

Revealing representation mismatch through role playing games : example of peri-urban catchment management in São Paulo (Brazil)

Introduction

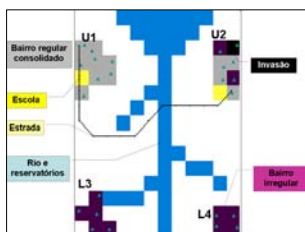
Irregular settlements without sanitation infrastructure are spreading in the headwater catchment of the Metropolitan Region of São Paulo, in spite of the catchment protection legislation. The subsequent pollution is affecting of water quality of the city reservoirs. The new governance framework promotes participation but local organizations face difficulty to deal with institutional actors because of asymmetry of power and access to information, competition to get access to authorities (and their resources) and passive position opposed to traditional paternalistic attitude.



Photo 1. illegal settlements in the periphery of São Paulo

A multistep approach including a computerized role playing game (Ter'Aguas) was tested to capacitate local leaders in negotiation related to land and water management negotiations. It was also assumed that the game could help social learning concerning the hydrological and social functioning of the area.

The Ter'Aguas role playing games



A virtual municipality with 6 types of actors are represented (a mayor, a water company, 4 district representatives, 2 small farmers, 2 big landowners with speculative strategies, 1 business representative, and 1 weekend house owner with environmental sensibility).

The computer simulation assesses the impact of land-use changes on the quality of the reservoir water; on the cash assets of the players; on social indicators of the municipality.

The players take decisions concerning investment strategies (urban infrastructure, property development and land use activity), economic activities (buying and selling plots, subsidies and taxes on land), licensing land uses and activities, and allocating land to migrating families in the area.

After one round of decision-making, all the players get together to try to find a more collective planning strategy and try to implement it in the following round.

The interactions can focus on strategies for urbanisation, investment in urban infrastructure (sanitation, piping, wells, roads etc), land-use planning and land market dynamics

Comparing different game sessions with two public types

- Two first games with a focus group that help developed the tools used in the approach
- Game (within complete multistep approach) in two areas, gathering each more or less 15 community leaders.
- One game with representatives of the catchment committee
- 3 games sessions within training courses for water specialists and water firm engineers.
- Game sessions and collective analysis monitored and registered (direct observation, video monitoring, computer registered)
- Learning assessed by questionnaires before/after game and interviews (8 months after process)



Photo 2. Ter'Aguas game sessions.

	Nb game	PARTICIPANTS	ROLE
Community games	Focal group 1 st game	Local community leaders Local business representative Municipality : head of planning Sabesp : water resources department member	Each one in its role
	Focal group 2 nd game	Local community leaders Municipality : head of agricultural department Sabesp : water resources department member Health agents and executives Local NGO	Municipality / Sabesp inverted
	Embu-Guaçu game	Municipality : head of planning Sabesp : no one represented	Two active leaders coupled with municipality and Sabesp role – no change for other participants
Paralheiros game	1	Local community leaders Local business representative Municipality : head of planning Sabesp : water resources department member	Two active leaders coupled with municipality and Sabesp role – no change for other participants
Institutional actors	Sub-committee game	Representatives of urban municipalities and water firm Department of Environment Environmental NGO 2 members of local NGO (dealing with housing issue in urbanised areas) Representative of social housing schemes	Role inversion. Two non institutional players (representative of local NGO) coupled municipality and Sabesp role
	Training sessions	3	Engineers and water specialists (1 games), Sabesp technicians (2 game)

Tab 1. Game sessions participation structure.

Very different games contents and development

Huge discrepancies concerning the content and focus of the main negotiations in the games played with and without community representatives.

	WITH COMMUNITY LEADERS PLAYERS	ONLY WITH INSTITUTIONAL PLAYERS OR WATER TECHNICIANS
Game perception	A virtual situation close to reality; Easy to connect to local situation	A mere virtual or theoretical situation
Negotiation contents and orientation	Interactions between Big Landowners, District Representatives and Mayor; Main discussion : possibilities of land regularization (given the legal constraints), and possible trade between regularization of illegal settlements and development of sanitation infrastructure Other emerging preoccupation: unemployment, coalition (attempts) between Business player / District Representatives. Unsuccessful attempts to use the land market mechanism	oriented by the trio Municipality-Environmental NGO and Business player Main discussion : the role of business actors and economic incentives or tools to orient land use and activity development
Legal zoning	Role of legal zoning emphasized by institutional players when present	Legal zoning tools relatively little used Weak collective performance mostly imputed to lack of environmental police and control
Players attitudes	Demand of "community leaders" players extended to all urban services (transportation, school, health, security etc)	Demand of players assuming community leaders role : restricted to water and sanitation Weaker protest of players assuming community leader role; Big Landowner player more cooperative and less speculative oriented than in other game
Learning	important capacity development mentioned	Restricted learning process mentioned

Tab 2. Comparison of the different types of game .

Conclusion

- Interesting to discuss complex environmental issues in tensionless space and bring players closer;
- But such easy and cooperative meeting unlikely in real life
- Learning and integration in practices depends of the distance of the game-model to reality (as perceived by the players) and connection to participants' preoccupation
- Sharing perspectives supposes direct interaction between stakeholders;
- Question balance between consultation and participation in environmental governance process

Acknowledgments

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