ADRIADAPT

Report on catalogue for adaptation measures

Deliverable 4.2.1

Work Package 4
Activity 4.2

PAP/RAC

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Table of Contents

1 Purpose of the document

The main purpose of this document is to present the structure, process of development and the final contents of the catalogue of adaptation measures for Adriadapt knowledge platform. During the project implementation it was decided to structure the catalogue in the two main categories:

1. Adaptation options
2. Case studies

2 Adaptation options

Adaptation options are possible measures and actions that can be implemented to improve adaptation to climate change. From a broad perspective they have been categorized in:

- **Societal** (often called soft) options, including policy, legal, social, management and financial measures that can modify human behaviour and styles of governance, contributing to improve adaptation capacity and to increase awareness on climate change issues. These measures may involve policy changes and benefit from administrative coordination among different actors. Examples include: governance, integrated coastal zone planning and management, land-use planning, early warning systems, awareness raising, public information campaigns, capacity building, economic diversification, insurance mechanism, economic instruments, etc. These options are considered to be among the most promising one related to the joint objective of overall society transformation needed to reach the goals established by the Paris agreement. Therefore, their common tittle has been assessed as underestimating and damaging for the presentation of this group of options. Therefore, the tittle of this group has been changed into societal options.
- **Green options**, referring to a wide range of solutions which are based on the ecosystem-based approach (also known as nature-based approach). These types of measures utilise natural or ecosystem-like processes to improve resilience and adaptation capacity. Examples of green measures include ecological restoration of floodplain forests, reinforcing natural defences such as dunes and cliffs, as well as maintaining and restoring healthy coastal wetlands.
- **Grey options**, referring to technological and engineering solutions to improve adaptation of territory, infrastructures and people. Examples of this typology of option include adaptation or improvement of dikes and dams or strengthening of river flood defences.

However, some of the options are combination of more than one category. In such cases, options can be found under both categories.

2.1 Adaptation options template

Adaptation options were presented according to the following template:

1. Name

Brief and clear name of the option, e.g. early warning system, capacity building and training, restoration of coastal wetland, mainstreaming adaptation in land use planning, improving integrated governance of climate change adaptation, etc. Max: 100 characters including space.

2. Description

Description of the option, including scope, objectives, applicability, available techniques/methods, major (policy, legal, institutional) drivers encouraging the adoption of the initiative, factors that can be decisive for the successful implementation of the measure, and expected challenges or limiting factors which may hinder the process. Max: 4,000 characters including space.

3. Costs and benefits

This section shall ideally provide information on typical costs for the design and implementation of the adaptation measure. Quantitative estimation can be derived from literature or cases of real implementation. However, they might be difficult to be found; qualitative evaluation of expected costs can be alternatively included. The section shall also highlight adaptation benefits and other co-benefits of the consideration option. Max: 2,500 characters including space.

4. Implementation time and lifetime

Typical time needed for the design and implementation of the adaptation measure; it can be expressed with a range of years. Typical duration of the adaptation measures; it can be expressed with a range of years. Max: 1,000 characters including space.

5. Keywords

6 to 8 keywords which reflects main contents of the adaptation option. Avoid too general words (e.g. adaptation, climate change, resilience, etc.) and words which are already include in pre-fixed fields (i.e. sectors and impacts). Keywords will be homogenised when all adaptation options are available.

6. General category

☐ Societal

☐ Green

☐ Grey

Selection of one category

7. IPCC category

- ☐ Institutional: Economic options
- ☐ Institutional: Government policies and programmes
- ☐ Institutional: Law and regulations
- ☐ Social: Behavioural
- ☐ Social: Educational options
- ☐ Social: Informational
- ☐ Structural and physical: Ecosystem-based adaptation options
- ☐ Structural and physical: Engineering and built environment options
- ☐ Structural and physical: Service options
- ☐ Structural and physical: Technological options

This categorization refers to chapter 14 of IPCC AR5 WG2. Selection of more than an option is allowed; it is suggested to select up to two options

8. Sectors

Specify whether the adaptation option is cross-sector (e.g. capacity building to improver adaptation) or tend to focus on some specific sectors (e.g. crop diversification to deal with climate change).

