable urban models through energy self-sufficiency and the promotion of a low-carbon economy. Reduction of contamination in waste fields through exchange and cooperation; pilot actions for the collection and management of solid urban waste; coordinated management of water treatment in Cross-border areas in shared river basins; innovative models for the sustainable use of water. 	<p>natural hazards (fires, floods, pollution of aquifers, drought, and erosion) which are sometimes aggravated by human action and they are adequately addressed by the programme.</p>
					6e	6.E. Reinforce sustainable local development along the Cross-border area			
					6f	6.F. Increase the level of efficiency in the use of natural resources to contribute to the green economy in the cooperation area.			
2014TC16 RFCB007	Interreg ES-PT (MAC)	CB	3	Promoting climate change adaptation, risk prevention and management	87	5b	5b. Improve the capacity to respond to natural risks that affect the cooperation space	<ul style="list-style-type: none"> Actions related to the improvement of knowledge about natural hazards, building and improving information systems knowledge of the effects of climate change, awareness raising and implementation of measures into the territory for disaster alerts and coordination. Measures to improve the investment and tools to prevent, mitigate and restore the negative effects caused by forest fires, flood, weather or natural phenomena, marine and coastal pollution and volcanic and seismic risk. Actions to enhance forest Management and Planning. 	<p>The cooperation programme aims to promote sustainable development, explicitly considering the environmental dimension as one of the basic pillars of strategy. Thus, the actions aimed at environmental conservation and sustainable use of natural resources as well as management of water scarcity and actions to address natural risks have a significant presence in the planned measures, articulating a specific axis for this purpose. Furthermore, the most important environmental problems related to the exposure of the area to various natural hazards (fires, floods, seismic activity, drought, erosion), which are sometimes aggravated by human</p>

									action, are adequately addressed in the programme.
2014TC16 RFTN007	South West Europe	TN	4	Promoting climate change adaptation, risk prevention and management	87	5b	5b. Improvement of the coordination and efficiency of instruments for prevention, risk management and rehabilitation of affected areas.	<ul style="list-style-type: none"> • Actions that aim to strengthen and disseminate the results of the emergency plans. Early warning systems and the implementation of safety devices against the threat of natural disasters such as floods, periods of drought or continuous rain, periods of intense heat, or on the contrary periods of intense cold. Development of risk management tools. Tools for supporting transferrable systems of observation, measurement and prevention. Tools and methodologies for the regeneration of soil damaged by natural disasters. 	The new version of the programme makes reference to climate-related elements of sustainable development, notably renewable energies. The ex-ante assessment and the strategic environmental assessment of the programme provide the necessary elements to ensure that the South West Europe programme maintains a respect for the principle of sustainable development and contributes to its compliance. Proposed projects that may have significant negative environmental impacts will integrate compensatory measures in order to be considered by the Selection Committee.

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN002	Atlantic Area	TN	3	Strengthening the Territory's resilience to risks of natural, climate and human origin (TO 5)	87	5b

24 Romania

24.1 Adaptation framework and priorities

In July 2013, the Romanian government adopted *Romania's National Climate Change Strategy 2013-2020* (NCCS) through the Governmental Decision no. 529/2013. The adaptation component from the NCCS aims to provide an action framework and guidelines to enable each sector to develop an individual action plan in line with the national strategic principles. The adaptation component addresses 13 sectors: industry, agriculture and fisheries, tourism, public health, construction and infrastructure, transport, water resources and flood protection, forestry, energy, biodiversity, insurance, recreational activities and education.

During its preparation, the mind-set of the adaptation component was to identify and develop the priority actions to be set down and integrated in the planning process of sectoral development envisaged through close cooperation between stakeholders. Nevertheless, an appropriate implementation of the current national strategy on climate change is rather difficult since cross-sector priorities are rather provided as a catalogue, with no clear schedule of measures and indicators assessing and developing a national action plan. Thereby, review and update of the strategy objectives arose as a necessity.⁽¹²⁶⁾

Looking at the Partnership Agreement, adaptation is mostly aiming its attention at the need of strengthening risk prevention and management, improving the quality of emergency services (based on the national risk assessment) and developing and improving the administrative response capacity for disasters. A national risk assessment will support climate change adaptation, by addressing several current key risks which produced extensive loss and damage across Romania, among which some recognized as generated by climate change (floods, droughts, coastal erosion, and forest fires). The agricultural sector receives special attention in terms of adaptation, the Partnership Agreement is foreseeing actions aimed at reducing vulnerability to climate change in this sector, e.g. knowledge transfer and information on environmental sustainable practices, climate change-related risks

¹²⁶ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/romania>

and the use of locally adapted crops (e.g. drought tolerant crops); investments for recovering the irrigation systems, which proved to be economically viable in accordance with the National Strategy for Investments in the Irrigation System in Romania (2011) rehabilitation; and development of secondary irrigation systems through water users' associations and federations of water users associations; discouragement of excessive water abstractions in water scarcity-prone regions; afforestation of agricultural lands and the creation of forest belts.

Sustainable development objectives are identified in several policy areas such as energy, agriculture and forestry or transport. Relevant investment priorities are referring to environmental protection, resource efficiency, climate change mitigation and adaptation, biodiversity, disaster resilience and risk prevention and mitigation. In this respect, the 'polluter pays' principle is being considered as recognised in the Law on environmental protection, in terms of obligation of landowners and operators to maintain a clean environment and payment for any environmental damage through pollution.

24.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹²⁷⁾ in Romania for the 2014-2020 period amounts to EUR 30.8 billion. Of this amount, EUR 8.1 billion is allocated for climate action.⁽¹²⁸⁾ Out of the total ESIF Union support for Romania, 3.9 % (or EUR 1.2 billion) is marked for climate change adaptation. An additional EUR 3.0 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Romania for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	-	469.1	727.9	1,197.1
Climate change adaptation and/or climate change mitigation	133.9	514.0	2,392.2	3,040.1

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 and in EAFRD through TO4 as pure adaptation and TO6 as supportive adaptation.⁽¹²⁹⁾

¹²⁷ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹²⁸ For climate change mitigation and for climate change adaptation

¹²⁹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6	TO7
Climate change adaptation, ERDF/CF	-	-	469.1	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	15.0	-	3.8	618.6	10.5
Climate change adaptation, EAFRD	-	385.7	69.1	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	2,392.2	-

24.2.1 Climate change adaptation in ERDF and CF

Romania has four ERDF programmes, of which one programme has an allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme. There, adaptation is primarily addressed through TO5 (EUR 469.1 million) in PA5 'Promoting climate change adaptation, risk prevention and management'.

The main climate adaptation IFs selected are IF087 and IF085. The focus is on making Romanian infrastructure resilient to climate change and natural disasters. The programme will contribute to the improvement of risk monitoring of the identified risks (including those related to climate change - e.g. floods, drought, coastal erosion), enhancement of the emergency response system and prevention measures (e.g. structural and non-structural measures to reduce the risk of and damage from flooding, drought and erosion).

24.2.2 Climate change adaptation in EAFRD

Romania has one Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Romanian EAFRD programme.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	69.1	-	-	-	385.7	273.2
Climate change adaptation and/or climate change mitigation	-	797.4	797.4	797.4	-	-

not included here due to the nature of the programmes, but it is addressed in section 25.2.5 of this chapter.

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address water use efficiency (UP5a) and local rural development (UP6b).

Most climate change adaptation can be found in measures M04, M19, and M17. The main focus of actions under the key climate measure M04 lies on investments and financial support for improving the performance and sustainability of agricultural holdings, infrastructure for the modernization/adaptation of agriculture and forestry, energy and water supply/saving. Measure M19 supports the implementation of activities under LEADER⁽¹³⁰⁾ in order to reduce the socio-economic imbalances and the urban-rural disparities, especially regarding the collaboration between public and private partners. Measure M17 is supporting mutual funds for farmers in order to cope with adverse climatic events, animal and plant diseases, pest infestations and environmental incidents, and to avoid breaks and/or loss of production due to such incidents.

Furthermore, the bulk of climate change adaptation action in the Romania EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

24.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 168.4 million, of which EUR 28.4 million (16.9 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the programme appears to be aligned especially with the targets referring to sustainable development and innovation. The OP contributes to the achievements of some important adaptation and mitigation objectives of the NAS, supporting actions for the protection of marine ecosystems and their biodiversity and promoting environmental friendly technologies, energy efficiency and renewable energy use in the fishing sector.

24.2.4 Climate change adaptation in ESF

Romania has two ESF programmes, one of which includes YEI. Total ESF Union support amounts to EUR 4.4 billion, of which EUR 54.2 million (1.2 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, the Operational Programme on Human Capital supports climate change adaptation through increasing competences and skills (training, employment, lifelong learning programs and qualification) in the field of green economy related to sectors such as: environmental protection, prevention and management of risks. The Operational Programme on Administrative Capacity is targeting awareness

¹³⁰ The LEADER programme supports development of rural economies through a constructive interaction with the municipal and regional authorities and local actors.

and training sessions on risk prevention and management, which are in line with resource efficiency, climate change mitigation and adaptation.

24.2.5 Climate change adaptation in ETC

Romania is part of three European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg RO-BG, Interreg HU-RO and Danube. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Romania is not available.⁽¹³¹⁾

24.3 Adaptation framework compared with actual ESIF adaptation actions

Since the adaptation component of the NCCS does not have a clear schedule of measures and indicators assessing and developing a national action plan, it is difficult to make a comparison with the expected results as set out in the Partnership Agreement. Sectors that are addressed in the NCCS, but not extensively covered in the Partnership Agreement are tourism, public health, insurance, and recreational activities.

The main development needs related to adaptation are: improvement of the country's capacity to anticipate, prevent and respond to extreme natural and man-made emergencies; improvement of adaptation and resilience to the negative effects of climate change (especially to extreme heat, drought, floods, coastal erosion); adoption of farming practices to improve the resilience of agriculture to climate change; and increase water use efficiency in agriculture. The Partnership Agreement seems to be slightly outdated, since the individual programmes contain more adaptation actions than described in this document, especially for EMFF and ESF.

