

# Participatory Approach for a "Collaborative Heritage Observatory" in Tunisia

## A (re)appropriation of Tangible Cultural Heritage with and for the citizen

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**Abstract**— This article presents an application of a participatory approach that involves the "citizen-participant" for a new appropriation of heritage. It is part of the project "Collaborative Heritage Observatory" funded by the European Union, in collaboration with UNESCO. Via this participatory research approach, we will show 1) how the citizen can support the production of scientific knowledge and 2) how this approach contributes to the construction of a common reference via a shared web platform. The objective is to realign theoretical and technical knowledge with practical and field knowledge. We will examine the complementarity between these two knowledge (theoretical and practical) for the production of new knowledge about the heritage and for a better appropriation of it. We will also dwell on a number of ethical issues imposed by citizen approaches and the limits they face to better apprehend them.

**Keywords**- *participatory research; heritage; shared database; citizen science; collaborative action research.*

### I. INTRODUCTION

How to value the richness of the tangible cultural heritage and bring it closer to its citizen? Two opposing visions emerge, faced to this wealth of Tunisian heritage. The first vision is that of the citizen who would judge the value of his heritage in function of its usefulness, its potential of use or its property value, or according to a personal link of the kind "my ancestor lived here". This first vision, more often than not, generates purely functional and sometimes even destructive solutions. The second vision would be that of the experts (such as architect, researcher, curator, etc.) who would judge the value of the heritage according to a list of national and / or international predetermined criteria. This second vision of heritage, even in the state-of-the-art restoration of buildings, in most cases results in solutions of "museumification" that freeze, isolate and, sooner or later, destroy the heritage through lack of means, maintenance and distancing solutions from the interests of the citizen.

With this "symmetry of non-dialogue", the process of bringing these two visions could be achieved through the definition of a participatory approach that tends to take into account these different points of view and thus gives as much room for the citizen as that granted to the expert for the safeguarding and re-appropriation of built heritage. This article reports feedback on the application of such an

approach in the context of a census project, giving rise to a web sharing platform fed by co-reflection between the citizen and the expert.

The contributions of this work consists in setting up a research's methodology called collaborative for 1) allowing an adaptive, self-evolving and controlled approach; 2) aligning the theoretical and practical knowledge for the construction of a common frame of reference, 3) facing ethical questions, 4) perpetuating citizen action to encourage better appropriation of the heritage and to assist and manage the change.

All these points mentioned above are demonstrated in the article. Indeed, it presents, first, the background and the problematic of research that put this research into a context, set its goals and the questions that will be answered within the article. After having identified the epistemological foundations of a participative approach, this article then explains the different stages of the methodology adopted to involve the citizen in the process, while ensuring the validity and reliability of the data relating to the heritage identified. Thirdly, the article shows the results of this approach leading to the development of an online participatory platform that lists several Tunisian buildings of heritage value.

### II. RESEARCH BACKGROUND

The subject of this article is part of the project "Collaborative Heritage Observatory" funded by the European Union within the NET-MED YOUTH program, "Cultural Heritage and Civic Engagement of Youth", in collaboration with the UNESCO. The aim of this project is the training of a group of citizens / observers spread all over the Tunisian territory in order to initiate an inventory of fixtures of the architectural heritage, for a duration of two months. The missions of this group were as follows:

- Identify heritage buildings in their respective regions according to pre-defined criteria et inform about the wealth of the existing heritage through publications on the web and in the field;
- Warn about overruns on heritage buildings (total or partial demolition, change of appearance, etc.)

The scientific innovation of this project is on a massive census carried out by non-expert citizens, while involving expert researchers. The aim is to maintain links of dialogue

and relevant reflections without hierarchical distinction between theoretical knowledge and practical knowledge.

To do this, this research over nine months has brought together three groups:

**Edifices & Mémoires (E & M):** coordinator and at the initiative of this project, it is an association that works for the re-appropriation and enhancement of the local architectural heritage.

