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ABSTRACT

ESPRESSO is a European project aiming at contributing to the definition of a new strategic vision for disaster risk reduction. It shall enable a better adaptation to climate change by opening new perspectives for research and the elaboration of public policies. ESPRESSO builds on stakeholder feedback to increase coherence among national and European approaches, find common solutions to scientific and legislative challenges and optimize crossborder crisis management.

To achieve this goal, WP4 aims at identifying best practice solutions and projects in response to the diverse challenges raised by natural hazards in terms of the organization of a territory. In this context, the ESPRESSO **Action DataBase** (ADB) has been developed by BRGM in order to solicit the support of stakeholders to share their experience and help constituting a reference database of existing practices.

To ensure accessibility and facilitate team work, a website format was chosen which can be accessed at <http://adb-espresso.brgm.fr>.

The first version of the ADB presented in this deliverable provides a generic structure to collect and evaluate different kind of actions that will arise from the stakeholder forums, the Think Tanks, the progressive questionnaire dissemination, etc. The actual structure takes into account criteria and indicator changes as identified from WP1, WP2 and WP3 feedbacks.

Keywords: action, indicators, criteria, questionnaire, database, web portal

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1 INTRODUCTION

1.1 GENERAL CONTEXT

The ESPRESSO Action Database, or ESPRESSO-ADB, is a database of initiatives and projects addressing disaster risk reduction (DRR) and climate change adaptation (CCA) created as part of the EU Horizon 2020 ESPRESSO project.

The word “action” is meant to serve as a generic term to encompass a wide variety of activities, from legislation to research projects. Actions are input into the database (accessible at <http://adb-espresso.brgm.fr>) via a questionnaire asking the user to evaluate the effectiveness of an action of his/her professional experience. Effectiveness is approached from an angle that closely aligns with accomplishing the goals of the Sendai Framework. Hence, the questionnaire is divided into five sections, four of which correspond to the four Sendai priorities. The fifth and final section further asks the user to evaluate the action in terms of its potential for transformative change, a concept currently championed by the UN and the Belmont Forum that seeks to create lasting, sustainable change and political will.

The ESPRESSO-ADB website and database have been developed using the Drupal open-source content management system. Analysis of the ESPRESSO-ADB entries will contribute to furthering DRR in the European Union and thus address the three barriers that ESPRESSO aims to overcome: What works across different territorial boundaries? How can we bring different fields of research together, particularly the DRR and CCA communities? How can we improve science-policy interfaces? The ESPRESSO-ADB is intended to be a repository of good ideas and case-studies to help answer these questions and capitalize on previous experiences to propose new solutions.

The first version of the ADB presented in the first part of this deliverable provides a generic structure to collect and evaluate different types of actions that will arise from the stakeholder forums, the Think Tanks, the progressive dissemination of the questionnaire, etc. This first version of the ADB has thus been elaborated thanks to literature reviews performed in WP4 and WP1.

In the second part, an update has been realized to take into account the modifications required by the stakeholders, and by the information collected in the D2.1 reports.

1.2 CONCEPTION OF THE TOOL

The main objective of WP4 is to identify best practice solutions and projects in response to the diverse challenges raised by natural hazards in terms of the organization of a territory.

To achieve this goal, BRGM has declined the ADB following four principles:

- **SHARE:** The ADB want to encourage stakeholders to make their professional experience available to colleagues and future risk managers. Stakeholders are invited to contribute to ESPRESSO by sharing their own experiences in managing disaster risks and adapting to climate change. Via the questionnaire developed by BRGM, stakeholders will be able to evaluate actions in terms of effectiveness and overcoming barriers.
- **DISCOVER:** The solution to a particular risk reduction or climate change adaptation challenge may already have been implemented elsewhere. The ADB enables stakeholders to search for and find out about initiatives they may not have heard of yet and learn about how others achieved their goals and created lasting change.
- **TRANSPOSE:** The ADB proposes an evaluation of an action in terms of its transferability. That means stakeholders may use the ADB to find effective and transposable solutions to their own social, cultural and geographical context and thus build a disaster risk reduction or climate change adaptation action that works for their specific region or context.
- **HARMONIZE:** In sharing their experience via the ADB, stakeholders contribute to working towards a European Union without boundaries for Disaster Risk Reduction and Climate Change Adaptation by participating in the discussion about how to reduce incoherencies and build a common approach for coordinated action.

During the first phase of the project, a preliminary structure of the database has been pre-established based on the analysis of existing knowledge from bibliography exchanges with ESPRESSO project partners.

The first prototype has been provided for the Stakeholder Forum in May 2017. During the Forum, statements of stakeholders or actions discussed were considered to realize changes in the database. The version presented here and released at present will constitute the one used in the following TT meetings.

1.3 OBJECTIVES OF THE ADB

The general objectives of the Action Database are to

- contribute and provide the opportunity to formalize discussions during workshops and to store relevant content in a synthetic format
- help to identify the impacts of different actions and their evolution in time once the entered information is classified using the different criteria, including some meta-data like the date of recording
- contribute to collect actions in response to sticking points identified in WPs 1 to 3.
- help to identify future research activities for the topics not mature enough to be proposed as operational solutions
- contribute to the identification of ways to mainstream and integrate these actions in laws, regulations and decision making processes.

Particular attention will be paid in entering actions in their planning state or very early starting phase to re-evaluate progress and observed impact at mid-stage of their realization process and towards the end. In this way, the evolution can be tracked via database entries during the whole duration of an action/a project. In this context, the ADB should enable the visualization of the evaluation of specific indicators related to observed impacts that may evolve over time.

