# Problem Definition and TA Research Design

PACITA Summer School 2014
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The Danish Board of Technology Foundation

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# The Danish Board of Technology Foundation

- The DBT is the parliamentary technology assessment institution of Denmark. It is an independent, nonprofit, common good, corporative foundation SME, committed to technology assessment, foresight, knowledge-based decision-making, parliamentary advisory activities on science, technology and innovation, collaborative democracy and methodological research. The DBT works with a local, regional, national, as well as international perspective. It is specialised into interactive methodologies, involving trans-disciplinary research, stakeholder involvement, citizen participation, political deliberation and advice, and public communication. Especially in the domain of stakeholder and citizen consultation, connected to policy analysis, the DBT aims at being at the forefront of praxis.

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# Problem definition and TA project design

- What problem need to be addressed?
- How will you address it?

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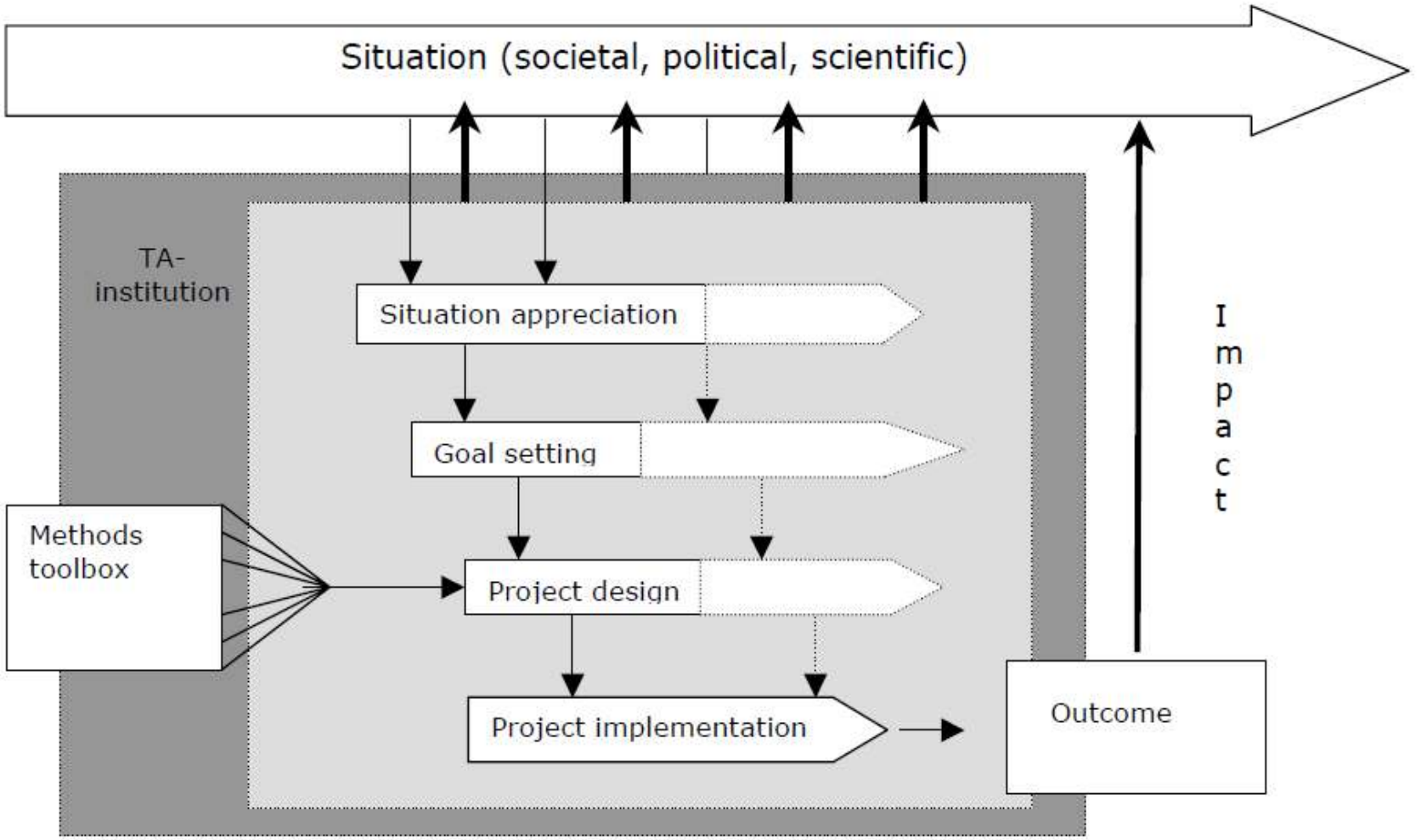
# Problem definition and project design