**PAE3C - University of Carthage:** representing the experts / researchers in this project, this research laboratory brings together several researchers and PhD students specialized in Tunisian architectural and environmental heritage. As part of this project, they have the mission to validate the data collected before distributing it on the web platform.

**BATir - University of Brussels:** research laboratory specialized in participatory approaches. Its task is to define and implement the participative approach. This article presents this approach, its contributions, its limits and the perspectives recommended to perpetuate this collaboration to support the re-appropriation of the heritage by the citizen.

### III. RESEARCH PROBLEM

"To regenerate to not degenerate" is the line that the entire consortium has sought to follow for this project. Today, the aim is to bring the citizen closer to his little-known and often unrecognized heritage by establishing a real mediation between [Table 1]:

- **Two perceptions of the heritage** often in opposition: that of the researchers perceiving the heritage as a testimony of the history, which is necessary to preserve the memory of the past versus that of the citizen perceiving the inheritance as buildings / territories to re-appropriate according to living arrangements today.
- **Two types of actions in relation to built heritage:** that of the researcher whom 1) identifies, 2) diagnoses, 3) classifies, then 4) rehabilitates versus that of the civil society that would instead seek 1) to identify what could be value-added, 2) to make others aware of this not always measurable value, 3) to repair or transform with the means granted to them, 4) to appropriate these new territories according to the needs of the community.

To ensure this mediation, we sought to guarantee a minimum of participative framework allowing these 2 perceptions and actions to converse [1].

The advantages in this context are various to:

- **Reduce** the boundaries between the researcher and the citizen by confronting the theory with the specificity of each context via the various data collected;
- **Go beyond** this reductive definition of the trainer / scientist vs. learner / novice and **transform** rapport to knowledge "learning to learn" by:

Thus, the citizen goes from an actor/learner to actor/trainer who will be responsible for transmitting this knowledge to his immediate entourage.

TABLE I. PARTICIPATORY APPROACH AS A BRIDGE BETWEEN THEORETICAL KNOWLEDGE AND PRACTICAL KNOWLEDGE

| Participatory approach<br><i>for the safeguarding and the valorization</i> |   |   |
|--|---|---|
| Type of Knowledge  | Theoretical knowledge<br>Expert actions   | Practical Knowledge<br>Citizen actions  |
| Actions based on   | State of the art  | Memory  |
|  | History and historical facts  | Experience  |
|  | Mastery of theories, research and studies conducted around and on Tunisian heritage with a global vision  | Increased knowledge of the field with a local vision  |
|  | Easy access to documents and privileged links with the legislature  | Privileged links with local people  |
| Need for reliability & completeness of information                         |   |   |
| Focus  | - Documented History<br>- Architectural styles<br>- Conservation techniques<br>- Urban value<br>- Historical value<br>- Remarkable heritage<br>- Classified heritage<br>- Known value ... | - Oral Tradition & Legends<br>- Incorporated know-how<br>- Collective memory<br>- Personal values<br>- Personal story (s)<br>- Noticed heritage<br>- Living heritage<br>- Recognized value... |

Nevertheless, the difficulties of such an approach lie in to constantly negotiate the discrepancy and certain contradictions between:

- The needs for framing, standards to be imposed and evaluation practices via committees (defined in terms of the knowledge needed for research) to ensure the scientific of the approach and the reliability of the data collected and;
- A more comprehensive approach that adapts itself to the reality and non-expert knowledge of the citizen and takes into account the implementation of such a scientific framework in the field [2].

The scientific innovation of this research project resides, therefore, in the implementation of a participatory methodology able to align these two perceptions while meeting the limits mentioned above. That is why we will seek to answer various questions: How to conduct participatory research? How to apply it to the Tunisian context and under what conditions? Which results can be expected for each of the project actors: researcher (as an expert in heritage) / association (as representative of civil society) / citizen (as an observer of this heritage)? What methods of collaboration and transmission of knowledge will be observed? However, before answering all these questions, it is necessary to specify our epistemological foundations.

#### IV. METHODOLOGY

The participatory approach is often presented as a link between the citizen and the experts. But, it seems essential to us to identify the specificities of these approaches in order to adopt the most appropriate one in this type of project around the theme of built heritage, keeping in mind the following questions (as recommended by J. Y. Antoine and al. [3]).

