**Cartografic challenge**

How to develop a map able to create a dialogue between social actors coming from different cultural contexts?

? How can we translate the terms «participation» and «collaboration» in cartographic instruments for territorial governance

? How can we integrate in a map different visions of the world

**Cartographic semiosis**

1. The cartographic interpreter: plurality of actors
2. The typology of data: not only statistical, other sources
3. The graphic transfert: multiple ways of representation

**THE SIGAP STRATEGY**

**Modular methodology**

1st phase KNOWLEDGE observation, data collection, field research and interviews

2nd phase PLANNING: data analysis, interpretation and GIS

3rd phase NEGOTIATION: Focus Group, living labs and collaborative mapping

4th phase CAPITALIZATION: sharing knowledge and experience
THE MAIN FEATURES OF COLLABORATIVE MAPPING FOLLOWING THE SIGAP STRATEGY

1) THE INTERPRETER OF THE MAP: A PLURALITY OF SOCIAL ACTORS
Environmental conservation is a colonial legacy which implies today a participatory approach considering many social actors: national institutions, international organisations, researchers, ONG and associations, local communities → The researcher as an intermediate actor facilitating the dialogue

2) DATA: LOCAL KNOWLEDGE RECOVERED BY FIELD RESEARCH
If a topographical map shows legal territorial organisation, following legal and administrative criteria, participatory mapping shows local traditional organisation: following historical and traditional criteria and also traditional knowledge → The importance of denomination: the need of a «de-codification» of the meaning to recover local knowledge

3) GRAPHIC REPRESENTATION: MULTIPLE OPPORTUNITIES GIVEN BY ICT
- 2D and 3D representations
- Participatory drawings and Community integrated GIS

The emergence of on-line collaborative systems for territorial planning
TWO EXAMPLES OF COLLABORATIVE MAPPING

→ MULTIMAP (www.multimap-parcw.org)
Within a EU project of environmental conservation in Western Africa

→ Bergamo Open Mapping (www.bgopenmapping.it)
Within the Candidacy of the city of Bergamo as European Capital of Culture 2019
WAP COMPLEX (W, Arly and Pendjari)

2001-2005 W TBR and 2006-2009 ARLY

Partners:
Universities of Bergamo, Ouagadougou, Niamey, Cotonou

Cooperation Project:
Regional Programme Parc W/ECOPAS (Europen Development Fund)
EU priorities

a) recover the **territorial organization** of local communities
b) build instruments of **environmental management**
c) promote **local sustainable development**

4 Universities, 15 researchers, many stakeholders in local communities

- identification of different social actors and analysis of the territorial organization
- negotiation between local communities and environmental institutions
- creation of capitalization and decision-support systems

From 40 villages already known to about 1570 villages never mapped before
Creating a dialogue between local communities and parks managers
Map of the southern regions of Scioa made by an Abyssin (1886)
Source: A. Cecchi (1886), Da Zeila alle frontiere del Caffa, vol.1-2-3, SGI, Roma, Loesher, tav. 4

«sketch collaborative mapping»
The participatory drawing of the foundation of the village of Kondio (Burkina Faso)

*Cartographers: chief’s councillors and sacred places guides*

Symbolic knowledge on natural resources:
- vegetation
- fauna
- pedology
- hydrography

*Jurisdictional knowledge*
- villages

Participatory drawing of the village showing the creation of the protected area

*Cartographers: the farmers association*

No symbolic knowledge
- vegetation
- fauna

New jurisdiction
- borders
- Farmers settlements
- Reserves

Denial of symbolic values and new jurisdiction
COLLABORATIVE MAPPING AND TRADITIONAL KNOWLEDGE

⇒ **SYMBOLIC KNOWLEDGE**: socially recognisable values such as history and myth (sacred sites, places of foundation)

![Symbolic Knowledge Example](image)

⇒ **FUNCTIONAL KNOWLEDGE**: aimed at intellectual knowledge and material practices for the identification of locations in which productive activities take place (agricultural and pastoral areas, hunting and fishing grounds and areas which are harvested)

![Functional Knowledge Example](image)

⇒ **JURISDICTIONAL KNOWLEDGE**: which give information regarding the social and territorial organisation of the local community (village boundaries, position of land, political and religious authorities)

![Jurisdictional Knowledge Example](image)
W UNESCO TRANSBOUNDARY BIOSPHERE RESERVE AND REGIONAL PARK

www.multimap-parcw.org

DIATHESIS LAB

WEB-BASED COLLABORATIVE MAPPING

www.bgopenmapping.it
PARTICIPATION LEVELS in the Candidate cities as European Capital of Culture 2019

The process of PARTICIPATION in Bergamo Open Mapping

- **IDENTIFICATION** of social actors
- **ORGANISATION** of meetings
- **COMMUNICATION** printed material and social networks

- **CONSULTATION**
  - Focus Group for supporting the use of the web-based mapping system
  - Users individually: insert markers and lines, add a text description on cultural initiatives, add pictures
  - Consensus and merit ranking by vote

- **NEGOCIATION**
  - Public presentation of the more voted initiatives
  - Rewarding mechanism
  - Meeting between proponents and Bergamo 2019 Steering Committee
  - Supporting initiatives in the Candidacy Report
  - Living Labs for shared urban planning
...A MULTI ACTOR PROCESS

