HERACLES

HEritage **R**esilience **A**gainst **CL**imate **E**vents on **S**ite

Deliverable D10.1
Report on social impacts, societal resilience and cultural values awareness

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1 Executive Summary

Deliverable 10.1 "Report on social impacts, societal resilience and cultural values awareness" defines the methodology and the process planned to contribute in societal resilience and cultural values awareness and evaluation of the impacts of the HERACLES project at social, economic and cultural level. In particular, some of the steps of the Social Impacts Assessment (SIA) methodology are followed in order to engage public authorities, schools, universities, territorial planners, associations of citizens, economic actors, etc., in a dynamic process for building a proactive behaviours of the different actors in the test-bed territories in order to evaluate the impacts.

Evaluating social, economic and cultural impacts of a research project is a quite big challenge, widely discussed at European level and it is a hot topic for H2020 projects. In particular, "quantitative data are hardly available" [1] and are usually observable in a long period of time; therefore, they cannot be easily distinguished from impacts produced by other causes.

For this reason, in the last decade methods have been developed which consider social impacts evaluation as the part of an iterative process where researchers and stakeholders influence each other with respect to a shared set of interests and objectives (https://www.research.manchester.ac.uk/portal/files/33083211/FULL_TEXT.PDF).

The European Commission has "flagged" topics in Horizon 2020 calls that require the inclusion of SSH research. The call addressed by HERACLES proposal was SSH "flagged".

According to this, the "HERACLES main objective is to design, validate and promote responsive systems/solutions for effective resilience of CH against climate change effects, considering as a mandatory premise a holistic, multidisciplinary approach through the involvement of different expertise" and actors (as already specified in the project Grant Agreement). The project and the methodologies adopted follow the socio-technical theory [2]. Indeed HERACLES involves social and technical issues aiming to facilitate the cooperation of the different actors. The cooperation process is devoted to combine the use of technologies, knowledge and individual as well collective experiences in a unique ecosystem. This effort is in line both with the recommendations of the Council of Europe Strategy 21 for Cultural Heritage [3] and with the concept of Responsible Research and Innovation (RRI) introduced in the Horizon 2020 strategy.

The European Cultural Heritage strategy for the 21st century addresses an inclusive and participatory approach aiming to involve different stakeholders at different scales (local, regional, national and European). The strategy embeds the "core values of the Council of Europe: democracy, respect for human rights and fundamental freedoms, openness and dialogue, the equal dignity of all persons, mutual respect and sensitivity to diversity".

RRI includes the "transformative power of innovation to create futures, innovations that are often socially and politically constituted" [4] and that embed values [5].

The European Commission gave the following definition (https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation) for Responsible Research and Innovation:

"Responsible research and innovation is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation."

The concept and the approaches related to the Council of Europe Strategy 21 for Cultural Heritage and to RRI with its six dimensions (governance, public engagement, gender equality,

science education, open access and ethic) are at the basis of the evaluation of the social, economic and cultural impacts of HERACLES.

In this perspective, this deliverable defines the process for evaluating societal, economic and cultural impacts of the HERACLES project. In particular, this process allows the identification of the expected impacts during the life of the project, the actions for enabling a qualitative evaluation of these impacts and the impacts expected at the end of the project.

2. Introduction

2.1 Document organization

The present document is organized according to the following sections:

Section 2: presents info on the Document Organization, Scope & Objectives, Reference documents, Acronyms and Abbreviations and relation with other deliverables.
Section 3: "The Heritage Preservation in the Anthropocene" discusses variations caused by climate changes and human activities on the cultural heritage preservation.
Section 4: "Evaluating social, cultural and economic impacts" provides a description of the key problems and risk variables/multipliers, the relationships of HERACLES with the Challenges of Responsible Research and Innovation, the methodology (World Café and Delphi method) and the process which HERACLES adopts to identify the social, cultural and economic impacts.
Section 5: "The World Café in Gubbio" provides description of the participatory workshop organised in Gubbio, the triggering questions discussed and the lessons learned.
Section 6: "Mini Delphi Workshop design" describes the different stages of the mini-Delphi methodology.
Section 7: "The informed consent framework" gives the informed consent used for the World Cafè and the Mini-Delphi.
Section 8: "Conclusions" where the conclusions are drawn.
Section 9: "References and documents" used are listed

2.2. Reference documents

Document name	Reference number
HERACLES – Annex 1: Description of Work	Grant Agreement nr. 700395
HERACLES - Consortium Agreement	Apr. 2016
HERACLES - Project's Handbook	Deliverable D11.1
Definition of the end-users requirements with emphasis on HERACLES test beds	Deliverable D1.2

2.3 Acronyms and abbreviations

Acronym	Abbreviations
CH	Cultural Heritage
ICOMOS	International Council on Monuments and Sites
NATO	North Atlantic Treaty Organization
OUV	Outstanding universal value
RRI	Responsible Research and Innovation
SIA	Social Impact Assessment
SSH	Social Sciences and Humanities
UNESCO	United Nations Educational, Scientific and Cultural Organization
WP	Work Package

2.4 Scope & Objectives

The social, economic and cultural impacts of the HERACLES project are evaluated specifically for the test-beds (Gubbio, Heraklion). From a broad perspective and bearing in mind the need to connect with other cases, this process requires the following steps:

A. Understanding the problem of climate change and cultural heritage as well as the interrelations between them:

- Global considerations are carried out, discussing on Cultural Heritage and Climate Change and Cultural Heritage [6] Archaeology and the Anthropocene [7, 8] including UNESCO reports [9] and reports from other projects [10];
- Identifying key problems;
- Identifying risk variables/multipliers.

B. Description of the major threats affecting the test sites and establishing a common agenda engaging experts as well as representatives of heritage and archaeological institutions and local communities:

- Identifying key stakeholders to be engaged;
- Identifying the triggering questions to be discussed;
- Discussing the use of the World Café and Delphi method on these particular cases;
- Discussing how to compare qualitatively different data.

2.5 Relation with Others Deliverables

D11.1 (CNR) HERACLES - Project Handbook
D1.2 (CNR) Definition of the end-users requirements with emphasis on HERACLES test-beds
     Deliverable
D2.4 (FORTH) Integration of socio-economic factors in risk analysis

3. The Heritage Preservation in the Anthropocene

Environmental issues, related to the anthropogenic impact produced by the human activities on the environment, are critical in today's world and raise a range of questions, which deal with climate change, land and soil degradation, species extinction, pollution, over-population, energy resources, imbalance of power and agency.