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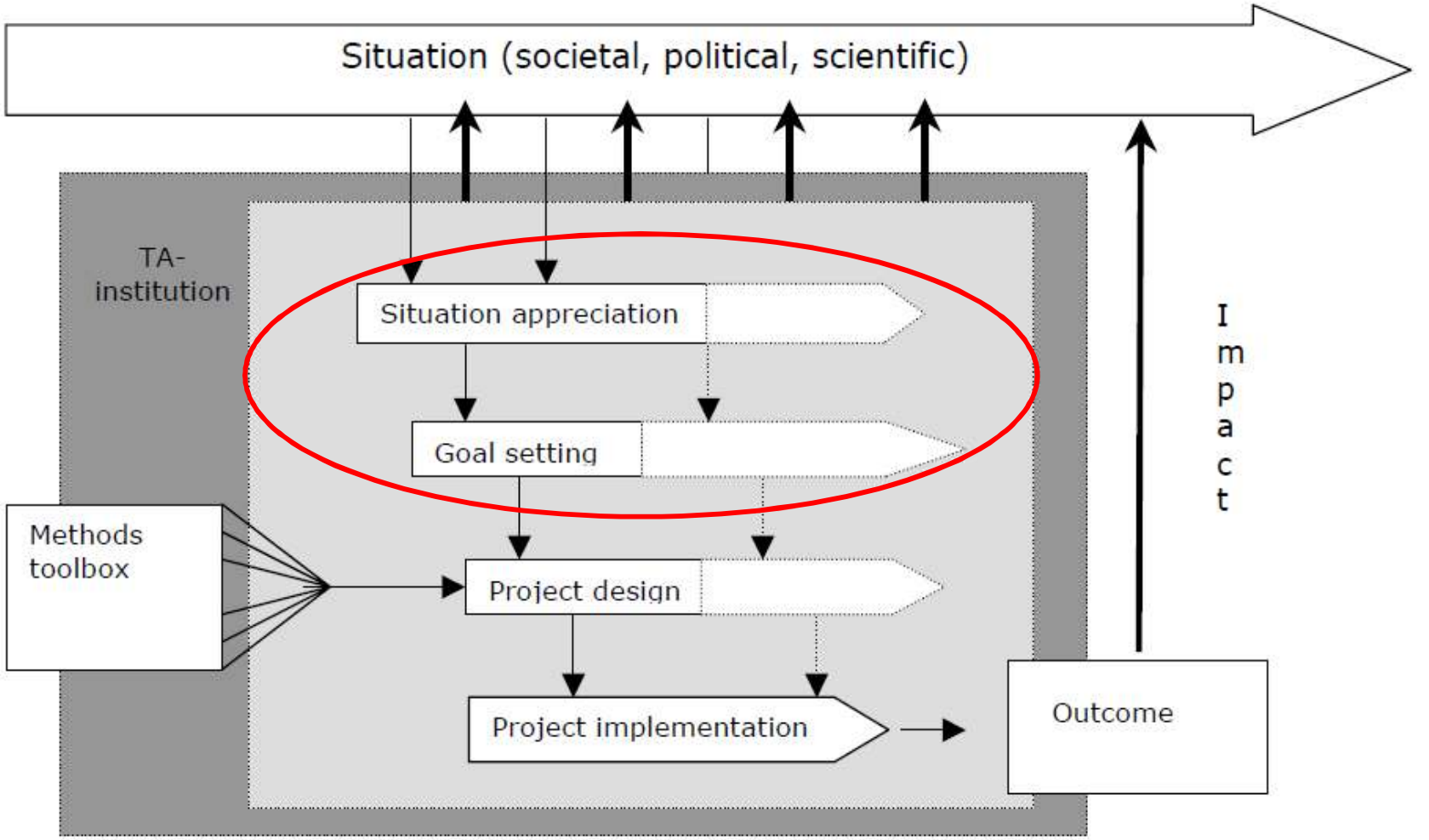

