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Support to the implementation of the Strategic Research Agenda (SRA) of the Joint Programming Initiative on Cultural Heritage and Global Change (JPI CH)

Instrument: Coordination and Support Action

Deliverable D3.1

Key Performance Indicators to monitor alignment at national research programmes level and at JPI CH research activities level

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Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1. Introduction

The **Deliverable D3.1 «Key Performance Indicators to monitor alignment at national research programmes level and at JPI CH research activities level»** is the first document to be produced under the Task 3.1 «Monitoring the alignment process of joint research programming», led by FCT (Portugal), which is part of the Work Package 3 (WP3) «Monitoring and Evaluation (KPI)», led by MCC (France).

According to the Grant agreement description of Actions (DoA), the **main objectives of the WP3** are to monitor and assess JPICH alignment and implementation process, and to demonstrate and evaluate JPICH impact by identifying and applying qualitative and quantitative key performance indicators (KPIs).

To achieve these objectives a performance-based monitoring and evaluation will be applied, and additional key performance indicators (KPIs) identified to monitor the alignment of national research programmes and research activities as it evolves within the alignment process. The WP3 is also expected to help implementing the High Level Group on Joint Programming (GPC) recommendations for monitoring the progress of alignment as formulated in the Report of the GPC Working Group Alignment «Alignment in the context of Joint programming initiatives» of July 2014: "The JPIs individually should develop a strategy for monitoring their alignment activities: the JPI should continuously define which good practices for alignment it will apply and then monitor the implementation of these".

The basis of WP3 work will be JPICH indicators identified by the first CSA JHEP methodology for monitoring and evaluation (JHEP, WP5, deliverable 5.2). WP3 will upgrade (refine, change, add, replace or suppress) the proposed sets, to continue the implementation of these indicators and to asses the alignment and implementation process developed by other JHEP2 work packages. This work will particularly focus on alignment activities developed through WP2.

Therefore, Task 3.1 will monitor the alignment process, both at national research programmes level and at research activities level by:

- upgrading the JHEP monitoring and evaluation methodology to attain a reasonable number of indicators, including, if necessary, new key performance indicators (KPIs) to monitor the alignment process.

- applying these KPIs on a regular basis, each participant in the JPICH being responsible to implement these indicators in its own country and report to the Task Leader, for the period 2015-2016 and 2017-2018. The Task Leader will summarize the outputs received by each partner in order to produce two Reports on Alignment of Common Research Programmes at Single Member States and Associated Country levels (D3.2 and D3.3).

- continuing the implementation of the methodological framework for monitoring and evaluation designed by the first CSA JHEP (deliverable 5.1). Measuring remaining indicators according to the methodology, timeframe and recommendations defined in deliverable 5.2 (March 2015), and continuing to assess

outcomes and results of the activities launched through the first CSA JHEP (Pilot Call, Heritage Plus Call, Heritage portal) as well as the outcomes of activities implemented through the second CSA JHEP2;

- proceeding to the implementation of monitoring and evaluation tools identified in JHEP deliverable 5.2, upgrading these tools, and providing solutions to ensure improved efficiency of monitoring activities and more effective implementation of indicators;

- Continuing the monitoring of necessary indicators to answer GPC biennial Report for JPIs Self-Assessment.

Deliverable 3.1 «Key Performance Indicators to monitor alignment at national research programmes level and at JPI-CH research activities level», in turn, is thus expected to revise and upgrade within **Task 3.1** the first JHEP D5.2 set of indicators, by presenting a reasonable number of additional key performance indicators for monitoring the alignment process, both at common research programmes and common research activities levels.

2. Methodology and Results

As previously indicated, the main intent of this exercise is to revise and upgrade within Task 3.1 the set of indicators identified in the first JHEP (hereafter referred to "D 5.2"). Consequently, the new set of indicators for D3.1 is based on an adaptation of D5.2 methodology for the specific purpose of monitoring and assessment of activities and objectives to be implemented under JHEP2. **This new set of KPIs is presented in Annex I. For comparison, in Annex II the different modifications to the JHEP D5.2 set of indicators are shown.**

2.1 Upgrading the indicators list

Different methodological steps were implemented in the refinement process:

- In order to remain in line with specific activities and objectives developed by the second CSA JHEP2, indicators recognized as <u>no longer necessary</u> at this stage, or indicators considered <u>useless</u> for the specific purpose of this CSA were set aside[1]. As an example, see indicator 3 in Annex II.

- Other indicators that were considered as <u>redundant or overlapping</u> with other priorities were removed from the list. As an example, see indicator 6 in Annex II.

- An attempt to align the final list of indicators with the guidelines from E.C. and from the GPC was undertaken. Therefore, several indicators were added to the initial list. As an example, two indicators were integrated, based on the comments from the DG Research&Innovation of EC (indicator 1 «Sustainability of the JPICH financial and administrative structures») and from the 28th October 2014 Report of the GPC Working Group on Alignment (indicator 20 «Alignment of national agendas: changes in research priorities of agencies, changes in national research priorities»).

The inputs of JHEP2 partners were also considered besides the evaluation documents provided by the project ERA-LEARN 2020, the last to achieve a higher level of harmonization with other P2Ps existing monitoring and evaluation frameworks[2].

As a result of the refinement process, starting from a total of 46 indicators proposed in the D5.2 of JHEP (Annex II), a final set of 34 indicators was selected (a reduction in the order of 26%). More specifically, 20 indicators were suppressed from the initial list (marked with strikeout in Annex II), 26 were maintained (highlighted in blue in Annex I), and 8 new indicators were integrated (highlighted in green in Annex I).

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[1] They may be reused for later stages, if necessary.