The rise of the debate on the Anthropocene [11, 12] encouraged a rethinking of the concept of heritage preservation as part of a complex nature-culture entanglement, in which climate change and human activities have to be jointly taken into consideration within a dynamic network. UNESCO itself draws our attention to this natural/cultural stratigraphy, by defining cultural landscapes as "illustrative of the evolution of society and human settlements over time, under the influence of physical constraints and/or opportunities presented by their natural environment and successive social actions, economic and cultural forces, both external and internal" [9].

As the global average surface temperature rises (the "rate" of temperature increase has nearly doubled in the last 50 years and by the end of the century (2099) the temperature of our planet may rise as much as 6,4°C) the number and frequency of extreme weather events, change rain regimes and consequently the frequency of floods and droughts and heat and cold waves, leading to extinction of species, food production shortage, extensive migration flows and other undesired events increase.

These changes affect natural, human and cultural ecosystems and include the conservation of material and immaterial cultural heritage. Cultural heritage is being affected by climate change. Archaeological remains and related evidence are and will continue to be affected as the soil undergone hydrogeological, chemical, and biological processes/changes. Older building materials are more porous than those used in modern constructions and thus much more susceptible to the action of salt soil itself; wood and other organic building materials are subject to increased biological infestation that reaches unthinkable places; flooding damage building materials not designed to withstand prolonged immersion, and uncommon strong winds lead to structural damage. Desertification, salt erosion and erosion already threaten cultural heritage in desert areas.

In addition, climate changes have also significant social and cultural impacts, as communities change the way they live, work, worship, and socialize in places and landscapes of buildings, possibly migrating and abandoning their built heritage. In addition, climate change can also have an impact on livelihoods, food security and the social fabric as a whole.

1. UNESCO and ICOMOS have issued several recommendations and guidelines concerning the promotion and preservation of cultural and intangible cultural heritage. In 1979, ICOMOS (International Council on Monuments and Sites) published the Burra Charter [13], which provides guidance on the conservation and management of cultural heritage, highlighting its critical role as a community building strategy, the core of a network that involves people, landscape, and monuments.

2. Cultural Heritage - monuments, buildings, archaeology and cultural sites - cannot easily move (although it has been done in exceptional cases, e.g. Abu Simbel temples) and therefore it "is inextricably linked to locality, place and living cultural practices and traditions" [14].

3. In this context, human action is also particularly relevant, both at local economy level – agriculture, fishing, water management, intensive use of soils, etc. - and concerning tourism: "Direct or indirect, the impacts of climate change affect the outstanding

universal value (OUV), integrity and authenticity of World Heritage sites. Most of them are iconic places and with a huge tourist demand that, without planning, would be a threat with negative consequences for Heritage sites and their local communities" [15].

4. Concerning tourism, UNESCO has launched the World Heritage and Sustainable Tourism Program (http://whc.unesco.org/en/tourism/), which "represents a new approach based on dialogue and stakeholder cooperation where planning for tourism and heritage management is integrated at a destination level, the natural and cultural assets are valued and protected, and appropriate tourism developed." This program builds on a global, dynamic and integrative framework that supports sustainable tourism as a vehicle for managing cultural and natural heritage.

5. In order to be effective, however, specific programs to engage and sensitize the population in a significant way are required. The UNESCO and Word Heritage Convention program "People protecting places" (http://www.peopleprotectingplaces.org/) is an example of this strategy of engagement.

4. Evaluating social, cultural and economic impacts

As established in the grant agreement, HERACLES aims "to design, validate and promote responsive systems/solutions for effective resilience of CH against climate change effects, considering as a mandatory premise a holistic, multidisciplinary approach through the involvement of different expertise and actors from end-users, industry and SMEs, scientists, historians of science and technology, conservators/restorers and social experts, decision, and policy makers and citizens". In this respect, the activities carried out in the HERACLES project contributes to the challenges arising from the three components of the Council of Europe Strategy 21 for Cultural Heritage [3], i.e. from the Social component, the Territorial and Economic component and the Knowledge and Education component. In particular, the European Cultural Heritage Strategy for the 21st century addresses an inclusive and participatory approach aiming to engage different stakeholders at different scales (local, regional, national and European). As already said, the strategy embeds the "core values of the Council of Europe: democracy, respect for human rights and fundamental freedoms, openness and dialogue, the equal dignity of all persons, mutual respect and sensitivity to diversity". In particular:

- The "Social component" focuses on: the relationship between heritage and societies and citizenship; the transmission and sharing of democratic values through participatory governance; good governance through participatory management.
- The "Territorial and Economic development component" focuses on: the relationship between cultural heritage and spatial development; the economy and local and regional governance with due regard to the principles of sustainable development.
- The "Knowledge and Education component" focuses on the relationship between heritage and shared knowledge, covering awareness raising, training and research.

HERACLES relationship with "the social component" has been already clarified in the Grant agreement, underlining that at "European level, the widespread presence of the movable and immoveable cultural assets, their high cultural value and the accessibility/fruition of this patrimony by the public make crucial the necessity of their sustainable management and protection for Europe and in particular for the Mediterranean area."
For this purpose HERACLES is providing innovative solutions and materials, for an economically sustainable maintenance and remediation, preserving the integrity and improving the social value of the CH; moreover the project aims to impact on societal values with different actions: involving civil society in discussions for common understanding will allow to share knowledge and concrete results, improving the collective and social awareness of risks and resilience. In this respect, HERACLES is in line with some of the recommendations that social component suggests, such as:

- encourage the involvement of citizens and local authorities in capitalising on their everyday heritage;
- make heritage more accessible;
- use heritage to assert and transmit the fundamental values of Europe and of the European society;
- encourage and assess citizen participation practices and procedures;
- create a suitable framework to enable local authorities and communities to take actions for the benefit of their heritage and its management.

The "Territorial and Economic development component" is also well related with the HERACLES innovative solutions. Indeed, the project can contribute in developing new management models to ensure that cultural heritage benefits from the economic spinoffs that can be generated. Moreover, with the ICT platform and the use of innovative solutions and materials, HERACLES focuses on:

- promoting heritage skills and professionals,
- promoting cultural heritage as a resource,
- supporting and promoting the heritage sector as a means of creating jobs and business opportunities,
- using "the cultural heritage as a means of giving to the region a distinctive character".

Finally, some HERACLES activities such as the production of video- courses, the organization of discussions, participatory and dissemination events, involving different stakeholders, general public, decision makers and students create a relationship with the "Knowledge and Education component" of the Strategy 21 [3]. Indeed these actions aim:

- fostering a shared knowledge society,
- Identifying, preserving, transmitting and sharing heritage knowledge and skills,
- Raising awareness of the values conveyed by heritage,
- Ensuring heritage stakeholders have access to lifelong training,
- enlisting the commitment of young people to heritage.

