

COLLABORATIVE DESIGN-BUILD AS A STRATEGY FOR COMMUNITY INVOLVEMENT: THE EXPERIENCE OF CONTRADA NICOLÒ ALONG THE SIMETO RIVER, SICILY, ITALY

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1 ABSTRACT

Through direct engagement in an Action Research process, we have documented a collaborative design-build exercise for the ecological regeneration of a riverine site in the Simeto basin, Sicily, IT. The site, Contrada Nicolò, presents numerous opportunities to convey connections between the river and the contiguous municipalities. Despite its ecological value, for years Nicolò has been no more than an illegal dumping ground. In contrast, a community-based group, whose characteristics are discussed in the paper, decided to act for revitalizing the site, encountering several challenges along the way. The authors - as engaged-scholars in the field of landscape architecture and ecological planning - have made the effort of supporting the grassroots' initiatives at Nicolò, acknowledging the sense of stewardship that some community members have developed for the site. Our common goal has been to show that ecological restoration can be conducted through a process of a wider community engagement, collaborative design-build and management, testing a variety of techniques on the ground. Our role, as engaged-scholars, has been crucial in catalyzing the process of collaborative design. At the same time, our community partners have been active co-constructors of the Action Research process in its whole cycle, from questions' framing (and reframing) to implementation and evaluation. Some pitfalls occurred, such as weaknesses and discontinuities in the process of community engagement itself. Notwithstanding, the process provides some key lessons that were worth sharing, presenting details and critical reflections and discussing one year of on-site work in depth.

1.1 Keywords

Ecological Restoration, Watershed Planning, Collaborative Design-Build, Action Research, Community-University Engagement

2 INTRODUCTION

"Planting trees is planting hope": this is a key lesson from Wangari Maathai, Nobel laureate in 2004 and author of *Unbowed* (2006). This lesson has inspired the work of local Non-governmental organizations (NGOs) along the Simeto River, Sicily, IT, in partnership with the University of Catania Ecological Design Lab (LabPEAT) and visiting scholars from Mississippi State University, USA. This partnership is framed within a broader one¹, the Simeto River Agreement (SRA), which was formally established in 2015. The partnership has been generated after a decade of work along the Simeto River, which is the largest river of Sicily by water flow. The river runs for 113 km in eastern Sicily and drains a watershed of 4186 km². The valley is going through a long-lasting phase of exploitation of resources, abandonment and social challenges, which have been strongly determined by the powerful control of the mafia on the land (Gravagno, 2008; Armiero et al., 2017). In this paper, we present our reflections related with a collaborative project, at the site of Contrada Nicolò, that is part of a wider Action Research process (Whyte 1997; Reason and Bradbury, 2001; Saija 2014b). Engaged scholars (Boyer, 1990) of the LabPEAT and a network of local NGOs have worked tightly since 2009 (Gravagno et al., 2011; Saija, 2014a; Raciti, 2016; Gravagno and Pappalardo, 2017; Pappalardo and Gravagno, 2018), humbly trying to follow an alternative trajectory in contrast to the dominant one.

In 2015, 10 governmental agencies and other actors, together with the aforementioned network of NGOs and the University of Catania, signed the SRA with the aim of pursuing the social-ecological regeneration (Gunderson and Holling, 2001) of the valley, innovating the governance of common goods (Ostrom, 1990) with a polycentric and multi-level approach (Ostrom and Janssen, 2004; Ostrom, 2010). The SRA is an ambitious experiment that should involve a multitude of actors, but it is encountering various obstacles along the way to implementation. While in this paper we do not want to deepen the SRA broader framework, we are rather focused on one *piece of the puzzle*, the project that has been developed at Contrada Nicolò. The project was originally conceived in 2009 during a community mapping initiative (Saija et al, 2017) when activists of local NGOs - one of them called *Vivisimeto* (together with LabPEAT's engaged-scholars) developed action-research jointly. During the initiative, they identified one special piece of land of about 3 ha close to the river, which local people identify as Contrada Nicolò, in the Municipality of Paternò, a town of about 50,000 inhabitants in the Metropolitan Area of Catania, Sicily, IT. The site stands close to the east bank of the Simeto River and it is located about 6 km from the historical center of Paternò (see figure 1). The land is publicly owned but it is not publicly managed anymore and the site is in a derelict status. It is the place where a project of a depuration plant was planned to be located. After significant public resistance, the plant relocated and was built in another place, and the area remained abandoned. The place is one of the last public accesses to the river, as other ones have been mostly "privatized" by farmers. It is a Site of Community Importance and a Special Protection Area accordingly with EU Directives (79/409/EEC *Birds* and 92/43/EEC *Habitat*) and *Natura 2000* ecological network. It is used at the same time as a grazing land and as an illegal dumping ground. Being one of the last public accesses to the river, conservationists, ecologists, environmentalists, and small-scale/organic farmers aim to restore the site. They have organized several volunteering days for cleaning the site but these activities were not enough to keep the site viable for visitors and clean. Something more radical was needed. During the community mapping initiative, Contrada Nicolò was identified as a place where activities forming collaboration amongst public actors and NGOs could practically manage common spaces for open access for the enjoyment of the landscape. Planting trees was immediately identified as a simple yet powerful act for involving various actors, restoring the site and producing overall benefits for the whole local community. All of the involved actors have the common purpose of changing the *status quo* but each of them has a peculiar idea of what the site is meant to be: diversities and conflicts often arose. Furthermore, key-actors (such as the institutional boards in charge of managing Contrada Nicolò) and the general public have not been immediately and easily engaged in the process of envisioning a different asset for the site. As a consequence, this simple act was not so simple to implement. After a series of public meetings and a first phase of community design conducted in 2010-2011 (Raciti, 2016), the project of Contrada Nicolò has encountered a variety of obstacles.

In this context, through our direct engagement in the process, in 2016 we decided to propose a set of techniques for meeting the objectives of community engagement, empowerment and ecological

¹ The University of Memphis and University of Massachusetts-Boston are other Institutions that have been involved in the partnership.

restoration simultaneously, through collaborative design-build (Badanes, 2008). Our assumption is that only a deep and aware involvement of various actors in the design/implementation/management of the site may produce a long-lasting, positive effect.