These general objectives of the ADB demand a global database concept fulfilling certain requirements:

- The structure has to be exhaustive enough to describe, characterize, evaluate an action proposed by a stakeholder
- The criteria used in the evaluation need to be general enough to allow comprehensive situations and not too detailed to avoid a large number of cases referring to each criteria; the compromise found by the Consortium was to use criteria describing situations at national and regional level
- Each action needs to be characterized by a set of parameters (metadata) allowing quick searching and filtering (title, date of entry, author that proposes the action, thematic context, ...).
- Each action needs to be described according to its respective framework (legal, scientific,...), the thematic context (prevention, crisis, mitigation, preparedness), and its impact at the respective scale of implementation, etc.
- Each action is evaluated by indicators referring to different criteria, so that it will be easy to rank the actions according to specific interest concerning one or more indicators.

In this way, the ADB attempts to measure an action's beneficial impact in terms of (i) its desirable outcomes for risk reduction following the Sendai framework of action 2015-2030, (ii) existing difficulties between DRR and CCA communities and topics (cf. Birkmann & von Teichmann, 2010) and (iii) the transformative change in the spirit of UNDP/UNESCAP directives.

2 PART 1: THE ADB FIRST RELEASE

The first release of the ADB was oriented to produce exhaustive metadata information, a clear description of the action, and the possibility to evaluate the action by the mean of criteria selected among 5 categories: economy, technical, societal, environmental, policy. The table shown below describes this structure.

1- Metadata	A first block of information dedicated to the features of the proposed action
Title	Concise formulation of the action
Language	The language in which the action is described between EN, FR, IT, DE
Date of entry in the ADB	Date of creation or modification in the database
Author	Shows who (stakeholder, partner) proposed the action
Source	Describe the source of the information that led to the action (Forum, Think Tank, Questionnaire, publication, report)
Challenge of the action	Specifies the challenged addressed (DRR vs CCA, Science vs policy, Transboundary issues)
2- Action description	This second block details the content and explains the context of the proposed action
Description summary	A summary of the proposed action
General context	Specifies the context of the action in the “risk chain”: prevention, mitigation, crisis management, preparedness
Typology	Set the proposed action in a framework: research, policy, education-communication, territory management
Realization status	Specifies the status of the action: proposal, in progress, realized
Geography	Geography parameters
Area of interest	Indicates the country concerned by the action: FR, DE, IT, ..., EU
Administrative scale	Indicates the scale of interest of the action : local, regional, national, EU,

	international
Hazard or risk scenario considered	Describes the risk scenario considered for deploying the action: earthquake on a transboundary area, floods in central Europe, multi-hazard crisis, ...
3- Criteria (<i>absolutely=3, yes=2, more or less=1, no impact=0, rather no=-1, no=-2, definitely no=-3</i>)	This third block list the criteria used to evaluate the action ; each of them can be ranked using an indicator specifying the impact the action (from -3 to 3)
Economy	First set of criteria
Contributes to development (employment, infrastructures constructions) of new markets (geotechnics, nature based solutions, smart cities)	
Costs a lot to operate , needs& important investments	
Cost a lot to maintain (human resources, periodic hardware replacements, ...)	
Technical	Second set of criteria
Improves data availability, processing, quality and resolution	
Improves the scientific knowledge (risk assessment, EWS, mitigation techniques)	
Integrates multi-scale, short/long term evaluation of impacts, incl. extreme events particularities	
Associate different form of knowledge (scientific, legal, economic, societal) to promote integrated solutions for adaptation	
Integrates a multi-risk approach with a high level of transfer, flexibility across risk reduction measures, i.e., climate / telluric induced	
Societal	third set of criteria
Facilitates cooperation between experts and institutions (cross-sectoral approach)	
Improves the acceptance of risk and risk management by citizens using guiding principles, improves preparedness	
Contributes to social learning and memory	
Allow a better past experiences sharing between countries (education, training)	
Generate conflicts between different social groups, decreases social cohesion	
Environmental	Fourth set of criteria
Preserves natural landscapes	
Decreases mortality and losses in densely populated areas	
Affects human activities, contributes to territories abandonment	
Affects local flora, protected species, soil quality	

Policy	Fifth set of criteria
Harmonizes functioning between governmental agencies (Civil Prot vs Env. Manag.)	
Standardizes methodologies from impacts evaluation to mitigation measures across countries	
Organizes funding schemes (National > EU) to shift from short to long term strategies (research, infrastructures, prevention, ...)	
Reduces incoherencies in legal, normative and contractual references	

This structure was used to organize the content of each action proposed by the stakeholders during the ESPRESSO networking activities. To ensure a maximal interactivity and be sure that all reflexions carried out during the meetings are entered in

the database correctly, the user interface and the data management system was adapted.