- **Which approach to follow?** Is it adapted to the concerned actor (both researcher/expert and citizen/novice), but also his social universe (both the Tunisian context in overall and the communal context)? In this article, we explain our methodological framework for the definition of an adaptive, self-evolving approach while being controlled to ensure the scientificity of the data identified [see Section V. A].
- **But why ?** What is the aim of this type of approach? We show how this approach contributed to the construction of a shared repository; the aim is to realign technical and scientific knowledge with practical and field knowledge [see Section V. B].
- **How far ?** While the citizen is being trained, it is difficult for him, in a short time, to apprehend science that is more and more complex and specialized. It is necessary to specify the participatory intervention framework of the citizen by posing a certain number of ethical questions imposed by the citizen processes and the limits which they face.. We, therefore, pause on these points to understand the approach with hindsight and in all its complexity [see Section V. C].

##### A. Epistemological foundations

Several conceptions/re-conversions/rehabilitations are today used without real concern for future users/inhabitants. The current approaches focus mainly on buildings to be retained in terms of "protection / cost / time / structural and functional quality / safety" [4]. In this type of procedure, three postures are most often considered [5]: 1) observant posture and case study, 2) research and development posture and 3) participatory stances. The three positions meet in the will to produce knowledge but are differentiated mainly their finality and in their methodology. The first seeks to know how things happen by observing, analyzing and evaluating a phenomenon or aspects of this phenomenon [6]. The stakes of research are then nomothetic for the development and specification of theoretical knowledge. The second seeks to develop tools, action models and pedagogical or practical theories by analyzing and improving a production process [7]. The challenge here would be pragmatic via the functional resolution of problems. The third participates in the development of reflexivity relative to a practical situation through social commitment and user involvement [8]. The stakes would be political or ontogenetic. As part of this project, we are clearly aligned with this third so-called participatory stance. With a better understanding of the experience of these

inhabitants, their experiences, their (bad) understanding and knowledge about the notion of heritage, their needs, their complex environment that is in perpetual mutation and their interactions with their communities and institutions, it is easier to encourage innovation and accept change [9].

Today, several participatory approaches, the objective of which are to integrate the citizen in an upstream reflection for an intervention at the scale of a building or a district in the design, are defined and put in place in various frames. We will talk about co-design [10], but also collaborative approaches [11], or action-research or intervention-research [12]. In this so-called participatory research, two large families emerge [13]. For one, it is about producing knowledge in order to facilitate a dynamic of change [11] [14]. For the other, it is as much a matter of producing knowledge as of training, thus refusing any hierarchy between "learned knowledge" and "action" [8][15]. In the case of this project, we opted for the second trend especially since training is at the heart of our problem. Since the project tends to collect data with the help of the citizen, we focused on the notion of "Citizen Science".

Citizen science relies on the possibility of building science with the participation of the citizen [16]. This approach is generally developed in the field of nature to collect a maximum of data in a limited time. It brings together three types of actors: the one who needs the data (the institution), the one who gathers the data (the citizen) and the one who facilitates the exchange between the two. "Citizen Science" can be divided into three categories according to the actor who is at the origin of the initiative [17]. In the case of our study, the initiative was initially citizen. Contrary to what one might think, this initiative did not come from scientists although they clearly state their need to collect a large amount of data of Tangible Cultural Heritage scattered throughout the Tunisian territory. This is the originality of our research compared to what was previously done in other contexts of implementation of participatory approaches [3]. A question was quickly asked of us: how is it possible to maintain the action and the motivation to guarantee the commitment of each one (Citizen - Researcher) in a sustainable way in the study, and thus better accompany the change? That is why it was necessary to leave this framework "Applicant (Researcher) vs Executor (Citizen)" and push towards a "co-construction" of the objective and the approach to be implemented, between scientists and citizens. The aim is to accentuate the complementarities of the actions and the interests of each one. To do this, the objective of the study has gone beyond the simple data-gathering framework (crowdfunding / crowdsourcing) towards a real collaboration between Citizen & Researcher (co-design). As defined by J. Y. Antoine and al. [3], the co-design in research implies the "co-construction of the scientific question to be tackled, operate a mediation / training that allows all actors to understand the issues involved and think about governance ". Therefore, we focused on a citizen position in which the citizen / non-expert becomes an actor in the research who does not feel excluded from the management of the project.

