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STARTING FROM THE RIVER AGAIN

COMMUNITY PROCESSES TO REGENERATE SPOILED ECOSYSTEMS

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Introduction

> "A frame can be seen as a scaffolding (an inner structure), a boundary that sets off phenomena from their contexts (like picture frames), a cognitive / appreciative schema of interpretation […] or a generic diagnostic / prescriptive story […]. These images all capture important features and functions of frames, albeit different ones. They all rest on a common insight: there is a less visible foundation - an "assumptional basis" - that lies beneath the more visible surface of language or behavior, determining its boundaries and giving it coherence." (Rein & Schön 1996, p.88)

Rivers and their ecosystems are a vital core of human societies: not only do they provide resources, in particular for rural economies, they also generate symbolic meanings in different cultures around the world. Although water is an essential necessity for life, communities are not always able to have harmonious relationships with it. Flooding, pollution, landscape degradation, and resource crises are common topics in the media and political agenda. These are not just technical issues. In environmental management, the crucial issue is to integrate and organize community members (laymen, ecologists, researchers, administrators, etc.) toward a common goal of self-sustainable life quality enhancement. How communities learn to deal with this crucial issue is the focus of this research. The focus is, in particular, river ecosystems' regeneration within critical contexts in terms of environmental and socio-economic challenges.

Like every human construction, this research moves from several 'assumptional bases' as they are defined by Rein & Schön (1996). First, ecology is not just a matter of natural conservation; it is about the quality of social relationships and the interaction between the natural and the social. When it comes to rivers, regenerative opportunities are related to the complex co-evolutionary processes characterizing ecosystems, within which humans and non-humans interact. Can such opportunities be found if the discussion does not include underprivileged citizens, i. e. the ones who do not have a voice at the decision-making table? Can they be found if the discussion does not acknowledge how the past is connected to the future, as well as how human and civil rights of present generations are connected to the future one's. The leading question is therefore two folded: why are rivers important

for democracy, why is democracy important for rivers? Both questions are crucial if the goal is to understand **how to improve ecological watershed planning for democratic communities**. In this research, such a question is addressed in several ways: after a brief overview of how watershed planning and its relationship with democratic issues are addressed by the broad disciplinary theoretical debate, the research focuses on how this topic is framed within two specific case of watershed planning, in Eastern Sicily, Italy and The State of Mississippi, USA. The main research question is addressed in the two contexts with two different methodological approaches: Participatory Action Research (PAR) is the methodology used in the first case, where a collective research and planning process has been coordinated by a partnership between researchers of the Department of Architecture, University of Catania, and a network of stakeholders from the Simeto river community in the widest watershed of Sicily (IT); case-study research is, on the contrary, the methodology used in the Mississippi case. The way in which (and the reasons why) both pieces of this research were conducted deserves an explanation. The traditional procedure for a research project is based upon a somehow linear process: methodological choices and fieldwork usually follow an initial phase dedicated to question shaping. In this case, the process was not linear, due to the intrinsic nature of Participatory Action Research (PAR): an approach that sees knowledge production as a collective endeavor. PAR is usually developed by mixed research-groups, in the form of community/ university partnerships. Mixed research-groups are composed by *engaged planning scholar,* i.e. *professional action-researchers,* together with *community-based action-researchers* i.e. various community members belonging to governmental and non-governmental sectors. In a collective and dynamic effort, *action-researcher*s interact in order to define research questions, theories, strategies and methods of a common project, aimed at affecting decision-making in its various aspects. Subsequently various biases and perspectives contaminate each other in research framing, and the act of reframing policy issues is endemic in a PAR process. In the case of this work, the main research question was the outcome of my engagement as action researcher with the Simeto community since 2009, when I was developing my master thesis in planning, and has then driven me to Mississippi with the need of explore it from a broader international perspective. In Mississippi there were not the conditions to carry a PAR experience, which very rarely can be conducted by a single researcher without a real community-based request; however, it was important, also from the perspective of my Simeto

community partners, to produce knowledge on collaborative watershed planning in a challenging context beyond the local Sicilian boundaries. In other words, I have been sent to Mississippi as a form of 'ambassador' on behalf of the Simeto community, with the purpose of exploring whether or not problems, values and methods of work we were using in Sicily made any sense in a context with similar challenges: for this purpose the case-study methodology was chosen as the most appropriate for the task. In this perspective, this research presents two 'cases' of watershed planning in two difficult contexts in a comparative fashion, but it has not to intended as a traditional comparative study: from a PAR perspective, the Mississippi Case-Study has been produced to 'serve' the Simeto process; at the same time, I carried my PAR ethos with me in Mississippi, where I felt obliged to embrace research in ways that enhanced reciprocity: I wanted Mississippi community to learn from me (and indirectly from the Simeto story I was embodying) as much as I was learning from them.

Details about the needy and greedy business of watershed planning in these two cases will be provided. Here, it is important to set the stage, underlining that there are always pre-existing theoretical assumptions – mostly related to the researcher's field experience – that lead the work. In the opening quote, Rein and Schön explain that every actor who participates in a collective process holds peculiar inner cognitive structures, boundaries, schemas of interpretation, and diagnostic/prescriptive stories *Frames* express specific ways of looking at and interacting with the world. This variety of perspectives is manifested in policy-making processes and, more generally, in human beings relations. Multiple perspectives are correlated with multiple systems of values, and contrasting systems of values may generate intractable controversies in public arenas. Being institutions called to manage such emerging controversies, various policy approaches can be followed in this never-ending fundamental task. In their work, Rein and Schön explore how *multiple frames* may contaminate each other reciprocally, in order to enhance decision-making; they argue the significance of a value-critical approach to face controversies in each specific context-based situation. According to them, a value-critical approach integrates policy analysis with action, the former being usually developed by researchers, the latter being usually guided by practitioners. Rein and Schön suggest overcoming this distinction: they highlight the necessity of framing policy issues collectively and critically reframing them, considering also the problem of including various social actors (for a more detailed discussion,

see Rein & Schön 1996, p.99-103). How does this relate to planning research? What Rein & Schön say about policy and decision-making is also true for research, especially when research is conducted as collaborative endeavor. Action-Researchers, in particular, are always internal nodes of collective processes of knowing. Based on the author's experience, *action-researchers* naturally carry their bias during the collective process; they are exposed to contaminate and to reframe assumptions continuously; they are also called to critically reframe research questions, theories, strategies and methods because of sudden changing connected with a complex reality. During a PAR process, *action-researchers* need to develop a self-reflective capacity (Schön, 1983) adapting their attitudes when facing moments of crisis, and adjusting their *modus operandi* according with the evolving process.

In the light of these premise, next paragraph presents how the author, as an internal actor of a PAR process, framed and reframed assumptions, theories and the overall borders of this inquiry. Chapter 1 discusses various streams of literature that have been reviewed in relation with ecological watershed planning for democratic communities. Chapter 2 discusses epistemological and methodological structures behind the choice of PAR as primary research strategy conducted in Sicily, and Case-Study Research as secondary research strategy conducted in Mississippi in relation with the PAR process. Chapter 3 explains similarities and differences between the native context of Sicily - Southern Italy, and the *State named after the Great River* - Southern U.S.A.; although this is not a comparative study, some contact points and divergences are clarified. Then, chapter 3 extensively narrates a *Mississippi Tale* and a *Simeto Tale*, in order to provide a wide discussion about community processes, i.e. conflicts and windows of opportunities that may regenerate two specific spoiled ecosystems. Chapter 4 focuses on experiential lessons that have been learned from the author as an *engaged scholar*, contributing to the debate about watershed planning in Europe and U.S.A.; methodological reflections are also discussed about the integrated approach "PAR – Case Study". Chapter 5 presents non-academic outcomes that the dissertation offers to the Simeto and Mississippi communities; it summarizes how reciprocal exchanges are opportunities for contaminating perspectives, and maybe for better relating each other as collective actors of dynamic ecosystems, i.e. as citizens belonging to local communities as well as to globally interconnected societies.

An autobiographic overview: framing and reframing assumptions

> "Knowledge is power but is new knowledge or newly organized knowledge that offers the greatest potential for shifting or maintaining power. Science provides much good in our lives, and scientists are members of a community of learners. We admire explorers, and explorers are brave learners about different and often dangerous circumstances. […] Great artists and athletes practice every day; they actively learn how to perform better". (Michael D. N., in Gunderson et al. 1995, p.478).

The following overview describes my academic journey, from the first PAR experience to the current research endeavors. I share these steps with the reader in order to clarify how the research process has been framed and reframed in relation with various experiences, and with persons whom I have met along the way. Doing so, I invite the reader to 'step in my shoes', providing some elements for identifying assumptions and biases behind the Dissertation that I present.

In 2006, as an Architectural Engineering Master student, I engaged for the first in a Participatory Action Research experience. It was a collaborative effort amongst the Municipality of Catania, the University of Catania – Department of Architecture, and a network of grassroots associations, to revitalize the city's Historical Market, enhancing collaboration between local inhabitants, workers, customers, etc. In that experience, I was exposed for the first time to the idea that urban and regional transformations are not limited to technical patterns; I experienced for the first time the importance of for formal experts of exchanging with numerous informal 'experts' possessing authentic knowledge and realizable ideas thanks to their rich life experiences. The Catania Historic Market project was a very challenging one, since, despite action-researchers' good intentions, the Municipality was genuinely committed to empower the local community, transforming the status quo (Saija & Gravagno 2009). Inspired by the Arnstein's well-known Ladder of Participation, I started questioning myself as to which category this project would fit. I was afraid the Municipality was using its institutional power in order to develop a manipulation-placation project more than an authentic participatory project. I was not convinced about the effective capacity of the University in shifting a deep-rooted system of power that has mauled my hometown for decades, as narrated by the anti-mafia journalist and Mafia's victim Giuseppe Fava (Fondazione Fava 2004). I questioned the effective role that can be played by

institutions and governmental stakeholders in planning; moreover, I questioned my own role, as student learning to be a professional.

Only after a couple of years, after a long and critical self-reflective process, I was able to overcome my conflicting attitude toward both the Municipality and the University (that at that time I perceived as problematic partners of a 'not-well-intentioned' Municipality). Re-engaging the dialogue with the scholars involved in the aforementioned collaborative effort, I reframed my judgment when I was able to recognize and appreciate their consistent hard work aimed at empowering the local community for a more functioning democracy. My observations were included in an academic paper written by two of them, Filippo Gravagno and Laura Saija. These individuals are scholars whom I had subsequently chosen as my advisors and mentors, for both my master thesis and Ph.D. research. I was triggered by their modus operandi, and a renewed trust allowed me to overcome the crisis. The article (published in Planning Theory & Practice, Vol. 10, No. 4., 2009) has a very clear title: Can Participatory Action Research Deal with the Mafia? : A Lesson from the Field. The title itself underlines Sicily's main challenges. During these years, I started reframing my bias toward participatory planning, understanding the importance of enhancing citizen engagement in decision-making processes, valuing grassroots and institutional collaboration.

Meanwhile, my evolving social consciousness drew me also into a self-organized student group called Collettivo TiroMancino – Ingegneria whose main goal was to enliven the public debate on global issues at the local community level. We were not only active in finding solutions for campus problems; we also contributed with our energies to various local grassroots projects whose visions we shared. During this experience, I trained myself to engage in the local political debate and to promote social awareness. Being the treasurer of a group committed not to petition for public funding, I had the task of making our actions economically self-sustained (independent fund-rising). We organized study-groups based on readings, movies, and writings using a variety of communication tools such as pamphlets and blogs. Thinking that campus is not just a place for scholarly activities, we organized community events such as collective lunches using local products, and annual public events with local artists and craftsman. As an active student, I was involved in a national campaign to promote a community approach for watershed management. In 2007, I participated in meetings and debates titled Water as a Common Good, which supported citizen initiatives and grassroots movements focused on reforming outdated laws and introducing best practices for this vital

resource. Through this involvement I further realized that I wanted to include rivers and their watersheds in my studies, and subsequently linked this important topic with my evolving interest in community participation.

Yet another defining moment in my journey would have to be taking the opportunity to attend the 2009 Community Organizing Workshop: Professor Kenneth Reardon, Ph.D., University of Memphis, and Wade Rathke, Acorn International, were invited by the University of Catania in partnership with a network of grassroots associations called ViviSimeto. Reardon and Rathke were invited as experts in Community planning and organizing, and they were asked to share their common work on promoting community development in the face of unjust power dynamics. The partnership's purpose was, and still is, to improve the Simeto River Valley's environmental and social organization, and they were hoping to learn tricks from Reardon and Rathke to be applied in the Simeto context. I was highly motivated by their enthusiasm and expertise. Admittedly, this workshop sealed my love for the river and I had no doubt that my master thesis had to serve the Simeto cause. As a consequence, I joined as graduating master student the mixed research and action group that, at that time, was initiating a long journey: I could have not forecast that, in a couple of years, that choice would have affected my life to the extent to which it has. For my master thesis, I co-coordinated the team, which developed a Community Mapping Initiative. We worked in a joint scholars-inhabitants research team as professional and community action-researchers with the aim of integrating different kinds of knowledge about the river landscape, and of defining the vision for the Valley, taking into account inhabitants' values, stories, critical observations and visions for the future. The project was very successful. In less than one year, between December 2009 and May 2010, we were able to involve about 1000 participants working with no public and research funding.

Many doubts arose during this path as well. First, I was questioning myself about the peculiar role that a trained engineer has to play when involved in bottom-up processes. Then, during the process some pitfalls occurred, such as: problems in communication; accidentally excluded citizens that petitioned inclusion; stakeholders experiencing the same skepticisms that I felt during the first approach to PAR; citizens mistrusting the government; governmental representatives ignoring the project; lack of funding, and so far so on. All these problems led the Simeto Action-Research team to adjust the direction of our experimental collaboration several times; we tried to enlarge the partnership more and more and studied current theories about collective watershed management, debating animatedly. During this experience I learned

two lessons. First: PAR projects are never stable and they continuously change in relation with endogenous and exogenous events. Second: although professional and community action-researchers may question and reframe various aspects of a collective project, some points remain stable as keystones for the partnership. In this case I observed that we all were working in order to democratize the decision-making process for regenerating the Simeto river ecosystem, taking into account socio-economic relationships and natural/anthropic interactions developed in this area for centuries. Above all, we were all driven by an unconditional love for a devastated and yet still resilient land. Despite self-critical reflections, the project gained several acknowledgements within the local community and by various external entities. A first successful outcome was a first draft of a community strategic plan with pilot actions; the draft was developed by a group of citizens, experts, and administrators. With this document we officially started the adventure of what we called The Simeto River Agreement PAR process. Professors Giorgio Pizziolo and Rita Micarelli advised us to frame the ongoing participatory effort within the Italian and international debate about collaborative watershed planning.

As a master student I also applied for a national competition called La Città dei Cittadini (A City Belonging to Citizens), promoted by the Casalecchio delle Culture association, and sponsored by the President of the Italian Republic. I won the First Prize for Master Dissertations and immediately felt both humble and grateful toward all the people involved in the Community Mapping project. I decided that I had to continue supporting The Simeto River Agreement process, as a citizen and as a scholar. To accomplish this decision, the day after graduation I immediately continued contributing to this effort voluntarily. I also applied for a Ph.D. program in Regional and Urban Planning still in the hometown of Catania. I had the great opportunity of attending the Program, although with no University funding. After months of hard working, this condition caused several struggles; I experienced the destabilizing perception that my institution did not properly recognize my work. I felt relieved every time I could share this condition with other Italian scholars who could not find a proper space within the Italian academia as well. Fortunately I had the constant moral support from my mentors, colleagues and friends within the Simeto community. Gratifications arrived also in other forms; I was able to overcome moments of crisis believing that hard and devoted work always leads to the fulfillment of personal aims.

I continued dedicating myself to The Simeto River Agreement PAR process as the main core of my Ph.D. inquiry. I worked following two directions.

On one side, I supported the effort of involving governmental representatives, inviting them to actively participate to the PAR process, in order to fulfill their institutional responsibilities. On the other side, I contributed to a community-design experience that was framed during the Community Mapping Initiative. We developed two pilot collective experiments in two delimited areas, questioning how human activities can find a balance with nature through ecological design, involving various local stakeholders. In one of these areas we were able to consistently work with schools focusing on children's experiential learning. This double experience has been widely described and discussed by a Ph.D. colleague, Antonio Raciti, in his final dissertation Il Progetto come Pratica Sociale (Community Design as a Social Practice). In this phase we worked with a renewed multidisciplinary research team; as a matter of fact two experts in Social and Psychological Sciences joined the research team, Santa Sicali and Milena Viani. We also enjoyed the precious support of friends whom I am always grateful to, Mara Basile, Enrico Cavalli, Alessia Denise Ferrara, Salvo Messina, Giovanna Regalbuto, and Carmelo Tomaselli.

In the meanwhile, I was developing a renewed curiosity about river ecosystems beyond the local context. It happened by serendipity that I had the opportunity to spend three months in the State named after the Great River, Mississippi – USA, supported by a EU-funded scholarship, at Mississippi State University (MSU) – Department of Landscape Architecture (LA). Once there, not only did I attend classes about watershed management, I also gave presentations and shared the Simeto experience with MSU various professors and students. They all showed a deep interest about the PAR process, recognizing the importance of various stakeholders' engagement and active involvement into the decision-making process. In particular two professors dedicated a conspicuous amount of time discussing similarities and differences between Sicily and Mississippi river basins: my LA advisor Prof. Wayne Wilkerson, Director of the Mississippi Water Resource Research Institute, was interested in my background as an engaged scholar; and Dr. Don Jackson, Fisheries Professor, Conservationist and Writer, was triggered by the manifested passion which I showed regarding rivers on behalf of the Simeto community. They allowed me to understand two contrasting frames when debating about aquatic ecosystems: one perspective is concerned with water as a resource for supporting commodities' production, especially for large-scale industrialized agriculture; the other perspective looks at rivers as integrated ecosystems including fisheries and wildlife, and the whole Life connected with them. I was so captured by these contrasting frames that I perceived that more

time dedicated to researching Mississippi might have been helpful also for the Simeto process.

In 2012 I applied for a Fulbright Scholarship to go back and spend more time in Mississippi, invited by the Head of MSU LA Department Prof. Sadik Artunç who understood my growing curiosity. Back in Italy for a while, I spent another semester working for The Simeto River Agreement effort that was slowly continuing on its institutional way. I was frustrated because I did not see immediate and consistent changes on the ground after years of hard work. The river was undoubtedly keeping flowing although its ecosystem was sick; local economies and societies around the water body were definitely suffering, in their spoiled conditions with deteriorated natural and human resources. While I was immerged in this challenging scenario, an honoring event occurred to me, as I was selected to be a Fulbright Fellow. I immediately felt grateful; then I started feeling thoughtful as I was leaving my native land again. Aware of the high significance connected with this opportunity, I focused on the great value that international exchanges have in order to share experiences amongst cultures, allowing a reciprocal learning. I was definitely enthusiast taking another step of my journey in another challenging context such as Mississippi, this time being a Fulbright visiting Ph.D. researcher.

From September 2012 to June 2013 I conducted Case-Study Research at MSU – LA Department. I decided to develop interviews to be done with key-informant on how collaborative watershed planning was conducted in the State Named after the Great River, and this brought me to travel around Mississippi exploring various ways in which local communities relate with rivers. While collecting precious stories to be brought back home, I felt committed to share some precious aspect of the Simeto story with the community was hosting me. The way I conducted interviews was strongly influenced by an "attitude of reciprocity," an attitude I had developed doing PAR in Sicily and supported by PAR literature. I purposely shared my background and biases with the interviewees, trying to develop an empathic mutual understanding. I prepared and showed a video about the Simeto River; I video-recorded the interviewees willing to be part of yet another video about river ecosystems in Mississippi. The fieldwork also gave me the opportunity of experiencing Mississippi natural areas awakening a spiritual dimension through a deep connection with its living environment, as Dr. Jackson predicted me in one of our initial conversations. Together with professors and students that I had already met during my first visit at MSU, I met new professors, students, and friends. Among them, a person provided me a consistent encouraging support, the

International Institute's Fulbright ambassador and scholar, Dr. Stephen Cottrell. He helped me understand U.S.A. southern culture and exploring its connections with the globalized world. He consistently improved my writing and provided cultural inspiration. Most importantly, he made me thinking critically. During our discussions, I developed a strong interest regarding underprivileged citizens; I decided to include the racial black-white mistrust, still characterizing in the Deep South, within the inquiry's boundaries, and to explore how these social struggles do relate with water governance.

While conducting the Mississippi case-study, I also engaged myself in various volunteering activities to serve the college town where I lived, Starkville MS. I chose those activities that were someway connected to a broad research interest about the interaction between communities and the environment. I realized that Food Security is an important piece of this relationship, being connected with agriculture and water issues in an embedded nexus, as recently highlighted by FAO's studies. Mississippi has a huge problem in terms of food diseases like obesity and diabetes, as well as food deserts, in a positive correlation with the highest levels of poverty in U.S.A., as U.S. Census Bureau shows. With this awareness, I decided to participate in a local Farm to Preschool Program called Fresh Start at Emerson Family School; the program is aimed at promoting hands-on gardening experiences and healthy life styles for children and families. I was designated as volunteers' coordinator, and the Parents and Teachers Organization (PTO) gave credit to my commitment during a public meeting. The Program won the President's Volunteers Service Award and the Volunteer Spirit Award. I also took part in a local Food Pantry organized at the St. Joseph Catholic Church, which is a Mississippi Food Network agency. These experiences touched me deeply for the challenges related to race, poverty and hunger in Mississippi.

Back in Italy again in July 2013, I planned to share my complex Mississippi experience with the Simeto Community as the last part of a binational fieldwork, but I had to revise my plans. The Simeto River Agreement PAR process was then at a renewed stage with renewed energies around it, and several events were happening continuously. Also, I was rushed and bound by current academic commitments proper of a Ph.D. student trying to close a chapter of a long research journey. I felt frustrated again because I could not immediately transfer properly the inspiring lessons learned in the State named after the Great River yet. Fortunately I was already trained by the uncertainty of a PAR process and I was able to reframe the inquiry's boundaries again. With this dissertation I try to share what I have learned not only in Mississippi, above

all during the whole 5 years fieldwork and reflections about communities and rivers. Up to this point, this is the best I have to offer as an open dialogue with the Simeto and Mississippi communities.

In this autobiographic overview, I want to communicate the experiential assumptions that frame the dissertation, giving the readers an opportunity of stepping themselves in my shoes with an empathic drive. I also highlighted pitfalls and frustrations as moments of personal crisis; the process of a self-reflective reframing has been a way to overcome these crises. Both the empathic drive and the reframing mechanism find theoretical foundations and empirical applications for natural and human ecosystems, as explained in the following paragraphs. In this paragraph I explicitly cited several persons, and I evocated other persons as part of the extended Italian - American community I worked with. I am deeply grateful to all of them; referring to Michael's opening quote, they all have been teaching me "how to perform better" and we are all part of a complex "community of learners". I close this autobiographic effort quoting Senator Fulbright's words in his speech as chairman of the Senate Foreign Relations Committee during the Johnson and Nixon administrations in 1967, while he was strongly criticizing the Vietnam War. Talking about the Regenerative Power of Youth, he says: "if I had to bet my money on what is going to happen, I would bet on this younger generation—this generation who reject the inhumanity of war in a poor and distant land, who reject the poverty and sham in their own country". "Rejecting the inhumanity of war and the poverty and sham in our countries" is the strongest assumption I have always carried in my life journey. I am grateful to the Fulbright Program, the International Institute of Education and the U.S.-Italy Fulbright Commission for the opportunity of learning through international exchange. Thanks to the Fulbright program, I was able to meet other young researchers from all over the world with the same attitude; they became international friends whom I am also grateful to. Sharing experiences with them, I validated the richness of being part of global interconnected societies. It is clear to me that in a common effort we all can learn how to value cultural differences and identities within our various local communities.

Chapter 1. Navigating streams of literature

> "The creature that wins against its environment destroys itself." (Bateson 1972, p. 497)

During a PAR process, *action-researchers* interact with theories in two ways. On one side, they posses their theoretical assumptions developed through individual studies, especially if *action-researchers* are Ph.D. students required to frame their fieldwork within a broader international debate. On the other side, *action-researchers* study and discuss collectively what they need to learn in order to improve the PAR process itself. Although these two paths are connected, Chapters 3 discusses broadly how *action-researchers* collectively embrace theory and what theories are used during the PAR process. This paragraph is rather aimed at highlighting the investigator's theoretical assumptions as part of a *cultural baggage* that has been shaped and reframed before and during the Italian - Mississippi fieldwork. Various streams of literature are explored and connected following this path:

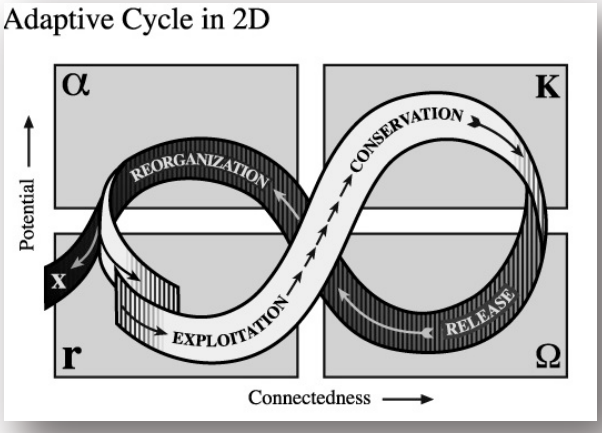
- Ecology is a matter of complex relationships inside human communities, and between human communities and the environment (Bateson 1972). Integrated ecosystems follow cycles of crisis and regeneration, adjusting to the evolution of unpredictable conditions (Gunderson, C.S. Holling et al. 1995).
- Within human societies, various stakeholders need to collaborate in order to face challenges and to manage common resources (Ostrom 1990).
- Collaboration does not mean to avoid conflicts, which allow diversities and inequalities to emerge (Flyvbjerg 1998).
- Conflicts can also be overcome in order to create renewed relationships inside human communities, and between human communities and the environment (Rifkin 2009). Emergent discourses may facilitate ecosystems' regeneration through paradigmatic changes based on a democratic dialogue (Martínez-Alier et al. 2010).
- Implications drawn in the watershed planning literature of the previous theoretical arguments.

1.1. Ecology and Planning

The starting point of this theoretical journey is the last part of Bateson's milestone *Steps toward an Ecology of Mind*, i.e. *Crisis in the Ecology of Mind* (Bateson 1972). According to the Bateson, ecology is a matter of complex relationships amongst human beings, communities, and the environment. Bateson also discusses the existence of an 'ecological crisis' generated by the decline of relationships between communities and their environment; the crisis is connected with the concept of human *hubris*, i.e. the self-perception of being highly powerful and able to dominate other entities such as other human beings, other living beings, natural resources, ecosystems, etc. Several scholars argue that hubris is based on a strong faith in the power of technology, or *technocracy* (Severino 1988; Galimberti 1999; Jonas 1984). Bateson describes hubris with a practical example: the huge catastrophes related to the use of *Dichloro-Diphenyl-Trichloroethane* (DDT). The powerful insecticide was discovered in 1939 and allowed a massive industrial agricultural production, and saved human lives especially war troops soldiers from diseases such as malaria. The world became addicted to DDT, perceived as a tool able to ameliorate human conditions. However, the discover of DDT's devastating effects was divulgated by books like Carson's *Silent Spring* (1962) and rose a general awareness. It was clear that this highly celebrated scientific solution could not solve human struggles without causing other negative effects. Although DDT was banned in the 70s, ecosystems like the Mississippi and the Simeto Rivers are still contaminated (for a detailed description of the Mississippi contamination see the *State of the River Report* published in 2013 by a the U.S. Natural Park Service). Returning to Bateson's groundbreaking work, he does not condemn technology *in toto*, rather he suggests a wise use of technology. He points out that civilizations have historically risen and fallen accordingly with their capability of being adaptable and flexible. He closes his reflections demanding institutions and planners to consider flexibility and adaptability as fundamental ecological principles to be embraced. DDT was unsuccessful in the long run because it was able to target and control just one variable destabilizing others, ignoring that ecosystems are nets of complex interactions in a bound and co-evolutionary relation with human societies.

Bateson's work is strongly related with the more recent debate on Socio-Ecological Systems (SESs). The nested relationship between human

communities and non-human biotic/abiotic communities, i.e. a Social Ecological System, has been explored via multidisciplinary research. Scientists such as Lance H. Gunderson, C.S. Holling and others (1995) embraced a debate that is still highly vibrant amongst scholars referring to the *Resilience Alliance* and to the *Millennium Ecosystem Assessment* (2005). The concept of resilience has been introduced in ecological studies by Holling in 1973; in a nutshell, resilience is "the amount of disturbance a system can take before its controls shift to another set of variables and relationships that dominate another stability region", using Holling's own words (2003) in a personal communication with his colleagues (quoted in Folke 2006, p.254). He argues the "existence of multiple stability domains or multiple basins of attraction in natural systems" (ibid.), i.e. the various potential states which a system can tend to. In other words, resilience is explained answering the question "how much can you change before loosing your identity?", i.e. before changing your "basin of attraction", with Brian Walker's words during an outreach lesson at the Stockholm Resilience Center. Resilience is a specific property of SESs together with adaptability and transformability; adaptability is "the collective capacity of human actors in the system to manage resilience", while transformability is "the capacity to create a fundamentally new system when ecological, economic, or social (including political) conditions make the existing system untenable" (Walker, 2004). These attributes describe SESs together with the Adaptive Cycle, i.e. a flow of events that have been observed in self-organized systems. Although not all SESs are the same, the Adaptive Cycle helps grasping their complexity. The cycle is characterized by four ecological functions: r-periods of growth, exploitation and exponential change; K-periods of accumulation, conservation and rigidity; Ω-periods of restructuring, readjustment and collapse; α-periods of reorganization and renewal (Gunderson and Holling 2001; see picture 1). These processes happen within the so-called *Panarchy*, named



Picture 1. The Adaptive Cycle
(Gunderson and Holling 2002, p. 34)

after the Greek god Pan "as an epitome of unpredictable change" (Holling 2001, p.396). Panarchy is

> "a cross-scale, nested set of adaptive cycles. […] The panarchy is a representation of the ways in which a healthy social-ecological system can experiment, benefiting from inventions that create opportunity while it is kept safe from those that destabilize the system because of their nature or excessive exuberance. Each level is allowed to operate at its own pace, protected from above by slower, larger levels but invigorated from below by faster, smaller cycles of innovation. The whole panarchy is therefore both creative and conserving. The interactions between cycles in a panarchy combine learning with continuity" (ibid. p.396-398).

Radical transitions occur when abrupt changes and turbulence destabilize rules and social mechanisms. With a metaphor, "navigating transitions […is like...] shooting the rapids […] with several alternate vessel configurations" (Olsson et al., 2006); after a preparation phase, transformations happen and open several windows of opportunities. Through empirical studies on five critical ecosystems, Olsson et al. observe the significance of building common knowledge and coordinating actors' before and during transformations. Creative leadership is called to improve collective action connecting people, making sense out of complexity and allowing trust amongst various actors. Shadow networks help facilitating information flow. Olson et al. finally suggest key-lessons such as learning to re-conceptualize issues, to integrate diverse ideas, and to move across levels of governance. In times of rapid change, it is also important to maintain Social Memory as:

> "the arena in which captured experience with change and successful adaptations, embedded in a deeper level of values, is actualized through community debate and decision making processes into appropriate strategies for dealing with ongoing change" (Folke et al. 2005, p. 453).