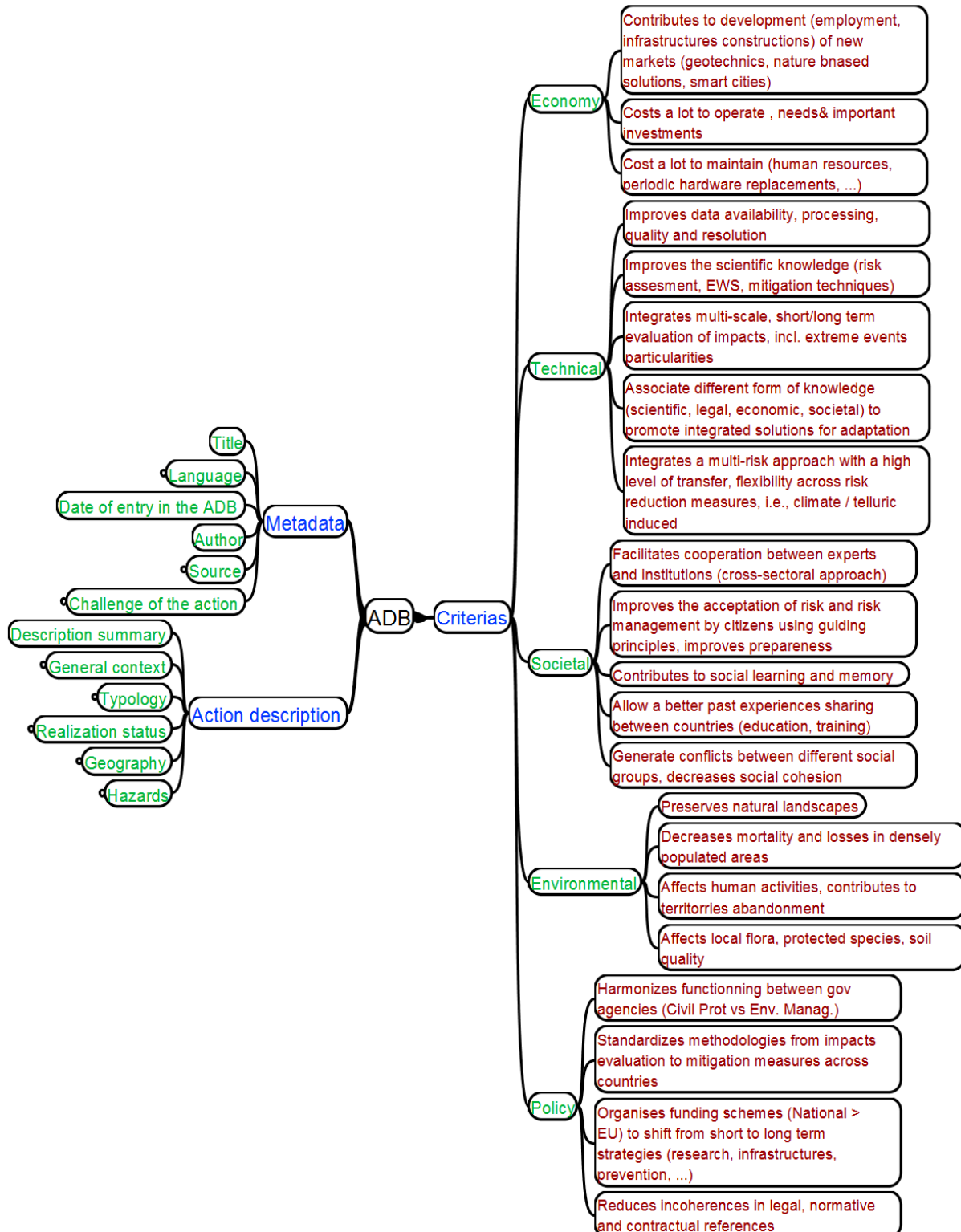


Figure 1: Mind map showing the different parts of the ADB structure (preliminary status)

3 PART 2: THE CHOICE OF FINAL INDICATORS

3.1 FEEDBACK FROM STAKEHOLDERS

First remote exchanges with stakeholders and discussions held during the stakeholders' forum produced important feedbacks to upgrade the ADB structure and the way criteria / indicators need to be managed inside.

The main comment from stakeholders was related to the typology of these criterias / indicators. Indeed an approach more oriented toward the Sendai great questions was asked by most of the participants. Initially inspired from scientific materials (i.e., Birkman, 2010), the initial ADB was probably too far from operational contexts so that the end users propose the Sendai Framework as a more pragmatic approach to describe DRR actions.

Some remarks were related to the way the criteria are formulated, and in particular, questions were more appreciated than statements.

Finally, references to past documents, publications, reports were also necessary to provide a strong scientific basement to the questionnaire.

3.2 DESCRIPTION OF ADB CRITERIAS / INDICATOR CHANGES

The definition of an action is a broad one: any programme, project or initiative dealing with disaster risk reduction and climate change adaptation can be considered. The actions we are interested in relate to (i) a variety of types (scientific research projects, codes, legislation, financial instruments, land use plans...), (ii) a variety of scales (from municipal to European) and (3) a variety of challenges (DRR, CCA, transboundary issues, science-policy interface...).

This large range of possible actions was guiding the choice of criteria describing and evaluating an action. BRGM wanted to ensure that a maximum number of stakeholders could identify themselves with the criteria and respond to a majority of them during the evaluation process. From the three challenge reports of the ESPRESSO project and from informal exchanges with stakeholders during the preparatory phase of the ADB it became clear that many criteria useful for the evaluation of an action were directly linked to guidelines formulated in the Sendai framework of action 2015-2030.

Synthesizing gaps and existing challenges from an extensive literature review and return or experience reports, BRGM has combined these results with the Sendai guidelines to develop a questionnaire around 7 content sections. Detailed content can be found in the appendix to this document. This questionnaire is aimed at collecting the stakeholder's experience on particular actions.

3.3 THE QUESTIONNAIRE STRUCTURE

The first section “Participant’s information” collects basic data about the person filling in the questionnaire, such as the host institution during the project, the area of expertise, the level of involvement in the project, ...

The second section collects basic information about the action. It includes title and acronym of the action as well as its thematic context, a short description, countries involved, spatial scale, ...

Sections 3 to 7 relate to criteria outlined in the Sendai framework of action and are entitled, respectively as “Risk evaluation and understanding”, “Optimising governance”, “Investment for increasing resilience”, “Improvement of response”, and “Potential for transformative change”.

The general information refers to the meta-data context blocks of the conceptual structure. This part integrates fields of information concerning the participating person entering information into the ADB. The second part relates to the action itself.