The project deeply crosses the concepts of Responsible Research and Innovation, in fact, the social, cultural and economic impacts in HERACLES also match the concept of Responsible Research and Innovation (RRI) introduced in the Horizon 2020 strategy.
RRI includes the "transformative power of innovation to create futures, that innovations are often socially and politically constituted" and that they embed values.

The six RRI Dimensions (http://ec.europa.eu/research/swafs/index.cfm?pg=library&lib=rri) defined by the European Commission are:
- **Public Engagement.** Co-creating the future with citizens and civil society organisations, and also bringing on board the widest possible diversity of actors that would not normally interact with each other, on matters of science and technology.
- **Gender Equality.** Fostering gender balance in research teams, in order to close the gaps in the participation of women; ensuring gender balance in decision-making, in order to reach the target of 40% of the under-represented sex in panels and groups and of 50% in advisory groups; integrating the gender dimension in research and innovation (R&I) content, helps improve the scientific quality and societal relevance of the produced knowledge, technology and/or innovation.
- **Science education.** Building capacities and developing innovative ways of connecting science to society is a priority under Horizon 2020. This will help to make science more attractive to young people, increase society's appetite for innovation, and open up further research and innovation activities.
- **Open access.** The global shift towards making research findings available free of charge for readers, so-called 'Open access', has been a core strategy in the European Commission to improve knowledge circulation and thus innovation. It is illustrated in

particular by the general principle for open access to scientific publications in Horizon 2020 and the pilot for research data.

- **Ethics.** For all activities funded by the European Union, ethics is an integral part of research from beginning to end, and ethical compliance is seen as pivotal to achieve real research excellence.
- **Governance.** Policymakers also have a responsibility to prevent harmful or unethical developments in research and innovation. Through this key, we will develop harmonious models for Responsible Research and Innovation that integrate public engagement, gender equality, science education, open access and ethics."

First of all, HERACLES relationship with RRI challenges is clear considering the project goal to produce "National and European innovation agendas, compiling options for robust and responsible innovation trajectories".

Each one of the six RRI dimension is addressed during the implementation of the HERACLES project.

Already during the definition of the project proposal different competencies and actors were involved in the consortium, building the basis for "Co-creating the future" by working "together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society". *(https://ec.europa.eu/research/swafs/pdf/pub_rri/KI0214595ENC.pdf).*

Moreover, in the effort of <u>facilitating the interaction among the different actors</u> on the specific issues of science and technology, HERACLES is producing:

- The online platform, a "living" tool that will engage, facilitate and build up a sustainable and coordinated European wide dialogue and exchange of information.
- A Self-assessment tool for gauging knowledge gaps/understanding of societal engagement in the field of advanced materials and nanotechnologies serving the industry and courses for the different actors.

The <u>Gender equality</u> dimension has been considered both:

- ensuring a balance in the research teams of the consortium and,
- WITHIN the organization of public events and in engaging stakeholders for the different activities of the project (e.g. in the participatory events).

In terms of social impact, the gender equality challenge will be considered in terms of values and in terms of public engagement in specific actions implemented during the project, (for example, when involving schools)

The organization of on-line courses (produced by the project) and the interaction with schools, as asked by attendees of the participative event held in Gubbio on June 2017 (see section 5), provide a projection of HERACLES on the "<u>Science education</u>" RRI challenge.

The interaction with the different actors facilitates the knowledge circulation and sharing data building the basis for the economic sustainability and future acceptance by the market and by the society while respecting the integrity of CH and the value it holds for communities. Moreover, the "<u>Open access</u>" formula has been adopted for scientific publications produced by the project, in order to stimulate the discussion and the production of innovative ideas.

The research process defined and implemented in HERACLES and the public engagement initiatives <u>follow ethical rules</u> at national and European level. The activities and, in particular, the activity of impacts evaluation are carried out and will consider suggestions coming from the ethical board.

In synthesis, building capacities and developing innovative ways of connecting science to society is a priority under Horizon 2020 and HERACLES is acting for harmonising policy maker activities, public engagement, gender equality, science education, open access and ethics.
This will help to make science more attractive to young people, increasing needs of society for innovation, and open up further research and innovation activities.

The project activities are strongly addressing the interaction, engaging different kinds of stakeholders within participatory events (e.g. see section 5 for the event already held; others are planned within the impact evaluation process). The project strongly took into account the gender balance and the dimension in research and innovation, both, within the consortium and in any action aiming at public engagement.

The six dimensions of RRI are keys factors for evaluating social impacts, societal resilience and cultural values awareness. Indeed, to adopt participative methodologies for the evaluation process based on "Public engagement" in the test-beds, was established.
The involvement of policy makers in the suggestion following the participatory event, may contribute in the creation of new governance models.

In the following, this section describes the key problems related to the test beds of the HERACLES project (subsection 4.1), a synthetic description of the World Café and of the Delphi method (subsection 4.2) and a description of the process that HERACLES adopts to identify the social, cultural and economic impacts (subsection 4.3).

4.1 Key problems and risk variables/multipliers

The first step of the evaluation consists in the identification of the key problems and variables that affect the sites covered by HERACLES – the Minoan Knossos Palace and Koules Fortress (Heraklion, Greece) and the Town Walls and Consoli Palace in the medieval city of Gubbio, in Italy. Considering the two test-beds in Gubbio as a whole, these can be summarised as follows:

- Coastal processes: geology, rise of water level, floods, erosion (Knossos and Koules);
- Inland floods (Gubbio);
- Extreme weather trends (extensive periods of dry weather, followed by heavy rain during extensive periods) (Knossos, Koules, Gubbio);
- Local economic activities (Heraklion and Gubbio);
- The relevance of the cultural heritage asset connected to the identity value as symbolic value for the local community (citizens), (Gubbio, Knossos, Koules);
- Ravages of tourism (Knossos, Koules, Gubbio).

Although climate changes and human actions are clearly the main risk variables, one should also consider them potentially as "risk multipliers", i.e. the way they act as cumulative factors that exacerbate the impact of an environmental threat [16]. These potential risk multipliers will be discussed within each of the key problems.
Starting from the issues of the test-beds, this deliverable focuses on the social, cultural and economic challenges and impacts that the HERACLES project addresses.
One questionnaire was already administrated both in Greece and in Italy for the definition of the end users requirements (see Deliverable D1.2). The results mainly addressed the users'

needs for the ICT platform (designed and implemented in WP5 and WP6, respectively). Some relevant results, also in view of the social, economic and cultural impacts underline a common vision about the importance of the cultural site or object for the social milieu of the area and for the identity value of the local community.