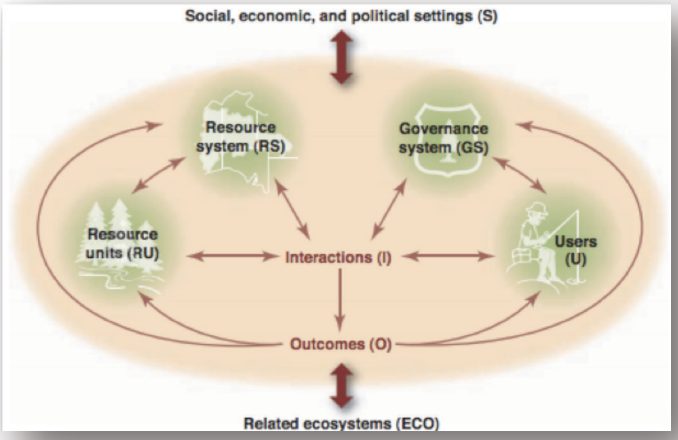
As anticipated in the Autobiographic note, the reframing process is a mechanism that allows a creative process of regeneration for human beings as well as whole social-ecological systems.

As a matter of fact, both Bateson's 'flexibility/adaptability', and Panarchy's 'resilience/adaptability/transformability', consent complex systems to survive through changes. In doing so, complex systems also need to cope with organizational structures, collaboration amongst various

entities and self-organization. These processes are widely discussed by the Nobel Laureate in Economics Elinor Ostrom, who also contributed to the debate about SESs pointing out the current catastrophic loss in vital common pool resources such as fisheries, forests and water resources, and the necessity of improving a common theoretical framework in order to cumulate knowledge for sustainability (in *Science* 2009).

1.2. Do ecological relations require collaboration?

Ostrom identifies main SESs' subsystems and a set of variables that describe self-organization. In synthesis, subsystems are: users, governance system, resource units and resource system. These subsystems interact within social, economic and political settings producing outcomes that affect related ecosystems. Institutional Analysis and Development (IAD) and Common Pool Resources (CPRs) have been lifelong research topics for Ostrom, her husband Vincent Ostrom and various interdisciplinary scholars connected with them. In *Governing the Commons* (1990), she investigates how institutions evolve in order to manage CPRs. Common goods differ from public and private goods because of two integrated characteristics: subtractability of use, that is a characteristic of private goods; and difficulty of exclusion, that is a characteristic of public goods. CPRs possess both characteristics simultaneously. CPRs need to be managed through collective action overcoming the so called "social traps": the tragedy of the commons (Hardin, 1968), the Prisoner's Dilemma (Dawes, 1973) and the logic of collective inaction (Olson, 1965), i.e. all those mechanisms that do not allow collaboration amongst various stakeholders, especially when "free riders" do not contribute to the joint effort of others. Through empirical studies about long enduring institutions, she identifies *Eight Design Principles* that facilitate the process of governing collectively CPRs: "clearly defined boundaries of the



Picture 2. SESs and CPRs (Ostrom 2009, p. 420)

CPR; congruence between appropriation and provision rules and local conditions; collective-choice arrangements; monitoring; graduated sanctions; conflict-resolution mechanisms; minimal recognition of rights to organize; for CPRs that are part of larger systems, nested enterprises i.e. multiple organizational layers" (Ostrom 1990, p.271). Beyond these principles, Ostrom points out the crucial role of *trust*; during the Nobel Prize Lecture at Stockholm University in 2009, Ostrom underlines this "five letter long word" as a necessary characteristic for governing CPRs and "building trust" as a lesson to keep in mind. During the same Lecture, Ostrom also underlines another lesson: "panaceas are not recommended". This lesson is confirmed when the author discusses the challenge of self-governance in complex environments (in *Journal of Speculative Philosophy* 2010), arguing that there are no "sure cures" for self-governance but each local community possesses its own organizational rules. Self-governance is based on the observation that local communities can implement polycentric approaches with multilevel processes, intertwining at least three levels of governance in reciprocal control: central governments, municipal government and "political pressure from local community-based organizations and nongovernmental organizations working on local resource management" (ibid. p. 324). Ostrom provides a clear motivation for the necessity of self-governance, stating:

> "In an era when human rationality is thought of in terms that involve almost superhuman capabilities in some domains, it is paradoxical that the human capacity for self-reflective thought and social artisanship is almost entirely ignored. In the policy sciences evolving from economics, game theory, political science, and decision theory, the individual is frequently modeled as possessing complete information about his or her environment, a clearly ordered set of goals, and the internal computational skills to find global optima in complex and difficult worlds. These sophisticated calculators are, however, presumed to have the foresight of the proverbial ostrich. Individuals are modeled as focusing exclusively on the choices available to them in a proximate situation without any capability to change the constraints of that situation. It is obviously the case that individuals do face many situations over which they have little or no control, at least in the short run. It is also obvious that human beings, faced with perverse situations, try either to avoid them or to change them" (ibid. p. 316, 317).

Ostrom rejects the convincement that self-organized individuals do not have the capability of changing toward desirable outcomes, confirming again the crucial role of reframing policy issues through collective dialogue

and self-reflective attitudes. Local communities possessing organizational rules do not need strong top-down government intervention in order to manage CPRs; with a complex and polycentric organization, local community can function properly. Open questions still have to be investigated such as

> "is there general agreement on the rules related to who is included as a member with both benefits and responsibilities? [...] Are these rules considered legitimate and fair?" (ibid. p.329).

While Ostrom provides detailed insights for understanding what does collaboration mean, a complementary reflection about conflict, equality and inclusion needs to be explored. For example, among the *Eight Design Principles* there is one principle, the "conflict-resolution mechanism", that evocates another stream of literature. Ostrom herself, during the aforementioned Nobel Prize Lecture, declares: "Every place has conflicts; if you have a local way to resolve conflicts you can make a difference". Moreover within the SESs framework Olsson et al. (2006) recommend: "Create cooperation and transform conflict, but always be happy with some rhythm of conflict and ensure that channels for expressing dissent and disagreement are always open". Discussing about adaptive water governance Scholz, Stiftel et al. (2005) argue that collaborative practices

> "Create spaces where adversaries can explore together and develop agreements that leave them better off. Science advances; solutions emerge; but conflict lives on. Only now, it does so with new social and political rules and structures that encourage more efficient and perhaps more equitable next steps" (p. 237-238).

1.3. Collaboration excludes conflict?

The tension between conflict and collaboration is one of the fundamental dilemmas about human nature, being conflict and collaboration considered as antithetic approaches. Flyvbjerg (1998; 2001) traces the philosophical discourses that are behind this debate referring to Aristotle, Habermas, Nietzsche, and Foucault. With the "theory of communicative action", Habermas seeks for consensus building. Foucault, following Nietzsche on history and contexts, explores conflicts and considers relations of power as inescapable conditions for societies. Referring to Foucault, Flyvbjerg argues the necessity of "empowering Aristotle" again (Flyvbjerg 2001, p.110). With this expression, he suggests to include the Aristotelian

virtue of *phronesis* within contemporary social debates. He points out that *phronesis* is like a lost virtue that is not even proper translated anymore. *Phronesis* expresses, he argues, the "practical value-rationality" posing ethical questions such as "Where are we going? Is this desirable? What should be done? […] Who gains and who loses, by which mechanism of power"(ibid. p.60). Huxley and Yftachel (2000), Yftachel (2006) also warn about the risk of the "communicative turn" of scholars, highlighting some limits of collaborative planning in contexts where marginalized ethnicities cannot express their needs for peculiar spatial issues. Amongst collaborative planners, Healey (1997; 2003) highlights that

> "Even the most stable of governance regimes is always changing in some way, and, through astute mobilization, windows of opportunity and cracks in the structure can be opened up through which other ways can get leverage. […] In complex urban governance contexts, with multiple actors, arenas, and struggle over discourses and practices, strategic actors who can make a difference will be those who focus on real opportunities for innovation and who work with the grain of the emergent properties of specific solutions" (Healey 2003, p.117).

Gravagno (2002) argues how conflict can be a creative process that allows different potentialities to be expressed: planners are called to dismiss the role of neutral mediators and to embrace the role of active participants within the planning process, in order to let various systems of values emerge and to organize diversities.

Following this train of thoughts, it can be assumed that the issue of how to enhance environmental planning, in general and also in the case of watershed planning, cannot be separated from the more complex Democratic issue. The same train of thought also teaches us that Democracy is not an ideal status to be reached once and for all, but it is a complex social process, where conflict does not exclude collaboration and vice versa; on the contrary, a wise alternation is desirable otherwise aberrations appear. Uncritical consensus building leads to maintain unfair relations of power. Abuses remain hidden, if collaboration is built upon myths that confuse the deliberative debate. Conflict may disclose the variety of values and perspectives that coexist within complex systems, and it may catalyze creative change. On the other side, the perennial exacerbation of conflicts does not allow to face challenges effectively, to achieve common goals and to move forward. Conflict operates as a candle able to turn a light on

inequalities and to let diversities emerge (Gaventa 1980), but the candle cannot burn forever and controversies need to be unlocked.

1.4. Conflict is the only way?

Going back to Rein and Schön's opening words, the contamination of *multiple frames* and the *collective process of reframing policy issues* may help facilitating the dialogue. *Stepping in someone else shoes* with an empathic drive is an attitude that current and future generations may need to consider in order to improve the relations within human communities, and between human communities and the entire biosphere. In *The Empathic Civilization* (2009), Rifkin explores the history of humankind discussing the evolution of the so-called *Homo Empathicus.* Based on recent neuroscience findings, human brain, like some other animals' brain, possesses mirror-neurons that are responsible for imitation and for the capacity of adopting somebody else's point of view. The empathic drive allows sociability, companionship and solidarity, developing the feeling to belong within extended groups. *Homo Empathicus* started belonging to local tribes through blood ties, then to religious groups through faith ties, then to nations through cultural ties. Rifkin argues that the human race has reached a point that calls for a global sense of belonging. Through empathy, human societies may start looking at the entire biosphere including other fellow creatures as an extended family, maintaining blood, religious, cultural identities. Rifkin argues for the necessity of rethinking the human narrative in terms of collaboration instead that aggression and oppression, as the only way that human societies have to survive. Institutions need to rethink themselves toward more empathic organizational structures.

Rifkin's reflections are connected with the general debate about sustainability. In *Entropy* (1980) Rifkin again discusses the history of humankind in relation with the second law of thermodynamics as an ineluctable principle for life. He describes how civilizations have gone through sequences of entropic watershed, i.e. periods when societies faced crises and reorganization of energy resources. Rifkin's reflections are based on the groundbreaking work of Georgescu-Roegen, *The Entropy Law and the Economic Process* (1971). Georgescu-Roegen underlines the necessity for economies to change direction, arguing that the mechanism of maximizing production-consumption cannot last forever in a finite world. Georgescu-Roegen's positions are more radical than the mainstream positions about

sustainable development based on the Club of Rome's *Limits to Growth* (Meadows et al. 1972). Together with Georgescu-Roegen, several other scholars argue the necessity of a "prosperous way down", with Eugene and Howard T. Odum's words (in Martínez-Alier et al. 2010). A variety of reflections on the topic generated the field of ecological economics as an integrated research approach, observing that "current economic paradigms have some serious shortcomings when it comes to dealing with natural resources […and that…] ecological paradigms tend to ignore human cultural behavior as an object of direct study" (Costanza and Daly 1987). Sustainable de-growth emerged as an "equitable and democratic transition to a smaller economy with less production and consumption" (Martínez-Alier et al. 2010. p. 1471). Even if Georgescu-Roegen and the Club of Rome had some contacts points (Levallois 2010), sustainable development and alternative approaches such as de-growth followed two different paths. While sustainable development was recognized as the feasible path in the dominant culture to be implemented through a system of technological solutions and incentives, sustainable de-growth has been maintained as a marginal hypothesis. Beyond the controversies amongst approaches (Kallis 2011) and the disputes about GDP/GNP as proper indicators for wellbeing (van den Bergh 2010), sustainable de-growth discourses are emerging up again. Ongoing debates are flourishing at a scholar level as well as at a grassroots level, with international conferences such as Paris 2008; Barcelona 2010; Montreal 2012; Venice 2012, and international networks such as Research & Degrowth. The discussion focuses on implementing practices aimed at overcoming the crisis line of the current entropic watershed with a deep paradigmatic change. This radical change can be synthesized with Latouche's "eight Rs program" (2007): re-evaluate, re-contextualize, remodel, relocate, redistribute, reduce, reuse, and recycle. Moreover, the change is based on a democratic approach to ecology based on laypersons' experiences, in order to overcome technocratic mechanisms of exclusions (Gorz 1975).

Another criticism to mainstream approaches for sustainable development is manifested within the Environmental Justice (EJ) framework. Inspired by the Civil Rights Movement, EJ is a grassroots effort that is active in U.S.A. since the 80s, when several underprivileged communities started a struggle against discrimination in the allocation of industrial hazards (Cole and Foster 2001; Rechtschaffen and Gauna 2002; Checker 2005). EJ is based on the principle that every citizen needs a healthy environment. There is assonance between EJ claims, and the echoes of debates about deep ecology

as intended by Lovelock (1979). As a matter of fact, the first EJ principle affirms the "sacredness of Mother Earth, ecological unity and the interdependence of all species, and right to be free from ecological destruction" (in Agyeman 2003). EJ is not disjointed by the general reflections about sustainability. Agyeman underlines the relation between sustainable societies and just societies, between environmental quality and human equality. He argues that there is no meaningful sustainability with a huge gap between levels of wealth and levels of poverty. In the light of these reflections, sustainability needs to be discussed within a broad democratic dialogue that allows citizens and experts to cooperate collectively embracing environmental challenges and changes (Fisher 2000).

1.5. Implications for watershed planning

In this polycentric journey across streams of literature, it is now time to ground theoretical discourses with practical experiences connected with water and rivers as vital cores of the biosphere. 2013 is the UN International Year of Water Cooperation. States are invited to work together and to guarantee enough fresh water and adequate living conditions for all human beings (UNESCO 2013). Being a vital resource, water may generate conflicts due to different stakeholders' perspectives and it may also be a catalyst for cooperation (Wolf 2007). After years debating if water has to be explicitly considered a human right (Gleick 1998; Hardberger 2005), 2010 UN Resolution 64/292 has confirmed that drinking and sanitation are basic needs. The UN resolution is particularly significant in contexts affected by drought, water scarcity and general lack of the essential infrastructures such as wells and aqueducts. More generally the resolution invites citizens to be aware of decision-making processes about water, and local communities are called to embrace collective responsibility. Despite the debate about watershed management is still open in terms of various governance approaches (Langford 2005; Bakker 2007; Distasio and Ciervo 2011), it is recognized that equitable distribution of water requires joint community efforts (Pahl-Wostl et al. 2007). Water is not an isolated fluid. Fresh water circulates through hydrogeological configuration creating streams, rivers, aquifers, lakes, wetlands, etc. and their living habitats. Rivers and their ecosystems provide resources, in particular for rural economies, and also generate symbolic meanings in different cultures around the world. The Bioregional Movement (Aberlay 1993) identifies rivers as the vital circulatory system of Earth. Although water is an essential necessity for life,

communities are not always able to have harmonious relationships with it. Flooding, pollution, landscape degradation, and resource crises are common topics in the media and political agenda. Their ecological challenges are usually related with groundwater depletion, rivers impairment, flood and pollution. Following lessons that can be drawn from Bateson, Gunderson and Holling, Ostrom, Rifkin, Martinez-Alier among many others, human societies are called to collectively embrace a democratic dialogue in order to improve the relationship with aquatic ecosystems, reframing issues and transforming challenges into solutions through an empathic attitude.

In *Design as a Value System*, the eclectic and creative Landscape Architect Lawrence Halprin (1989) highlights how environmental projects are related to context, social and economic characters of a community. These aspects refer to peculiar cultural dimensions, what Norberg-Schulz (1979) defines as *Genius Loci*. According to Halprin, environmental design has a strong responsibility for the future; it is an opportunity to enhance communities in building wise relationships with ecosystems, based not only on physical needs, but also on immaterial aspirations. In a holistic sense, natural and cultural aspects are deeply connected in landscapes (Spirn 2005), and participatory practices may allow communities to define actively which future do they want (Fortmann 2008). With these framed and reframed assumptions, after an epistemological and methodological clarification, next chapters explore the relationship between communities and rivers through the *Genius Loci* of southern contexts such as Sicily (IT) and Mississippi (U.S.A.).

Chapter 2. Epistemology and methodology

2.1. Research paradigms: an epistemological choice for planners

> "When paradigms enter, as they must, into a debate about paradigm choice, their role is necessarily circular. Each group uses its own paradigm to argue in that paradigm's defense. The resulting circularity does not, of course, make the arguments wrong or even ineffectual. The man who premises a paradigm when arguing in its defense can nonetheless provide a clear exhibit of what scientific practice will be like for those who adopt the new view of nature. That exhibit can be immensely persuasive, often compelling so. Yet, whatever its force, the status of the circular argument is only that of persuasion. It cannot be made logically or even probabilistically compelling for those who refuse to step into the circle." (Kuhn 1962, p.94)

The introduction has provided an overview of the investigator's assumptions in relation with peculiar experiences and studies. Creswell (2013, p. 21) clarifies the role of various philosophical assumptions and how they are related with practical research choices. Answering the question "what is the nature of reality" (ibid.) is an ontological problem. Answering the question "what is the role of values in research" (ibid.) is an axiological problem. In the Introduction, referring to Rein and Schön, I argued that reality is framed and reframed according with a multiplicity of perspectives, and that various perspectives are based on various systems of values. This means that reality may be conceived, for research purpose, as a synthesis of many views even though biases are an unavoidable part of the inquiry process. The most honest thing that a researcher can do, therefore, is to clarify his/her epistemological and methodological assumptions, i.e. explicating "what counts as knowledge and what is the relationship between the researcher and that being researched […as well as…] what are the process and the language of research" (ibid.)

These clarifications can also help avoiding common misunderstandings amongst scholars who assume different research paradigms. I thus start the epistemological argument with a discussion about paradigms and paradigmatic choices within this planning research.

According to several scholars (Campbell et al. 1996; Mandelbaum et al. 1996), urban and regional planning is concerned with decision-making

about natural, anthropic, physical and cultural aspects of societies. Beyond this general mission, there exist various ideas regarding *what planning is, what planning research is, and how it has to be developed*; in synthesis, there exist various planning research *paradigms,* using a Kuhn's (1962) epistemological definition. In *The Structure of Scientific Revolutions* (1962), Kuhn defines a *paradigm* as

> "a vehicle for scientific theory […] telling the scientist about the entities that nature does and does not contain and about the ways in which those entities behave. That information provides a map whose details are elucidated by mature scientific research. […] paradigms provide scientists not only with a map but also with some of the directions essential for map-making. In learning a paradigm the scientist acquires theory, methods, and standards together, usually in an inextricable mixture" (ibid. p. 109).

Kuhn argues that paradigms are stable for normal sciences; on the contrary, paradigms are destabilized and revised when a scientific revolution occurs, for example when Cosmology shifted from Ptolemy to Copernican systems. Normal sciences are characterized by specific paradigms; on the contrary, *pre or post paradigm periods* are moments of crisis when bodies of knowledge need to be reorganized due to important discoveries and to the evolutionary character of human learning.

How are these discourses connected with planning research? If one accepts the fact that regional and urban planning, especially environmental planning, is based on an intertwined complex mixture of natural and social sciences for policy making, stable paradigms are not easy to trace. Funtowicz and Ravetz (1991) introduce the idea of *post-normal science* arguing

> "the approach used by normal science to manage complex social and biophysical systems as if they were simple scientific exercises has brought us to our present mixture of intellectual triumph and socio-ecological peril" (Funtowicz and Ravetz 2003, p. 1).

Specifically, "when we are confronted by scientific riddles of global environmental policies, we can no longer maintain the fiction of a *normal* economic science" (Funtowicz and Ravetz 1994 p. 197). When the discussion is focused on socio-ecological systems, Funtowicz and Ravetz suggest that science "is no longer imagined as delivering truth. […] It entails the democratization of knowledge […], the multiplicity of legitimate perspectives and commitments, and provides new norms of evidence and discourse" (ibid.

p198). This is not to be intended as an apocalyptic surrender for truth; on the contrary, *post-normal* science legitimates an extended community of learners in search for "extended facts […including…] craft wisdom and community knowledge of places and their histories" (Funtowicz and Ravetz 2003, p. 7). Still acknowledging Kuhn's definition of paradigms, *post-normal* science suggests including a variety of legitimate perspective in the democratic dialogue about the environment. Recalling Kuhn's initial quote, it is an extended invite "to step into the circle", shaping the circle collectively.

In this perspective, it sounds reasonable to say that planning paradigms need to be framed and reframed according with the variety of stakeholders that take part into the planning process. Assuming democracy as the founding principle for planning, research paradigms need to be founded on the same democratic principle. In order to answer the question "what counts as knowledge", it is necessary to involve a variety of stakeholders into an extended legitimated community of learners. This is to say that compelling planning knowledge and innovation need to be produced within a democratic research process. What counts as knowledge is what the extended community of learners needs to know in order to self-organize within a democratic planning process. Specifically for this planning inquiry, research questions are deeply rooted on a democratic principle. Asking "Why are rivers important for democracy, why is democracy important for rivers? How to improve ecological watershed planning for democratic communities?" reveals a democratic approach to planning, and to planning research as well. That is to say, democracy is the founding declared paradigm shaping this inquiry.

Incorporating democracy in planning research introduces challenges and it does not facilitate the task. On the other side, it allows facing controversies with the pragmatic aim of including all those social actors that are directly affected by planning practices. The topic has been widely discussed by Fischer in *Democracy and Expertise* (2009). Moving from Dewey (1927), who claimed for cooperative efforts between citizens and experts, Fischer explores this relationship citizens/experts in the light of contemporary issues, questioning how deliberative democracy can be practically improved. Dewey has proposed a form of cooperation based on the division of labor between experts and citizens, the firs responsible for facilitating the public debate, the latter responsible for informed political judgments. Considering the evolving issues of technocracy (Fischer 2000), Fischer proposes to overcome this separation, arguing that is necessary to

"open up the empirical/normative divide" (Fischer 2009, p. 110). This position is based on social constructivist and post-empiricist debates about knowledge. Social constructivists say that knowledge is "the result of a confrontation among different interpretations, […] a constructive synthesis leading to a new inter-subjective perspective" (ibid. p.113). Post-empiricists argue how "scientific accounts are generated by observers with different types of educational training, ideational frameworks, research experiences, perceptual capacities, and the like. The objective is to understand how these varying cognitive elements discursively interact to shape that which comes to be called knowledge" (ibid. p. 114, 115). Fischer discusses how knowledge is co-produced within a deliberative process that has to be problematized in terms of participation. Beyond the assumption and the practical evaluation that lay citizens can, and have to, participate in open policy-making processes, the practical questions become: why and how should they do that? What forms of outcome may be expected? How to catalyze the participatory process? How to incorporate in the debate issues connected with relations of power and conflicts? From an epistemological perspective, what kind of knowledge produces preconditions for an integrated cooperation citizens/experts based on an experiential dimension of learning? Fischer highlights the necessity of exploring policy assumptions as guiding principles for deliberation, validating the process of a collective problem framing, rather than a technocratic problem solving. Within problem framing, conflicts and clashing of ideas are vital signals. The act of reframing allows transformative learning and the opportunity for adaptive organizations. Fischer suggests exploring this process of experiential learning through

> "The role of narratives, tacit knowledge, the inter-subjective empowerment of deliberative spaces, and the complicated question of the role of emotion in public deliberation. All of these issues pertain to deliberative empowerment; none of them suggest that the task is easy. It is thus important to have a better grasp of the terrain ahead" (ibid. p. 298).

In the light of these premises, "what counts as knowledge" is what allows a way for "democratizing democracy" (Sousa Santos 2005); specifically for planning researchers, in order to "democratizing democracy", it is necessary to "democratize expertise" and the production of knowledge through a democratic approach to research (Gravagno 2011).

2.2. Why reciprocity in research

If one accepts that reality can be addressed by democratic research only with the engagement of a variety of actors and different perspectives, a crucial issue is how the researcher relates, in his/her process of knowing, with them. In other words, we need to problematize the relationship between the researcher and the researched. Within the post-normal epistemological perspective, such a relationship has to be intended as feeble boundary. In this specific case "the research object" is the democratic process occurring in river basins intended as socio-ecological systems. Within river SESs, there are various stakeholders that are part of extended communities of learners. The researcher is part of these extended communities of learners and interacts with them through relations of reciprocity. This means that: first, researcher shares his/her own biases with other members of the extended community of learners; second, researcher shares lessons learned within the extended community of learners. Although this clarification comes out from the necessity of synthesizing a specific research mechanism, to some extents it is rooted in a broader debate. Reciprocity is consistent with the same aforementioned social constructivist and post-empiricist debates. More generally, reciprocity is connected with all the philosophical reflections that came out after that two physical principles were declared, specifically the "Observer Effect" for macrophysics, and "Heisenberg Uncertainty" for quantum mechanics. With no attempt to uncritically extend physics laws to human interactions, a plausible point can still be discussed: it is reasonable to say that observers cannot observe phenomena without modifying the evolving characters of phenomena and without modifying themselves. Furthermore, from a sociological standpoint, Giddens (1982) highlights the mechanism of "double hermeneutics", which means that researchers study societies which researchers are contemporarily part of. In this respect, researchers are, at the same time, subjects and objects of their studies, with the "two possible modes in which the social sciences connect to their involvement in society itself: as contributing to forms of exploitative domination, or as promoting emancipation" (ibid. p.14). The latter is the option pursued within this inquiry. In addition, neuroscience studies (Rizzolatti et al. 2001) give more insights on the function of "mirror neurons", i.e. those neurons that are responsible for the empathic drive discussed in chapter 1. These discoveries produce a deeper understanding

and awareness about a natural attitude for human beings, i.e. the attitude of assuming others' perspectives. That is to say, reciprocity is a variegated epistemological principle inspired by the clearly stated choice of contaminating biases and perspectives while conducting research, rather than maintaining value-neutral positions.
In this research, the principle of reciprocity has been applied through two different methodological approaches, both inspired by post-normal epistemologies: Participatory Action Research (PAR) and Case-Study Research (CSR). An overview of both strategies is provided in the next paragraphs, together with a discussion about their consistency with declared research paradigms.

2.3. Participatory Action Research (PAR)

> "There is no 'short answer' to the question 'What is action research?' [...] A primary purpose of action research is to produce practical knowledge that is useful to people in the everyday conduct of their lives. A wider purpose of action research is to contribute through this practical knowledge to the increased wellbeing – economic, political, psychological, spiritual – of human persons and communities, and to a more equitable and sustainable relationship with the wider ecology of the planet of which we are an intrinsic part. [...]; it is to liberate the human body, mind and spirit in the search for a better, freer world." (Reason and Bradbury 2001, p.2)

In order to "democratize expertise", a feasible approach is Participatory Action Research. Reason and Bradbury (2001)'s quote captures in a nutshell Participatory Action Research's complexity. PAR is a research strategy that moves from various epistemological approaches that incubate a critical position in respect of positivist science, such as the aforementioned social constructivist and post-empiricist perspectives. PAR is founded on the intrinsic integration between knowledge and action for producing practical innovation, toward a *participatory worldview*, i.e. "a participatory understanding of the underlying nature of the cosmos we inhabit and which we co-create" (ibid. p.7). "There exists a great amount of good-will, of readiness to face the problem squarely and really to do something about it. If this amount of serious good-will could be transformed into organized, efficient action, there would be no danger for intergroup relations" with the words of Kurt Lewin (1946), who is considered one of the PAR's fathers with his experiments on minorities groups. PAR catalyzes the process of organizing some "good-will" that is generated within complex contexts. It is

through renewed forms of organization that PAR advances knowledge. Reason and Bradbury highlight that PAR has a variety of origins beyond Lewin's practices for social democracy, such as: indigenous traditions; Gramsci's educational works and Freire's liberation of oppressed; emancipation of race and gender; experiential learning; spiritual practices as forms of inquiry; critical thinking. Boog (2003) highlights the emancipatory character of various PAR projects, "meant to be a double-sided process of research, self research and education directed at individual empowerment and collective empowerment and/or emancipation" (p.426). Reardon (2006) experiences and discusses processes of empowerment in low-income communities, arguing the importance of reciprocity within community/university partnerships. Reciprocity is possible accepting creatively "the limitation of positivist-oriented scholarship in order to benefit from reciprocal learning" (p.107), and the occurrence of "frequent organizational conflicts that requires repeated reframing of the project" (ibid.). PAR is often associated with what Boyer defines "the scholarship of engagement", which is receiving a growing attention in higher education (Boyer 1990); based on a definition of Ernest Boyer, this expression describes "a host of practices cutting across disciplinary boundaries and teaching, research and outreach functions in which scholars communicate to and work both for and with communities" (Barker 2004, p. 124), emphasizing "the process of democratic decision making, or the substantive result of social transformation" (ibid. p.133).

Many critiques have been addressed toward engaged-scholars doing PAR; they are accused of lacking a proper scientific research strategy, being often perceived as researchers conducting a hybrid academic activism, or a professional exercise from an academic position. This double critique comes from the fact that traditional researchers question PAR's intrinsic inclination toward producing innovation trespassing the academic boundaries. As a matter of fact, if PAR's goal is the improvement of those contexts where PAR itself occurs, it is necessary to do research outside the so-called "ivory towers" of academies. On the other side, although outside the "ivory towers", PAR still generates experiments that nourish the advancement of knowledge. That being said, PAR is neither academic activism, nor academic professionalism, but it is an integrated and complex approach that is rooted on practice, aimed at empowering a context while advancing practical knowledge. PAR is connected with *service learning*; scholars producing knowledge with community members that partner with Universities; *service*

learning is an opportunity for students that are allowed of learning while improving the context where they operate, gaining hands-on and experiential knowledge. Recalling Kuhn and Creswell's definition of paradigms and epistemology, what is scientific depends on specific ways of conducting research answering the question "what counts as knowledge". If one accepts democracy as a founding paradigm, "what counts as knowledge" is defined and validated by the extended community of learners involved in the PAR process itself. This allows highlighting that the choice of paradigms is endogenous in a democratic-driven research process (which is exactly what PAR aims to be). In other words, the extended community of learners defines and validates paradigms within a democratic PAR process.