The “Participant’s information” section asks for:

- Language of submission
- Family name / first name
- Email address
- Host institution during the project
- Area of expertise / professional role / SIM code
 - o Communication (Media, Weather Forecast, Scientific communication, transboundary platforms, disaster relief networks)
 - o Planning (Resilience / evacuation plan, Post-event survey, land use plan, risk assessment / hazard mapping)
 - o Transport (road and rail, airports)
 - o Science (Universities / research institutes, consultancies)
 - o Government (European, National, Regional, Local)
 - o Military / law and order (Police / law enforcement, military)
 - o Finance (Insurance / reinsurance, banks, research funds (international and national))
- Level of involvement in the action
 - o Direct involvement
 - o End-user

- Sponsor / client
- External observer
- Date of the questionnaire entry in the ADB
- Source of the information entered into the ADB
 - Professional experience
 - Project report or other deliverable
 - Scientific publication
 - Forum
 - Think tank

The “basic information about the action” – section demands the following details:

- Title of the action
- Acronym of the action
- Indicate whether the action is considered in its entirety or only a specific part of it
- Starting date and end date (real or provisional)
- Thematic context of the action
 - Funding scheme/financial instrument
 - Technological development/innovation
 - Education/information/communication/outreach
 - Governance/public infrastructure
 - Scientific research/data acquisition
 - Policy/legislation/regulation
 - Other
- Description of the action
- State of progress of the action (proposal, ongoing, completed, aborted)
- Territories concerned by the action (France, Germany, United Kingdom, Italy, Denmark, Switzerland, Other)
- Spatial scale of the action (Local, municipal, departmental, regional, national, plurinational, European, Pan-European, World)
- Type of hazards concerned by the action (Riverine flood, storm surge/coastal inundation, groundwater flooding, storm, earthquake, volcanic eruption, ground instability, tsunami, forest fire, drought, cascading effects, other)

- Language in which documents concerning the action have been published (English, French, Italian, German, Danish, Other)

For a detailed presentation of the structure and the web implementation of the ESPRESSO-ADB please refer to deliverable D4.1 “Technical note: The Action Database in English” and D4.3 “Technical note: The Action Database in French, German and Italian”.

The following table summarizes in more detail the content of sections 3 to 7 and provides main references used to determining the relevant criteria for each section that are presented in form of questions.

Table 1: The ESPRESSO-ADB questionnaire structure and major references

SECTION 3:	Major references considered for the choice of criteria (non exhaustive)
RISK EVALUATION AND UNDERSTANDING	
<p>1. Does the action have an impact on the fundamental scientific understanding of natural risks and/or climate change?</p> <p>2. Please evaluate the action's influence on transparency and public access to non-sensitive natural risk and/or climate change data</p> <p>3. Is the action able to federate different fields of expertise?</p> <p>4. Does the action contribute to create, enrich or improve data contents?</p> <p>5. Does the action have an impact on local risk culture or risk memory among the population?</p> <p>6. Does the action integrate local and indigenous knowledge?</p>	<ul style="list-style-type: none"> • Brasseur, G. P., & Gallardo, L., 2016. Climate services: Lessons learned and future prospects. <i>Earth's Future</i>, 4(3), 79-89 • Gattuso, J. P., Magnan, A., Billé, R., Cheung, W. W., Howes, E. L., Joos, F., ... & Hoegh-Guldberg, O., 2015. Contrasting futures for ocean and society from different anthropogenic CO2 emissions scenarios. <i>Science</i>, 349(6243), aac4722 • Hinkel, J., Jaeger, C., Nicholls, R. J., Lowe, J., Renn, O., & Peijun, S., 2015. Sea-level rise scenarios and coastal risk management. <i>Nature Climate Change</i>, 5(3): 188-190 • Le Cozannet, G., Ait-Kaci, A., Colas, S., De Lacaze, X., Lecacheux, S., Mirgon, C., ... & Oliveros, C., 2013. Recent GIS based national assessments of climate change consequences in France: methods, results and lessons learnt. <i>Journal of Coastal Research</i>, 65(sp2): 1421-1426 • Le Cozannet, G., Garcin, M., Bulteau, T., Mirgon, C., Yates, M. L., Méndez, M., ... & Oliveros, C., 2013. An AHP-derived method for mapping the physical vulnerability of coastal areas at regional scales. <i>Natural Hazards and Earth System Sciences</i>, 13(5), 1209 • Mercer, J., I. Kelman, L. Taranis, and S. Suchet-Pearson., 2010. Framework for integrating Indigenous and scientific Knowledge for Disaster Risk Reduction. <i>Disasters</i> 34: 214–239 • Weichselgartner, J., and P. Pigeon, 2015. The role of knowledge in disaster risk reduction. <i>International Journal of Disaster Risk Science</i> 6:107–116. DOI 10.1007/s13753-015-0052-7 • White, G., Kates, R. W. and Burton, I., 2001. Knowing Better and Losing Even More: the Use of Knowledge in Hazards Management. <i>Global Environmental Change, Part B: Environmental Hazards</i> 3 (3–4): 81–92.

SECTION 4:

OPTIMISING GOVERNANCE

<p>7. Does the action contribute to integrating scientific research into public policy?</p> <p>8. Please evaluate the action's impact on improving the coordinated cooperation between various institutions</p> <p>9. Does the action contribute to improving the quality control of norms and standards relating to disaster risk reduction and/or climate change adaptation?</p> <p>10. Please evaluate the action's contribution in reducing incoherence between existing legal, normative and contractual references in the field of disaster risk reduction and/or climate change adaptation, including between different countries.</p> <p>11. What is the action's contribution towards reducing incoherencies in the management of different natural hazards in view of an evolution towards a multi-hazard approach?</p> <p>12. How does the action contribute towards integrating civil society and local business/private sector in decision making processes?</p>	<ul style="list-style-type: none"> • CCD (2008c) Links between disaster risk reduction, development and climate change. CCD, Geneva, Stockholm. • Dandoulaki, M., Karymbalis, T., Melissourgos, G. and Skordili, S., 2014. From decision to implementation: Barriers and bridges for implementing mitigation and adaptation measures and strategies in times of financial, institutional and political crisis. Know-4-DRR Deliverable 2.4. [online] www.know4drd.polimi.it • Dandoulaki, M., Karymbalis, T., Melissourgos, G., Skordili, S. and Valkanou, K., 2014. Analysis of main fragmentation issues within different stakeholder groups – Part 4. Knowledge in the private sector and the civil society. Know-4-DRR Deliverable 1.2. [online] www.know4drd.polimi.it • Gaillard, J. C., and Mercer, J., 2012. From Knowledge to Action: Bridging Gaps in Disaster Risk Reduction. Progress in Human Geography. doi. 10.1177/0309132512446717 • Menoni, S., Weichselgartner, J., Dandoulaki, M., Valkanou, N., Jimenez, M. J., Garcia Fernandez, M., Kienberger, S., Spiekermann, R., Pigeon, P., Briones, F., Norton, J. and Nussbaum, R., 2014. Enabling knowledge for disaster risk reduction and its integration into climate change adaptation. Input paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015. • O'Brien K, Sygna L, Leichenko R, Adger WN, Barnett J, Mitchell T, Schipper L, Thanner T, Vogel C, Mortreux C (2008) Disaster risk reduction, climate change and human security—a study for the Foreign Ministry of Norway. GECHS (Global Environmental change and human security) Project. http://www.gechs.org/downloads/GECHS_Report_3-08.pdf • Spiekermann, R., Kienberger, S., Norton, J., Briones F. and Weichselgartner J., 2015. The Disaster-Knowledge Matrix – Reframing and evaluating the knowledge challenges in disaster risk reduction. International Journal of Disaster Risk Reduction 13: 96-108
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SECTION 5:

