

Laymen, Experts, NGOs, and Institutions in Watershed Management

Giusy Pappalardo, University of Catania
Via Santa Sofia, Città Universitaria

People's activities and behaviors are deeply related with water and ecosystems: the relationship between human communities, their places of life, and nature has always been a challenging issue, like Ian McHarg explains in 1969, inspiring many scholars' works. A question is open: who is part of human communities? It is possible to identify some groups of people: inhabitants, with their direct experiences of their native lands (laymen); researchers and practitioners, with scientific tools to understand and to design lands (experts); supporters of specific interests and hopes (NGOs); environmental authorities, with their responsibility in managing lands (institutions). They have different knowledge, roles, interests, and expectations. According to Fisher, Professor of Political Science at Rutgers University in Newark, everybody should be allowed to participate into the decision-making process about environmental matters. Elinor Ostrom, American political economist, 2009 Nobel Memorial Prize in Economic Sciences, also underlines the necessity of collaboration between different people and institutions to manage Common Goods, like rivers, rich soil, and hydraulic infrastructures.

Starting from this framework, this paper has an overall goal: to identify how do laymen, experts, NGOs, and institutions work together in managing their places of life. The main question is: how to establish collaborative practices among them, focused on watershed management, to experience a responsible use of resources and to improve water ecosystems? This question comes out from my PhD research at its current status: Rethinking Environmental Management through collaborative practices. The Simeto River Agreement: a crazy idea or a possible outcome? In Italy, these kinds of collaborative practices are experimental processes called River Agreements: they still are not so common, and in Sicily there is an ongoing one to define and to build a River Agreement for the Simeto Watershed. It is a Participatory Action Research (PAR) process, i.e. a deep collaboration among scholars and associations' activists to improve local communities, and I am directly involved in the process as researcher. The process is led by a partnership between the University of Catania – Department of Architecture, and a network of Associations called ViviSimeto, to revitalize the Simeto River Valley, East Sicily, Italy, promoting ecological design and socio-economic improvement through a collective learning process. Furthermore, thanks to an European Scholarship on International Exchanges called Beyond Frontiers, I had the possibility to be a Short Term Visiting Scholar at Mississippi State University – Department of Landscape Architecture, from September to December 2011. Research's activities at MSU let me find some Cases in Mississippi State about collaborative practices in watershed management, to study in order to give an input to the process. The Case Study Method is a useful tool for PAR processes, to help participants in visualizing possible alternatives.

This paper presents opportunities and some preliminary results related to a comparison between the PAR process in Sicily and a Case Study in Mississippi State. I am going to continue the Case Study and the comparison when I will be a Visiting Scholar at MSU again thanks to a Fulbright scholarship, from September 2012 to May 2013. Having returned to Italy again, the Case Study would support the ongoing process in Sicily, translated and shared with other participants through focus groups, public presentations and a website under construction, for collective learning and education.

Introduction

The biosphere does not consist of a pyramid of organisms but of ecosystems in which many different creatures coexist in interdependence, each with its own process, apperception, roles, fitness, adaptations and symbioses. This system has an energy source as its currency, an inventory of matter, life forms and ecosystems, and reserves in the inventory – the cycles of matter, genetic and cultural potential. Energy is degraded but is replaced; some energy is arrested on its path to entropy and this increases the inventory and enhances the creative capacity of the biosphere. » (McHarg 1969:197)

Landscape architects and experts well know the importance of relationships among different elements of ecosystems. The relationship between human communities and the environment is a crucial issue underlined by Ian McHarg in his milestone *Design with Nature* (1969). In ecological design, it is also a matter of relevance to understand relationships inside human communities, as different people have different knowledge, interests, responsibilities in order to manage natural resources.

The paper explores preconditions and characteristics of collaborative relationships among laymen, experts, NGOs' activists, and institutional representatives, in managing water ecosystems.