Still debating about paradigms, William F. Whyte (1989), another acknowledged father of PAR, adds that "the standard model is *paradigm-driven research*: whether pure or applied, the research design is controlled by professional researchers following some theoretically oriented strategy. PAR is *client-centered* research in that it is focused on practical problems of importance to the client organization. PAR is controlled neither by the client nor by the professional researcher, but neither is it out of control. Professional researchers and members of the client organization work together in defining the problems in ways appropriate for research and in gathering the data, as well as in the analysis and action phase of the project" (p. 382). PAR allows the advancement of knowledge through a *surprised attitude*; still with Whyte words "instead of assuming that we must devise critical hypothesis and also predict what the data will reveal, we should open our world of experience to creative surprise" (ibid. p.384). In other words, the extended community of learners validates the PAR process' effectiveness within contextual paradigms, which are not stable according to the necessity of "reframing" pointed out by Reardon (2006). PAR's strong relationship with 'the outside' does not imply the dismissal of the scientific community as a comptroller of PAR's accountability; moreover, it does not deny the existence of epistemological criteria for evaluating research validity and quality. In an open dialogue with action-researchers and the whole academic community, Reason and Bradbury (2001) suggests to rely on five dimensions of the participatory worldview in order to evaluate a PAR project: relational praxis, reflexive practical outcome, plurality of knowing, engaging in significant work, emergent inquiry towards enduring consequence. For example, still according to Reason and Bradbury, a set of leading evaluating questions may be: Who is allowed to participate and how? Are participants changing their

way of acting in the light of what they are learning? How different ways of knowing have surfaced in the process and informed the process? Is the inquiry well grounded in the everyday concerns of people? How are new scenarios manifested after that action researchers leave the scene? In this open dialogue, few clarifications can be pointed out. With regard to the first question, it is necessary to highlight that a genuinely democratic PAR process needs to look carefully at unbalanced relations of power, exercising an Aristotelian practical wisdom with a Foucauldian attitude; that means underlying and avoiding manifested or hidden exclusions of underprivileged citizens. With regard to the second question, a frequent debriefing amongst participants may catalyze a collective reflective process. The third question recalls what has been stated in chapter 1 regarding the role of theory in a PAR process. "Doing research together" (Fortmann 2008) means that not only paradigms, questions and methods, but also theories are shaped within the ongoing PAR process. Theories are used as a mean to improve the PAR process itself according with practical necessities, and they are selected within the collective process. Engaged scholars may assume the responsibility of formalizing emergent issues and to frame the local debate in a broader international debate. At the same time, engaged scholars still conduct their studies contributing to the PAR process with a highly informative attitude, that has not to be confused with an arrogant cultural superiority. The fourth question can be explored through a continuous mechanism of feedback, while the fifth question requires patience, being PAR processes naturally slow and long run oriented. Adopting PAR as a research strategy requires flexibility and assuming the abovementioned *surprised attitude*. Moreover, beyond a practical commitment in intense fieldworks, engaged scholars still need to prepare academic outcomes such as PhD dissertations or scientific papers. For the production of such outcomes, Saija (forthcoming) suggests that engaged scholars may use experiential narratives focusing on lessons that have been learned, using first-person storylines with a sober language, and providing a logical thread for the overall argumentation.

That being said, this paragraph has shown consistency between the epistemological choice for planners that has been declared in the previous paragraph, and PAR as main research strategy. As a matter of fact, PAR rational is rooted on democracy; therefore it opens research to an extended community of learners; it is rooted on relations of reciprocity, shaping research through a continuous exchange within the extended community of

learners. A closing statement is dedicated to the validity of choosing PAR as a highly reasonable research strategy for planning. Accepted that planning, especially environmental planning, assumes the characteristics of a post-normal science as intended by Funtowicz and Ravetz, planning paradigms need to be defined within an extended community of learners. So do PAR paradigms. Moreover, planning is a practice-oriented discipline, as Friedmann highlights:

> "Specific modalities and styles of planning may become obsolete, but the linkage between knowledge and action will remain a lively concern, both ideologically and in practice. We cannot wish *not* to know, and we cannot escape the need to act. As social conditions and human understanding change, the actual and theoretical links between knowledge and action will surely undergo changes as well." (in Mandelbaum et al. 1996, p. 28).

Being PAR aimed at contributing "to the increased wellbeing – economic, political, psychological, spiritual – of human persons and communities, and to a more equitable and sustainable relationship with the wider ecology of the planet of which we are an intrinsic part" as in Reason and Bradbury's opening quote, the marriage between planning and PAR sounds reasonable, and it may generate hope for a "better, freer world".

2.4. Case Study Research

> "I thought it was highly likely that there had been still earlier projects that had fulfilled my definition of practitioner participants in all phases of the project, from initial design, to the gathering of data, to the reporting of findings, and finally to some action. In this search, I reflected on my first filed project, resulting in Street Corner Society [...] In a district where unemployment was over 40 percent and where people were crowded into dilapidated old flats, it was hard to avoid thinking of what might be done [...] Whose voice does the researcher use when reporting results that were collaboratively generated? Can the researcher ever represent anyone but himself/herself? "
>
> (Whyte 1995, pp. 293-298)

In *Encounters with Participatory Action Research* (1995), Whyte narrates his early field experiences doing sociological research as a member of the Society of Fellows at Harvard University. While he was institutionally committed to

basic research without "any concern to practical use" (p. 293), Whyte experienced his "social concerns to move into action" (ibid.). These reflections allowed him a shift from Case Study Research (CSR) to Participatory Action Research (PAR). Whyte discusses his gradual shift from being a participant observer (Whyte 1943/1955) to becoming a participatory action researcher; that is to say, from observing a context and interviewing key-informants to transforming a context together with these key-informants who then become co-researchers. This experience highlights that the boundaries between CSR and PAR may be very feeble, and their thickness might depend on the way CSR is conducted. This paragraph is aimed at tracing a review of various CSR approaches, identifying the peculiar way it is conducted within this inquiry (as a secondary research strategy integrated with PAR, and shaped according with those philosophical assumptions n declared in previous paragraphs).

In the popular book *Case Study Research: Design and Methods* (1984), Yin refers to Whyte's most famous Case-Study (1935/1944) as canonical example of a *Descriptive* Case Study, i.e. a detailed inquiry aimed at scrutinizing phenomena. Beside the Descriptive one, Yin also differentiates between *Explanatory* and *Exploratory* CS: the former is aimed at proving a thesis, moving from a leading hypothesis to a set of results through data collection in a cause-effect relation; the latter is aimed at investigating phenomena and at defining further questions or hypothesis for a subsequent study. Exploratory Case Study does not follow a prefixed path but it is conducted with some reasons for going toward a direction, and some general criteria in order to recognize the destination. Yin gives an effective example when he compares Exploratory Case Study with Christopher Columbus's enterprise, carrying with him just compass and maps for getting directions but still facing a continuous surprise. Beyond this image and the differentiation amongst Descriptive, Explanatory and Exploratory Case Studies, Yin provides a comprehensive definition that traces the general character of the method:

> "an empirical inquiry that: investigates a contemporary phenomenon within its real-life context: when the boundaries between phenomenon and the context are not clearly evident; and in which multiple source of evidence are used"(p.28).

Multiplicity of evidence usually relies on the principle of triangulation, which means different types of information are put together to help the research drawing his/her conclusions.

Information can be various; preferring quantitative or qualitative data is based on the specific epistemological choice, and CSR can rely on various contributions as long as a chain of evidence is provided. Focusing on the debate about qualitative research, Creswell (2013) adds that it is necessary

an "*in-depth understanding* of the case […through…] many forms of qualitative data, ranging from interviews, to observation, to documents, to audiovisual materials" (p. 98). Cases can be developed considering a single unit of analysis or a multiple unit of analysis, i.e. within-site or multisite studies. Cases can be focused on individuals, groups, programs, activities, places, and so forth. There are not any limits to the kind of unit of analysis that can be chosen, as long as the unit is clearly defined. Data analysis is conducted detailing the aspects that the researcher identifies of relevance and organizing a logical framework. The researcher is then called to interpret the analysis giving a meaning to the case; a preliminary report can be shared with the key-informants who contribute to the study, in order to receive a stronger validation. Interviews, one of the main tool used in qualitative research, may assume a preponderant role as source of evidence within the CSR. According to Glesne (1992) interviews can be conducted as: structured, if questions are fully established before the interview process occurs; semi-structured, if some questions are established and variations can emerge within the interview process; or unstructured, if questions are not established and the conversation is open, conversational and dialogical. The author suggests to to revise the set of question with a very restricted group of key-informants before enlarging the interview process. Interviews have to be recorded, transcribed, and analyzed. The analysis may follow various approaches such as: narrative (the focus is on interviewees' stories) or thematic(the focus is on specific themes and patterns). Codes can be introduced in order to find relational categories amongst interviews, together with matrices, graphs, flowcharts and any kind of visual representations in order to support the process of making sense. Feedbacks are vital elements of the interviews' interpretation, in order to highlight possible limitations due to the researcher's partial perspective. Finally, crafting the story is that crucial moment when "writing is rewarding in that it creates the product, the housing for the meaning that you and others have made of your research endeavor" (p.218). It can be done with an artist, interpreter, or a transformer attitude; it is anyway necessary to fulfill the task with the responsibility of giving a coral voice to the collected polyphony of words. Text can be organized according with a variety of strategies, such as: thematic, natural history of the fieldwork process, chronology, zoom lens, narrative, separation of narrative and interpretation, amalgamation, data display. These approaches may also be integrated based on the final aim of the study (ibid. pp. 228, 231). A linguistic choice can be that one of the drama, combining different voices in a composed dialogue, even if the interviewees never met each other.

In *Making Social Science Matter* (2001) and in more recent articles (2004; 2011) Bent Flyvbjerg highlights the validity of Case Study with its potentialities, above all the "power of example". Flyvbjerg asks for a renewed social science that is able to "empower Aristotle", that means that is able to

overcome the dominance of scientific and technical knowledge over *phronesis.* There is not a specific translation for *phronesis* in contemporary languages, so Flyvbjerg defines it as "the lost virtue". *Phronesis* is commonly intended as prudence, practical wisdom, or practical value rationality. According to Flyvbjerg, introducing *phronesis* in social research means overcoming the anxiety for producing explanatory and predictive theory based just on scientific knowledge and technical know-how. Doing *phronetic research* means conducting reflexive analyses and discussions about values, in order to explore and highlight contextual relations of power with a Foucauldian perspective. *Phronetic* planning research (2004) "focus on values; place power at the core of analysis; get close to reality; emphasize little things; look at practice before discourses; study cases and contexts; ask how, do narrative; move beyond agency and structure; do dialog with a polyphony of voices" (p.295). Furthermore, Flyvbjerg (2011) points out how the divide quantitative VS qualitative research is obsolete as long as research is problem-driven and not methodology-driven. Furthermore, "some of the most ambitious claims regarding how the quantitative revolution would make possible a social science on a par with natural science in its ability to explain and predict have been scaled back" (p. 313). That is to say, quantitative methods such as statistical analysis may integrate qualitative methods as long as it is accepted that social science cannot assume the same characteristics as natural science with a predictive and explanatory character.

In order to grasp the current debate within social research, Pascale (2013) may provide additional insights for a conscious approach to CSR. In *Cartographies of Knowledge,* he traces various philosophical roots for qualitative epistemologies, mapping analytic induction, symbolic interaction, and ethnomethodology as epistemic macro-categories. The first is "the process of formalization that gives most of qualitative research claim to scientific validity […] apprehending patterned occurrences in localized contexts" (p. 70). The second "shifted the goal of social research from an objective study of an empirical reality to a deep understanding of the symbolic practices that make a shared reality possible" (p.78). The third "focuses on the methods people use to decide what is relevant and meaningful on any specific situation" (p.134). Pascale identifies the limits of these categories, still variously rooted in a Cartesian framework, i.e. in an individualistic production of knowledge. Rather Pascale asks for "exploring routine relations of power and privilege, for examining porous relationships among social phenomena, for thinking about the nature of evidence differently, and for situating localized contexts in the broader cultural and historical contexts from which they emerged" (p.141). Pascale suggests drawing new maps, with the awareness that mixed methods are required, that narratives are highly potential approaches to formalization in order to make sense of the world, and that "exploration of social values, interests, and

meanings form the core of social sciences; such exploration requires a critical intersubjectivity. If empathy (the ability to relate compassionately to another) is one of our greatest pathways to interpersonal relationships, it is also one of our greatest resources in social research. Empathy and compassion form a bridge between the interviewer and the interviewee – not a bridge that allows one to cross over and share experience but a bridge that makes shared understanding more likely. Empathy is a very powerful tool for human connection that can help researchers to better understand people whose experience and values were very different from our own" (p152).
In the light of these premises, CSR can be considered consistent with the founding epistemological choice based on democracy and relation of reciprocity. That is verified if CSR is conducted adopting an exploratory approach that is founded on an in-depth understanding of the context, with the awareness that no predictive or explanatory character is to be pursued, with a predilection for interviews as main source of evidence, with the search for a polyphony of voices that may represent a variety of perspectives and underprivileged citizens, with the attitude of sharing research in an open dialogue with interviewees, with an emphasis on practical value-rationality, relations of power, intersubjectivity and empathic attitude. Finally Flyvbjerg and Pascale focus on narratives for formalizing research outcomes. In the discussion about catalyzers for deliberative democracy, Fischer focuses on narratives as well, emphasizing the role of storytelling and storylines; "through narration individuals relate their experiences to one another, it is how they make meaning in their lives. It has been said that we virtually exist because we tell the story of our existence" (2009, p.293).

2.5. Methodological specifications on Case-Study in Mississippi

> "Where are we going? Is this desirable? What should be done? [...] Who gains and who loses, by which mechanism of power?"
>
> (Flyvbjerg 2001, p. 60)

Within this inquiry, PAR and CSR have in common the same tension toward the Aristotelian "virtue lost", i.e. the practical value rationality recalled by Flyvbjerg (2001). Beyond specific research questions, there is the attempt of following *phronetic* questions, such as the ones reported in the opening quote, as a guiding compass during the overall investigation. That being said, specific research questions within this inquiry have been already stated in the introduction in the following form:

Why are rivers important for democracy?
Why is democracy important for rivers?

How to improve ecological watershed planning for democratic communities?

The introduction also clarifies the overall genesis of the questions, mainly connected with my being engaged in PAR in Sicily, and subsequently influenced carrying out CSR in Mississippi. As a matter of fact, the presented research questions are the result of a process of evolution influenced by theoretical and experiential lessons that took place during the overall inquiry process. The PAR process is widely described in Chapter 3 within the *Simeto Tale*. Being a collective process, PAR is strongly intertwined with the implementation of the process itself based on collective choices. Here it is suffice to day that, like many other *Action-Researchers,* I used a variety of tools in order to engage various community members; tools were such as public presentation, pamphlets, websites, videos, reports, etc. Appendix A and B presents two examples of posters prepared for public events, in order to summarize the steps of the PAR process and to share them with the extended Simeto citizenry. A more detailed description of tools and used when and why will be provided within the narrative itself.

Differently, specific procedures, methods and tools, used doing CSR, are not evident within the narrative that is presented in chapter 3 and need more explanation.

The *Mississippi Tale* is a narrative of Case-Study Research conducted choosing Mississippi State political boundaries as the main unit of analysis, with a specific interest on planning cases to be selected according what I had decided were important criteria of selections. Since I was exploring preconditions and characteristics of interaction between human communities and river ecosystems, I was looking for examples of collaborative water governance and of community-based river restoration. During a three-months phase of informal conversations, observations and archival research, I identified three sub-units of analysis: the Delta – Yazoo River Basin; the System of Mississippi Scenic Streams and Rivers; the Pascagoula River. I noticed that these sub-units of analysis were located the first and the third one at two extremes of an abstract continuum of how well the "environment is conserved", while the second one is located somehow in the middles of such a continuum. Based on this observation, I selected key-informants belonging to Governmental (G), Non-Governmental (NG), Research & Education (R&E) sectors, one for each sub-unit; the three categories were selected so that may case-study would have grasped a wide range of stakeholders. During a six-month phase, I continued observations and archival research while proceeding with interviews with key-informants.

A network of 25 key-informants in total has been selected and interviewed, out of the ones listed in table 1. Priorities have been identified based on table 2. Key-informants were chosen because of their participation in collaborative water governance and community-based restoration programs.

After a first round of interviews, one for each category G-NG-R&E, the stories have been stabilized, i.e. interviewees started giving the same information, even though from different perspectives. At that point, the interview process has been suspended, in order to stay within the limits of the research funding and timeframe. The Pascagoula River and the System of Scenic Streams and Rivers did not require a great number of additional interviews, while a different situation occurred for the Delta – Yazoo River Basin. After the first round it felt like more data and therefore more interviews were needed, probably due to Delta's dense history and feverish current events.

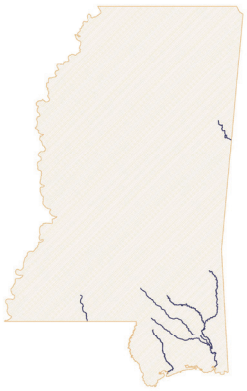
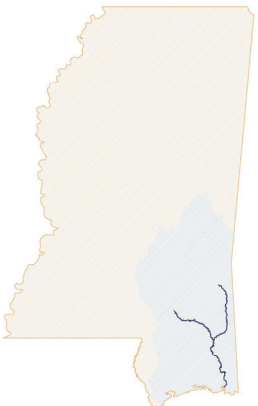
All the interviewees were invited through a letter explaining the purpose of the overall study (Appendix C). A video about the Simeto River was also shown to all of them at the beginning of the interview; the aim was to improve interviewer-interviewee reciprocity and mutual learning, providing a background about the current study and explaining how findings would have been be used. Interviewees were key-actors deeply involved in the discussed cases, with their strong opinions and partisanship; so was I. The Simeto video was a way to treat reciprocal biases as something to be valued and shared, rather than avoid. After the video, a set of questions (Appendix D) was presented and questions recorded, for an average length of time of approximately two hours. Some interviews were videotaped and others were audiotaped, accordingly to the willingness of the participants. At the end of the interview, interviewees were asked to summarize the most important aspects that were discussed, and to give a message of hope for the Simeto River Community. Archival documentation was used to support and validate the information obtained through the interviews. The travelling done with the purpose to interview key-informant provided the occasion for real field trips, made up of special and social observations as well as several informal conversations. The latter experiences significantly contributed to shape my final narrative aimed at giving sense to the collected data. Information have been analyzed, interpreted and discussed in order to construct a storyline that blends various stakeholders' points of views.

Table 1. Mississippi Community.
Examples of stakeholders connected to the *Great River* – Acronyms

	N°	Stakeholders	G	NG	R&E
National Level	1*	Farm Bureau Federation – Agriculture Corporations		X	X
	2	Industries: gravel, lodging, paper, oil companies		X	X
	3*	American Rivers – Environment America – Rivers Network – Riverkeepers – Water Keepers		X	X
	4	Environmental Protection Agency (EPA)	X		X
	5*	National Audubon Society – The Nature Conservancy		X	X
	6	Farm Aid – Good Food Movement	X		X
	7	National Park Service (NPS)	X		X
	8	National Treasures – National Trust for Historic Preservation		X	X
	9	National Wildlife Federation		X	X
	10	Americorp VISTA	X		X
	11	The Sierra Club – Oxfam America		X	X
	12	U.S. Army Corps of Engineers (USACE)	X		X
	13**	U.S. Department of Agriculture (USDA)– Natural Resources Conservation Service (NRCS)	X		X
	14	U.S. Fish and Wildlife Service (U.S. FWS)	X		X
	15	U.S. Geological Survey (USGS)	X		X
Mississippi (State Level)	16	Gaining Ground Sustainable Institute of Mississippi		X	X
	17	Mississippi Department of Environmental Quality (MDEQ)	X		X
	18	Mississippi Department of Wildlife Fisheries and Parks	X		X
	19**	Mississippi State University (MSU) – MSU Extension Service Mississippi Water Resource Research Institute (MWRRI)			X
	20	Mississippi Wildlife Federation		X	X
	21	Pascagoula River Basin Alliance	X	X	X
	22	University of Mississippi (Ole Miss)			X
Mississippi (River Level)	23*	1Mississippi Mississippi River Network – Friends of the Mississippi River		X	X
	24	Gulf of Mexico Alliance	X	X	X
	25	Gulf Restoration Network		X	X
	26	Lower Mississippi Riverkeeper		X	X
	27	Lower Mississippi River Foundation – River Gator		X	X
	28	Lower Mississippi River Resources Assessment	X	X	X
	29	Lower Mississippi River Conservation Committee (LMRCC)	X		X
	30	Natural Capital Development		X	X
	31	Mississippi River Water Walk – Ojibwe Women		X	X
Mississippi (Floodplain Level)	32	Alcorn State University			X
	33	Delta State University			X
	34**	Delta Council – Delta Wildlife – Delta F.A.R.M. (Farmers Advocating Resources Management)		X	X
	35	Yazoo Mississippi Delta Joint Management District	X		X
	36	Lower Mississippi Delta Partnership (LDP)		X	X
	37	E.T.H.I.C. Emmett Till Historic intrepid Center		X	X
	38	Yazoo Mississippi Delta Levee District	X		X
	39	Mississippi Levee Board	X		X

This table shows a variety of stakeholders connected with the Mississippi River. Some stakeholders are grouped according with the following criteria: similar vision and mission (*); same leadership (**). Grey rows indicates the stakeholders who have been interviewed, belonging to the following categories: G = Governmental Agencies (regulatory agencies and any organization related with the public sector); NG = Non Governmental agencies (non-profit and private organizations); R&E = Research and Education (University, research institutes and schools). All the listed G and NG are also part of the R&E extended category (X), because of their mission statements connected with outreach activities.

Table 2. Conservation efforts in Mississippi

River systems	Examples of Conservation Programs	
Delta Yazoo River Basin 	Mississippi Delta Nutrient Reduction Strategies (2009)	Paradigm: Conservation of water and natural resources as means to support profitable agribusiness.
		Goals: To reduce nutrients' load in Delta waterbodies via stakeholders' collaboration. Implementation of Best Management Practice such as tail water recovery system.
		Leaders: Delta F.A.R.M. (Farmers Advocating Resource Management); Mississippi Department of Environmental Quality
Scenic Streams 	Mississippi Scenic Streams Stewardship Program (1999)	Paradigm: Conservation of ecosystems as a value per se, reconnecting human activities and wildlife in a wise balance.
		Goals: To preserve Streams and Rivers via voluntary networks of streamside landowners. Implementation of Best Management Practices such as buffer zones of trees.
		Leaders: Mississippi Wildlife Federation; Mississippi Department of Wildlife, Fisheries and Parks.
Pascagoula River 	Pascagoula River Wildlife Management (1976)	Paradigm: Conservation of wilderness as a duty to celebrate the natural and cultural heritage of Mississippi, for present and future generations.
		Goals: To maintain a pristine natural environment under a public ownership domain. Implementation of the heritage goal triad: inventory, protection and stewardship.
		Leaders: A Landowner; The Nature Conservancy; Mississippi Department of Wildlife, Fisheries and Parks – National Heritage Program.

LEVELS OF CONSERVATION

Chapter 3. Communities & Rivers

> "The Niger River, North Africa; the Mekong River, Southeast Asia; the Irrawaddy and the Ganges River, Central Asia; the Murray-Darling System, Australia; the Amazon, South America; the Mississippi River, North America. They all work in the same way, and they provide incredible resources for people. Incredible. Because they are new, they are always new. And they are full of energy." (A *River Advocate*, personal conversation)

The *Great One*, i.e. the Mississippi River (U.S.A), and the Simeto River (IT) are not juxtaposed in this paragraph with the purpose of a comparison. This inquiry is not a comparative study; rather, the inquiry is based on the power of the example (Flyvbjerg 2001), on narrative understandings (Fischer 2009), and on empathic relations amongst different contexts (Rifkin 2009), in order to foster mutual learning through the exchanging of experiences. That being premised, this paragraph is aimed at framing this exchange through similarities and differences between the exchanging contexts, in order to orient the reader. The Mississippi River and the Simeto River are quite diverse. The first one, 3734 km long, drains more then 2,900,000 km^2, being the widest drainage system in North America and amongst the longest rivers on earth. A section of the Lower Mississippi, about 500 Km long, is also the western boundary of the State that takes the same name of the *Great One*, benefiting from a significant part of the River's ancient floodplain, i.e. the Mississippi Delta. The State of Mississippi, with a specific focus on the Delta, is also the unit of analysis for the presented Case Study Research project. The Simeto River (IT), 113 Km long, drains less than 4,200 km^2, being the widest watershed of an island that is 25,711 km^2 extended, i.e. Sicily. The Simeto Valley is a portion of land in eastern Sicily where the middle course of the River flows for about 1/3 of its length. The Simeto Valley is also the context where the narrated Participatory Action Research process occurs. Although bulks are significantly different for the Mississippi and the Simeto rivers, they both have in common what the *River Advocate* states in the opening quote; equally to every other river ecosystem in the world, they sustain human communities that live along their courses. Moreover the southern State of Mississippi and the southern island of Sicily share some similar characteristics. They are both *deep southern contexts* of the Global North. In spite of being part of the most dominant political and economic systems on Earth, such as U.S.A. and Europe, Mississippi and Sicily are characterized by

socio-economic disadvantages comparing with other regions of the Global North, and a lack in *social capital* as defined by Putnam (1994; 1995) in terms of civic engagement and functioning democracy. Although Mississippi and Sicily's histories are quite diverse, as the *New and the Old Worlds'* histories are, these geographical areas have historically based their economies on agriculture, specifically on large-scale agriculture, with few landowners developing economic wealth through human labor's exploitation; *plantations* on one side and *latifundo* on the other side are based on similar mechanisms of power, being *plantation* based also on a strong racial divide connected with African American slavery. Large-scale farming operations generated also environmental exploitation. Agriculture is an activity that introduces elements of ecological disturbance in river valleys and floodplains, whose fertility is connected with the river's overflow; disturbance is due to the necessity of organizing the fields for cultivation and irrigation. Agriculture may coexist with wildlife and other activities such as fishing; or, disturbance may become preponderant. With the rise of industrialized agriculture through mechanical and chemical innovations, disturbance became preponderant in both contexts, especially after WW2. Today in Mississippi, in particular in the Delta, agribusiness is still a high profitable activity, which goes along with high rates of unemployment having been human labor substituted with machines. Today in the Simeto Valley, like in other parts of Sicily, agriculture is not a profitable activity anymore, as a consequence of a market crisis that hit Sicilian businesses in the 1980s, due to global competition; despite that, industrialized farming operations still disturb the ecological health of the river. Agriculture is based on water for irrigation. Studying water in terms of a CPR (Ostrom 1990), the State of Mississippi and the Simeto Valley are not affected by sever water scarcity conditions comparing with other regions on earth (see Figure 3). As a matter of fact the State of Mississippi is commonly defined as "blessed with water" from local inhabitants; the Simeto Valley benefits from the peculiar geological configuration connected with the Volcano Etna, being the lava soil a natural cistern for groundwater. Despite that, aquifer depletion, cycles of drought, the lost of minimum flows are threatening both contexts in terms of water quantity. Within the framework of SESs (Gunderson and Holling 1995, 2001), both the State of Mississippi and the Simeto Valley undergo periods of growth, exploitation and exponential change; periods of accumulation, conservation and rigidity; periods of restructuring, readjustment and collapse; periods of reorganization and renewal. At the same time, both SESs

are highly impaired systems in terms of dams, floodplain transformation and flood control measures, making ecological restoration a quite challenging perspective. Furthermore, water quality is threatened in both SESs due to rural and urban activities that contaminate water bodies through various point and non-point sources. In terms of water laws, both the U.S.A. and Europe require public participation in the decision-making process for watershed planning. The State of Mississippi is regulated under the *Federal Water Pollution Control Act Amendments of 1972*, i.e. the *Clean Water Act* (CWA). As Sirianni (2006) reports,

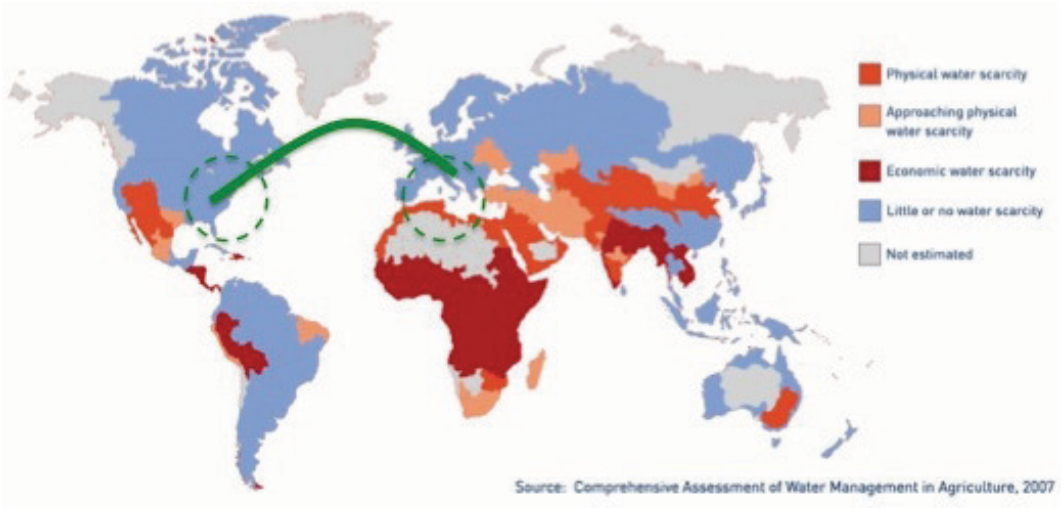
> "During the 1970s, citizens became engaged in water issues at the grass roots as never before. The federal government spurred this in several ways. Responding to the ethos of the 1960s movements, Congress passed the Clean Water Act Amendments of 1972 with strong requirements for citizen participation" (p. 18).

As a matter of fact, Section § 101 (e) of the CWA as Amended Through P.L. 107–303, November 27, 2002, declares: "Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish regulations specifying minimum guidelines for public participation in such processes." The Simeto Valley is regulated under the *EU Water Framework Directiv*e (WFD) 2000/60/EC of the European Parliament and of the Council of 23 October 2000. Although the Italian Legislation started adopting the EU Directive in 2006, the Sicilian Region is still far behind in terms of watershed planning measures accordingly with the WFD. As Newig et al. (2005) state:

> "Participation of non-state actors in the implementation of the WFD constitutes a major opportunity to achieve better informed decisions and more effectively implemented measures. It is crucial that the role of uncertainties in participatory processes is explicitly taken into account." (p. 343).

As a matter of fact, Art. 46 states: "To ensure the participation of the general public including users of water in the establishment and updating of river basin management plans, it is necessary to provide proper information of planned measures and to report on progress with their implementation with a view to the involvement of the general public before final decisions on the

necessary measures are adopted." Both laws encounter some degrees of resistance in contexts with a lack in *social capital*. That being premised, as anticipated in Chapter 2 the following stories are narrated with the purpose of highlighting why are rivers important for democracy, why is democracy important for rivers, how to improve ecological watershed planning for democratic communities. The Mississippi Tale is narrated from a visitor's point of observation, while the Simeto Tale is narrated from a native inhabitant's one. Also, the Mississippi Tale has been constructed through the Case Study Method while the Simeto tale narrates the *engaged-scholar*'s experience within a Participatory Action Research process. The Mississippi Tale follows a storyline that has been identified as the result on an empirical study; the same storyline has been chosen to narrate the Simeto Tale.