INVESTMENT FOR INCREASING RESILIENCE

<p>13. What is the action's contribution to ensure the funding of new initiatives and equipment (retrofit of critical infrastructure, building of laboratories, implementation of outreach programmes...)?</p> <p>14. How would you describe the action's impact promoting public and private actors' self-investment in preventing and reducing disaster risk or adapting to climate change?</p> <p>15. Please evaluate the action's contribution to risk sharing/transfer via appropriate financial instruments (insurance, etc.)</p> <p>16. How does the action contribute to economic development (innovation, new markets, job creation)?</p> <p>17. Please evaluate the action's contribution to reducing social vulnerability by decreasing poverty and developing social safety nets?</p> <p>18. Disadvantaged and/or socially isolated groups (children/senior citizens/people with disabilities, racial/sexual/religious minorities) have specific needs in terms of risk prevention. Does the action account for these needs?</p>	<ul style="list-style-type: none"> • ASca, Ledoux Consultants, 2012. L'agence de l'eau Seine-Normandie et la gestion du risque inondation : Quelle stratégie de positionnement ? Synthèse stratégique, Agence de l'eau Seine Normandie, Nanterre, France • Blaikie, P., Cannon, T., Davis, I. and Wisner, B., 2014. At Risk: Natural Hazards, People's Vulnerability and Disasters. Routledge, 2014, 496 p. • CCD (2008a) Incentives and constraints to climate change adaptation and disaster risk reduction—a local perspective. Commission on Climate Change and Development (CCD), Stockholm • Clark, P. U., Shakun, J. D., Marcott, S. A., Mix, A. C., Eby, M., Kulp, S., ... & Schrag, D. P., 2016. Consequences of twenty-first-century policy for multi-millennial climate and sea-level change. Nature Climate Change • Chantry, J., G., 2015. The "Living Lab" experience: knowledge transfer between stakeholders in central Vietnam faced with regular typhoons and floods. KNOW-4-DRR Task 3.2 Final report. [online] www.know4drd.polimi.it • Jha, A.K., 2010. Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters. World Bank Training Series, World Bank Publications 2010, 404 p. • Kreimer, A., Arnold, M. and Carlin, A., 2003. Building safer cities: the future of disaster risk, available at: http://www.preventionweb.net/files/638_8681.pdf • Negre, E., C. Rosenthal-Sabroux, and M. Gasco (2015). A knowledge- based conceptual; vision of smart city. IEEE, 48th Hawaii International Conference on System Sciences. DOI 10.1109/HICSS.2015.279; Norton • Sendai Framework of Action
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SECTION 6: IMPROVEMENT OF RESPONSE	
<p>19. Does the action contribute to establishing or improving early warning systems, including via the implementation of crisis simulation exercises?</p> <p>20. Does the action contribute to better identifying and quantifying the impacts of natural disasters, particularly long term effects?</p> <p>21. Does the action contribute to creating opportunities for reducing vulnerability during the post-disaster reconstruction phase? (Build Back Better)</p> <p>22. Please evaluate the action's contribution to facilitating emergency response and population evacuation in the event of a crisis</p> <p>23. Please evaluate the action's impact on the timespan needed for the restoration of critical facilities and services (transportation, healthcare, energy...)</p>	<ul style="list-style-type: none"> • Baker, D., Refsgaard, K., 2007. Institutional development and scale matching in disaster response management, <i>Ecological Economics</i>, 63(2–3): 331-343 • Chakravarty, A.K., 2011. A contingent plan for disaster response, <i>International Journal of Production Economics</i> 134(1): 3-15 • Hill, B., 2010. Diagnosing co-ordination problems in the emergency management response to disasters, <i>Interacting with Computers</i>, Volume 22(1): 43-55 • Kunz, N., Reiner, G. and Gold, S., 2014. Investing in disaster management capabilities versus pre-positioning inventory: A new approach to disaster preparedness, <i>International Journal of Production Economics</i> 157: 261-272 • Rawls, C.G. and Turnquist, M.A., 2010. Pre-positioning of emergency supplies for disaster response, <i>Transportation Research Part B: Methodological</i> 44(4): 521-534 • Scott DM, Novak DC, Aultman-Hall L, Guo F. Network robustness index: A new method for identifying critical links and evaluating the performance of transportation networks. <i>Journal of Transport Geography</i> 2006; 14(3): 215-227. • Taniguchi, E., Ferreira, F., Nicholson, A., 2012. A Conceptual Road Network Emergency Model to Aid Emergency Preparedness and Response Decision-Making in the Context of Humanitarian Logistics, <i>Procedia - Social and Behavioral Sciences</i> 39: 307-320 • Wex, F., Schryen, G., Feuerriegel, S., and Neumann, D., 2014. Emergency response in natural disaster management: Allocation and scheduling of rescue units, <i>European Journal of Operational Research</i> 235(3): 697-708 • Yan, S. and Shih, Y.-L., 2009. Optimal scheduling of emergency roadway repair and subsequent relief distribution, <i>Computers & Operations Research</i> 36(6): 2049-2065

