**A System Thinking and Modeling Process for inquiring Socioeconomic Problematic Situation in National Level**

- **Genesis:** MIT

**- Basic Concept:** *Behaviour based Structure; Mental model; Feedback Thinking; Endogenous Point of View; the field of simulation modeling;*

**-** **The SD Intervention Process:** Different process

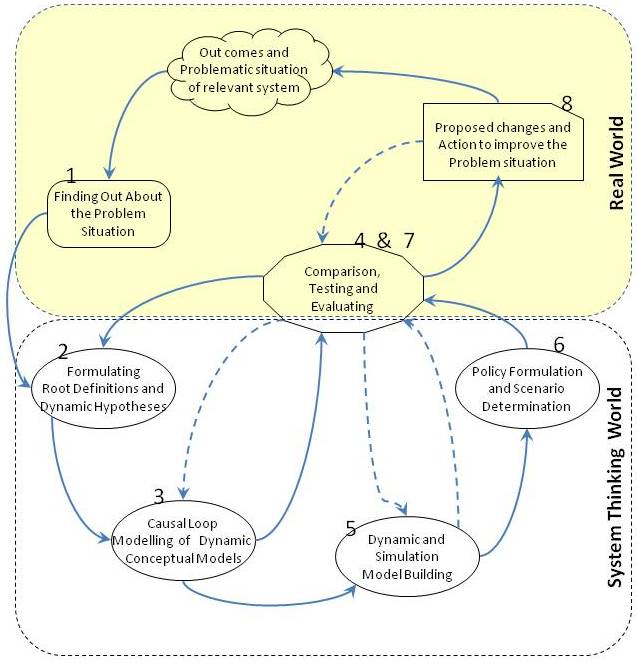
**- The Stages of SD:** 5 steps

- **Genesis:** Lancaster University

**- Basic Concept:** *Problematical situation; Worldview; Purposeful action as a system;*

**-** **The SSM Intervention Process:** four different kinds of activity.

**- The Stages of SSM:** 7 stages analysis process



**Soft Systems dynamics Methodology (SSDM)**

Rodrı´guez-Ulloa(2000)

**Holon Dynamic**

Lane and Oliva (1998)

Combination or Synchronization

**System Dynamics Methodology (SD)**

Forrester (1960s) and others

**Soft Systems Methodology (SSM)**

Checkland (1970s)

**Hard System Thinking Approaches**

Oriented to goal seeking;

Positivistic Philosophy;

Functionalist Sociology;

Assumes the world contains systems that can be engineered;

Ontology-based;

Talks of "problems" and "solutions."

**Soft System Thinking Approaches**

Oriented to learning;

Phenomenological Philosophy;

Interpretive Sociology;

Assumes the world is problematic but can be explored using system models;

Epistemology-based;

Talks of "issues" and "accommodations

**Summary of Theoretical Fuondations**

System Thinking Paradigm

**Summary of Proposed Modeling Process**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **phase** | **Activities** |  | |
| **1** | **Finding Out About Problem Situation** | - Looking at the Unstructured Problem Situation  - Preliminary Information & Data Collection  - Boundary Selection  - Rich Picture Building  - Cultural Analyses | **Real World** |  |
| **2** | **Formulating Root Definitions and Dynamic Hypothesis** | - Understanding Worldviews  - Describing the Purposeful Activity  - Expressing Dynamic Hypotheses | **System Thinking World** | **Conceptual and Dynamic Modeling** |
| **3** | **Causal Loop Modelling of Dynamic Conceptual Models** | - Identifying the Key Activities and Variables  - Causal Loop Mapping |
| **4** | **Comparison,**  **Testing and**  **Evaluating** | - Comparing and Testing the Models Structure and Behavior  - Analyzing Models Behavior to Identify Key Leverage Points | **Both** |
| **5** | **Dynamic and simulation Model building** | - Identifying Stock and Flow Variables and Constricting Dynamic Diagram  - Constructing Computer Simulation Models  - Steady State and Parameter Sensitivity Test | **System Thinking World** | **Scenario Planning With Simulator** |
| **6** | **Policy Formulation and Scenario Determination** | - Scenario Specification  - Determination and Simulating Scenarios |
| **7** | **Comparison,**  **Testing and**  **Evaluating** | - Behavior Sensitivity Analysis  - Scenario Analysis | **Both** |
| **8** | **Proposed Changes and Action to Improve the Problem Situation** | - Selection Systematically Desirable And Culturally Feasible Changes | **Real World** |  |