

Participatory 3-dimensional mapping for climate change adaptation

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PAPRIKA POLICY BRIEF

A research project funded by the French National Research Agency

May 2013

Participatory 3-Dimensional Mapping (P3DM) consists of building stand-alone large-scale relief maps made of locally available and cheap materials (e.g. carton, paper, cork) over people overlap thematic layers of geographic information. P3DM enables the mapping of landforms and topographic landmarks, land cover and use, and anthropogenic features (assets, vulnerabilities and capacities), which are depicted by push-pins (points), yarn (lines), and paint (polygons). Scales range from 1:500 to 1:1000 and enable mapping and planning at the household level.

P3DM fosters the participation of a large range of stakeholders (Fig. 1), especially the collaboration amongst climatologists and other scientists, government officials, and local communities, thus enabling the integration of local and scientific knowledge as well as bottom-up and top-down climate change adaptation (CCA). P3DM provides a tangible tool where the most marginalized people, including the illiterate who may have a poor understanding of scientific concepts, can discuss CCA with climatologists and other scientists, who on the other hand may have a poor understanding of the local context. P3DM is credible to both locals, who build the map and plot most of the information, and to volcanologists and other scientists as well as local government representatives who can easily overlap their own data and plans on scaled and geo-referenced maps. In the process, NGO partners serve as facilitators and moderators.