SECTION 7: POTENTIAL FOR TRANSFORMATIVE CHANGE	
<p>24. Does the action enhance political will to act on disaster risk reduction and/or climate change adaptation?</p> <p>25. Please evaluate the action's contribution to promote local population's involvement in disaster risk reduction and/or climate change adaptation activities</p> <p>26. Is the action supported and approved by the concerned public?</p> <p>27. Is the action sustainable from an economic point of view (e.g. maintenance cost)?</p> <p>28. Does the action account for environmental sustainability (respect and preservation of natural landscape, biodiversity, ecosystems, soil and water quality...)?</p> <p>29. Does the action explicitly take into account climate change issues?</p>	<ul style="list-style-type: none"> • CCD (2008b) Overview of adaptation mainstreaming initiatives. CCD, Stockholm • Collier, W.M., Jacobs, K.R., Saxena, A., Baker-Gallegos, J., Carroll, M., and Yohe, G.W., 2009. Strengthening socio-ecological resilience through disaster risk reduction and climate change adaptation: Identifying gaps in an uncertain world. <i>Environmental Hazards</i> 8(3): 171-186. • Cutter S, Gall M (2008) Hurrikan Katrina: Gescheitertes Planen oder geplantes Scheitern? In: Felgentreff C, Glade T (eds) <i>Naturrisiken und Sozialkatastrophen</i>. Spektrum, Berlin • German Adaptation Strategy to Climate Change (2008) The German Government. http://www.bmu.de/files/pdfs/allgemein/application/pdf/das_gesamt_bf.pdf • Greater London Authority (2008) <i>The London climate change adaptation strategy</i>. Draft report. Greater London Authority, London • Handmer J (2009) Adaptive capacity: what does it mean in the context of natural hazards. In: Schipper ELF, Burton I (eds) <i>Adaptation to climate change—the Earthscan Reader</i>. Earthscan, London, pp 213–227 • Jones, L., Jaspars, S., Pavanello, S., Ludi, E., Slater, R., Arnall, A., Grist, N., and Mtisi, S., 2010. Responding to a changing climate: How disaster risk reduction, social protection and livelihoods approaches promote features of adaptive capacity. <i>Overseas Development Institute Working Paper 319, ODI Working Papers (Online) ISSN 1759 2917</i>, 27 p. • Le Masurier, J., 2006. <i>International reconstruction experience: Study tours to USA and Japan</i>. Resilient Organisations Research Report, 2006. http://www.resorgs.org.nz/pubs.shtml • Le Masurier, J., Wilkinson, S., 2006. <i>Barriers to post disaster reconstruction: Report on workshop</i>. Resilient Organisations Research Report, 2006. http://www.resorgs.org.nz/pubs.shtml • Moench, M., 2009. <i>Adapting to climate change and the risks associated with other natural hazards: methods for moving from concepts to</i>

<p>30. Is the action transferable to a different territorial, national or cultural context?</p> <p>31. Is the action transferable to a different spatial or temporal scale?</p>	<p>action. In: Schipper, E.L.F., Burton, I. (eds), <i>Adaptation to climate change—the Earthscan Reader</i>. Earthscan, London, pp 249–280</p> <ul style="list-style-type: none"> • Myburgh, D., Wilkinson, S., Seville, E., 2008. <i>Post disaster reconstruction research: An industry update</i>. Resilient Organisations Research Report, 2008. http://www.resorgs.org.nz/pubs.shtml • Rotterdam Climate Initiative (2009) <i>Rotterdam climate proof—the Rotterdam challenge on water and climate adaptation</i>. http://www.rotterdamclimateinitiative.nl/documents/RCP/English/RCP_adaptatie_eng.pdf • Smith, J.B., Klein, R.J.T. and Huq, S., 2003. <i>Climate Change, Adaptive Capacity and Development</i>. London: Imperial College Press. • Smithers, J. and Smit, B., 1997. <i>Human Adaptation to Climate Variability and Change</i>. <i>Global Environmental Change</i> 7(2): 129-146. • UKCIP (Climate Impacts Programme) (2009) <i>Adapting to climate change in England: a framework for action</i>. http://www.ukcip.org.uk/index.php
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This structure (Appendix) will organize the content of each action proposed by the stakeholders during the ESPRESSO networking activities. To ensure a maximal interactivity and be sure that all reflexions carried out during the meetings will be entered in the database correctly, the user interface and the data management system need to be adapted. In the following section, the implementation of this database management tool is described.

4 CONCLUSION

In the task 4.1, a first version of the ADB is realized from a bibliographic work. It is proposed to stakeholders through remote exchanges or during the stakeholder forum. This first version provides a generic structure to collect and evaluate different kind of actions, by using criteria and indicators. The stakeholders' feedback shows this structure is too oriented toward scientific considerations and suffer from a lack of pragmatism. The evolution of the ADB consisted in using the Sendai Framework to reselect and reformulate the criteria and indicators to develop a new version of the ADB. This will be tested during the TT meetings. Thus this new ADB will offer the most adapted structure to the material collected during the ESPRESSO project.



5 APPENDIX

5.1 DESIGN AND ARCHITECTURE

5.1.1 Information technology: DRUPAL 7

After some discussions with IT services in BRGM, it was decided to choose Drupal 7 as the technical solution to implement the ADB. Indeed, Drupal is open-source content management software which is very flexible and modular. It will allow easy modification to the structure of the ADB to adapt the needs of the Espresso project all along its duration. This aspect is important because the database will be used during different activities (forum, survey, scenario study, think tank discussions,...) planned from M12 to M30. In addition, Drupal has a performant search module which will be useful to navigate within the ADB entries.

The Drupal content (text fields) is supported by a database that manages the structure of the information system.