- ☐ Cross-sector
- ☐ Sectors specific

If the adaptation option is sectors specific, select most relevant sectors; i.e. those for which the measure provides a clear improvement of the adaptation capacity.

- [ ] Agriculture
- [ ] Biodiversity
- [ ] Buildings
- [ ] Coastal management
- [ ] Disaster Risk Reduction
- [ ] Energy
- [ ] Financial
- [ ] Forestry
- [ ] Health
- [ ] Marine and fisheries
- [ ] Spatial planning
- [ ] Tourism
- [ ] Transport
- [ ] Urban
- [ ] Water management

Selection of more than one is allowed; be specific on the sectors really addressed by the option

9. Climate impacts

- [ ] Droughts

☐ Extreme temperatures and heatwaves

☐ Flooding

☐ Wildfire

☐ Heavy rains

☐ Changes in sea conditions

☐ Sea level rise

☐ Storms

☐ Water scarcity

☐ Non-impact specific

Selection of more than one is allowed; be specific on the impacts really addressed by the option

10. Source for more detailed information

Include here any reference/link to source for more detailed information about the specific adaptation option: web-site, on-line document, published manuscript, projects, studies, etc. The aim is not to provide a long list, but to be as much as possible focus on key resources.

2.2 Final list of the adaptation options

In total, 43 adaptation options have been selected and developed, reviewed by another organization or person. Final version of the original language was profred, translated into remaining two languages and each language has been controlled by a technical experts, native to the language in question.

Work has been coordinated through the G-drive established by the project leading partner CMCC. PAP/RAC opened the folder within the WP4 entitled: "Information for partners" within which each adaptation option had its own folder. In this manner all partners were invited to use the knowledge platform during its creation, prior to the finalization of all the materials. Once finalized DOOR uploaded the adaptation options on the web platform.

During development of adaptation options for several options PAP/RAC assessed the discussion with experts to be of a great value. Therefore, it was decided to test another way of communication and awareness raising. During project implementation period PAP/RAC possessed the licence for Prezi presentations, which in 2020 got a new feature – Prezi video. We have decided to film few videos with the most relevant and interesting contributions realized during the preparation of the platform.

Following videos were made:

- Contribution of neglected surfaces in cities to adaptation to climate change (Adaptation option: Green spaces and corridors in urban areas)
- Mediterranean bark beetle and the climate change (Adaptation option: Mitigating gradient outbreak of pests associated with climate change)
- Mitigating outbreaks of pests along Adriatic coast (Adaptation option: Mitigating gradient outbreak of pests associated with climate change)
- Growing risks of wildfires (Adaptation option: Adaptation through integrated fire management)

All adaptation options are available at the following web addresses:

- https://adriadapt.eu/adaptation-options/
- https://adriadapt.eu/hr/adaptation-options/
- https://adriadapt.eu/it/adaptation-options/

Following adaptation options can be found on the platform:

SOCIETAL ADAPTATION OPTIONS

- Adaptation through integrated land use planning
- Adaptation through integrated fire management
- Adaptation through Integrated Coastal Zone Management Plans and Programmes
- Climate-related health action plans
- Water saving and recycling (societal/grey)
- Managed retreat
- Setback
- Knowledge sharing and learning platforms
- Establishment of early warning systems
- Modelling, monitoring and forecasting systems
- Climate proofing of building codes
- Risk-based zoning and siting for aquaculture
- Diversification of fisheries and aquaculture products and systems

- Marine Protected Areas and Fisheries management
- Integrated governance for adaptation
- Community-based management and Adaptive Co-management
- Systemic building of climate literacy
- Systemic science-based citizens informing

GREEN ADAPTATION OPTIONS

- Climate Smart Pest management
- Water sensitive forest management
- Afforestation and reforestation
- Dune construction and strengthening
- Restoration and management of coastal wetlands
- Adaptive management of natural habitats
- Use of adapted crops
- Rehabilitation and restoration of rivers
- Green roofs
- Green spaces and corridors in urban areas
- Disaster risk reduction using eco-system services – Eco DRR
- Measures reducing urban runoff
- Reduction of land consumption in urban areas and surface unsealing
- Possidonia – queen of mitigation and of adaptation