[2] Following WP3 WP and Task leaders participation to the ERA-LEARN 2020 Workshop on evaluation and impact assessment of P2Ps, the 18th May 2016: https://www.era-learn.eu/events/era-learn-2020-workshopon-evaluation-and-impact-assessment-of-p2ps

2.2. Upgrading the methodological framework.

Deliverable D5.2 classified indicators in a methodological framework composed of four different levels of objectives, addressing the short and medium term effects, as well as the final and global effects of JPI-CH interventions. This specific structure of the JPICH monitoring and evaluation framework was maintained, apart from two structural changes related to the C category of the framework («Research Added Value») to which 2 subtables/annexes were added, more specific one related to Joint Calls Assessment and the other one to Joint Alignment Assessment. The structural changes were deemend necessary for the following reasons:
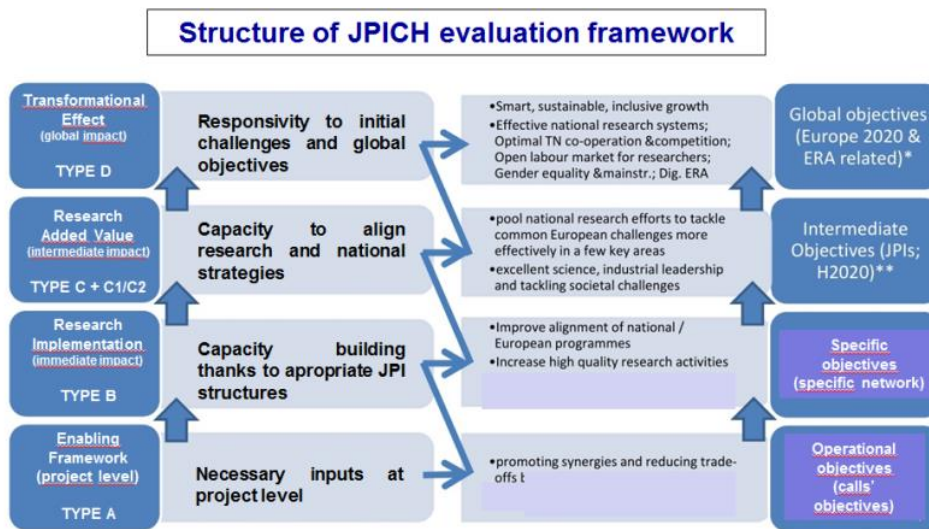
- Considering the necessarily increasing quantity of instruments and data to assess calls for proposals and granted project achievements, it has been decided to add a «(C1) Annex to the C category for Joint Calls Assessment» to the table, regrouping important objectives specifically related to calls for proposals. This subtable mainly consists of indicators that were already included in the C category and may be developed further, depending on specific needs arising from the monitoring and evaluation activities.

- The further addition of , «(C2) Annex to C category for Joint Alignment Assessment» containing 7 new indicators, was considered necessary for the specific assessment of the Joint Alignment as this could not be accurately done with the existing indicators.

Following these structural changes, the logical framework consists of the following categories:

- Type A: Enabling Framework
- Type B: Research Implementation
- Type C + C1/C2: Research Added Value
- Type D: Transformational Effect

This logical framework is integrated in Figure 1 below, which is inspired by the ERA-LEARN 2020 D4.3 (Figure 3), which schematizes the intervention logic from input to impact and their link with a four level hierarchy of objectives. This figure shows the correspondence between the methodological framework designed through JHEP, and the impact assessment framework designed by other JPIs and communicated by the ERA-LEARN 2020 project to P2P networks, in order to achieve a more harmonised methodology for impact assessment.

Figure 1: inspired by ERA-LEARN 2020, Deliverable 4.3, October 2014, page 20[3]

Structure of JPICH evaluation framework

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[3] https://www.era-learn.eu/publications/other-publications/era-learn-2-report-deliverable-d4-3-analysis-ofoptions-for-future-platforms-monitoring-and-assessment-framework-for-p2p-activities

3. Conclusion and Future Work

As described above, the new set of indicators presented at Annex I modifies and amends the previous JHEP D5.2 set of indicators presented in Annex II. Indicators are classified according to a methodological framework for monitoring and evaluation, composed of four levels of objectives: (A) Enabling Framework – (B) Research Implementation – (C) Research Added Value – (D) Transformational Effect. However, the addition of two additional subtables/annexes to the (C) category of indicators were considered necessary, namely C1 and C2, in order to allow the specific assessment of calls for proposals and of the alignment process.

Based on this upgraded set, a further step consists of the definition of the content (what), the schedule (when) and the participants (who) targeted by the instruments included in column 6 (How to measure) of Annex I. This is essential to carry out the indicators measurementprocess (appropriate questionnaires, surveys and templates).

It follows that the next step is to update and make available to partners the whole set of instruments presented in the Annexes of JHEP D5.2, and adapt it for the new set of indicators. This will be done between months 6 and month 18, in order to be able to carry out a first monitoring and evaluation exercise and present the results at month 18 (June 2017) in Deliverable D3.2 (First interim evaluation of JPICH alignment process). This first deliverable will conduct a mid-term evaluation of JPICH activities and alignment process for the period 2015-2016; and should also provide recommendations to improve JPICH intervention as it evolves.

The first monitoring cycle will serve as a test for the new set of indicators. Results and conclusions of this test will be included in Milestone 6 (MS6: Upgrade and validation of KPIs indicators), presented to SC and EB, and validated by the GB at month 18. Therefore, MS6 may propose readjustments and/or modifications to the indicator table presented in the present deliverable.

Following this testing process, the new set of KPIs will then be applied on a regular basis by each participant in the JPICH in its own country, as a basis of a regular reporting to the Task 3.1 Leader. The Task 3.1 Leader will summarize the outputs received by each partner in order to produce a second report on alignment of Common Research Programmes at Single Member States and Associated Country levels for the period 2017-2018 (D3.3 Second interim evaluation of JPICH alignment process, month 36, December 2018). Again, this deliverable will evaluate JPICH activities and alignment process, providing recommendations for implementation of future JPICH activities.

The work performed by Task 3.1 is the major input for Task 3.2, which will produce three reports on the implementation of the alignment of common research programmes, starting from month 24 (D3.4, December 2017), and ending with the final evaluation of JPICH alignment process at month 48 (D3.6, December 2019). D3.6 will also critically assess the efficiency of KPIs applied over the whole JHEP2 period.

