

Participatory research methods applicable in geographic studies

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Abstract. The aim of this article is to present methods of participatory research and PGIS participative mapping and their applicability to geographic studies. Participatory research has emerged as a reaction to the traditional pyramidal research approaches. 2014's Future Earth Agenda indicates that there are issues regarding a) the need for the co-creation of knowledge and integration of academic and non-academic knowledge and b) development of collaborative research with different stakeholders in order to address current global environmental challenges in a sustainable manner. After a theoretical introduction, the author presents the applicability of focus groups interviews and PGIS participative mapping in a trans-disciplinary project concerning the Lower Danube Floodplain evolution. The PGIS research field is a domain, which links GIS with the critical geography thinking being based on the implementation of participatory research methods. The current international policy of Future Earth is raising awareness about the importance of participative research methods and the article presents two practical applications of such methods.

Keywords: *participative research, focus group interviews, PGIS participative mapping, Lower Danube*

1. INTRODUCTION

The tradition in participatory research is based on the principles of Kurt Lewin (1946) about active/action research, which in turn was influenced by John Dewey (1910), the father of the educational philosophy of pragmatism who believed that education and learning are social and interactive processes. Richard Rorty (1979) was a continuator and a modern representative of this philosophical tradition who saw the idea of knowledge as a 'mirror of nature'.

Participatory research has emerged as a reaction to the traditional pyramidal approaches. Research strategies in Western Europe are largely based on participation and there are many positive example from United Kingdom (Cornwall and Jewkes 1995) where governmental and non-governmental organizations resort to participatory research methods motivated by pragmatism but also concerns about equity, including eco-equity.

As Cornwall. and Jewkes (1995) highlights traditional /conventional research methods generate

knowledge / information that helps understand various phenomena, while participatory methods generate knowledge /information for action at the right time in a space inhabited by a group/community directly affected by a diversity of problems and issues debated by academia.

There are different types of participatory research methods according to the level of involvement of the participants to research, starting from a) business as usual **consultative research**, where the participants are passively involved in research led by academia or researchers to b) a new way of working such as **collaborative research** (Future Earth, 2014), where the participants to research (stakeholders /non-academia) play equal roles with academia in the research process to c) **Participatory Action Research (PAR)**, a method used since the 1970s, in which the researcher acts only as a facilitator guiding participants to collect relevant information, reflect, plan and act on it. In this case the knowledge and decision making process belongs to the participants. Freire

(1970, 1973) developed the concept of 'Participatory action research' (PAR), which demonstrated that educating the masses is a tool that changes the structure of a society. The 'pupil' was considered a passive recipient of knowledge, which was in the possession of an 'educator', just as money is in the possession of a bank. He organized a multidisciplinary team that developed educational materials to stimulate groups to reflect on their own lives, organized people in circles to regain cultural identity and indigenous knowledge and encouraged them to discuss about controversial issues followed by reflection and action.

Braun AR and Hocde H (1998) define PAR as a process by which a group or a community identify a problem or an issue of interest, reviewing what it knows about it conduct research on the specific issue/problem, analyze information generated, conclude and implement solutions. The decision making position is implicit and belongs to the group / community involved.

Xunaxi Cruz Velasco (2013) suggestively defines the cyclical phases of PAR for sustainable community development, which are represented in Figure 1 below.

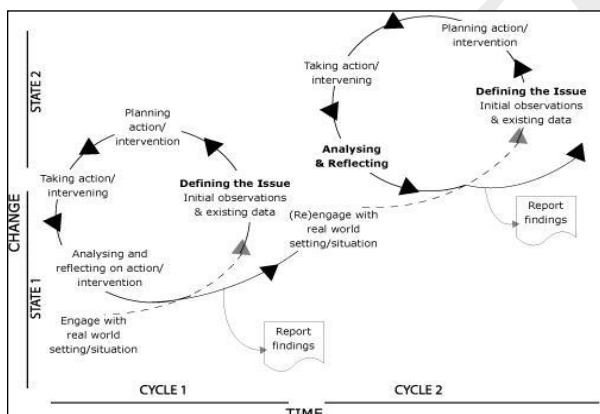


Figure 1. PAR for a sustainable community

An important principle of participatory research is that ethics should be at the core of the research process and the relationship between researcher and participant must be based on an informed and ongoing consent to participate in research.

Currently there are issues regarding the need for the co-creation of knowledge and integration of academic and non-academic knowledge and research (Mauser et al, 2013). In order to address

this problem, the Agenda of the above mentioned Future Earth (former Global Environmental Facility – GEF) aims to create 'Knowledge-Action Networks,'. 'The networks bring multiple disciplines and societal actors together to understand and respond to the global challenges facing humanity'. Future Earth has a 'collaborative approach to knowledge generation' using academic and non-academic knowledge aiming to integrate natural and social sciences and humanities (www.futureearth.org).

Future Earth is based on a coalition of National Future Earth organizations. According to the Romanian Academician, Prof. Dr. Dan Balteanu (2016), the National Romanian Committee of Future Earth is an organisation named 'Terra in the future - Research for Global Sustainable Development' and the inaugural meeting of this committee was organized by the Institute of Geography of the Romanian Academy, in Bucharest on 30th of June, 2015.

