



# Supporting stakeholder participation in public policy development: The OCOPOMO approach

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ePolicy technical meeting, Bologna 6<sup>th</sup> and 7<sup>th</sup> of February 2012

# **Agenda**



- OCOPOMO and its method to engage stakeholders in policy development
- Scenario building, analysis, conceptual modelling and transformation support towards formal policy models
- Innovation



# **Challenges in Policy Development**



- Appropriate ICT support in policy planning not deployed widely
- Management of complexity in strategy and policy formation
- Development, visualisation and simulation of appropriate policy models usually done by experts
  - black-box approach
- Lack of open collaboration and therewith transparency in identifying the crucial features of complex social environments to inform policy models
- Online participation means not yet deployed widely in strategic decision making



# **Aims of OCOPOMO Project**

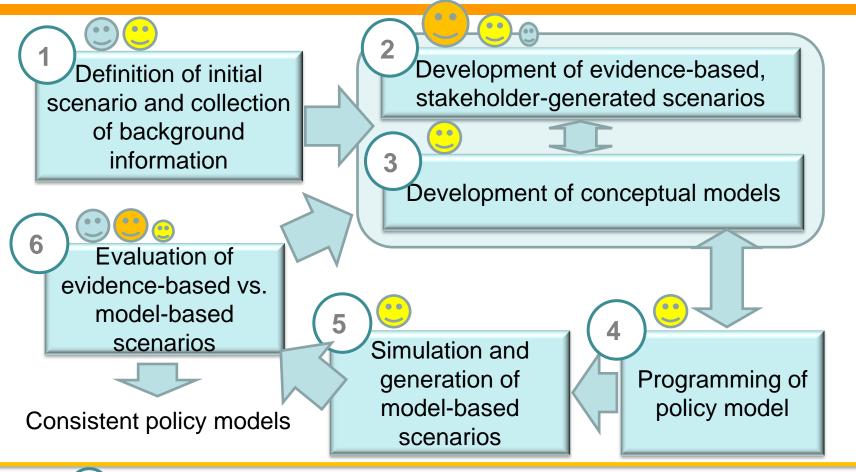


- Support key stakeholders to participate in the processes of policy formulation
  - Policy analysts, policy operators, wider stakeholder groups of specific policy domains
- Integrate methods and tools of scenario-based policy formation with formal policy modelling
- Develop an integrated ICT platform for efficient policy making
  - Mechanisms of open collaboration along the policy process
  - Supporting engagement of wide stakeholder groups



# OCOPOMO's Integrated Policy Process and Involved Actors





Legend:



Process phase

Transition to next phase

Actors:



Domain Experts (Policy Planner / Strategic Decision Maker)



Stakeholders involved



Experts for Policy Analysis / Policy Modelling



# Integrating Scenario and Formal Model

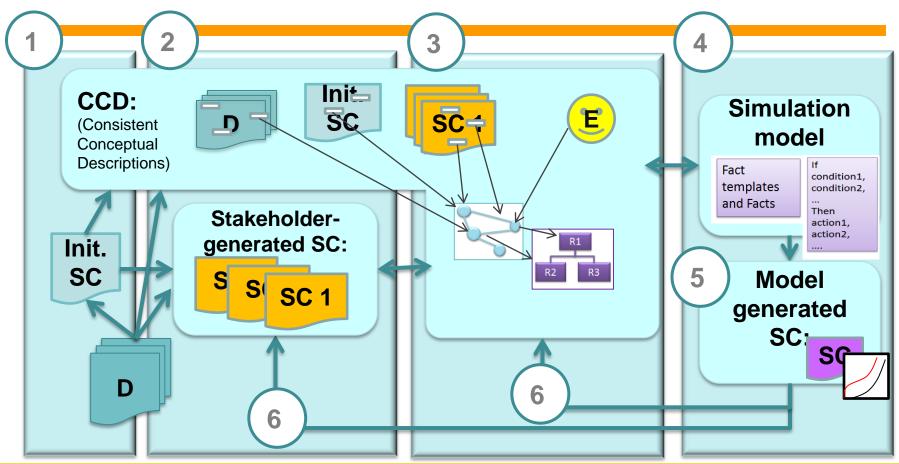


- Goals, scope and social processes specified by participating stakeholders
- Stakeholder-generated scenarios inform formal policy model design
- Models produce simulations, which result in model-based scenarios
- Participating stakeholders evaluate model generated scenarios
  - Surprises involve further investigation of model & scenarios
  - Iterations in developing formal policy models



#### **Artefacts along the Process Phases**





Legend:



Process phase



SC

**Documents** 

Expert knowledge



Relevant aspect

Information flow Information flow detailed steps



**Scenarios** 



Network of social relationships

Rule-Dependency-Graph

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# Collaborative Scenario Building in OCOPOMO



- Scenarios as textual descriptions of a perceived view or understanding of a topic under discussion
  - Cover existing world status or mental model of stakeholders
- Alternative scenarios for different aspects and /or alternatives
- Different sets of scenarios from different stakeholder groups
  - Scenarios may be conflicting among stakeholder groups
- Extending existing scenarios as understanding and viewpoints grow



# **Consistent** Conceptual Description (CCD)



#### Consistent

- Make modelling decisions traceable for stakeholders.
- Text phrases from source scenarios and background texts are linked with conceptual descriptions.
- Semi-automatic transformation of a CCD into imperative and declarative programming code allows that simulation results can be linked with original text phrases.