5.1.2 Accessibility

To ensure accessibility and to avoid simultaneous multiple versions of the ADB, it was chosen to implement it on a website: <http://adb-espresso.brgm.fr> (Fig. 1). Access to the website is restricted by password identification in order to check who can create new entries. In a first time, only project members will be allowed to create new entries and to access the ADB content. Further in the project, the possibility to open the ADB to stakeholders will be discussed.

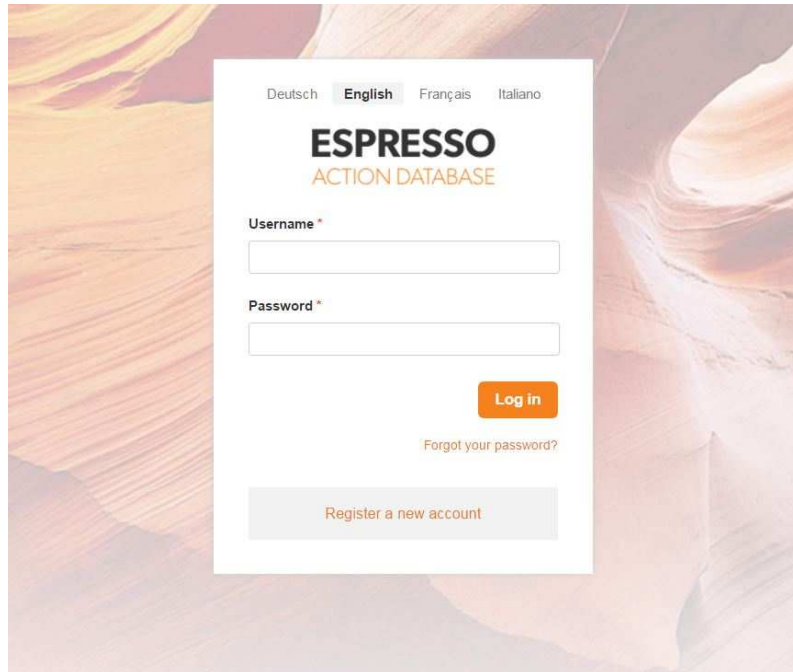
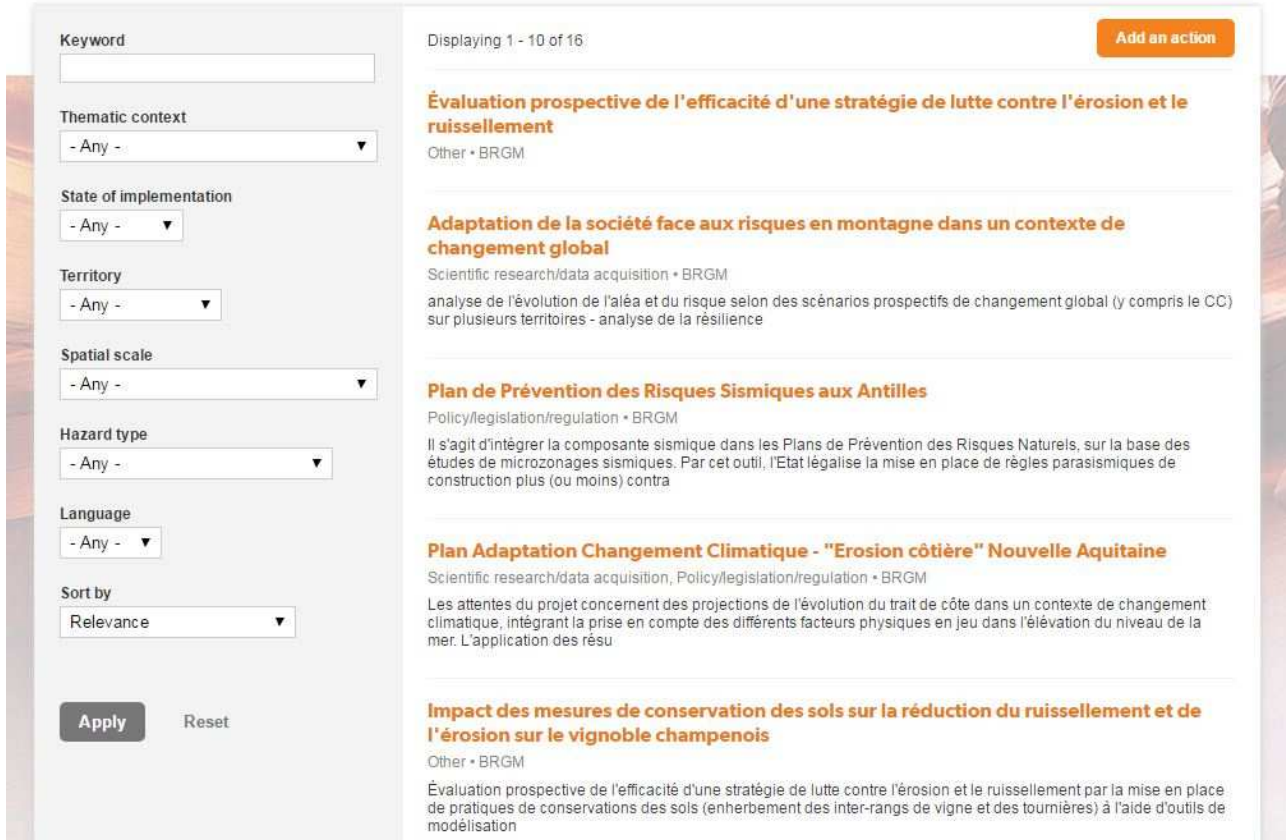


Figure 2: Access page of the ADB (<http://adb-esspresso.brgm.fr>)

5.1.3 The ADB WEBPORTAL

When logged in to the ADB portal (Fig. 1), three actions are possible: “add an action”, “consult last actions entered” and “browse through the ADB” (Fig. 2).