2. STUDY AREA

This chapter presents two different methods ascribed to the participatory research field: a) the method of focus groups and b) PGIS (Participative Geographical Information Systems), a type of participative mapping developed in the last 10 years based on the sketch mapping, both methods were used in a project led by Francisc I Rainer Institute of Anthropology - 'Taming the post-socialist Nature: Floods, Local Strategies and National Policies along The Lower Danube' between 2013 - 2016 (www.politicaecology.ro).

What is distinctive for participatory research are not the methods used, which may be qualitative or quantitative, but the methodological and cultural context in which they are applied. Therefore essential to facilitate dialogue between people or 'groups' is the need for a system of common understanding, especially of concepts and ideas that might seem different from the terms defined by the scientific world as the common understanding but have a special meaning for the group concerned. Words / terms used become 'impregnated' with special meaning in certain social groups / communities.

2.1. The Focus Groups

The Focus Group interview idea was developed in the 1930s, but the acceptance of focus group interviews was delayed in the academic and scientific circles until the 1980s. In the 1970s the focus group interviews became a tool largely used by private sector marketing researchers, which discovered that the method was important in 'shaping marketing strategies for products' (Krueger and Casey, 2000).

For the last 20 years the 'Focus Group: A Practical Guide for Applied Research' by Krueger and Casey remains the most important book which explores the process of focus group research. The book was republished and up-dated 5 times drawing on the authors more than 30 years of hands-on experience in using focus groups.

A focus group is usually composed of 4 to 10 participants who have certain characteristics in common that relates to the purpose of research, a facilitator/mediator who creates a comfortable and inviting environment, which allows people to express different points of view. Trends and patterns in perceptions on a number of themes (subjects) are identified after several focus groups (minimum number is 3). Despite the fact that the questions appear to be spontaneous, the first set of questions are ordered in a logical manner and carefully selected before the focus group interview.

The questions from the first focus group are usually more general, in time the questions evolve becoming more detailed and specific helping people to start talking and thinking, reflecting upon the themes/subjects. There is no pressure from the moderator that a consensus is reached, on the contrary special attention is paid to feelings, comments and any information on the local cultural/social context.

The main advantage of a focus group is that many people find a face to face interview an uncomfortable experience and focus groups include people who are usually excluded, such as minorities, women and people who do not participate because they think that only specialists and people with authority in their community should participate in research (Nenciu Posner, 2015).

2.2. The PGIS Method

PGIS site was formulated in close connection with the PAR concept within the context of emergence and widespread use of Geographical Information Systems (GIS) (Abbot et al, 1998).

PGIS aims to challenge the traditional roles of researcher and researched subject in geographic analyses. With PGIS, spatial analysis becomes a collaborative action involving constituents of a community (insiders) and researchers (outsiders) in a production system including spatial information which gives more power to local people. Increased availability of geospatial data and technology, combined with the iterative nature of the creation of digital maps and multimedia applications for viewing them in the community is the basis for PGIS (Elmore, 2013).

PGIS is an approach that allows the connection of sciences (geography, social sciences, cultural and environmental) and policies, plans and strategies through a bottom up process and representation of all interested parties (stakeholders). Free software such as Open Street Map, Quantum GIS, Global Mapper, Google Earth, satellite maps or orthophotoplans which can be accessed free of charge enables anyone with a computer and Internet access to create 2D/3D maps and a data base that can include important local knowledge (Nenciu Posner, 2015). PGIS increases the ability of disadvantaged people to generate, manage and use their Indigenous Spatial Knowledge (ISK) (Rambaldi, 2013) and spatial information generated from the outside in contexts such as:

- Managing and improving the conflicts in terms of access, use, control and allocation of natural resources;
- It is a collaborative research endeavour;
- Conservation of intangible cultural heritage and strengthening the identity of indigenous peoples and rural communities;
- Good governance in terms of transparency and decision making on spatial data in a consensual manner;
- Reducing the risk and hazard management by local communities (Gaillard and Maceda, 2009)
- Promoting equity on ethnicity, culture, sex and eco-justice.

3. RESULTS

During my research in Danube floodplain between 2013-2016 I used several focus groups in order to identify the human adaptation to changes of river and floodplain environment and facilitate discussions during two PGIS mapping exercises. I have also conducted several focus groups at different times with 4 groups of women to discuss day to day life specific to the Danube floodplain environment before and after embankment of Danube in 1960s.

The two methods of research were applied in two different communities from the Romanian Danube Valley: Gostinu Village, from Giurgiu County and Rast Village from Dolj County.

Gostinu is a village located on Danube floodplain with a population of 2032 inhabitants (2011 census) and a mixed economy: agriculture, fishing, tourism. The area has been enclosed by raised embankments and drained through different projects, started in the 1920's and continued up to the 1970's.