Inspired by the work of eminent thinkers such as Danilo Dolci, Paulo Freire and John Gaventa, the goal is to allow the empowerment of the local community. Based on action-oriented research approaches (Whyte, 1997; Reason and Bradbury, 2001; Saija, 2014b), we, engaged-scholars, have acted as catalyzers of the process and community partners have acted as co-constructors. We have used collaborative design-build as a means for enabling the local community to take direct care of places, having raised ecological awareness. The ultimate aim has been to allow a renewed perception of the problems through a direct experience on site. This has been conducted with an attitude of constant reciprocity between researchers and community members (Reardon, 2006).

In this paper, we discuss the overall process of revitalizing Contrada Nicolò and focus on one year of activities. After presenting its relevance both for the international debate and the local context, first we refer to the state of the art of action research for landscape research and community participation in design-build projects. Then we specify the characteristics of actors that been involved in the process of community-engagement for Contrada Nicolò. Finally, we discuss the strategies that we have observed on the ground, in a whole year of work and monitoring. We highlight the importance of having key-actors that embrace the project with perseverance for engaging other actors and give continuity to the process. In conclusion, we identify key-lessons (successes and pitfalls) for collaborative design-build as a stratagem for community engagement and empowerment, based on the practical experience of *doing things together on the site*.

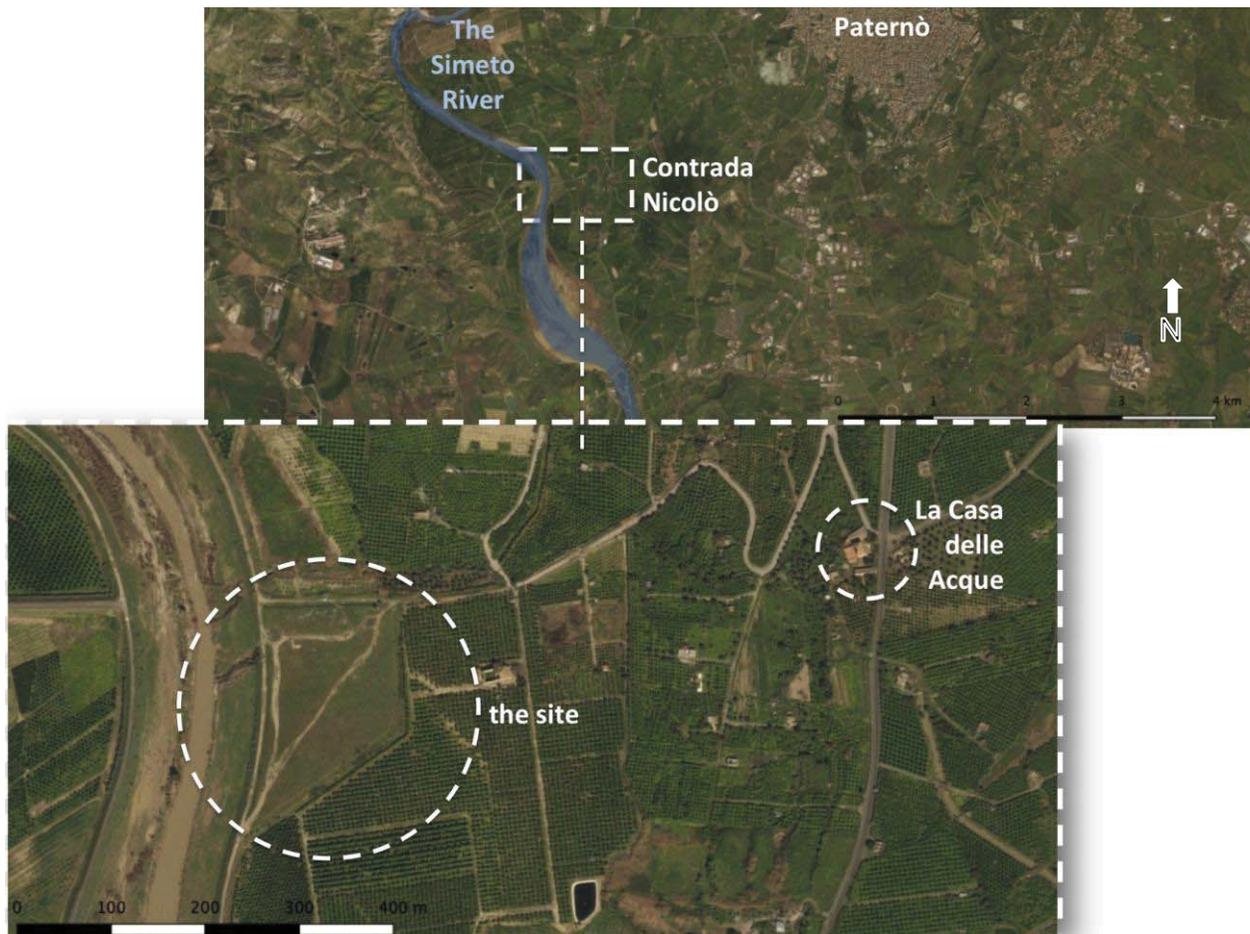


Figure 1. Contrada Nicolò: location map

2.1 The relevance of Contrada Nicolò in the international debate about ecological systems

The Millennium Ecosystem Assessment (2005) lists 6 important cultural ecosystem services categories that are derived from ecological systems. Three of the six categories take priority at Contrada Nicolò. The cultural ecosystem services of particular interest at our sites are Heritage Value, Cultural Identity, and Recreation. Heritage Value describes sites of historical significance for a community. This service was eliminated in recent years by the use of the site for illicit trash dumping and as a site for dredged fill soils from the creation of a levee system near the river. Historically, people from Paternò and the surrounding communities came to Contrada Nicolò to access the river, but more recently this has not been the case. The Cultural Identity associated with the Simeto River and community interaction with the river is tied to the importance of the river system, and particularly its spring-fed tributaries, to the agricultural systems of the surrounding landscape. The livelihood of numerous local residents is dependent on the water systems of the Simeto River watershed and also, therefore, to the cultural importance of people's connection to the main channel of the river, visible and accessible from Contrada Nicolò. The recreation services provided by the site have been compromised in recent years, but current efforts to restore the site will provide opportunities for hiking, camping, birdwatching, and picnicking. Contrada Nicolò provides opportunities for river advocates to demonstrate that the community cares about the cultural services that the watershed provides.