### B. Targetted objectives

With the expert researchers (PAE3C) and members of the association (E & M), we defined the objectives of this project, while trying to involve the citizen in the process:

- To collect and record a massive amount of data in a large territory thanks to and with the citizen ;
- To systematically document each of these data according to a predefined methodology taking into account the specificity of each context ;
- To ensure the reliability of data through regular and online support via a scientific committee and a technical committee ;
- To archive, reveal and disseminate the results via an online platform open to any public ;
- To gradually co-build a shared repository of knowledge and concerns of shared valorization ;
- To bring communities together (scientists vs civil society) and reconcile present and past.

Starting from these objectives, we present here the various gradations of citizen involvement, envisaged for the definition of the methodological process implemented. Indeed, our role was initially pedagogical, in addition to managing the transition between the different partners.

To allow this gradation during this methodological process, we have increased the contribution of the citizen by gradually passing from "observer status for the census project" to the status of "an actor in the valorization project".

### C. Choice of phases of the process

The phases of the participative methodology have been specified to ensure the monitoring of a scientifically valid data and the reliability of the information. Each of these phases was presented to observers-citizens. Elements had been prepared and put at their disposal according to the objectives of each phase. Tools were had also been developed and tested and updated with and by these citizen-observers for a better appropriation of the methodology that was imposed on them. By involving them in the validation and improvement of the elements provided, we seek to empower them and to involve them as much as possible in the project for more sustainable and effective change management. Table II details each phase (first column) by specifying the different elements that have been given and prepared (second column) according to the objectives targeted by our participative methodology (third column). The results obtained at the end of each phase were also detailed in Table II.

TABLE II. MAIN STEPS OF THE PROCESS

| Phases                    | Prepared / Given Elements  | Objectives Targeted  | Results  |   |
|---------------------------|--|--|--|---|
| 1)<br>Choice of observers | 1.1) Launch of the invitation  | Intensive publication on the web and social networks   | Spread the invitation and explain the conditions of participation  | 239 applications throughout the Tunisian territory                      |
|                           | 1.2) Pre-selection by file   | First evaluation according to selection criteria: (availability, residence, historical interest for its region)  | To reach the widest fringes of society and thus form a multidisciplinary team.   | 40th of candidatures (2 to 3 candidates per region)                     |
|                           | 1.3) Definitive selection  | Second evaluation according to selection criteria: (degree of involvement: in the social actions and in local activities in their region)  | Objectively identify the applications taking into account each social and regional environment.  | 15 observers located in the different regions of the Tunisian territory |
|                           | 1.4) Dissemination of results  | Intensive publishing on the web and social networks  | Explain and "legitimize" their action in their regions   | Make direct contact with local associations                             |
| 2)<br>Training            | > 3 days of co-located training<br>> 5 proposed themes:<br>1) Historical landmarks and legal framework,<br>2) Concrete realities of cities and municipal interventions,<br>3) Diversity of points of view on Tunisian heritage,<br>4) Methodology of collection and encoding of data<br>5) "Patrimonialization" & Heritage Value Creation)<br>> Development of a WEB application for information encoding and 1st field test   | > Encourage formal and informal moments of exchange, by mixing citizens with scientists, professionals from the field and members of other associations<br>> Train the observers and federate the group for the project<br>> Allow better appropriation of the method by the observers | > Creation of a collective dynamic<br>> Construction of a common reference on Tunisian heritage<br>> Immediate update of the web application according to the first feedback given by the post-test observers.   |   |
| 3)<br>Deployment          | Authorizations given by local authorities<br>> Allowance payment per month<br>> Shared web platform with a grid of criteria to be filled in by the citizen observer, guaranteeing:<br>1 - the ergonomics of the interface, ease of understanding, feeding and use by observers;<br>2 - possibility of verifying the veracity of the information and its source;<br>3- automatic processing of these data, so that they are easily communicable for verification and publication. | > Visit and capture officially and legitimately the data on the site<br>> Cover travel and communication expenses during the mission<br>> Facilitate the census task, re-enforce communication, harmonize data, ensure reliability and maintain a rigorous and repeatable methodology  | 520 sites identified in 2 months indicating various information:<br>- General information<br>- Justification of the relevance of the choice of this building (architectural value, historical, symbolic, potential use, social, urban, landscape, etc.)<br>- Stories of the place<br>- List of information collected |   |

