



Transdisciplinary Research Methods

Soft Systems Methodology

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Transdisciplinary Research Methods

Transdisciplinary research is a research method that transcends traditional disciplinary boundaries, seeking a holistic and integrated approach to the investigation of complex problems.

The theory and practice of Transdisciplinary Research Methods were developed by Basarab Nicolescu in 1990, a Romanian-French physicist and philosopher.



Nicolescu is known for his pioneering work in promoting the transdisciplinary approach, which seeks to transcend conventional disciplinary boundaries and promote integration between different fields of knowledge

The importance of transdisciplinary research

- Integration of knowledge;
- Multi-stakeholder participation;
- Focus on complex problems;
- Interdisciplinary knowledge collection;
- Construction of new perspectives;
- Action orientation;
- Social relevance;



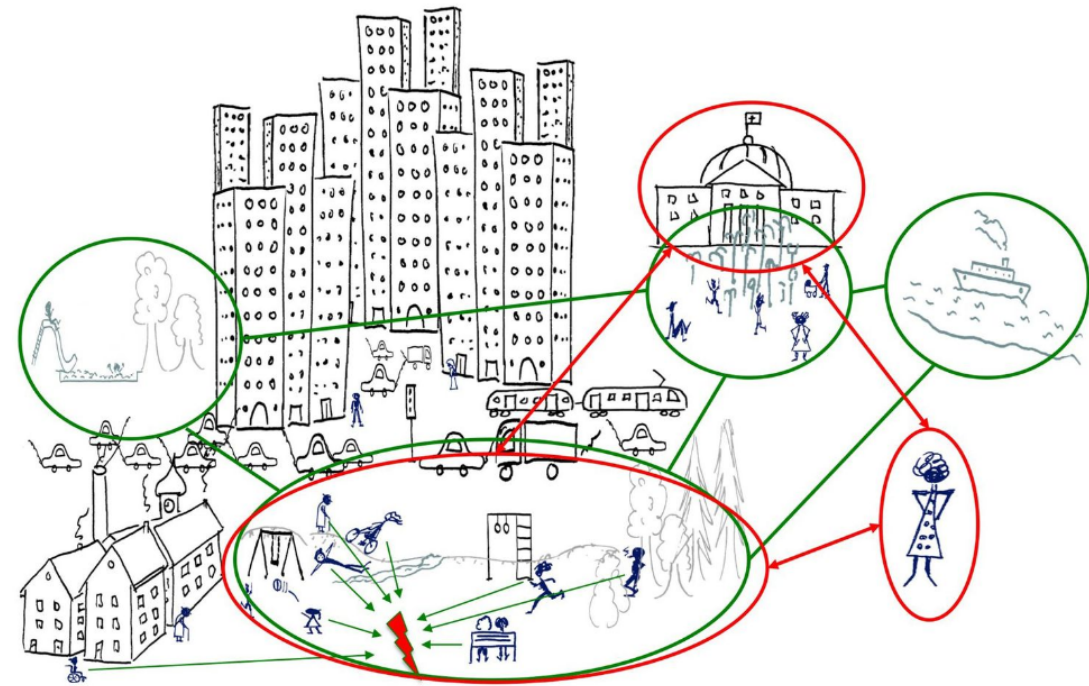
Soft Systems Methodology

The Soft Systems Methodology (SSM), is a methodology and not a technique (Flood and Carson, 1988) – proposed by Peter Checkland in 1981, for the articulation of unsafe problems, it was the systemic approach adopted in the work.