This work synthesizes some preliminary results of my PhD research developed in South Italy, Sicily, whose boundaries are mostly related to the Simeto River watershed. My research is part of a wider research project, the Simeto River Process, in partnership between the University of Catania, Department of Architecture, and a network of local grassroots associations called ViviSimeto. The partnership's goal is to promote opportunities for self-sustainable development at the local scale; the context is characterized by complex ecological and socio-economic problems. The Process has already got a milestone, the Community Mapping project, i.e.

a strategy to explore the peculiar knowledge of inhabitants and their ability to organize landscape regeneration in a democratic perspective (Chambers 1992, Aberlay 1993, Fisher 2000). Next step of the process is the River Agreement, i.e. a strategy to support a network of different stakeholders working together in order to highlight common values and best practices in managing the river ecosystems. My PhD research has two interdependent overall goals: sustaining the process itself (action goal); enlightening possibilities and limits related to the Simeto River Agreement strategy, in order to reframe the concept of environmental management (scientific goal). The methodology is based on a deep collaboration between researchers and other stakeholders (Participatory Action Research, Whyte 1997), supported by a selection of Case Studies (Yin 1994) to improve the ongoing process (Francis 2001).

Mississippi Water Resources Research Institute hosts an inventory of data in alignment with the research design; among them, the Mississippi Delta Nutrient Reduction Strategies and Watershed Implementation Plan for Harris Bayou have proper characteristics in order to focus how do laymen, experts, NGOs, and institutions collaborate in watershed management.

Though the research is still a work in progress, the paper presents a first set of reflections and introduces the comparison of frameworks and practices in two different contexts, the Mississippi State - USA one, and the South Italy-European one.

Paradigm, research questions and literature review.

It is widely accepted that human actions in environmental transformations are awkward choices. Considering landscape design as an act based on value system (Halprin 1989), choices depends on which visions for the future a community decides to embrace. Scholars agree that technologies and practices should be selected with strong awareness and responsibility about their consequences for the environment,

as for present time, as for next generations (Jonas 1979); so opportunities and consequences related to transformations should be point out in public debate and discussed with all members of a community. Someone can argue that contemporary institutions are not able to take into account citizens' direct involvement; but when communities have to organize and face practical problems, related to their resources and common goods (like water, forests, rural infrastructures), deep institutional changes can happen, through shared rules and projects (Ostrom 1990). It means that the decision-making process has to move to a collaborative process, taking into account different stakeholders' knowledge and purposes through suitable tools (Fisher 2000).

The main question is: who is part of a community, and which are these tools, practices, and furthermore, preconditions for different stakeholders' collaboration? Simplifying, stakeholders can be defined in four categories. Laymen are inhabitants and users of a land, with their direct experience of the land due to their everyday life; according to André Gorz, their experience is called local knowledge (Gorz 2008). It also happens that groups of laymen, with distinguishing interests on their land, cluster in associations: laymen that take part to Non-Governmental Organizations (NGOs) represent a second specific kind of stakeholders. Then experts are inhabitants or users of a land, or external people, with a specific kind of scientific knowledge; among them, researchers are experts with scholar skills, and they have the responsibility of producing innovation in order to improve society. Lastly, institutional representatives are laymen or experts with high responsibilities for land management.

As rivers and their ecosystems are a vital core of human communities, watershed is proposed as a critical scene to test forms of collaboration among stakeholders. So the main question moves to another question: is it possible to establish a collaborative strategy in managing water resources,

and which are its characteristics? In Italy there is a school of avant-garde scholars that is experiencing watershed management through participatory processes called River Agreements (Pizzolo and Micarelli 2011). The international debate highlights the necessity of watershed partnerships as a crucial issue in managing water resources, and Leach provides a framework of characteristics defined as inclusiveness, representativeness, impartiality (as equity and fairness), transparency, deliberativeness, lawfulness, empowerment (Leach 2006).

Methodology

Research is connected to a practical experience. Researchers themselves are active participants, not just observers: according to the complexity theory (Morin, 1994), they influence data during the action. Results are evaluated during the action, too; they are analyzed through reports and focus groups that clarify consistency between goals and outcomes, reframing problems when it is due.