|   |   |   |  |
|---|---|---|--|
|   | <p>4- possibility to declare "I do not know", to not be tempted to fill in some data without control of the content.</p> <p>&gt; Web page for sharing useful documents, communication and feedback</p>  | <p>&gt; Ensure regular and repeated monitoring between the different monitoring committees and the citizen observers, etc.</p>  | <p>(bibliographic sources, webography, documents, photos, videos, statements, testimonials, etc.)</p>                                      |
| <p><b>4)<br/>Validation and publication of data</b></p> | <p>&gt; Specification of a validation method of the data in 3 steps:</p> <p>1- Validation in principle by the technical committee on: the handling of the grid (have all the data been encoded?) + Correct spelling and comprehensible sentences + relevance of the chosen building</p> <p>2- Validation of the content by expert readers via a criterion grid</p> <p>3- Final validation by the technical committee which verifies the availability of all the resources and takes into account the remarks of the scientific committee</p> <p>&gt; Publication of data in a geo-located web platform with:</p> <p>- "No mention" if validation stopped in step 1 of this phase</p> <p>- Mention "Peer Review" if the validation passed through the 3 stages of this phase</p> | <p>&gt; Achieve a publishable and useful verifiable result for future analyzes, diagnostics and research</p> <p>&gt; Indicate the degree of reliability of the encoded data</p> <p>&gt; Guarantee a massive and reliable census of geo-located data</p> | <p>&gt; 487 (/ 520) have been identified on the web platform accessible to all public</p> <p>&gt; 124 (/ 487) are marked "Peer review"</p> |

V. FROM PARTICIPATORY RESEARCH (CITIZEN SCIENCE) TO PARTICIPATORY ACTION RESEARCH (CO-RESEARCH)

The success of the project lies in two aspects. The first is the massive census capacity that has been realized. The web interface [18], which has been online for more than a year and roughly summarized 160 sites, reveals today more than 520 sites, in two months of the project, with a detailed description and the scientific validation of approximately a quarter of them. The second concerns the process itself. By involving the citizen and bringing together these two types of perceptions (which may seem opposite - cf. Table 1), the approach presented here has allowed to create a dynamic within the group, to involve joint interactions, a reflection on oneself, a mutual adjustment, the co-construction of negotiated meaning and knowledge about how current heritage might be appropriate. This is what we will show by developing our results in this article.

A. *Ensure a dynamic, adaptive, self-evolving and controlled approach*

The participatory approach applied here aims at being dynamic, considering the citizen as a partner in research, who must jointly assume the credibility of the data collected. As the project develops, we notice that observers also become responsible for disseminating and valuing the data they have collected.

By asking questions to people in their community, residents see themselves as mediators between themselves and the administrators of this heritage that they mix with daily. Their actions with their respective communities become concrete through an educational and empowering process. It is in this that the approach goes beyond the framework of traditional research in social sciences because there is not explicitly a clear separation between the expert and the novice, between the one who does research and the one who lives in the studied situation. These citizens-observers will also seek, little by little, an emancipatory perspective where they claim their will to change the situation after becoming aware of the state of disrepair in

which they find their heritage. This awareness grew as the census exercise evolved.