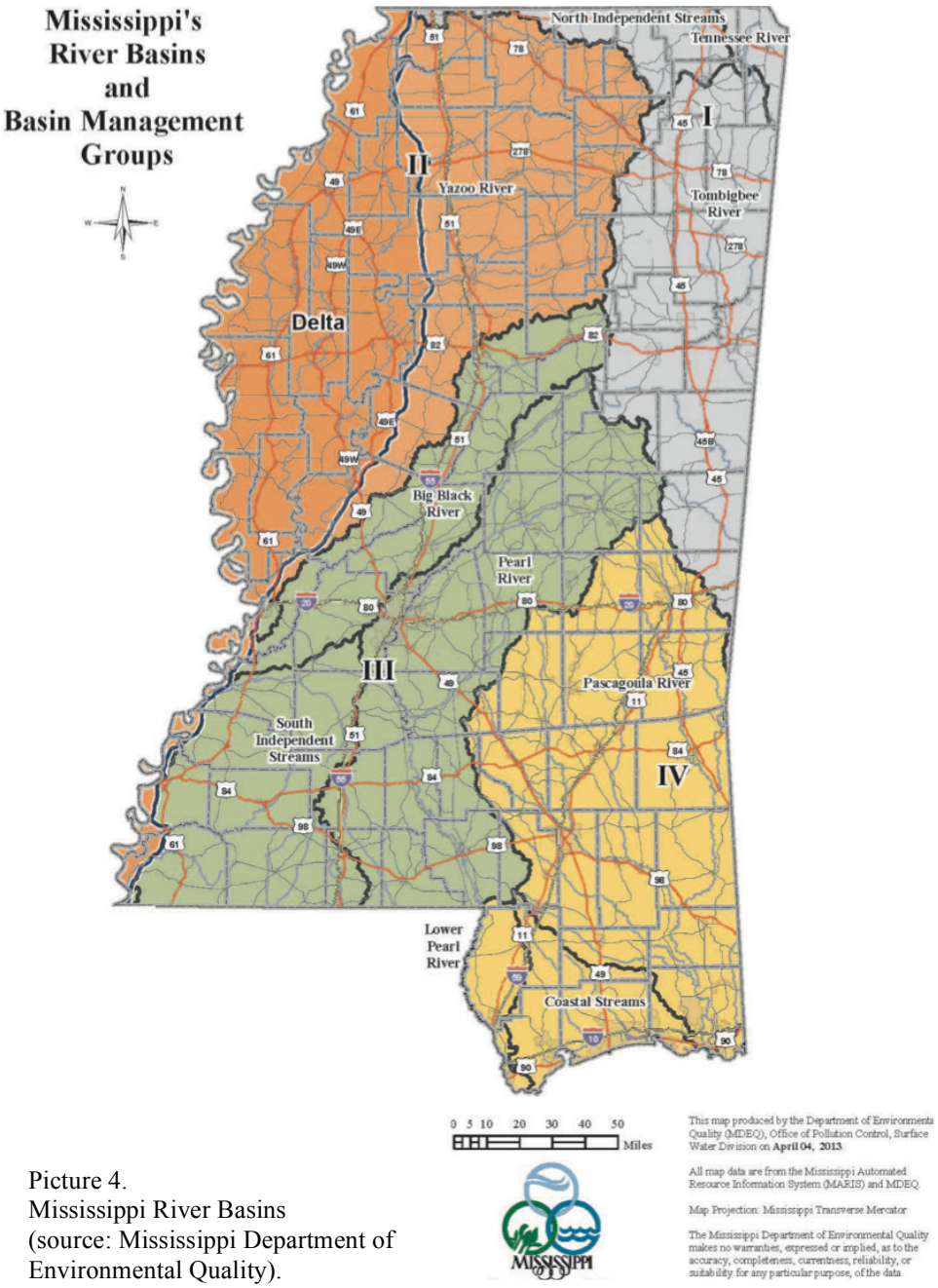
Picture 3. Global distribution of water scarcity with the identification of the studied contexts (source: International Water Management Institute)

3.1. A Mississippi Tale

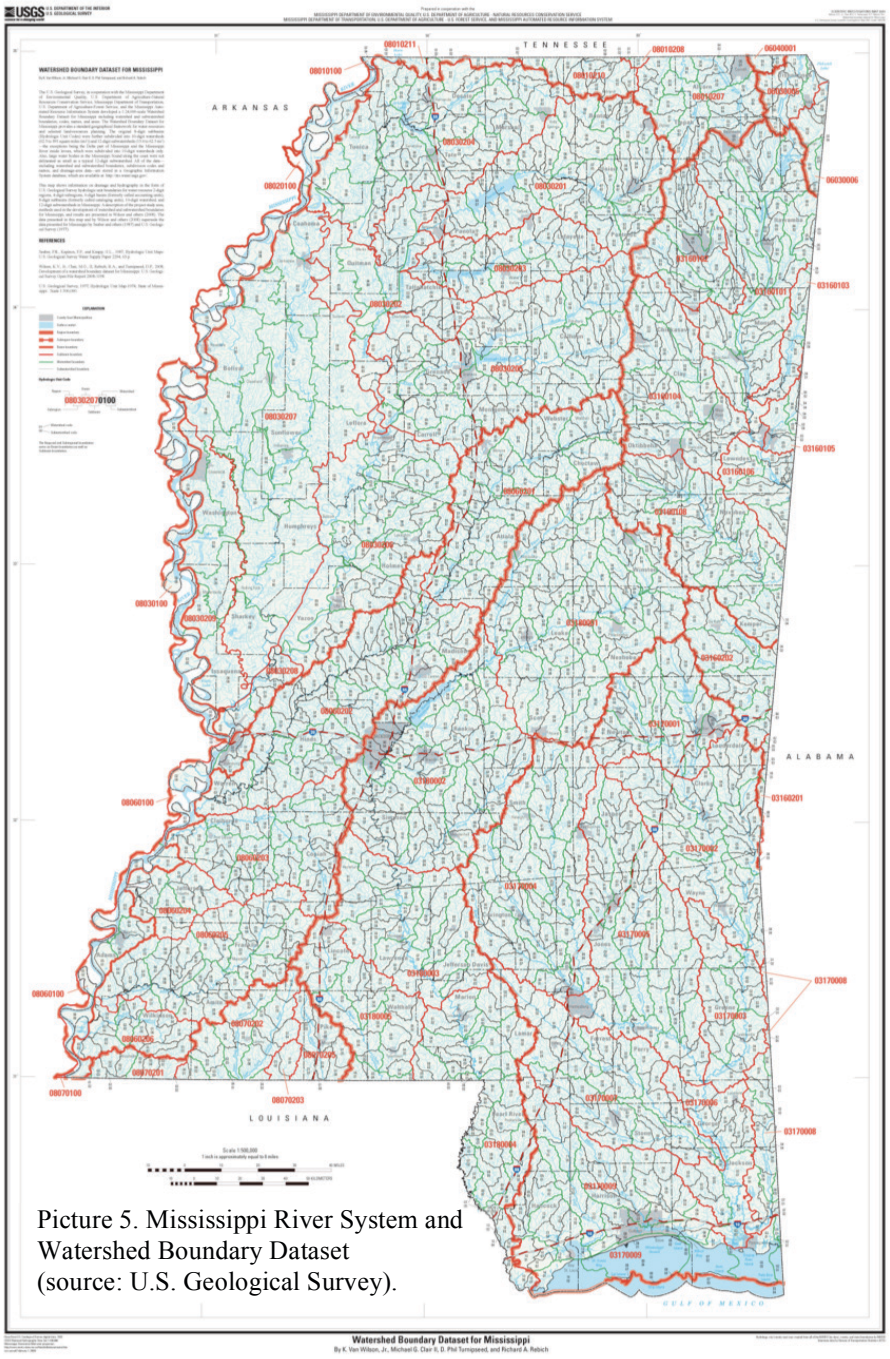
> "[…] Modern people still do value the sacred in their lives, as evidenced by the abundance of churches, synagogues, and mosques of the world, but modern society seems to disavow the potential of natural places as being capable of arousing sacred feelings in us. In the Indian mind sacred places in nature not only represent physical touchstones for evoking sacred values, but they also hold an important key to personal power. […] *Power* in modern language has come to mean gaining control over something, and then using that force to change the world. By contrast, in the Native American mind, power is a personal empowerment arising from a surrendering of personal ego consciousness to become aligned with a spiritual world […]". (Swan 1990, p. 70)

On March 1st 2013 a group of Native American women, Ojibwe tribe, began their *Mississippi River Water Walk*, from Lake Itasca Minnesota, to the Gulf of Mexico, from the Mississippi River's headwater to its mouth. On this pilgrimage they carried a copper pail full of clean Lake Itasca water. Along the way, they asked for and received spiritual and material support to accomplish their mission. This mission was astonishingly clear: to pray for the water; to enhance awareness and to demand responsibility in order to collectively improve the *Great River* (in Ojibwe language) through the delicate balance between human activities and Mother Earth. On May 3rd, at the final healing ceremony, they symbolically poured the pail's pure contents into the *dead zone* of the Gulf of Mexico. Science identifies the *dead zone* as a *hypoxic area*, i.e. an aquatic ecosystem with low levels of dissolved oxygen in the water due to an excess of algal growth. This excess of algae is related to an overload of nutrients, primarily caused by industrial agriculture, in particular corn and soybeans crops (Alexander et al. 2008), whose runoff is a vehicle for nitrogen and phosphorus diffusion. In 1997, E.P.A. established the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force in order to face the hypoxia problem that started during the 1970s. It took years of research, monitoring, public pressure, and NGO petitions to develop nutrient policies (Rabalais et al., 2002). Conflicts and collaborative efforts are currently an ongoing process within States and Tribes in the Mississippi/Atchafalaya River Basin (MARB). The State of Mississippi is

amongst them, and hypoxia is not the only challenge that the State faces; it is just one of several consequences connected with high anthropic pressure on ecosystems. Next paragraphs provide a detailed discussion aimed at identifying other consequences, their preconditions and alternative approaches in Mississippi, reporting key-stakeholders' perspectives.



Picture 4.
Mississippi River Basins
(source: Mississippi Department of Environmental Quality).



Picture 5. Mississippi River System and Watershed Boundary Dataset (source: U.S. Geological Survey).

The State named after the Great River. Setting the stage

> "Mississippi is probably the State with one of the poorest records of rivers' stewardship in the all Country. […] In the 1980s, the more I worked in research with rivers and streams, the more I began to recognize that all across Mississippi two things happened. First, people did not understand how rivers worked. As a result of that, the general public was not very engaged in stewardship. And yet, when I talked to them, it was obvious that they liked rivers. […] Then, throughout the State, in particular in the western part, in the Delta, there was a tradition of taking water from the land, because that area is subject to flooding. And when it floods, the prevailing idea was that it is a bad thing, in particular for agriculture. Certainly we do not want to have flooding that is harmful for the people, our homes, and our farms. But, I think it is also important to understand that we can change our behavior, and we can change the way we interact with the rivers and with the land […]. So that the amount of damage is minimized, and we can get the benefit of flooding, in terms of natural resources, and soil fertility. […]. The energy that makes the whole system work comes from the floodplain." (Jack Dowson)

Jack is a scientist in fisheries biology, a passionate advocate for rivers and democracy, an active citizen interested in wildlife and natural conservation, an experienced stakeholder involved in environmental controversies. He highlights a paradox: the absence of care for rivers in the state named after the *Great River*. On one side, the State of Mississippi (48,430 Square Miles; more than 125000 Square Kilometers) is characterized by the presence of a unique aquatic ecosystem; as a matter of fact, an extended part of its territory (6,250 Square Miles; more than 16100 Square Kilometers) is situated in the Delta, the ancient floodplain of both the Yazoo and the Mississippi rivers, being the Mississippi one of the most important rivers on earth and a great basket of resources for inhabitants along its banks. On the other side, within the State's political boundaries there is not a strong tradition of community-based organizations advocating for rivers; also, the State has 72,000 miles (more than 115000 km) of impaired stream segments, the highest number in U.S.A. (EPA 303d List; in Shoreman & Haenn, 2009). The Mississippi river can also be a threat: Jack hints at an environmental crisis that distresses the Delta since forests have been cut for large-scale agriculture purposes: flood risk. He also anticipates two different approaches in managing river ecosystems. With a high degree of simplification, these approaches can be synthesized as: water exploitation based on economic rational *versus* river conservation based on ecological rational. The dichotomy economy/ecology is verified looking at the whole State. The economic rational is mainly expressed in the Delta, where natural resources are currently used in order to maximize economic profits through agribusiness operations. While the ecological mindset is reflected in another

geographical unit: it is the "largest (by volume) unimpeded river system in the contiguous 48 states", as defined by The Nature Conservancy. This national treasure is the Pascagoula River, located in southeastern Mississippi. It was acquired by the State during the 1970s for public use. Although the distance between the Delta region and the Pascagoula basin is just about 200 miles from Vicksburg to Lucedale, they are quite diverse.

> "If you go the Pascagoula River, there is a sense of place on that river, [...] people spend considerable time connected to that river. I do not know of that relationship in the Delta." (Willy Silver)

Willy is another scientist; he focuses on watershed management holding a leadership role inside research institutions that collaborate with Delta agribusiness stakeholders. In his statement, Willy describes different landscapes related with different planning approaches. As a matter of fact, while in the Delta region natural resources are managed in order to produce commodities and to maximize profit, the Pascagoula River has been preserved for ecological and recreational purposes. These approaches are based on stakeholders' antithetic ways of looking at the world:

> "The biggest dilemma is a fundamental difference of philosophy. It is not engineering. It is pure philosophy" (Paul James)

Paul is an engineer, lawyer, pubic official and regulator. He has been working throughout the State and EPA Region 4 for decades, experiencing several environmental conflicts rooted in different systems of values such as the aforementioned dichotomy economy/ecology. In Mississippi, these values are also blended with another common southern belief: mistrusting governmental regulations. For example, in 1968 a federal program was established in order to protect scenic rivers in U.S.A.; it was not until 1999 that the State version of that program came into existence through the Mississippi Scenic Streams Stewardship Program (MSSSP), which is currently at a dormant stage after 10 years of activities.

> "And because in the Deep South, landowners' rights are so important, and the government is so distrusted, Mississippi tried about six different times in order to enact some sort of Scenic River Program. Each time, it was voted down, and it never made out to the legislative committee. [...] Mississippi decided that if it was going to have a Scenic River Program, it had to be very friendly to landowners. It had to be voluntarily." (David Gessy)

Like Jack, David is a rivers' advocate and he was directly involved in the MSSSP coordination. MSSSP's main goal was to identify streams of ecological

interest, and to guarantee the perpetuation of their status via voluntary Best Management Practices (BMPs). Mississippi landowners usually accept BMPs if property rights and economic interests are not threatened. Looking at the spatial distribution of scenic streams (Statute Section § 51 – 4) the highest concentration of them is located in the Pascagoula River basin, and none of them is located in the agribusiness core of the State, the Delta. Jack, who also participated in establishing the MSSSP, gives his interpretation for this phenomenon:

> "We have been able to have the Scenic River System except in the Delta. There is still a lot of political power in the Delta that kept those rivers for being included as potential candidates." (JD)

Willy underlines that there are not rivers in the Delta anymore:

> "Those rivers are nor rivers; they are just hydrological connectors, […] and a lot of that has to do with farming." (WS)

Paul confirms that political leadership is connected with Delta agribusiness:

> "Typically in Mississippi the leadership has been agriculture. And typically agriculture is the Delta. […] There is a local organization that watches after everything, let me put it in this way." (PJ)

The local organization is a Council that was established in the Delta during the 1930s, for protecting and sustaining local profitable agriculture and wealth. The Council have historically supported various flood control measures and enhanced physical as well as social infrastructures for the Delta, within a political conservative entourage. Interviewees have discordant opinions about what the Council is. On one side, some Delta inhabitants declare how "the Council does a lot of good things for the Delta". On another side, other Mississippi inhabitants state how "the Council orchestrates everything". That is to say, the following 5 paragraphs focus on the Delta because of its extreme features, being a highly disturbed ecosystem with a controversial presence of political power. The journey through the Delta starts recalling the words of the 1950 Nobel Prize laureate William Faulkner, in his address to the 1952 annual Delta Council Meeting:

> "because somewhere, at some point, we had lost or forgot or voluntarily rid ourselves of that one other thing, lacking which, freedom and liberty and independence cannot even exist. That thing is the responsibility, not only the desire and the will to be responsible, but the remembrance from the old fathers of the need to be responsible". (in Cash 1986)

"The energy comes from the floodplain": the Delta. Setting the stage II

> "If we did not have all these rivers here, we could not have the communities here, because the communities were founded typically next to the rivers, looking back historically. But [...] I do not see a real big tie to the rivers today" (Bruce Philly)

Bruce is a Delta inhabitant whose family and job are connected with the agribusiness sector. He acknowledges the founding value of aquatic ecosystems in the Delta, in terms of water availability, soil fertility, wildlife, fisheries, and transportation routes along the *Great One*. But today, floodplain-rivers do not seem to exist anymore in the Delta. Using again Willy Silver's words:

> "They are just pools of water that cannot really sustain aquatic life. [...] They are channels, which are sometimes full of water, and most of the time in the summer they are not." (Willy Silver)

Synthetically the Mississippi Delta can be described as a flat alluvial plain, a geographic and cultural unit that is enclosed between the levee system to the west and the bluff hills to the east. According to Smith (1954, p.3) "before the [Civil] war [the Delta] was known as the wilderness". When planters settled during the 19th century, the local ecosystem was transformed in order to establish large-scale agriculture and lumber, and the "irrevocable alteration of local ecology" (Saikku, 2011, p.163) took place after the Civil War. Planters knew that the Delta "was rich enough to sustain the new cotton system for a long period of time, [...having been...] fed to a richness surpassing the Nile Valley on the regularly overflowing rivers" (Smith 1954, p.3). This "Alluvial Empire" (Harrison 1961) was

Picture 6. The Mississippi-Yazoo Rivers floodplain, the Delta (Smith 1954, p.2)

shaped by the effort to "clear" the land from swamps, fighting against the *Great River* through various flood control measures, and organizing the fields for drainage. These significant environmental changes, so heavily human-driven, are connected with socio-economic dynamics that have given birth to one of the world's most controversial portion of human history: the history of the *Old South*, with its precious values and traditions, which is also the history of the black and white racial divide that has inflamed American society since then. As a matter of fact, "for most of the people involved in the transformation of the Delta bottomlands, especially black slaves, sharecroppers, and agricultural workers, economic gain and social mobility remained severely limited" (Saikku, 2011, p. 170). Current socio-economic conditions reflect the legacy of this system; today the Delta hosts some of the poorest African American counties in the entire Nation (US Census Bureau, see picture 8) coexisting with the most profitable high-tech agribusiness operations (US Census of Agriculture, see picture 9). Agribusiness operators proudly state that they *feed the world*; as a matter of fact, they produce and export worldwide commodity crops such as cotton, rice, soybeans and corn, with an increasing production in corn acreage (Coupe at al., 2012). Soybeans and corn requires high use of fertilizers that mostly contribute to hypoxia, as explained in the prologue. The same exploitative mindset has also produced other ecological crisis as described in the following paragraphs.

Social-ecological challenges and environmental conflicts

The floodplain is a social-ecological system that is experiencing an exploitation phase and its subsequent effects. Amongst these effects, there is another Mississippi paradox. Coupe et al. (2012) synthesize the paradox with "Too much water, yet not enough water". As a matter of fact, the same ecosystem faces:

- Drainage needs, overflow and flood control crisis, based on having maximized land's availability for settlers and crops in the floodplain, that is naturally designated to abundant inflows (too much water);
- Depletion of the alluvial aquifer, based on overusing groundwater for crops' irrigation (yet not enough water).

Regarding flood control measures, an environmental conflict has struggled Delta's stakeholders for years; regarding water shortage, bottom-up conservation efforts are currently happening. This paragraph focuses on the

flood control crisis and the connected conflict. Drainage and flood control have been the central problem of Delta inhabitants before and after the catastrophic event of 1927 narrated by Barry (1927) when "miles of the narrow levee were crammed with refugees, almost of them there black" (p. 306). Furthermore, Harrison (1961) describes a flooding situation: "the water backs up the tributary streams and uses the area as a storage. The extent of area covered by backwater has increased as the levee program nears completion, with a consequent rise in flood levels of the confined river. The damage thus caused in backwater areas has been one of the unavoidable *costs* of valley-wide flood control" (Harrison 1961, p.166). In the Delta-Yazoo River Basin, the backwater area is situated north of Vicksburg, in Issaquena County. The Flood Control Act of 1941 authorized a project proposed by the U.S. Army Corps of Engineers, and the Mississippi Board of Levee Commissioners: the "Yazoo Backwater Area Pump Project". Its goal was to reduce flooding in an area of 630,000 acres. A 14.000 cfs pumping station was proposed to move surface water from the Yazoo backwater area to the other side of the constructed Mississippi levee. The project was opposed for concerns about wetlands, fisheries and wildlife. As a matter of fact, in 2011 EPA vetoed the project under section 404(c) of the Clean Water Act.

> "The Pump Project was very simple. It was just putting some pumps there […]; those pumps would simply pull the accumulated water flowing from the North to the South, over the levee into the Mississippi River." (Paul James)

Paul strongly advocates for the project, in order to protect Delta inhabitants from flooding, regardless of race and income. But other stakeholders think differently about the overall utility of the project; these critical stakeholders declare that the project is going to benefit just a restricted minority of Delta landowners:

> "What they wanted to do is taking some water out, over the levee, putting back into the Mississippi. So they can get crops in the ground earlier […] The Pump was very expensive, and the value was not worth what it would cost to the taxpayers and the public; […] also it would destroy large areas of wetlands that could be changed forever." (Rod Blue)

Rod is a journalist and a conservationist embracing ecological concerns. Together with a network of natural conservation organizations he strongly opposed the project. The conservationists advocated more suitable ecological solutions such as a nonstructural approach based on reforestation, to take place in a land that has already been highly impaired.

> "We have to learn to live with the river a little bit […] looking for a new direction, fighting against this project because we have done a lot of things to the river, and we need to start thinking a little bit differently. In a sense, it was a symbol of a desire for change." (Rod Blue)

On the other side, the supporters of the project were mainly part of the agribusiness sector; they claimed the necessity of flood control measures to protect agricultural plantations and local residents, arguing that:

> "People that live in the Delta can dialogue all day long. There are no problems. Problems come when people who do not live in the Delta want to dialogue about you, living in the Delta. […] People who live farthest away got the best solutions for the problems where you live." (Bruce Philly)

Emma Hunt, a representative of the conservationist coalition claimed their stake into the discussion because:

> "They are doing that with public money and I pay taxes for that project. I use the Mississippi River and public lands with wetlands that are going to be affected by that project. Above all, they are going to do it with 100% federal money, because the Delta is poor" (EH)

The pump project is thus an example of a conflict in terms of economic *versus* ecological rational; this conflict has been exacerbated by the fact that poor conditions of marginalized citizens were used as a justification for asking conspicuous federal aids.

Delta's tragedy of the commons and collaborative bottom-up efforts

As anticipated in the previous paragraph, despite the abundance of water, since the 1950s the floodplain is experiencing serious cycles of drought (Palmer, 1983) that are recently worsening. Furthermore, crops are shifting from cotton to corn (Coupe at al. 2012) fostered by federal subsides for ethanol and high market prices. Corn requires more water, and the lack of strict regulation does not inhibit producers from reducing their withdraws. Paul James provides a very clear explanation about the overall situation:

> "You can have the best and the worst of both world. You can have flood, and you can have drought. […] It is just the result of decades and decades of over-pumping groundwater. […] In the central part of the Delta, so much of that groundwater has been lowered and the static water level is below the bottom of streams. So, in the dry weather months, groundwater does not flow into those streams anymore, and that is a huge problem." (PJ)

Approaching water as a CPR, the *tragedy of the commons* (Hardin 1968) is currently verifying in the Delta, where appropriators are mostly part of the agribusiness sector. Ostrom (1990; 2010) recognizes the crucial role of institutional renewal with bottom-up mechanisms and multilevel interaction amongst governmental, non-governmental and community-based actors. In the Delta, there is an ongoing debate regarding how to solve the aquifer's problem. The debate is centered on the possibility of avoiding regulations and promoting voluntary practices based on the fact that local leadership and most of producers are strongly resistant to federal government impositions, and they tend to adopt conservation BMPs only to protect the Delta profitable market. This "politics of unsustainability" has been studied by ethnographers Shoreman & Haenn (2009) and testified by some key-informants:

> "Everything has to make economic sense, avoiding costly government regulations" (Andrea Bonn)

> "You have to make the connection that conserving some water on your farm does pay economically." (Mark Klee)

Andrea works for a state public agency and Mark is part of Delta F.A.R.M. (Farmers Advocating for Resources Management), a nonprofit organization started in 1997 by Delta leadership:

> "Delta F.A.R.M. represents about 1.3 million acres, the Delta is about 4 millions acres. There is 75% out there, who still needs to be reached." (MK)

Delta F.A.R.M. collaborates with Mississippi public agencies. In order to understand how institutions are changing in the Delta, it is crucial to overview how water governance has evolved throughout the years in the light of Ostrom's studies. Mississippi jurisprudence follows English Common Law, like other southeastern states. Prior to 1956, Mississippi had sporadic *Supreme Court Cases* about water rights. They variously adopted the Riparian Doctrine, i.e. riparian landowners have the right to use the water. The 1956 legislation blended this system with the Doctrine of Prior Appropriation, which is rooted in Spanish and Mexican Civil Law and it is used in the southwestern states. According to Prior Appropriation, a landowner may acquire the right to withdraw and use water, with the rule "first in time, first in right" (Palmer, 1983). Then in 1985 Water Law changed:

> "I am not sure what precipitated this. It must be a drought cycle. Because typically in Mississippi, when we see this major legislative changing, they are typically

> provoked by a drought cycle. […] The Delta leadership said to the legislator: we want to go away from prior appropriation, […] that is straightforward to administer, but terribly unfair. […] In 1985 we shifted from "first in time, first in right" to a "permitting approach", so that when we have a drought situation everybody cuts back, and everybody gets some water. […] This is much fairer, much more equitable among these users, but extremely difficult to implement." (PJ)

In 1988, another significant drought event awoke the concern about the emerging challenge. In 1989 a new public agency was formed under State legislation (Mississippi Code 1972, Statute Section § 51 – 8): the Yazoo Mississippi Delta Joint Management District (YMD). Its purpose is providing non-regulatory solutions for the declining aquifer. At the same time, Mississippi Department of Environmental Quality (MDEQ) and Delta F.A.R.M. are working in partnership in order to implement Conjunctive Water Use according to State legislation (Mississippi Code 1972, Statute Section § 51 - 3), i.e. integrating "the ground and surface water resources within the state […] in their use, storage, allocation and management." (Mississippi Code 1972, Statute Section § 51 – 3 – 1). MDEQ and Delta F.A.R.M. are also currently arguing with YMD in order to find solutions that may fit various appropriators' needs. They barely agree in promoting a *bottom-up* approach and the general mistrust for federal government is generating a self-government mechanism. The debate is still open in order to concur how to overcome the *local tragedy of the commons.*

Missing bottoms

1985 Mississippi Water Law is very peculiar in the U.S.A. Southeast. Despite the general mistrust for governmental regulations, legislation is characterized by a regime of public ownership for water resources. Statute Section § 51 – 3 – 1 clearly states that Mississippi water is a public resource and it has to be administered so that "the best interests and welfare of the people that are served".

> "In the 1985 revision of the legislation, there is a very specific statement in the very first section: the water in Mississippi (surface water, groundwater) belongs to the people to be held, and trust, and managed accordingly. People do not own water. They have the right to use it, and the use will be regulated, but they do not own water. It would amaze you how difficult it has been for other southeastern states, that wanted to put that statement in the law, that the State owns the water, and landowners do not own the water. […]" (Paul James)

At this point of the *Tale*, a question arises: who does represent the *best interest*? Large-scale agriculture is organized in non-governmental organizations that can advocate landowners' interests.

> "We serve as representative of the farmers' community at the regulatory table, to give them a voice. If you are not involved, you will not be heard." (Mark Klee)

What about the other part of the *best interest*, e.g. the African American Community? Today agriculture is highly mechanized and the heirs of slaves live in disadvantage human conditions in terms of unemployment, education, food diseases, and quality of life (Mississippi Delta Report on Poverty, Inequality and Discrimination, 2001). Cobb (1960; p.231) states: "The Delta's white minority had compiled an impressive record of neutralization and manipulation of federal policy initiatives, in large part because the region's black majority remained politically powerless and socially repressed". Some interviewees argued that the fault rather lies with the black leadership. In general the black/white mistrust is still a current issue in the Delta. It goes along with mutual accusation that undermines a desirable process of integration. Recent studies show (Cottrell, 2012) the actual influence of traditional politics in Mississippi as defined by Elazar (1984); the leadership tends to maintain the *status quo* and to control the social structure according to its values and needs.

Going back to water governance, it sounds reasonable to say that the *best interest* cannot be defined without listening at the majority of Delta citizens. As a matter of fact, water is not just a CPR for large-scale agriculture. Water flows through SESs such as rivers, and their existence has a practical value for underprivileged communities. For example, Brown and Toth (2001) have studied African Americans' dependence on subsistence fishing. When still possible, fishing is a "stable, inexpensive, accessible, and desirable food source all year round for both whites and blacks, but in different ways […being…] an important part of economically-marginal people's lives" (p.104). Luther Park, a representative of the African American community, said:

> "When I was a child, we had fishermen that actually lived in Glendora. Back in 1940s, the Tallahatchie River, which originally flew through Glendora, was subsequently rechanneled, and made a strict channel. […] Now the problem is that it is affected with chemicals, runoff from the fields, and those kinds of things. No fishing now, in that great body of water. We should redirect it to what should be, toward something we all should work together on, to make that body of water a real natural resource for this community. " (LP)

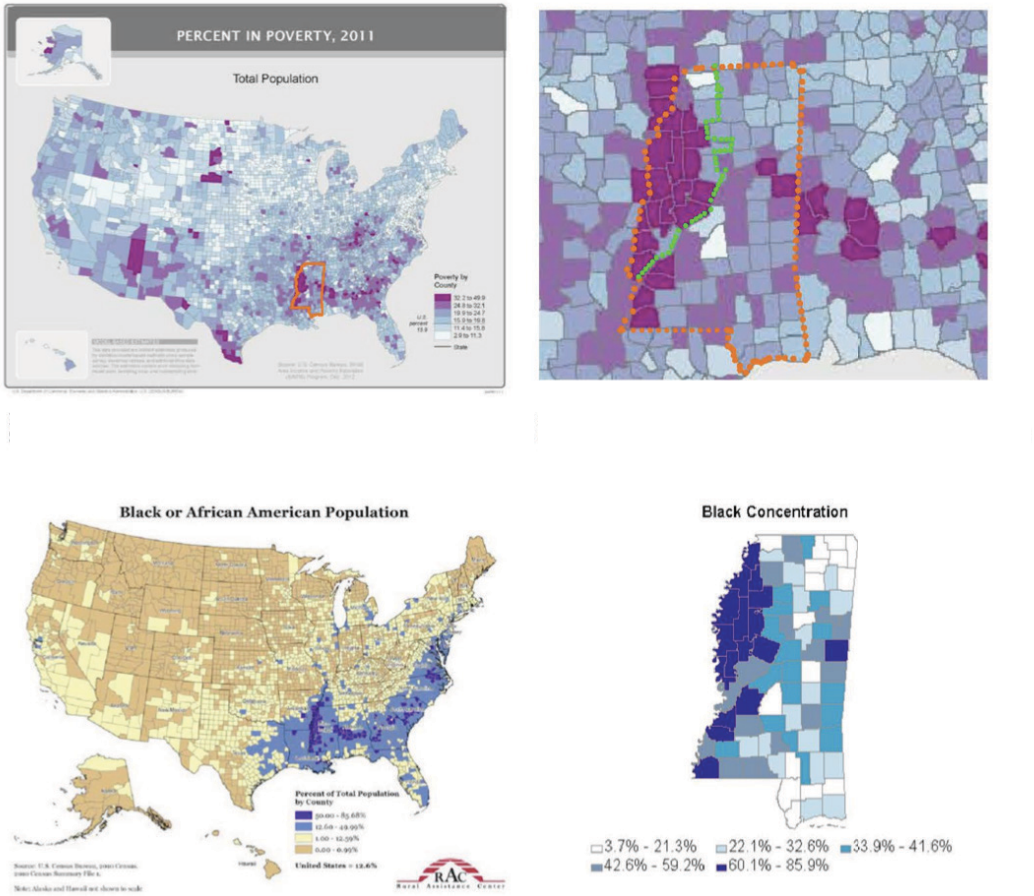
Also, marginalized communities do not have a wide range of possibilities beyond their local environment. Jack Dowson said:

> "We have to keep in mind is that people who live on the land, at least most of them, they are not mobile. They live with whatever is around them. [...] It touched me deeply, because I know these people, I have been out with them, and I have been in their boats and their sharecropper houses. [...] They do not have a voice. " (JD)

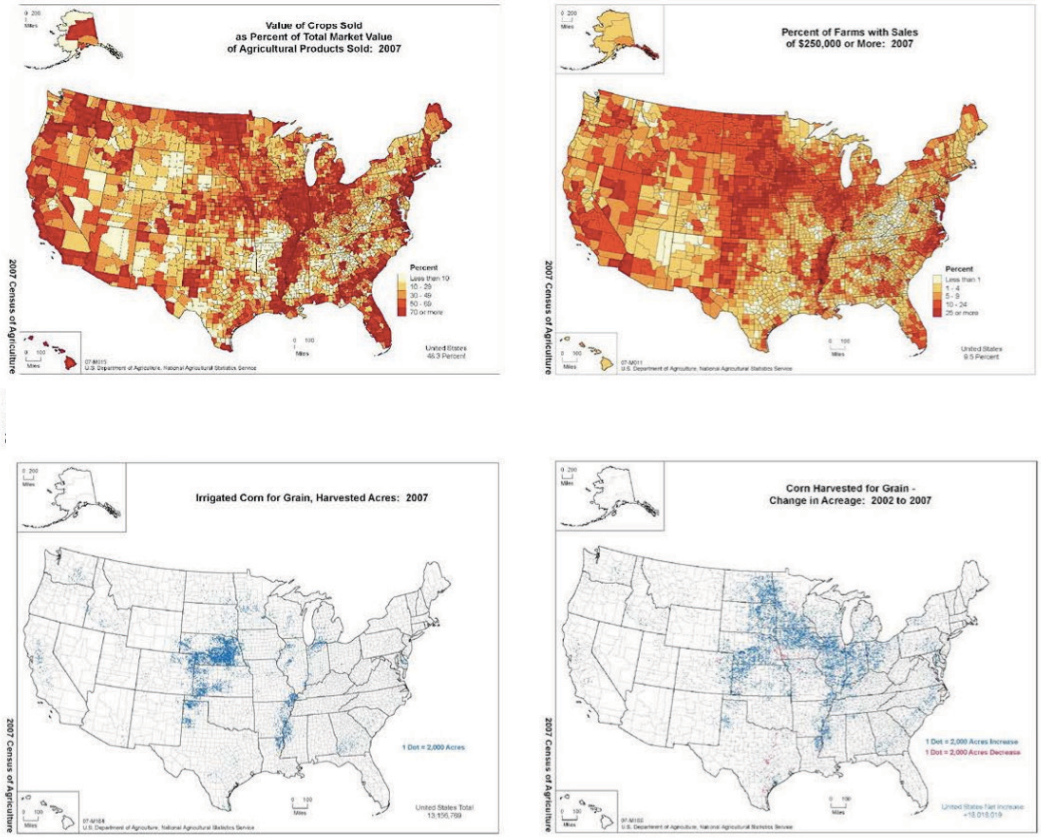
When asked about including the African American community within the decision-making process about water issues, some interviewees declared that: "they do not care, they do not really have a stake". Simon King, an African American elected official, stated:

> "I do not think it is the case of *not caring*. When they see airplanes flying over their head spreading chemicals for the agricultural community, they are concerned about what is in those chemicals, whether or not those chemicals are going to have an impact on their health, today or in the future. [...] Environment is a concern of the entire community, whether you may be African American or White or Hispanic. " (SK)

That is to say, asking practical value-rationality questions, this inquiry discovers that not only the agribusiness sector or the environmental movement have a stake in Delta water governance, as it has been verified with the pump conflict and the aquifer depletion. Including underprivileged citizens in the debate poses an EJ problem. EJ, as commonly intended in literature (Cole and Foster 2001; Rechtschaffen and Gauna 2002; Checker 2005), is not a major issue in the Delta. All Delta inhabitants, regardless of race or income, experience the same environmental problems. However, a broader interpretation of EJ suggests that underprivileged citizens do not have access to resources and recreational opportunities beyond the surrounding natural environment. Resources' constant degradation penalizes those citizens because of their narrow range of possibilities and mobility. For example, surface watercourses such as rivers and streams give opportunities for subsistence fishing and recreation, but they are threated by hydrological impairments and fields' runoff. What if the decision-making process leads to other environmental changes that do not take into account underprivileged citizens' needs? Furthermore, the lack of both environmental quality and human equality (Agyeman 2003) suggests the necessity for policies that allow not only environmental, but also socio-economic regeneration.