Contrada Nicolò presents numerous opportunities to convey connections between the site (or any other site) and greater watershed needs for conservation and ecosystem management at the watershed scale. If successful, visitors will see the value of habitat restoration, collaborative design, and collaborative management. An overarching goal of the project is to convey native forms of streamflow and riparian habitat so that visitors might employ similar approaches on private and public lands that they manage. Applicable stream forms include stream cut banks, point bars, riffles, and pools, and also their associated riparian plant communities. The site will demonstrate rehabilitated ecological conditions and communicate an increased appreciation for the ecosystem services provided by the watershed, including but not restricted to agriculture, recreation, plant and animal communities, clean water, clean air.

2.2 The process of community-engagement for Contrada Nicolò in the Simeto River Valley

Through recent years, a local environmentalist non-governmental organization (NGO) called *Vivisimeto*, funded in 2006 and based in Paternò, has focused on the idea that Contrada Nicolò could be a significant place where local people can establish a connection with the river and its ecosystem. Volunteers have spontaneously organized cleanup activities once a year. On average, 20 people took part in them from the network of other environmentalist associations (such as a nation-wide association called *Legambiente*). Invitations were made using flyers distributed among the members of the associations and via advertisement through the local media. This first set of cleanup activities occurred before the establishment of the partnership between *Vivisimeto* and the LabPEAT. Cleanup activities were limited to one-day events without developing any planning strategy and design for the site.

Then, the partnership with engaged-scholars of LabPEAT started in 2008-2009. Raciti (2016) discussed the main steps between 2009 and 2011. In this phase, specific planning strategies were developed:

- A community mapping initiative (for details, see also Saija et al., 2017; Pappalardo, 2017) has served the overall purpose of engaging a variety of inhabitants, farmers, and NGOs in defining a bottom-up plan for the Valley. The partnership developed this phase from December 2009 to April 2010; about 500 people participated from Paternò and three other municipalities nearby. Not only did flyers and advertisement circulate; also door-to-door knocking served the purpose of engaging various inhabitants to participatory events. During the community mapping initiative, Contrada Nicolò has been identified as a place where to start implementing a simple yet significant project aimed at reconnecting people with the river ecosystem.
- After a reflection about the choice made during the community mapping initiative, a group of volunteers and engaged-scholars (10 people on average) took part in a series of weekly meetings for defining how to set up and implement a bottom-up plan and ecological design for Contrada Nicolò. A first *experiential learning workshop* took place in November 2010: meeting on-site has allowed a

direct understanding of ecological dynamics beyond maps and indoor meetings. Then, volunteers and engaged-scholars established an *Ecological Lab* (ECOLab): on average, 20 people continued meeting on a weekly basis for setting up a design for Contrada Nicolò. Finally, in April 2011 a *Spring Fest Charrette Initiative* took place: it was a two-day initiative aimed at implementing on the ground what the ECOLab has discussed, involving a wider audience, including a class from the middle school of Paternò (details in Raciti, 2016).



Figure 2. Significant steps in the overall process of revitalizing Contrada Nicolò

Despite the growing enthusiasm between 2009 and 2011, participatory activities for Contrada Nicolò did not last for long due to a combination of issues.

On one side, a lack of volunteers' availability and economic resources restricted the initiatives that the partnership could conduct, despite the effort of collecting donations. Above all, the lack of institutional support paralyzed our work: the Agencies in charge for the management of the site barely listened to the request for collaboration showing indifference for this bottom-up effort.

Engaged-scholars and volunteers did not give up. In 2013, we applied for a EU funded project (*Life Program*). Meanwhile, we were in the process of establishing the Simeto River Agreement, signed in 2015. But none of these initiatives produced benefits for supporting the bottom-up effort at Contrada Nicolò. The proposal for the *Life Program* was not successful due to disengagement within the boards of the Municipality of Paternò. The SRA is generating a very positive effect in terms of innovating the democratic *governance* structure of the Valley (see for example Pappalardo and Gravagno, 2018) but it is encountering problems in implementing practical projects, still due to a lack of funds and weak institutional involvement in some of these projects (Nicolò being one of them).

A phase of stasis occurred, with the exception of a Summer Camp Project in August 2014. *Vivisimeto* and other 3 NGOs organized the camp, involving 10 volunteers from abroad and 10 locals in a 13-day activity of clean up and arrangements for the accessibility of the site.

In 2016 the project gained momentum again. Thanks to an Office of Economic Cooperation and Development Fellowship, Contrada Nicolò could benefit from the work of another engaged-scholar that joined the team. In this phase, implemented two main strategies: collaborative design workshops and collaborative design-build. These strategies have contributed to the implementation of two sub-phases on-site: The Water Experiment and Bosco Experiment. The following paragraphs discuss the part of the process that occurred between 2016 and 2017.

2.3 Action research, collaborative design workshops and design-build

According to the Action Research approach, we have been involved in a bottom-up process, with the absence of a single decision maker communicating their will on a group to carry out a project. Rather, we aimed to involve as many parties as possible in each step of a cyclical process, such as defining questions, goals, implementing, and evaluating. The lengthy process that led to the River Agreement now in place in the Simeto Watershed is an example of this approach. Other site-specific projects recently undertaken by the communities along the Simeto River also reflect this approach (see for example Raciti and Saija, 2018).

Community-based projects require the implementation of techniques for the co-creation of knowledge and spaces, plus the co-development of management skills. With this aim, collaborative design and design-build are emerging in various fields - from architecture to service design - producing social innovations (Dean, 2005; Stickdorn and Schneider, 2011; Canizaro, 2012; Manzini, 2015). During collaborative workshops, diverse participants are called to share ideas based on their background and expertise. During collaborative design-build, participants are called to avoid the separation of design, art, and craft, embracing the challenge of constructing what they design (simultaneously with the design process).