The level of risk for public safety (potential problems of collapse, structural risk in case of disasters such as floods and/or earthquakes, etc.) was identified of the maximum importance in the decision making process, by the majority of respondents. The educational value of knowledge sharing and the engagement of universities, schools and of the world of culture in the decision making process was considered important in the future (even if different weights were assigned by the respondents - See HERACLES deliverable D1.2: *Definition of the end users requirements with emphasis on HERACLES test beds*)

"The educational value of the knowledge sharing will have a beneficial effect on the preservation and on passing on the own cultural heritage. Indeed, it will be essential to develop the consciousness of the importance of the own CH because it will represent a guarantee for its protection and preservation".

Of course, the economic issues were also evaluated with a high priority.

The results of the deliverable D1.2 represent the first step that has been used to define the users' requirements of the ICT platform. They also suggested some hot topics to be discussed with stakeholders for starting the interaction process with the different societal and economic actors, which are necessary for evaluating the project impacts. This interaction process has been activated starting from the participatory workshop held in Gubbio on June 5th, 2017, and will use a hybrid of World Café and of Delphi method.

4.2 Methodology

The World Café methodology

The World Café methodology is a simple, inclusive, effective, and flexible format for hosting a group of people for dialogue and promote knowledge sharing. The groups may be quite heterogeneous and participation does not imply any specific expertise. The World Café methodology allows for bringing together lay public and experts. The underlying assumption of World Café events is that collective discussion can shift people's conceptions and encourage collective actions. For this reason, it has been selected for the first three steps described in Figure 1, that mainly address the interaction process with different actors before the steps aiming to forecast impacts (that requires the Delphi methodology).

The Delphi methodology

The Delphi methodology [17, 18, 19] is widely used, especially for science and technology foresight and is considered particularly useful for long-range forecasting, as expert opinions are the only source of information available. It has also proved adequate for web-based decision-making and e-democracy processes.

Aiming at reaching a consensus about the impacts of the outcomes of HERACLES, the Delphi method uses a selection of experts who exchange their point of view and each one, independently, gives estimates and assumptions to a facilitator. In successive rounds, the experts discuss the facilitator's anonymous summary of the experts' forecasts as well as the reasons they provided for their judgments. Experts are encouraged to revise their earlier answers in light of the replies of other members of their panel, to review the summary report and to give updated forecasts to the facilitator, who again reviews the material and issues and prepare a second report. This process continues until all

participants reach a consensus. The experts at each round have a full record of what forecasts other experts have made, but they do not know who made which forecast. Anonymity allows the experts to express their opinions freely, encourages openness and avoids admitting errors by revising earlier forecasts.

4.3 The process for the evaluation

Cultural Heritage assets are more and more connected to the societal, environmental, cultural and economic challenges, deeply influencing the lifestyle, the feeling of belonging of the communities and the economic models of the different territories [20].

The HERACLES project is building a complex approach that takes into account the social, economic and environmental sustainability of the actions and future acceptance, by considering the social and economic impacts for the public and local communities, while respecting the integrity of Cultural Heritage assets and the values they represent for the communities. The project brings "together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities" (https://ec.europa.eu/programmes/horizon2020/en/h2020-section/societal-challenges).

HERACLES project adopted the hypothesis and widely accepted idea that planning, designing and implementing any technical intervention, any policy, any project and action on cultural heritage assets may produce social cultural and economic impacts, which must be understood and monitored by involving local stakeholders. Indeed, these impacts are perceived and experienced by local communities living in the area of the intervention [21].

For this reason, it was decided to follow some crucial steps of the Social Impact Assessment (SIA) adapted and simplified for facilitating the engagement process, which implies:

- Creating participatory processes (with World Cafe events) to engage the communities from the test-beds of the project (in Italy and in Greece), by facilitating their discussions about the actions planned and carried on by HERACLES project;
- Gaining a good understanding of the communities selected to identify the different needs and interests with respect to the holistic approach and actions implemented in HERACLES project, discussing key societal, economic and cultural issues with pros and cons. This means that the engagement process of different societal actors allows the matching of services and tools that HERACLES project can offer and the values that characterise each community with its needs and potentialities;
- Defining actions to be carried out during the project lifetime in the territories of the test-beds in order to have the necessary exchange of information on the project based on the previous two steps, while ensuring that the development of the project is carried on with an approach involving the different societal actors as much as possible; for example, in Gubbio have been planned activities involving students and professors, engaging them in using the video-courses and also involving them in face to face meetings for enhancing their skills in view of their professional development. The face-to-face meetings will allow the creation of new knowledge and will improve the awareness of the CH assets value and potentialities.
- Organising participatory events using the Delphi methodology with the participation of experts to evaluate and forecast the impacts that may result from the HERACLES project. The participation process will ensure the principles of free, human rights, the feeling of belonging of the community members.
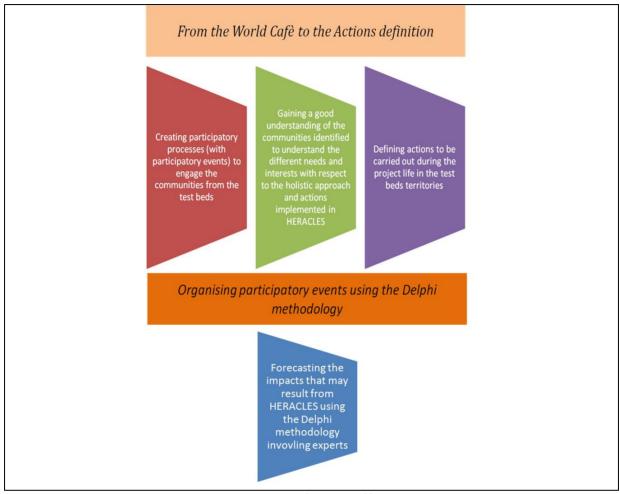
The aforesaid steps, are schematised in Figure 1.

Figure 1: The combined use of World Café and Delphi method

The building of a proactive attitude of citizenship is crucial to act upon policy makers and calls for the relevance of an educated citizenry towards HERACLES products and services.

These activities will produce as outputs:
- an evaluation of societal resilience with respect to disasters;
- arising and explicit awareness of the set of historical, cultural and social values related to the selected sites.