Picture 8. The first map (top left) shows the percent of Population in Poverty (U.S. Census Bureau 2011). The second map (top right) shows the same data in the Delta counties. The third map (bottom left) shows the African American Population Distribution (Rural Assistance Service 2010). The fourth map (bottom right) shows the African American Population Distribution in Mississippi (Cottrell 2011).



Picture 9. The first map (top left) shows the value of crops sold as percent of total market value (U.S. Census of Agriculture 2007). The second map (top right) shows the percent of farms with sales of 250,000 USD or more on (U.S. Census of Agriculture 2007). The third map (bottom left) shows the concentration of irrigated corn for grain – harvested acres (U.S. Census of Agriculture 2007). The fourth map (bottom right) shows the change in acreage 2002/2007 in Mississippi (U.S. Census of Agriculture 2007).

Windows of opportunities for the floodplain

The Delta reveals itself as a context where unbalanced relations of power have paralyzed the democratic dialogue amongst stakeholders. Is the Delta hopeless? This question often arose while conducting this inquiry. Bart Poll, an engineer who works in the Delta for a federal agency, has a firm idea:

> "There is no problem too big. […] But people have to make decisions and to do action; and then they have to reach more people doing action. We cannot stop and wait that others will do it for us." (BP)

The ecologist Rod Blue adds:

> "You can always fight, but there have to be people out there willing to sit down and find alternatives and solutions. […]"(RB)

Windows of opportunities do exist in form of partnerships and grassroots initiatives. These ongoing processes may allow an inclusive dialogue amongst marginalized citizens, agribusiness operators, engineers and ecologists, Delta inhabitants, institutions; they all need to sit down and find alternatives and solutions. Some of them are already working toward this direction. For example, the Lower Mississippi River Conservation Committee (LMRCC) is a coalition of public agencies in the Lower Mississippi River Basin. Through the *Lower Mississippi River Resources Assessment* they are partnering with some non-governmental stakeholders in order to find long lasting solution for the Lower Mississippi River. The Delta is part of their areas of interest. US Army Corps of Engineer and ecologists are active cooperators in this experience that someway overcomes the pumping conflict:

> "I spent years fighting against the Corps, and now I am working with the Corps. […] LMRCC tries to bring a little bit of balance back in realizing that the river can be managed better for industries, for agriculture, for shipping, for the threats of flooding. But also, for the ecological values, for fisheries, for birds, for recreation." (Rod Blue)

Among these non-governmental stakeholders there is a Delta canoe company that organizes fieldtrips to the Mississippi River for schools and the general public. The small canoe company also runs an apprenticeship program for local underprivileged youth, in order to train them in swimming, canoe-making, paddle construction, and river guiding. Willie Twain, the company's inventor, stated:

> "I realized over the years that we are living on the banks of the biggest river in North America. […] And yet no one was getting out on the water. Not to say that there are not people interested, […] it is natural you want to see the Mississippi River when you get close to it." (WT)

The canoe company provides experiential opportunities in order to reconnect people with the *Great One*; at the same time, it is creating experimental jobs for marginalized citizens. They are also connected with another ongoing experience: the Mississippi Delta National Heritage Area (MDNHA) partnership. MDNHA is inspired by the value of the Mississippi Delta as a unique place in world because of its main cultural features, such as the Blues, the King Cotton, the Civil War, the struggle of the Civil Rights Movement, the Great Migration, the significance of several writers such as the Nobel Prize winner William Faulkner. After a 10-year period of discussion, the MDNHA Enabling Legislation was signed in 2009. Its main goal is to promote networks of local stakeholders and educational opportunities based on the value of its cultural heritage. The planning process is in progress, and it is built in an open way. Martin Morris is currently working on his dream of rebuilding Delta's identity toward a renewed sense of place and sense of community. He admits:

> "The question is: what can we do to improve a new sense of Delta economy for all Delta inhabitants? Not just economy, but reputation, to make people proud of where they live, to make them value the Delta […]. Why the people in the Delta acted the way they did in the past; why they feel the way they do today; why they are important to America, why they are important to rest of the world. […]" (MM).

Amongst MDNHA partners, there is E.T.H.I.C. (The Emmett Louis Till Historic Intrepid Center). E.T.H.I.C. is a memorial museum dedicated to the civil rights struggle and located in the heart of the rural Delta. There is an ongoing project of expanding the Museum realizing a farmers' market, community gardens and a colonial kitchen, in order to teach local citizens how to improve their lives. About this project, Luther Park says:

> "In order to *feed the world* we have to allow individuals to do something for themselves, and take care of themselves. […] We have been farmers all of our life! We know how to farm and how to grow things. And it should be natural that this is what we do here, […] bringing individuals back to farm, making their own living." (LP)

Small-scale and family farms can thus represent another experiential opportunity in order reconnect a broken relationship between Delta citizens

and the land. Several networks promoting sustainable agriculture are currently spreading throughout Mississippi. Although slowly, they are affecting the Delta as well, based on the idea that before *feeding the world*, Mississippi can feed itself.

Complementary windows of opportunities for Mississippi: lessons from the Pascagoula

While the Mississippi Delta is a highly disturbed river system due to large-scale agriculture's needs, the Pascagoula River is an outstanding ecosystem both for the state and the entire nation, where a fascinating swamp was left uncut for several decades assuming the characters of a pristine bottomland (Schueler, 1980; Herdon and Williams, 2005). The Pascagoula example shows that contexts are not homogeneous: within the same political boundaries it is possible to develop a different system of values, in this case, a deep ecological awareness that could not find enough space in the center of local power, the Delta. During the 1970s, The Nature Conservancy (TNC) joined with community leaders, state officers, and the general public in order to preserve this unique area. The Pascagoula River Wildlife Management Area was established in 1976. The Pascagoula has been conserved because a synergy happened amongst a group of inspired people. After a long negotiation process, the State acquired about 40,000 acres of land to be protected for public non-consumptive use.

> "We understood, still understand that crops are necessary, and timber is necessary. We were trying to have an example of what we could hold up and protect. Since the 1920s it began a major clearing of land along the State of the virgin timber […] converted in agricultural lands. The land use trend was telling us that if we do not do something pretty soon, there is not going to be a valuable track of land anymore […]. People were telling me that I was wasting my time. There was no point to go to the legislator. They have no history of really supporting land acquisition for conservation. Of course I knew that. " (Bill Quis)

Bill defines himself as the *nuts and bolt* person during the epic process of accomplishing this significant public acquisition in the Pascagoula River Basin. Bill, together with other inspired people, state officials, and a wide grassroots support, left a long-lasting legacy in terms of ecological awareness that still affects the decision-making process.

> "All the work that we have done in the past 30 years explains: this is the last river that we have and it is special. " (Al Bird)

Al is an active ecologist working with conservation organizations along the Pascagoula River. Together with other conservationists, he stands up to any possible nuisance for the river, such as the project of expanding the Strategic Petroleum Reserve exploiting the Tatum Salt Domes, project that would have highly disturbed the Pascagoula. This project was proposed in 2005 during the second Bush presidency and it was firmly opposed by a coalition of associations and citizens:

> "All I have to say is that one threat galvanized the support […] that almost everybody absolutely opposed this project. And it saved the river. All we had to do is putting information out there, and everybody helped. We asked fishermen and other people. We had elected officials that signed petitions and said no. This is huge because these people usually do not get into the environmental movement, but on this issue, they were." (AB)

The Pascagoula offers an opportunity for providing experiential education, recreation, fishing, and an overall enhancement of Mississippi citizens' ecological awareness.

> "We are loosing a conservation ethic with children […]. We have to get them outside, to get them to understand what is going on outside, giving them some basic appreciation of ecosystems. " (Bill Quis)

The Pascagoula is also a resource for subsistence fishing and it gives occasions for engaging underprivileged citizens in community projects taking care of a common ecosystem.

> "We want to build a voluntary army, with a lawyer, a doctor, a guy driving the bus… we do not care, but we have to understand the message from river […]. That is the only way: citizens' science and citizens' engagement. " (Al Bird)

Epilogue and Transition: It is a matter of education, what type of education?

All interviewees, with their different frames of reflection, agree on one point: windows of opportunities for whole Mississippi may be implemented through education. Education has been widely discussed in literature about sustainable development and water governance (Gunderson et al., 1995; Pahl-Wostl, 2006). This inquiry points out that education can facilitate a polyphonic dialogue amongst various voices, suggesting that the dialogue may happen if unbalanced relations of power are revealed, and stakeholders agree in working together toward a common goal, recognizing and respecting diversities. In doing so, contacts points need to be explored. For example,

interviewees acknowledge that a balance is required amongst economic and ecological rational: studies on *ecological economics* (Daly, 2011) may offer useful inputs in order to shorten a cultural distance, that exists despite physical proximity, between the Delta and the Pascagoula geographical units because of the overall systems of value expressed within these units. Moreover, a variety of educational approaches have been discussed.

- On behalf of the scientific community working with Delta agribusiness, Willie Silver confirms the necessity of outreach activities in order to involve Delta farmers in environmental conservation efforts: "Because we can come out with the science that we need to implement, but we also have to be able to change the culture and educate the users of the resources, primarily the farmers, about why they should change their habits. I think that this is the biggest struggle." (WS)

- On behalf of the Delta agribusiness community, Mark Klee reports the story of a landowner that is actively cooperating with fellow farmers in order to champion the environment through BMPs; in this case, Mark gives the example of BMPs aimed at reducing nitrogen and phosphorus that cause hypoxia: "There is a successful story of a landowner, in the Harris Bayou watershed in the Delta. […] This person also fishes in the Gulf of Mexico, so he recognizes the problem. He makes the connection between the Gulf of Mexico and his farm. So he is there, as a proactive producer. […] In his farm, we had numerous tours, demonstration days." (MK)

- On behalf of the ecologist community, David Gessy points out the importance of experiencing natural ecosystems, "having fun", learning from them, with the awareness that taking care of rivers is mostly an act of self-respect: "I grew up fishing. […] I have always loved to play in rivers, to look underneath logs and to see what was there. The creek where I played was a great teacher. In someway it thought me more about biology and ecology than anything I could get out of a book, or at least it validated the things that I read." (DG)

- On behalf of the African American community, Simon King claims the necessity of improving the public education system in order that all Mississippi citizens may have the opportunity to practice self-determination. **"**You probably do not have as much education […]. It does not mean that the African American community is not concerned about the environment; it does not mean that they do not care. They do care, but they do not have a voice" (SK)

- On behalf of Mississippi scholars, the last voice of this dialogue expresses the same concern for self-determination. Karl Montgomery, who actively works with students in order to practically improve the local context, suggests a liberation approach to pedagogy (Shor and Freire, 1987) for all Mississippi citizens: "Education gives options, economic, social options that you can exercise in life. […] You can choose where you live and what you do, and this is what education is; it is liberation. It liberates people to stay where they are, to move some place new, to pursuit their dreams, and to invest in their history. […] Ultimately, when people are educated, it is more likely that they become enlightened, that they understand that we are connected to each other, and that brighter futures are more probable through working together. Education gives individuals those options. I think it is a huge part of the solution. The challenge is how do you influence real chance in the educational system. […]" (KM)

Outreach, peer collaboration, experiential learning, inclusiveness, self-determination, liberation. All these educational approaches may be combined within a Participatory Action Research (PAR) process. A PAR process may endorse the responsibility of catalyzing the contamination amongst various perspectives, toward a desirable common goal of environmental quality and human equality. Moreover, all interviewees agree that solutions cannot be imposed top-down; in order to enhance collaborative bottom-up efforts, an open and democratic dialogue is necessary for warding off never-ending conflicts, exclusion, and uncritical consensus building. In this respect, the *Simeto Tale* highlights how collective actions may represent integrated windows of opportunity toward this direction, merging Governmental, Non-Governmental and Research & Education inputs. In the light of these reflections, the *Simeto Tale* is inspired by the following basic storyline: I frame the peculiar preconditions and characteristics of the context; I summarize an environmental conflict and how it has been overcome, introducing those collective key-actors that were able to generate the PAR process; I present the PAR process in relation with my experience, highlighting evolving conditions, challenges, co-adaptive strategies and collaborative bottom up efforts; I focus on those mechanisms that allowed resilience within the process; I underline that missing bottoms and obscure relations of power may be tackled through an open and democratic dialogue.

3.2. A Simeto Tale

> "Il mondo è grande ed è bello, ma è molto offeso." Tr: "The world is wide and beautiful, but the world is very hurt."
> (Elio Vittorini, *Conversazione in Sicilia*
> Tr: *Conversations in Sicily*, 1941)

As a co-researcher in a PAR process I share what I have experienced and learned during the process itself, telling a story. Here I present the "long and *passionate* road" toward the Simeto River Agreement, borrowing the adjective *passionate* from Fischer (2009) in order to portray the vibrant and explosive character of a community that lives close to the active volcano Etna. Stories can be written in several ways Storylines[1] are interpretative keys that give specific meanings to events; in this case, drawing from lessons learned in Mississippi, the Simeto Tale is narrated in way that underlines how conflict and collaboration play a role in the course of the events. The story is articulated through the following steps:

- Setting the stage: the Etna-Simeto social-ecological system
- Prequel to PAR. An environmental conflict.
- Overcoming the conflict. Genealogy of the Simeto River Agreement.
- Collaborative bottom-up efforts and evolving institutions.
- Collective reframing and collective studies.
- Missing bottoms and obscure relations of power. Reframing again.
- Where we are. Where we want to go.

[1]The storyline comes out of what I have learned in Mississippi doing case study research with a 'participant attitude', merging myself within that foreign context, and constantly carrying in mind my native context of Sicily. The Mississippi journey allowed me to focus on some key-aspects of collaborative watershed planning, through a specific interpretative key. The experience of taking some distance from Sicily provided me the opportunity of looking at the Simeto River Agreement from another perspective. For this reason, I open this *Tale* with a quote from Elio Vittorini's popular novel, whose protagonist comes back in Sicily after having been left.

Setting the Stage: The Etna-Simeto social-ecological system

If they could talk… what would the Simeto River say, from the bottom of the floodplain and the mouth? What would "*Mamma (Mom)* Etna" say from the top of the craters? They have been observing a changing landscape over millennia and they have been changing with the landscape as well. In a co-evolutionary relation, humans and nature have shaped a peculiar socio-ecological system that is now experiencing a critical phase. "There is too much waste, too much entropy, too much human greed and unfairness; but there is always time and space for windows of opportunities, hope and new beginnings", probably they would say. Who knows. This snapshot is aimed at identifying preconditions and characteristics of interactions between human communities and the Etna – Simeto socio-ecological system (SES); this snapshot is a synthetic excerpt of what has been elaborated in various forms of outcomes, during various phases of the PAR process, integrating local knowledge and technical expertise. The Simeto River runs along 113 Km and its watershed drains more than 4000 square Km in eastern Sicily, being the widest river basin of the island. The Simeto Valley is a portion of the watershed where approximately 160,000 permanent residents live in several municipalities, with Adrano and Paternò as the north and south main ones. The expression "Simeto Valley" refers to 1/3 of the river in its middle course, where the river changes its characteristics from the torrential flow of the upstream course, to a different energetic status that generates natural meanders before turning southeast forming the floodplain, and then reaching the Ionic Sea through its mouth. De facto, the natural configuration has been reshaped and highly modified by anthropic projects such as concrete dams and levees for anti-flooding as well as hydroelectric and irrigational facilities, realized during the second half of the 20th century; the Simeto then has become "a manual of engineering mistakes", as a hydraulic engineer stated during a public meeting. "No more riparian forests, and very few wetlands", an ecologist added. This is to say that, like the majority of other rivers in the world, the Simeto River has lost its identity; nowadays, biodiversity is threatened, no more fishing or boating, and some young inhabitants declare that they rarely experience the river. A completely different scenario characterizes Mount Etna, the tallest active volcano in Europe, a popular attraction for local and foreign visitors due to its biological and geological peculiarities. Recently, "*Mamma* (*Mom)* Etna" has also been declared a World Heritage Site by the United Nations Educational, Scientific and Cultural

Organization (UNSECO, 37th Committee Session, Cambodia, June 2013). As a matter of fact, the Etna and the Simeto River belong to the same system, both in people's perspective (landscape), and from an ecological perspective. As a matter of fact, on the left bank the river collects Etna's waters, receiving abundant springs coming out from the bottom of the volcano; underground lava layers function as a natural tank for groundwater, and the fertile topsoil, formed by a joint river-volcano action, allows abundant crops. Differently, the Valley's right bank is characterized by clay soil, with several Simeto tributaries coming from the western Erei Mountains that are affected by instability and erosion. Due to these conditions, since the Stone Age, human settlements have mostly developed on the left bank. For centuries the local socio-ecological interaction has produced virtuous rural infrastructures such as handmade stone terraces, irrigation channels (called *saie* in ancient Arabic), aqueducts, water mills, wells, more recently railways and similar infrastructures; these infrastructures served the high-quality agricultural production of almonds, pistachios, vegetables, citrus trees, and so forth. In addition, the rural culture generated significant material and immaterial heritage, whose physical signs are for example rural churches and farm villas called *masserie*; immaterial signs are songs, poems, portraits and so forth; being all these various forms of local heritage strongly intertwined with rural habits. Despite a resilient and co-adaptive relation between humans and nature, the *latifundo* and a complex system of illegal power has often challenged social emancipation. Moreover as it happened for the aforementioned dams and levee's construction, the second half of the 20th century represented a turning point for the human/nature relation. As a matter of fact, rapid urbanization, large-scale mechanized agriculture, monoculture, chemicals, exports, industrial production, and the myth of economic growth broke that old resilient relation, producing a highly disturbed Socio-Ecological Systems (SES). The crisis of the agricultural market, between the 1970s and the 1980s, has then generated abandonment, negligence and decline in the Simeto Valley. Unemployment and economic shortage started distressing local communities and discouraging young generations. Urban areas broke the co-adaptive cycle with rural areas in terms of stormwater management, sewage treatments, food production and consumption, industrial pollution and waste management. By the end of the 20th century, waste management had become one of the most serious threats for the Simeto SES, as for the entire Region, whose institutions face a perennial situation of emergency.

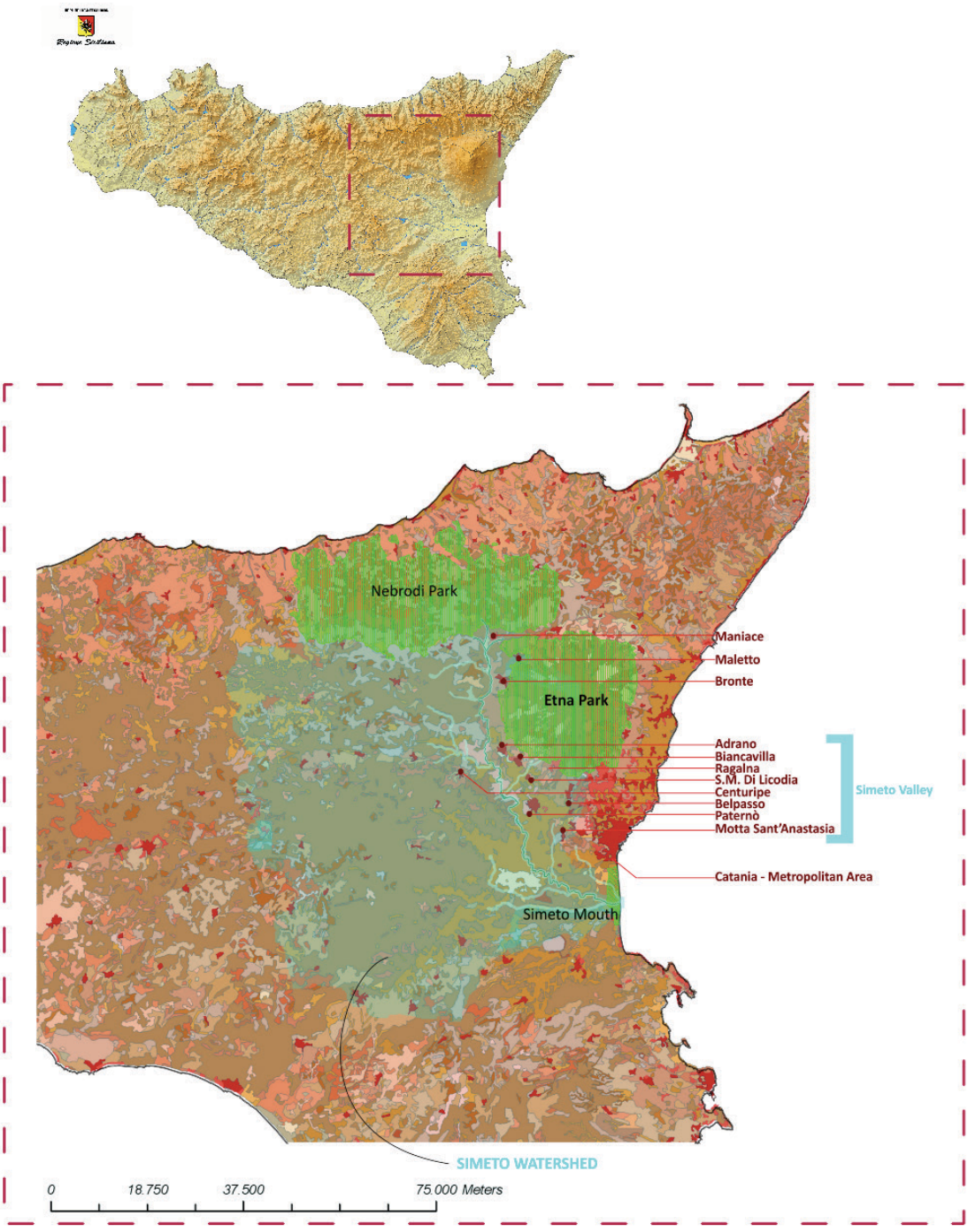


Figure 10. Simeto Watershed, Municipalities along the Simeto River course, main Natural Parks and Refugees (author's elaboration on the Sicilian Region land use map).

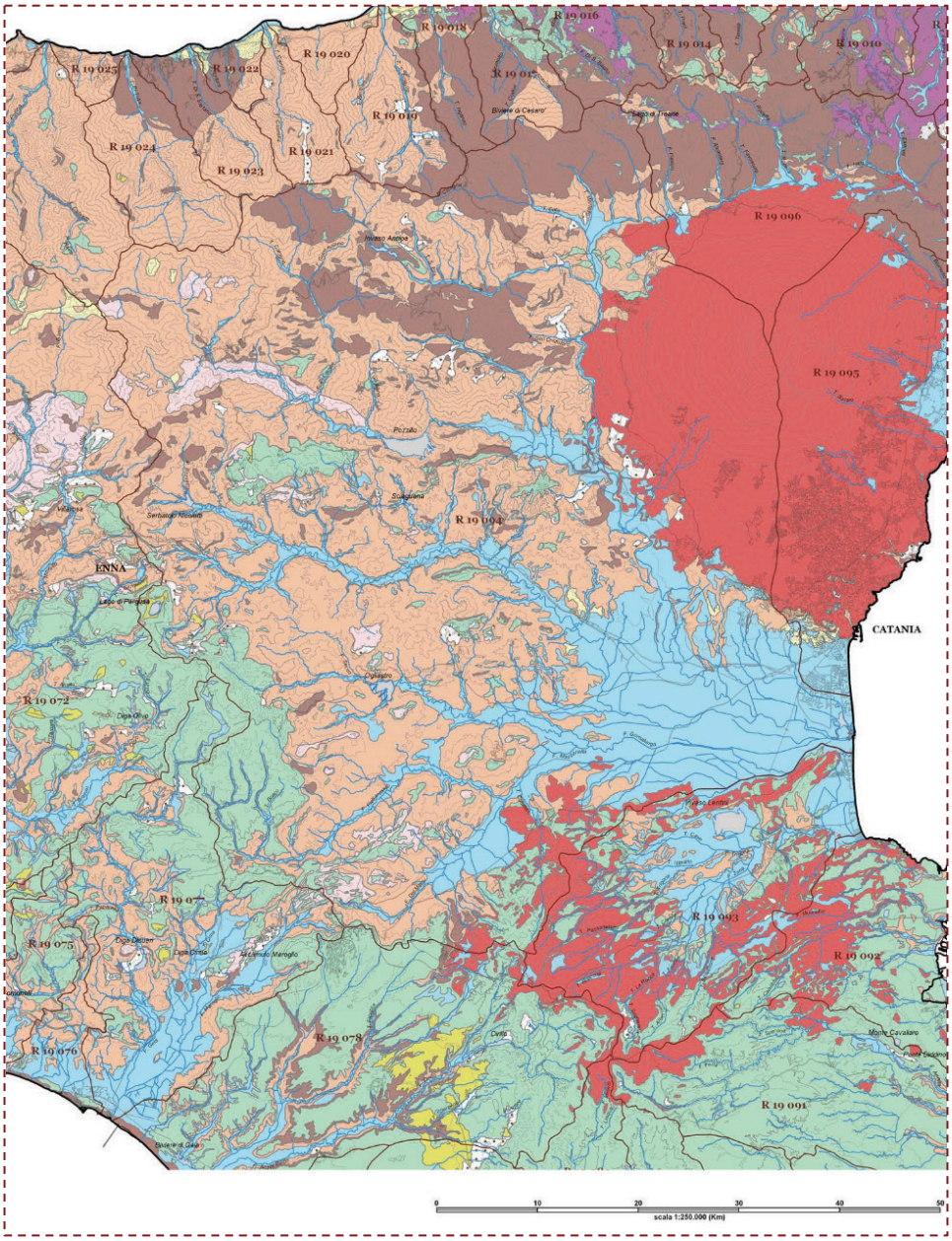


Figure 11. Geological map of the Simeto Watershed. Red: Lava soil. Blue: Alluvial Soil. Orange: Clay Soil. Map (source: Sicilian Region – Water Observatory).

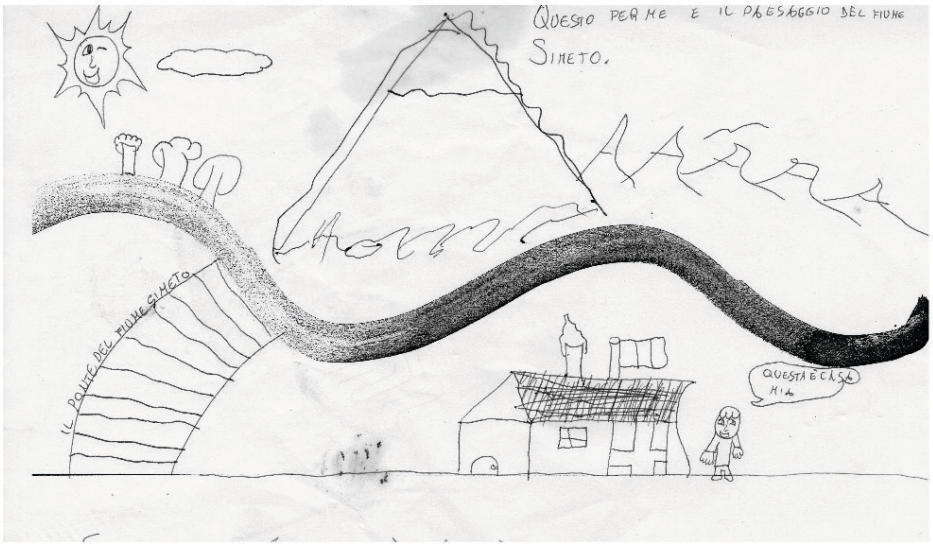


Figure 12. Top: Mental mapping by a Simeto kid representing the relationship between the Simeto River and the Etna Mountain. Center: natural beauty in the Simeto Valley; Bottom: abandoned rural areas in the Simeto Valley (source: SimetoPAR archive).