¹³¹ The total Union support for the three programmes Romania is involved in amounts to EUR 607.0 million, out of which EUR 28.8 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014RO16M 1OP001	Large Infrastructure Operational Programme	5	Promoting climate change adaptation, risk prevention and management	85, 87	5i	SO 5.1 Mitigating the effects and damages on the population caused by natural phenomena associated with the main risks enhanced by climate change, mainly floods and coastal erosion	<ul style="list-style-type: none"> > The use of green infrastructure by taking over natural ecosystems solutions for the management of risks posed by the increased incidence of extreme events; > Measures to promote green infrastructure specific risks identified in the assessment and/or national action plan for adaptation to climate change; > Development of methodologies, studies, reports, manuals of good practice for the management of dams > Cross-sectoral approach at river basin level > Modernisation of infrastructure for monitoring and warning severe hydro-meteorological phenomena in order to protect life and property 	There are several thematic areas where the OP specifies the contribution to sustainable development: protecting the environment, biodiversity and ecosystems, air protection and reducing greenhouse gas emission, resource efficiency and waste protection, adaptation to climate change and disaster resilience. In this respect, it is stipulated that measures based on ecosystem services and promoting the green infrastructure will be an integral part of the projects in the applicant's guide in terms of the technical requirements for the construction works and to ensure disaster resilience of these
					5ii	SO 5.2. Enhancing the preparedness for a rapid and effective disaster response of the intervention teams		

							<ul style="list-style-type: none"> > Other specific actions for flood risk management, as stipulated in the national strategy of flood risk management on medium and long-term management plans long or flood risk > Specific actions to limit the negative effects of coastal erosion, including rehabilitation and protection, the creation of new artificial beaches, dams and dykes for retention of sand, stabilisation of the beaches > Provide professional and voluntary services for emergency situations with technical and other means to reduce the response time in case of disasters, protection of emergency workers, increasing efficiency of response and protect the environment > Development of infrastructure related to the system of staff training of the professional and volunteer emergency services by developing specialised databases polygons and CBRN (chemical, biological, radiological and nuclear) preparations in hostile environments; > Modernisation of the IT systems and associated structures to ensure interoperability with tasks in the field of emergency situations management; > Establishing and equipping of multi-hazard regional intervention centres in order to ensure a timely and effective response at regional level and the completion and equipping rapid intervention centres (e.g. IGSU - General Inspectorate for Emergency Situations) 	works. Also, specific indicators for monitoring the environmental impact of the projects are seen as a condition in the applicant's guide.
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Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014RO06RDNP001	National Rural Development Programme	M01, M02, M04, M07, M10, M11, M13, M15, M17, M19

Table 6 show all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB021	Interreg RO-BG	CB	3	A safe region	87	5b	SO 3.1 To improve joint risk management in the Cross-border area	<ul style="list-style-type: none"> Increasing co-ordination and efficient reactions of the authorities in the emergency situations caused by natural disasters (flood, fire, heat waves, earthquakes, storms), setting up common rules/legislation on deforesting and construction in the areas affected by natural and anthropic hazards; setting-up and integrating harmonized standards and systems for better forecasting and managing natural and anthropic hazards in the CBC area (flood, earthquake, fire, storms), including preparing/updating hazard maps and ecosystem-based solutions (for floodplains, wetland 	The programme acknowledges the importance of considering sustainable development as a horizontal principle throughout all axes, with a particular focus on PA2 (A green region), focusing on the management of natural resources. In the projects' selection phase, there are specific requirements for the projects to meet the

								<p>preservation, forest management) setting up of harmonised integrated tools for risk prevention and mitigation (including detection, early warning and alert systems, risk mapping and assessment)</p> <ul style="list-style-type: none"> • creation of joint structures for urgent, unexpected situations (including highly specialized response units/civil protection modules), and development of small-scale regional level Cross-border infrastructure in the field of emergency preparedness (e.g. transport accidents, disasters, etc.), including in cases of weather-related risks (such as storms, extreme temperature events, forest fires, droughts, floods) and geophysical risks (such as landslides, earthquakes) • elaborating of joint detailed maps and data bases indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services; exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the Cross-border area (including training and learning programmes, community-based training initiatives, bilingual maps, information sheets, brochures about natural and anthropic hazards) targeted at specific target groups (children/youth, development planners, emergency managers, local government officials, etc.) • land improving for regions with high and medium hazard risk level, preferably by nature-based ecosystem solutions (including: sanitation and reforestation of river banks, building green infrastructure flood and coastal defences, building flood and coastal defence (dikes, reservoirs), forestation/reforestation of non-permanent vulnerable land to torrential formations, reducing desertification tendencies and high drought risks, replanting floodplain forests) supporting and promoting Cross-border investments in the green infrastructure that helps reduce the risk and mitigate disasters (like systems for rainwater harvesting, reforestation) • Measuring/monitoring environmental parameters that are important for early warning and effective mitigation 	<p>sustainability principle: avoiding investments that may have negative environment or climate externalities; promoting the use of green procurements and the reduction of waste generation; protection of air quality, resource efficiency, biodiversity and ecosystem; extended producer responsibility, but also the requirement that projects should be climate-neutral.</p>
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								measures (e.g. emission levels, water purity, analysis of soil and water samples etc.), through the purchasing of common equipment and joint assessment of results.	
2014TC16 RFCB049	Interreg HU- RO	CB	5	Improve risk- prevention and disaster management	87	5b	SO5/b. Improved Cross-border disasters and risk management	<ul style="list-style-type: none"> • Development and implementation of harmonized standards and systems for better forecasting and natural / anthropogenic risk management in the Cross-border area • Land improvement for regions with high and average hazard natural risk level Setting up the harmonized and integrated tools for risk prevention and mitigation in order to provide a joint response to emergency situations • Development of regional level Cross-border infrastructure in the field of emergency preparedness • Exchange of experience on efficient risk prevention and management in the Cross-border area • Awareness-raising activities targeted at specific groups • Elaboration of detailed maps and data bases indicating natural and technological risks • Purchasing special vehicles, equipment and materials for public emergency response services • Purchasing equipment for measuring /monitoring environmental parameters • Development of common strategies, action plans on risk prevention and risk management • Establishing common rules/legislation and protocols related to risk prevention and disaster management 	The programme acknowledges the importance of considering sustainable development as a horizontal principle during the programme and project implementation but with a focus on environmental protection rather than climate change adaptation and mitigation. Thus, in the implementation of sustainable development principle, indicators referring to climate change mitigation and adaptation should be considered: e.g. promoting the use of green procurements and the reduction of waste generation; energy efficiency indicators; biodiversity and ecosystems indicators, regulations on investments in areas of risk of climate-related hazards (floods, storms etc.).

2014TC16 M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to support sound water management. Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. Support risk management plans for cultural and natural heritage sites exposed to climate change. Improved strategic frameworks and developed specific solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region 	<p>Numerous aspects of sustainable development common to all PAs and IPs including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.</p>
						6c	2.2. Foster sustainable use of natural and cultural heritage and resources		
						6d	2.3. Foster the restoration and management of ecological corridors		

25 Spain

25.1 Adaptation framework and priorities

Spain, as a result of geographic and climatic conditions (as well as socioeconomic characteristics), is highly vulnerable to climate change. Hence, there is a need to respond to the effects of climate change in the various regions and economic sectors. To do so, Spain has adopted a National Climate Change Adaptation Plan (PNACC) with the objective to mainstream adaptation to climate change in the planning processes of all the relevant sectors or systems.

The PNACC provides the current framework for carrying out assessment actions to evaluate the impacts, vulnerability and adaptation to climate change in Spain. It identifies the sectors to address adaptation actions during the period 2014-2020, which inter alia include biodiversity, forestry, water, soils, agriculture, fishing, aquaculture, tourism, health and finance/insurance. Additionally, the vast majority of the Spanish Autonomous Communities have developed their adaptation strategies, plans or actions, which are in line with PNACC.⁽¹³²⁾

The Spanish Partnership Agreement outlines the country's strategic objectives to prevent and fight forest fires, erosion and desertification, as well as prevent and fight floods and droughts by mitigating and preventing their effects. To achieve these objectives, the Partnership Agreement supports the adaptation actions that fall under two categories: a) sectoral evaluations of impacts, vulnerability and adaptation to climate change, focusing on the sectors of water resources, biodiversity, coastal areas, health, agriculture and silviculture, forests, soil and desertification and urban areas and b) actions addressed to risk management through prevention with the aim to analyse and study existing and potential risks. Climate change adaptation is mainly tackled through EAFRD and ERDF.

The horizontal principle of sustainable development is incorporated in the Partnership Agreement in two ways: a) through a horizontal focus reflected in the

¹³² More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/web/quest/countries/spain>.

environmental impact assessment and b) through specific actions promoting, to the extent possible, the presence of environmental measures in the operations financed by all Funds.

25.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹³³⁾ in Spain for the 2014-2020 period amounts to EUR 37.4 billion. Of this amount, EUR 8.2 billion is allocated for climate action.⁽¹³⁴⁾ Out of the total ESIF Union support for Spain, 2.5 % (or EUR 930.8 million) is marked for climate change adaptation. An additional EUR 3 billion is allocated for actions that could potentially contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen Union support for climate change adaptation in Spain for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽¹³⁵⁾	EAFRD	Total for adaptation
Climate change adaptation	195.1	-	735.7	930.8
Climate change adaptation and/or climate change mitigation	112.1	-	2,961.5	3,073.6

Error! Reference source not found. presents the thematic concentration of this support. The largest adaptation support is foreseen in ERDF through TO5 and in EAFRD through TO4 as pure adaptation and TO6 as supportive to adaptation.⁽¹³⁶⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO4	TO5	TO6	TO9
Climate change adaptation, ERDF/CF	-	195.1	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	-	111.5	-	0.7
Climate change adaptation, EAFRD	352.7	10.1	-	-

¹³³ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹³⁴ For climate change mitigation and for climate change adaptation

¹³⁵ CF is not aimed at Spain.

¹³⁶ These tables only give an overview on the funds where a 2.961,5 distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 11.2.5 of this chapter.

Climate change adaptation and/or climate change mitigation, EAFRD	-	-	2,961.5	-
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25.2.1 Climate change adaptation in ERDF

Spain has 22 ERDF programmes, of which only four have allocations to climate change adaptation. Table 4 in the Annex provides an overview on all programmes with climate adaptation support with a more detailed focus on the three programmes with the largest allocation to adaptation. There, adaptation is primarily addressed through TO5 (EUR 306.6 million) in PA5 '*Promoting climate change adaptation, risk prevention and management*'. The main climate adaptation IFs selected are IF087, IF085 and IF021. The OPs identify the main climate challenges such as floods, droughts, forest fires and erosion, and support actions that minimise their impact. The main actions supported will include inter alia development of early warning systems, promotion of efficient water management including flooding, restoration of areas damaged by forest fires, measures for prevention and defense against droughts, and risk prevention and management.

25.2.2 Climate change adaptation in EAFRD

Spain has programmed a total of 17 Rural Development Programmes (RDP), one national RDP, and one national Framework. Table 3 below indicates the climate change adaptation allocations in the Spanish EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	10.1	-	-	-	352.7	372.9
Climate change adaptation and/or climate change mitigation	-	987.2	987.2	987.2	-	-

As can be inferred from the table, the bulk of climate change adaptation action in the Spanish EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b) and water use efficiency (UP5a).