Starting from the classification matrix of Deming&Swaffield (2011), research strategy is defined as subjectivist, i.e. knowledge itself is the product of a particular way to look at society where researchers are merged, and samples are not representative of general laws, but they are related to specific situations and context. Lessons from the fields contribute to theory building; theory and practice are deeply related; theory is tasted during the action though a reflective rationality (Schon, 1994; 1995).

The main strategy is to be engaged in a Participatory Action Research project with a Service Learning perspective.

Some scholars (Lewin, 1946; Whyte, 1991; 1997) have shown the validity of mixed research groups: these groups are composed by researchers and other participants; with their different skills and experiences, they contribute to build collective innovative processes. This is suitable for:

- researchers to enter inside practical problems and evaluate their hypothesis during the action;
- participants to get capabilities in raising problems and building strategies.

Others (Reardon, 2003; Gravagno et alii, 2010) have concretely carried on Partnerships between University and Association to empower local communities. This is suitable for:

- University to apply its theoretical skills and contribute directly to local development;
- Associations to learn and improve their action;
- Institutions to innovate themselves.

Participants are invited to reflect during the action and to reframe their issues thanks to input received by concrete actions: this also helps researchers to perform their practical thinking and to face the complexity of reality (Saija, 2007).

Since one of my goals is to improve the process itself, the methodology also requires a wide variety of multiple in-depth case-studies. The collected samples are analyzed with the purpose of defining what a River Agreement can be, and shared with other participants. Selection criteria are: partnerships among laymen, experts, NGOs, and institutions to improve water ecosystems; working together with different knowledge, abilities and responsibilities; learning by doing.

The paper synthesizes the Participatory Action Research process in Sicily and presents some opportunities of comparison with a Case-Study in Mississippi State, detected using the aforementioned selection criteria.

The Simeto River Agreement. Some notes about the context, an overview of the process, and some preliminary results.

The local context is a rural area where the most important river of Sicily flows, the Simeto River (113 km/70 mi long; 4182 Km²/1614 mi² watershed).

This place is very rich of biodiversity, traditions and agricultural productions, but it is losing its original characters due to a lot of factors. The local community calls the middle course of the River as the Simeto River Valley.

With five municipalities in two different Provinces along its path, plus eight more close to it, it is a significant area due to some features: rare elements of wildlife still existing; historical and cultural heritage places; peculiar farming systems (with some high-quality products into a fascinating rural landscape with ancient buildings and infrastructures, from different époques starting from Neolithic, continuing with Greeks, Romans, Arabic, Normans, Bourbons); a lot of springs from Mount Etna (rich groundwater system).

But there are also a lot of disturbing factors: water and ground pollution (cities' depuration plants do not work; inefficient waste management system, illegal water pumping and chemical pollutants by some farmers and industries); derelict lands (young generations move from rural places into the cities and no one is taking care of fields anymore); inefficient and useless hydraulic infrastructures (artificial banks and dykes); so the context is badly changing and biodiversity is decreasing. For these reasons, it could be defined as an ecological challenging context.

Furthermore, there is a long-lasting crisis for the local agricultural market and rural economies, with few institutional plans and no well-defined visions to empower local communities. Different local agencies do not share land management information and, in general, laymen, associations, and institutions are not used to work in a collaborative way, as it is even difficult to say who is the local community. Moreover, political patronage is quite common and young generations suffer unemployment problems (they do not believe in better changing so they often go away from Sicily).

In the meanwhile, there is an active network of grassroots associations that wants to promote strategies and projects to revitalize derelict areas through responsible fruition and practices. They want to encourage public debate about these issues, with institutions playing their part in a responsible way.

In 2008, the partnership among association and the University of Catania started from a specific need: defending a Special Area of Conservation (SAC Pietralunga) from the building of a big incinerator, that laymen perceived as very dangerous for them, for ecosystems and for the economy of their life place. This incinerator was part of the Regional Waste Plan of Governor Salvatore Cuffaro in 2002 (some years later he was convicted of mafia affair), so that regional institution was perceived as an enemy to fight.