#### **Consistent Conceptual Description**



#### Conceptual

- provide a conceptual model of a policy case i.e. conceptualising actors, policies, believes, aims etc. and their relations
  - relevant in a policy case and
  - described in scenarios and background information.
- Concepts are further transferred into concrete programming code elements using a Model Driven Development (MDD) approach



# **Consistent Conceptual Description**



- Description (based on Wimmer et al., 2012):
  - CCD plays a role as intermediary between scenarios and simulation models
  - Several scenarios can form input to the CCD of a policy domain and further lead to a formal simulation model
  - Expertise of policy analysts may lead to particular knowledge constructs in the CCD
  - Visualising particular knowledge gaps in the existing scenario descriptions
  - CCD content may be revised or enriched based on input from analysing simulation models



#### **CCD Tool – Annotation of Scenarios**

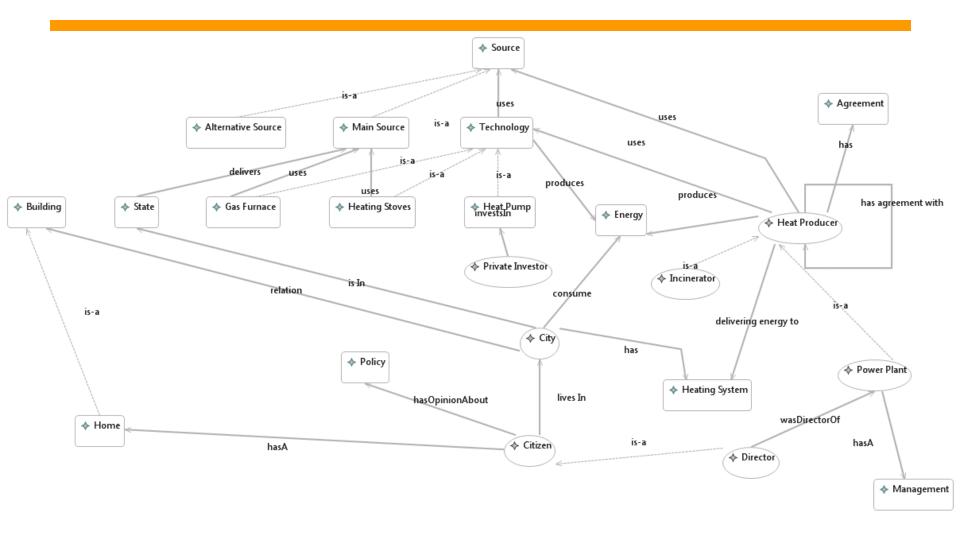


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# **CCD Tool – Visualisation Ontology**

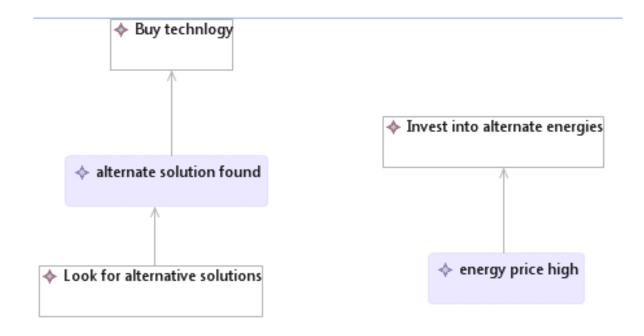






#### **CCD Tool – Visualisation of Actions**







#### ICT Toolbox overview



#### Web Content Management System (Alfresco)

[Scenario generation, stakeholder collaboration, document management, user management]



# Consistent Conceptual Description Tool (CCD Tool)

[Annotation of scenarios and background documents, Conceptual model of policy domain, Transformation to simulation environment]



#### Declarative Rule-based Agent Modelling Software (DRAMS)

[Programming of simulation model with agents, fact bases, rules, executable simulation models]



#### Three policy cases in OCOPOMO



- Renewable energy in Kosice Self-governing Region
- Competence centres for knowledge transfer in Campania Region
- Housing facilities in London



# Status of development



- ICT Tools implemented
- Initial scenarios, CCD draft models, DRAMS simulation prototype models developed
- Piloting with Kosice and Campania
  - Engaging stakeholders of the cases in scenario generation and discussion
- Next steps
  - Evaluation of tools and models developed
  - Improvement of tools and processes
  - Second iteration



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#### **Innovations in OCOPOMO**



- OCOPOMO policy development process: integrated approach from narrative scenarios to formal policy models
  - Iterative process of identifying the parameters and features informing formal policy models
- Consistent conceptual description (CCD): Incorporating traceability in the iterative policy development process
- Open collaboration in policy development through integrated web 2.0 based e-participation toolbox
  - Enabling policy analysts, policy operators and wider stakeholder groups to work together collaboratively



#### **Expected impact**



- Contribution to strategic policies and to implement open government
- Contribution to transform government and administration to an open, effective and efficient participative governance (good governance principles)
- Provide new opportunities for open discourse among stakeholders of the policy domain and the policy experts
  - in stakeholder-oriented scenario generation
  - in evaluation of formal policy models
- Improve transparency and traceability in strategic decision making by involving different stakeholders in the participative process via the open collaboration platform









# Many thanks for your attention!

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#### **Project partners:**





