Prequel to PAR. An environmental conflict

Gravagno et al. (2010), Raciti (2011) and Saija (2013) have discussed how the Sicilian waste crisis has impacted the Simeto Valley, generating a harsh environmental conflict. According to Saija (2013) "the "European Directives (91/156 CEE, 91/689 CEE, 94/62 CE) officially adopted in 1997 by the Italian legislation […] had EU Regions to produce waste management plans aimed at transforming waste to energy and reducing the amount of land required for landfills. In spite of the available funds to implement those plans for many years the waste management situation in Sicily reflected a complex combination of obsolete official management strategies (almost exclusive dumping, with a recycling rate of less than 2%) with illegal management strategies implemented by organized-crime, well documented by official legal and political documents and by the yearly *Ecomafi*a report prepared by the non-profit association *Legambiente*. In 2000, the Sicilian Government attempted to address this situation through the development of a *Document of Priority Actions for Waste Management* (PIER), establishing a target for recycling of 40-50% and stating that the remaining portion of solid waste had to be collected in a new CDR production system (CDR = waste-to-fuel). The CDR was to be used by local industries that were encouraged to adopt new waste-to-energy technologies. Two years later, the newly elected President of the Sicilian Region Salvatore Cuffaro decided to change strategy. The Waste Management Plan prepared in 2002 by his administration rejected the idea of encouraging the technological conversion of existing industries to use waste as fuel, and published a call for tenders, designed to have 4-5 private actors managing the non-recyclable portion of solid waste through waste-to-energy facilities." (p. 4). The Cuffaro plan generated mistrust from community-based groups as well as from experts because it was lowering the recycling target in order to make the waste-to-energy facilities work at their maximum potentialities; moreover it was creating a private monopolistic regime around the undifferentiated waste-treatment business. One of the main concerns was related to the infiltration of Mafia clans in the business, and in 2005 two crucial events happened: an official report highlighted procedural anomalies in the Cuffaro planning process, with a mafia-related enterprise temporarily included in the construction and management of the waste-to-energy facilities; meanwhile in the Simeto Valley, regional and local institutions were authorizing the construction of one of the four waste-to-energy facilities in contrada Cannizzola (Paternò)

close by the river. At that point, the Simeto community stood up with no hesitation, and started opposing the project and the regional plan. The Simeto community formed a "*Coalition of grassroots groups for The Simeto River* (*Coalition*)"; the Coalition included various stakeholders but no administrators with the exception of the mayor of S.M. di Licodia (a small town of less than 7000 inhabitants). The campaign carried out by the coalition was the beginning of a conflict between governmental and non governmental representatives, the former moved by business-related interests, the latter animated by a common rebuttal against a highly exploitative plan connected with mafia affairs. A legal action and public protests were conducted against the *Regional Waste Management Plan*. The 'anti-incinerator campaign', as it was commonly called, extended its opposition to another waste-related and environmental controversial project, a factory that was about to introduce hazardous waste in the production cycle in Adrano. The Coalition highlighted the connection between the Paternò waste-to-energy facility and the Adrano "poisoning factory", as local people called it. Both enterprises had in common a controversial corporation, the DB Group, which had high interests in the waste-management sector. Saija adds: "The Simeto groups, thanks to their work, but also to some contingent events, prevented, at the local level, the authorization for the use of hazardous waste in the production cycle in the DB Group Adrano Factory (June 8th 2007), as well as the closure of the DB Group Paternò facility by police officers for documented irregularities (March 12th 2008). They also played a key role in preventing the construction work at the Cannizzola site, while a largest legal and political game against the *Regional Waste Management Plan* was being played on a larger scale; a game that ended with a substantial victory of the anti-incinerator front, also related to significant change in the Sicilian power structure" (ibid. p. 11). The new elected president Raffaele Lombardo officially refused the Cuffaro's *Waste Management Plan* through the Regional Law n°9, 2010 and denounced mafia infiltration in the waste-to-energy business. Finally Salvatore Cuffaro was condemned for aiding and abetting Mafia on January 2011.

During the "anti-incinerator campaign" the Simeto Coalition immediately juxtaposed a YES! to a NO! The protest started triggering the debate about proposing a long-enduring vision for the Simeto Valley as an alternative to the mainstream economic model, being the waste emergency only one evident effect of a wider problem. Not only this common idea was rooted on local issues; it was also connected with global challenges,

elaborating critics to the ongoing unsustainable development mechanisms, and looking for possible alternatives. On one side, the Coalition started an informative campaign about *Zero Waste*, i.e. an international strategy aimed at promoting a community-driven process toward 100% recycling; on behalf of the *Zero Waste* Strategy supporters, Prof. Paul Connet (environmental activist and professor of Chemistry at St Lawrence University) and Rossano Ercolini (president of Zero Waste Italy and 2013 Goldman Prize) were invited to inform the local community about possible alternatives that were being tested in other parts of the world. On another side, a group of PAR-oriented scholars from the University of Catania (UnictPAR) was involved during the "anti-incinerator campaign" and provided technical support for the legal action against the waste-to-energy facility in Paternò. Beyond the technical support, the PAR-oriented group started an informal partnership in order to investigate and to organize community-based initiatives; the debate about the long-enduring vision for the Simeto Valley was generating a reflection about local economies. In 2009, a voluntary-based partnership between the Simeto Coalition and UnictPAR (from now on called SimetoPAR) initiated a debate about sustainability through a series of public meetings. One of the first steps of the partnership was the organization of a Community Organizing workshop conducted by Prof. Kenneth Reardon (University of Memphis), and Wade Rathke (ACORN International). The workshop targeted various PAR-oriented scholars and community leaders, and it was aimed at improving the efficacy and the grassroots effort that was occurring in the Valley. The workshop was also part of a broader Valley-wide festival. Since 2004, the Simeto Coalition organized, and still does, ViviSimeto, named after one of the main associations within the Simeto Coalition, together with Comitato Civico salute-Ambiente Adrano. ViviSimeto is aimed at exalting and celebrating the *genius loci* (Norberg-Schulz, 1980; Pizziolo Micarelli, 2011) in various forms through local arts and crafts. The festival also encourages responsible recreational activities in the Valley, such as biking and hiking; moreover, the festival promotes local high-quality products and economies, with the awareness that local communities are connected each other at the global scale. ViviSimeto 2009 was the moment when my personal PAR journey started. The journey is now told through excerpts of my notes, which have been organized in order to continue following the aforementioned narrative steps.

Figure 13. Top: photos and fliers from the 'anti-incinerator campaign' and the 'anti-poisoning factory' campaign. Bottom: Contrada Cannizzola, Paternò (source: SimetoPAR archive).

Overcoming the conflict. Genealogy of the Simeto River Agreement

My first encounter with SimetoPAR was between June and September 2009. I was fascinated by what was happening in the Simeto Valley, for me an unknown territory despite my hometown, Catania, is technically located within the Simeto Watershed. At that time, the Simeto Coalition was claiming attention so loudly that even the most distracted citizens were reached by this common voice. The campaign against the *Regional Waste Management Plan* was generating a collective and spontaneous attitude to overcome a common NO! through a common YES! This was the clear message lunched in various initiatives and public campaigns that were organized by the Simeto Coalition. As a master student interested in environmental conflicts, it was natural to frame the anti-incinerator campaign within the overall debate about the *Not In My Backyard* (NIMBY) syndrome. The NIMBY syndrome was one of the most discussed and controversial topics in the international debate, as argued for example by Fischer (2000) in *Citizens, Experts and the Environment*. Manuals describe the NIMBY syndrome as local communities refusing to accept a project that may threaten their health and quality of life, without taking into account the general interest and ignoring the broader picture. This was a frequent argument that various political actors used in order to denigrate the Simeto Coalition's effort, and other similar campaigns that were spreading in Italy at that time such as the Acerra Campaign against another waste-to-energy facility, or the Movement against the megaproject of the bridge Messina – Reggio Calabria for connecting the island of Sicily with the main land. This general debate was capturing my attention and I recognized some stimulating features within the Simeto River Campaign that were not typical of a NIMBY attitude. If a NIMBY syndrome occurred at the beginning, it was widely accepted the necessity of overcoming the syndrome, moving from opposing something 'bad' proposing something different for the broader benefit. The point was not to advance the local interest against the general one; the point was rather catalyzing a debate about current development models and possible alternatives. In Italy, especially in Sicily, megaprojects were and still are perceived as dangerous because of the hidden relations of power aimed at straightening the dominant influence of the Mafia in the Governmental sector. In the case of the *2002 Regional Waste Managent Plan*, this main concern was subsequently proved to be true when Salvatore Cuffaro was evicted for mafia affairs in 2011. Beyond the common distrust toward the Governmental Sector, the civil society realized that an

alternative was required. The Simeto Coalition started adopting a common language for a common dream. The first proposal was initially envisioned as a River Park, being established a formal organizing committee in 2008. I engaged in several conversations with the members of the organizing committee, and I realized that the River Park was perceived as a long-enduring project for protecting and exalting the local beauties and forbidding the various exploitative mechanisms that were threatening the Simeto social-ecological health. When I heard about the River Park proposal, I developed interest in this idea and I decided that I had to support the effort somehow. Meanwhile, I was becoming part of the UnictPAR group as a graduating student interested in developing a *service learning* master thesis, i.e. I was interested interested in fulfilling academic requirement through a practical experience of community service, learning-by-doing. I spontaneously took part to the Simeto Coalitions' technical group that was proposing the River Park, in order to better understand what the proposal was. UnictPAR was skeptical regarding the technical group as a it was still proposing separated activities for citizens and expert; furthermore UnictPAR arose some concerns about the Park as a proper strategy for revitalizing the Simeto Valley. UnictPAR's concerns regarded three aspects: first, according to the Regional Law 98/81 in matter of preserved natural areas, proposing a Park implied defining a system of regulations, prohibitions, and boundaries, that may generate various degree of opposition amongst various local producers; second, the Regional Law did not actually take into account strategies for promoting sustainable development, that seemed what the Simeto coalition was actually looking for; third, a technical group would have still generated the separation experts/citizens based on a technocratic principle rather than a democratic one. Moreover, the experience of a regional park located close by the Valley, the Etna Park, has a lot to teach to the Simeto group. The Etna Park was instituted in 1987, as the first Regional Park in Sicily, and it was aimed at preserving the Etna volcano's unique features. The establishment of the Etna Park was a historic and important planning innovation in the Sicilian context, which helped raising environmental awareness; and still, despite the common recognition of Etna's Environmental value, it did not occur without resistances from the local community. This story was known to same experts of the Simeto Coalition (especially the UnictPAR members), who had firmly supported the Etna Park institution and were, therefore, aware of its limits. In September 2009, during an animated meeting about the Simeto River Park, the aforementioned individuals pointed out that the establishment of

the Simeto River Park could have been controversial, with a possible result in landscape crystallization and subsequent deterioration, rather than socio-ecological revitalization. Someone also recalled a local tragedy of the commons in the Valley: the aquifer decline, draught, and the lost of vital minimum flow for the Simeto River itself and for several streams were experienced as emerging challenges connected with the illegal pumping operated by some farmers. How to face these problems? How to discuss with the farmers the hypothesis of adopting better irrigation practices, and with the overall citizenry about the necessity of taking care of our common resources as a community? In the light of these questions, we realized that we needed something different rather than a Park for the Simeto Valley. If the SimetoPAR had to continue, it had to trigger the democratic debate, to open up the divide citizens/experts and to explore community-organizing strategies. Starting from an interest in the River Park idea, after the meeting I realized that a "participatory" shift needed to take place, as the natural heart of SimetoPAR, in order to generate more suitable outcomes for the Simeto Valley. In order to define which strategy we had to adopt, SimetoPAR started meeting on a weekly basis in a rural house close by the river. The house's owner used to call it *Water House*, because of its proximity with one of the several springs on the left bank; moreover, the owner acted like a friendly coordinator opening that space to various visitors that used to come, not only from the Valley but also from all over the world. SimetoPAR's first steps were aimed at organizing the Simeto Coalition's archive in order to build up what Folke et al. have defined as *Social Memory* (2005), promoting the awareness of the common process from the "anti-incinerator campaign" with its various evolutionary phases. In the meanwhile, we were collectively trying to design a strategic action that could synthesize various emergent necessities; according to the proverbial saying, the action was defined as "*catching* more birds with just one stone" (of course without any attempt to kill the birds, being a group with an attitude for protecting endangered species). The strategy was aimed at building the widely debated lung-enduring vision for the valley; specifically the strategy was aimed at addressing simultaneously the integration of technical knowledge and local knowledge, triggering the public debate and involving a variety of stakeholders with different systems of values and interests; the strategy still promoted experiential learning about the vital role of ecosystems and the socio-cultural production connected with them, being this attempt based on the synthetic statement "You love only what you know". Moreover, the strategy had to produce a

collective document as an outcome of the process, to be used for starting a constructive dialogue with the Governmental Sector in order to influence the decision-making process; the ultimate goal was to improve the democratic dialogue about environmental and socio-economic sustainability the Simeto SES. We identified that a *Community Mapping* initiative could be a feasible strategy in order to address the aforementioned objectives. The idea came from different participants to the SimetoPAR group, but I want to acknowledge specifically a member of the Bioregional Movement who had previously experienced the Community Mapping practice, giving a precious input to the Simeto initiative. The Bioregional Movement arose in the 1970s in California promoting a deep connection with local places as a way to improve socio-ecological relations. The Bioregional activist, living in the Simeto Valley for a while and defining himself as a "river warrior", gave his original and vital support to the Community Mapping project. Being an energetic and close-knit team, together we conducted various collective studies and arrived at defining a peculiar set of tools. Specifically we decided to use various maps printed in various scales representing the entire river course and the land surrounding it. The main map, 10 meters wide by 3 meters high, was able to raise a lot of enthusiasm. The purpose of the maps was to link the physical dimension with the immaterial one through low-tech instruments such as paper, markers, stickers, blackboards, and all our enthusiasm. We did not have any money at that time: everything was based on voluntary activism and lacked university funds. Not everybody was persuaded within SimetoPAR. There was a group of skeptic community members that observed with a doubtful and experimental attitude what the other group of community members and engaged scholars wanted to implement. The skeptics were afraid that the Community Mapping initiative could be just a naïve exercise, which was not going to produce anything meaningful, unable to interfere with the Governmental decision-making process, and that could exacerbate diversity of perspectives. For this reason, we organized a first experimental event during which we self-tested the actual potentialities and limits of the Community Mapping initiative as we conceived it. Facilitators were those community members and engaged scholars who were promoting the experiment; *mappers* were the skeptics and an extended number of invited community members, about 100 persons, who were part of the Simeto Coalition but not consistently engaged within the SimetoPAR group. The first experimental event took place on December 20th 2009, and it was a great day. We enjoyed gathering together at the *Water*

House. Everybody cooked something and shared the homemade food with other participants; we laughed and had a good time together; moreover, we spent a day discussing about our native land, our values and memories, our problems, our motivational purposes, our meanings in life, our ideas for the present and for the future. With our low-tech tools in a relaxed atmosphere, we enriched the big map and collected a variety of meaningful input for the common document to be used in a constructive dialogue with the Governmental sector, document that was then created as a initial draft, and was then enriched during next meetings of the Community Mapping initiative. And yes, the skeptics were finally on board; all the participants were on board; one of them stated: "let's embrace the fascinating insanity of this grassroots project in the Simeto Valley". From January to May 2010 we organized several open-house events and public meetings in order to engage as much citizens as we could, working at the *Water House* in order to involve the rural community; and also going inside schools, civic centers, museums, in order to involve urban inhabitants. In five months we were able to reach more than 500 citizens working in four municipalities of the valley. Despite our enthusiasm for the positive energy catalyzed during the *Community Mapping* initiative we were questioning if there was something to adjust within the PAR process. We observed that the citizen/expert divide was somehow disappearing, and that now it was time to explore another dimension of the PAR process. It was time to synthesize what we had collected as a common voice for the Simeto community, although we were aware that more stakeholders, such as local farmers, had to be reached in a more structured way. But we were at a point of the voluntary process when another strong awareness arose within the SimetoPAR group. If a broader community involvement had to happen, it needed to be supported by the Governmental Sector. In May 2010 we delivered a first document to local and regional administrators in order to start that constructive dialogue that we envisioned from the beginning. It was a synthesis of the Community Mapping initiative, and it was an open-ended document. The document served more like an invitation for an open event in order to enrich the document itself, in joint Government/Non-Government working teams. It was ViviSimeto 2010, and the Valley-wide festival was titled: "Collaborative Planning is Possible: An Agreement between the Grassroots and Institution to Regenerate the Simeto Valley". In May 2010 the expression "Simeto River Agreement" was pronounced for the first time in that occasion.

Figure 14. People at work during the Community Mapping Initiative (source: SimetoPAR archive).

Figure 15. Flyer of the ViviSimeto 2010 event, reporting, for the first time, the expression 'River Agreement' (source: SimetoPAR archive).

Collaborative bottom-up efforts and evolving institutions

May 21st to 23rd was an intense event. Based on what we had discussed during the Community Mapping Initiative we organized six focus groups about the topics that were identified as crucial for the Simeto Valley: Water, Agriculture, Shelter, Environmental and Cultural Heritage, Tourism, and Energy & Resources. The last one included the discussion about waste, to be intended as a resource rather than a problem. Although watershed planning may be intended as related just with few aspects that are connected directly with water and rivers, based on *mappers* inputs we focused on the complex ecological relation with a holistic approach. Every focus group was formed with various community members, from the Governmental, Non-Governmental, and Research & Education sectors; participants came from the Simeto Valley as well as from other parts of Italy, in order to give a broader contribution to this exalting project, as many of them publicly declared. As a matter of fact, it is rare to experience participatory democracy in Sicily; and yet it should be promoted by the Governmental sector, as required by the European Directive 2001/42/EC. On the contrary, members of the associations had previously experienced pretended-to-be participatory institutional decision-making processes, feeling that the participation was "just on paper" generating frustration amongst those community members willing to give their inputs. Beyond what had been done in Sicily before, we focused on the present, acknowledging that new opportunities were about to arrive, thanks to a fortunate combination of enthusiastic energies around the Simeto Valley. Each focus group felt committed to produce a document identifying values and principles, strategies, pilot actions and projects to be implemented in the short as well as in the long run. The common outcome was a community-based strategic plan for the Simeto Valley, that contained the identity values of the Etna-Simeto landscape "as perceived by people, whose character is the result of the action and interaction of natural and/or humans factors", in accordance with the European Landscape Convention

, as well as with the Regional Law 71/78. Moreover, the community-based plan contained actions, projects and responsibilities to be assumed by various stakeholders. The River Agreement was intended as an organizational structure to be collectively identified, in order to translate responsibilities into action, still exploring the various systems of values and interest that characterize the complex Simeto SES. May 23rd was the last day

of ViviSimeto 2010. May 23rd was also the 18th anniversary of the "Slaughter of Capaci", when the anti-mafia judge Giovanni Falcone, his wife Francesca Morvillo, three police officers Vito Schifani, Rocco Dicillo and Antonio Montinaro were brutally killed by the Mafia. At this point of the story, it might be worth to specify how the complex discourses about the Mafia, intended as obscure relations of power, are connected with the reasons of implementing a PAR process in Sicily.

As a native inhabitant, I experienced that the mechanisms generating the mafia system can be fought with a collective effort, with a deep and courageous change of direction starting from everyday practices. I engaged myself in several conversations with other participants in the PAR process, and we shared the same concerns and the same will. We discussed how the disgraceful "Mafia stain", which we carry with us as Sicilians, is rooted in Sicilian democratic deficit, and it may be counteracted through a continuous effort toward more democratic and empathic relations. This is also what I learned after reading *Cose di Cosa Nostra* (tr: *Things of Cosa Nostra*), the collection of Giovanni Falcone's interviews conducted by Marcella Padovani (1991). In May 23rd we collectively read some excerpts of these interviews, and we were ready to continue our common path with a renewed awareness about the sacrifice of other Sicilians and other human beings who firmly fought against that stain. With this attitude, the day after we were ready to continue working.

We organized collective studies in order to learn from other experiences related with collaborative watershed planning. In particular, November 29th we learned from the story of Panaro River (in the northern Italy). The Panaro River had undertaken a similar collaborative watershed planning effort in terms of a River Landscape Contract. Although the label, the context and the overall process were barely different comparing with the Simeto River Agreement, the basic guiding principles were the same, i.e. generating a long-enduring vision for a River valley according to the European Landscape Convention. The Panaro's story was told from two "passionate participants" within that process. At this point, the Simeto River Agreement was ready to be practically shaped. The process followed two parallel directions. On one side, we tried to implement two pilot actions that we identified during the focus groups; we chose two projects that we could start immediately with few resources. That was done because we perceived that we needed to find a practical starting point in order to experience what collaboration amongst Governmental, Non-Governmental, Research &

Education stakeholders means, with a learning-by-doing attitude. On the other side, we needed to coordinate the Governmental sector in order to build the organizational structure that we had envisioned.

Pilot actions were identified within the territories of Adrano and Paternò, choosing two areas that were identified as significant for the entire Valley. In Adrano we worked in a public space; it was an abandoned municipal park in a low-income neighborhood where inhabitants spontaneously organized themselves in order to clean up the space during a serious waste-emergency in 2008. The park is positioned in a privileged point, due to its altitude, for observing the Simeto Valley. In Paternò we worked in a space close to the river, in one of the few open accessible points for reaching the river's banks. The abandoned area was originally designated for the installation of a water-depuration plant; once the plant was located in another site, this site became neglected attracting illegal dumps of hazardous wastes such as asbestos. While in Adrano we were able to apply for and receive a grant, in Paternò it was not possible. In Adrano we had the Governmental support that allowed us to establish a formal partnership, while in Paternò various Governmental agencies could not even attribute the ownership and management of the land, that was defined by Raciti (2011, p. 222) a "no-man's land". In Adrano we cooperated with inhabitants, mostly retired persons that acted as "neighborhood grandparents", together with young kids from an elementary school and their teachers, developing experiential learning practices and redesigning the park according with ecological principles with a focus on the water cycle This experience was also framed within the broader network "Sicilian Peace Gardens", that promotes experiential learning through hand-on activities and reconnection with nature; the network is also connected with the national one, "Peace Gardens", coordinated by the Cesena Eco-Institute that is inspired by the Bioregional movement. In Paternò, the grassroots effort consisted in redesigning the site according to ecological principles as well, through a community-based support. Not only kids from schools, but also Non-Governmental representatives participated in a collective design process, which culminated with a "Spring Fest" in April 2011. During the "Spring Fest" we implemented a demonstrative action, "planning and adopting a tree", in order to wishfully underline the necessity of ecological restoration, and the community demand for infrastructures aimed at supporting responsible recreational activities, such as bird watching, together with experiential learning. While both experiences were successful in terms of grassroots support and enthusiasm,

allowing a practical understanding of bottom-up collaborative efforts for ecological design, a limit was evident: the Governmental sector was not walking along with the Non-Governmental and Research & Education sectors. In Paternò this limit was evident since the beginning, while in Adrano it emerged when we asked the Municipality to assume the responsibility of practically realizing the project that the kids and the "neighborhood grandparents" had designed. During a public event in June 2011, Governmental representatives received a symbolic "bowl of dirt" from the kids; the bowl represented the hard work, hands on the dirt. We were inviting the administrators to do a comparable effort in order to allow the realization of the project. But unfortunately, that was not the case.

While SimetoPAR was implementing those actions, implementing the River Agreement's organizational structure was a challenge to be faced with patience. On one side, we were experiencing the failure of Governmental sector's disengagement in the pilot actions; on another side, we were going through a low-energy phase, connected with an internal reorganization of UnictPAR and of the overall SimetPAR group. Moreover two circumstances contributed to the low-energy phase. First, we were still working with no public funding and very scarce research funding; we could benefit just from the Adrano Peace Garden's grant that barely covered some expenses. Second, we needed at least a "friendly institution", beyond the University and schools, which could establish a formal partnership with SimetoPAR in order to apply for grants aimed at accomplishing the economic self-sustainability of the PAR process itself. We identified the *Soprintendenza BB.CC.AA.* (tr: Government Department responsible for the Environmental and Cultural Heritage) as a possible supporter. We organized several meetings in order to understand the real willingness of the Governmental sector to take part of this collaborative watershed planning effort. We invited Governmental Representatives of all the municipalities and provinces along the entire river course in order to define a common path toward the Simeto River Agreement. Specifically, after several meetings we prepared a Memorandum of Understanding (MoU) that contained a synthesis of the common vision expressed since that point, the general framework for extending the SimetoPAR group with Governmental Representatives, and the institution of a "Valley-wide Local Development Agency" in order to coordinate the River Agreement Process with a polycentric approach, as Ostrom (2010) recommends. The MoU contained also the proposal of defining a "River Statute", i.e. a system of common rules designed by various resources' users,

still consistently with Ostrom's reflections. After a long process of dialogue with Governmental representatives, the MoU was finally signed in 2012, April 26th in Adrano.

The MoU was not an effective turning point for the Simeto River Agreement as we expected, due to several factors. First, only 4 Municipalities out of 14 invited, and only one Regional Province signed the MoU, together with only 5 associations, because the broader Simeto Coalition was now becoming disengaged and doubtful about the real feasibility of the project. Second, neither the "friendly institutions" nor institutional representatives from the University of Catania, such as the Head of the University, attended the event for signing the MoU. Third, we were going through an institutional transition phase, with Municipalities' elections, discussions about the abolition of Regional Provinces' political authorities, Regional elections, University elections, National political instability, and whatever can make a policy decision an highly instable decision. So we were still trapped in a very low-energy phase, during which SimetoPAR had the commitment of maintaining a minimum level of vitality in the public debate in order to allow the "River Agreement Dream" to survive. I need to highlight that SimetoPAR was also changing its configuration constantly; few *action researchers*, from the Simeto Coalition and from UnictPAR, were always working on the field and maintaining a hopefully attitude, still using the expression "Simeto River Agreement" as a long-enduring vision for the Valley. To them it goes a deep gratitude. And then, high-energy configurations were about to come back again. A month after the MoU's signature, the elections' season started. Specifically Paternò and Adrano shared important results; Paternò and Adrano are two Municipalities whose civil societies had a distinguishable coordinating role for the Simeto Coalition, being also actively engaged within SimetoPAR over the years. In May 2012 the citizenry of Paternò chose a left-wing major who was supported by part of the Simeto Coalition; the brand new elected major immediately signed the MoU and embraced the River Agreement cause. In June 2012 the major of Adrano was reconfirmed, but with a renewed right-left alliance supported by a SimetoPAR representative, who then became Assessor for the Environment and Public Education. In both Municipalities, the River Agreement was designated as a key programmatic point, allowing a more structured discussion about the institution of a "Valley-wide Local Development Agency", as it was envisioned before. Meanwhile, the political configuration inside the University of Catania was changing as well; in February 2013, a new Head of the University was

elected; the Head of the University showed an open attitude toward the mission of being *engaged-university* for the Simeto Valley; the attitude was confirmed when the Head of the University was finally amongst the formal signers of the MoU, allowing a more structured partnership. Signer Municipalities passed from 4 to 8, out of the initially 14 invited. We were then ready to apply for grants. Grants were a tool aimed at transforming the "Simeto River Agreement dream" in something real. The Simeto River Agreement was not a rigid organizational structure yet. Rather, the Simeto River Agreement was still an evolving project to be shaped engaging stakeholders as much as possible, with the practical aim of gaining economic self-sustainability for the project. Applying for grants is not an easy task, even more if transparency is set as an undeniable principle. With this attitude, in order to allow various stakeholders to give their inputs, SimetoPAR organized learning activities about institutional fundraising, with Govrnmental, Non-Governmental and Research & Education sectors working in synergy. This institutional fundraising phase was a significant turning point for the Simeto River Agreement, instilling hope to various stakeholders, and it was possible thanks to renewed energies within SimetoPAR. To the *action researchers* carrying those energies it goes a deep gratitude. Specifically, in June 2013 SimetoPAR applied for the EU "Life" funding program aimed at supporting environmental and natural conservation; in September 2013 SimetoPAR presented a candidacy for "Progetto Aree Interne" (tr: "Inland Areas Project") promoted by the National Ministerial Department of Economic and Cohesion Development, in order to nominate the Simeto Valley as the pilot area for South-Italy. The Ministerial Department asked for an interview with a SimetoPAR delegation in order to evaluate the eligibility of the Simeto Valley as a pilot area. In November 2013, after a press conference attended by several Governmental, Non-Governmental, and Research & Education representatives that were presenting the candidacy, a member of SimetoPAR thought out loud: "how did we get to this point?" adding "I am so moved". After a long and still enduring journey, we all were moved and we all were asking: "how did we achieve this goal?". Next paragraph discusses the process of "collective reframing" and "collective studies" as crucial steps for building the Simeto River Agreement up.

Figure 16: Images for the Vivimseto 2010 event. From top-left to bottom-right: focus groups on Agriculture, Water, Tourism, Shelter, Environmental and Cultural Heritage, and Energy & Resources, plenary session (source: SimetoPAR archive).

Figure 17. Top: The signature of the Simeto River Agreement memorandum of understanding in Adrano on April 26th, 2012. Middle row: pilot actions developed in Paternò and Adrano from 2010 to 2012. Bottom: press conference on the candidacy of the Simeto Valley for the Ministerial Project 'Inland Areas' on November 2013 (source: SimetoPAR archive).

Collective reframing and collective studies

The 'long and passionate road' toward the Simeto River Agreement has been narrated following a storyline that has revealed resilience for the overall process. Assuming 2008 as the starting point of the journey, i.e. when the River Park's proposal was initially formalized, and 2013 as the current snapshot of the process, i.e. when the River Agreement's proposal has been officially adopted by the University, this five-years' lapse of time gives the temporal measure of what I intend with resilience for a voluntary-based process. Recalling also Holling's words (in Folke, 2006) which have been quoted in Chapter 1, resilience is the "the amount of disturbance [this] system [could take rather than shifting] to another set of variables and relationships". Although several critical phases occurred, SimetoPAR was able to overcome those crises still maintaining its identity and its ultimate purpose, i.e. a bottom-up long-enduring vision for the Simeto Valley. It was the participatory character of the process that allowed creative co-adaptive synergies. As a planning process, the Simeto River Agreement was not a rigid goal to be reached through a rigid path; rather, it was an evolving idea reshaped several times according with evolving circumstances or critical events, based on various inputs of various stakeholders. As a research process, the Simeto River Agreement was not a hypothesis to be proved through specific strategies and methods in order to accomplish a set of conclusions; it was rather a set of evolving questions to be answered through evolving strategies and methods, providing some temporarily valid answers, based on various inputs of different stakeholders. Recalling Chapter 2, with Reasons and Bradbury (2001)'s words, SimetoPAR was aimed at producing "practical knowledge that is useful to people in the everyday conduct of their lives". In this sense, various steps of "collective reframing (CR)" and "collective studies (CS)" were key-factors for maintaining resilience and for allowing creative co-adaptive synergies. Based on my experience, I define CR those cyclical steps that may occur during a PAR process, when questions, strategies and methods need to be redefined due to evolving circumstances or critical events. Subsequently, steps of CS are usually needed, in order to inform the collective research process through other experiences. These steps are now summarized and commented in order to show their significance within the SimetoPAR experience. I registered four major CR and CS steps.