With respect to the concept of social resilience, in [22] this is defined as the capability of a community to cope with and adapt to stresses such as social, political, environmental or economic change. Walker et al. in [23] defined resilience as "the capacity of a system to experience shocks while retaining essentially the same function, structure, feedbacks, and therefore identity". This definition is referred to an extended ecological meaning and, it can also be used in a hybrid context. In particular, in the HERACLES project it addresses collective awareness of cultural values and risks connected to the climate changes actions on the Cultural Heritage assets. The individual and collective awareness will guarantee the active role of citizens with respect to an ethic approach and relationships with the different territories.

Although HERACLES is strongly based on a technology-driven approach and design, it is clear that it deems critical to engage local communities in the implementation of its agenda. Data available for the sites are qualitatively different, ranging from governmental statistics to interviews. It implies to compare and to understand how to use them in relation to the key problems and variables (climate changes and human actions).

The use of a mix methodology (World Café and Delphi) in the test-beds allows us to build a common ground for analysing in a comparative framework:

- how heritage problems, remediation strategies and tools from HERACLES are perceived by the communities and by representatives of local institutions and the other stakeholders (e.g. tourism representatives);
- what are the expected main future impacts at the social, economic and cultural level;
- what are the most relevant issues in planning actions to preserve the heritage and archaeological sites.

The World Café events represent the first phase of the process for evaluating the project impacts and this phase aims at interacting with the stakeholders in order to exchange information about the project outcomes. In this phase, a selected group of stakeholders, representative of Civil Society, Research and University, Cultural Organisations and Institutions, Professional Entrepreneurs, etc, are involved. A small number of participants are required in this phase, as it serves to identify actions for a plan engaging a wider number of people. At this stage, the most important issue is to involve representative actors.

This is what was already done in Gubbio, where the first World Café was organised on June 5th, 2017. A description of the discussion carried out and of the actions proposed in the next section, is provided.

When the project will replicate the event in Heraklion, the stakeholders will be invited to provide an answer to the same triggering questions and invited to propose some actions to interact with the project (some examples of actions are available in section 5).

Summarising:

At this stage, the project planned to promote workshops where two methods are used:

(i) the World Café method - which allows collecting information on what a heterogeneous audience thinks about the project and actions that participants propose (this implements the first three steps of Figure 1);

(ii) a simplified version of the Delphi method – which involves a homogeneous group of experts and aims at predicting social, cultural and economic impacts concerning preservation of heritage.

After the phase using the World Café method and after a period of interactions of the project with stakeholders according to some of the suggested actions (arose in the first phase, such as for example, courses), one-day mini-Delphi workshops will be organised involving Gubbio and Heraklion.

The participants to the mini-Delphi workshops (also based on the knowledge of the HERACLES project exchanged in the world Café and on the actions for making the project known within the stakeholders in the test beds territories) will answer to two triggering questions:

(i) Which are in your opinion the main threats that the Cultural Heritage assets face nowadays and which are the impacts from HERACLES services and products useful to prevent future negative consequences from social, cultural and economic point of view?

(ii) What are in your opinion future pros from the HERACLES services and tools?

The process of World Café and mini Delphi events will be developed by resorting to the recommendations of the HERACLES Ethical Board. The World Cafè and the Delphi are used in two phases of the process depicted in figure 1. These methodologies are largely used for engaging both small number (about ten) as well as wide number of people. Indeed, from 10 to 15 participants can be considered as an adequate number. What is important is to involve participants representative of the quadruple helix [24].

5. The World Café in Gubbio

The first participatory workshop was organised in Gubbio on June 5th, 2017 by Consiglio Nazionale delle Ricerche in collaboration with the Comune di Gubbio (Gubbio Municipality). The title of the event is: *"Discussion on the European project HERACLES as a contribution within civil society".* Figure 2 shows the flyer of the event

Figure 2: Flyer of the participatory event held in Gubbio on June 5th, 2017

Figure 3: The coordinator of HERACLES, Giuseppina Padeletti is describing the HERACLES project during the workshop in Gubbio

Figure 4: A group of participants at the workshop held in Gubbio

In Figures 3 and 4, photos from the Gubbio event. Eleven people attended the meeting, eight men and three women. The description of participants is provided below.

Participants
One student (female) from the University of Perugia. She is interested in the methodologies for analysing and monitoring used in the project.
One person (male) representative for "Officina Gubbio" - Officina Gubbio is a local organization interested in the future of the town, proposing an urban regeneration model devoted to improve the citizens' quality life. He described the experiences of some initiatives that they organised and the discussion that involved the town of Gubbio about mobility and accessibility of the historic town and on the reuse issues. He affirmed that it was of great interest, also, the participatory pathway implemented in the workshop "L'Oro di Gubbio". During this workshop, the urban regeneration challenge was discussed, from the historic area to the external ones with respect to the old town, considering building heritage, as well as economic and cultural issues and implications. (By the way, it has to be underlined the participation of HERACLES at this event)
One person (female) representative of the Confcommercio, the Italian General Confederation of Enterprises, Professions and Self-Employment.
The president (male) of the local cultural association "Maggio Eugubino", an association that has, among its aims, the role of maintaining the historical memory, traditions and cultural heritage of Gubbio and its area.
Two students (males) from a secondary school of Gubbio, particularly interested in the future of their town and the opportunities that it can offer.
A retired person (female) formerly headmaster of a second level high school.
One professor (male) of the high technical school for building surveyor and freelance technician.
Two architects (males) who are involved in restoration and renovation of historic buildings

Each participant was invited by means of e-mail ten days before the event. The e-mail contained the invitation, a document with a short description of the HERACLES project and some questions proposed to encourage reflection and discussion (section 5.1).

The event was opened by Dr. Giuseppina Padeletti (see Figure 3), the HERACLES coordinator, who presented the project providing information, more details and clarifications on the different aspects of the project and its impacts. After this informative section, participants (Figure 4) introduced themselves and explained their interest in the project.

Dr Patrizia Grifoni and Dr. Fernando Ferri, facilitated the discussion by replicating the questions asked to the participants (see section 5.1), collecting and classifying the answers and ideas that emerged in socio-cultural, economic and hybrid issues.