Most climate change adaptation can be found in measures M10, M08, M13, and M04, respectively. The main focus of actions under the key climate measure M10 (all, except National) lies on the implementation of environmentally friendly practices and an improvement of biodiversity. For some RDPs, the focus further extends to water management (e.g. Aragon) and wildfire prevention (e.g. Asturias). A lot of emphasis on climate change adaptation can also be found in measures on forest area development, M08 (all RDPs, except Asturias). Actions under this measure generally aim to increase biodiversity and forest resilience, especially to wildfires, and further reduce land degradation. The main theme of actions under M13 is to address environmental problems that constrained areas face, for example soil conservation, biodiversity or wildfire risks. All RDPs, with the

exception of Cantabria, plan investments in physical assets (M04), with most emphasis on investments that lead to higher water use efficiency (especially Canarias). This degree is reflected in that the investments in water use efficiency are more than twice as high as for actions that address ecosystems, i.e. UP4.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

25.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 1.2 billion, of which EUR 212.7 million (18.3 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need to improve knowledge about consequences of climate change and possibilities to adapt.

25.2.4 Climate change adaptation in ESF

Spain has 23 ESF programmes, one of which is a Technical Assistance programme, while two ESF programmes include YEI. Total ESF Union support amounts to EUR 6.5 billion, of which 50 million (0.8 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting promotion of entrepreneurship in the fields of green economy, waste management, biodiversity and the efficient management of water resources, as well as the conservation and improvement of genetic forest resources (OP Youth Employment).

25.2.5 Climate change adaptation in ETC

Spain is part of five European Territorial Cooperation (ETC) programmes with allocations to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programmes with the largest allocation to adaptation, namely Interreg ES-PT (POCTEP), Interreg ES-PT (MAC), and South West Europe. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Spain is not available.⁽¹³⁷⁾

¹³⁷ The total Union support for the five programmes Spain is involved in amounts to EUR 835.8 million, out of which EUR 53.5 million is allocated for adaptation.

25.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate adaptation actions under the Spanish Partnership Agreement are in line with the objectives of the PNACC and address the sectors identified under the PNACC such as biodiversity, forestry, water, soil, agriculture, fisheries and others. Furthermore, the country's strategic objectives to prevent forest fires, erosion, desertification, floods and droughts are reflected in the actions supported under EAFRD and ERDF in the Partnership Agreement.

The climate adaptation actions foreseen under the ERDF and EAFRD are in line with both the PNACC and Partnership Agreement. Out of 22 ERDF programmes in Spain, only 4 regional programmes (Andalucia, Canarias, Galicia and Pais Vasco) have support for adaptation through IF087 and 100, addressing regional needs like droughts and forest fires in Andalucia. This represents a small number of programmes, and there is a need to mainstream adaptation into more regional programmes. In the EAFRD, there is a strong focus on adaptation through actions dedicated to increasing the capacity of ecosystems (biodiversity, water and soil management) and environmentally friendly practices, water management and wildfire prevention. Furthermore, the EMFF OP identifies the adaptation need to improve knowledge about the consequences of climate change and possibilities to adapt. However, it is not clear from the programme whether any actions supporting adaptation will be foreseen.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4-1 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014ES16RFOP003	Andalucia	5	Promoting climate change adaptation, risk prevention and management	87	5a	OE.5.1.1. Development of knowledge and development of plans in relation to adaptation to climate change and risk prevention, including early warning systems, monitoring and evaluation.	Various actions including: vulnerability and impact studies, pilot programme in adaptation management actions, development of a system of indicators for adaptation and risk prevention, promotion of planning in the field of efficient water management, development of early warning systems, improvement of emergency equipment, restoration of areas damaged by forest fires; measures for prevention and defense against droughts; integration of the automatic systems for hydrological information from river basins; investments in infrastructure for prevention and protection against floods.	The OP has been designed to take into account sustainable development criteria during the process of project selection. More favourable co-financing rates will be applied for projects that respect the environment. Additionally the 'polluter pays' principle will be applied throughout and the rules of ecologic public procurement will be employed. These will guarantee that sustainable development will be integrated in the OP. Virtually all Priority Axes factor in some sort of sustainable development considerations.
					5b	OE.5.2.2. Promotion of investments for the prevention and management of specific risks on the territory.		

2014ES16RFOP007	Canary Islands	5	Promoting climate change adaptation, risk prevention and management	87	5a	OE.5.1.1. Development of knowledge and development of plans in relation to adaptation to climate change and risk prevention, including early warning systems, monitoring and evaluation.	Development of a new zoning of areas with a high risk of forest fires according to the new national legislation. - Development of an Early Warning System, (EWS) to alert people. - Elabe (GIS) in the Emergency Coordination Generation of a risk map. - Implementation of an emergency management system based on a geo- referencing software.	Sustainable development is considered in a horizontal manner in the OP and in particular through actions under PA4, PA5 and PA6. Policy actions are also foreseen under other PAs like 1, 2 and 3, which can have a positive impact on the protection of the environment, resource utilisation efficiency, climate change adaptation, risk mitigation or the protection of ecosystems and biodiversity. Compliance with the sustainable development principle is included in the guiding principles for operation selection in all IPs and SOs.
2014ES16RFOP015	Galicia	5	Promoting climate change adaptation, risk prevention and management	87	5a	OE.5.1.1. Development of knowledge and elaboration of Plans related to the adaptation to Climate Change and Risks prevention, including early warning, monitoring and evaluation systems.	Development of monitoring networks, risks prevention and sectoral analysis of adaptation to climate change, implementation of prediction model before floods, fires, atmospheric contamination and other adverse episodes of climate origin. Prevention and management flood measures in determined areas, modernization of the forest fires equipment, improvement of infrastructures of civil protections aimed to prevention and management risks derived from natural disasters and other climatic phenomena.	The horizontal principle of sustainability has been taken into account all over the OP: in TO 5, actions contribute to sustainable development through the adaptation of available means to the challenges caused by climate change, such as actions implementing sectoral analysis of adaptation to climate change in Galicia or aimed to prevention and management of floods in River basin of Galicia –Coast, trying to mitigate the effects of climate change by a dual strategy (adaptation to risks and prevention though warning mechanisms).
					5b	OE.5.2.1. Promotion of investment for specific risks prevention and management related to Populations, including Civil Protection.		

Table 4-2 Overview of remaining ERDF/CF OPs with EU climate change adaptation support

OP		Priority Axes		Selected IFs	Selected IPs
CCI number	Title	No	Title		
2014ES16RFOP021	Pais Vasco	5	Promoting climate change adaptation, risk prevention and management	87	5b

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014ES06RDNP001	National RDP	M04, M07, M08, M15, M16
2014ES06RDRP001	Andalucia RDP	M01, M02, M04, M05, M07, M08, M10, M11, M13, M16, M19
2014ES06RDRP002	Aragon RDP	M01, M04, M07, M08, M10, M11, M12, M13, M15, M16, M19
2014ES06RDRP003	Asturias RDP	M04, M07, M10, M11, M13, M19
2014ES06RDRP004	Islas Baleares RDP	M01, M04, M08, M10, M11, M13, M19
2014ES06RDRP005	Canarias RDP	M01, M02, M04, M05, M07, M08, M10, M11, M16, M19
2014ES06RDRP006	Cantabria RDP	M07, M08, M10, M11, M12, M19
2014ES06RDRP007	Castilla-La Mancha RDP	M01, M02, M04, M07, M08, M10, M11, M12, M13, M15, M16, M19
2014ES06RDRP008	Castilla y León RDP	M01, M04, M05, M07, M08, M10, M11, M13, M17, M19
2014ES06RDRP009	Cataluña RDP	M01, M02, M04, M07, M08, M10, M11, M13, M16, M19
2014ES06RDRP010	Extremadura RDP	M01, M04, M07, M08, M10, M11, M13, M15, M19
2014ES06RDRP011	Galicia RDP	M01, M04, M07, M08, M10, M11, M13, M15, M16, M19

2014ES06RDRP012	Madrid RDP	M01, M02, M04, M07, M08, M10, M11, M13, M19
2014ES06RDRP013	Murcia RDP	M01, M02, M04, M05, M08, M10, M11, M12, M16, M19
2014ES06RDRP014	Navarra RDP	M01, M02, M04, M07, M08, M10, M11, M12, M13, M16, M19
2014ES06RDRP015	Pais Vasco RDP	M01, M04, M08, M10, M11, M13, M15, M16, M19
2014ES06RDRP016	La Rioja RDP	M01, M04, M07, M08, M10, M11, M12, M16, M19
2014ES06RDRP017	Valencia RDP	M02, M04, M08, M10, M11, M13, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB005	Interreg ES-PT (POCTEP)	CB	3	Promoting climate change adaptation, risk prevention and management	21, 85, 86, 87	5b	5.B. Increase the territorial resilience to natural risks in the Cross-border cooperation space	<ul style="list-style-type: none"> Shared infrastructure and equipment for the prevention and fight against forest fires and other natural disasters; modernisation of risk management systems; improve knowledge on risk (identification studies, risk mapping) raise public awareness about natural hazards; training on identified risks for personnel in order to improve their risk 	The programme aims to promote sustainable development, explicitly considering the environmental dimension as one of the basic pillars of strategy. Thus, the actions aimed at environmental conservation and sustainable use of natural resources has a significant presence in the planned measures, articulating a specific priority axis for this purpose. Furthermore, the

						<p>6c</p> <p>6.C. Protect and valorise natural and cultural heritage as a support of the economic base of the Cross-border cooperation area</p>	<p>management capacity; initiatives and actions to promote the recovery and restoration of areas affected by natural disasters.</p> <ul style="list-style-type: none"> • Creation of Cross-border networks of natural and cultural spaces; management of tourism based on common environmental resources; promotion of environmental tourism; promotion of traditional products coming from protected areas. • Joint management for the protection and conservation of Cross-border natural spaces; environmental awareness raising and training on the protection of natural resources in protected areas; connectivity of environmental infrastructure and services; scientific research on the protection and recovery and the use and sustainable management of natural resources; exchange of environmental information, support to networks and design of common programmes for environmental volunteering. • Integrated planning of collective sustainable transport; promotion of systems of intelligent transport and sustainable mobility; joint management of the urban environment and green urban itineraries; development of sustainable urban models through energy self-sufficiency and the promotion of a low-carbon economy. • Reduction of contamination in waste fields through exchange and cooperation; pilot actions for the collection and management of solid urban waste; coordinated management of water treatment in Cross-border areas in shared river basins; innovative models for the sustainable use of water. 	<p>most important environmental problems relate to the exposure of the area to various natural hazards (fires, floods, pollution of aquifers, drought, and erosion) which are sometimes aggravated by human action and they are adequately addressed by the programme.</p>
				<p>6d</p> <p>6.D. Improve the protection and sustainable management of natural spaces</p>				
				<p>6e</p> <p>6.E. Reinforce sustainable local development along the Cross-border area</p>				
				<p>6f</p> <p>6.F. Increase the level of efficiency in the use of natural resources to contribute to the green economy in the cooperation area.</p>				