GREY ADAPTATION OPTIONS

- Adaptation or improvement of dikes and dams
- Beach nourishment
- Cliff stabilization & strengthening
- Seawalls
- Storm surge gates / flood barriers
- Groynes, breakwaters and artificial reefs
- Raising/expanding coastal land
- Water sensitive urban and building design (grey/green)
- Improved water retention and irrigation efficiency in agricultural areas
- Water use to cope with heatwaves in cities
- Transport and road infrastructure adaptation
- Improving thermal comfort of buildings

Following table contains information about the authors, reviewers and the responsibilities for translation into two languages, including control/approval authority.

LIST OF ADAPTATION OPTIONS

Title	AUTHOR(S)	ORIGINAL LANGUAGE/ proofreading	REVIEWER(S)	TRANSLATION 1 – responsible + expert approval	TRANSLATION 2- responsible + expert approval
Adaptation through integrated land use planning	Thetis/IUAV	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Adaptation through integrated fire management	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.), N. Tramontana, M. Kević, A. Mikačić CMCC	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Climate Smart Pest management	Dr. Milan Pernek	Croatian/ Cakum-pakum	PAP/RAC (D.P. S.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Afforestation and reforestation	Dr. Milan Pernek	Croatian/ Cakum-pakum	PAP/RAC (D.P. S.) and CMCC (M.B.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Adaptation through Integrated Coastal Zone Management Plans	PAP/RAC (D.P.S.)	Croatian/ Cakum-pakum	PAP/RAC (Z.S.), CMCC (M.B.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Climate-related health action plans	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Water saving and recycling	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Adaptation or improvement of dikes and dams	E. Pranzini	English/ PAP/RAC (N.S.)	PAP/RAC (I.S. and P.N.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Beach nourishment	E. Pranzini and PAP/RAC (I.S.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)

Title	AUTHOR(S)	ORIGINAL LANGUAGE/ proofreading	REVIEWER(S)	TRANSLATION 1 – responsible + expert approval	TRANSLATION 2- responsible + expert approval
Cliff stabilization & strengthening	E. Pranzini	English/ PAP/RAC (N.S.)	PAP/RAC (I.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Dune construction and strengthening	E. Pranzini and PAP/RAC (I.S.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Restoration and management of coastal wetlands	PAP/RAC (P. N. D. E. and I. S.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Seawalls	E. Pranzini	English/ PAP/RAC (N.S.)	PAP/RAC (I.S. and P.N.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Storm surge gates / flood barriers	E. Pranzini	English/ PAP/RAC (N.S.)	PAP/RAC (P. N. and I.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Groynes, breakwaters and artificial reefs	E. Pranzini	English/ PAP/RAC (N.S.)	PAP/RAC (I.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Raising/expanding coastal land	E. Pranzini and PAP/RAC (I.S.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Managed retreat	PAP/RAC (A. I. and D.P. S.)	English	PAP/RAC (I.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum + E. Pranzini)
Adaptive management of natural habitats	CMCC (K.J. and M. B.)	English/ CMCC	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum + + Thetis)
Agro-forestry and crop diversification	CMCC (K.J. and M. B.)	English/ CMCC	PAP/RAC (I.S.)		
Use of adapted crops	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Setback	PAP/RAC (I.S.)	English/Cakum-pakum	PAP/RAC (D.P. S.) and M. B.	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + E. Pranzini)
Knowledge sharing and learning platforms	PAP/RAC (A.I.)	English/ Cakum-pakum	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum + Thetis)