5.1. Triggering Questions

- *In your opinion, how the knowledge of the HERACLES project could increase citizenship awareness about cultural heritage issues, and the risks and the needs for Cultural heritage assets conservation?*
- *In your opinion, how the knowledge of the HERACLES project could increase citizenship in the sense of belonging to the city community in social and cultural terms?*
- *Do you find it interesting that tourists will receive information on the methodologies developed by the HERACLES project? In your opinion, how can they be provided?*
- *In your opinion, what specific actions could be undertaken to effectively involve citizens on the issues dealt with by the HERACLES project, and in particular for the safeguarding of cultural assets against the damage caused by the effects of climate change?*
- *In your opinion how is it possible to stimulate the active participation of citizens in the reporting of critical issues regarding the cultural heritage of the city of Gubbio?*
- *What fallout could the HERACLES project have for the local economic economy (in terms of tourism and more)?*

5.2 Lessons learned

The participants identified a set of actions and the implementation modality that they suggest to establish and address a fruitful interaction process able to communicate and exchange information about the HERACLES project and that will allow in a second phase (with the Delphi) to produce an accurate impact forecast. These actions imply the involvement of different kinds of stakeholders.

The proposed actions were classified according to the Socio-cultural issues (Table 1), the Economic issues (Table 2) and the Economic and socio-cultural aspects (hybrid) (Table 3).

Each action is identified with a number and, each stakeholder type is associated with the number of the action where s/he is potentially involved in (see column 2 of Table 1).

Table 1: Actions for stakeholder and Socio-cultural issues

Socio-cultural issues	Stakeholders role potentially involved in the action

1. Possible actions and implementation modality
It is possible and important:
1. To promote:
  a) Participatory workshops and meetings for sharing knowledge on specific cultural assets and their conservation, organizing also guided tours.
  b) Meetings /seminars in the schools also engaging students in the project (where possible).
	Decision makers
	2, 3,5, 6, 8, 9

2. To formulate a management and reconnection plan of the methodologies and approaches used in HERACLES to solve problems related to on environmental and climate changes risks on cultural heritage. This plan aims to share knowledge in the test beds locations avoiding a loss of knowledge. 3. To organize conferences and papers on the local press; moreover geo-referencing the "ancient walls" of the Town and "Palazzo dei Consoli" on Google Maps and routes on Tripadvisor is very important to highlight their historical importance and to inform on any actions and monitoring of the HERACLES project.	*CITTIZENS and NGOs* *5, 6, 7, 8, 11*
4. To schedule initiatives for sharing knowledge that originate from the project and from actions for maintenance/monitoring. 5. To improve citizens' and tourists' awareness about the importance of reporting problems eventually found in the city's assets to the website information desk that the Municipality made available. The citizens can be informed of the presence of this service also in relation to HERACLES project information. 6. The association «Maggio Eugubino» periodically proposes the public initiative "ConoscereGubbio", which presents a hot topic and a visit of the city is organized, based on this topic. Information related to this initiative are shared on the Facebook page of the association, through local communication tools and through specific info days in the schools.	*ECONOMIC OPERATORS* *5, 6*
7. To upload the HERACLES project news on the Facebook page of «Maggio Eugubino» and promote a connection with the Facebook page of the HERACLES project. 8. To organise a targeted communication action on the real risks and the risks of the loss of the historic center of Gubbio. This action should be integrated with the service provided by an info desk (real and virtual) where citizens can actively send information related to any need and emergency observed. 9. To apply at the entrance of the city, on the walls and at the Palazzo dei	*TEACHERS* *1, 3, 4, 5, 6, 10, 11*

Consoli, specific captions related to the HERACLES project (in a similar way to the UNESCO projects). 10. To involve schools such as the linguistic high school of Gubbio to produce dissemination materials on the project in Italian, English, and French language. In addition, an action can be taken to promote twinning between schools with other countries, actively engaging them for delivering and promoting at the same time an increased awareness of HERACLES related issues among younger generations. 11. To organize other information and awareness-raising activities in the schools to trigger a knowledge-sharing process with a "snowball" effect that engages the families, and thus citizens direct or indirect way. The involvement of the schools also aims at making evident that combining new technologies and cultural goods could be for Gubbio the first step to launch Gubbio as a laboratory has a look on the future with the strength of technology and history. Promoting socio-cultural and economic effects and implications, requires a strong contact with the city, with a great exchange of information.	*STUDENTS* *1, 4, 5, 6, 10, 11*
	SCIENTISTS *1, 2, 3,4, 5, 6, 7, 8, 10, 11*

2. Expected impacts
1. Cultural heritage is an element for people identity. Its preservation means preserving the historical memory of the citizenship identity.
2. The project can increase the awareness of the new generations on the importance of the city's historic center and the relevant strategies and technologies in order to monitor and preserve this collective heritage.

Table 2: Actions for stakeholder and Economic issues

Economic issues	Stakeholders role potentially involved in the action
1. Possible actions and implementation modality 1. The primary element of each marketing action is to create the product brand. The product in this case is the cultural asset, the environment in which it is located, with its history, its socio-cultural context, the handicrafts, the services offered and the awareness of the risks related to atmospheric factors, and the importance of the monitoring and maintenance strategies and techniques (offered by the project).	**Decision makers** **1, 3, 4, 5, 6, 7**
2. To involve schools such as the Gubbio language high school to develop cultural tourism packages linked to the HERACLES project and then to propose them to tour operators.	**CITTIZENS and ONG** **1, 3, 4, 5**
3. The presence of Gubbio and Crete in the HERACLES project, two situations distant and similar at the same time, can be useful to engage many users to launch a message aiming to promote tourism with a wide and qualified audience (such as collateral activities to the project), facilitating the emergence of opportunities such as for example job creation for young «cultural Guides» in the territory.	**ECONOMIC OPERATORS** **1, 3, 4, 5, 6**
4. To undertake marketing campaigns to rediscover and bring to light architectural excellence of archaeological interest reconnecting them to the urban and social life.	**TEACHERS** **2**
5. The project can improve the awareness of categories such as architects, engineers, surveyors and citizens about the importance of preventing, monitoring and maintaining cultural heritage. This awareness also means to activate strategies such as promoting twinning between cities with similar problems and to put in place common processes to promote tourism flows, involving also private individuals and tourism agencies.	**STUDENTS** **2**
6. To prepare dissemination cards of the action of the HERACLES project with possible excursions that include the Palazzo dei Consoli in the tours recommended to tourists. These cards can be distributed in the hotels. 7. An equation such as HERACLES = GUBBIO must be established, including in the municipal administration sites, as well as in the administration communications on project themes, the project logo and/or useful information and the QRCODE for the HERACLES project. **2. Expected impacts** 1. Sustainable and green tourism. 2. Gubbio city becomes a laboratory that attracts new European funds and funds from public and private investors. 3. To establish an HERACLES prize with annual frequency for the best restoration project	**SCIENTISTS** **1, 2, 3, 4, 6, 7**