Even if the methodology set up, via the grid and the predefined phases, could seem fixed, the approach adopted here has gone beyond the "citizen science" framework where the citizen becomes an actor only at the level of data collection. It is adaptive and self-evolving in the framework of a process that encourages reflexivity: by empowering citizens/observers, ensuring feedback between the different committees (scientific and technical), encouraging co-analysis where it is demanded. These citizens/observers are asked to present the data they collected themselves and, as far as possible, to be co-authors with the committees. This equivalence relationship between expert/researcher and observer/citizen is an essential condition to ensure the success of the process [19].

It should be noted that the explanation of the objectives, the phases of the process (what? How? Why?) and the joint identification of the working hypotheses confronted with the reality of the field, participated in a better appropriation of the "citizen science" approach, to move little by little towards co-research. This new approach has allowed more space for the expression of opinions and positions where theoretical knowledge and practical knowledge complement each other, opening the possibility for complementary and mutual interactions. Nevertheless, even if the approach is citizen and self-evolving it must be structured and responds to a real need for reliability of the data entered. It is therefore essential not to forget that this approach must also guarantee a scientific approach that introduces certain conditions, such as objectivity, the specification of a framed method, the possibility of controlling these data, peer verification and reproducibility of the operation. This is why the approach proposed here follows very specific steps defined above with the establishment of various committees managing the various aspects of research with feedback from the field.

### B. Building a common reference framework between theoretical knowledge and practical knowledge

As part of the project "Collaborative Heritage Observatory" the 15 applications that were selected came from various fields of specialization, with an age range varying between 20 and 40 years. Not all of them required extensive knowledge of heritage. Nevertheless, the approach taken here allowed the construction of a group culture through a learning process that arose from the interaction of knowledge between scientific theories and historical facts to the knowledge of the field, and the workings of the environment hosting this building. This interaction not only contributed to the construction of a common feeling, but we notice that new negotiated knowledge emerges by taking into account the knowledge and the aims of each one. These activities of co-construction of knowledge constitute a means 1) of development of expertise relating to the heritage and 2) of self-reflection from the point of view that each one brings as well as on the way of reacting faced with this heritage, which tends to being degraded and/or being demolished without real awareness of its potentialities and values. It is thus a question of creating dynamics of adjustment between the interests, the stakes and the logics of the two communities (between researchers and citizen, between experts and novices). Through the interviews conducted during the project, we were able to observe that this awareness and this process of self-reflection and adjustment concerns the observers/citizens and the experts/researchers involved in the training and the scientific committee. The project's stakeholders were thus positively influenced to support learning and cross-reflections. The driving force behind this project was the ability of the observers 1) to reflect on their census task, the influence it could have on their entourage and knowledge of the heritage, and 2) to act according to their understanding that they have of the context of their actions (social, economic, urban and political). The interviews conducted show the contribution of such an approach in the construction of a common reference system connecting technical and scientific knowledge and practical and field knowledge. This realignment of knowledge is the cornerstone for better understanding and appropriation of built heritage through these material and immaterial data.

### C. Solving ethical issues

Adopting a citizen approach requires us to ask ourselves a certain number of ethical questions, such as remuneration, the limits of a lack of expertise, the mastery of a specific scientific language and technical terms, copyrights or legitimacy of negotiated knowledge.

**Remuneration.** Many authors raise the question of the remuneration of collected data in the framework of citizen research [20]. For the definition of our approach, we took the position relative to the economic and social context of the country. Indeed, we have chosen to grant compensation because certain areas of the territory remain inaccessible via public transport. Most observers/citizens have to rent a car to access isolated and little-known buildings. It should be

noted that it is thanks to this difficult access that many of these buildings have been preserved from any unauthorized transformation and/or destruction. In addition, this allowance also played the role of some recognition for the work done by these citizens and the time spent on the census, which helps to maintain their motivation. Nevertheless, we were able to observe that the involvement of observers/citizens in the census project was such that they asked not to close their access to the census platform so that they could continue this work on their own merits despite the end of the project.