Title	AUTHOR(S)	ORIGINAL LANGUAGE/ proofreading	REVIEWER(S)	TRANSLATION 1 – responsible + expert approval	TRANSLATION 2- responsible + expert approval
Disaster risk reduction using eco-system services – Eco DRR	Ana Mikačić, Civil protection Croatia	Croatian/ Cakum-pakum	PAP/RAC (D.P. S. and A. I.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Rehabilitation and restoration of rivers	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Establishment of early warning systems	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Green spaces and corridors in urban areas	CMCC (K. J.) and Igor Belamarić	English/ PAP/RAC (N.S.)	PAP/RAC, CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Improved water retention and irrigation efficiency in agricultural areas	CMCC (K. J.)	English	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum + Thetis)
Modelling, monitoring and forecasting systems	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (I. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Water use to cope with heatwaves in cities	CMCC (K. J.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Water sensitive urban and building design	CMCC (K. J.) and I. Belamarić	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Green roofs	Ambiente Italia (L. Bono)	English/ PAP/RAC (N.S.)	CMCC, PAP/RAC	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + L. Bono)
Climate proofing of building codes	Thetis, IUAV	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Measures reducing urban runoff	Thetis, IUAV	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Reduction of land consumption in urban areas and surface unsealing	CMCC (M. B.)	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.), IUAV	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Transport and road infrastructure adaptation	IUAV, Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)

Title	AUTHOR(S)	ORIGINAL LANGUAGE/ proofreading	REVIEWER(S)	TRANSLATION 1 – responsible + expert approval	TRANSLATION 2- responsible + expert approval
Risk-based zoning and siting for aquaculture	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (I. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Diversification of fisheries and aquaculture products and systems	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (I. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Marine Protected Areas and Fisheries management	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (I. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Possidonia – queen of mitigation and of adaptation	PAP/RAC (I.S.)	English/ Cakum-pakum	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum + PAP/RAC)
Improving thermal comfort of buildings	IUAV, Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.) and CMCC (M. B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Integrated governance for adaptation	V. Lay and PAP/RAC (D.P.S.)	Croatian/ Cakum-pakum	PAP/RAC (Z.S.), CMCC (M.B.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Community-based management and Adaptive Co-management	Thetis	English/ PAP/RAC (N.S.)	PAP/RAC (D.P. S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Systemic building of climate literacy	V. Lay and PAP/RAC (D.P.S.)	Croatian/ Cakum-pakum	PAP/RAC (I.S.)	English, (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)
Systemic science-based citizens informing	V. Lay and PAP/RAC (D.P.S.)	Croatian/ Cakum-pakum	PAP/RAC (I.S.), and CMCC (M. B.)	English, (Cakum-pakum + PAP/RAC)	Italian (TraduTour + Thetis)

3 Case studies

Case studies showcase adaptation measures that have been carried out in a specific location (region, county, city, town, village, etc.) of the Adriatic or Mediterranean region to increase resilience to extreme weather and slow-onset events and therefore to improve adaptation to climate change. They are aimed at supporting policy and decision-makers, in particular at the local and regional scale, in their efforts to cope with the effects of climate change by demonstrating the implementation of real adaptation measures. They intend to demonstrate that adaptation initiatives have been already put in place and therefore to inspire the initiation of other adaptation processes and initiatives.

A set of criteria for the identification of AdriAdapt case studies is hereafter proposed:

- Case studies are taken primarily from **Adriatic experiences,** followed from other Mediterranean countries.
- Case studies can refer to the **whole set of adaptation options** part of the AdriAdapt catalogue, thus including institutional, social and structural ones. In this perspective two typologies of case studies are identified:
    - **Process case studies**, describing experience taken by communities (regions, counties, cities, towns, villages, etc.) in initiating a process to improve adaptation to climate change, including adaptation strategies, adaptation plans, mainstreaming adaptation in other sector policies, disaster risk plans, other plans, etc.
    - **Implementation case studies**, describing experience of actual implementation of adaptation measures (ex. managed retreat of the road), also including measures under implementation. Implementation case studies can – although not necessarily – describe the effects of a previous process which has led to the design of strategy, plan and programmes.
- **Clear link to climate change adaptation**; the case studies described measures which have been designed and implemented to reduce vulnerability to climate change and/or address its impacts or opportunities, therefore also adopting a long-term perspective. Adaptation options which mainly aim to cope with current climate variability and extreme are also relevant, if a longer term perspective is anyhow taken in consideration.
- The examples of case studies have been selected to be representative of key **impacts and sectors** relevant for the project area.