STUDENTS
- University internships
- Students associations
- Middle and High schools

ASSOCIATIONS
- Young people
- Cultural organisations
- Local groups

CITIZENS
- Parishes
- Local administrations
- Neighborhoods

STAKEHOLDERS
- Educational/cultural Institutions
- Administrations
- Private initiatives

Released in March 2013

www.bgopenmapping.it

Information:
1. institutional data sets
Information:
1. institutional data sets
2. data collected in field research

Released in March 2013

Information:
1. institutional data sets
2. data collected in the field
3. crowd-sourced data
SOME NUMBERS …

Users: 4793
Initiatives: 110

Registered users: 306
Province → 79 72%
City → 31 28%

MARCH-SEPTEMBER

Proposal of activities → 44 40%
Place valorization → 38 35%
Mixed proposals → 21 19%
Places restoration → 7 6%

VG1 analysis

56 mills, farm houses, small industries
churches, sanctuaries, monasteries
castles, towers, gates, villas, palaces
hospitals, electric powers
WHAT IS THE MAPMAKER ASKING FOR?

PLACES

• Open public buildings for cultural initiatives
• Create lively public spaces as places of culture (painting, sculpture, music, dance, theatre, cinema, ...)
• Discover unknown places and valorize the local culture (dialect, local knowledge ...)

ACTIVITIES

• Low environmental impact (cycling routes, pedestrian paths, recovering already existing buildings...)
• With high social impact (collective cultural activities, group excursions, ...)
• Creativity, art in unusual places (paintings in the caves, concerts in the electric power stations, cinema in the villas...)

RECEIVER

• To envolve young people
• To attract visitors from Europe
Ten initiatives presented to the Bergamo 2019 Committee

1. ITINERARI CULTURALI e AMBIENTALI NEL TERRITORIO DI PONTERANICA
   Proponente: GIUSEPPE GUALINI  Associazione/Ente: ASSOCIAZIONE PENSIERI E PAROLE

2. DOORS TO EUROPE E FLOWING CULTURE: ALLA SCOPERTA DELL’ALTA VALLE BREMBANA
   Proponente: ANDREA PALENI  Associazione/Ente: ALTOBREMBO

3. SCUOLA DI MUSICA NEL PALAZZO DEL VICARIO DI VALLE
   Proponente: ANDREA CHIESA  Associazione/Ente: COMUNE DI ALBINO

4. POLO DI INNOVAZIONE CULTURALE NELL’EX-CENTRALE TERMICA I.R.F.
   Proponente: FABRIZIO TERZI  Associazione/Ente: BERGAMO HUB

5. ONE THOUSAND SOUNDS: FESTIVAL MUSICALE DEGLI STUDENTI UNIVERSITARI EUROPEI
   Proponente: MARIO GHIDINI  Associazione/Ente: ASSOCIAZIONE STUDENTI UNIBG

6. ALLA SCOPERTA DELL’ARTE NELLA GROTTA EUROPA
   Proponente: PIERO CATTANEO  Associazione/Ente: GRUPPO SPELEOLOGICO VALLE IMAGNA

7. GIOVANI ARTISTI EUROPEI IN MOSTRA PRESSO GLI OSPEDALI RIUNITI DI BERGAMO
   Proponente: CATERINA GIUPPONI  Associazione/Ente: UTENTE PRIVATO

8. L’ARTE E I LUOGHI DELL’ACQUA: ALLA SCOPERTA DEI LUOGHI NASCOSTI DI CITTA’ ALTA
   Proponente: GIOVANNI GINOLIHAC e IVANA CATTANEO  Associazione/Ente: ASSOCIAZIONE CITTÀ ALTA E COLLI DI BERGAMO

9. CAPOLAVORI CINEMATOGRAFICI A VILLA DEI TASSO
   Proponente: DIANA SANA  Associazione/Ente: UTENTE PRIVATO

10. CAMPUS SCOLASTICO A CASCINA CA’ VALOTI
    Proponente: SARA BERGAMELLI  Associazione/Ente: BIBLIOTECA CENTRO CULTURA NEMBRO

Towards the second phase: Living Labs for collaborative urban planning
SOME ISSUES COMING FROM THE EXPERIENCE

AUTHORSHIP: A COMPLEX DEFINITION
→ the promoter: from single citizens to many stakeholders (supporter, developer, producer, ...)
→ the user: from the individual to the real and a virtual community

THE BENEFICIARY from citizens to researchers, institutions and private organisations

QUALITY: ACCURACY, DIVERSITY, CONSENSUS
→ accuracy in geolocalisation
→ multifaceted perspective in data attributes (eg. the same place can have multiple place-names, descriptions, pictures, ...)
→ quality is proportional to other users validation and consensus

TECHNOLOGY: OPEN, UBQUITOUS, TRACEABLE, STORED
→ open source software and open data
→ proliferation of Location Based Services
→ real time control of data production or use
→ collection, storage and management of huge amounts of data
→ digital divide?

PRAGMATICS: IMPACT OF COLLABORATIVE MAPPING ON SPATIAL PLANNING
→ what happens during the process and afterwords?
→ who uses the information, how and for what purposes?
→ what is the actual contribution of collaborative mapping?