

THE “PROSCA” MODEL

Quantiqualitative Participatory Research for Sustainable Development

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INTRODUCTION

There are many arguments in favour of using interactive participatory methods for sustainable development planning at all territorial levels and socio-economic contexts.

As amply evidenced in literature on development policies and planning, the traditional top-down approaches have failed in terms of their objectives.

Their use has often aggravated social problems, broadened regional disparities in the quality of life and increased environmental costs of economic growth.

An alternative to such situations are the bottom-up strategies that enable social groups and economically less developed areas to give priority to their societal patterns and to harmonize the external economy and other interactions with these patterns.

This kind of strategic action is governed by a logic that is different from the top-down: instead of a “deterritorialized economy” (i.e., economy with no specific territorial reference), it promotes:

- ✓ economy based on concrete local and regional potentials and interests substitution of the profit-making orientation with determination to first satisfy human needs;
- ✓ search for alternative forms of production and replacement of large-scale by small-scale economy;
- ✓ valorisation of local resources through development process itself, and
- ✓ decentralisation of decision-making, through direct involvement of interested segments of the communities in the formulation and implementation of local and regional development programmes and projects.

Assuming that the participation is a process through which individuals and institutions affected by development initiatives can influence the decision-making and the allocation of resources related to such initiatives, major issue at stake is to create conditions for institutionalised participation of the civil society in decision-making and in other development-oriented activities.

This calls for an adequate operationalisation of the participation process, that is, use of adequate mechanisms that will enable **effective interaction**

- ✓ among different segments of the civil society, and
- ✓ between them and different entities of public administration.

In fact, such mechanisms should become powerful instruments for building **consensus and articulation** among different social actors, or development stakeholders.

In this context, the participatory territorial development planning requires an adequate conceptual-methodological framework for

- ✓ **comprehensive collection of data and information and their logical organization, efficient processing and resourceful outputs, and, at the same time,**
- ✓ **promotion of the consensus amongst the participants (i.e., development stakeholders) and making best possible use of that consensus.**

An attempt in this direction was made by a group of geographers and other territorial development planning specialists by applying the **Prospective Stepwise Consensus-Seeking Analysis Model** (the PROSCA Model) in the County of Arraiolos in the Southern Portuguese Region of Alentejo (i.e., one of the least developed regions in the European Reunion).

THE PROSCA MODEL

This model was designed for the application of participatory methods with development stakeholders, including the local government, in a R&D Project “Plan of Action for Local Agenda 21 in the Arraiolos County” .

The basic structural feature of the PROSCA Model is its organization in a sequence of six phases (A - F),

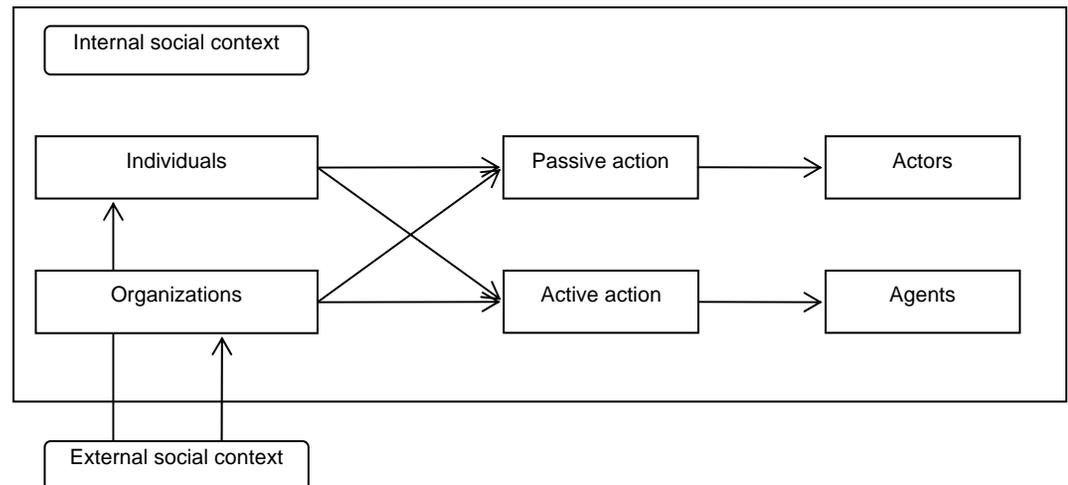
- ✓ starting with the identification and classification of local development stakeholders and their involvement in the evaluation of social, economic, environmental and other problems and priorities,
- ✓ followed by a step-wise process of quantiquitative disaggregation, extraction and condensation of information collected through participatory methods, and
- ✓ culminating in the final consensual approval of proposals for policy measures, instruments and interventions in favour of sustainable local development

Phase A: Identification and Classification of Stakeholders

The categorization of development stakeholders is based on the nature and degree of their “(non)rationality” and “(non)passivity”, with a distinction between actors and agents.