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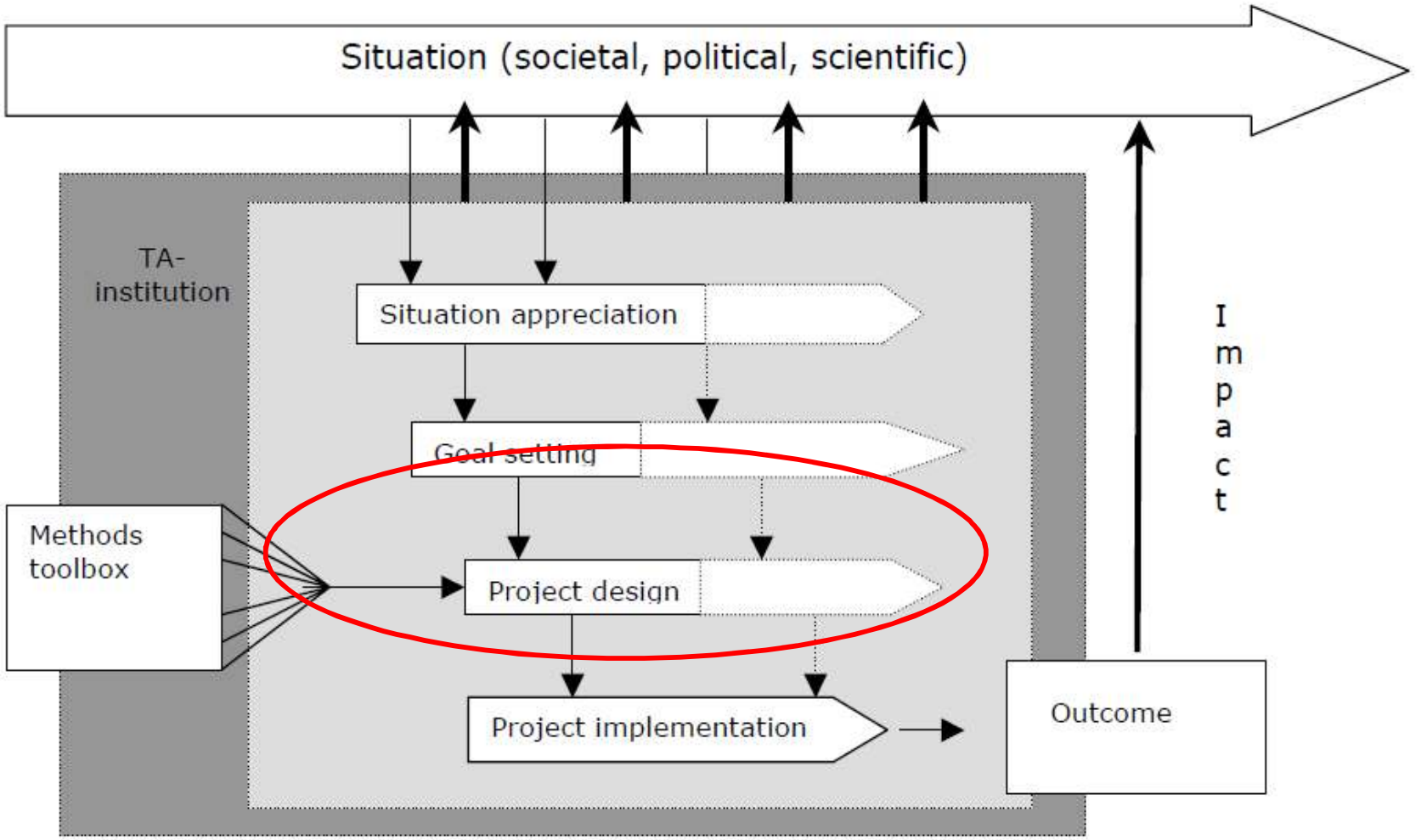
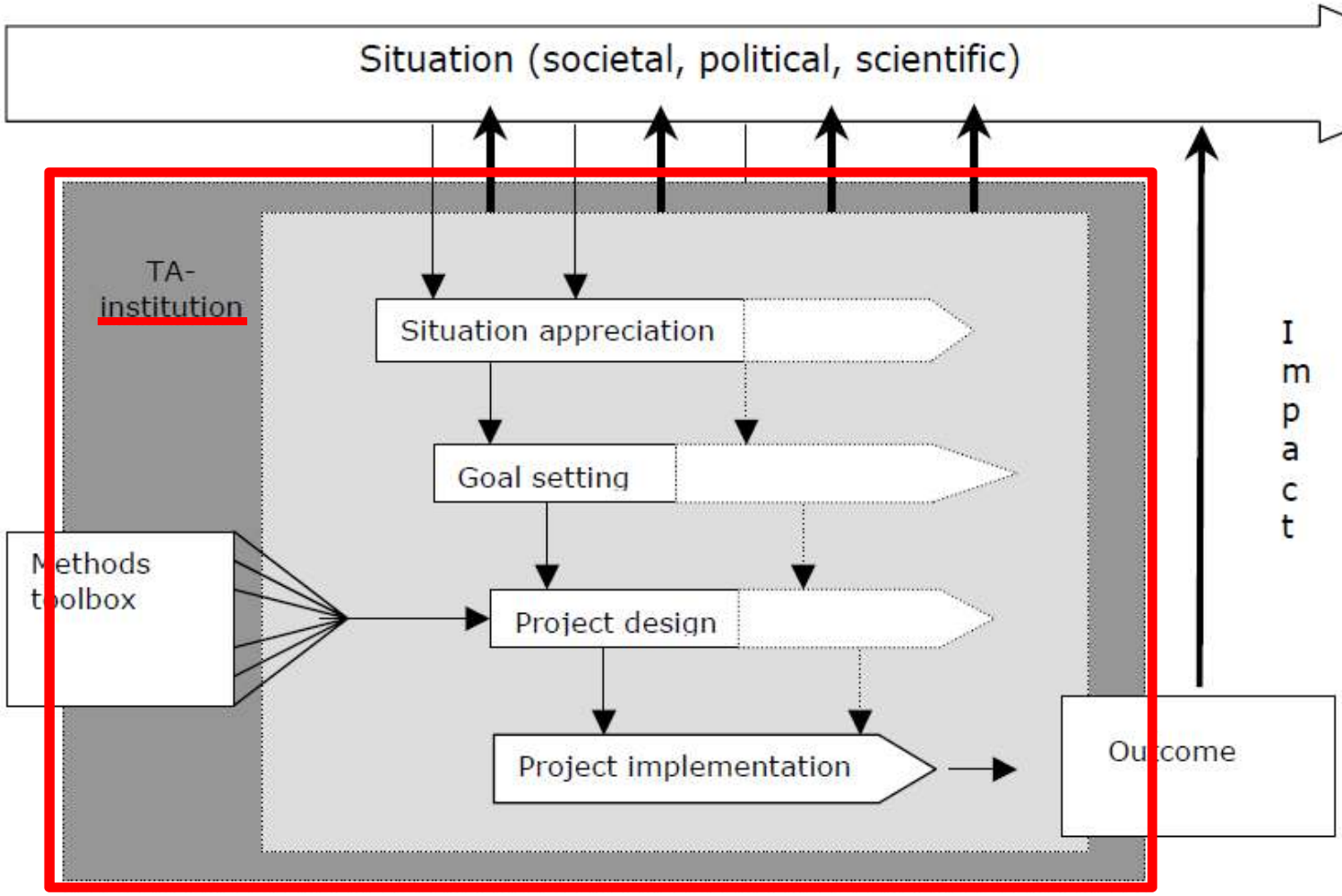