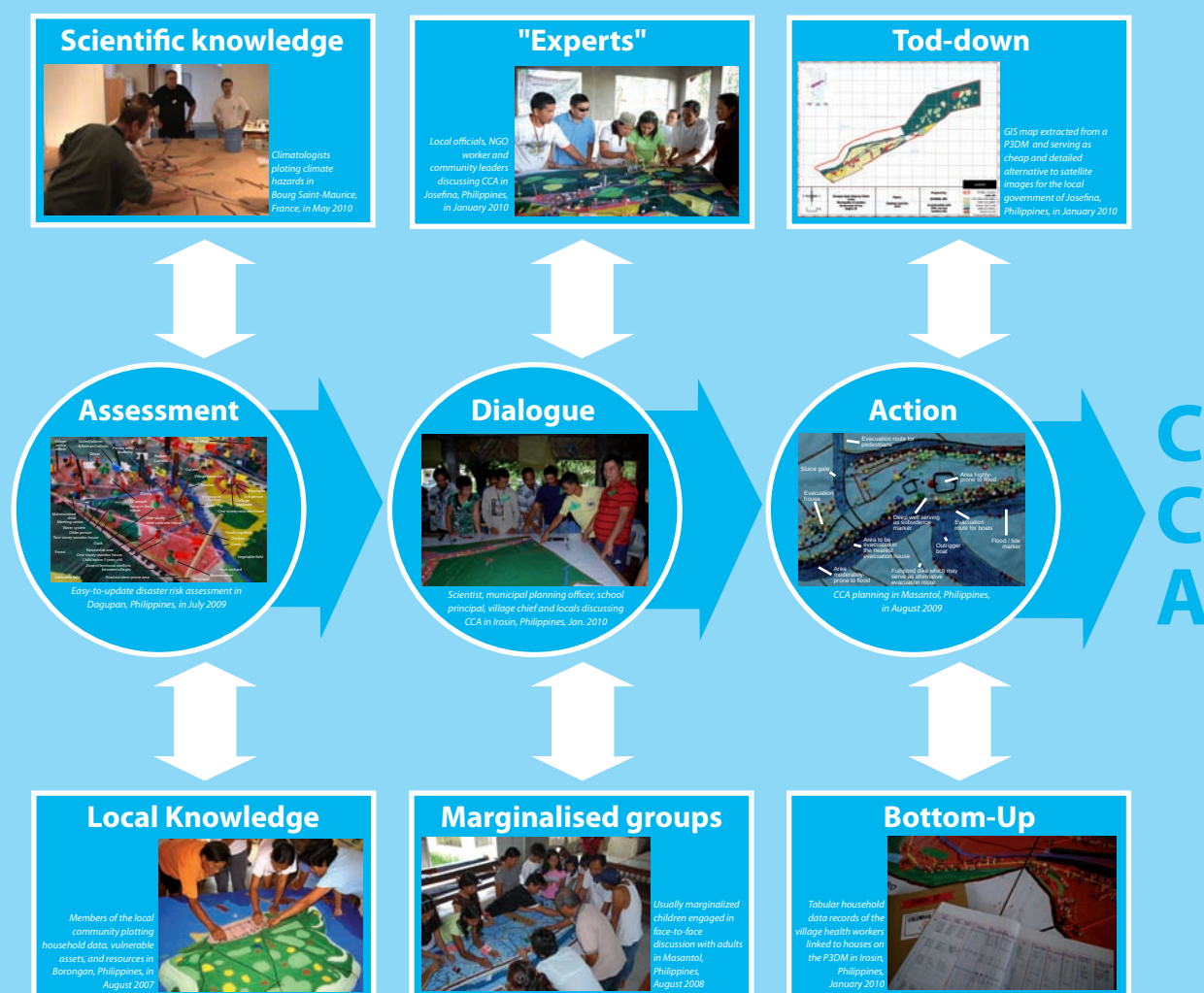


Figure 1 : Participatory 3-dimensional mapping for integrating knowledge and actions in climate change adaptation



Figure 2: Participatory 3-dimensional mapping in Gati, Cambodia, in January 2011



Figure 3: Assessment of the potential impact of climate change, people's vulnerabilities and capacities in La Carlota City, Philippines, in July 2009



Figure 4: Participatory 3-dimensional map in Dagupan, Philippines, in July 2009

Scope and limitations

- P3DM allows livelihood mapping
- P3DM enables to integrate CCA into development planning
- P3DM facilitates the resolution of territorial conflicts

But...

- P3DM is not a stand-alone tool
- P3DM offers limited possibilities to integrate time variations
- P3DM partially encompasses social relationships

Steps in conducting P3DM for CCA

1. Selecting a site
2. Building rapport with the community
3. Preparing for the training
4. Introducing the training
5. Preparing the blank model
6. Defining the legend
7. Plotting data on the 3D map (Fig. 2)
8. Integrating local and outsiders' knowledge
9. Household datasheets
10. Field verification and community validation
11. Assessing the potential impact of climate change, vulnerabilities and capacities (Fig. 3)
12. CCA planning
13. Polishing the map (Fig. 4)
14. Closing ceremony
15. (optional) integrating P3DM data into a Geographic Information Systems
16. Updating the 3D map

Materials needed for P3DM for CCA

- Base map
- Carton / polystyrene / cork / foam / foam board
- Push-pins (for point features)
- Yarns (for linear features)
- Acrylic paint (for areal features)
- Tailor pins
- Thimbles
- Glue
- Scissors and cutters
- Pencils and marker pens
- Paper clips
- Masking tape and brown tape
- Paintbrushes of different widths
- Carbon paper
- Crepe paper / newspaper for paper maché
- Small hammer and nails
- Wood and plywood for the table

To learn more about P3DM for CCA

Gaillard J.C., Cadag J.R.C. (2013) *Participatory 3-dimensional mapping for disaster risk reduction: a field manual for practitioners*. Catholic Agency for Overseas Development, London.

Cadag J.R.D., Gaillard J.C. (2012) Integrating knowledge and actions in disaster risk reduction: the contribution of participatory mapping. *Area* 44(1): 100-109.

Gaillard J.C., Maceda E.A. (2009) Participatory 3-dimensional mapping for disaster risk reduction. *Participatory Learning and Action* 60: 109-118.

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The PAPRIKA project is funded by the Agence Française de la Recherche (ANR) and institutionally supported by the Centre National de la Recherche Scientifique (CNRS).

Website: <http://www.evkc2cnr.org/cms/en/share/pilot-projects/ABC/Nepal?filter0=paprika%20himalaya>