4. Annex I: D3.1 Selected Indicators

A) Enabling Framework

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)
Governing structures	Increase the performance of the financial and administrative management	Members States / EC satisfaction	1	Sustainability of the JPICH financial and administrative structures	Capacity to secure financial resources from JPI members to fund the Secretariat and to execute the implementation plans	Survey
Extending cooperation and partnership	To extend network and cooperation to external organisations	At least one annual joint action with an international organisation	2	Number of joint actions with organisations	Formal collaborations through joint activities and actions with International organisations (including UN, UNESCO, NGOs, ICOMOS, ICOM...), NGOs, regional organisations, other...	Survey
Extending cooperation and partnership	To establish quality contacts with other P2P networks	Organise at least one annual joint action with another P2P networks	3	Number of joint actions with other P2P networks	P2P networks such as article 169/185, ERA-NETs, ERA-NETs cofunds... other JPIs (Urban Europe, Clik'EU, FACCE etc.). Joint actions including definition of common schemes for evaluation and monitoring, coordination or clustering, definition of common SRA, joint training activities, personnel exchange, mutual opening of facilities and infrastructures, of programmes, joint calls design and implementation, other...	Survey
Extending cooperation and partnership	To cooperate with non European countries	Organise at least one annual joint action with a non-European country	4	List of joint actions involving non-European countries	Joint actions involving non-European countries, particularly advanced economies (Japan, USA...), neighbourhood Mediterranean countries, BRICs...	Survey + Templates
JPICH attractiveness	JPICH is attracting new countries	Initial countries' membership enlarged to include at least one new country and doesn't decrease from one year to the next	5	Evolution of the number of countries participating to the JPICH	Cumulated number of countries that joined the project and that were not present at the beginning of the project, countries that opted out (no longer partners or observers), and information about the number of countries that participated to the JPICH per year	Coordinator
SRA and Action Programme	Action Programme funding quantity and type matches SRA needs	–	6	Adequacy of research needs in SRA and Action Programme	The SRA is reflected by the Action Programme that identifies the most useful funding instruments and pooling capacities for implementation of selected research topics in SRA	Questionnaire
Dissemination strategy	To identify and contact key stakeholders across and within the EU	4 categories of key stakeholders identified, by WP6 contacted and involved in JPICH activities	7	List of new stakeholders and types of stakeholders reached by the dissemination strategy within EU and across the EU	One list for stakeholders reached by JPICH dissemination strategy in the EU, one list for stakeholders reached outside the EU, with description of categories of stakeholders reached. They include the four categories used in the JHEP Dissemination Plan: Policy makers and influencers ; Cultural Heritage research community ; Parallel projects and organisations ; Industry, SMEs ans civil society	Survey + Templates

B) Research Implementation

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)
Joint transnational calls for proposals	To increase the amount of allocated funding through transnational calls for proposals	Number of applications granted and average funding allocated per application increase from one call to the next	8	Evolution in the number of applications granted and average funding allocated per application through calls for proposal	For each call, total amount of allocated funding related to the number of applications finally granted and average funding allocated to each granted project, compared to preceding call	Reporting directly from coordinator GPC Biennial Report – JPI Self-Assessment
Joint transnational calls for proposals	To launch joint transnational calls for proposals	Launch at least 2 joint transnational calls for proposals	9	Number of new and foreseen joint transnational calls for proposals	Number of new joint transnational calls for proposals published by the JPICH, and calls foreseen or planned for future of JPICH	Coordinator GPC Biennial Report – JPI Self-Assessment
Capacity building and Enabling activities	Development of advanced training	At least one training instrument implemented annually	10	Number and diversity of training instruments implemented	Inform as to number of seminars, conferences, thematic workshops, e-learning platforms developed for Cultural Heritage researchers and professional training purposes.	Survey + Template
Capacity building and Enabling activities	Development of a Cultural-Heritage-dedicated network of infrastructures	Develop and pool digital infrastructures for Cultural Heritage	11	Share of digital and built infrastructures compared to total number of infrastructures participating in the JPICH	Number of new or pre-existing infrastructures participating in JPICH activities. Physical (CHARISMA...) and digital (DARIAH...) infrastructures. Open laboratories, networks (HERA...)	Survey
		Develop and pool research facilities, laboratories, infrastructures				
Collaboration with private sector	Private sector participation in the research process	At least one collaboration implemented with the private sector	12	Number of research collaborations and partnerships with private sector	Participation of industry and SMEs through calls for proposals, access to research infrastructures, training programmes, informal collaborations, and commercial projects. Projects co-financed by private sector, access to private infrastructures	Survey + Template

C) Research Added Value

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)
Publications	Available publications to enhance visibility of JPICH activities	_	13	Number of publications resulting from JPICH research activities	Number of publications resulting from JPICH research activities. Publications in specialized, academic and high-impact journals (those considered highly influential in the field of Cultural Heritage and in specialized professional fields), and publications on JPICH research activities (collective works, conference proceedings, monographs, etc.).	Template
Training	To include students and professionals still in training in JPICH research activities	_	14	Number of degrees achieved and thesis presented by students collaborating in JPICH during the life time of the project	Students having achieved important degrees (master, doctoral) or presented their thesis during JPICH lifetime and having participated in JPICH research activities in one way or another, through research projects, workshops or training programmes.	Template
Aligned research	Increased coordination of JPI and European scientific strategic agendas	Development of a European agenda mirroring the JPICH agenda	15	New mechanisms for alignment with regional, federal, national and European research agendas	Innovative mechanisms implemented for alignment, coordination and interactions between institutional strategic agendas in the Cultural Heritage area: common research agendas, forums, subsidiarity principle... as innovative funding concepts likely to influence national, regional, institutional funding policies	Questionnaire GPC Biennial Report – JPI Self-Assessment Template
Aligned research	High-level coordination of JPI and National/Federal scientific strategic agendas	Participating States align their scientific strategy to the JPICH agenda				
Aligned research	To share common research agendas	Share the JPICH research agenda with at least one institution	16	Number of institutions sharing JPICH Strategic Research Agenda	Number of International organisations, national ministries or departments, agencies, councils, regional organisations, public research organisations and others... sharing JPICH research agenda or for which the SRA of the JPICH is explicitly mentioned as a cornerstone	Questionnaire GPC Biennial Report – JPI Self-Assessment

C1) Annex to C category for Joint Calls Assessment

Topics	Goals, Objectives	Success criteria /Target	Indicator		Indicator Definition	How to measure (multiple sources)
Calls outputs	Development of innovative Cultural-Heritage-dedicated tools, technologies, frameworks and methodologies for conservation and risk assessment	–	17	Number of patent applications, license agreements, invention disclosures, studies underway, technology demonstrators, new specific frameworks and methodologies dedicated to Cultural Heritage conservation	Development through JPICH research activities of cross disciplinary tools and methodologies for repair, treatment and maintenance... of Cultural Heritage, including new or improved products, technologies (advanced hybrid technologies, diagnostic tools, nanotechnology), processes (single early warning intelligent system crossing chemical, biological or physical sensors, climatic-security- behaviour interdisciplinary model, mapping earth observation with the help of spatial technologies) and equipments. New frameworks, methodologies and dedicated to risk assessment & prevention, Cultural Heritage conservation, natural and man-made disasters, specific management and risk assessment protocols.	Annual reporting templates
Calls outputs	Available publications to enhance visibility of JPICH activities	–	18	Number of publications resulting from research activities	Number of publications resulting from JPICH research activities. Publications in specialized, academic and high-impact journals (those considered highly influential in the field of Cultural Heritage and in specialized professional fields), and publications on JPICH research activities (collective works, conference proceedings, monographs, etc.).	Annual reporting templates
Calls outputs	Improved accessibility of materials and data	–	19	Share of research project addressing improvement in accessibility of materials and data	Share of research projects concerned with improving accessibility of materials and data, by using data mining, database, infrastructures... compared to total number of research projects during the period in question.	Annual reporting templates