Laymen started organizing in grassroots associations that were able to affect decision-making process thanks to mass protests, for example mobilizing more than 5000 participants for a march, and also legal actions supported by some experts (Gravagno&Saija, 2008). Even if the fight against incinerator was successfully, it was not enough: partnership knew that NIMBY approach was not a proper way to face the question (Fisher, 2000), so researchers and activists started reflecting on a complex and more holistic level. It was immediately clear that the entire river system needs to be revitalized from deep changes, long-terms strategies, new and respectfully relationship human-environment.

The partnership highlighted some goals: promoting an inclusive debate about the environment, starting from local knowledge and common experience, involving also laymen that are outside grassroots associations; affecting decision-making process, building a community strategic plan as a tool for a meaningful dialogue with institutions; trying to overcome advocacy toward a shared responsibility, i.e. a process in which different actors

play their part with their skills. The partnership was therefore starting to trace a collaborative strategy for watershed management improving renewed ecological relationship. It is reasonable to say that these goals are inspired by discourses about sustainability. More than theories, the debate focused on practices: which could be suitable paths toward sustainability?

The first step was defined as the 'Community Mapping Project', built in a specific way suited to the local context, interests and needs. It explored the awareness to be part of an ecosystem where inhabitants share a 'common home' and its resources with other living being. Inspired from Bioregional practices, it focused the importance of mapping to create a community sense related also to natural environment, giving up a 'city-centered' vision to move toward a wider one, with the central role of rivers as symbols for respectful ways to live together (Aberlay, 1993); furthermore, it was a way to explore allocation and management of resources through an easy way of understanding land's features, as experienced in Participatory Rural Appraisal (Chambers, 1992). But the 'Community Mapping Project' was also something more. It was a simple and direct action able to put different people together in front of a huge map (1:10000 scale with the all river path, in a 3 m height, 10 m weight wall) and reflect together about future of their land. A 'serious play' was invented, without rigid rules, but just some guidelines, to sharpen 'mapper's' interest and action. In four months of work (carried on in four different cities), the partnership was able to involve 500 active participants (farmers, tourism operators, students, inhabitants, workers, users of the valley, and so on), plus some institutional representatives. This number is quite minor comparing with 5000 people involved into the protest against incinerator mentioned above, because it was more difficult moving 'from NO! to YES!', i.e. from the protest level to the proposal level. By the way, the Map collected a lot of interesting contributes about the past, the present and the future of the river valley in

Laymen, Experts, NGOs, and Institutions in Watershed Management.
Pappalardo, Giusy

its complexity, with a particular attention on water resources. After a 'Three Days Community Design Workshop', called 'ViviSimeto 2010' and focused on some topics arisen from the 'Community Mapping', a document was realized, with a system of values, wish and, above all, with a system of actions: something like a participatory strategic plan. Participants evaluated this phase as successful through public appreciations and the willingness to continue working together.

When the partnership focused which pilot actions and projects could be the starting point of practical landscape transformation and regeneration, it was immediately clear the necessity to start from derelict areas, places that are not currently used, apart from being illegal dumps. Two of them were chosen, where the partnership experienced a community design approach to build collective knowledge (Raciti, 2012): one near the river, to revitalize through planting trees and natural open furniture, promoting a responsible use and care of a fragile ecosystem characterized by peculiar birds; the other one inside a city in a poor neighborhood, to revitalize through a creative school-community garden, promoting intergenerational exchange between old people and young students, with experiential forms of education. These two experiments showed two critical points: voluntary action was too weak; institutional support was not effective. Reflecting during the action, the partnership focused the importance of an Institutional Turning Point, i.e. a more organized structure made of a deep collaboration among associations and institutions.