**Lack of expertise.** It is essential to maintain motivation shared by the experts and observers involved in the project. This motivation is allowed through the involvement and accountability of all stakeholders in the joint definition of the approach to be implemented and in the collection and reliability of the data. From this implication emerges a set of difficulties relating to 1) the appropriation of knowledge and 2) the capacity of actors to negotiate the difficulties that emerge during the process and the means implemented to mitigate them. This is why it was essential that the approach be adaptive, not depending on the observer's ability to correctly follow the phases of the defined methodology but on the "*real appropriation of the knowledge mobilized in order to modify their social practices, their understanding and their environment*", as underlined by C. Gonzalez-Laporte [13]. Nevertheless, it is difficult to gauge the ability of observers to appropriate this knowledge. Thus, we equipped them by putting them in direct contact with local experts that they can call on in case of doubt. We also imposed them to put the listing of all the sources used by the observers to give information relative to the listed building. This list is crucial for scientific validation, reliability and cross-referencing of the data. It should be noted that all these sources have imposed the opening of a server in which all collected data (video, audios, documents, pictures, etc.) are deposited and collected before closing a file on a building.

**Legitimacy of negotiated knowledge.** We must be fully aware that it is difficult to envisage, through this type of participatory approach, the total accuracy of these collected data and the universality of the knowledge that is produced there. It is the knowledge that can be progressively and collectively enriched by the feedback allowed by the platform. Any expert consulting the web page of the map project " Collaborative Heritage Observatory "can make a comment, supplement the information given or contradict it if it demonstrates the source. In this sense, the experience of the citizen and the reality of the environment in which he evolves are as essential to the success of the project as the theoretical and technical knowledge of experts in historic buildings. It is, therefore, a democratic first step in which the advancement of knowledge is discussed and promotes debate by identifying problems and proposing possible solutions adapted to the context in question. But we still notice that it is necessary to guarantee a minimum of critical detachment on both the practical reality and the theoretical conceptualization of a deteriorating heritage.

**Copyright.** Collective analysis and the production of negotiated knowledge automatically raise the issue of copyright. Whom does this data belong to? Who could exploit them and for which purpose and for which framework? Initially, this problem was circumvented by having all observers/citizens a signed contract in which they assign the right to the association on all data collected in the context of this project. Nevertheless, it was decided, following a real desire expressed by the entire consortium to integrate a co-research approach, for each data published on the web platform to be indicated the name of the observer who harvested as well all of his resources. This new positioning has contributed to strengthening the accountability and commitment of the various actors in the project.

#### *D. Ensure the sustainability of the "Collaborative Heritage Observatory"*

In the association's response to UNESCO's call for proposals, it was proposed to involve "*Lamda*" citizens whose specialization and/or profession does not have a direct relationship with heritage. Nevertheless, by jointly identifying the citizen approach to be adopted, it was decided that this first generation of 15 observers should be selected, not with their specialty, but according to their degree of involvement in associative actions that could directly or indirectly concern the heritage. The reasons for this choice are many.

The first reason being the limited duration of the training, it is difficult to 1) initiate a person to the scientific approach, the variety and the complexity of this heritage, but also 2) bring it closer to the problematic of architectural heritage and debates surrounding it. The second reason is the proximity and involvement of the citizen in the activities and issues of his community. We started from the hypothesis that it is thanks to his level of implication and knowledge of the region that he will be able to open a maximum of doors, to count more easily the buildings challenging to access and to speak directly with the inhabitants about their issues and expectations for the heritage buildings around them. Thus, we also record their visions on this architectural heritage.

The third reason, the most essential, is the durability of the Collaborative Heritage Observatory project. Indeed, thanks to the project, it has been possible to train a group of citizens spread over the entire Tunisian territory. The next objective is to go in each of these regions to directly from the premises where our main interlocutors will be the first observers/citizens. The latter will themselves become trainers and will progressively evolve towards a status of regional heritage referents. Cultural visits to heritage buildings could be organized by observers in their respective regions, with the support of the association in order to continue the observation mission. It is through this strategy that we want to perpetuate the project through knowledge negotiated for the transmission, re-appropriation and conduct of social change to and for the heritage of its citizen and with the support of experts.