C2) Annex to C category for Joint Alignment Assessment

Topics	Goals, Objectives	Success criteria /Target	Indicator		Indicator Definition	How to measure (multiple sources)
Alignment at strategic level	Level of the strategic leverage effects	–	20	Alignment of national agendas	Changes in research priorities of the agencies, and in national research priorities, towards a closer harmonization between partners.	Survey + Template
Alignment at funding level	Level of the funding leverage effects	–	21	Changes in national budgets re international activities / programmes	Changes in national budgets, in order to increase the participation of agencies in international activities / programmes	Survey + Template
Alignment at funding level	Level of the funding leverage effects	–	22	Changes in legislation to allow payments to foreign researchers	Legal and regulatory changes that enhance the internationalization factor, namelly by permission of paymento to foreign researchers	Survey + Template
Alignment at operational level	Level of the financial and operational leverage effects	–	23	Leverage effect	Efforts at financial and operational level in order to increase the return of partners investment (leverage effect)	Survey
Alignment at operational level	Level of the operational leverage effects	–	24	Coordination of timing in funding & programme implementation	Adjustment of timelines with regard to the funding schemes and to the implementation of the programmes	Survey + Template
Alignment at operational level	Level of the operational leverage effects	–	25	Harmonised rules and procedures for participation	Harmonization of the regulations and procedures for participation in programmes and calls	Survey + Template
Alignment at scientific level	Level of the scientific leverage effects	–	26	Standardisation of research practices	Establishment of common rules and procedures for the joint transnational calls, programme clustering and changes in national research programmes' themes	Survey + Template

D) Transformational Effect

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)
Connecting people with heritage	To improve Cultural Heritage accessibility	50% of total created, updated and pooled multidisciplinary databases are in open access	27	Increased access to Cultural Heritage information through database development, and share of open access databases	Number of multidisciplinary databases created, updated and pooled through JPICH activities, and share of open access sources compared to total.	Template
Connecting people with heritage	To help leaders in their use of Cultural Heritage (policy making) and to improve Cultural Heritage inclusion in research and sectoral policies	–	28	Increased and diversified actions to bring awareness of the knowledge developed in the JPICH to the political level	Number and type of actions developed by the JPICH to promote knowledge, tools and policy making instruments developed through its activities at political regional/federal/national/European/transnational levels: lobbying, political advisory groups, advocacy groups, transnational forums	Template for regular reporting Survey
Creating knowledge	To move the field towards truly interdisciplinary studies	–	29	JPICH ability to attract and increase investments for existing and new Cultural Heritage educational programmes	JPICH participations in creation of new Cultural Heritage curricula, in enforcement of the existing one, and its expenditure on pre-existing and new educational programmes	Monitoring survey + Template
Creating knowledge	To generate knowledge	Available information on the Heritage Portal and on the JPICH website increased from the beginning of the JPICH	30	Increase in the amount of Cultural Heritage information available on Heritage Portal and on JPICH website	From the beginning of the JPICH, increase in the amount of information available on the Heritage Portal (http://www.heritageportal.eu/) and on the JPICH website (http://www.jpi-culturalheritage.eu/)	Coordinator
Safeguarding our Cultural Heritage resource	Adaptation to and mitigation of climate change effects	Contribute to H2020 goals to reduce energy demand by factor of 5 to 20%, or more	31	JPICH potential contribution in reduction in energy demand and use	Potential impact on energy demand and use (in %), of results achieved through JPICH-related projects addressing or trying to tackle the challenge of renewable energy in the Cultural Heritage domain with reference to Europe 2020 goals	Monitoring survey + Template
Safeguarding our Cultural Heritage resource	Adaptation to and mitigation of climate change effects	–	32	Share of collaborative projects addressing and investigating the issue of climate change	Share of total projects and activities developed through JPICH addressing and investigating the issue of climate change effect on Cultural Heritage	Template
Transversal indicators	JPICH ability to address research priorities identified in the SRA	80% of research priorities identified in the SRA were addressed by JPICH activities	33	Proportion of priorities identified in the SRA addressed by JPICH activities, and number of research projects working on each priority	Among the priorities identified in the SRA: Developing a reflective society, identity and perception, values, ethics; connecting people with heritage, protection through use, sustainability, security, heritage information; creating knowledge, linking information, change, methods and measurements, integrating risk; safeguarding our Cultural Heritage resource, conservation, adaptation and mitigation	Template
Transversal indicators	To help Europe's economical growth and jobs	–	34	Number of transversal jobs directly or indirectly created through JPICH joint actions and their sustainability	Through activities and joint actions developed by JPICH, number of jobs directly or indirectly created, and their sustainability rate one year later.	Template