Rast Village, Dolj County is composed of Rastul (the old village) and Rastul Nou (located 9 km north of Rastul Vechi. Rast's economy is based on agriculture and has a population of 3343 inhabitants (2011 census) and is not situated in the floodplain, only the agricultural land being in the floodplain. Rast Village was dramatically affected by 2006 floods after which the local authority attempted to move the entire population to New Rast.

At first I started using the focus group method because the majority of women that I approached during my study were shy and reluctant to speak about their day to day life and thought that their opinion was not so valuable. Many women said that their role was not so important because they worked for the cooperative farm as unskilled labourers and suggested that I should speak to their husbands and other people, usually men who had powerful positions or worked for the agencies involved in embanking the Danube River.

The focus groups with women were the most valuable because they provided information on everyday life and human adaptation based primarily on the use of the Danube ecosystem services. Thus

women identified a varieties of food sources - shellfish, wild edible plants (e.g. wild asparagus) that disappeared with the embankment and the destruction of natural floodplain environment. All women have discussed issues concerning difficulties regarding transport and communication, practical problems encountered during the last flood, then they indicated places where there were natural ponds in the middle of the village and the direction of pathways for water during floods.

The men from Gostinu put great importance on technology, the jobs they have made them to worship technology and over estimate its importance. Women instead were maintaining that the technology will not be enough if Danube River erodes its banks because there will not be enough boats for everyone in the village and all new houses built at altitudes lower than 18 m will be flooded.

The men from both Rast and Gostinu tended to use the formal terms, while women knew the local toponymy and its origin and used a rich vocabulary to describe their immediate environment and their observations of plants and animals specific for the floodplain.

Information obtained through the focus groups was not representative for the entire population but allowed me access to disadvantaged groups and valuable information/local knowledge on human adaptation. The PGIS method was used for a variety of reasons, but for the purpose of this article I will present two different PGIS maps, one from Rast and the other from Gostinu. Both maps were developed to identify the agricultural areas affected by infiltrations of water through the levees (longitudinal 4-5 m in height dykes built along the river). These phenomena determined huge agricultural losses in both villages under study.

The map in Figure 2 below identify areas of up to 30% of all arable land, where water accumulates due to infiltrations through the levees in areas which become unusable for agriculture.

In Rast the area affected by infiltrations is considerable as shown in Figure 3 below.

The areas affected by excess humidity were then superposed on older maps, indentifying that these areas occur mainly in areas of former ponds/lakes that were once part of the natural floodplain and an increased water logging in some areas due to the drainage works.

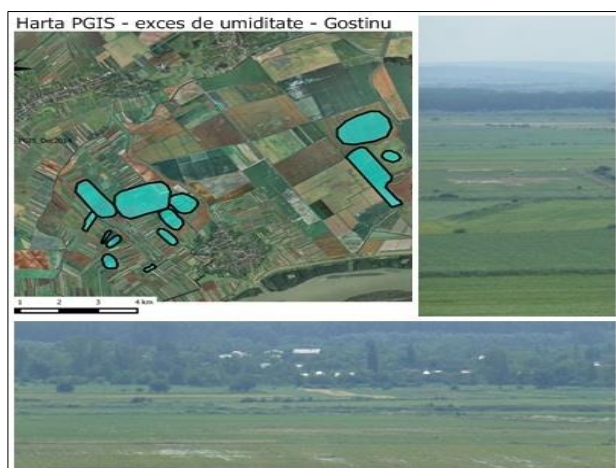


Figure 2. Gostinu PGIS Map and pictures showing effects of water infiltration through the levee

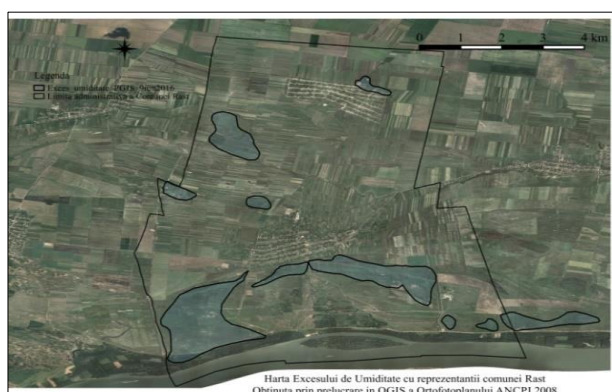


Figure 3. Rast PGIS Map

The use of the PGIS method was so suggestive and participants were very pleased to work with a maps which were worth more than a thousand words.

4. CONCLUSION

The purpose of this article evidenced by the results regarding the use of the focus group and PGIS methods was to show that using participatory research methods brings very valuable information and local knowledge in one place, which is relevant to the communities studied, empowering them to make decisions about real problems identified by them.

By implementing participatory research methods such as PGIS the author gives an example on how to increase the capacity of villagers from Gostinu and Rast to visualize and understand spatial

information and knowledge about their community. This information should help reflect and find appropriate ways of adapting to excess humidity affecting more than 30% of the arable land and to consider other options that are available to villagers current situation determined by specific geographical, ecological, cultural, social and economic contexts. In this process the participatory research brought together different generations, experts and non-experts to facilitate an exchange of information and learning about former adaptations, past mistakes and in this way to help create a collective spatial database.

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