## VI. DISCUSSION

The whole participatory process defined here aims to lead a collective action for a (re)appropriation of Tangible Cultural Heritage with and for the citizen. In just a few months, the number of buildings surveyed has been multiplied by 3. As a result of the project and despite the fact that the observers are no longer paid, more than 50% of them continued to enrich the content of the platform. Today, the page is visited by 12568 people with an attendance rate of an average of 40 a day. This attendance rate has, among other things, helped the E&M association to federate others observers distributed throughout the Tunisian territory. They gradually shifted from 15 "remunerated" heritage observers to 23 "volunteer" heritage observers, 8 of whom were paid observers in the past who now continue to do so on a voluntary basis. The context was a determining variable that conditioned the explanation of this approach so that it could be dynamic, adaptive and self-evolving while being controlled. That is why the whole participatory process was defined here to lead a collective action for change, even to change it from the "Citizen science" (that is, from a simple census carried out by the citizen) to a "Co-research" that involves the citizen in the different stages of the project, so that the process evolves with and thanks to him. To do this, we were guided by the principle that it should be to ensure to 1) making knowledge equivalent, and 2) clarification of representations that the citizen-observers and experts-researchers make of the social reality will encourage "a process of education, development of consciousness and mobilization for action" [13]. This principle is confirmed. Indeed, 73% of observers continue, till today, to warn local authorities and associations when overruns that tend to destroy the Tangible Cultural Heritage of their region are noted. As a result of the project, more than a quarter of them were either 1) involved in associative actions within their locality (as project managers), or 2) registered in third cycle on topics of research about Tunisian heritage and its valorization (3 Phd in Architecture et 1 Phd in Human Sciences). As a result, citizen observers are now privileged partners who also help to raise awareness in their regions. This research work then tends to logic of "learning to learn" and not only "learning for learning". The objective of this project is to open a perspective towards a new (re)appropriation of heritage for and with the citizen. This change is reflected in the way that the citizen/participant looks today at the richness of his heritage and in his relationship with the experts in the field. The observers, who are basically scattered around the various Tunisian regions, have, on their own initiative, created a community of observers and experts, setting up their own web page, for the communication and the experience sharing. This web page has become in fact the new place for various debates around the notion of heritage value and possible future actions. In one year, approximately 3110 interactions between different observers and experts were recorded; about 10 exchanges per day on average related to Tangible Cultural Heritage. Thus, Reflections and debates concerning heritage are no longer reserved for a certain elite. Through

this framework, the citizen is given the means to also expose his point of view on the question of buildings with heritage value for a better appropriation of these.

One of the main limitations of this project is the lack of availability of the Scientific and Technical Committees for the scientific validation of encoded data. Despite their increased investment in the exchanges, only a quarter of this data was validated in Peer review by the experts. In order not to block the planned publication of the recorded data, it was decided that all data that has been validated by the technical committee could be visible on the web platform but without displaying the "Peer Review". Thus, users of the platform can gauge the degree of reliability of the data recorded and published.

We also hope for a transformation at the level of inter-societal relations, for example, to see in the social structures but it is impossible, at this stage of the project, to gauge this parameter.

## VII. CONCLUSION

**Contributions.** This article has made it possible to highlight the contribution of a citizen-centred approach in a context in particular for the production of knowledge and the appropriation of heritage, under the scholarly supervision of the experts. Also, all the data collected have been published on a unique web platform that is now being consulted and nurtured by experts as well as other citizens (excluding project observers). This platform has made it possible to create a shared repository via a clustered and shared broadcast interface. To date, several proposals for co-research and exploitation of this unique and online database are made within the framework of various projects for tourism, heritage research, urban planning, new citizen actions, etc.

**Prospects.** A crucial phase is to be expected as a result of this project, which consists of analyzing and linking the information collected by the observers. This analysis work will form a basis for global reflection on the heritage that the association wishes to initiate. The next step is to consolidate the already formed group, to encourage the continuation and to accentuate decentralization. A project of a cycle of conferences has already been planned at the end of this research project in different Tunisian sites, under the supervision of observers from the regions concerned.

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