The screenshot shows the home page of the ESPRESSO ACTION DATABASE. On the left, there is a search filter sidebar with the following sections:

- Keyword:** A text input field.
- Thematic context:** A dropdown menu with "- Any -" selected.
- State of implementation:** A dropdown menu with "- Any -" selected.
- Territory:** A dropdown menu with "- Any -" selected.
- Spatial scale:** A dropdown menu with "- Any -" selected.
- Hazard type:** A dropdown menu with "- Any -" selected.
- Language:** A dropdown menu with "- Any -" selected.
- Sort by:** A dropdown menu with "Relevance" selected.

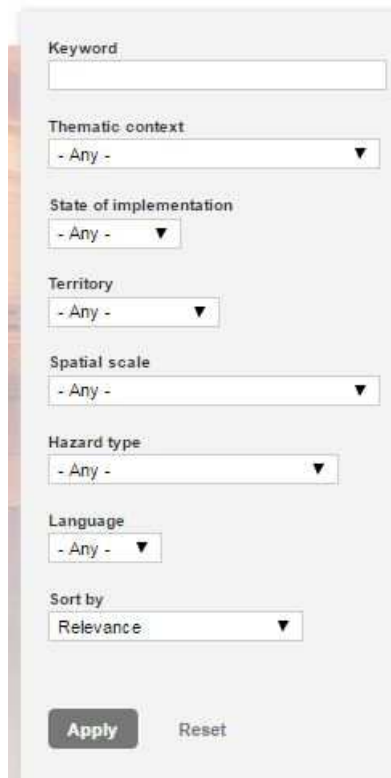
At the bottom of the sidebar are "Apply" and "Reset" buttons. The main content area on the right displays a list of actions:

- Displaying 1 - 10 of 16:** A status indicator.
- Add an action:** An orange button.
- Évaluation prospective de l'efficacité d'une stratégie de lutte contre l'érosion et le ruissellement:** Other • BRGM
- Adaptation de la société face aux risques en montagne dans un contexte de changement global:** Scientific research/data acquisition • BRGM
analyse de l'évolution de l'aléa et du risque selon des scénarios prospectifs de changement global (y compris le CC) sur plusieurs territoires - analyse de la résilience
- Plan de Prévention des Risques Sismiques aux Antilles:** Policy/legislation/regulation • BRGM
Il s'agit d'intégrer la composante sismique dans les Plans de Prévention des Risques Naturels, sur la base des études de microzonages sismiques. Par cet outil, l'Etat légalise la mise en place de règles parasismiques de construction plus (ou moins) contra
- Plan Adaptation Changement Climatique - "Erosion côtière" Nouvelle Aquitaine:** Scientific research/data acquisition, Policy/legislation/regulation • BRGM
Les attentes du projet concernent des projections de l'évolution du trait de côte dans un contexte de changement climatique, intégrant la prise en compte des différents facteurs physiques en jeu dans l'élévation du niveau de la mer. L'application des résu
- Impact des mesures de conservation des sols sur la réduction du ruissellement et de l'érosion sur le vignoble champenois:** Other • BRGM
Évaluation prospective de l'efficacité d'une stratégie de lutte contre l'érosion et le ruissellement par la mise en place de pratiques de conservations des sols (enherbement des inter-rangs de vigne et des toumières) à l'aide d'outils de modélisation

Figure 3: Home page of the ADB portal

5.1.4 Search Module

The search module of the ADB (Fig. 3) allows browsing through entered actions selecting different search criteria such as the scale or the administrative level of the action, the hazard related to the action, etc.



Keyword

Thematic context
- Any - ▼

State of implementation
- Any - ▼

Territory
- Any - ▼

Spatial scale
- Any - ▼

Hazard type
- Any - ▼

Language
- Any - ▼

Sort by
Relevance ▼

Apply Reset

Figure 4: Search module of the ADB

5.1.5 Add an action

The “Add an action” button is situation on the top right of your page (*Fig. 4*) and will lead you to the action page.

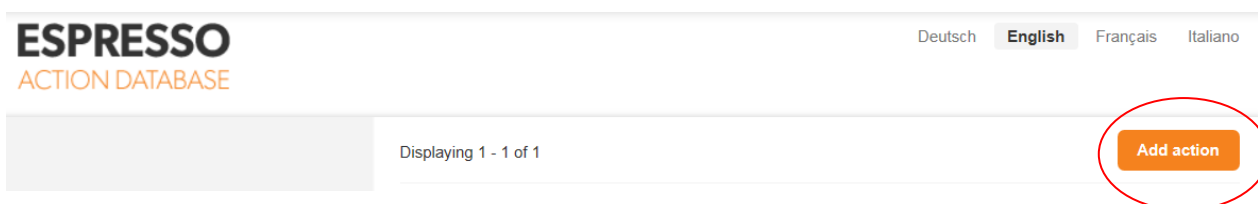


Figure 5: “Add action” button location

On the action page, the ADB fields have been divided into two main categories: the general information (following section) on the action and the evaluation.

5.1.6 Evaluation of the action

Actions are input into the database via a questionnaire asking the user to evaluate the effectiveness of an action of his/her professional experience. Effectiveness is approached from an angle that closely aligns with accomplishing the goals of the Sendai Framework. Hence, the questionnaire is divided into five sections, four of which correspond to the four Sendai priorities. The fifth and final section further asks the user to evaluate the action in terms of its potential for transformative change, a concept currently championed by the UN and the Belmont Forum that seeks to create lasting, sustainable change and political will.

The questionnaire proposes a range of possible answers to each question enabling the user to evaluate the action's beneficial impact on a scale of 7 levels (very strong impact, strong impact, moderate impact, weak impact, very weak impact, no particular impact, negative impact) plus an option "I don't know / I don't wish to answer".

Database entries will be exported into data analysis software for mathematical and statistical data processing.

At present and following the stakeholder forum, actions are being entered by stakeholders and project partners. With increasing number of inputs and depending on the different action criteria, specific mathematic methods will be determined and applied to analyse the data and its evolution over time.