During the collaborative process, some participants will be the users of the project; some called to manage it. Others (in our case, engaged scholars) are co-designers and co-implementers, with the role of facilitating the process, but the ultimate goal is to deliver the project to the hands of the community for the long run.

A variety of strategies and techniques for enhancing collaboration have been outlined by previous researchers. Sheppard and Meitner (2005); Schroth et al. (2011) and Opdam et al. (2013) stress the concept of "visualization" and the importance of developing proper tools (such as 3D scaled models and user-friendly maps) in order to facilitate the understanding of the ecological dynamics in landscapes, which is a goal of the overall Simeto River Agreement. Bidanes (2008) and Kellum (2010) describe a bottom-up, collaborative design-build process that is applicable at the site scale, which is the appropriate scale of observation for the on-the-ground projects associated with the Simeto River Agreement itself.

Our workshops and design proposals focused on visualizing and finding site design solutions that are "legible" (Kaplan 1979). At Contrada Nicolò, the elements contributing to landscape legibility include the native plants used in the demonstration, the landforms associated with the stream-like irrigation canals, the entrance connection to the access road, and that all site improvements and operations, even those occurring over long periods of time, must be legible and should be tied to the ecological/historical past. The purpose for creating legibility is for the site to make sense upon a person's first visit by communicating a perceived structure, and by encouraging their future involvement in the site.

As the community participates in the design process, they must continuously recognize and evaluate the design approach to the site, including in their evaluation elements that form positive site perception such as mystery, complexity, and coherence.

3 METHODS

3.1 Engaging the community of Contrada Nicolò

In participatory processes, the engaged-community varies depending on the evolution of a process. In 2016-2017, the involved actors for the collaborative efforts at Nicolò have been: *Vivisimeto* volunteers (25 persons in total); other volunteers from *Vivisimeto* network of NGOs (*Lega Italiana Protezione Uccelli* and the *Simeto Participatory Presidium*; 20 persons); volunteers from the World-Wide Opportunities in Organic Farming (WWOOF) community hosted at *La Casa delle Acque* - a foreseeing permaculture farm belonging to the WWOOF network that has given most of the support for the project (approximately 10);

farmers close to the site (5 farmers), the general public (approximately 20, see table 1). They have been engaged through flyers distributed among volunteers, advertisements in the local media, social networks (Facebook and email), and door-to-door knocking. Students did not take part to the 2016-2017 activities but they have been previously involved in service learning projects that have produced actionable knowledge for the overall process, through master theses and PhD dissertations dedicated to Nicolò (5 graduate students). In 2016-2017, three engaged-scholars have contributed organizing the activities and *dealing with differences* (Forester, 2009), i.e. transforming conflicts in creative opportunities for moving forward.

Conflicts arose between environmentalist volunteers and some local farmers and grazers that were initially skeptical about the project but have started understanding its value after having seen the volunteers' hard work. For some farmers that live close to Nicolò, the skepticism has not been targeted yet.

Conflicts arose also between various participants with different ideas about *what to do* and *how to do* things. Two main different approaches to practice can be reported: a first one is concerned with doing things *regardless of the lack of involvement of institutions*; a second one is concerned with doing things *only with the involvement of institutions*. A common ground has been found in the idea of doing things *for stimulating the involvement of institutions*. Some of these conflicts are still in place and they are opportunities for enriching an open-ended debate.

3.2 Research objectives, Action Research objectives and implementation

From a traditional academic standpoint, our objectives were to: 1) document the Collaborative Design-Build approach as a bottom-up process for site-scale design and construction; 2) engage local community groups for the realization of community-led site improvement projects that increase site biodiversity; and 3) quantify community participation and site improvements resulting from the implementation of the Collaborative Design-Build approach.

From an engaged-scholar standpoint, we have built our objectives together with our community partners within the Action Research process. Specifically, we wanted to increase community involvement, awareness and stewardship in respect of a site, Contrada Nicolò, that has been identified as a strategic one for its ecological and symbolical relevance.

The approach for increasing community involvement, awareness and stewardship in the site restorations at Contrada Nicolò included engaging laypersons more and more in problem assessment, identifying multiple possible interventions and selecting outcomes, collectively planning projects for installation, and setting up a collective monitoring and evaluation system.

The practical implementation of this approach led to the adoption of more concrete categories of activities including: preparatory meetings and focus groups in order to discuss the general idea of "planting trees" at Contrada Nicolò with various groups of actors; the collection of material/funds, such as pipes, trees, and money, in order to collectively contribute to the implementation of the project and to create a sense of community ownership of the project; collaborative design exercises in order to collectively design the process and the project, moving from the general idea of "planting trees" to a more defined organization of the space, the project itself, phases, and actors for implementing the project; and numerous on-site activities, including walks for site surveys, trash clean up, preparing the soil, planting, irrigation and art installations. All these activities occurred almost three times a week from June to September 2016 in a very intense fashion.

Following a series of meetings to acquaint the researchers with past individual works, grassroots and authorities' works conducted in the watershed, materials were prepared in support of proposed future collaborative design exercises. Maps and research outcome summaries from previous workshops and a 3-dimensional model were prepared for display at the first exercise as a tool for visualization (Sheppard and Meitner, 2005; Schroth et al., 2011; Opdam et al., 2013).

On August 5, 2016 a key-community collaborative design exercise was conducted at *La Casa delle Acque*. The participants (in this case, about 30 people from the aforementioned groups of actors) were asked to brainstorm the perceived positives and negatives associated with previous community design experiences, and then to propose solutions to any negatives that they identified. They were then asked to consider and evaluate all existing on-site materials and to give their opinions of what the forms in the landscape should be, specifically with regard to roads/pathways, soil/rocks, water, and plant forms. Then, prior to the consideration of design alternatives, all participants agreed to seek a diversity of options, to

accept open consideration of all ideas and options, to work together to effectively narrow the choices for site design, and finally, to avoid the separation of design, art, and craft (the “build” portion of design/build)

3.3 Collaborative Design Techniques

The first major activity was to finalize a process for determining planting design solutions that included, as an outcome of initial public meetings, to:

1. Conduct a site inventory using the layout of a 50mx50m site grid at Contrada Nicolò to facilitate existing plant community mapping for future comparisons following site design implementation;
2. Inventory approach/entry views at Contrada Nicolò;
3. Determine future views of site entrances to draw people into the site, make them more legible, and communicate larger site and watershed goals;
4. Determine plant communities, what degree of forest vs. open landscape;
5. Determine visitor use areas; and
6. Identify local materials as potential landmarks (distinctive plants/trees, use of rocks and other historic materials) related to the site.