5. Annex II: JHEP D5.2 Indicator Tables

(A) Enabling Framework

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)	Comments
~~Governing structures~~	~~To ease communication and exchange of information within and between the governing bodies~~	~~Member States satisfaction~~	~~1~~	~~Development of effective and diverse communication tools between Member States~~	~~Member States are satisfied with the developed Communication tools including web-based platform, video conferencing system, allowing circulation of information, access to documentation and meetings' follow-up, good communication flow and visibility on the project's advancement.~~	~~Final Questionnaire (Q10.1 to Q10.6)~~	No longer necessary at this stage
~~Governing structures~~	~~To facilitate financial and administrative management~~	~~Member States satisfaction~~	~~2~~	~~Appropriate financial management of the coordination budget~~	~~Member States are satisfied with the European Commission financial contribution administration, distribution. Contractual issues are appropriate~~	~~Final Questionnaire (Q10.7 to Q10.9)~~	No longer necessary at this stage
~~Governing structures~~	~~Increase Member States' participation to official meetings~~	~~Percentage of Member States (by mean of their representatives) attending meetings per year reaches 80%~~	~~3~~	~~Proportion of Member States attending the meetings~~	~~A semi-annual average of the percentage of the total number of Member States attending JPICH meetings (only the official meetings are being counted), considering possible evolutions in the total number of Member States from one meeting to another~~	~~Reporting directly from WP1 (Specific template T01)~~	No longer necessary at this stage
Extending cooperation and partnership	To extend network and cooperation to external organisations	At least one annual joint action with an international organisation	4	Number of joint actions with organisations	Formal collaborations through joint activities and actions with International organisations (including UN, UNESCO, NGOs, ICOMOS, ICOM...), NGOs, regional organisations, other...	- Monitoring survey, (A) Q4 & Q4.1 - WP6 survey of communication and dissemination activities (Q34, 35, 37)	
Extending cooperation and partnership	To establish quality contacts with other JPIs	Organise at least one annual joint action with another JPI	5	Number of joint actions with other JPIs	Other JPIs (Urban Europe, Clik'EU, FACCE etc.). Joint actions including definition of common schemes for evaluation and monitoring, coordination or clustering, definition of common SRA, joint training activities, personnel exchange, mutual opening of facilities and infrastructures, of programmes, joint calls design and implementation, other...	- Monitoring survey, (A) Q3, Q3.1, Q3.2 & Q3.3 - WP6 survey of communication and dissemination activities (Q34, 35, 37)	
~~Extending cooperation and partnership~~	~~To build links with other transnational collaboration activities~~	~~At least one annual joint action with transnational cooperation activities other than JPIs~~	~~6~~	~~List of joint actions with other transnational collaboration activities~~	~~Existence of joint actions with transnational activities other than JPIs; Joint technology initiatives, Article 185 projects...~~	~~Monitoring survey, (A) Q5 & Q5.1~~ ~~WP6 survey of communication and dissemination activities (Q34, 35, 37)~~	Overlapping with indicator 5 above
~~Extending cooperation and partnership~~	~~Sustainable cooperations and partnerships~~	~~At least cooperation and partnership lasting more than 3 months~~	~~7~~	~~Proportion of cooperations and partnerships lasting more than 3 months~~	~~Duration of collaborations and partnerships conducted through joint activities and actions: with organisations, JPIs, transnational activities, as described above (ind. 4, 5, 6)~~	~~Monitoring survey, (A) Q3, Q3.1, Q3.2, Q3.3, Q4, Q4.1, Q5 & Q5.1~~ ~~Template for regular reporting, Q1.3~~	Useless
Extending cooperation and partnership	To cooperate with non European countries	Organise at least one annual joint action with a non-European country	8	List of joint actions involving non-European countries	Joint actions involving non-European countries, particularly advanced economies (Japan, USA...), neighbourhood Mediterranean countries, BRICs...	- Monitoring survey, (A) Q1, Q2 & Q2.1 - Template for regular monitoring, Q2.3	

JPICH attractiveness	JPICH is attracting new countries	Initial countries' membership enlarged to include at least one new country and doesn't decrease from one year to the next	9	Evolution of the number of countries participating to the JPICH	Cumulated number of Countries that joined the project and that were not present at the beginning of the project, countries that opted out (no longer partners or observers), and information about the number of countries that participated to the JPICH per year	- Reporting directly from WP1 (Specific template T02)	
~~SRA and Action Programme~~	~~Member States are satisfied with SRA~~	~~90% of participating countries satisfied with JPICH goals and objectives as stated in SRA~~	~~10~~	~~JPICH participating countries' satisfaction towards JPICH goals and objectives mentioned in SRA~~	~~90% of the participating countries consider that JPICH goals and research objectives mentioned in the SRA are timely, adapted and reflect JPICH main challenges and priorities~~	~~- Final questionnaire (Q13.1 to Q13.8)~~	Useless, even if we have to make sure that the link with the SRA is maintained
SRA and Action Programme	Action Programme funding quantity and type matches SRA needs	_	11	Adequacy of research needs in SRA and Action Programme	The SRA is reflected by the Action Programme that identifies the most useful funding instruments and pooling capacities for implementation of selected research topics in SRA	- Final questionnaire (Q13.9 to Q13.12)	
~~SRA and Action Programme~~	~~Research priorities and gaps identified and reflected in the SRA are timely and regularly updated~~	~~Up-to-date SRA~~	~~12~~	~~Number of SRA updates~~	~~Number of possible amendments, modifications, additions, suppression to the original text in order to better adjust it to the initial challenge, or to adapt it to the changing context~~	~~- Reporting directly from WP3 (no specific template)~~	Useless
Dissemination strategy	To identify and contact key stakeholders across and within the EU	4 categories of key stakeholders identified by WP6 contacted and involved in JPICH activities	13	List of new stakeholders and types of stakeholders reached by the dissemination strategy within EU and across the EU	One list for stakeholders reached by JPICH dissemination strategy in the EU, one list for stakeholders reached outside the EU, with description of categories of stakeholders reached. They include the four categories used in the JHEP Dissemination Plan: Policy makers and influencers ; Cultural Heritage research community ; Parallel projects and organisations ; Industry, SMEs ans civil society	- Survey of Communication & Dissemination Activities (Q22, 23, 28, 29, 34, 35, 40, 41) - Template for regular reporting (Q2.2, 2.4, 3.1, 3.2)	
~~Dissemination strategy~~	~~Accessibility of updated informations and actions for stakeholders and general public~~	~~At least two different communication tools and actions for stakeholders' and general public information~~	~~14~~	~~List of communication tools and actions for stakeholders' and general public information~~	~~Depending on the information requirements for groups, and their potential for engagement at different time periods during the initiative, a set of methods and actions will be developed for communicating with each group of stakeholders and the general public, including printed promotional materials, websites, newsletters, events, links to databases and resources, outreach communication exhibitions, offline and online mass media presentations~~	~~- WP6 survey of communication & Dissemination Activities (Q5, Q6, Q24 to 26, Q30 to 32, Q36 to 38, Q42 to 45) - Template for regular reporting (Q1.1, Q2.4, Q3.1, Q7, Q7.1)~~	Useless