2014TC16 RFCB007	Interreg ES-PT (MAC)	CB	3	Promoting climate change adaptation, risk prevention and management	87	5b	5b. Improve the capacity to respond to natural risks that affect the cooperation space	<ul style="list-style-type: none"> • Actions related to the improvement of knowledge about natural hazards, building and improving information systems knowledge of the effects of climate change, awareness raising and implementation of measures into the territory for disaster alerts and coordination. Measures to improve the investment and tools to prevent, mitigate and restore the negative effects caused by forest fires, flood, weather or natural phenomena, marine and coastal pollution and volcanic and seismic risk. Actions to enhance forest Management and Planning. 	The cooperation programme aims to promote sustainable development, explicitly considering the environmental dimension as one of the basic pillars of strategy. Thus, the actions aimed at environmental conservation and sustainable use of natural resources as well as management of water scarcity and actions to address natural risks have a significant presence in the planned measures, articulating a specific axis for this purpose. Furthermore, the most important environmental problems related to the exposure of the area to various natural hazards (fires, floods, seismic activity, drought, erosion), which are sometimes aggravated by human action, are adequately addressed in the programme.
2014TC16 RFTN007	South West Europe	TN	4	Promoting climate change adaptation, risk prevention and management	87	5b	5b. Improvement of the coordination and efficiency of instruments for prevention, risk management and rehabilitation of affected areas.	<ul style="list-style-type: none"> • Actions that aim to strengthen and disseminate the results of the emergency plans. Early warning systems and the implementation of safety devices against the threat of natural disasters such as floods, periods of drought or continuous rain, periods of intense heat, or on the contrary periods of intense cold. Development of risk management tools. Tools for supporting transferrable systems of observation, measurement and prevention. Tools and methodologies for the regeneration of soil damaged by natural disasters. 	The new version of the programme makes reference to climate-related elements of sustainable development, notably renewable energies. The ex-ante assessment and the strategic environmental assessment of the programme provide the necessary elements to ensure that the South West Europe programme maintains a respect for the principle of sustainable development and contributes to its compliance. Proposed projects that may have significant negative environmental impacts will integrate compensatory measures in order to be considered by the Selection Committee.

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFCB006	Interreg ES-FR-AD (POCTEFA)	CB	2	Promoting climate change adaptation, risk prevention and management	87	5a, 5b
2014TC16RFTN002	Atlantic Area	TN	3	Strengthening the Territory's resilience to risks of natural, climate and human origin (TO5)	87	5b

26 Sweden

26.1 Adaptation framework and priorities

Sweden adapted a national integrated policy for energy and climate, or National Adaptation Strategy (NAS), in 2009.⁽¹³⁸⁾ The strategy provides a basis for a medium-term process to identify the effects of climate change, assess the risks, and develop and implement adaptation measures.

The climate change adaptation priority sectors and adaptation actions are primarily organised into sectors. The main sectors pointed out in the NAS are related to critical societal functions such as biodiversity and ecosystem services, fresh water supply, health, infrastructure, rural businesses, technical supply systems and urban areas. Additionally, the cooperation on all levels and between sectors and actors working with land use planning, risk management, natural disasters and climate adaptation is promoted to reduce risks and enhance preparedness.

The national strategy is transposed into regional action plans covering the whole of Sweden with around 800 proposed actions. The main actions proposed aim at flood protection, protection of drinking water, shoreline protection, infrastructure (roads, railways), adaptation of agriculture and forestry, resilience for heat waves and health care.

The Swedish Partnership Agreement outlines the country's strategic objectives and investment priorities with regard to adaptation. The adaptation objectives aim to maintain the green infrastructure of islands and corridors, protect flora and fauna, facilitate and enhance biodiversity, develop strategies and action plans for climate change adaptation, and develop tools for disaster management systems.

Under the Partnership Agreement, climate change adaptation is mainly addressed through EAFRD. The foreseen actions will focus on reducing the risks of adverse production and environmental impact of pests and diseases. The actions linked to

¹³⁸ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/countries/sweden>

UP 4 (restoring, preserving and enhancing ecosystems that are influenced by agriculture) are also supported.

Regarding the horizontal principle of sustainable development, the Partnership Agreement does not mention the integration of the principle into ESI Funds.

26.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹³⁹⁾ in Sweden for the 2014-2020 period amounts to EUR 3.6 billion. Of this amount, EUR 1.4 billion is allocated for climate action.⁽¹⁴⁰⁾ Out of the total ESIF Union support for Sweden, 1.9 % (or EUR 68.6 million) is marked for climate change adaptation. An additional EUR 1.1 billion is allocated for actions that could potentially contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in Sweden for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽¹⁴¹⁾	EAFRD	Total for adaptation
Climate change adaptation	-	-	68.6	68.6
Climate change adaptation and/or climate change mitigation	78.5	-	1,064.3	1,142.8

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in EAFRD as supportive adaptation in TO6 and in ERDF in TO4 and TO1.⁽¹⁴²⁾

¹³⁹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁴⁰ For climate change mitigation and for climate change adaptation

¹⁴¹ CF is not aimed at Sweden.

¹⁴² These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 26.2.5 of this chapter.

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO6
Climate change adaptation, ERDF/CF	-	-	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	25.1	53.5	-
Climate change adaptation, EAFRD	-	-	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	1,064.3

26.2.1 Climate change adaptation in ERDF

Sweden has nine ERDF programmes and one ERDF/ESF programme, of which none have allocation to climate change adaptation through IF087 and/or IF100.

26.2.2 Climate change adaptation in EAFRD

Sweden has one National Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the National RDP.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	68.6
Climate change adaptation and/or climate change mitigation	-	354.8	354.8	354.8	-	-

As can be seen, climate change adaptation is mainly addressed under local rural development (UP6b) and supports LEADER local development. Most climate change adaptation under UP6b can be found in measures M19, M07, M16, M02 and M01.

Furthermore, the bulk of climate change adaptation support in the National RDP is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), however, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the measures selected in the National RDP.

26.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 120 million, of which EUR 26 million (21.7 %) is designated for climate action. This is above the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP identifies the need to

improve fish stock data and align different types of data, however, no specific actions are mentioned in the OP.

26.2.4 Climate change adaptation in ESF

Sweden has one ESF/YEI and one ERDF/ESF. Total ESF Union support amounts to EUR 697 million, of which 7 million (1 %) is allocated to climate action. This is below the EU average of 1.4 %. Both programmes do not have focus on climate change adaptation.

26.2.5 Climate change adaptation in ETC

Sweden is part of four European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the one Cross-border (CB) and 2 Transnational (TN) programme with the largest allocation to adaptation, namely Interreg SE-FI-NO, North Sea, and Baltic Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Sweden is not available.⁽¹⁴³⁾

26.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the Swedish Partnership Agreement are mostly in line with the NAS. However, it is clear that the NAS and regional action plans go a bit further than the Partnership Agreement and allocations to ESI Funds. The NAS has around 800 proposed actions covering flood, drinking water and shoreline protection, infrastructure, resilience for heat waves and health care.

The Partnership Agreement mainly addresses climate change adaptation through the EAFRD, whereas if one follows the logic of the NAS, there should be more concrete adaptation actions in, for example, ERDF. The actions supported in the National RDP are in line with the Partnership Agreement and NAS. Despite the fact that there is no pure adaptation allocation in the ERDF programmes, there could be some potential adaptation actions.

¹⁴³ The total Union support for the four programmes Sweden is involved in amounts to EUR 523.2 million, out of which EUR 25.1 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. A more detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014SE06RDNP001	National RDP	M01, M02, M04, M07, M08, M10, M11, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB032	Interreg SE-FI-NO (Nord)	CB	3	Culture and Environment	85, 86, 87	6d	Improved conservation of natural environments.	<ul style="list-style-type: none"> Improved conservation of natural environments. Public sector knowledge and expertise on green growth and resource efficiency have increased in the region. 	<p>The horizontal principles make general references to sustainable development and climate change: It refers to that climate, energy and environment challenges are transboundary and environmental status of the program area is very much dependent on the actions taken within the EU and internationally. Within the Programme, there will be a number of projects directly aimed at contributing to a better environment but the North Programme should also take into account the horizontal criterion for sustainable development even if it is not the programme's main purpose. This will be done in the selection and implementation of projects that have the goal of sustainable growth.</p>
						6g	Public sector knowledge and expertise on green growth and resource efficiency have increased in the region.		
2014TC16 M5TN001	Baltic Sea	TN	2	Efficient management of natural resources	21, 65, 87	6b	<p>2.1. 'Clear waters': To increase efficiency of water management for reduced nutrient inflows and decreased discharges of hazardous substances to the Baltic Sea and the regional waters based on enhanced capacity of public and private actors dealing with water quality issues</p>	<ul style="list-style-type: none"> A wide set of measures reduced nutrient inflows and decreased discharges of hazardous substances. The activities concentrate on strategies, coastal spatial planning, developing and test innovative techniques and methods, management and monitoring systems, etc. Additionally climate change is also described to have an impact on the environmental state of the Baltic Sea and the regional biodiversity. For instance, eutrophication might be aggravated even more as the 	-

						6g	<p>2.2. 'Renewable energy': To increase production and use of sustainable renewable energy based on enhanced capacity in energy planning and supply</p>	<p>measures applied today will be less efficient.</p> <ul style="list-style-type: none"> • More extreme weather conditions in a changing climate might cause technological accidents at e.g. onshore and offshore constructions (oil platforms and refineries), resulting in spills of hazardous substances into the sea waters. The acidity of river waters might also increase. Therefore, regional strategies on climate change adaption are to be seen as a measure to decreasing eutrophication. • Enhancing the capacity of public and private actors to produce renewable energy from natural resources (e.g. wind, water, solar/geothermal sources, biomass from agriculture and forest, manure and aquatic resources) available in the region as well as waste. • Developing incentive policies for increasing renewable energy production; • Testing innovative green solutions on producing energy from renewable sources, including pilot investments; • Evaluating and testing alternative technologies for energy recovery from waste (e.g. anaerobic digestion, incineration) • Improving sustainable energy networks (e.g. development and reorganisation of smart and sea grids, virtual power plants, integration of storage) • Demonstrating and implementing innovative renewable energy storage technologies and distribution patterns. 	
2014TC16 RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	<p>Demonstrate new and/or improved methods for improving the climate resilience of target sites</p>	<ul style="list-style-type: none"> • Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. • New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the 	<p>The programme describes a comprehensive approach to pursuing sustainable development. During project development, projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.</p>

						6d	Develop new methods for the long-term sustainable management of North Sea ecosystems	<p>programme will provide opportunities for:</p> <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats <ul style="list-style-type: none"> • The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	
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Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN004	Northern Periphery and Arctic	TN	4	Protecting, promoting and developing cultural and natural heritage	85, 87	6c

27 Slovakia

27.1 Adaptation framework and priorities

In 2014, Slovakia adapted the National Adaptation Strategy (NAS), which creates a framework for climate change adaptation processes in the country.⁽¹⁴⁴⁾ The NAS outlines a set of adaptation measures in vulnerable sectors such as geological environment, water management, biodiversity, urban environment, health, agriculture, forest management, transport, energy tourism and disaster risk management. Furthermore, top priority is given to adaptation measures with a positive impact on public health.