“Development actor” is an individual or organization that carries out his/her role as a person (single or collective) and that has some interest in his/her own (individual or organizational) normal functioning, and, ultimately, in his/her interaction with other actors to achieve a common cause.

“Development agent” is an individual or organization whose activity provokes positive social change and/or is conducive to it.



Twenty seven institutions were identified as most important local development agents operating in the Arraiolos County, all interested to actively contribute to the conceptualization and elaboration of and, at a later stage, implementation of a Plan of Action for Local Agenda 21.

Classified in three sectors, that is,

- ✓ local government and administration,
- ✓ non-profit organizations (i.e., civic associations, social economy institutions, etc.), and
- ✓ enterprises,

these institutions became constitutive members of the Local Development Strategy (LDS) Office, established by the Project in the town of Arraiolos in the final stage of the Phase 1 of the PROSCA Model.

Phase B: Discussion and Assessment of SWOT Analysis

As a technical background for the design of the PROSCA Model served the Comprehensive Diagnostic Study of Development Issues in the County of Arraiolos, carried out by an independent team of geographers and other territorial development experts.

The full version of the Diagnostic Study was presented to the local government authorities and other institutional agents as part of the public launching of the Project.

Findings from the above mentioned in-depth diagnostic study of development problems and prospects in the Arraiolos County were synthesised in the form of a SWOT Analysis and first distributed *via* Internet to local development agents represented in the LDS Office and also directly presented in separate meetings for every sector.

Phase C: Systematization and Prospective Evaluation of Areas/Problems

The selection of Areas/Problems was based on a conceptual framework according to which the process of territorial development relies on the five-fold interface of

- i. Economy – development of agriculture and tourism; structural features of local enterprises and internal conditions for their development, and their capacity for internationalisation;
- ii. Environment – physical (natural and environmental resources) and other conditions related to the quality of life (urban planning and territorial organization, social situation, quality of public services);
- iii. Infrastructure and Equipment – directly related issues, such as social, sportive, cultural and other equipment and infrastructure, and less directly related ones, such as transportation equipment;
- iv. Employment and Training – residents' employment capacities (job opportunities and quality terms of wages, career-progress, stability, etc.) and access to education and training;
- v. Cooperation – networking and associative spirit, establishment of partnerships and relations among different local agents.

Main Areas/Problems in the Arraiolos County

1. Natural resources and environment
2. Location of main logistic infrastructures
3. Transportation systems
4. Geo-strategic position and external accessibilities
5. Successfulness of enterprises in the County
6. Diversification of productive structure
7. County's attractiveness for private investments
8. Technological development and innovation
9. Internationalisation of economy
10. Supply of services in support of enterprises
11. Agricultural development
12. Development of tourism
13. Dynamics of (un)employment
14. Levels of education and professional qualification
15. Educational system and schools network
16. Actions of and relations among social, economic and government agents
17. Cooperation between economic and institutional agents
18. Urban planning and territorial organization
19. Quality of urban design
20. Quality of public services
21. Cultural and sport equipments and services
22. Social infrastructure and equipments (education, health and social services, housing)
23. Activities of associations and socio-cultural traditions
24. Partnerships between public, private and third sector
25. Social marginalization and exclusion
26. Criminality and (in)security

The participants were requested to select ten Areas/Problems they considered most important for a sustainable future of the Arraiolos County in a positive and ten in a negative way by filling-in the **Prospective Evaluation Form**

Areas/Problems considered important for sustainable development	+	-
1	(Will turn better)	(Will turn worse)
2		
3		
(...)		
n		

Phase D: Evolution Appraisal and Formulation of Proposals

Requested to express their opinion regarding the intensity of evolution of these Areas/Problems, the participants then filled-in the **Evolution Appraisal Form** by attributing scores from 1 (minimum evolution) to 5 (maximum evolution) to at least three “positive” and three “negative” Areas/Problems.

Areas/Problems considered important for sustainable development	Evolution scores				
	1	2	3	4	5
1					
2					
3					
(...)					
n					

Subsequently, another survey was carried out in which the participating agents were asked to **formulate concrete proposals for the solution** of at least three negatively evolving Areas/Problems, as well as for the enhancement of the three positively evolving ones.