(B) Research implementation

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)	Comments
Joint transnational calls for proposals	To launch joint transnational calls for proposals	Launch at least 2 joint transnational calls for proposals	15	Number of new and foreseen joint transnational calls for proposals	Number of new joint transnational calls for proposals published by the JPICH, and calls foreseen or planned for future of JPICH	- Reporting directly from WP1 (T03) - GPC Biennial Report – JPI Self-Assessment (Q3.2)	
Joint transnational calls for proposals	To increase the amount of allocated funding through transnational calls for proposals	Number of applications granted and average funding allocated per application increase from one call to the next	16	Evolution in the number of applications granted and average funding allocated per application through calls for proposal	For each call, total amount of allocated funding related to the number of applications finally granted and average funding allocated to each granted project, compared to preceding call	- Reporting directly from WP1 (T03) - GPC Biennial Report – JPI Self-Assessment (Q3.2)	
Joint transnational calls for proposals	Applications meet the objectives of the calls for proposal	–	17	Total number of projects submitted in relation to final number of granted projects	For each new call, percentage of projects selected after peer review related to total number of applications after eligibility check and percentage of projects granted compared to number of projects selected after peer review, considering every intermediary steps of the evaluation procedures	- Reporting directly from WP1 (T03) - GPC Biennial Report – JPI Self-Assessment (Q3.2)	
	To allocate funding to as many projects selected after peer review as possible	100% of selected applications are granted after peer review					
~~Capacity building and Enabling activities~~	~~To facilitate researcher mobility~~	~~10% of exchanged researchers moved more than 3 months~~	~~18~~	~~Number of researchers exchanged across the partner research institutions through JPICH activities~~	~~Number of researchers exchanged mainly through transnational calls, collaborative cross-border projects, specific training programmes, workshops, seminars, institutional exchanges and other JPICH joint actions. Share of these researchers who moved more than 3 months (cumulated or consecutive)~~	~~- Monitoring survey, (B) Q4 & Q4.1~~	In JHEP activities, no such exchanges seems to be under construction
Capacity building and Enabling activities	Development of advanced training	At least one training instrument implemented annually	19	Number and diversity of training instruments implemented	Inform as to number of seminars, conferences, thematic workshops, e-learning platforms developed for Cultural Heritage researchers and professional training purposes.	- Monitoring survey, (B) Q3 & 3.1 - Template for regular reporting (Q6.1)	
Capacity building and Enabling activities	Development of a Cultural-Heritage-dedicated network of infrastructures	Develop and pool digital infrastructures for Cultural Heritage	20	Share of digital and built infrastructures compared to total number of infrastructures participating in the JPICH	Number of new or pre-existing infrastructures participating in JPICH activities. Physical (CHARISMA…) and digital (DARIAH…) infrastructures. Open laboratories, networks (HERA…)	- Monitoring survey, (B) Q2 & Q2.1	
		Develop and pool research facilities, laboratories, infrastructures					
Collaboration with private sector	Private sector participation in the research process	At least one collaboration implemented with the private sector	21	Number of research collaborations and partnerships with private sector	Participation of industry and SMEs through calls for proposals, access to research infrastructures, training programmes, informal collaborations, and commercial projects. Projects co-financed by private sector, access to private infrastructures	- Monitoring survey, (B) Q1 & Q1.1 - Template for regular monitoring (Q2.1)	

(C) Research added value

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)	Comments
Calls outputs	Development of innovative Cultural-Heritage-dedicated tools, technologies, frameworks and methodologies for conservation and risk assessment	–	22	Number of patent applications, license agreements, invention disclosures, studies underway, technology demonstrators, new specific frameworks and methodologies dedicated to Cultural Heritage conservation	Development through JPICH activities of cross disciplinary tools and methodologies for repair, treatment and maintenance... of Cultural Heritage, including new or improved products, technologies (advanced hybrid technologies, diagnostic tools, nanotechnology), processes (single early warning intelligent system crossing chemical, biological or physical sensors, climatic-security- behaviour interdisciplinary model, mapping earth observation with the help of spatial technologies) and equipments. New frameworks, methodologies and dedicated to risk assessment & prevention, Cultural Heritage conservation, natural and man-made disasters, specific management and risk assessment protocols.	- Template for regular reporting (Q4.2, Q6.1)	
~~Calls outputs~~	~~Digitization of Cultural Heritage~~	~~–~~	~~23~~	~~Share of research projects developed through JPICH addressing the specific challenge of digital Cultural Heritage~~	~~Share of research projects addressing or concern with the problems of conservation of materials used in cultural information storage, conservation of digital heritage, digitization of tangible and intangible heritage, digital database... compared to total number of research projects during the period in question~~	~~- Template for regular reporting (Q6.1)~~	Useless
Calls outputs	Improved accessibility of materials and data	–	24	Share of research project addressing improvement in accessibility of materials and data	Share of research projects concerned with improving accessibility of materials and data, by using data mining, database, infrastructures... compared to total number of research projects during the period in question	- Template for regular reporting (Q6.1)	
~~Calls outputs~~	~~Research projects' initial objectives completed~~	~~Majority of research projects reached their expected objectives~~	~~25~~	~~Number of research projects having reached expected objectives, compared to number of research projects not completed or prematurely aborted~~	~~For the period in question, number of research projects that reached a majority of their initial objectives compared to number of projects prematurely aborted because ineffective or inefficient, or unable to reach the majority of their initially stated objectives~~	~~- Monitoring survey, (C) Q1 & Q1.1~~	Useless
Publications	Available publications to enhance visibility of JPICH activities	–	26	Number of publications resulting from JPICH activities	Number of publications resulting from JPICH-related activities and research projects. Publications in specialized, academic and high-impact journals (those considered highly influential in the field of Cultural Heritage and in specialized professional fields), and publications on JPICH joint actions (collective works, conference proceedings, monographs, etc.).	- Template for regular reporting (Q5)	Switched to «Call Assessment»
Training	To include students and professionals still in training in JPICH activities	–	27	Number of degrees achieved and thesis presented by students collaborating in JPICH during the life time of the project	Students having achieved important degrees (master, doctoral) or presented their thesis during JPICH lifetime and having participated in JPICH activities in one way or another, through research projects, workshops or training programmes.	- Template for regular reporting (Q2.4, Q6.1)	