Synthesizing, in order to build the River Agreement, the Community Mapping Project was the first milestone as a voluntary experiment carried on by the partnership among associations and institutions, with its good results and some failures related to the pilot actions. In the meanwhile, the partnership decided to enlarge itself, enclosing different institutional representatives, with the aim

of building a frame defined as a Community River Statement, the baseline for the River Agreement. This is still a work in progress, but it is possible to trace its characteristics. It is about to be realized by mixed work groups, with the institutional representatives as newcomers, and the purpose of clarifying the Simeto Community's system of values, common rules, and landscape managing. The process of realizing the Statement is a way to let institutions and citizens collaborate around the common issue of revitalizing their place of life. It is going to be structured like a 'puzzle', where different actors do what they can (and want) to do, in order to contribute and to exchange with others. For examples, old people want to explore the topic of memories and transmission to young generation; some institutional representatives want to exchange data and expertise related to the river system; farmers and touristic operators want to realize networks and promotional strategies for a sustainable rural economy; some activists and researchers want to continue a 'listening process', like the one started with Community Mapping Project, going deeper inside stories of people who live the river. All different contributes are going to compose the puzzle, if every participant does not delegate, but takes own responsibility of a small action for the large collective project. After this phase, expected results are related to obtain a mature process to build the River Agreement, with the crucial challenge of defining the 'stickiness factor' (Gladwell, 2000), i.e. preconditions and characteristics of best practices in collaborative watershed management.

Comparing for learning: Watershed Implementation Plan for Harris Bayou – Mississippi State – USA.

Research perspectives.

In order to explore collaborative practices in watershed management, Mississippi State University and Mississippi Water Resource Research Institute host data about a Case where farmers, experts and institutional representatives started and implemented strategies to reduce water pollution and to improve ecosystems: the Harris Bayou Plan,

part of a complex strategy called Mississippi Delta Nutrient Reduction Strategy. For this research, the first source of information used are some reports: Mississippi Delta Nutrient Reduction Strategies Implementation Draft December 2009; Watershed Implementation Plan for Harris Bayou Draft February 2011; Delta Nutrient Reduction Strategies and Implementation Plan Update September 2011. To go deep inside the Case, according to Yin (1994), a set of questions has been provided to key-actors, that represent different kinds of stakeholders involved: laymen and NGOs' activists (Delta Farmers Advocating Resources Management and Delta Wildlife), experts and representatives of Mississippi Department of Environmental Quality. Questions are related to understand the "farmers' forward-thinking mindset", as reports say; they also try to explore the role of local knowledge, and tools used to link it to scientific knowledge; questions explore awareness and the educational process as an adaptive process of learning by doing, eventually.

Even if the study is still a work in progress, some preliminary aspects can be highlighted. Preconditions of this case are related to a voluntary, incentive-based, practical, cost-effective action; collaborative teams of stakeholders, governmental agencies, NGOs, academia, business, and agricultural producers, use existing programs in order to find proper strategies to support their action. It is necessary to continue with interviews in depth and field-work, to better understand the nature of the Case and to share "good news" with Simeto participants. For this reason, I am going to spend next nine months in Mississippi as a Fulbright scholar, and to study different cases in order to build a frame about collaborative practices in watershed management.

Acknowledgment

I feel grateful to every person I met along the Simeto River. Besides, I want to acknowledge my advisor, Prof. Filippo Gravagno, University of Catania; my co-advisor, Laura Saija, Researcher

and Marie Curie Fellow, University of Catania – University of Memphis. Thanks to Antonio Raciti, Visiting Professor – University of Memphis, for the practical experiences and efforts in our common fieldwork for one year. I also want to acknowledge professors and students I met, as a short term visiting scholar, during my research exchange at Mississippi State University, Landscape Architecture Department, Mississippi Water Resource Research Institute, and College of Forest Resources – Wildlife, Fisheries & Aquaculture. Special thanks to Sadik C. Artunç, FASLA, Professor and Head Department of Landscape Architecture - College of Agriculture and Life Sciences, that invited me. Special thanks to Prof. Wayne Wilkerson, ASLA, Associate Professor at Department of Landscape Architecture, Director at Mississippi Water Resources Research Institute (my local mentor at MSU), that helped me in selecting Case Studies and gave me interesting eadvice. I also want to acknowledge: Prof. Chuo Li, PhD, Professor of Research Methods, DLA – MSU; Prof. Donald C. Jackson, PhD, Sharper Professor of Fisheries, Department of Wildlife, Fisheries & Aquaculture, MSU; Prof. Cory Gallo, ASLA, Assistant Professor, DLA – MSU.