The first CR occurred within the Simeto Coalition, when the idea of proposing a River Park came up beside the 'anti-incinerator campaign'. 'Overcoming a common NO! through a common YES!' was the first step that generated an enduring process, even after the incinerator threat was warded off. The Simeto Coalition started asking questions such as "how can we have a transformative impact on the mainstream development model, that is producing waste crises everywhere? How can we promote a different development model aimed at producing and consuming less, locally, fairly, considering waste as a resource?" The Simeto Coalition organized independent CS moments in order to acquire the necessary knowledge for approaching emerging questions; contemporarily, the Simeto Coalition generated the proposal of a River Park as a long-enduring vision for the Valley. Although this first CR and CS allowed a shift from a NIMBY syndrome to more a complex configuration for the Coalition, UnictPAR observed that the River Park was still not a consistent strategy for the emerging questions; furthermore, the Park proposal was still trapped into a technocratic citizens/experts divide rather than open to a democratic dialogue. The Simeto Coalition did not immediately perceive these observations as fundamental issues to be explored; rather, during various meetings with UnictPAR, some *engaged scholars* pointed out these issues, generating a new CR phase.

SimetoPAR merged key-actors from the Simeto Coalition and UnictPAR. The second CR step was based on a trustful momentum, being also a test-bed for the jointed SimetoPAR group. The Simeto Coalition accepted to follow UnictPAR's research questions, strategies and methods, being some key-actors from the Simeto Coalition highly motivated, others highly skeptical. The reframed research questions were more like "how can we trigger the democratic dialogue about a common long-enduring vision for the Simeto Valley?" At this point, a very delicate CS step was also occurring. Not only SimetoPAR had to define the Community Mapping initiative as a strategy and a set of feasible methods in order to explore reshaped questions; skeptics also required to validate the soundness of these proposed strategy and methods. We conducted a collective literature review about various community mapping approaches, being *engaged scholars* responsible for coordinating this task and maintaining an open attitude toward other *action researchers*' inputs. The outcome of this CS step was a seminar that allowed a common reflection about other Community Mapping experiences. We studied a wide range of cases, and we organized these cases in three major focuses.

The first focus was how to explore various perceptions and identities connected with the landscape, based on Kevin Lynch's milestone *The Image of the City* (1960). The second focus was how to ensure community-building and community empowerment through the powerful act of collective mapping; we scrutinized some Bioregional practices that highlight the importance of mapping in order to create sense of community; through this focus we deepen the idea of shifting from a "city-centered" perception of the land, toward a "river-centered" one, and we were also triggered by the Bioregional attitude of considering rivers as symbolic circulatory systems for the Earth, as metaphors for respectful ways of living together (Aberlay, 1993). Being the Bioregional lessons inflected in various practices, we studied the Bioregional cultural heritage in various experience such as the one generating the Italian *Eco-museums* network (Perella et al.,2010). The third focus was how to explore allocation and management of resources through a user-friendly language for understanding land's features, as experienced for example through Participatory Rural Appraisal (Chambers, 1992) or through experiences carried out by international NGOs such as WaterAid. All these focuses allowed us to shape the peculiar Community Mapping Initiative for the Simeto Valley. This CS step was finally an effective one in order to get some skeptics on board, together with the first experimental event aimed at experiencing practically the Community Mapping potentials for the Valley.

After the Community mapping phase, a third CR step occurred when we felt the necessity of entangling the Governmental representatives in a structured partnership. It was when the expression "Simeto River Agreement" came out for the first time. This CR step was a natural continuance of the Community Mapping initiative. SimetoPAR decided to take this step since the circumstances have apparently become mature enough, in order to start a constructive dialogue with the institutions; SimetoPAR was then demanding institutions to support the bottom-up process and to involve a wider range of stakeholders in the decision-making process. At this point, the reshaped questions were still based on the necessity of triggering the democratic dialogue, but with a renewed focus, such as "how can we invite the Governmental sector to assume its peculiar responsibilities in order to accomplish an inclusive planning process for a the Simeto Valley? How can we start practically experiencing the collaboration amongst Governmental, Non-Governmental, and Research & Education sectors? How can we define a common system of values, rules, and the organizational structure for the

Simeto River Agreement? How can we create a 'Valley-wide Local Development Agency' in order to coordinate the River Agreement Process?" In synthesis, we were now trapped in a complex intersection of issues that we needed to harmonize, with the additional issue of a critical political instability. At this point, the needed CS step was more a boost of enthusiasm. For this reason, we asked and received a precious support from the "Panaro River Landscape Contract crew", especially from two Panaro "passionate participants" that visited the Simeto Valley several times sharing their experience. The Panaro process was also conducted following an open and evolutionary path that has been built day by day thanks to the input of various stakeholders with the support of "friendly institutions". The process led to complex and articulated systems of proactive actions; the passionate participants organized this complexity through a structure labeled the "beehive"; this name not only does underline the relational character of all these actions, it also highlights the fact that every participant is asked to be active and to cooperate with others like the precious bees. The river is the central core of the Contract, not only for its water quality and quantity issues, but also being the starting point for a complex system of sustainable projects; these projects start from the river and affect various dimensions of the human/nature co-evolving relation, such as: enjoying the landscapes, promoting wholesome rural productions, hosting visitors that are interested in the local cultures through a fair touristic network, and so on. The Panaro River Landscape Contract was envisioned as a way to sustain a "slow use" of the land, to improve the quality of relationships among its users, and to enhance the *genius loci* (Norberg-Schulz, 1979). This example, that is also reported in Pizziolo & Micarelli (2011), highlighted the active role of each participant, from the grassroots level to the institutional level; the "beehive" recalls not to delegate, but to work concretely and cooperatively for a specific action; every small action, as a part of the complex "beehive", takes actually benefits due to the fact of being part of that system. In the light of this lesson, we continued our journey. This was the phase when we were following two parallel directions as a set of strategies for actualizing the Simeto River Agreement: the first direction was aimed at the formalizing the Governmental plus Non-Governmental plus Research & Education partnership; the second direction was aimed at experiencing two small actions as parts of the complex system we were trying to build up. After a tentative phase, we realized that critical events were jeopardizing the Simeto River Agreement. We could not fully benefit from any "friendly institution

supports"; furthermore Governmental representatives were neither actually ready to start a formal partnership nor to sustain the small actions at that time. These critical conditions were both connected with the overall political instability at various levels, so we needed to reframe again, but we also needed to wait for a while.

The fourth CR was possible because an institutional reframing occurred at different levels. Moreover at the local level in some cases, the institutional reframing was also connected with SimetoPAR activities to a certain degree. Specifically, the purpose of triggering the democratic debate generated an active grassroots support for SimetoPAR and for those Governmental candidates that were proposing a long-enduring vision for the Valley. Although I am not proving any positive correlation between the electoral results and the SimetoPAR grassroots support, I observed that the local community understood the importance of having institutional representatives that could embrace what they were asking for, in terms of what has been publicly debated for years. This fact happened clearly in two municipalities: the mayor of Paternò and the Assessor for the Environment of Adrano were both committed to the Simeto River Agreement before and during the electoral campaign; once they have been elected, they carried this responsibility with them, being active supporters for the process. Beyond these peculiar cases, when the overall institutional configuration became advantageous, another SimetoPAR CR step occurred again. The question was now "how can we self-sustain the process from an economic standpoint" since SimetoPAR was supported only by ephemeral funding up to that point. This CR generated hope within various local stakeholders, being also southern Europe still experiencing a profound socio-economic crisis that started in 2008 as a global crisis. The CR was then centered on the task of attracting funds and sustaining local economies in order to revitalize the socio-economic conditions for the Simeto Valley, still rooted in the ecological principles that we have focused along our journey. The CS step followed two parallel directions. On one side, the community-based component of SimetoPAR organized a series of meetings aimed at promoting practices inspired by ecological economics mechanisms and by sustainable de-growth experiences, practices such as community-supported agriculture, educational farms, fair trades and ethical banking. On another side, the SimetoPAR *engaged scholars* promoted a workshop aimed at informing local stakeholders about financial opportunities that SimetoPAR could pursue through the upcoming EU Social Funds 2014-2020. The workshop was

intended as a complementary activity in order to empower those grassroots initiatives that were spontaneously spreading up throughout the Valley; the workshop tried to provide the necessary understanding for collectively approaching funding programs and applying for grants. The workshop made clear that the Simeto River Agreement, as a long-enduring vision for the Valley, would endure only if economic aids could support the effort.

Figure 18. These pictures represent four steps of collective reframing and collective studies. Top: from the River Park to *something else*; second row: *what else?* SimetoPAR decides to experiment a Community Mapping initiative. Third row: SimetoPAR moves from the Community Mapping to the River Agreement with the support of the 'River Panaro Crew'. Fourth row: SimetoPAR learns about fundraising for the project (source: SimetoPAR archive).

Missing bottoms and obscure relations of power. Reframing again

The Simeto River Agreement process has shown resilience connected with CR and CS steps. CR and CS steps occur when it is necessary to reshape collective questions, strategies and methods in order to maintain the process' identity through various degrees of changes. I have to warn again that this interpretation of the process is provided by a specific point of observation. As every narrative, I constructed a fiction. Other SimetoPAR participants may neither have recognized various CR and CS steps, nor may be profoundly aware of the form I presented questions, strategies and methods that I labeled as collective ones. This narrative is a fiction, but this does not mean that the narrative is not a valid interpretation. It means that the fiction is still firmly rooted on those empirical phenomena that I have directly experienced, and it is mainly aimed at highlighting a characteristic feature of the process. When a process, like SimetoPAR, is conducted in a collective and open way, being based on democratic principles, that process may be readjusted according with evolving circumstances, critical events, and various stakeholders' inputs. This was proven to be true in a recent occasion, that might be interpreted as the last CR that is occurring within the Simeto PAR process (which is also connected to some of the questions that I started to ask in July 2013 when I was back in Sicily after the Mississippi journey: "are there any missing bottoms or obscure relations of power that we are not considering within the Simeto River Agreement process?"). A critical event occurred in July 2013. A local young farmer found his sheep brutally killed close to his rural house, one sliced head in front of his door. This symbolism was immediately associated with the ancient language of the rural Mafia. The farmer stated that he was firmly denouncing the illegal dumping within a special area of conservation close to his farm; he was frequently reporting illicit activities to public authorities, provoking that brutal reaction, which he associated with some local obscure power groups. Investigations are in progress. The farmer received a broad support form the local community; a rural march was organized and about 500 persons participated, with the mayor of Paternò, the assessor of Adrano and some members of the SimetoPAR group amongst them; public debates followed, and again the Simeto community showed its resistance to these forms of threats, and the necessity of expressing a change of direction. Again the "NO!" was

immediately substituted with a "YES!". As a matter of fact, a new grassroots association was born subsequently to this event; the association shared a common vision with the one expressed by the Simeto Coalition and SimetoPAR over years, with a specific focus on fighting illegal activities and the mission of rebuilding an ancient rural road, the *Wheat Road*, through a crowd-sourced fundraising campaign. The "NO!" manifested against illegal activities was substituted again with a "YES!" for a proposal, as it had happened for the "anti-incinerator" campaign. Specifically the *Wheat Road* is aimed at guaranteeing access to some portions of the Simeto Valley in order to facilitate its fruition, trying to target the problem of hydrogeological instability as well. In August 2013, the threatened young farmer received a national award from *Legambiente* for his commitment aimed at supporting the significant pair legality & environment. Also, the farmer and other members of the brand new born association joined SimetoPAR. At this point the discussion about obscure relations of power was lighted up within SimetoPAR. Beyond the specific case, questions arose about rural mafia, illegal exploitation of immigrants' labor that is identified as *caporalato*, marginalized citizens' oppression, and the overall illegal control of the land; questions arose specifically in the form "how do we address those issues? Which are the best strategies to change these illegal activities? How do we relate with the culture that generates the Mafia?" Although this CR step is still not mature enough in order to be widely discussed within this dissertation, one certain statement can be declared. The participatory character of the process allowed another reframing toward an open discussion about missing bottoms and obscure relations of power. Will the Simeto River Agreement be able to properly expound these discourses?

Figure 19. These pictures show the Simeto community reaction in front of a brutal episode that occurred to a young local farmer in July 2013. Democratic processes allow collective reframing based on observations that may emerge and events that may occur. Democratic processes may light candles on missing bottom and obscure relations of power if the dialogue is open to a variety of inputs (source: La Valle del Simeto association).

Where we are. Where we want to go

SimetoPAR's journey started with an anti-mafia campaign, and it has constantly borne the weight of operating in a land permeated by various degrees of illegality based on obscure relations of power and ancient mechanisms of oppression. Moreover, the global socio-economic crisis has contributed to worsen desperate circumstances related with youth unemployment, overall unemployment, marginalized citizens and social exclusion in the Simeto Valley, as it has been variously reported in local daily news. These urgencies are also widespread in other southern contexts of the Global North, as confirmed by EU and National funding programs' rational. The 2014-2020 programs require a focus on these issues, establishing related criteria for selecting those projects aimed at enhancing socio-economic cohesion. All these various inputs triggered the discussion within SimetoPAR. A thematic focus group was established during a public event that occurred in November 2013; the focus group had the task of exploring social inclusion's issues within urban and rural areas. Although the focus group just started its activities, although missing bottoms and obscure relations of power have still not been deepened within the Simeto River Agreement process, SimetoPAR is maturing the awareness of their significance within this collaborative watershed planning process. Being the aforementioned issues very delicate issues, more stable conditions for the partnership need to occur in order to start a serious discussion. In this sense, the proposal of establishing a "Valley-wide Local Development Agency" may represent a significant turning point toward this direction. Although we cannot foresee the destiny of the Agency, of the overall Simeto River Agreement, and of SimetoPAR, a closing statement is possible. The necessity of improving a PAR process in Sicily has been inspired by a firm belief; promoting and improving the democratic dialogue may facilitate a long-enduring vision that goes beyond socio-ecological revitalization for a River Valley; the ultimate goal of a PAR process points to weaken those mechanisms that generate complex phenomena connected with various forms of oppressions and dark dynamics of power, which are named as the Mafia in this geographical region of the Earth.

Figure 20. Top: Adrano, May 23rd 2010, reading Falcone's *Cose di Cosa Nostra*. Bottom: Paternò September 27th 2013, debating about crucial issues for the Simeto Valley. Recalling Brian Walker's words, "how much can you change before loosing your identity?", SimetoPAR has shown resilience for years. At the same time, SimetoPAR has constantly questioned how Sicily can change toward a more democratic dialogue amongst community members, in order to overcome those obscure dynamics of power that have torn apart communities for centuries.

Chapter 4. Experiential Lessons

"Choosing something other than power and influence as marker for significance of life."
(A *River Advocate*, personal conversation)

4.1. Learning through exchanging

The cultural bridge between Mississippi and Sicily allows the identification of a set of key-lessons for collaborative watershed planning. As previously specified, the leading research question can be articulated in three sub-questions:

- Why are rivers important for democracy?
- Why is democracy important for rivers?
- How can ecological watershed planning be improved for democratic communities?

As I stated in the Introduction, I, as engaged-scholar, developed the main research question within a Participatory Action Research process in the Simeto Valley, reshaping and adjusting it during the experience of sharing research in a foreign context, where I developed Case-Study Research, with the same *participatory worldview* (Reason and Bradbury 2001) that I have acquired over years. In particular, lessons I've learned working in Mississippi are relevant in answering the first sub- question, lessons learned in Sicily are relevant for the second one, and lessons learned in both contexts are relevant in addressing the third crucial question.

> "How do you want to be connected to the river? Not just the water that is in the river, but the river as an integrated ecosystem, including the land that surrounds it, and the people that live on that land, and interface with river and land. What kind of relationship do you want to have? Is it a relationship of giving or is it a relationship of taking? Do you want to take something *from* the River? Or do you want to give something *to* the River, and to the whole Life that is part of that river?"

This quote, from a Mississipi *River Advocate* but very close to what Simeto River advocates say, can be considered a trait d'union for these two contexts, recalling that it is important to look at the relationship between rivers and democracy from a bi-directional point of view.

Why are rivers important for democracy?

The *Mississippi Tale* suggests three reasons. The first one can be drawn from the environmental conflict related with the "Yazoo Backwater Area Pump Project". That conflict started with environmental concerns for the floodplain, becoming an arena for a public controversy. As a matter of fact, on the one side, Delta inhabitants claimed the improvement of security measures (water pumps) for flood control; on the another side, the environmental conservationist coalition pointed out that only few wealthy landowners would have actually benefited from that project; moreover the coalition underlined that the project would have been realized with 100% public fund and raising a simple concern: was that really the best use of tax-payers' money for the Delta counties, amongst the poorest ones in the Nation? This controversy ended up with the EPA veto that was loudly petitioned from the broad conservationist coalition. With the words of the ecologist interviewee, this conflict was symbolic of a "strong desire for change" and of the will to overcome Delta landowners' traditional power and political influence. At the same time, "Delta Insiders" were not satisfied with the decision, as the statement of the "landowner" key-informant underlines: "People who live farthest away got the best solutions for the problems where you live". That is to say, rivers intended as Socio-Ecological Systems (Gunderson and Holling 1995, 2001) generated an environmental conflict triggering the democratic debate, although the conflict is still trapped within an exacerbated contraposition "Delta Insiders" VS "Delta Outsiders". From this perspective, rivers are important for democracy because they provide crucial but also very practical issues to be faced, therefore they are precious features able to feed a democratic debate.

The second reason regards the Delta *tragedy of the commons* (Hardin 1968) connected with cycles of drought and the aquifer depletion. Appropriators agree upon the idea of proposing collaborative bottom-up solutions in order to avoid strict and "costly Governmental regulation" (as defined by a Mississippi governmental representative). At the same time, appropriators are experiencing high difficulties in implementing effective self-regulation; as a matter of fact, the current system based on a permissive approach is "extremely difficult to implement", (as stated by a State Regulator). As a consequence, regulators are now debating the possibility of returning to the mechanism of "prior appropriation", even acknowledging

that fact that "first in time, first in right" is less fair than the "Riparian Doctrine". Such an issue, according to scholars (see Ostrom 2010 among many others), can be faced by institutions that embrace a polycentric model: in the Delta case, the Yazoo Management District (YMD) –established in 1989 as state agency aimed at addressing the tragedy – is the closest thing Mississippi has to a polycentric institution and it does seem to succeed. As a matter of fact, local dynamics of power do not facilitate the task: delta acquifer, intended as a Common Pool Resource (Ostrom 1990; 2010), shows the necessity of a democratic dialogue in terms of collaborative bottom-up efforts in order to liberate "Delta insiders" from their being still trapped in local contrapositions.

The third reason regards underprivileged citizens. In the Delta case, collaborative bottom-up efforts do not include the majority of the bottom, i.e. the African-American Community. According with 2010 UN Resolution 64/29, water is a human right; according with the Clean Water Act, public participation is required for water governance; according with 1985 Mississippi Water Law, water has to be administered in "the best interests and welfare of the people that are served". In the Delta, the African-American community is dependent on water and rivers for subsistence fishing (Brown and Toth 2001), as confirmed by a member of the Delta African-American community recalling that "when [he] was a child, [they] had fishermen" living throughout the Delta, but it is not the case anymore due to the impaired conditions of Delta rivers and streams. The African-American community is also dependent on water and rivers for recreational purposes, enjoyment and fulfillment of life, as highlighted by a fisheries biologist: " [African Americans] are not mobile. They live with whatever is around". Based on these practical reasons, the African American community does have a significant stake in water governance, although they are generally excluded from the "Delta Insiders' democratic debate" about water governance. This exclusion poses an extended Environmental Justice problem (Agyeman 2003), related to the fact that the natural environment provides some of the few open-access resources for citizens who have a narrow range of opportunities.

In sum, the status of rivers considered as a SES, of water considered as a CPR, and of their accessibility and availability for underprivileged citizens, may reveal also the status of the democratic debate within a human community. Being vital resources, rivers may be catalysts for the democratic dialogue, as observed also by Wolf (2007) in terms of cooperation for trans-boundary water systems. Stakeholders, who carry various biases, systems of

values and interests, need to debate about a practical problem in order to find desirable common solutions. The debate, in form of conflict or collaboration, may reveal possible pitfalls in a democratic system.

Why is democracy important for rivers?

The *Simeto Tale* suggests three answers. Firt of all, the Simeto case confirms what Fisher states about the important environmental outcomes that can be achieved thanks to the opening up the divide citizens/experts, overcoming a technocratic approach embracing a democratic use of technical knowledge for environmental matters (Fischer 2000; 2009). SimetoPAR has raised this point reflecting upon the proposal for the Simeto River Park which what initially supported by a technical group. In the light of the experience of the Etna Park, during animated debates we realized that imposing a system of regulations, prohibitions, and boundaries with a top-down rationality would have probably generated oppositions from many stakeholders such as farmers. On the contrary, we wanted to promote a mechanism that could generate active conservation and adaptation, i.e. embracing transformations with resilience (Holling 1973 in Folke 2006), rather than crystallization. In addition, we tried to approach the local *tragedy of the commons,* such as the aquifer depletion and the lost of minimum flows, implementing forms of collective action (Ostrom 1990). With the *Community Mapping* initiative, collective action was still based on a grassroots effort conducted in by voluntary partnership with *engaged-scholars*. On the one side, the *Community Mapping* initiative was aimed at exploring *local knowledge*, i.e. laypersons' experience about their everyday life (Gorz 1975); on the other side, the initiative had the primary purpose of triggering the democratic debate about an extended concept of the *Commons*, i.e. the Simeto Valley SES. The idea was that various stakeholders could blend their biases, systems of values and interests, through the act of building a common map. A grassroots leader, who then became the Head of the Environmental Department of the City of Adrano, defined this blend as *io-collettivo* (collective-self). The *collective-self* was able to generate a rich document that creatively synthesized various biases, systems of values and interests of those stakeholders engaged by the *Community Mapping* initiative. Regard the quantity of persons involved, we never had the presumption of having been exhaustive; rather, we claimed the potentialities of approaching watershed planning through an open dialogue amongst various community-based stakeholders, and we experimented the

open dialogue within a voluntary-based process. That is to say, the democratic intent behind the *Community Mapping* initiative enriched the debate about watershed planning in terms of integrating a variety of aspects, which were pointed out by the variety of participants. As a matter of fact, all the topics like Water, Agriculture, Shelter, Environmental and Cultural Heritage, Tourism, as well as Energy and Resources were identified as connected with the river. In other words, river is affected and affect not only the rural environmental but also urban settings. This deep understanding of Simeto's environmental complexity was possible because of the described democratic approach that catalyzed a polyphony of voices.

The Simeto Tale teaches also a lesson on how non-governmental actors can collaborate with Governmental ones in order to enhance regional socio-ecological health. Grassroots' choice of collaboration was based on the observation that a complex watershed planning process could not be carried out only by the grassroots in an informal partnership with *engaged-scholars*, as a voluntary process. On the contrary, every actor has to embrace specific responsibilities, including institutional actors who have the responsibility of sustaining watershed planning processes implementing public participation, as stated by the European 2000/60/EC Water Framework Directive (WFD). These observations instilled a shift from the *Community Mapping* initiative to the Simeto River Agreement initiative as a natural co-evolving consequence of a resilient partnership. The democratic debate allowed a gradual enrichment of the Simeto River Agreement concept; SimetoPAR invited the eight mayors who had signed the MoU to consider coordination and cooperation, looking at the Simeto Valley beyond its municipal boundaries, and implementing common approaches for common problems. The idea of a "Valley-wide Local Development Agency" is based on the necessity of implementing a polycentric organizational structure, renewing institutions through a bottom-up effort (Ostrom 1990; 2010). At this point, the process can maintain resilience only being economically self-sustained. This awareness, reinforced by the lack of local resources, incited to apply for European and National grants and to solicit multiple levels of Governmental interaction, as recommended by Ostrom (2010) and many others. That is to say, the successful enlargement of a democratic debate was able to get the institutional support in favor of a grassroots initiative aimed at improving the common socio-ecological health for the Simeto Valley through governance innovation.

Finally, the democratic dialogue has allowed transforming problems into opportunities for the improvement of watershed planning. This is probably one of the most significant feature characterizing the *Simeto Tale*, from the very beginning to the current status: in various phases, participants have always combined their reaction to problems with the willingness of changing perverse dynamics. The opposition to the dreaded *2002 Regional Waste Management Plan* generated a chain of events characterized by the discussed steps of collective reframing. These steps were based on open and inclusive public debates; through a process of democratic dialogue, SimetoPAR has now arrived to candidate the Simeto Valley for two outstanding programs, the EU "Life" and the Ministerial "Inland Areas Project – Pilot Areas". These candidacies may represent an important turning point in order to actualize the wide range of proposals that have been elaborated by various community-based and institutional stakeholders over the years. This variety of stakeholders, carrying their biases and perspectives, has animated the dialogue within the framework of the Simeto River Agreement; the dialogue has been at times conflicting other times collaborative. Some conflicting phases have lighted a candle on "missing bottoms" and "obscure relations of power" within watershed dynamics; other subsequent open forms of collaboration have allowed overcoming the conflict toward constructive synergies. That is to say, the democratic debate is the precondition for those steps of collective reframing which transform problems into opportunities.

In synthesis, the answers provided to the second research sub-question can be summarized stating that the democratic dialogue is important for rivers in so far as it improves the quality of relationships within human communities. Healthy community-based relationships are preconditions for healthy socio-ecological relationships. Specifically, democratic watershed planning has been discussed in terms of opening up the divide citizens/experts, grassroots/institutions, problems/opportunities, and conflict/collaboration through Participatory Action Research. How can this be done in practice? To date, the *Mississippi Tale* and the *Simeto Tale* both suggest three crucial operational lessons for democratic watershed planning.

How can ecological watershed planning
be improved for democratic communities?

The *Mississippi Tale* has highlighted "missing bottoms" and obscure relations of power as critical aspects for collaboration in challenging

contexts. Bottom-up efforts may be problematized asking who are the "missing bottoms", and what real dynamics of power inhibit underprivileged citizens to express their necessities connected with vital resources, such as water and rivers. "Windows of opportunities" have been discussed in order to highlight that challenging contexts are neither uniform nor hopeless. The Lower Mississippi River Conservation Committee, the Mississippi Delta National Heritage Area Partnership, the Pascagoula River Wildlife Management Area, and those actions developed within these programs, have been reported as examples of collaboration aimed at involving the "missing bottoms" through educational practices. Education, in its various forms, has been identified as a convergent point for all interviewees.

The *Simeto Tale* has narrated how education may be integrated with collective forms of action; through PAR, education is endogenous in the planning process, being shaped accordingly with evolving necessities. Collective Reframing (CR) and Collective Studies (CS) have been presented in order to grasp what education means within a PAR process. Through CR and CS, windows of opportunities are identified from those community members and professional scholars playing the role of action researchers, which means playing the role of participants in communities of learners such as SimetoPAR. Being a PAR process, "missing bottoms" and obscure relations of power may be pointed out from those action researchers who identify critical issues and share them with other action researchers, embracing the cause through CR and CS phases.

Merging the *Mississippi Tale* and the *Simeto Tale* in order to answer the question "how to improve ecological watershed planning for democratic communities", three *operational lessons* may be synthesized. These lessons have to be intended as *modus operandi* for implementing projects of ecological and economic revitalization:

- Activating collaborative research;
- Envisioning collaborative opportunities and implementing correlated actions;
- Highlighting real dynamics of power, in order to empower underprivileged "missing bottoms".

The *Mississippi Tale* and the *Simeto Tale* both suggest the necessity of renewing institutions through an *organism*, such as the proposed "Simeto Valley-wide Local Development Agency", which may assume the responsibility of *organizing* the aforementioned *operations.* This *organism*

may need to integrate bottom-up forces with other levels of governance through a polycentric approach, as it has already been highlighted and as discussed by Ostrom (2010). However, the realization of the "Simeto Valley-wide Local Development Agency" presents several challenges, mostly related to the context. First of all, at the Regional level there is not an organic legislation that promotes types of planning processes such as the evolving *Simeto River Agreement*, despite the fact that they are required by the *European* WFD, and validated by the *European Landscape Convention* (Council of Europe Treaty Series No.176, Florence 2000). During the last decade in Italy there has been a growing interest for, and an implementation of, "River Contracts", as proved by several cases such as in Lombardy, Piedmont, Emilia Romagna, Tuscany, Umbria, Lazio, Puglia. Italian River Contracts are voluntarily bounded in a network that has proposed a National Charter during the Fifth National Round Table on River Contacts in Milan, 2010 (Bastiani 2011). The Simeto River Agreement is in the process of joining this national organization, being the second one in Sicily after the Alcantara River Contract (Bastiani 2011 pp. 505-526). Presently the Simeto River Agreement suffers from a general lack of current Regional-supported initiatives for collaborative water governance. The Sicilian Regional *Osservatorio delle Acque* (tr: *Water Observatory*) is an attempt of going toward the WFD's requirements, but further steps are needed in order to improve organic water governance in Sicily. The *Simeto River Agreement*, coordinated by the proposed "Agency", may thus be a unique opportunity for the entire Region to experience bottom-up institutional renewal with a collaborative approach, in the widest watershed of the Island. The candidacies for the EU "Life" and for the Ministerial "Inland Areas Project – Pilot Areas" have been presented in order to gain support because of the scarce economic resources at the local level. That is to say, the existence of an *organizing organism* depends on specific political and economic conditions; the more challenging are the contexts the more these opportunities are needed.

The aforementioned *operational lessons* may be implemented through the work of collaborative *organizers*. Drawing from the two Tales discussed in the previous paragraphs, it appears crucial that these organizers have a triad of skills for succeeding in the implementation of *operational lessons*. In particular:

- Cogitative skills; *cogitative* action researchers are needed in order to nourish collaborative research with critical inputs;
- Energizing skills; *energizers* action researchers are needed in order to link research with community-based visions and to correlate with practical actions, animating public debates;
- Listening and observational skills; *careful listeners and observers* are needed in order to scrutinize "missing bottoms" and dynamics of power.

Since not all researchers might possess all the required skills at the same level, various *action researchers* may contribute according with their specific talents while, of course, *multiple-skills action researchers* are precious resources for the process.

Three metaphoric images can help the reader grasping the complexity of ecological watershed planning for democratic communities. The first is a *tree*; the second is a *flexible frame*; the third is a *candle*. A tree has roots, trunk, branches, leaves and fruits. Grounded values and context-based memories are the roots; common rules and polycentric organizational structures are the trunk and the branches; various projects for ecologic and economic revitalization are the leaves and the fruits. The *flexible frame* represents the capacity of unifying various inputs under a common border, able to change its form accordingly with evolving circumstances through the mechanism of reframing. The *candle* is a metaphor for turning a light on obscure relations of power at any level; even within a collaborative framework, conflicts may emerge occasionally in order to reveal abuses and to recall attention on human and civil rights. In this perspective, Alex Zanotelli, a Combonian missionary and activist for the *Water as a Common Good* Movement (the Movement promotes citizens' initiative for community-based water governance, operating at the international level and being a vibrant one at the local level in the Simeto Valley), during a conference in 2007 at the University of Catania stated: "The right to water is essential to the full enjoyment of life. On water we play everything for us and for the poor. If we lose the water, we will lose everything".

Literature also provides various lessons for water governance. For instance, through a set of case-studies on impaired rivers, water quality, water scarcity, and subsequent litigations within the boundaries of Florida, various scholars Scholz, Stiftel et al. (2005) provide some insights on adaptive water governance in a State like Florida based on "riparian rights" (Florida and Mississippi belong to the same EPA Region) They highlight five

critical challenges for adaptive water governance: representation, process design, scientific learning, public learning, and problem responsiveness; they suggest a lesson based on stronger collaboration, pragmatic science and wiser competition. Similarly, through an inductive study based on 76 cases of watershed partnerships in California and Washington State, whose legislation is based on "prior appropriation", Leach (2006) identifies and discusses seven normative ideals for assessing democracy within collaborative watershed planning processes: inclusiveness, representativeness, impartiality, transparency, deliberativeness, lawfulness, and empowerment. In the European context, Pahl-Wostl et al. (2007), Mostert et al. (2007) focus on the crucial role of social learning for participatory river-basin management. Through the European *HarmoniCOP* project (Harmonizing Collaborative Planning), they have analyzed 10 cases, identifying 8 recurrent themes as the most significant ones: the role of stakeholder involvement, politics and institutions, opportunities for interaction, motivation and skills of leaders and facilitators, openness and transparency, representativeness, framing and reframing, and adequate resources. Many of these lessons may be found at some points of the *Mississippi and Simeto Tales* as well, but the *Tales* are not meant to confirm or reject those lessons.