The preparation of the NAS was connected with the preparation of the new ESIF 2014-2020 programming period, which ensured that the adaptation strategy is mainstreamed into the relevant Operation Programmes (OPs). More specifically, the ERDF/CF programme 'Quality of the Environment' provides support for increasing resilience to the impacts of climate change by reducing the risks related to floods, for improved water management in agriculture, restoration of ecosystems and prevention of forest fires, and for promotion of risk management in the area of climate change.

The Slovak Partnership Agreement includes a set of measures to minimise the risk and negative effect of climate change on the quality of life and economic growth. In the Partnership Agreement, adaptation is addressed through EAFRD, ERDF and CF. The main expected results are protection and preservation of biological biodiversity and implementation of water and soil management.

Regarding horizontal principles, sustainable development is integrated into ESI Funds through the 'polluter pays' principle. The fulfilment of the sustainable development principle will be monitored at the project level through monitoring reports.

¹⁴⁴ More country specific information can be found at <http://climate-adapt.eea.europa.eu/en/countries/slovakia>

27.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁴⁵⁾ in Slovakia for the 2014-2020 period amounts to EUR 15.3 billion. Of this amount, EUR 3.4 billion is allocated for climate action.⁽¹⁴⁶⁾ Out of the total ESIF Union support for Slovakia, 5 % (or EUR 759.7 million) is marked for climate change adaptation. An additional EUR 776.2 million is allocated for actions that could contribute to 'climate change adaptation and/or climate change mitigation'.

Table 1 below shows the foreseen support for climate change adaptation for ERDF, CF and EAFRD in Slovakia.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	260.9	419.3	79.5	759.7
Climate change adaptation and/or climate change mitigation	16.4	93.0	666.8	776.2

Table 2 presents the thematic concentration of the adaptation support. The largest support is foreseen in CF and ERDF through TO5 and in EAFRD through TO5 as pure adaptation and TO6 as supportive adaptation.⁽¹⁴⁷⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO4	TO5	TO6
Climate change adaptation, ERDF/CF		-	680.2	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	8.4	-	-	101.0
Climate change adaptation, EAFRD	-	-	21.0	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	666.8

27.2.1 Climate change adaptation in ERDF and CF

Slovakia has one ERDF/ESF/YEI three ERDF, and two ERDF/CF programmes, of which only one ERDF/CF programme, 'Quality of Environment', has allocation to

¹⁴⁵ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁴⁶ For climate change mitigation and for climate change adaptation

¹⁴⁷ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 28.2.5 of this chapter.

climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme.

In the programme, adaptation is primarily addressed through TO5 (EUR 680.2 million) in both ERDF and CF. The main climate adaptation IFs selected are IF087, IF021, IF085 and IF086. The OP identifies flooding as a main climate change challenge, thus measures addressing the adverse effect of flooding will be supported. More specifically, the programme will support development of polders, protective embankments, dikes and flood risk-management plans.

27.2.2 Climate change adaptation in EAFRD

Slovakia has one national Rural Development Programme. Table 3 below indicates the climate change adaptation allocations in the National RDP.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	21.0	-	-	-	-	58.5
Climate change adaptation and/or climate change mitigation	-	222.3	222.3	222.3	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b) and risk prevention and management (UP3b). Most climate change adaptation under UP6b and UP3b can be found in measures M19, M07 and M05. More specifically, M19 supports local development strategies that promote resource efficiency and support a climate resilient economy in agriculture, food and forestry sectors. However, these measures are very general and it can be difficult to assess which concrete actions they support.

Furthermore, the bulk of climate change adaptation support is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the measures selected in the National RDP.

27.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 15.8 million, of which EUR 1.3 million (8.2 %) is designated for climate action. This is considerably below the average share of 17.7 %. The actions foreseen under the OP partially focus on climate change, but only as a secondary objective. It is also worth noting that the programme is relatively small, mainly due to Slovakia having only inland fisheries.

27.2.4 Climate change adaptation in ESF

Slovakia has one ESF and one ERDF/ESF/YEI programme. Total ESF Union support amounts to EUR 2 billion, of which 23.6 million (1.2 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting promotion of employment and self-employment in the environmental sector/ green jobs (OP '*Human Resources*').

27.2.5 Climate change adaptation in ETC

Slovakia is part of three European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6 in the annex lists all the programmes and presents detailed information for the one Cross-border (CB) and two Transnational (TN) programme with the largest allocation to adaptation, namely Danube, Central Europe, Interreg PL-SK. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Slovakia is not available.⁽¹⁴⁸⁾

27.3 Adaptation framework compared with actual ESIF adaptation actions

The NAS is closely aligned to the Partnership Agreement and the specific ESI Funds, mainly because the preparation of the NAS was connected to the preparation of the ESIF programming period for 2014-2020 in Slovakia. This collaboration ensured that the adaptation strategy is mainstreamed into the relevant OPs, namely EAFRD, ERDF and CF. Furthermore, the preparation of the NAS has become an ex ante conditionality of the OP '*Quality of the Environment*'.

¹⁴⁸ The total Union support for the three programmes Slovakia is involved in amounts to EUR 603.7 million, out of which EUR 12.2 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014SK16 M1OP002	Quality of Environment	2/ 3	Adaptation to the adverse effects of climate change with the focus on flood protection / Promoting risk management, emergency management and resilience to emergencies affected by climate change	87	5i	2.1.1 Reducing the risk of flooding and negative effects of climate change.	Preparation of adaptation strategies at regional and local level and in municipalities, measures aimed at exchange of experience, networking, and information exchange. Polders, protective embankments/dikes, and stream adjustment; flood risk management plans that form a part of the river basin management measures utilising the green infrastructure; creation of bio-retention systems for rainwater retention. Modelling the development of emergencies, monitoring and evaluation of the risks related to climate change and its	The horizontal principle Sustainable development is directly integrated into the programming cycle and will be further reflected in the project selection phase and the subsequent implementation, monitoring and evaluation processes. The OP is a key programme for attainment of the goals of the climate change policy including health and lives of population and ecosystem protection, thus contributing to sustainable development. However, there are no specific measures included in OP to ensure integration of climate change adaptation and mitigation in sustainable development as horizontal principle.
					5b	3.1.1 Increasing the level of preparedness to manage emergencies affected by climate change.		

						3.1.2 Increasing the effectiveness of preventive and adaptation measures to eliminate environmental risks (except flood protection measures).	impacts, creating the systems of risk assessment. Promoting prevention and remediation of emergency landslides.	
						3.1.3 Increasing the effectiveness of management of emergencies affected by climate change		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014SK06RDNP001	National	M01, M02, M04, M05, M07, M08, M10, M11, M12, M13, M15, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level.

Table 6 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85, 86, 87	6b	2.1. Strengthen Transnational water management and flood risk prevention	<ul style="list-style-type: none"> Contribute to the common transboundary implementation of the Flood Directive by more effective flood forecasting, exchange of flood protection techniques, technologies and experiences, better integrate policies for the reduction of the total amount of pollution. Improved co-ordination and dialogue between the users of water or other resource, encourage more effective information sharing, mutual learning and a sustainable approach to managing the risks of floods, develop and implement education, training and capacity building to support sound water management. Improve frameworks and develop joint and integrated solutions for sustainable tourism (e.g. sustainable tourist activities), bicycle tourism, agro-tourism, Implement common strategies to develop common approaches for the protection and sustainable use of natural heritage. Reduction of energy consumption and CO2 emissions and resources consumption (e.g. water) through increased use of renewable energy sources and energy and resource efficiency measures as an integrated aspect of sustainable tourism development. Support risk management plans for cultural and natural heritage sites exposed to climate change. Improved strategic frameworks and developed specific solutions to restore, conserve and improve a network of green infrastructures/ bio-corridors in the Danube region Integrated management of habitats, protection and recolonisation of endogenous species, control of invasive species, raising awareness on sustainable land use, etc. 	<p>Numerous aspects of sustainable development common to all PAs and IPs including climate relevance ones (energy efficiency, renewables, GHG reduction) are listed as criteria to be assessed in selecting operations in addition to the general approach of implementing projects with the highest resource efficiency and sustainability. The CP focuses on contribution to reduced emission particularly in transport, energy efficiency and water management. Prevention of investments with considerable negative climate effects, and increased use of sustainable procurement are also to be considered.</p>
						6c	2.2. Foster sustainable use of natural and cultural heritage and resources		
						6d	2.3. Foster the restoration and management of ecological corridors		

2014TC16 RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c	3.1. To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources	<ul style="list-style-type: none"> • Developing and implementing integrated strategies and tools for the sustainable management of protected or environmentally highly valuable areas (e.g. biodiversity, landscapes, eco-systems, etc.) • Developing and implementing integrated strategies and tools to sustainably use natural resources for regional development, thus avoiding potential use conflicts (e.g. with tourism, transport, industry, agriculture, energy, etc.) • Developing and testing the application of innovative technologies and tools that facilitate effective integrated environmental management (e.g. remediation technologies, monitoring tools etc.) • Developing and testing applications to improve the efficient management of natural resources in public institutions and enterprises • Harmonising environmental management concepts and tools on the Transnational level to reduce negative climate change impacts on the environment and human life (e.g. adaptation measures) • Developing and implementing strategies and tools (including innovative financing and investment models) to manage and improve environmental quality (air, water, waste, soil, climate) in functional urban areas • Strengthening the capacity for environmental planning and management (e.g. participatory planning mechanisms and decision making processes) at the level of functional urban areas • Developing and implementing integrated strategies, policies and tools to reduce land-use conflicts in functional urban areas (e.g. urban sprawl, shrinkage and fragmentation also in the view of social implications) • Developing and implementing integrated strategies and pilot applications for the rehabilitation and reactivation of brownfield sites • Developing concepts and implementing environmental pilot applications to support the development towards smart cities (e.g. ICT applications, environmental technologies) 	Climate change objectives being part of sustainable development policy are adequately taken into account in terms of operation selection.
						6e	3.3. To improve environmental management of functional urban areas to make them more liveable places		