In spite of their structural diversity (i.e, mixture of pragmatic solutions, wishes and objectives), all contributions were considered valid and were included as Policy/Action Proposals in the processing of data in the next Phase E.

Phase E: Defining Consensus

The records obtained from these surveys were introduced on a file compatible with a Data Base Management System (DBMS).

Simple and relative frequencies of “negatively” and “positively” evaluated Areas/Problems, as well as averages and standard deviations of their Evolution Scores were calculated.

This was followed by a statistical analysis that determined the consensual Areas/Problems regarding the level of importance for future development of the Arraiolos County.

In order to obtain a synthesized overview of the complete range of Policy/Action Proposals recorded by the last survey, a Consensual Perception Coefficient was calculated for every Area/Problem by pondering the dispersion among their respective Evolution Scores.

$$C_i = \sqrt{\frac{\sum_{j=1}^n \left(p_{ij} - \left(\frac{\sum_{j=1}^n p_{ij}}{n} \right) \right)^2}{n}} \times \left(\frac{1}{\frac{\sum_{j=1}^n p_{ij}}{n}} \right) \times \frac{1}{n} \times 100$$

where:

- c – the value of the Consensual Perception Coefficient for every Area/Problem i ;
- p – the Evolution Score attributed to every Area/Problem i by every participant j ;
- n – the number of times an Area/Problem is referred to and assessed by participants.

The formula can be simplified if the ratio between the standard deviation and average (the variation coefficient) is transformed into a ratio between the standard deviation and the sum of Evolution Scores attributed to every Area/Problem. In this way, the Consensual Perception Coefficient c can be calculated as follows:

$$c_i = \sqrt{\frac{\sum_{j=1}^n \left(p_{ij} - \left(\frac{\sum_{j=1}^n p_{ij}}{n} \right) \right)^2}{n}} \times \left(\frac{1}{\sum p_{ij}} \right) \times 100$$

The smaller the value of the Consensual Perception Coefficient for an Area/Problem, the higher its level of Evolution Score attributed by the participants and, at the same time, the smaller the dispersion among the Evolution Scores.

Also, the smaller the value of the Coefficient, the higher the level of consensus among the participants in terms of the importance (negative or positive) they attributed to every Area/Problem for future development of the County.

Phase F: Consensus Analysis and Typology of Main Activity Areas

Consensus about Positively Evolving Areas/Problems (*)

Areas / Problems	Coefficient c
Development of tourism	0,8
County's attractiveness for private investments	1,0
Social infrastructure and equipments	1,1
Culture and sports equipments and services	1,6
Natural resources and environment	1,6
Quality of public services	1,8
Technological development and innovation	1,9
Actions of and relations among social, economic and government agents	1,9
Quality of urban environment	2,1
Geo-strategic position and external accessibilities	2,4

(*) Only Areas/Problems referred 10 or more times are included; c = variation coefficient / n° of references x 100

Consensus about Negatively Evolving Areas/Problems (*)

Areas / Problems	Coefficient c
Dynamics of (un)employment	0,6
County's attractiveness for private investments	1,0
Transportation systems	1,0
Agricultural development	1,4
Diversification of productive structure	2,0

(*) Only Areas/Problems referred 10 or more times are included; c = variation coefficient / n° of references x 100

The highest consensus is on tourism as a strategic option for the future, while less consensual are the evolution prospects for social infrastructure and equipments. On the pessimist side, the highest consensus was reached about the evolution of (un)employment, followed by the attractiveness of private investments, transportation systems and agricultural development issues.

In terms of internal homogeneity, equally strong pessimistic and optimistic views were recorded only about County's attractiveness for private investment.

The processed results point to a prospective diagnosis in favour of economy and infrastructure, with fundamental importance given to the development of tourism, employment generation and improvement in transportation.

One-hundred-twenty-five valid references (i.e., participating agents means of overcoming the problems and ninety-seven about enhancing the prospects ' proposals/opinions) were obtained about the ways and for sustainable development.

The classification of the total of two-hundred-twenty-two valid references was based on the analysis of their contents from the point of view of the types of policies and/or interventions that were proposed by the participants in order to attain the objectives inherent to every Area/Problem.