Using ideas generated at the August 5 workshop and through continuous dissemination/response by the community throughout the fellowship via numerous meetings, workdays and social media, a four-phased approach for site rehabilitation at Contrada Nicolò was proposed. Sub-Phase 1 is called “Water Experiment”, Sub-Phase 2 is called “Bosco Experiment”, Sub-Phase 3 is called “Restoration and Succession”, and Sub-Phase 4 is called “River Connection”. At the time we write this article, sub-phases 3 and 4 have not been implemented yet.

The second major activity was to take this community-generated process and produce a site design for Contrada Nicolò for review by the local and regional actors. Final site designs were adopted by participants of the August 5 workshop and exist now as living documents for continuous review and continued implementation (Figure 3).

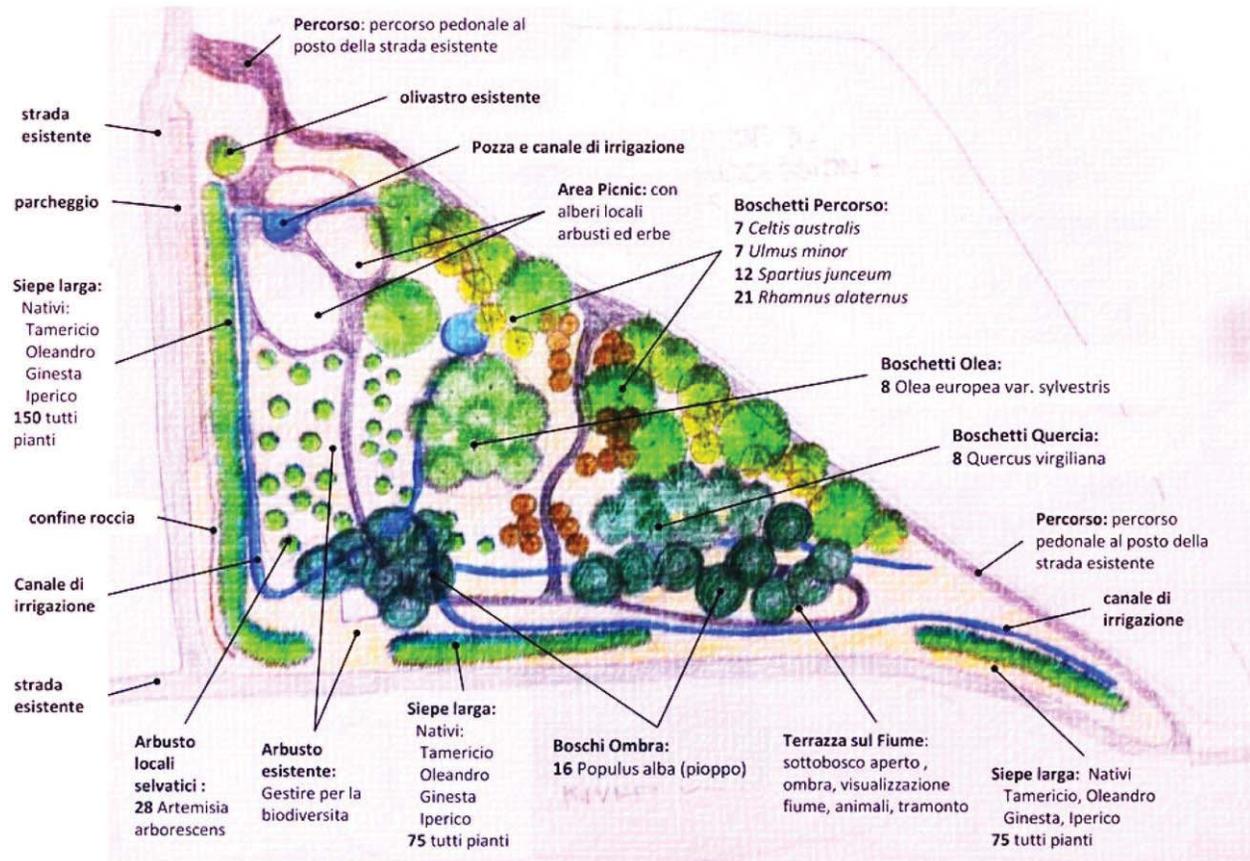


Figure 3. Final design for Sub-Phases 1 and 2 of Contrada Nicolò

3.4 Design Implementation Sub-Phase 1: Water Experiment

Sub-Phase 1 was named “Water Experiment” due to the need to determine whether irrigation canals could effectively deliver water throughout the site, whether inexpensive methods of attaining and successfully establishing plant materials were feasible, and finally, once initiated, whether site construction would be supported by the surrounding community. Entrance and Parking for the entry to the site required a significant cleanup of trash, the inclusion of native accent plants, and space for visitors to park their vehicles. Parking was placed along the existing north access road with a rock border defining the edge of the site. A Thick Plant Border was planned and installed along the northern and western edges of the site, made of Tamaricio, Oleandro, and Ginestra. The border defined the site edges and deters entry to the site by grazing cattle that are common in the area. The three small tree species were added to the existing vegetation found on steep slopes that comprise the edges of the site. Above these slopes the site is very level, and provides opportunity to establish examples of numerous local plant communities. Irrigation Canals deliver water to all new plants via a canal system fed by excess irrigation runoff from surrounding farms. Because the site is very flat in its upper elevations, it was proposed that a connected series of canals be used to distribute water for the establishment of new plant material. The depth of the canals varies from 25 to 50 cm. A *River Terrace* was located on the western edge of the site, overlooking the river. A break in the Thick Plant Border allows for views of the river, with shade provided by a *Bosco Pioppo* to the east. A *Low Shrub Meadow* is planned uphill from the parking area on the northern end of the site. The meadow will be created by adding *Artemisia* shrubs to the existing vegetation, which contains other asters, fennel, and grasses. A *Picnic Area* is planned for just beyond the main entrance to the site. Edges of this area will be planted with edible plants such as figs, mulberries, bagolaro, mandorlo, carob, corbezzolo, alloro,

pomegranate, elicriso, melissa, rosemary, oregano, salvia, lavanda, alloro, and lippia citriodora. The *Picnic Area* is only area where local habitat models were not used in the planting design. The area is intended to provide an appreciation for the numerous food crops available in the region. Species chosen are not commercially in high demand, and should be available for visitors to grab and enjoy with other picnic foods that they bring onsite. The area will have to be managed in an open manner to provide spaces for people to spread out. *Walking Paths* provide connections to all parts of the site described above, and are created within the footprints of existing roads through the site. They can also be used as exercise pathways