2014TC16 RFCB012	Interreg PL- SK	CB	1	Protection and development of the Cross- border area's natural environment and cultural heritage	85,86, 87	6c	Increasing the level of sustainable use of natural and cultural heritage by visitors and residents	<ul style="list-style-type: none"> • Construction or modernisation of Cross-border leisure industry infrastructure (including inter alia bicycle paths, greenways, 'Park & Ride' points), • Restoration and conservation works, redevelopment of cultural heritage sites, including in the area of energy efficiency • Exchange of movable heritage objects and exhibits, • Cooperation concerning the Cross-border area's heritage in the scope of conservation and protection of the cross border cultural and natural resources, (inter alia promotion of joint actions to protect natural resources, including protection of biodiversity) • Educational activities promoting cultural and natural heritage, • Coordinated educational programmes/initiatives including classes on ecology, • Promotion devoted to cultural and natural heritage of the border area, • Development and implementation of common Cross-border standards/guidelines on cultural and natural heritage protection and conservation, • Employing IT tools for conservation and promotion of cultural and natural heritage resources, e.g. for creation of Cross-border eco-products; • Joint training sessions for guides, conservators and representatives of institutions involved in activities related to protection of the cross border area's natural and cultural heritage, • Joint protection of the environment, including protection and restoration of proper conditions of species and habitats, • Educational activities in the area of risk management and security. 	Climate change objectives being part of sustainable development policy are adequately taken into account in terms of operation selection.
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28 Slovenia

28.1 Adaptation framework and priorities

In Slovenia, no plans for a separate adaptation strategy are currently in place as the National Development Strategy is expected to set long-term goals for the country with regard to adaptation. Meanwhile, short-term measures will be defined in an Action Plan for Adaptation that will be prepared on the basis of a comprehensive national Climate Change Risk Assessment that is currently underway.

The main cross-sectoral strategic document that includes adaptation measures is the Draft Strategy for the Transition of Slovenia to a Low-Carbon Society by 2060. The draft strategy contains strategic guidelines for both mitigation and adaptation, which have been since followed through. To reach long-term goals of maintaining vulnerability to the adverse effects of climate change at the present level, the adaptation guidelines proposed in the draft strategy aim at increasing the resilience and adaptive capacity of society, economy and nature. This is to be achieved through increasing understanding of climate change, integrating adaptation objectives and measures into sectoral policies, conducting sustainable spatial planning, strengthening the resilience of local communities and raising awareness through training and education. In 2008, the Government of the Republic of Slovenia adopted the Strategy for the Adaptation of Slovenian Agriculture and Forestry to Climate Change, which includes measures to reduce risk and damage to agriculture and forestry.

The Slovenian Partnership Agreement foresees most climate change adaptation through the EAFRD and ERDF/ESF/CF. The measures are aimed at innovation and knowledge through a stimulation of cooperation between enterprises and knowledge institutes. While the EAFRD primarily aims to restore and conserve significant ecosystems and their biodiversity, the ERDF/ESF/CF focuses on flood protection. Through use of the ESI Funds, the disaster management system shall be improved both in terms of infrastructure and human and technical capacity.

The environmental pillar of sustainable development as a horizontal principle is considered in all programmes, and will take into account recommended climate mitigation measures put forward by a comprehensive environmental impact assessment. Concerning sustainable development at the level of each programme, the transition to a low-carbon society and rational use of resources has been supported.

28.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁴⁹⁾ in Slovenia for the 2014-2020 period amounts to EUR 3.8 billion. Of this amount, EUR 1.1 billion is allocated for climate action.⁽¹⁵⁰⁾ Out of the total ESIF Union support for Slovenia, 2.6 % (or EUR 99.8 million) is marked for climate change adaptation. An additional EUR 522.1 million is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'. Table 1 below shows the foreseen support for climate change adaptation in Slovenia for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF	EAFRD	Total for adaptation
Climate change adaptation	30.0	53.0	16.8	99.8
Climate change adaptation and/or climate change mitigation	84.4	5.6	432.1	522.1

Table 2 presents the thematic concentration of this support. The only adaptation support is foreseen in ERDF through TO5. However, the EAFRD has a considerably high allocation for supportive adaptation in TO6.⁽¹⁵¹⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	TO1	TO5	TO6
Climate change adaptation, ERDF/CF	-	83.0	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	68.2	-	21.8
Climate change adaptation, EAFRD	-	-	-

¹⁴⁹ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁵⁰ For climate change mitigation and for climate change adaptation

¹⁵¹ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 27.2.5 of this chapter.

Climate change adaptation and/or climate change mitigation, EAFRD	-	-	432.1
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28.2.1 Climate change adaptation in ERDF and CF

Slovenia has one ERDF programme, which is combined with CF, ESF and YEI. Table 4 in the Annex provides a detailed overview on that programme with climate adaptation support. There, adaptation is only addressed through TO5 (EUR 83 million) in PA5, 'Adaptation to climate change'. Climate adaptation is only addressed through IF087, with the primary focus on the needs to adapt against higher flooding risk, strengthen monitoring and human capacities, emergency response capacities of agencies and disseminate information on climate change adaptation.

28.2.2 Climate change adaptation in EAFRD

Slovenia has programmed one national Rural Development Programme (RDP). Table 3 below indicates the climate change adaptation allocations in the Slovenian EAFRD programmes.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	-	-	-	-	-	16.8
Climate change adaptation and/or climate change mitigation	-	144.0	144.0	144.0	-	-

As can be seen, the bulk of climate change adaptation action in the Slovenian EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c), followed by actions under local rural development (UP6b).

Most climate change adaptation can be found in measures M13, M10, and M11.. The main theme of actions under M13 is to address environmental problems which constrained areas face, including issues like soil conservation, water management and the protection of biodiversity. The main focus of actions under the key climate measure M10 lies on the implementation of environmentally friendly practices and an improvement of biodiversity. M11 foresees the promotion of the conversion to organic agriculture, which has the benefits of improved water management, soil management, fertiliser management and enhanced biodiversity. A specifically foreseen adaptive action under this measure is the promotion of plant varieties with a better ability for adapting to altered climatic conditions.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

28.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 24.8 million, of which EUR 3.1 million (12.7 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP foresees actions that address the availability and quality of aquatic resources, and reduce the impact on biodiversity, as well as fish stocks preservation.

28.2.4 Climate change adaptation in ESF

Slovenia has one ESF programme, which is combined with ERDF, CF, and YEI. Total ESF Union support amounts to EUR 694.8 million, of which 18 million (2.6 %) is allocated to climate action. This is above the EU average of 1.4 %. The ESF programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting promotion of green jobs.

28.2.5 Climate change adaptation in ETC

Slovenia is part of 6 European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg SI-HR, Interreg SI-AT, and Adriatic-Ionian. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for Slovenia is not available.⁽¹⁵²⁾

28.3 Adaptation framework compared with actual ESIF adaptation actions

Slovenia currently has no national climate change adaptation strategy in place, and makes use of other strategic documents that partially address climate adaptation. Furthermore, specific key sectors are rarely specified, with the exception of agriculture and forestry.

Based on the indicated actions in the ESIF programmes, climate adaptation is, to the greater extent, in line with the Partnership Agreement. However, none of the actions in the ESIF programmes point to improved disaster management, as indicated in the Partnership Agreement. Furthermore, climate adaptation has not been particularly mainstreamed across all themes. The ESF funding partially addresses adaptation by promoting green jobs, though adaptation needs that relate to the expected impacts from gradual climate change and increases in the occurrence of extreme weather events are not addressed. No measures are foreseen to increase the resilience of urban areas to climate change through e.g.

¹⁵² The total Union support for the 6 programmes Slovenia is involved in amounts to EUR 704.2 million, out of which EUR 33.2 million is allocated for adaptation.

runoff water systems. Moreover, climate change adaptation has not been mainstreamed into research and innovation, biodiversity, green skills and targeted education.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top three programmes with the largest adaptation support have a more detailed description on actions to be supported and horizontal principles on sustainable development.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014SI16MAOP001	Implementation of the EU Cohesion Policy	5	Adaptation to climate change	87	5a	Enhance the availability of water supply and wastewater management services and system management efficiency, while achieving good status of water regarding chemical and ecological parameters.	Both IPs, 5a and 5i, support actions that aim to ensure flood protection on the major rivers (Savinja, Drava, Gradascica, Selska, Sora, and others) subject to high flood risk, with the result of reduced risk exposure.	The horizontal principle foresees that integrated territorial plans developed for a number of cities will consider climate change adaptation measures. Furthermore, sustainable development has been integrated in the design of measures. Selection criteria for projects will be, among others, focused on climate action.
					5i	5i1. Reduced risk of flooding in areas affected by significant floods		

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures.. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014SI06RDNP001	National	M01, M02, M08, M10, M11, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16 RFCB029	Interreg SI-HR	CB	1	Integrated flood risk management in transboundary river basins	87	5b	1.1. Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems so harmonised actions are required.	<ul style="list-style-type: none"> Flood risk reduction in the transboundary Dragonja, Kolpa/Kupa, Sotla/Sutla, Drava, Mura and Bregana river basin 	The programme authorities will undertake actions throughout the programme lifecycle, to avoid or reduce environmentally harmful effects of interventions and ensure results in net social, environmental and climate benefits. Actions to be undertaken may include the following: 1) Directing investments towards the most resource-efficient and sustainable options; 2) Avoiding investments that may have a significant negative environmental or climate impact, and supporting actions to mitigate any remaining impacts; 3) Taking a long-term perspective when 'life-cycle' costs of alternative options for 4) investment are compared; 5) Increasing the use of green public procurement.
2014TC16 RFCB054	Interreg SI-AT	CB	3	Enhancing Institutional Capacity and an Efficient Public Administration	87	11b	A.3.1. Improving cooperation in the fields of risk management, energy, health and social cohesion	<ul style="list-style-type: none"> Developing and implementing CB tools and services (e.g. analytical tools, management tools, technical tools, software tools, etc.) for the purpose of risk management prevention (e.g. joint monitoring, etc.). Joint programming, project preparation and demonstration actions of local governments, non-profit organizations, development and energy agencies in the field of renewable energy and energy efficiency. Developing and implementing CB tools and services (e.g. analytical tools, management tools, technical tools, software tools, etc.) for the purpose of emergency interventions (e.g. information about hospital beds, availability of ambulances and medical workers, etc.). 	The principle of sustainable development refers in a superficial and broad manner regarding climate change mitigation and adaptation. According to the CP, important tools in methodologically considering the principles of sustainable development in the preparation phase are the Ex-ante evaluation and the SEA. The findings of the SEA were integrated into the CP and its implementation procedures. Furthermore, it is mentioned that sustainable development will be considered throughout the program implementation phase. Project assessment, selection, implementation, monitoring and evaluation will be guided by principles including: selection of investment related projects in view of highest resource efficiency and sustainability; selection of projects with positive environmental and climate effects.