Table 3: Actions for stakeholder, Economic and socio-cultural aspects (hybrid)

Economic and socio-cultural aspects (hybrid)	Stakeholders role potentially involved in the action
1. Possible actions and implementation modality 1. To organize meetings for facilitating the stakeholders and institutions discussion on the risk related to the environmental issues of the area. For this purpose, it is useful to promote the creation and involvement of local cultural associations, by encouraging the direct connection among the parties and the involvement of local professional orders. This kind of action can be useful in order to spread a greater knowledge and awareness on the sustainability related to environmental phenomena in the territory of Gubbio, a renewed awareness of the importance of the historic center for the social and cultural identity of Gubbio. 2. To promote actions and communication campaigns on the technologies used by the project to create awareness on cultural assets value of the city and thus to convey tourism flows	*Decision makers* *1*
	CITTIZENS and ONG *1*
	ECONOMIC OPERATORS *1, 2*
2. Expected impacts 1. Cultural heritage is crucial for people identity. Its preservation means preserving the historical memory of the citizens' identity. HERACLES can contribute in reinforcing resilience of the cultural heritage asset.	*TEACHERS* *2*
2. The proposed actions increase the awareness of the new generations on the importance of the city's historic center and the relevant strategies and technologies in order to monitor and preserve this collective heritage. 3. Sustainable and green tourism.	*STUDENTS* *2*
4. Gubbio city becomes a laboratory that attracts new European funds and funds from public and private investors. 5. To establish an HERACLES prize with annual frequency for the best restoration project	*SCIENTISTS* *1, 2*

6 Mini Delphi Workshop design

The expected one-day mini-Delphi can be structured as described below.

Opening
- Short presentation of both the project actions carried out and the Delphi method.
- Presentation of the two triggering questions identified in section 5:
  (i) Which are in your opinion the main threats that the Cultural Heritage assets face nowadays and which are the impacts from HERACLES services and products useful to prevent future negative consequences from social, cultural and economic point of view?
  (ii) What are in your opinion future pros from the HERACLES services and tools?

Stage 1
- Fifteen minutes for participants to think about the questions.
- Each participant responds to the two questions with maximum three possibilities for each one, justifying briefly the reasons for his/her choice.
- The moderator/facilitator records the answers on two flip charts or blackboard.
- First round voting and selection: each participant has three coloured dots to stick on to her/his favourite subjects on the flipchart.
- The top three themes of each list are discussed in 3 groups (we encourage participants to use the World-café method: about 60 minutes to discuss and 15 or 20 minutes at each table; each group has a table host that runs the debate at the table and registers the main ideas/relations/oppositions (for example, using a graphic recording).

Stage 2
- The table hosts present a brief summary of the discussion of his/her table.
- Brief plenary discussion.

Stage 3
- Second vote: each participant receives two points - one for each of the lists - which he/she sticks on the flipchart with the topics discussed.
- The top voted two answers to question 1 and 2 will be disclosed.
- A report is presented by the organisers of the workshop.

Experts/stakeholders to be invited (around 10-15): they have to be representatives from local organizations engaged in heritage preservation; local economic organizations such as companies, participants from local authorities and policy makers, archaeologists, architects, scientists, engineers, students, representatives of heritage preservation policies authorities [17, 18, 19, 24].

7.   The informed consent framework

The organiser of the World Café event and of the Mini-Delphi use the Informed Consent Module included below (opportunely adapted and revised by the ethical board members). The organiser will store the signed Informed Consent Modules in a secure place, providing them to the European Commission if required.

Informed Consent Form

**Participation at
the workshop titled:
Put here the title of the workshop
This workshop is organised in the framework of the Project HEritage Resilience Against CLimate
Events on Site - HERACLES
Grant Agreement No. 700395**

**H2020
Ref. Ares(2016)1514656 - 30/03/2016**

Introduction
You have been invited to take part at the workshop specified below.

Title: XXXXXXXX ,
Topics: XXXXXXXXXXXXX,
Held in: XXXXX
Date: XXXXXX

Short Description: This is one of the participatory workshops organised by the project "HEritage Resilience Against CLimate Events on Site - HERACLES " to involve local administrators, policy makers, entrepreneurs, researchers, professors, students, professionals and citizens in a concrete discussion on relevant social, cultural and economic impacts.
Before making a decision on whether you want to participate or not at the workshop, please read this document carefully. Please ask all the questions you may have so you can be completely sure to understand all the procedures of the workshop, including risks and benefits.
This informed consent document may include words that you do not understand. If this is the case, please ask the Workshop contact researcher, to fully explain the meaning of the word or piece of information you do not completely understand. We ensure the compliance with the current informed consent legislation at national and EU level.

Workshop contact Researcher: "Name, Family Name, e-mail"

PURPOSE OF THE HERACLES PROJECT
The HERACLES main objective is to design, validate and promote responsive systems/solutions for effective resilience of Cultural Heritage (CH) against climate change effects, considering a holistic, multidisciplinary approach through the involvement of end-users, industry/SMEs, scientists, conservators/restorers, social experts, decision and policy makers. HERACLES will develop a system exploiting an ICT platform to collect and integrate multisource information to effectively provide complete and updated situational awareness and support for improving CH resilience, including new solutions for maintenance and conservation and to define the materials able to be integrated into the platform for proper maintenance, remediation and restoration actions. Heracles will elaborate climate forecast models to anticipate problems and to back up the required solutions, exploiting operational protocols for overall CH risk cycle management which include proper remote geo sensing for mapping and preventing geo-hazards. Moreover, Heracles will back up all the progress and exploit results to other scenarios through an established advisory board that includes relevant personalities. The strength of HERACLES solutions is their flexibility in evaluating a large quantity of different information that can be changed and tailored to specific CH assets needs, guaranteeing a general applicability. HERACLES system will be designed and developed taking into account the economic sustainability and future acceptance by the market and the social

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and economic impact for public and local communities while respecting the integrity of CH and the value it holds for communities. HERACLES envisages effective technological transfer of outcomes to large companies, SMEs and end users. HERACLES expects wide audience awareness through suitable dissemination, communication, education and training activities to share the vision and progresses obtained to different communities.

DURATION OF THE RESEARCH ACTIVITIES

The HERACLES Project activities are during 36 months from 01/05/2016 to 30/04/2019.

The workshops are organised starting from June 2017. Each workshop can have a duration from a half day, to 1 day, in the different locations.

In particular, the workshop titled "Title of the Workshop" will start at "Starting date" and will end at "ending date" for a total duration of XXXX hours.