- Particular attention was given to case studies showing design and implementation of **societal** and **ecosystem-based** (or nature-based or green) measures.

3.1 Case study template

AdriAdapt case studies are described through a common template, as proposed below. This template is a customization of the one provided by Climate-ADAPT.

1. Name

Brief and clear name of the case study, identifying its major scope and the location. Max: 100 characters including space.

2. Geographic context and climate challenges

Brief description of the geographic context, its main climate change impacts/risks and related challenges addressed by the adaptation options proposed by the case study. Possibly include quantitate scenarios and projections of future climate change considered by the case study. Max: 2,500 characters including space.

3. Objectives

Main objectives that the design and/or implemented adaptation options intend to fulfil. Max: 2,500 characters including space.

4. Adaptation measures implemented in the case

Selection of one or more adaptation options from the AdriAdapt catalogue.

5. Solutions

*This field represents the **core of the case study**. It shall provide the description of: (i) the process that led to the identification and design of adaptation options and solutions, (ii) the solutions identified and in case implemented, (iii) related technical aspects, (iv) the expected added value for climate change adaptation, (iv) contribution of the identified solutions to mitigation, if any. Max: 4,000 characters including space.*

6. Leader of the initiative and key partners

Key actors involved in the design and implementation of adaptation measures and description of respective roles. Max: 2,000 characters including space.

7. Stakeholder participation

Description of the stakeholder engagement process, if relevant; including: actors involved, role of the actors in designing and implementing the adaptation measures, forms of participation Note that this field shall not replicate the context of the previous field n, 6; therefore shall focus on the engagement of stakeholders other than key actors (e.g. cavity society at large, representative of the business sectors, etc.). Max: 2,500 characters including space.

8. Success and limiting factors

Factors that have been decisive for the successful identification, design and, in case, implementation of the adaptation measures and limiting factors which might have hindered the process. Max: 2,500 characters including space.

9. Costs and benefits

Describe costs (possibly providing quantitative estimates) and funding sources. Describe benefits expected and provided by implemented solutions, i.e.: positive outcomes related to climate change adaptation, other co-benefits, and if available quantitative estimation of benefits and related methodologies (e.g. monetization of benefits for cost benefit analysis, indicators of effectiveness of actions implemented, etc.). Max: 2,500 characters including space.

10. Implementation time and lifetime

Time needed for the design and implementation of the adaptation measures; it can be expressed with a range of years. Duration of the adaptation measures; it can be expressed with a range of years. Max: 1,000 characters including space.

11. Keywords

6 to 8 keywords which reflects main contents of the adaptation option. Avoid too general words (e.g. adaptation, climate change, resilience, etc.) and words which are already include in pre-fixed fields (i.e. sectors and impacts). Keywords will be homogenised when all case studies are available.

12. Sectors

Specify whether the case study illustrate cross-sector adaptation measures, or measures which focus on some specific sectors.

☐ Cross-sector

☐ Sectors specific

If the case study deals with sectors specific measures, select most relevant ones; i.e. those for which the measures designed and/or implemented by the case study provides a clear improvement of the adaptation capacity.

☐ Agriculture

☐ Biodiversity

☐ Buildings

☐ Coastal management

☐ Disaster Risk Reduction

☐ Energy

☐ Financial

☐ Forestry

☐ Health

☐ Marine and fisheries

- ☐ Spatial planning
- ☐ Tourism
- ☐ Transport
- ☐ Urban
- ☐ Water management

13. Climate impacts

- ☐ Droughts
- ☐ Extreme temperatures and heatwaves
- ☐ Flooding
- ☐ Wildfire
- ☐ Heavy rains
- ☐ Changes in sea conditions
- ☐ Sea level rise
- ☐ Storms
- ☐ Water scarcity
- ☐ Non-impact specific

Selection of more than one is allowed; be specific on the impacts really addressed by the option

14. Contacts

Contacts of the leader of the initiative, i.e. the institution (and person) directly responsible in the design and/or implementation of the case study. This should enable users to request more detailed information. Contacts should include: name, affiliation, address, personal e-mail address and generic e-mail address. The publication of this information requires approval from the owner.