~~Efficiency benefits through pooling~~	~~Capacity and financial gains through pooling~~	~~Majority of Member States agrees that the benefits of international calls for proposals and non-project funded activities outweigh transaction and administrative costs of JPICH~~	~~28~~	~~Cost of coordination compared to size of research budget~~	~~According to Member States, the total costs of preparing JPICH coordination (mostly working hours spent on preparation, selection and contracting) measured in relation to the size of the research budget, costs of non-project-funded activities (total costs).~~	~~- Final questionnaire (Q14.1, Q14.2, Q14.4, Q14.6, Q15)~~	Useless
~~Efficiency benefits through pooling~~	~~Capacity and financial gains through pooling~~	~~Involve a group of funding bodies wider than the total number of States participating to the JPICH~~	~~29~~	~~Number of funding bodies participating to JPICH activities compared to total number of Member States and share from non Member States~~	~~Number of funding bodies from JPICH Member States, observer States or non member countries participating in the funding of JPICH activities, compared to the number of Member States of the JPICH. Share of total funding bodies originating from observer or non member countries.~~	~~- Template for regular reporting (Q2.1)~~	Useless
~~Efficiency benefits through pooling~~	~~JPICH representativeness in the Cultural Heritage research financial landscape~~	~~Funding coordinated through JPICH reaches 5% of total European research funding in this domain~~	~~30~~	~~Amount of JPICH common research funding for Cultural Heritage as share of total EU research funding in this domain~~	~~Funding in Cultural Heritage areas commissioned jointly as a proportion of the aggregated national research funding, including from the European Commission & European Research Council.~~	~~- No instrument yet~~	Useless
Aligned research	Increased coordination of JPI and European scientific strategic agendas	Development of an European agenda mirroring the JPICH agenda	31	New mechanisms for alignment with regional, federal, national and European research agendas	Innovative mechanisms implemented for alignment, coordination and interactions between institutional strategic agendas in the Cultural Heritage area: common research agendas, forums, subsidiarity principle... as innovative funding concepts likely to influence national, regional, institutional funding policies	- Final questionnaire (complete Q16 and Q17) - GPC Biennial Report – JPI Self-Assessment (Part II, Q6.5 & 6.6) - Template for regular reporting (Q6.1)	
Aligned research	High coordination of JPI and National/Federal scientific strategic agendas	Participating States align their scientific strategy to the JPICH agenda					
Aligned research	To share common research agendas	Share the JPICH research agenda with at least one institution	32	Number of institutions sharing JPICH Strategic Research Agenda	Number of International organisations, national ministries or departments, agencies, councils, regional organisations, public research organisations and others... sharing JPICH research agenda or for which the SRA of the JPICH is explicitly mentioned as a cornerstone	- Final questionnaire (complete Q18) - GPC Biennial Report – JPI Self-Assessment (Part II, Q6)	

(D) Transformational effect

Topics	Goals, Objectives	Success criteria /Target		Indicator	Indicator Definition	How to measure (multiple sources)	Comments
~~Developing a reflective society~~	~~To improve the way Cultural Heritage reflects changes in terms of values and ethics~~	~~–~~	~~33~~	~~JPICH contribution to adoption, introduction and enforcement of charts, standards, ethical codes and declarations~~	~~At the transnational and national/regional/federal levels, JPICH contributions to the adoption of innovative charts, standards, ethical codes, declarations (regulating Cultural Heritage social inclusion in terms of values and ethics) or to better enforcement of existing ones (ICOMOS, UNESCO, ICOM, etc.)~~	~~- Monitoring survey, (D) Q3 & Q3.1~~ ~~- Template for regular monitoring (Q6.1)~~	Redundant with other indicators added in C2
Connecting people with heritage	To improve Cultural Heritage accessibility	50% of total created, updated and pooled multidisciplinary databases are in open access	34	Increased access to Cultural Heritage information through database development, and share of open access databases	Number of multidisciplinary databases created, updated and pooled through JPICH activities, and share of open access sources compared to total.	- Template for regular reporting (Q6.1)	
~~Connecting people with heritage~~	~~To improve Cultural Heritage accessibility~~	~~The use of existing databases on Cultural Heritage increased before and after JPICH intervention~~	~~35~~	~~Increased use of Cultural Heritage databases thanks to JPICH~~	~~Use of selected key databases on Cultural Heritage before and after they were completed, updated and promoted through JPICH intervention.~~	~~- Monitoring team needs to select key databases~~ ~~- See Monitoring survey, (D) Q6~~ ~~- Final questionnaire (Q19)~~	No longer necessary at this stage
~~Connecting people with heritage~~	~~To improve Cultural Heritage accessibility~~	~~Visits to the Heritage Portal and the JPICH website increased from the beginning of the JPICH~~	~~36~~	~~Increase in the amount of visits on the Heritage Portal and on the JPICH website~~	~~From the beginning of the JPICH, evolution of unique visitors visits to the Heritage Portal (http://www.heritageportal.eu/) and JPICH website (http://www.jpi-culturalheritage.eu/)~~	~~- Reporting directly from WP1 & WP6 (T04)~~	No longer necessary at this stage
Connecting people with heritage	To help leaders in their use of Cultural Heritage (policy making) and to improve Cultural Heritage inclusion in research and sectoral policies	–	37	Increased and diversified actions to bring knowledge developed in the JPICH to political level	Number and type of actions developed by the JPICH to promote knowledge, tools and policy making instruments developed through its activities at political regional/federal/national/European/transnational levels: lobbying, political advisory groups, advocacy groups, transnational forums	- Monitoring Survey, (D) Q1 & Q1.1 - Template for regular reporting (Q6.1) - WP6 Survey of Communication & Dissemination activities (Q23, Q24, Q25, Q26)	
Creating knowledge	To move the field towards truly interdisciplinary studies	–	38	JPICH ability to attract and increase investments for existing and new Cultural Heritage educational programmes	JPICH participations in creation of new Cultural Heritage curricula, in enforcement of the existing one, and its expenditure on pre-existing and new educational programmes	- Monitoring survey,(D) Q5 & Q5.1 - Template for regular reporting (Q1.5, Q1.7, Q6.1)	
~~Creating knowledge~~	~~To move the field towards truly interdisciplinary studies~~	~~New academic and educational instruments with targeted approach to SRA research priorities were developed thanks to JPICH~~	~~39~~	~~Increase in the amount of existing academic and educational instruments with targeted approach to present SRA priority research areas~~	~~Number and type of new instruments having potential academic and educational application, targeting current SRA research priorities, and developed through JPICH research projects and activities~~	~~- Monitoring survey, (D) Q4 & Q4.1~~ ~~- Template for regular reporting (Q6.1)~~	No longer necessary at this stage