2014TC16 M4TN002	Adriatic-Ionian	TN	2	Sustainable region	21, 85, 86, 87	6c	Promote the sustainable valorisation and preservation of natural and cultural heritage as growth assets in the Adriatic-Ionian area	<ul style="list-style-type: none"> • Transnational networks for sustainable cultural/natural tourism promotion; • Diversified tourism products and innovative touristic services; • Sustainable tourism models focusing on low carbon emissions, low ecological footprint and 'slow food' concepts. • Transnational frameworks and platforms for hazard and risk assessment, planning methodologies, management plans, sustainability and adaptation assessments etc. • Development of implementation strategies, models and testing of pilot activities on risk management and climate change adaptation in terrestrial and aquatic environments; • Transnational Special Spatial Plans (e.g. on RES, on tourism, on agriculture and forestry), Maritime Spatial Planning, Multiannual Fishery Management Plans and Integrated Coastal Zone Management Plans and Procedures; • Early warning systems for forecasting, managing and preventing natural and manmade hazards; • Exchange of best practices on civil protection, floods management, risk management, integrated and sustainable management of protected areas) 	<p>The programme aims at improving and harmonizing environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management systems across the partner's countries. In line with the principle of sustainable development, projects applications shall be evaluated using the following criteria: - positive effect on the environment, - Projects that have a potentially harmful effect on the environment will be excluded; environmental awareness consideration and compliance both within - efficiency in the use of resources (e.g. energy efficiency, renewable energy use, reduction of GHG emissions), management and recycling, reduction of PM and NO2, etc.). - development of green infrastructures; contribution to better awareness for the adaptation to climate change and risk prevention; Furthermore whether projects are directly concerned by sustainable development issues or not, they shall be invited to implement actions/take specific measures to reduce the environmental impact beneficiaries are requested to describe in their project proposals the efforts they will undertake to reduce the project's 'carbon footprint'. Finally, the SEA and the ex-ante evaluation provided inputs to ensure that the ADRION Programme respect the principle of sustainable development.</p>
						6d	Enhance the capacity in tackling environmental vulnerability, fragmentation, and the safeguarding of ecosystem services in the Adriatic Ionian area		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16M6TN001	Danube	TN	2	Environment and culture responsible Danube region	21, 85,86, 87	6b, 6c, 6d
2014TC16RFTN003	Central Europe	TN	3	Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE	21, 85, 86, 87	6c, 6e
2014TC16RFCB036	(Interreg V-A) IT-SI - Italy-Slovenia	CB	4	Enhancing capacity building and Cross-border governance	87	11a

29 The United Kingdom

29.1 Adaptation framework and priorities

Responsibility for climate change adaptation is split between the four countries of the United Kingdom, with national governments in Northern Ireland, Wales and Scotland responsible for adaptation in all devolved policy areas. Her Majesty's Government (HMG) is responsible for adaptation in England and Reserved Matters for the UK. In some initiatives, a UK-wide approach has been adopted.

The Climate Change Act 2008 created a framework for building the UK's ability to adapt to climate change. Priority sectors and actions for each of the four countries are described below.

England and reserved matters - 6 thematic chapters: Built Environment, Infrastructure, Healthy and Resilient Communities, Agriculture and Forestry, the Natural Environment and Business. There is a seventh cross-cutting chapter on Local Government, while considerations such as flooding and water scarcity are considered throughout the various chapters.

Scotland - The Adaptation Programme is structured around an overarching aim to increase the resilience of Scotland's people, environment and economy to the impacts of a changing climate.

Wales - The Sectoral Adaptation Plans are the principal mechanism through which the Welsh Government seeks to deliver climate resilience in the sector's aims and objectives for the coming century. Sectoral Adaptation Plans will be developed in the following five sectors: Natural Environment, Infrastructure, Health, Communities, and Business and Tourism.

Northern Ireland - Four primary areas for action have been identified. These are flooding, water, natural environment and agriculture and forestry. The NICCAP contains a range of actions and activities to address risk in these areas.⁽¹⁵³⁾

Looking at the Partnership Agreement, adaptation is mostly addressed through EAFRD (5 % of the EAFRD budget is allocated to TO5). The focus is on encouraging the development of the market in adaptation products, services and, where market failure can clearly be demonstrated, investing in infrastructure to help manage floods. Expected results for England are to increase farm, forest and ecosystem resilience to the projected impacts of climate change. For Wales, the expected results are on land-based measures to reduce GHG and improve Carbon retention, and improved resilience of farm businesses to the extreme effects of climate change.

The Partnership Agreement sets out that the use of ESI funds in the UK will include integrated strategies for addressing environmental, social and economic concerns guided by the principles of sustainable development. The Partnership Agreement states that the UK system of environment law is underpinned by the 'polluter pays' principle' which will be applied systematically across all programmes and investments.

29.2 ESIF support for climate change adaptation

Union support under the ESI Funds⁽¹⁵⁴⁾ in the United Kingdom for the 2014-2020 period amounts to EUR 16.4 billion. Of this amount, EUR 5.7 billion is allocated for climate action.⁽¹⁵⁵⁾ Out of the total ESIF Union support for the United Kingdom, 1.1 % (or EUR 172.6 million) is marked for climate change adaptation. An additional EUR 4.1 billion is allocated for actions that could contribute to '*climate change adaptation and/or climate change mitigation*'.

Table 1 below shows the foreseen support for climate change adaptation in the United Kingdom for ERDF and EAFRD.

Table 1 Overview of EU ESIF support for climate change adaptation

Union support in EUR million/Fund	ERDF	CF ⁽¹⁵⁶⁾	EAFRD	Total for adaptation
Climate change adaptation	70.0	-	102.6	172.6
Climate change adaptation and/or climate change mitigation	256.0	-	3,801.2	4,057.2

¹⁵³ More country specific information can be found at <http://climate-adapt.eea.europa.eu/countries/united-kingdom>.

¹⁵⁴ ERDF, CF, ESF, EAFRD and EMFF – but excluding ETC

¹⁵⁵ For climate change mitigation and for climate change adaptation

¹⁵⁶ CF is not aimed at the United Kingdom.

Table 2 presents the thematic concentration of the adaptation support. The largest adaptation support is foreseen in ERDF through T05 as pure adaptation and in T01 and T04 as supportive, while in EAFRD through T04 as pure adaptation and T06 as supportive adaptation.⁽¹⁵⁷⁾

Table 2 Overview of ERDF & EAFRD with Union support for climate change adaptation per thematic objective

Union support (in EUR million)/TO	T01	T04	T05	T06
Climate change adaptation, ERDF/CF	-	-	70.0	-
Climate change adaptation and/or climate change mitigation, ERDF/CF	141.5	79.7	-	34.7
Climate change adaptation, EAFRD	-	8.4	4.5	-
Climate change adaptation and/or climate change mitigation, EAFRD	-	-	-	3,801.2

29.2.1 Climate change adaptation in ERDF

The United Kingdom has six ERDF programmes, of which one programme has an allocation to climate change adaptation. Table 4 in the Annex provides a more detailed overview on this programme. There, adaptation is primarily addressed through T05 (EUR 70.0 million) in PA5 'Promoting climate change adaptation, risk prevention and management'. The main climate adaptation IF selected is IF087. The most significant and specific climate change challenge faced by the British economy is greater flood risk due to increased rainfall and sea-level rise. ERDF funding aligned with or matched national and local funding will be used to target flood risk in specific local areas and help to unlock development sites that are important to unlocking growth in local areas. These sites are unlikely to be development-ready without government intervention, as any private developer would be unlikely to absorb the negative environmental externality. Improving resource efficiency and reducing waste including better management of energy, materials, and water are also mentioned.

29.2.2 Climate change adaptation in EAFRD

The United Kingdom has programmed a total of four Rural Development Programmes (RDP). Table 3 below indicates the climate change adaptation allocations in the British EAFRD programmes.

¹⁵⁷ These tables only give an overview on the funds where a distinction of adaptation support is possible; this is not the case for ESF and EMFF. ETC is also not included here due to the nature of the programmes, but it is addressed in section 29.2.5 of this chapter.

Table 3 Overview of EAFRD Union support for climate change adaptation

EU support (in EUR million)/UP	UP3b (TO5)	UP4a (TO6)	UP4b (TO6)	UP4c (TO6)	UP5a (TO4)	UP6b
Climate change adaptation	4.5	-	-	-	8.4	89.7
Climate change adaptation and/or climate change mitigation	-	1,267.1	1,267.1	1,267.1	-	-

As can be seen, the climate change adaptation actions in the National RDP are foreseen in Focus Areas that address local rural development (UP6b) and water use efficiency (UP5a).

Most climate change adaptation can be found in measures M19, M07, and M01. The main focus of actions under the key climate measure M19 lies on support for the implementation of Local Development Strategies, including community actions on climate change and enhancement of rural natural and/or cultural heritage, tourism and leisure. Measure M07 has a focus on investments on difficulties faced by rural communities, including lack of access to services and the provision of infrastructure, such as access to ICT and the development of community buildings, public spaces and cultural, tourism and heritage amenities, including the renovation and maintenance of historic farm buildings. Actions under measure M01 are aimed at individuals engaged in the agriculture, food and forestry sectors, land managers and SMEs. Designed to support knowledge transfer and innovation through vocational training, skills development, and knowledge-transfer activities.

Furthermore, the bulk of climate change adaptation action in the United Kingdom EAFRD programmes is allocated to Focus Areas that address biodiversity (UP4a), water management (UP4b), and soil management (UP4c). However, it is worth noting that these Focus Areas include both adaptation and/or mitigation.

Table 5 in the Annex provides more details on the content of the programme with support for climate action.