15. Source for more detailed information

Include here any reference/link to source for more detailed information about the case study: web-site, on-line document, published manuscript, projects, studies, etc. The aim is not to provide a long list, but to be as much as possible focused on key resources for additional information.

16. Map

Map of the Adriatic area showing the location of the case study, including geographical borders.

17. Pictures

Pictures of the case study areas, climate change impacts, implemented measures and/or relevant charts, graphs and maps. For each picture, please include: (i) title (1 line), (ii) short description (2 lines), (iii) credits ©: author and/or source of the image. Picture publishing permission rights should be asked, in written form to picture's owner (e-mail is enough)

Documents

Brief and high relevant document (e.g. brochure) about the case study (if any), which can be uploaded on the on-line version of the case study.

Following list of case studies is under development, editing, translation and proofreading.

3.2 Final list of case studies

Following table contains information about the authors, reviewers and the responsibilities for translation into two languages, including control/approval authority.

Title and location	AUTHOR	ORIGINAL LANGUAGE	REVIEWER	TRANSLATION 1 – responsible + expert approval	TRANSLATION 2- responsible + expert approval
Optimisation of agricultural water consumption and distribution in the Reno river basin, Emilia Romagna, Northern Italy	Thetis	English (PAP/RAC N.S.)	Consorzio della Bonifica Renana (D. R.), PAP/RAC (D.P.S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour)+Thetis
Ripristino ambientale del cordone dunoso nel sito Bevano Sud, Ravenna, Italia	B. Giambastiani	Italian	PAP/RAC (I.S.)	Croatian (TraduTour) + PAP/RAC	English (Cakum-pakum + PAP/RAC)
Coastal plan for Šibenik-Knin County with focus on climate variability and change	PAP/RAC (D.P.S.)	English (PAP/RAC N.S.)	PAP/RAC (I.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour) +Thetis
ICZM Plan for Kaštela	M. Baučić, PAP/RAC (A.I.)	Croatian (Cakum-pakum + PAP/RAC)	RERA SDŽ (M.M.), PAP/RAC (D.P.S.)	English (Cakum-pakum + PAP/RAC)	Italian (TraduTour)+Thetis
Managed retreat of the coastal road Izola-Koper, Slovenia	S. Mezek	English (PAP/RAC N.S.)	JZP Izola (I.Š.), PAP/RAC (D.P.S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour)

Restoration and management of coastal wetland Škocjanski zatok, Slovenia	S. Mezek	English (PAP/RAC N.S.)	Naravni rezervat Škocjanski zatok (B.M.), PAP/RAC (D.P.S.) CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour)
Integrated system for the protection of Venice and its lagoon against flooding	Thetis, IUAV	English (PAP/RAC N.S.)	Consorzio Venezia Nuova (E.Z.), CMCC (M.B.), PAP/RAC (D.P.S.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour) +Thetis
Integrating climate change adaptation processes at regional and local scale in Emilia Romagna	Thetis, CMCC (M.B.),	English (PAP/RAC N.S.)	Regione Emilia Romagna (P.B., V.M., R.T.) PAP/RAC, CMCC (M.B.),	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour) + Regione Emilia Romagna
Managed realignment of the coastal road in Sète-Marseillan, France	Thetis	English (PAP/RAC N.S.)	Sète Agglopôle Méditerranée (M.I.), PAP/RAC (D.P.S.), CMCC (M.B.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (TraduTour) +Thetis
Ripristino di una duna mediante soluzioni di ingegneria naturalistica nel sito Bellocchio (Lido di Spina, Comune di Comacchio, Provincia di Ferrara, Italia)	M. Aguzzi	Italian	CMCC (M.B.), PAP/RAC (D.P.S.)	English (Cakum-pakum + PAP/RAC)	Croatian (Tradu Tour)
Climate change adaptation of wetlands in Attica Region, Greece	Thetis	English	PAP/RAC (D.P.S.), Atika Region (A.P.)	Croatian (Cakum-pakum + PAP/RAC)	Italian (Cakum-pakum)