# Problem definition and project design



# Frame conditions

- Mission of organization
- The institutional form
- The experience available
- Resources available
- Target groups
- ….

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# Frame conditions

- Who initiates?
- Criteria for selecting a theme for a TA project
  - Technology content – either in problem or solution
  - Problem-orientated
  - Relevance – politically or socially

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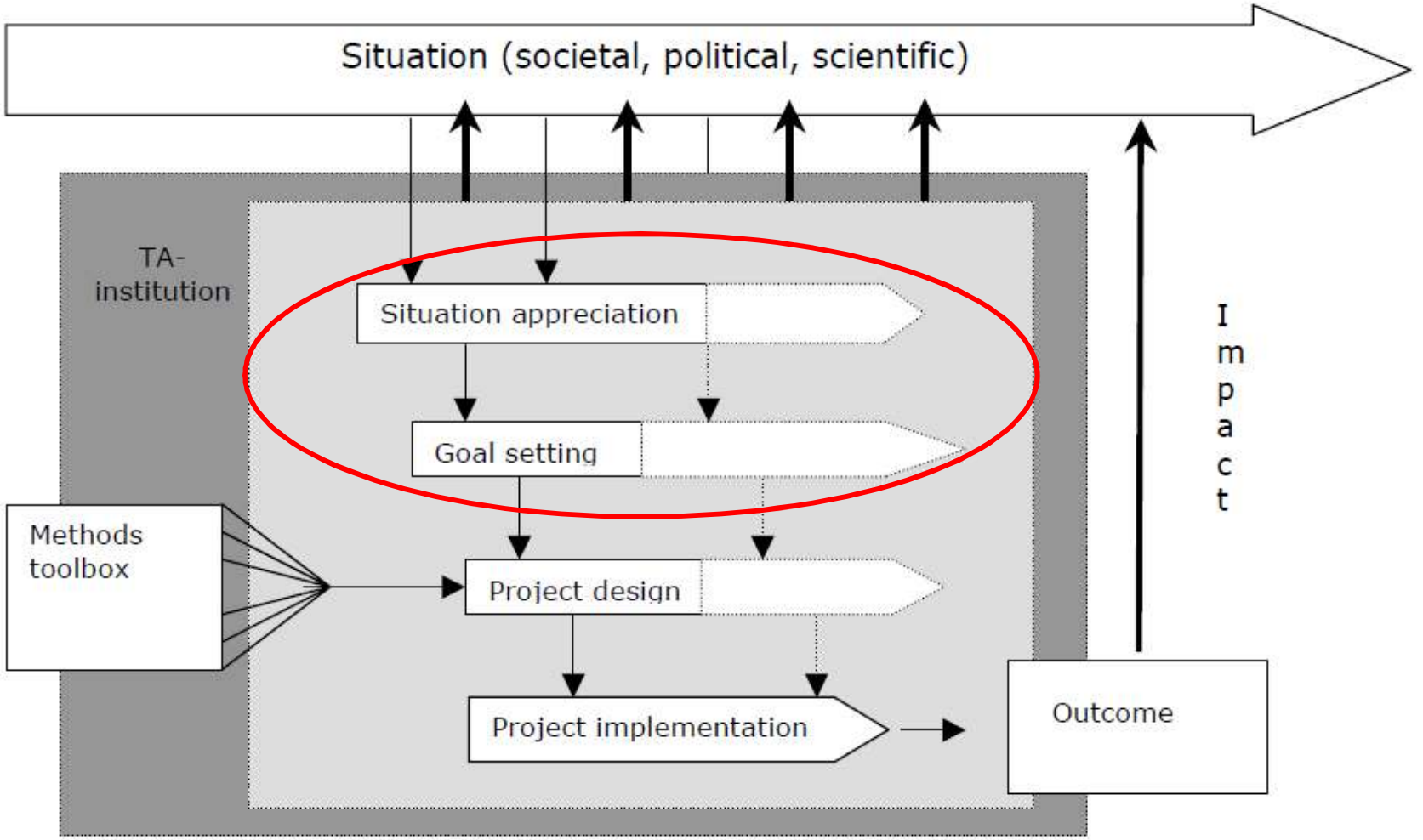
# Problem definition



# Problem definition

- Situation appreciation
  - What is the issue at stake?
  - What is the problem?

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# Problem definition

What is the issue at stake?

- Issue Dimension
- Political Dimension
- Social Dimension
- Innovation dimension
- Availability of knowledge

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# Problem definition

What is the problem?

- Lack of knowledge
- Lack of awareness
- Conflicts
- Policies that need to be reassessed
- A need for action
- …