Thanks to key actors I have already met and I am going to meet: far from my river, close to other rivers, I have the opportunity to refocus some points of my work, and to look at the international debate from another meaningful perspective.

References

- Aberley D. 1993. Boundaries of home: mapping for local empowerment. Gabriola Island, Bc: New Society Pub.
- Chambers R., 1992. Rural Appraisal: Rapid, Relaxed and Participatory, Discussion paper.
- Deming and Swaffield, 2011. Landscape Architectural Research: Inquiry, Strategy, design. Hoboken, NJ: John Weley and Sons.

Laymen, Experts, NGOs, and Institutions in Watershed Management.
Pappalardo, Giusy

Fisher F., 2000. Citizens, Experts and the Environment. The Politics of Local Knowledge. Durham and London: Duke University Press.

Gladwell M., 2001. The tipping point: how little things can make a big difference, Little Brown.

Gorz, A. *Écologie et politique* (Galilée, 1975) (trad. it.: *Ecologia e politica*, Bologna 1978).

Gravagno F., Saija L., 2008. Is Mafia a Planning Issue, AESOP-ACSP 4th Joint conference. Chicago

Gravagno F., Saija L., Pappalardo G., 2010. Il fare alla prova del Mezzogiorno: partnership fra Università e comunità locale come soggetto attivo dello sviluppo locale, (tr: Participatory Action Research for a southern context. Partnerships between University and local community toward active sustainability), paper presented at XIII Conferenza Società Italiana degli Urbanisti, Roma

Leach W., 2006. Collaborative Public Management and Democracy: Evidence from Western Watershed Partnerships, *Public Administration Review* 66 pp. 100-110. Blackwell Publishing
Lewin, K., 1946. "Action Research and Minority Problems" in *Resolving Social Conflict*. New York: Harper&Row.

Morin E., 1994. *Mes demons*. It. Tr. (1999): *I Miei Demoni*, Maltimi. Ostrom, E., 1990. *Governing the Commons*. The evolution of institutions for collective action. Cambridge University Press.

Pizzolo G., Micarelli R., 2011. Il contratto di fiume/ paesaggio del medio Panaro (Tr: *The Panaro River/ landscape agreement*), in Bastiano M., *Contratti di fiume* (Tr: *River Agreements*). Palermo: Flaccovio Editore.

Raciti, A., 2012. Building Collective Knowledge through Design. Paper to be presented at the AESOP 26th Annual Congress, 11-15 July, METU, Ankara.

Reardon, K. M., 2003. *Ceola's Vision, Our Blessing*:

The Story of an Evolving Community- University Partnership in East St. Louis, Illinois. In: B. Eckstein and J. A. Throgmorton (eds.). *Story and Sustainability: Planning, Practice, and Possibility for American Cities*. Cambridge, MA and London, UK: MIT Press, 113-142.

Saija L., ed. 2011. *Comunità e Progetto nella Valle del Simeto* (Tr: *Community design in the Simeto River Valley*). Catania: Edizioni Didasko.

Schon D., 1994. *The reflective practitioner*. UK: Ashgate.

Schon D., Rein M., 1995. *Frame reflection*. New York: Basic Books.

Whyte W. F., 1989. Advancing Scientific Knowledge Through Participatory Action Research. *Sociological Forum*, 4(3), pp. 367-85.

Whyte W. F., 1997. *Creative Problem Solving in the Field. Reflections on a Career*. Walnut Creek, California: Alta Mira Press, Sage Publications.

Yin, R. 1994, *Case study research : design and methods*, Thousand Oaks CA: Sage