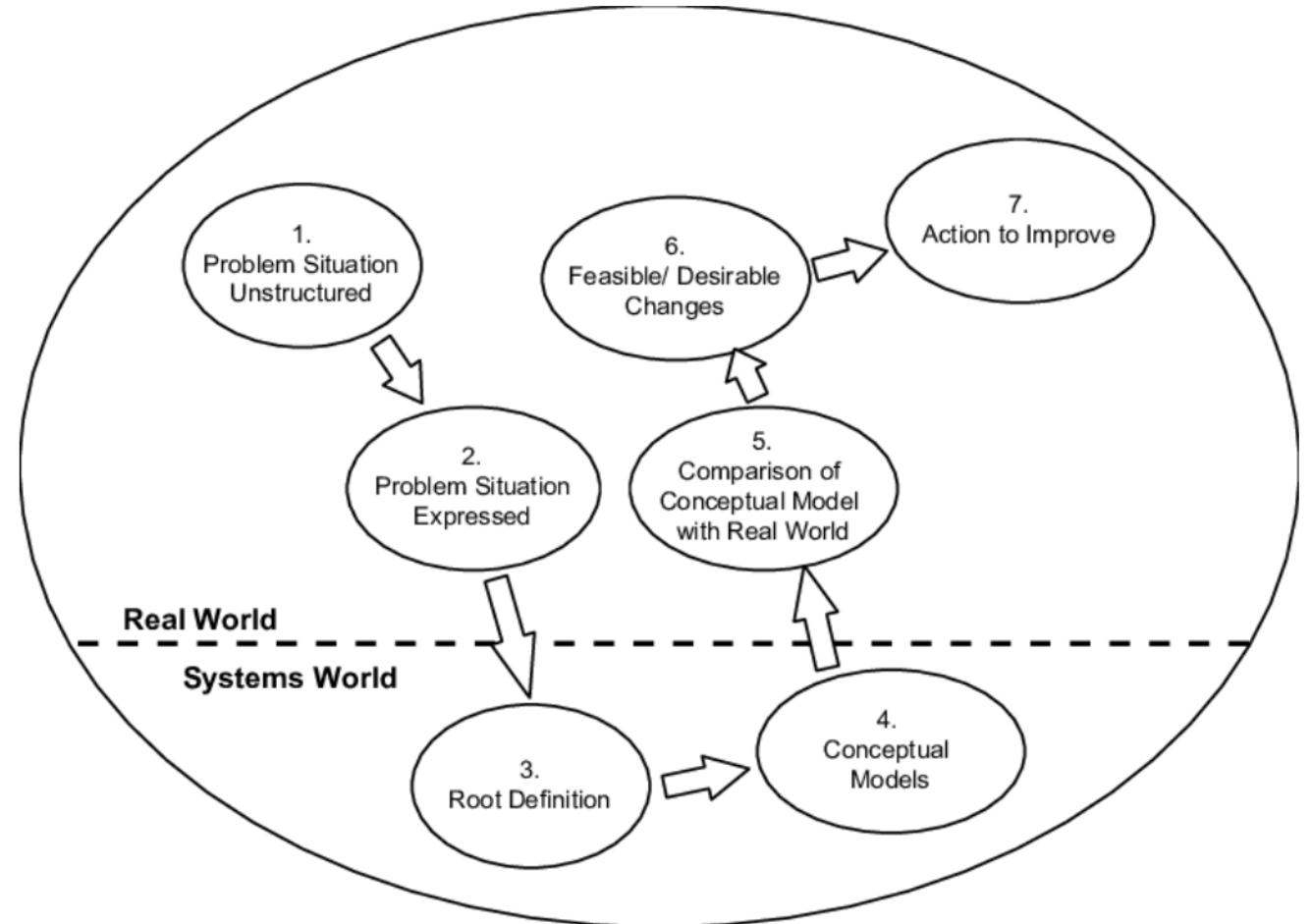
Soft Systems Methodology

The SSM is an approach to tackle complex and ill-structured problem situations. It provides a systematic way of understanding and addressing complex issues that involve multiple perspectives and stakeholders. The SSM is primarily used in the field of systems thinking and organizational analysis.



Applications steps of the Soft Systems Methodology

- Problem situation unfolding
- Expresses problematic situation
- Root definition
- Conceptual models
- Comparison of models with the real world
- Feasible and desirable changes
- Action planning



Notions of the systematic approach to a problem

According Farinha (2005) highlights five essential notions to a systemic approach to a problem: “holon”, hierarchy, emergent property, stability and frontier.

- **“holon”** - According to the systems approach, a problem is divided into systems, subsystems and components. Each of these elements is considered a whole or a part.
- **Hierarchy** - Complex systems are organized according to a hierarchy and the different levels of this hierarchy are used to understand the system.