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# Problem definition

- Goals

# Goal setting

| IMPACT DIMENSION<br><br>ISSUE DIMENSION | I.<br>RAISING KNOWLEDGE | II.<br>FORMING ATTITUDES /OPINIONS | III.<br>INITIALISING ACTIONS |
|---|---|---|---|
| **TECHNOLOGICAL /SCIENTIFIC ASPECTS** | **SCIENTIFIC ASSESSMENT**<br>a) Technical options assessed and made visible<br>b) Comprehensive overview of consequences given | **AGENDA SETTING**<br>f) Setting the agenda in the political debate<br>g) Stimulating public debate<br>h) Introducing visions or scenarios | **REFRAMING OF DEBATE**<br>o) New action plan or initiative to further scrutinise the problem decided<br>p) New orientation in policies established |
| **SOCIETAL ASPECTS** | **SOCIAL MAPPING**<br>c) Structure of conflicts made transparent | **MEDIATION**<br>i) Self-reflecting among actors<br>j) Blockade running<br>k) Bridge building | **NEW DECISION MAKING PROCESSES**<br>q) New ways of governance introduced<br>r) Initiative to intensify public debate taken |
| **POLICY ASPECTS** | **POLICY ANALYSIS**<br>d) Policy objectives explored<br>e) Existing policies assessed | **RE-STRUCTURING THE POLICY DEBATE**<br>l) Comprehensiveness of policies increased<br>m) Policies evaluated through debate<br>n) Democratic legitimisation perceived | **DECISION TAKEN**<br>s) Policy alternatives filtered<br>t) Innovations implemented<br>u) New legislation is passed |

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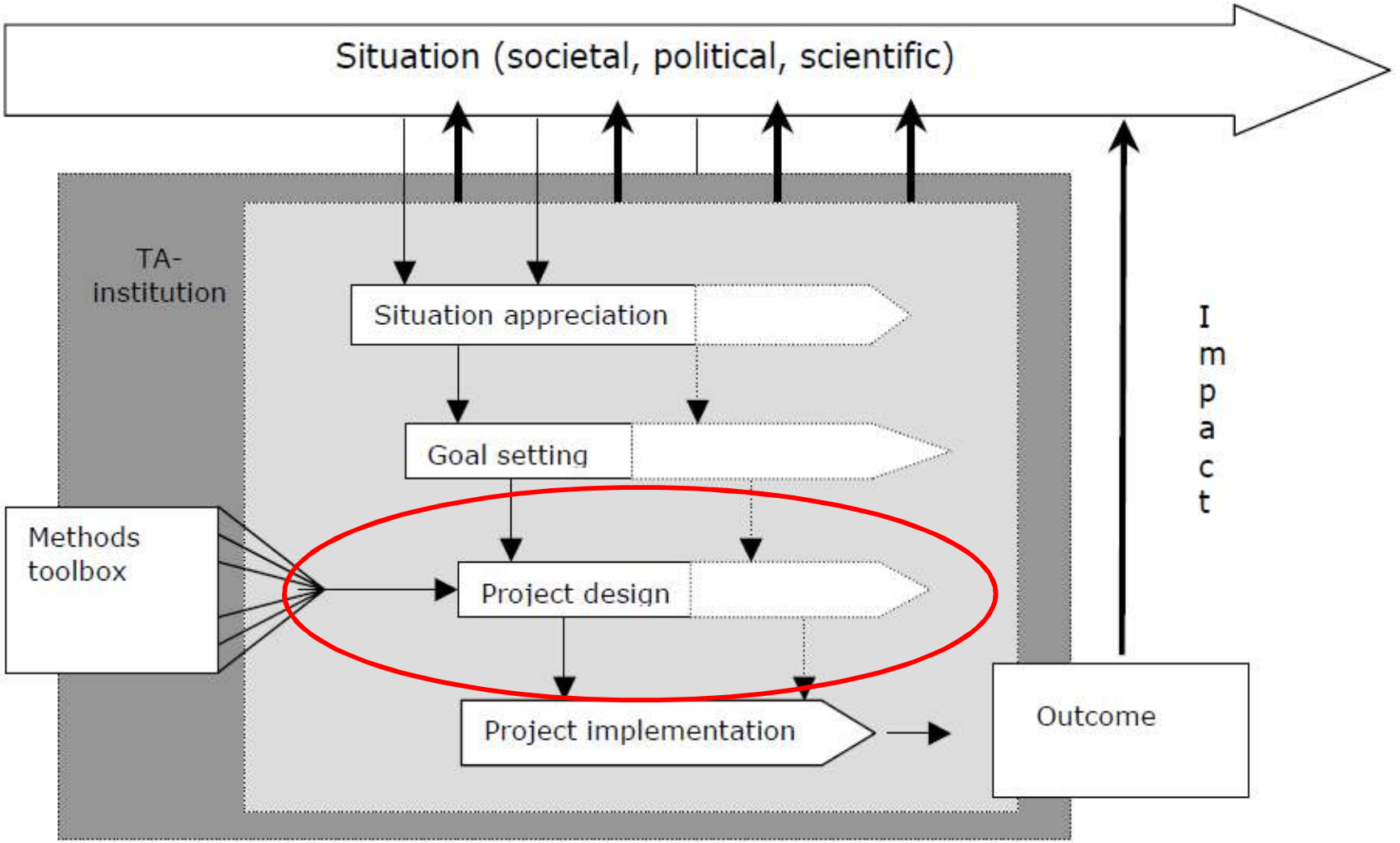
# Project Design