29.2.3 Climate change adaptation in EMFF

Total EMFF Union support amounts to EUR 243.1 billion, of which EUR 36.7 million (15.1 %) is designated for climate action. This is below the average share of 17.7 %. The actions foreseen under the OP focus on climate change, but only as a secondary objective. With regard to adaptation, the OP pursues four main policy goals: adaptation of the fisheries sector to the new requirements of the CFP, fostering growth in aquaculture and processing, supporting environmental, economic and social sustainability of the sector and fulfilling enforcement and data collection obligations.

29.2.4 Climate change adaptation in ESF

The United Kingdom has six ESF programmes, two of which include YEI. Total ESF Union support amounts to EUR 4.6 billion, of which 37.1 million (0.8 %) is allocated to climate action. This is below the EU average of 1.4 %. The ESF

programmes do not directly target climate change adaptation, due to the nature of the programmes. However, some of the actions indirectly support climate adaptation, for instance, by supporting skills and employment activities that complement new community flood-risk management approaches and sustainable land management and drainage.

29.2.5 Climate change adaptation in ETC

The United Kingdom is part of seven European Territorial Cooperation (ETC) programmes with allocation to adaptation. Table 6-1 and 6-2 in the annex lists all the programmes and presents detailed information for the two Cross-border (CB) and one Transnational (TN) programme with the largest allocation to adaptation, namely Interreg FR-BE-NL-UK, Interreg FR-UK and North Sea. Due to the nature of ETC programmes, it is not possible to attribute support for adaptation to a specific country. Thus, the total adaptation support for The United Kingdom is not available.⁽¹⁵⁸⁾

29.3 Adaptation framework compared with actual ESIF adaptation actions

The foreseen climate change adaptation measures under the British Partnership Agreement seem to be in line with the National Adaptation Strategy (NAS). However, often the Partnership Agreement refers to the NAS without being explicit.

Major strengths on adaptation include: contributing to the delivery of climate change policies and priorities for sustainable land use and management, including through managing flooding and coastal erosion risks, where activity would complement national action, address demonstrated market failure and contribute to growth. The Partnership Agreement has a strong focus on actions related to the rural development programme, whereas all the other programmes (ERDF, EMFF, and ESF) also contain adaptation actions.

¹⁵⁸ The total Union support for the seven programmes The United Kingdom is involved in amounts to EUR 1.3 billion, out of which EUR 108.6 million is allocated for adaptation.

Annex Overview of programmes with support for climate change adaptation

This Annex contains all ERDF/CF and EAFRD programmes with EU support for climate change adaptation. It does not contain programmes from the ESF and EMFF funds since it is not possible to extract more detailed information (ESF and EMFF).

Table 4 shows all OPs that have direct support for adaptation (IF087 or IF100 are selected) on a priority axis level. The selected information gives a quick overview of possible adaptation-relevant content.

Table 4 Overview of ERDF/CF OPs with EU climate change adaptation support

OP		Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	No	Title					
2014UK16RFOP001	United Kingdom - ERDF England	5	Promoting Climate Change Adaptation, Risk Prevention and Management	87	5b	Enabling and protecting economic development potential through investment in flood and coastal flooding management where there is demonstrable market failure	Flood mitigation measures will support the protection of major employment areas and SMEs and unlock derelict, underused or neglected land on strategically important sites/areas identified as central to realising growth aspirations. Flood mitigation and associated environmental measures will also aim to bring back into use, in a sustainable way (such as through green and blue infrastructure), dormant land in need of remediation identified as strategically important for business growth and employment.	The horizontal principles include a commitment that projects support the move towards a low carbon economy; integrate adaptation and local resilience to a changing climate; support green infrastructure; attain recognised sustainable building standards; and demonstrate a proactive approach to energy efficiency.

Table 5 shows all RDPs that have direct support for adaptation (UP 3b, 5a, or 6b are selected), and presents all relevant measures. More detailed information can be found in the individual programmes.

Table 5 Overview of EAFRD RDPs with EU climate change adaptation support

RDP		Selected Measure
CCI	Title	
2014UK06RDRP001	England	M01, M02, M04, M07, M08, M10, M11, M15, M16
2014UK06RDRP003	United Kingdom - Rural Development Programme (Regional) Scotland	M01, M02, M04, M07, M08, M10, M11, M13, M15, M16, M19
2014UK06RDRP004	United Kingdom - Rural Development Programme (Regional) Wales	M01, M02, M04, M07, M08, M10, M11, M15, M16, M19
2014UK06RDRP002	United Kingdom - Rural Development Programme (Regional) Northern Ireland	M01, M02, M04, M07, M08, M10, M11, M13, M16, M19

Table 6 shows all ETC programmes that have direct support for adaptation (i.e. IF087 or IF100 are selected) on a priority axis level. Only the top Transnational (TN) programme and top two Cross-border (CB) programmes with the largest adaptation support have a more detailed description on the specific objectives, actions to be supported and horizontal principles on sustainable development.

Table 6-1 Overview of ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs	Specific Objective	Actions to be supported	Horizontal principles on sustainable development
CCI	Title	PT	No	Title					
2014TC16RFCB038	Interreg FR-BE-NL-UK (Two seas)	CB	3	Adaptation to climate change	87	5a	3.1. Improve the ecosystem-based capacity of 2 Seas stakeholders to climate change and its associated water management-related effects.	<ul style="list-style-type: none"> Design of strategies to optimize coastal zones integrated management and take account of climate change in economic development areas; Joint measures (e.g. infrastructure planning tools) integrated tools and technical solutions (e.g. soil management, coastal defence lines or concepts (e.g. managed realignment)) aiming at protecting built-up areas (e.g. urban areas) and coast lines against erosion/flooding through the promotion and implementation of nature and ecosystem-based solutions; Measures jointly dealing with loss of biodiversity and climate change; Set-up of a better coordination for prevention of floods (water management, flood risk techniques, awareness-raising on flood) Investments for the prevention and protection against floods 	According to section 8 of the CP, the sustainable development principle will be taken into consideration in the set of selection criteria. No reference is made to climate change.
2014TC16RFCB040	Interreg FR-UK (Manche-Channel)	CB	3	Enhance the attractiveness of territories within the FCE area	85, 87	6d	3.2. Enhance and protect the coastal and transitional water ecosystems	<ul style="list-style-type: none"> Joint research and scoping studies to manage environmental and natural risks, biodiversity and ecosystems, and natural assets across the FCE area with the aim to raise awareness of natural heritage, biodiversity, and local ecosystems and their services; Joint analysis, comparison and evaluation of the management of protected areas (marine areas, UNESCO biospheres, areas of outstanding natural beauty, etc.), especially where new activities are emerging (natural marine resources, marine energy, offshore aggregates, etc.) leading to concrete proposals that will improve how ecosystems are managed; Pilot projects on the definition and implementation of 	As part of the assessment of applications, consideration will be given to the projects adherence to the principles and objectives of sustainable development; as well as the associated environmental costs and benefits resulting. Where deemed appropriate, Environmental Impact Assessments will be made. To inform this assessment, all project applications will detail how their project complies with

							<p>new management systems for ecosystem services, including joint activities.</p> <ul style="list-style-type: none"> • Joint testing and piloting of actions that demonstrate better management of the FCE area and how to balance competing priorities for human activities and environmental preservation; • Joint testing of cross border cooperation on risk management (e.g. flooding) as a tool for better protecting ecosystems services. • Development and implementation of common information, education and communication tools for the general public, designed to improve organisations and citizens respect for and treatment of the environment; • Joint awareness and training events on the theme of sustaining, improving and managing ecosystem services – aimed at public decision makers, environmental stakeholders, and practitioners concerned by these challenges ; • Implementation of joint actions to better manage green and blue infrastructure; • Development and implementation of measures to influence local planning policy especially focused on maritime and coastal planning; • Implementation of joint measures to reduce pollution and improve the management of environmental risk especially in relation to the maritime risk and pollution; • Joint initiatives combining sustainable management of natural resources (promotion of renewable energy in tourist infrastructure, water and waste management) and protection and promotion of preserved natural areas. 	<p>Directive 85/337/EEC as amended by 97/11/EEC, which requires a statement of environmental impact i.e. that either the project does not have any significant, negative environmental impact or, where this is not the case, the application should provide a full description (if possible) of the anticipated negative impact as well as of the mitigating measures. The potential environmental impact of projects will be assessed during the selection of projects by assessing how the proposed actions take into account environmental protection requirements (including addressing soil, water and air pollution), resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management. The selection criteria will also take into account the ability of the project to address the environmental challenges and will take on board the mitigation measures highlighted in the Strategic Environmental Assessment (SEA) non-technical summary. The projects funded under this programme could be subject to an Environment Impact Assessment if required by the Directive 2011/92/EU as</p>
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									amended by the Directive 2014/52/EU and the relevant national legislation.
2014TC16RFTN005	North Sea	TN	3	Sustainable North Sea Region: Protecting against climate change and preserving the environment	85, 87	5a	Demonstrate new and/or improved methods for improving the climate resilience of target sites	<ul style="list-style-type: none"> Projects should include work on modelling climate change impacts on a regional level if this has not already been done, and developing risk management and investment plans based on the picture that emerges. New and more effective flood defences should continue to use 'building with nature' techniques wherever possible in order to harness natural protection mechanisms. More broadly the programme will provide opportunities for: <ul style="list-style-type: none"> - Sharing knowledge on the latest methods - Joint work on designing improved infrastructure and procedures - Developing new solutions to tackle emerging threats The focus will be on increasing coordination between administrations in each country and ensuring that sufficient weight is given to the preservation of the environment, particularly the marine environment. Notably, the programme requires that solutions are climate-proofed and preferably contribute to the overall adaptation strategies of the regions where target sites are located. 	The programme describes a comprehensive approach to pursuing sustainable development. It is stated that during project development projects should consider how to ensure net social, environmental and climate benefits in particular when making investments and increasing the use of green public procurement.
						6d	Develop new methods for the long-term sustainable management of North Sea ecosystems		

Table 6-2 Overview of remaining ETC programmes with EU climate change adaptation support. Programme types (PT): Cross-border (CB), Transnational (TN), Interregional (IR)

CP			Priority axis		Selected IFs	Selected IPs
CCI	Title	PT	No	Title		
2014TC16RFTN006	North West Europe	TN	2	Low carbon (to facilitate the implementation of low-carbon, energy and climate protection strategies to reduce GHG emissions)	65, 87	4e, 4f, 7c
2014TC16RFTN007	South West Europe	TN	4	Promoting climate change adaptation, risk prevention and management	87	5b
2014TC16RFTN002	Atlantic Area	TN	3	Strengthening the Territory's resilience to risks of natural, climate and human origin (TO 5)	87	5b
2014TC16RFTN004	Northern Periphery and Arctic	TN	4	Protecting, promoting and developing cultural and natural heritage	85, 87	6c