~~Creating knowledge~~	~~To generate knowledge~~	~~=~~	40	~~Integration level of available Cultural Heritage information in targeted Cultural Heritage-related fields of study~~	~~In selected key fields of study (conservation, architecture, urban studies, climate studies…), increased integration of Cultural Heritage information in representative research processes and in educational programmes, before and after JPICH intervention~~	~~Need to select key fields of study~~	No longer necessary at this stage
Creating knowledge	To generate knowledge	Available information on the Heritage Portal and on the JPICH website increased from the beginning of the JPICH	41	Increase in the amount of Cultural Heritage information available on Heritage Portal and on JPICH website	From the beginning of the JPICH, increase in the amount of information available on the Heritage Portal (http://www.heritageportal.eu/) and on the JPICH website (http://www.jpi-culturalheritage.eu/)	- Reporting directly from WP1 & WP6 (T04)	
~~Safeguarding our Cultural Heritage resource~~	~~Conservation, revitalisation of artefacts, buildings and landscapes~~	~~=~~	42	~~Share of collaborative projects addressing and investigating renewal and restoration of historic areas~~	~~Share of the total projects and activities developed through JPICH addressing and investigating the fields of historic architecture, renewal and restoration of historic areas with an innovative, global and multidisciplinary safeguard approach~~	~~Template for regular reporting (Q4.2)~~	Overlap
Safeguarding our Cultural Heritage resource	Adaptation to and mitigation of climate change effects	Contribute to H2020 goals to reduce energy demand by factor of 5 to 20%, or more	43	JPICH potential contribution in reduction in energy demand and use	Potential impact on energy demand and use (in %), of results achieved through JPICH-related projects addressing or trying to tackle the challenge of renewable energy in the Cultural Heritage domain with reference to Europe 2020 goals	- Monitoring survey, (D) Q2 & Q2.1 - Template for regular reporting (Q4.2)	
Safeguarding our Cultural Heritage resource	Adaptation to and mitigation of climate change effects	–	44	Share of collaborative projects addressing and investigating the issue of climate change	Share of total projects and activities developed through JPICH addressing and investigating the issue of climate change effect on Cultural Heritage	- Template for regular reporting (Q4.2)	
Transversal indicators	JPICH ability to address research priorities identified in the SRA	80% of research priorities identified in the SRA were addressed by JPICH activities	45	Proportion of priorities identified in the SRA addressed by JPICH activities, and number of research projects working on each priority	Among the priorities identified in the SRA: Developing a reflective society, identity and perception, values, ethics; connecting people with heritage, protection through use, sustainability, security, heritage information; creating knowledge, linking information, change, methods and measurements, integrating risk; safeguarding our Cultural Heritage resource, conservation, adaptation and mitigation A proportion of these priorities addressed by JPICH research projects.	- Template for regular reporting (Q4.1)	
Transversal indicators	To help Europe's economical growth and jobs	–	46	Number of jobs directly or indirectly created through JPICH joint actions and their sustainability	Through activities and joint actions developed by JPICH, number of jobs directly or indirectly created, and their sustainability rate one year later.	- Template for regular reporting (Q6.1)	

6. Annex III: Glossary

Alignment: the strategic approach taken by Member States to modify their national programmes, priorities or activities as a consequence of the adoption of joint research priorities in the context of Joint Programming, with a view to implement changes to improve the efficiency of investment in research at the level of Member States and the European Research Area.

Alignment of national research programmes and activities occurs around a common Strategic Research Agenda. In practical terms, it requires changes in the orientation and content of national research, the volume of research, the way the national programme or activity is executed (e.g., in its degree of collaboration with third parties) and changes in research outputs.

Efficiency: a measure of how economically inputs (resources such as funds, expertise, time) are converted into results.

Evaluation: a judgment of interventions according to their results, impacts and needs they aim to satisfy.

Impact: reflecting the long-term socio-economic changes brought about by an intervention, the impact of an intervention can take a long time to become apparent, and the level of control exercised by the manager of the intervention over its long term impact is very low, as well as difficult to assess during the lifetime of the intervention, even a long time afterwards. This impact may be expected or unexpected, foreseen or unforeseen, desirable or undesirable. The final impact may also influence the initial societal challenges having led to the intervention, thus necessitating readjustment of the intervention objectives.

Indicator: a quantitative or qualitative variable that provides a valid and reliable way to measure achievement, assess performance, or reflect changes connected to an intervention. Note: single indicators are limited in their utility for understanding program effects (i.e., what is working or is not working, and why?). Indicator data should be collected and interpreted as part of a set of indicators. Indicator sets alone cannot determine the effectiveness of a program or collection of programs; for this, good evaluation designs are necessary.

Inputs: inputs describe the human, financial and institutional resources used for the implementation of an intervention.

Monitoring: a continuous and systematic process carried out during the duration of an intervention, which generates quantitative data on the implementation of the intervention, but not usually on its effects. The intention is to correct any deviation from the operational objectives, and thus improve the performance of the programme as well as facilitate subsequent evaluation.

Objectives: objectives aim to address - and ideally solve - the initial identified challenges by assigning qualitative and quantitative goals. These objectives can be short-term, addressing immediate and precise effects (input and

output objectives), or long-term, addressing future and global impact (transformational effect). The more global the objective, the more difficult it will be to monitor its expected effects. Objectives are not immutable and can evolve at each new cycle of intervention, assuming that a cycle of intervention can have an impact on the initial challenges and change the rationales for intervention.

Outcome: outcomes describe the wider results enabled and created by outputs, although their causal link with the initial objectives and inputs is less tangible. They may not describe a change important enough to be of a societal nature, but sufficient enough to touch the primary beneficiaries of the specific fields of intervention (these do not usually concern society in general).

Outputs: the direct results of the work enabled by the inputs and activities. Outputs are under the direct control of the manager of an intervention, since they describe the direct goods, services and effects produced by an intervention according to its short-term objectives and affecting its primary beneficiaries. In a future cycle of intervention, outputs may be converted into inputs. For example, in an initial cycle of intervention, an input of financial funds has enabled the creation of an infrastructure. In the next cycle of intervention, this new infrastructure may serve as an input, to create a broader network of infrastructures.

Performance: the degree to which an intervention or organization operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans.

Sources for the Glossary:

● *Deliverable 4.1- Report on the Definition and Typology of Alignment*, ERA-LEARN 2020, September 2015.

●*Ten Steps to a Results-Based Monitoring and Evaluation System*, *A Handbook for Development Practitioners*, World Bank, 2004.

● *Evaluating EU Activities – a practical guide for the commission services*, European Commission, 2004.