Should you feel uncomfortable at any stage of the workshop, you have the right to end your participation in the workshop.

RISKS OR INCONVENIENCES

No risk is foreseen. You are only requested to be available to participate.

BENEFITS

It is likely that you will not receive any personal benefit for your participation in this workshop beside possibly learning more and contribute in the discussion about the social, cultural and economic impacts of HERACLES..

With your participation you will provide a substantial contribution:

- to a common understanding on the topics and issues discussed in the workshop, and
- to the knowledge sharing using the WKSP services and sharing Knowledge with the other users of the platform, at local, national and European level.

PRIVACY AND CONFIDENTIALITY

- Stored data could include the following personal data: first name, family name, e-mail, organization, role, type of stakeholder, gender, age group.
- None of the provided personal data will be handed out to third parties.
- The decision about whether or not to authorise the use of the information provided (not personal data) during the workshop for the purpose of the HERACLES Project dissemination is completely voluntary.
- For the purpose of the accurate information, the workshop may be audio or video recorded
- The registered information could include personal data (first name, family name, e-mail, organization, role, type of stakeholder, gender, age group, your particular interest(s), voice, image) that will be incorporated for their treatment in a folder ownership for scientific and informative purposes.
- The above consent for the treatment and cession of the data is valid unless it is revoked. If a participant would decide to revoke their consent, they must contact the person who organised the workshop to communicate their decision to leave the workshop.
- Further participant consent will be requested, if necessary, for disclosing data.
- The authorization for the use and access to this information is valid unless you decide to cancel it before. If a participant should decide to deny her or his consent, she or he has to contact the workshop contact researcher .
- Your decision to whether or not give your authorization for the use and diffusion of the information provided by you is completely voluntary. However, if you do not provide the workshop organization with this authorization now or if you cancel it in the future, you will not be able to participate in this Workshop of the HERACLES project.

Workshop contact Researcher: "Name, Family Name, e-mail"

CONTACT PERSONS

In case of any issue involving you in your role of participant of this workshop, you are invited to inform the:

Workshop contact Researcher: "Name, Family Name, e-mail"

CONFIRMATION

Participation in this workshop is only possible if the participant freely and independently signs this consent to authorize us to use the data that she or he provides. If the participant does not wish to do so, she or he cannot participate in this workshop.

Hereby each participant to the workshop has to do the following declaration

Declaration

- I am 18 years or older and am competent to provide consent;
- I have been fully informed about the aims and purposes of the HERACLES Project and the before cited workshop;

- I have been fully informed about the aims and purposes of the HERACLES Project;
- I understand that there is no compulsion to participate in the HERACLES Project and in the before cited workshop and, if I choose to participate, I may at any stage withdraw my participation;
- I have read, or someone had read to me, a document providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and I understand the description of the research that is being provided to me;
- I agree that my data will be used during the workshop. Moreover, the procedures regarding confidentiality have been clearly explained (e.g. use of names and personal data, etc.) to me.
- Select only one of the following:
    a. I would like my name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognised.
    b. I do not want my name used in this project.
- I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights;
- I understand that I may refuse to answer any question and that I may withdraw at any time without penalty;
- I have received a copy of this agreement.

This consent form is made pursuant to the relevant national, European and international data protection laws and regulations and personal data treatment obligations. Specifically, this consent document complies with the following laws and regulations:
- *EC Data Protection Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.*
- *The revision of Directive 95/46/EC Regulation (EU) No 2016/679 of the European Commission,*
- *The Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 and the national law on data protection*

…………………………………………………………………………………………
Name and Family name of participant
(if the participant is minor: also name and surname of parent/authorized adult's participant)

…………………………………………………………………………………………
Place, date and signature of participant

Statement of investigator's responsibility

I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

…………………………………………………………………………………………
Name and Family name of the researcher

…………………………………………………………………………………………
Place, date and signature of the researcher:

8.   Conclusions

This deliverable describes the work carried out to define the process for the evaluation of the social impacts, the societal resilience and the awareness of cultural values.

The proposed evaluation process consists of two steps:

- The first step for engaging different societal actors in a discussion devoted to collect information on what a heterogeneous audience thinks about the opportunities and tools that HERACLES project offers to mitigate the effects connected to climate changes impacts on the Cultural Heritage assets.
- The second step for engaging a group of experts with the aim of predicting, before the end of the project, social, cultural and economic impacts concerning preservation of heritage.

The first step of the process already started. In particular, "a questionnaire was defined and sent to the two partners that in HERACLES represent the end-users (i.e. the mayor of Gubbio and the director of the Ephorate of Antiquities of Heraklion). Nevertheless, the end-users have different institutional roles, and in order to compare same national levels influencing the decision making process, the questionnaire was also extended to two stakeholders: the director of the Ducale Palace in Gubbio (representing the Superintendence comparable to the Ephorate) and the vice-Mayor of Heraklion [25].

The analysis of the questionnaires suggested to activate "a continuous and always updated information flow with the local community in order to receive information, suggestions about the preservation issues and opportunities related to the possible *use* of the cultural heritage assets and to make the community aware about actions/strategies for conservation and improved fruition of the cultural heritage assets providing social and economic benefits" [25].

One participatory workshop was held in Gubbio with different societal actors. The activities carried out, on one side, allowed collecting some suggestions for the users' needs and, on the other hand, allowed us to establish and address a fruitful interaction process with different stakeholders in Gubbio, suitable to communicate and exchange information about the HERACLES project. This process produced also interesting results related to the relationships between the awareness of the cultural value and the tools and potential actions from the HERACLES project. In particular, cultural heritage assets are identified as crucial for people identity. Their preservation means preserving the historical memory of the citizens' identity. HERACLES can contribute in reinforcing the resilience of the cultural heritage asset. HERACLES with its actions and tools can contribute to increase the awareness of the new generations on the importance of the town historic center and the relevant strategies and technologies in order to monitor and preserve this collective heritage. Gubbio and, more in general, the HERACLES test-beds could establish a laboratory on the topics addressed by the project and could host prizes with annual frequency for best restoration project or for the "Cultural Heritage Citizenship".

The process of interaction with the different stakeholders will continue with participative workshops in Greece, with some actions (for example courses or other actions suggested during the workshops) by the HERACLES project that will continue to involve the stakeholders during the project life.

The second phase will start in 2018, by using the mini Delphi methodology, and will involve experts, which, on the basis of the lessons learned by the participative actions of the first phase, will predict the expected impacts. The results will be reported in the deliverable "D10.2- Report on HERACLES impacts at test sites".

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