Notions of the systematic approach to a problem

- **Emergent property** - A "holon" must be seen as a system in itself and as such, it has properties that are only valid for that system called emergent properties.
- **Stability** - means that the structure of a given system is not destroyed or radically altered by changes in its environment, although the relative importance of the various parts may change (OU, 1985).
- **Border** - When analyzing a system at a given hierarchical level, it is important to identify the border that separates it from the surroundings.

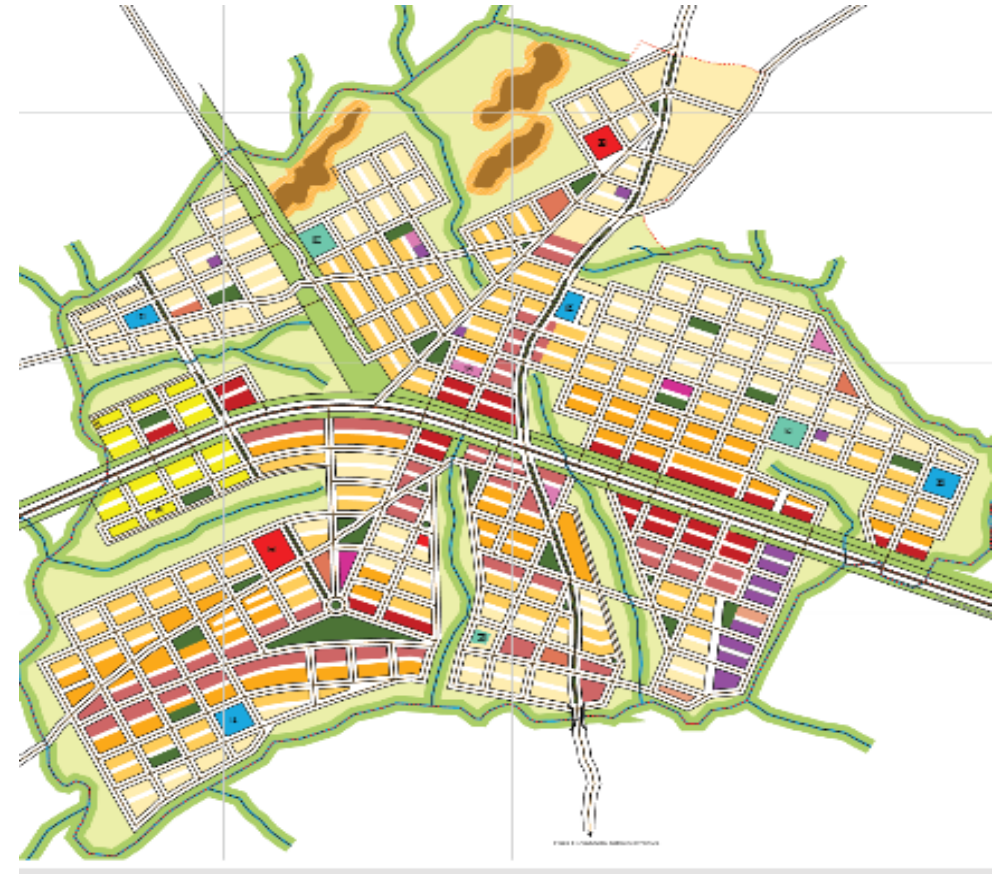
Experience of SSM in organizational process

At Lúrio University human resources it was used to investigate a communication problem between departments, analyze interactions and information flows, and propose changes in processes and organizational structure to improve communication.



Experience of SSM in urban planning

Last month in the city of Pemba, we worked on developing a solid waste management plan in which we applied the SSM to analyze different stakeholders opinions. Being a complex problem where in the end we had to propose integrated solutions to improve solid waste management.



Experience of SSM in public policies

SSM can be used to analyze and improve complex public policies. For example, a government can apply SSM to better understand the interactions between different actors and interests involved in a public policy, identify points of tension and seek solutions that meet the needs and expectations of all those involved.



SSM on GIRT

SSM can be used at different moments. To understand women's participation in decision-making, it will be necessary to interview all stakeholders, local government, central associations and since this is a complex point, we can use the SSM method.





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