Both methodological approaches used in Sicily and in Mississippi are not aimed at generalizations; rather, they are situated on peculiar contexts. According to Flyvbjerg, case-study research is able to provide critical insights in a specific situation so that researchers are asked to share them in order to somehow impact the course of events. PAR is action oriented for definition: knowledge is not meant to be general neither transferable to other situations (with due exceptions, for course); it is conceived to impact and be impacted within the situation in which it is produced (Saija forthcoming).

In relation with the *Mississippi and the Simeto Tales*, the narrated contexts, processes and phases possess their peculiarities and have generated *specific* operational lessons that are grounded on the presented narratives. Readers are invited to step into participants' shoes with an empathic drive. They may approve or reject the proposed *operational lessons*, depending on their interpretation as well as their personal experiences, embracing a dialogical relationship with the narratives. A more general reflection can, on the contrary, be provided at the methodological level.

4.2. Methodological reflection and closing remarks

> "A new science is emerging whose operating principles and assumptions are more compatible with empathic ways of thinking. The old science views nature as objects; the new science views nature as relationships. The old science is characterized by detachment, expropriation, dissection, and reduction; the new science is characterized by engagement, replenishment, integration, and holism. The old science is committed to making nature productive; the new science to making nature sustainable. The old science seeks power over nature; the new science seeks partnership with nature. The old science puts a premium on autonomy from nature; the new science on re-participation with nature. If we can harness an empathic scientific method that recognizes and acts to harmonize the many relationships that make up the life-sustaining forces of the planet, we will have crossed the divide into a sustainable economy and a biosphere consciousness."
>
> (Rifkin 2010, p.11)

This inquiry has been conducted from an *engaged-scholar* that has participated to the Participatory Action Research (PAR) process in the Simeto Valley. Meanwhile, the same investigator has developed a Case-Study Research (CSR) in Mississippi in order to improve the PAR process. Up to this date, this CSR interfaces with the PAR process providing a storyline. The storyline has suggested a precise a narration for the PAR process, with a specific focus on those key-elements identified doing Case-Study research. It is not excluded that the outcome of the CSR may be shared with other action researchers and with the extended citizenry in the Simeto Valley.

Many scholars might find problematic the choice of comparing two different tales, generated by two very different research approaches, such as Case-Study and PAR. Therefore it is important to share some final 'methodological' reflections that might contribute to the broad debate on "planning research", well beyond the specific thematic focus of ecological watershed planning. For the reasons that have been explained in chapter 2, the way Case Study Research has been conducted was strongly influenced by the experience of being an *engaged-scholar* in a PAR process. I contaminated myself with the foreign context and interviewees, sharing my experiences and bias as I was acquainted to do with PAR. To make my interaction with my case-study interviewees bidirectional, I prepared and shared a video on the *Simeto Tale* with Mississippi informants, who then responded with a

dialogical attitude, even when they did not agree with its content. Feedback revealed that interviewees perceived the video as an opportunity to start an open conversation. In particular, interesting reflections about the topic were triggered by a narrative trick: the choice of letting the "the Simeto river talk" at the beginning and the end of the video highlighting the abuses it was subjected to by industrialized societies. When I interpreted the collected data, I felt obliged to share the interpretation with interviewees in an open letter. I also prepared a second video synthesizing some "River keynotes", combining diversities of perceptions. This was yet another way to give back my interpretation to those who had shared theirs with me. It was also a way to allow interviewees listening at each other, although in a simulation. These research choices, which are aimed at promoting reciprocity, are not only drawn from the experience of being an *engaged-scholar* in the PAR process in Sicily. They are generated by the epistemological and ethical assumptions that have inspired this research: the researcher is always an internal node of the reality he/she is trying to interpret, and he/she can legitimately share what he/she has learned through research with the subjects that he/she has related with during his/her work.

At the same time, doing Case Study I experienced some limits of this research strategy. As planning researcher, I need to orient inquiry toward action, being planning a discipline aimed at organizing transformations. Case Study Research is not concerned with changing the *status quo*; it is rather aimed at studying cases within specific contexts. It is not unlikely that case-study researchers fully engaged with their fieldwork might experience a sense of frustration. Social scientist William F. Whyte, discussing about his experience with Case Study Research, states: "In a district where unemployment was over 40 percent and where people were crowded into dilapidated old flats, it was hard to avoid thinking of what might be done" (Whyte 1995, pp. 293-298). In the poorest State of the U.S.A. with most of the richest agribusiness operations in U.S.A, it was hard not to think what should be improved and how, as well. Contingencies did not allow starting a PAR process in Mississippi, but I point out that a PAR process in Mississippi may be a needed "further research" as another "window of opportunities" for that challenging context.

In conclusion, recalling the *Simeto Tale*, the PAR process provides a deep focus on specific windows of opportunities for Sicily. Opportunities are connected with improved community relationships, which have been synthesized as relationships amongst Governmental, Non-Governmental,

Research & Education sectors, including all those community members who are not part of any organization, still connected with these sectors. The Governmental sector has been an element of weakness for the process. From the very beginning, to the signature on the Memorandum of Understanding, Governmental representatives were not ready to start and to manage a process such as the proposed Simeto River Agreement. After the "institutional transition phase", renewed Governmental representatives were finally supporting the process, but they were doing so as a byproduct of the process itself. As a matter of facts, amongst the others the most active Governmental representatives were those elected officials who had previously participated to the PAR process, being their political agenda also connected with the Simeto River Agreement. Although institutions were not ready to embrace an innovation such as this collaborative watershed planning process in Sicily, a loud and consistent bottom-up pressure conducted toward more Governmental support. That is to say, the organized Non-Governmental sector has been the driving force for gaining this support. The non-Governmental sector started a collaborative effort when the first valley-wide protest became a proposal, adjusting the proposal through various reframing phases. Non-Governmental representatives consistently operated in order to actualize the "long-enduring vision for the Simeto Valley" working in a trustful relation with *engaged-scholars*. Researchers, together with the Non-Governmental driving forces, were the main catalyzers for the process, introducing critical reflections and organizing critical phases along the way. A small group inside the University of Catania conducted the informal partnership for more than 5 years, sometimes collaborating also with schools as a connection between educational practices and citizenry's involvement. That is to say, the Research & Education sector nourished the collective reframing and collective studies phases, opening its peculiar mission, i.e. advancing knowledge and educating, to the community. As a matter of fact, learning became a collective effort during some phases of the PAR process. It is desirable that interactions amongst these cited sectors, i.e. Governmental Non-Governmental Research & Education, become stronger. However, the ongoing reduction of public financial support for education, especially higher education, is jeopardizing the opportunity for these complex PAR processes to take place. And yet these complex processes are vital, especially in challenging social-ecological systems in terms of both environmental quality and human equality, such as Sicily. Windows of opportunities are then connected with the hope that PAR processes may

survive to broader crises and they may generate renewed chances for any community member, including the underprivileged citizens that are not usually contemplated in collaborative watershed planning. Turning a light on dynamics of power, windows of opportunities can be created only if decision-makers and planners become forward-looking and start connecting social inclusion with ecological and economical revitalization. This connection, in Sicily and Mississippi, might take place if communities start from the River Again, as a matter of self-respect, celebrating memories of the past, pursuing fulfillment of life for present generations, and fostering a democratic ideal toward an extended citizenry, including those that have yet to come.

Chapter 5. Non-Academic Outcomes

> "Knowing something and yet, not doing anything about it, is the same as not knowing."
> (La Budde in Mātā Amṛtānandamayī Devī, 1994, p. 7)

This chapter presents some materials that can be considered unusual for a PhD dissertation: a letter and a report. When present, these documents are often included as appendices. In this work these are more than appendices, and deserve more emphasis. As a matter of fact, these documents represent an example of what this dissertation leaves to the Mississippi and Simeto communities.

Doing Case-Study Research (CSR) with a *participatory worldview* (Reason and Bradbury 2001) as well as following the "relation of reciprocity" explained in Chapter 2, I felt obliged to give back data interpretation and synthesis to those interviewees who allowed constructing the CSR. Doing Participatory Action Research (PAR) as an *engaged-scholar*, I constantly serve the process contributing to the production of all the needed documents, which support the process itself. Within these documents, I give personal interpretation and synthesis; but at the same time, documents are an expression of the "collective-self" discussed in Chapter 4. These two different outcomes are connected with the different research strategies. Moreover, while CSR is traditionally not aimed at changing the *status quo*, PAR is. With the CSR's letter, I tried to trigger the debate amongst various interviewees with various frames of reflections; I attempted to start a transformative action, although I was aware that I did not have the opportunity of going deep inside effective local improvements through a CSR and with a limited timeframe. Nevertheless, I received several interviewees' feedback, which showed a receptive response and a desire to continue the dialogue. Differently, with the PAR's exemplar report, I contributed to the collective transformative effort, as I did during the overall process with other documents, giving a consistent support connected with the specific necessities of each specific phase.

Together with the letter and the reports, I produced several videos and presentations in order to share research with various community members, in Sicily as well as in Mississippi. These outcomes were an opportunity to focus on local issues while connecting local contexts with

global challenges. This *glocalized* attitude was confirmed with the opportunity of participating in exchange programs; I highlight that international exchange improves the awareness of being part of interconnected societies; investigators become also experienced witnesses of the benefits connected to "thinking globally, acting locally", sharing this attitude with other community members, in Mississippi as well as in Sicily. Before closing the Dissertation with the presented non-academic outcomes, I still point out the necessity of promoting *engaged-scholarships* as opportunities for reciprocal learning and world-wide connections which communities may benefit from. With the wish that public investment may still support the Research & Education sector that has patiently contributed to the transformative effort that are reported here.

Open Letter for Mississippi Citizens

Starting From the River Again.
Knowledge, Practices and Community Processes to Revitalize Spoiled Contexts.

From:
Giusy Pappalardo
PhD Candidate in Regional and Urban Planning – University of Catania – Italy
Fulbright Fellow – Mississippi State University (MSU)
Visiting Student Researcher – Department of Landscape Architecture – September 2012 – June 2013
giusypappalardo83@gmail.com

To:
Interviewees who contributed to the Case-Study Research
Dr. Keenum, MSU President
Dr. Gilbert, MSU Provost and Executive Vice President
Dr. Rezek, MSU International Institute
Prof. Artunc FASLA, Head of Landscape Architecture Department

Catania (Italy), July 30th 2013

Dear Mississippi Institutional Representatives and Citizens,

I had a fruitful experience at MSU as well as throughout the whole *State named after the Great River*. I was impressed with the hospitality I usually received, and I truly appreciated the overall support from institutions and individuals. Doing research about communities and rivers, I had a double opportunity; I explored beautiful places and I had conversations with generous interviewees who pleasantly discussed how to improve a river. Now I am back in Italy, and I feel committed to share perspectives and lessons generated during the entire visit in Mississippi. With this letter I want to express my gratitude for your hospitality. I also believe that reciprocity and exchange of ideas are important characteristics for mutual learning and the advancement of knowledge.

The conducted inquiry is an empirical qualitative research. Questions are concerned with preconditions and characteristics of interaction between various community members and river ecosystems in southern contexts with socio-economic challenges. Methodology required paradigmatic case studies within the State of Mississippi's political boundaries. The inquiry explored history, systems of values, current issues and future visions of local stakeholders. Three phenomena have been observed: the *Mississippi Delta Nutrient Reduction Strategies*, focusing on the relationship between agribusiness and water quality; the *Mississippi Scenic Streams Program*, targeting volunteer activities designed to preserve wildlife habitat and to promote responsible recreation; and *Pascagoula River Management*, in the largest unimpeded river system in the Continental U.S. Furthermore, the Mississippi Delta has been explored more specifically because of its complexity. Data have been collected through archival research, direct observation and interviews with 25 key-informants. Observation and interviews occurred during six months of fieldwork, from January to June 2013.

Collected case studies will be used as means to improve a Participatory Action Research project conducted by the University of Catania in partnership with a network of governmental and non-governmental organizations. Scientific coordinators are my advisors, Filippo Gravagno PhD, and Laura Saija PhD – Marie Curie Fellow. The partnership is promoting a River Agreement, i.e. a community strategic plan aimed at revitalizing the Simeto River, in

terms of both natural and human relationships. The River flows through the widest watershed in the Italian island of Sicily, my native context. As a master student in 2010, I spent my thesis hours conducting a *Service Learning* project defined as *Community Mapping,* working with some grassroots NGOs in order to understand systems of values and visions for the Simeto River. My PhD proposal has been formulated in order to continue the interaction with the Simeto process, now paying attention to its institutional dimension. The final dissertation is therefore dedicated to the River Agreement effort. I plan to defend in March 2014 at the University of Catania. More information about the overall process can be found at www.simetopar.org.

I am deeply passionate about this project because I believe that rivers are vital cores of societies; not only do they provide rich resources, they also generate symbolic meanings. On the contrary, rivers are often perceived as leftovers for current global economic models. They are places for dumping, pumping and spilling water, exploitation of resources, and transportation of commodities. Meanwhile, some committed citizens are bounded in NGOs and work together in order to preserve and restore rivers around the world. So do we with the Simeto River in Sicily. I feel connected with this river because I am aware of its importance for local communities and their local economies, based on traditional rural activities. Consequently, I decided to explore how rivers can be perceived as opportunities for socio-economic regeneration in challenging contexts such as Sicily, as well as the State of Mississippi. The following snapshots synthesize my observations about Mississippi.

I have been impressed by the fact that this State is named after the Mississippi River, and it benefits from its floodplain, the Mississippi Delta. According to U.S. Census Bureau, Mississippi is the poorest state in the nation. Most of its poorer counties are located in the Delta region. The Delta is also the area with the highest concentration of African American population. Despite its high levels of poverty, this region is a fertile area for profitable agricultural operations such as cotton plantations of the past, and high-tech agribusiness of today. The Delta - Yazoo river basin has been significantly transformed for agricultural purposes. The *Great One* does not overflow quite as often any more. Massive flood control structures such as levee systems have been built. They operate as a barrier between the Mississippi river and the rich floodplain that the *Great One* itself created. Tributaries have been damned and channeled for irrigation and drainage purposes. Since men have transformed the pristine natural landscape for agriculture, they have struggled against the river's natural flow. Today they fight yet another battle; the depletion of the alluvial aquifer primarily due to groundwater irrigation overuse.

In southeastern Mississippi, the Leaf and Chickasawhay rivers meet to form the Pascagoula river, which flows freely and undisturbed for 80 miles down to the Gulf of Mexico. During the 1970s, The Nature Conservancy joined with community leaders, state officers, and the general public to preserve this region's pristine ecosystem. TNC identifies the Pascagoula as "the largest (by volume) unimpeded river system in the contiguous 48 states". The "Singing River" echoes with the tweets of more than 300 birds species. They peacefully fly throughout cypress-tupelo swamps, oxbow lakes and pine ridges. Not only birds sing within this ecosystem. Legend says that the Native American tribe of "Bread Makers" (Pascagoula) walked into the river and started singing. It was their way to avoid a fight with the invading Biloxi tribe. Still today, the river seems to perpetuate their peaceful songs.

Although the distance between the Delta region and the Pascagoula River is just about 200 miles (from Vicksburg to Lucedale), they are quite diverse. Both represent examples of

extreme ecosystems; one highly transformed and the other highly preserved. In the Delta region, natural resources are managed to produce commodities and maximize profit. The Pascagoula River has been ecologically maintained for years. Toward that end, in 1968 a Federal program was established to protect scenic rivers. It was not until 1999 that the State version of that program came into existence through the Mississippi Scenic Streams Stewardship Program (MSSSP). Its main goal is to identify streams of ecological interest, and to guarantee the perpetuation of their status via best management practices. In Mississippi, introducing elements of federal government control often causes a degree of resistance. This resistance is rooted in a common southern belief that individuals have the right of developing their initiatives without external intervention. MSSSP was accepted because it is a voluntary program. Also, it does not interfere with the agricultural core of the state, the Mississippi Delta. Nevertheless, the highest concentration of scenic streams is located in the Pascagoula River basin. This reality traces a geographical polarization that highlights different worlds embedded in the same State, which touched me deeply.

Preconditions and characteristics of interaction between various community members and river ecosystems are context-based and rely on the peculiar history and organization of various communities. In the case of Mississippi, primary findings reveal how water can be intended as a "mirror" for the overall health of a community; it means that its ecological status reflects societal dynamics. In this context, exploitation of natural resources has been historically connected to the exploitation of human resources. Currently, water issues are not only environmental concerns. They are also connected with stakeholders' organizational structures, dynamics of power and decision-making processes. It is desirable to enhance the role of education in its various forms as a requirement to improve physical and cultural relationships between communities and their environment. Specifically, all interviewees agreed on the importance of promoting educational practices. They discussed a variety of approaches such as educating agribusiness to champion the environment; educating riparian landowners to protect the body of water that flows through their property; educating the general public to understand ecological principles; educating institutions to overcome conflicts through dialogue. This inquiry also identifies the necessity of improving the public education system in order that all Mississippi citizens may have the opportunity to practice self-determination.

Based on my experience, I am going to share an overall lesson with the Simeto Community: environmental issues reveal a general malfunction of societies. Taking care of a river is not only a matter of respect for mother earth. Common sense suggests that nature will eventually fix itself; studies show that technologies may no longer be able to sustain current economic models of production, consumption and resources' management. Protecting a river is mostly an act of self-respect. It reflects the way we collectively decide to spend our time on this planet. Synergies amongst governmental, non-governmental, research and education institutions may help in finding responsible approaches.

This research is at its early stage of data processing and results discussion. This letter is a preliminary report with outreach purposes. I will be glad to share academic publications when validated by the international scientific community. As I have previously stated, I feel obliged to share my interpretation synthetically. I hope you appreciate this effort. If you want to provide any feedback, please do not hesitate to contact me.

Sincerely,
Giusy Pappalardo

Firmato digitalmente da Giusy Pappalardo
ND: cn=Giusy Pappalardo, o, ou, email=giusypappalardo83@gmail.com, c=IT
Data: 2013.08.05 08:34:39 -06'00'

A Report for the Simeto Community

Patto per il Fiume Simeto

Report Incontro di Comunità

Giovedì 07 novembre 2013 – Paternò – Adrano

L'incontro si è svolto contemporaneamente in due sedi, nei Comuni geograficamente collocati in posizione baricentrica rispetto all'intero corso del Fiume, Paternò e Adrano. L'incontro è stato promosso dalla rete di Associazioni e Istituzioni aderenti al Patto, ed è stato coordinato da docenti, ricercatori e studenti dell'Università di Catania – Dipartimento di Architettura. In particolare, gli studenti del Corso di Pianificazione Territoriale – Laurea Magistrale Ingegneria Civile Acque e Trasporti, hanno svolto la loro prima attività di *service learning*, redigendo parte dei materiali di supporto al dibattito, presentando i propri studi e contribuendo a coordinare l'incontro.

I lavori hanno avuto luogo dalle 17:30 alle 20:30 e si sono articolati in 6 fasi:

1) Registrazione dei partecipanti e *networking;*
2) Saluti istituzionali e collegamento *web* tra le due sedi;
3) Stato dell'arte del Patto di Fiume. Condivisione documento per la candidatura al progetto "Aree Interne", Ministero dello Sviluppo Economico;
4) Presentazione studenti di Pianificazione Territoriale;
5) Tavoli di lavoro tematici;
6) Sintesi dei Tavoli e prossimi appuntamenti.

1

I partecipanti, complessivamente poco meno di duecento, sono stati introdotti al dibattito attraverso la condivisione di studi, approfondimenti e riflessioni sui seguenti temi.

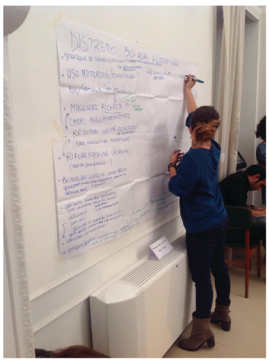
- **Identità** *Simetina.*
- **Problemi** discussi fino a ora: **declino economico** (settore agricolo sia produttivo che della trasformazione, settore commerciale); **depotenziamento servizi di cittadinanza** (istruzione, sanità, servizi sociali; infrastrutture per la mobilità); **degrado ambientale** (rifiuti, acqua, beni culturali, consumo di suolo, ecc.); **indebolimento comunità locali, illegalità e sicurezza.**
- Il Patto di Fiume come **strumento innovativo di *Governance* per lo sviluppo locale**: il Patto è in fase di costruzione, promosso da una rete tra cittadini, associazioni e istituzioni; il Patto si fonda su valori e regole di trasformazione condivise, si dota di una struttura organizzativa e facilita la realizzazione di progetti per rivitalizzare la Valle del Simeto.
- **Il Percorso** di costruzione del Patto di Fiume è in divenire: quali sono state le premesse, e quali le tappe dal 2009 a oggi; quali sono le attuali **opportunità di sostegno economico al percorso**. Candidatura della Valle del Simeto come area pilota per il progetto "Aree Interne" – Ministero dello Sviluppo Economico.
- **Azioni strategiche** emerse durante il percorso: Agenzia del Patto di Fiume; Distretto Bio-Agro-Alimentare Etna-Simeto; Progetto Cultura; Strategia Rifiuti-Zero; Politiche di Miglioramento del Ciclo Energetico, del Ciclo dell'Acqua e rinaturalizzazione del fiume; Progetto Orti di Pace *Simetini*; Riorganizzazione della Mobilità Sostenibile; Inclusione Sociale e Lotta alle Mafie.
- **Contributi degli studenti** al percorso: Inquadramento territoriale, storia e memoria, dissesti e rete idrologica, attività di comunicazione e *outreach*.

Sono state scelte tre azioni strategiche alle quali dedicare un **approfondimento specifico** attraverso ***focus groups*** in **Tavoli di Lavoro**:

- ✓ Distretto Bio- Agro-Alimentare Etna-Simeto;
- ✓ Infrastrutture e Mobilità Sostenibile
- ✓ Inclusione Sociale

I contributi emersi in entrambe le sedi sono stati sintetizzati dagli studenti, e sono riportati nelle seguenti schede.

Distretto Bio – Agro – Alimentare Etna-Simeto



E' emersa la necessità di promuovere e sostenere un'**agricoltura di qualità**, che tenga conto delle **tradizioni** e delle opportunità legate all'**innovazione** nel rispetto dei cicli naturali e degli ecosistemi. E' necessario sostenere le **colture autoctone**; evitare la monocoltura e favorire le produzioni locali piuttosto che affidarsi alle multinazionali. E' importante promuovere consapevolezza e **consumo critico**, ovvero: da dove viene il cibo che consumiamo e come è stato prodotto? E' altresì importante promuovere coltivazioni senza uso di fertilizzanti, erbicidi e pesticidi di stampo industriale, tornando a prediligere produzioni di qualità e accompagnando i produttori della Valle del Simeto, in un **percorso comune verso l'agricoltura biologica**. La qualità della produzione può essere supportata da un meccanismo di **auto-certificazione, certificazione partecipata** e **filiera corta**. Non solo l'agricoltura, anche i **manufatti antropici** devono essere realizzati e recuperati attraverso l'uso di **materiali biodegradabili e sostenibili**. L'agricoltura si fonda sulle risorse idriche: è necessario prestare la dovuta attenzione all'**acqua e agli ecosistemi a essa connessi**. E' necessario promuovere un attento uso dei canali irrigui, la diminuzione del consumo di acqua potabile per l'irrigazione, un miglioramento complessivo della gestione in termini di quantità evitando perdite e prelievi eccessivi, e in termini di qualità favorendo meccanismi di fitodepurazione. Lo stato di salute delle acque e degli ecosistemi deve mantenersi **vitale** lungo tutto il fiume e laddove possibile va favorita la **pesca**. La **riforestazione**, in particolare nelle zone denominate Calanchi, è una strategia che può migliorare la salute globale degli ecosistemi (qualità delle acque, biodiversità, etc..) **mitigando anche la pericolosità idrogeologica**. L'agricoltura va supportata economicamente. I prodotti del distretto devono essere promossi attraverso **un'appropriata strategia di marketing** che preveda un **marchio unico Etna-Simeto** e una differenziazione per microzone geografiche, dove va **favorita la biodiversità** (sono stati citati alcuni prodotti peculiari, tra cui il cavolfiore viole e il broccolo nero, prodotti ad Adrano e Biancavilla). Il **consumo a Km0** va promosso innanzitutto nelle mense pubbliche per esempio presso scuole e ospedali; al Km0 va integrata una strategia di esportazione che preveda **magazzini sociali** (magari gestiti da migranti assunti regolarmente) dove gli agricoltori possono spedire la merce per esportarla fuori dal Distretto e dalla Sicilia a costi competitivi. Sulla base dello stesso principio, centri di compostaggio sociali, cantine sociali, orti comuni etc. possono favorire la **cooperazione**. I **giovani** interessati all'agricoltura vanno accompagnati in un percorso di supporto, dalle fasi di conoscenza e acquisizione delle competenze pratiche, coinvolgendo anche scuole e anziani, alle fasi di fattibilità economica e burocratica dei propri progetti. Soggetti già contattati, e da contattare, sono: piccoli imprenditori; agricoltori; OP (organizzazione produttori); AIAB; gruppi di acquisto; famiglie sociali; Università; AUSL; ….

3

Infrastrutture e Mobilità Sostenibile

E' emersa la necessità di potenziare **l'accessibilità al fiume**, riaprendo laddove possibile le strade interpoderali e mettendole in rete. E' necessario creare dei percorsi e riuscire a utilizzare il **fiume stesso per varie attività sportive e ricreative** in armonia con gli ecosistemi. Oltre a realizzare percorsi ciclabili e pedonali, si potrebbero promuovere passeggiate sugli asinelli. Attenzione è stata rivolta alla anche **rete di torrenti**: riscoprire sorgenti, affluenti e i letti ormai asciutti per escursioni guidate e percorsi naturalistici che siano anche opportunità d'impiego per i giovani, con la premessa che si possano ripristinare i sentieri che conducono a tali luoghi, a oggi resi inaccessibili dalla noncuranza. Nel dotarsi di attrezzature è opportuno seguire il **principio cubatura zero**, promuovendo il recupero di casali e ruderi presenti nel territorio con nuove funzioni nell'ambito produttivo, nel settore ricettivo, con l'obiettivo di creare una rete sul territorio che sfrutti le preesistenze piuttosto che aggiungere nuova cubatura. Seguendo lo stesso principio, è importante non incrementare le arterie stradali. Particolare attenzione è stata rivolta verso la possibilità di recuperare la dismessa **"Ferrovia delle Arance"** Motta-Regalbuto come *Greenway*. Sono già stati condotti diversi studi preliminari che suggeriscono spunti in merito alla fattibilità economica, e alle priorità degli interventi che potrebbero realizzarsi in diverse fasi temporali. La realizzazione dell'infrastruttura favorirebbe un incremento di visitatori nei territori attraversati da essa, potrebbe catalizzare la trasformazione di alcune stazioni principali in strutture **ricettive e per la ristorazione che promuovano il distretto bio-agro-alimentare**; lungo la greeway potrebbero inoltre essere installati punti di *bike-sharing*. Alcune proposte suggeriscono inoltre la possibilità di ripristinare la linea ferrata a supporto dei piccoli produttori che vogliono trasportare merce alleggerendo il trasporto su gomma; questa proposta andrebbe sostanziata con studi di fattibilità economica e con un'indagine sulla reale esigenza dei produttori locali. E' inoltre necessario e urgente creare una **segnaletica unitaria** per tutta la Valle del Simeto, che sia efficace nell'indirizzare verso aree e percorsi di maggiore interesse, segnaletica a oggi inesistente. E' inoltre importante valorizzare e connettere i centri storici con il fiume. Sempre nell'ambito territoriale dell'intera valle rientra la richiesta di un **efficiente trasporto intermodale** tra la Valle del Simeto e il centro urbano di Catania, istituendo un biglietto unico, comprendente le tariffe per la sosta del veicolo privato in parcheggi fuori città e tutte le tipologie di trasporto pubblico dalla valle alla città. Altro tema affrontato riguarda la mobilità interna ai comuni. La necessità primaria è quella di garantire una **maggiore sicurezza ai pedoni**, soprattutto agli scolari nei percorsi casa-scuola. La proposta, volta alla riduzione dello spostamento su gomma dei mezzi privati, è quella di istituire il progetto "Piedibus" tramite limitazioni al traffico in determinati intervalli spazio-temporali.

Inclusione Sociale

Sono necessari processi di **ascolto attento e dialogo** con i soggetti deboli come i migranti, le ragazze madri, gli anziani soli. E' dunque necessario avviare dei percorsi specifici e approfonditi per comprendere le ragioni dell'esclusione sociale e i possibili catalizzatori per l'inclusione. Sono stati proposti diversi **Osservatori** sul territorio che si occupino dei soggetti deboli, con particolare attenzione al **disagio dei migranti, delle donne e delle famiglie in difficoltà**. Gli Osservatori potrebbero dotarsi di un "**Registro per il Disagio Sociale**" e promuovere attività varie, tra cui per esempio la **collaborazione intergenerazionale** tra gli anziani e i giovani con lo scopo di trasmettere la tradizione contadina. La **scuola** va interpretata come **cerniera tra istituzioni e società**. E' emersa la questione della **dispersione scolastica**, che andrebbe affrontata attraverso nuove forme di coinvolgimento nelle attività scolastiche e di avviamento al lavoro per i minori con problemi familiari. In generale, bisognerebbe promuovere un **modello educativo che si basi sulla riscoperta del territorio** come **ricostruzione di un'identità comune**; riscoperta dei cibi, dei luoghi e delle tradizioni. E' emersa l'importanza di sostenere le famiglie nella socializzazione e riconnessione con il territorio, attraverso attività varie, per esempio ispirate al valore del **gioco** nell'età dell'infanzia e al **ruolo educativo dello sport**, realizzando spazi attrezzati per i bambini e i ragazzi. Per fronteggiare il dramma della disoccupazione giovanile, si propone di attuare meccanismi volti al recupero delle costruzioni rurali, e delle antiche masserie in disuso da trasformare in fattorie sociali, aziende agricole, strutture collettive, anche mediante il meccanismo dei "**campi lavoro**", valorizzando l'importanza del **ritorno consapevole alla terra e alla coltivazione come meccanismo di riscatto sociale**. Nel breve termine e con costi ridotti, si potrebbero definire e costruire percorsi guidati nella valle che coinvolgono scuole, giovani, parrocchiani, gruppi scout, appassionati a vario titolo, per **riscoprire le relazioni tra i vari soggetti della comunità locale, e il contatto tra uomo e natura.** Si riscontra inoltre un **forte disagio abitativo** osservando che una grande percentuale di famiglie non ha un'abitazione garantita. Le proposte per affrontare la questione possono ispirarsi all'edilizia a costi bassi. E' stata fatta, a titolo esemplificativo, menzione alle "iurte", abitazioni mobili adottate da molti popoli nomadi in diffusione in tutto il pianeta grazie anche al loro conveniente costo (una iurta di 125 mq costa 24000 euro). E' stata puntualizzata l'esigenza di rivedere **l'organizzazione dei distretti socio-sanitari** così come prevista dalla legge 328/2000. Occorre realizzare delle strutture per le comunità di accoglienza per minori con problemi amministravi e di affidamento; potenziare le strutture ospedaliere presenti sul territorio, in particolare i consultori familiari; potenziare le strutture di accoglienza e ricreative per pensionati, reduci e invalidi; potenziare strutture di ospitalità per i soggetti deboli.

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