As a result of this analysis, a set of twenty-six types of Policy/Action Proposals was first defined, then typified according to the similarity and frequency of proposals and, finally, classified into **26 Policy Lines and Measures**

Proposed Policy Lines and Measures

1. Information campaigns
2. Incentives for investment attractiveness
3. Certification of products
4. Construction of equipments
5. Cooperation and partnerships
6. Employment generation
7. Education and professional training
8. Infrastructure and equipments for education and professional training
9. Infrastructure and equipments for supporting economic activity
10. Research
11. Local government's management practice
12. Housing
13. Territorial identity
14. Road infrastructure
15. Cultural incentives
16. Social integration
17. Territorial marketing
18. Spatial planning
19. Cultural heritage
20. Agricultural practices
21. Environmental protection and education
22. Urban renewal
23. Valorisation of facilities
24. Transpiration services
25. Public services
26. Tourism

The core-contents of Proposed Policy Lines and Measures were further disaggregated, extracted, synthesized and typified into the following **18 Main Activity Areas**(*) that should be integrated in the Plan of Action for Local Agenda 21 in the Arraiolos County:

1. Education and Professional Training
2. Attraction of Investments
3. Cooperation and Partnerships
4. Construction of Equipments
5. Tourism
6. Spatial Planning
7. Employment Generation Related to Diversification of Activities and Certification of Products
8. Territorial Marketing
9. Agricultural Practice
10. Information, Sensitization and Dissemination Campaigns
11. Cultural Initiatives
12. Public Transportation
13. Public Services
14. Research
15. Cultural Heritage and Urban Renewal
16. Road Infrastructure
17. Social Integration
18. Environmental Protection and Education

(*) Listed by the order of frequency of processed proposals

LESSONS-LEARNED FROM THE APPLICATION OF THE PROSCA MODEL

A “consensus matrix” was produced, where the ranking of the Main Activity Areas (resulting from the qualitative analysis of all the valid proposals) intersected with the Area/Problems identified by the participating agents can be appreciated both across the lines and across the columns.

Twenty-six columns correspond to the Area/Problems identified by the agents as issues of major concern and/or hope regarding the future of the Arraiolos.

The number of valid references to policies and measures proposed for every Area/Problem is also indicated.

At the same time, each line refers to a specific type of activity that the participating agents deemed necessary for correcting negative or enhancing positive evolution Areas/Problems.

In this way, the green section in the “consensus matrix” corresponds to the core interface between six priority spheres of development interventions (i.e., Main Activity Areas) and eight Areas/Problems.

The yellow section corresponds to the Areas/Problem considered by the agents as most relevant in terms of future positive or negative evolution

The blue section corresponds to the Main Activity Areas or policy lines and measures regarded as most important for the correction or enhancement of that evolution.

The coherence between Main Intervention Areas (policies or measures) and Areas/Problems, as viewed by agents

Ranking of Areas/Problems													
Ranking of MAIN ACTIVITY AREAS ~ (Spheres of development interventions)	12. Development of tourism	7. County's attractiveness for private investments	1. Natural resources and environment	13. Dynamics of (un)employment	11. Agricultural development	22. Social infrastructure and equipments	23. Activities of associations and socio-cultural tradition	25. Social marginalization and exclusion	21. Cultural and sport equipments and services	14. Levels of education and professional qualification	(...)	5. Successfulness of enterprises in the County	TOTAL Nº OF REFERENCES
Education and Professional Training	1			2	3	1		2		7	(...)	2	29
Attraction of Investments	1	11		4	1						(...)	2	26
Cooperation and Partnerships		2		2	1		4	3			(...)	2	22
Construction of Equipments		1				8			4		(...)		20
Tourism	12		4				1				(...)		17
Spatial Planning	4		3								(...)	1	14
Employment Generation Related to Diversification of Activities and Certification of Products	2			4		1		2			(...)		11
Territorial Marketing	3	4	1								(...)		11
Agricultural Practice			1		10						(...)		11
Information, Sensitization and Dissemination Campaigns			3	1			1	1	1	1	(...)		10
Cultural Initiatives	1		1				3	1	4		(...)		10
Public Transportation				2		2					(...)	1	8
Public Services											(...)		8
Research				1		1	3			1	(...)		7
Cultural Heritage and Urban Renewal	2								1		(...)		6
Road Infrastructure											(...)		5
Social Integration				1				2			(...)		3
Environmental Protection and Education			4								(...)		4
TOTAL Nº OF REFERENCES	26	18	17	17	15	13	12	11	10	9	(...)	8	222

CONCLUSION

By selecting three most relevant proposals for action from each Policy Measure, every participating developmental agent actually approved the results of the application of the PROSCA Model and, at the same time, prioritized activities that should lay grounds for the strategic projects design.

The utilization of the PROSCA model in a real-life situation, such as the elaboration of the Local Agenda 21 for the Arraiolos County, proved to be valid and useful not only in terms of its straightforwardness in recording and processing of the results from the surveys of agents' opinions, but also because it actually enabled the construction of an operational Plan of Action for sustainable development.

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