3.5 Design Implementation Sub-Phase 2: Bosco Experiment

Where Sub-Phase 1 focuses on the northern and western edges of the site to create a legible border, Sub-Phase 2 is located in the center of the site and is dedicated to creating shaded pathways and two woodlands: *Boschetti Olea* and *Boschetti Quercia*. A *Tree-lined Walkway through the Center of the Site* will be defined by a combination of large trees (*Celtis australis*) and medium-sized trees (*Ulmus minor* and *Spartium junceum*) with pathway intersections marked by *Rhamnus alaternus*. The *Boschetti Olea* (The Wild Olive Woodland) is a homage to the agricultural heritage of the surrounding region, while also representing the importance of native woodlands in the Mediterranean region. The woodland will provide shade and should be managed with an open understory to allow views from the central path to the north, across the low shrub meadow described in Sub-Phase 1. The spring bloom should be allowed to finish completely prior any management activity in this area, and any native shrubs that become established should be allowed to stay, while maintaining an open character. The *Boschetti Quercia* (Oak Woodland) lies to the east of the River Terrace described in Sub-Phase 1, and represents the most conservative of all of the proposed plant communities. It will take many years and significant patience to allow for the establishment of this woodland. Similar to the Wild Olive Woodland, this area should be managed with an open understory preserve the long views across the site and to allow for circulation under the oaks and the White Poplars in the adjacent River Terrace. The spring bloom should be allowed to finish completely prior any management activity in this area, and any native shrubs that become established should be allowed to stay, while maintaining an open character.

A major accomplishment was the installation, with the involvement of various actors, of over 400 locally-grown native plants at Contrada Nicolò during a series of planting activities in September 2016. Then, in January 2017, an internationally-renowned artist arrived at *La Casa delle Acque* to donate the creation of a rock installation that has been made with the rivers' stone in the entrance of the site. The installation has been done with the help of the *WWOOFers*; it has been discussed and celebrated during a public event in January 10 2017 with the involvement of several actors. The creation of this piece of art has been the another important step for implementing the idea of legibility on site (Figure 4).



Figure 4. Community activities to increase site legibility

4 RESULTS

4.1 Potentials in terms of community engagement

Collaborative design-build at Contrada Nicolò has increased cooperation among various categories of actors that were not used to cooperating. This has been possible because of the need to face the practical challenges related with the project. What has been of relevance is having a project to implement, rather than just vague topics to discuss during meetings. This opportunity has attracted actors that are not interested in participating just for the act of participation itself; one participant has clearly stated that he would be available "...only when we put our hands in the dirt, because I am tired of just talking...". The local association *Vivisimeto*, which has been in charge of promoting the whole project, could reach actors that were not usually engaged in the association's activities thanks to the practical character of the project. The simplicity embedded in the act of planting trees has been a key characteristic for improving the level of community engagement step by step, although more steps still have to be taken. This statement was validated by summarizing the status of involvement for each activity connected with the project, in the time-frame we have described in depth (2016-2017) and that we were also able to monitor, some precisely, others by estimating community involvement.

Table 1 shows levels of engagement in on-site activities, especially the walks, the trash clean up, the act of planting itself, the participation and visits to the art installation. These activities have mostly attracted volunteers and the general public. *La Casa delle Acque* and *Wwoofers* have given a

fundamental contribution in terms of preparing the soil and irrigating with pipes that were assembled temporarily. The main criticisms were related to the involvement of the neighbors/farmers that have contributed only in the collection of the pipes that are needed for creating a long-lasting irrigation system. The collection of pipes has been successful, though. The needed 400 meters of reused pipes have been collected thanks to the neighbors' contribution. Further activities will have to be settled for improving all the neighbors' interests in respect to certain aspects of the project, such as safety/security and increased traffic to the site.

Table 1. The status of involvement for each type of activity connected with the project

		Number of persons (n) involved in a one year time frame				
Categories of actors		Vivimeto volunteers	Other NGOs volunteers	La Casa delle Acque and WWOOFERS	Farmers [neighbors of La Casa delle Acque]	General public
<i>Type of activities</i>						
<i>Focus groups</i>		10*	5	3	3	-
<i>Collection of material/funds</i>	<i>Pipes</i>			4	2	-
	<i>Trees</i>	2	3	7	-	
	<i>Money</i>	6	5	3	-	10*
<i>Collaborative design exercises</i>		15*	5	3	-	5*
<i>On-site activities</i>	<i>Walks for site survey</i>	20*	10*	12	5	10*
	<i>Trash clean up</i>	25*	20*	8	-	20*
	<i>Preparing soil</i>			8	1	
	<i>Planting trees</i>	15*	10*	9	1	10*
	<i>Irrigation</i>	5*		10*	1	5*
	<i>Art installation</i>	10*	5*	10*	-	10*

***estimated values in 5-person increments**

4.2 Benefits in terms of ecological dynamics

Six months after the planting activities, the survival rate of the species has been monitored mainly from *Vivimeto* and *La Casa delle Acque* community partners. The main challenge for supporting the growth of plants has been irrigation. As a matter of fact, at this point the irrigation system has not been built in its permanent configuration and irrigating has been based on voluntary work for about three days a week in early autumn; during the rainy season of 2017, rainfall was abundant (about 500 mm) and it has been the only source of water for plants. Other challenges were connected with the grazing activities that could interfere with the existence of the growing plants. Thanks to the involvement of the shepherd, cows were directed in different areas so that the plants could be preserved. Another expected threat was the illegal dumping and deliberate human damage. Illicit trash disposal has been strongly reduced after the last clean up and the planting activities of September 2016. No damages have been reported. Given these surrounding conditions, the survival rate can be considered in line with the target (about 50% of survival). Specifically, Tamaricio has a rate of about 100% of survival, Oleandra has a rate of about 10% of survival, Ginestra has

a rate of about 50% of survival; in the *Bosco*, 40% of *Populus alba* survived. Further activities will consider the desire to increase and manage biodiversity on the site.

4.3 Opportunities for public/private collaboration

The necessity of having constant activities on site is related with the opportunity for *Vivisimeto* to adopt the area, not only in an informal fashion as it is already happening, but also through an institutionalized public/private partnership. We have already pointed out that several issues arose regarding institutional involvement. The lack of institutional involvement cannot stop the activities on site but institutional involvement still remains a goal for the long run.

Contrada Nicolò presents opportunities for the overall framework of the Simeto River Agreement (SRA). The SRA is a multi-centric and multilevel public/private partnership: it is multi-centric because it involves 10 municipalities along the river and a network of NGOs; it is multilevel because it is related with local governmental agencies, regional boards, national departments and EU policies. The SRA has experienced some pitfalls in terms of implementing tangible projects on the ground.

The experience of Contrada Nicolò has been conceived and supported by several public and private actors that are also part of the SRA partnership: *Vivisimeto*, the Municipality of Paternò, and the University of Catania. At the same time, it is not fully embraced by all SRA actors and it is still not included in the SRA action plan. Other key actors for Contrada Nicolò are also quite skeptical about the overall aim and effectiveness of the SRA. On one side, Contrada Nicolò still suffers the lack of the necessary public/private partnership for managing the site, which *Vivisimeto* is in the process of establishing with the Municipality of Paternò and the regional boards that are in charge of the management of the area. On the other side, Contrada Nicolò is one of those practical projects that can inspire other practical projects for the SRA. The governance of Contrada Nicolò needs to be multilevel as well as the governance of the SRA; at the same time, the practical activities at Contrada Nicolò can be one of the focal points of the multi-centric organization of the SRA. Further Action Research is needed for connecting these two worlds that were born together but are currently following separate trajectories.

4.4 Limits and pitfalls

In 2016, like in 2009-2011, Contrada Nicolò has been a place where various actors have worked tightly, forming a community that has learned and impacted reality simultaneously (accordingly with action-oriented approaches). But again, like in 2009-2011, the process of community engagement and the care for the site paused. This is due to the same limits encountered in 2011, more or less:

- a lack of resources (not only economic ones but also a restricted availability of voluntary forces and difficulties in planning incremental activities that can be sustained in the long run);
- a lack of institutional support;
- a lack of deep commitment from a stable group of actors (although *Vivisimeto*, WWOOFERS and *La Casa delle Acque* are fully committed to the project, this is not enough in order to create a robust core group in charge of implementing it).

In other words, the most involved volunteers have experienced an increasing fatigue in embracing this bottom-up effort in the long run. So do engaged-scholars. Contrada Nicolò may be trapped again in a phase of stasis and abandonment. But, what we have learned from 2009-2011 and the subsequent experiences in 2016-2017 is that this phase of stasis could only be a temporary one. Moreover, the SRA is in place: it needs to be tuned and adjusted, such as the process at Contrada Nicolò, but it constitutes an existing framework that may lead to more organized and effective actions, in collaboration with institutions as well. Up to this point, Contrada Nicolò and the SRA have a resilient story that is still in place and can evolve toward better configurations, if the actors will be resilient as well.

4.5 Perspectives

Having visited the site September 2018, we have witnessed three major successes and confirmed the pitfalls. Success is related to: a rate of survival of about 100% rate in *Tamaricio* and of 50% in *Ginestra*, regardless another phase of stasis between January 2017 and September 2018 and the absence of irrigation; a significant decrement in illegal dumping; the persistence of the art installation. Evaluating the process with 4 key-actors from the *Vivisimeto*, *La Casa delle Acque* and the WWOOF community, we have

confirmed the necessity of improving the community engagement process in order to catalyze a rise of awareness for the local community in "being a community", starting with simple yet articulated projects such as "planting trees for planting hope", following Maathai (2006). We focused on the importance of doing things *also for stimulating the involvement of institutions*. We confirmed the necessity of focusing on "bringing back water on the site as bringing back life to the site".

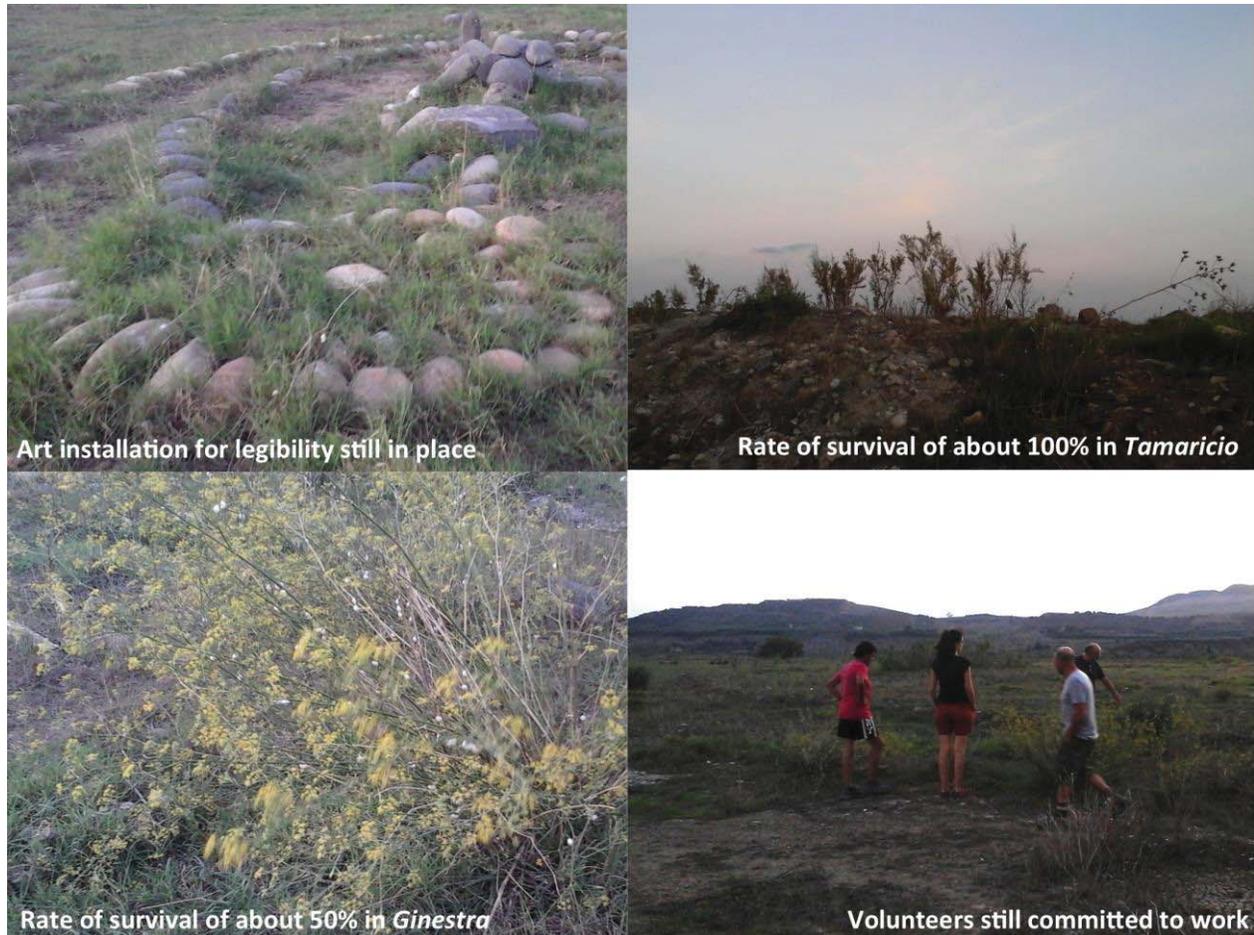


Figure 5. Monitoring activity, 2018 September 11th

5 CONCLUSIONS

We highlight the importance of having key-actors that embrace the project with perseverance and act as catalysts and co-constructors for engaging other actors, give continuity to the process toward the empowerment of local community. Our experiences thus far highlight the need for organizations willing to persistently undertake small, on-the-ground legible projects (Kaplan 1979) in order to improve sites for community use. Without key-actors such as *La Casa delle Acque*, *WVVOOF* and *Vivisimeto* participating in planning and installation, projects such as Contrada Nicolò can devolve into top-down experiences guided by a single landowner or government entity that might disregard the public desire or need for engagement.

We identified key-lessons for collaborative design-build as a stratagem for community engagement and empowerment based on the practical experience of *doing things together at the site*, rather than just discussing with no effects on the ground, according with the Action Research approach. We have learned that collaborative design-build is effective in generating ideas and moving towards unison for a legible site asset, but there is not overwhelming evidence that involving people in the design process motivates them to be involved in implementation, which mirrors results of Kellum (2010). We confirmed the necessity of

developing techniques that facilitate the visualization of current status and possible transformation of the site, such as maps and 3D scaled-models (Sheppard and Meitner, 2005; Schroth et al., 2011; Opdam et al., 2013). These tools do not substitute the build component of design-build which is a way for boosting co-design processes for social innovation (Dean, 2005; Stickdorn and Schneider, 2011; Canizaro, 2012; Manzini, 2015).

We feel that it is too early to judge long-term community involvement, and that success will ultimately be defined on numerous levels: ecological (habitat metrics, erosion control, soil-building, etc), societal (education opportunities, recreation, place-making, etc.), and economic (low budget, government investment, etc.).

We feel that the public and some local administrators were open to ecological design and supported the adoption of design criteria driven by ecological parameters, and in fact insisted on this approach in all stages of discussion. As a result, 7 new dominant native species were introduced at the site, with 14 more identified for inclusion in Sub-Phases 1 and 2. Animal diversity should increase with corresponding increases in the structural diversity of site plant communities. Site soils should also be stabilized by the implementation of the proposed design.

We are unable to project long-term levels of involvement by the local community. We anticipate that the *Vivisimeto*, *La Casa delle Acque* and *Wwoof* volunteers will remain engaged and active at the site, but some of them (the *Wwoof*) are temporary residents. As role models they project attitudes that we hope are adopted by the community: "work is fun, the environment is important, as well as work together to attain a goal, new friendships forged in work are meaningful, all ideas are important, and that exposing yourself to new ideas leads to personal growth". The authors have benefitted both personally and professionally from their relationships with *Vivisimeto*, *La Casa delle Acque* and *Wwoof*ers and it cannot be underestimated how important it is for a project to have a strong proponent to build and carry momentum through a long-term design and implementation process.

In the end, the process of building community engagement, seeing cultural changes take place and community empowerment is very slow. As action-researchers, we commit to long-term processes with an attitude of reciprocity as in Reardon (2006), and must stay involved as observers, participants and - if needed - catalyzers and co-constructors together with our community partners. Ultimately, if we disengage from the process, we should report this outcome as a failure. If at some point we are unable to show evidence of momentum towards stated goals and outcomes, then our experiment in the collaborative design-build process leading to increased community engagement and empowerment cannot be supported.

In this respect, the next challenge is to build the conditions for continuity, including the need of a more stable and suitable cooperation with institutions, as well as transforming the collaborative design-build in opportunities for local development. This point is open to further discussion focused on identifying the conditions for the sustainability of community engagement in the long run, in terms of "costs" of human and economic resources for keeping catalyzing and co-constructing the engagement and empowerment process.

Acknowledgements and dedication

The authors feel committed to recognize that this paper would not exist without the engagement of volunteers from *Vivisimeto*, *La Casa delle Acque* and the *Wwoof* community. We also dedicate this paper to Saro, a friend that has been connected to the Simeto River and worked at Contrada Nicolò with a deep understanding of the significance of such a long-term project.

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