# Project Design

- Finding the right method(s)

*The method(s) chosen should be the one(s) with the highest potential of reaching your identified goal(s) with the given conditions*

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# Project Design

Three classes of methods

- *Scientific methods*
- *Interactive/participatory methods*
- *Communication methods*

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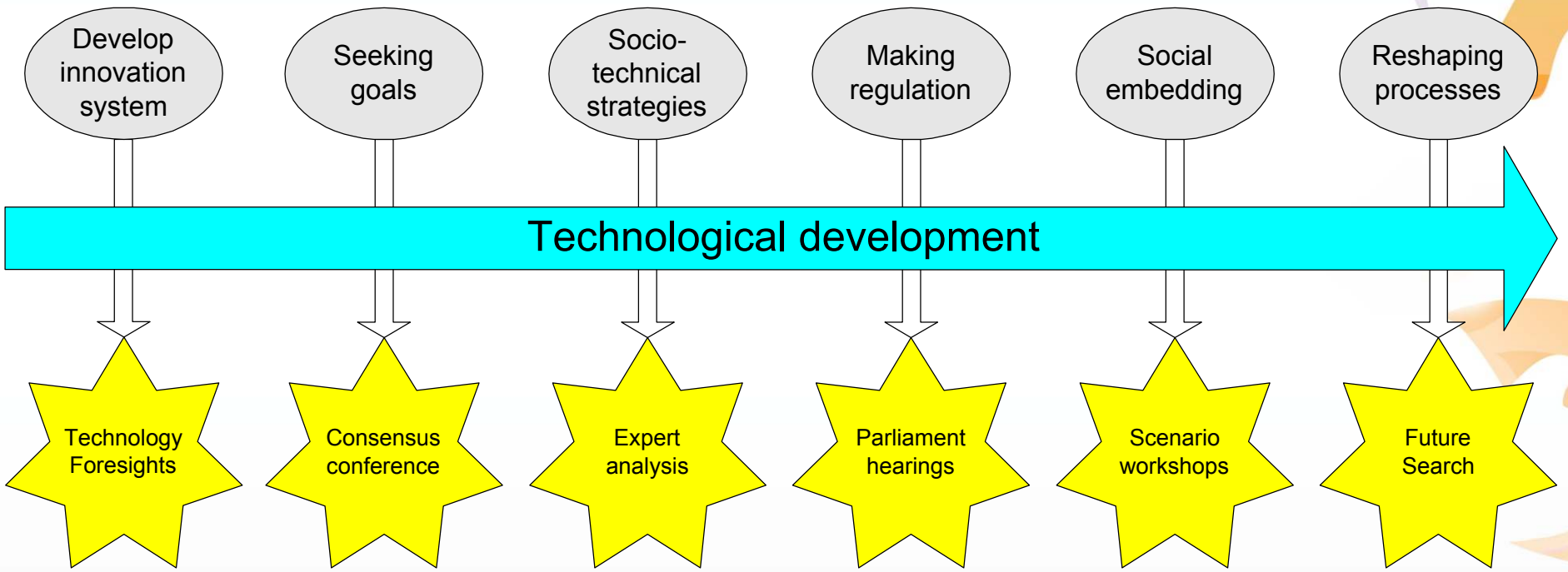
## Development and implementation of technology




## Processes - rooms for analysis and dialogue

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# Quality criteria

- Scientific Quality Criteria
  - *Interdisciplinarity*
  - *Scientific reliability*
- Interactive Quality Criteria
  - *Social fairness*
  - *Process fairness*
  - *Transparency of the interactive processes*
  - *Argumentative quality*
- Communication Quality Criteria
  - *Flexibility related to the ongoing debate*
  - *Keeping track with social, political and scientific reality*
  - *Political embedding*
  - *Diffusion of results*
  - *Striving for synergies*

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# The Method Toolbox of TA

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# The TA toolbox

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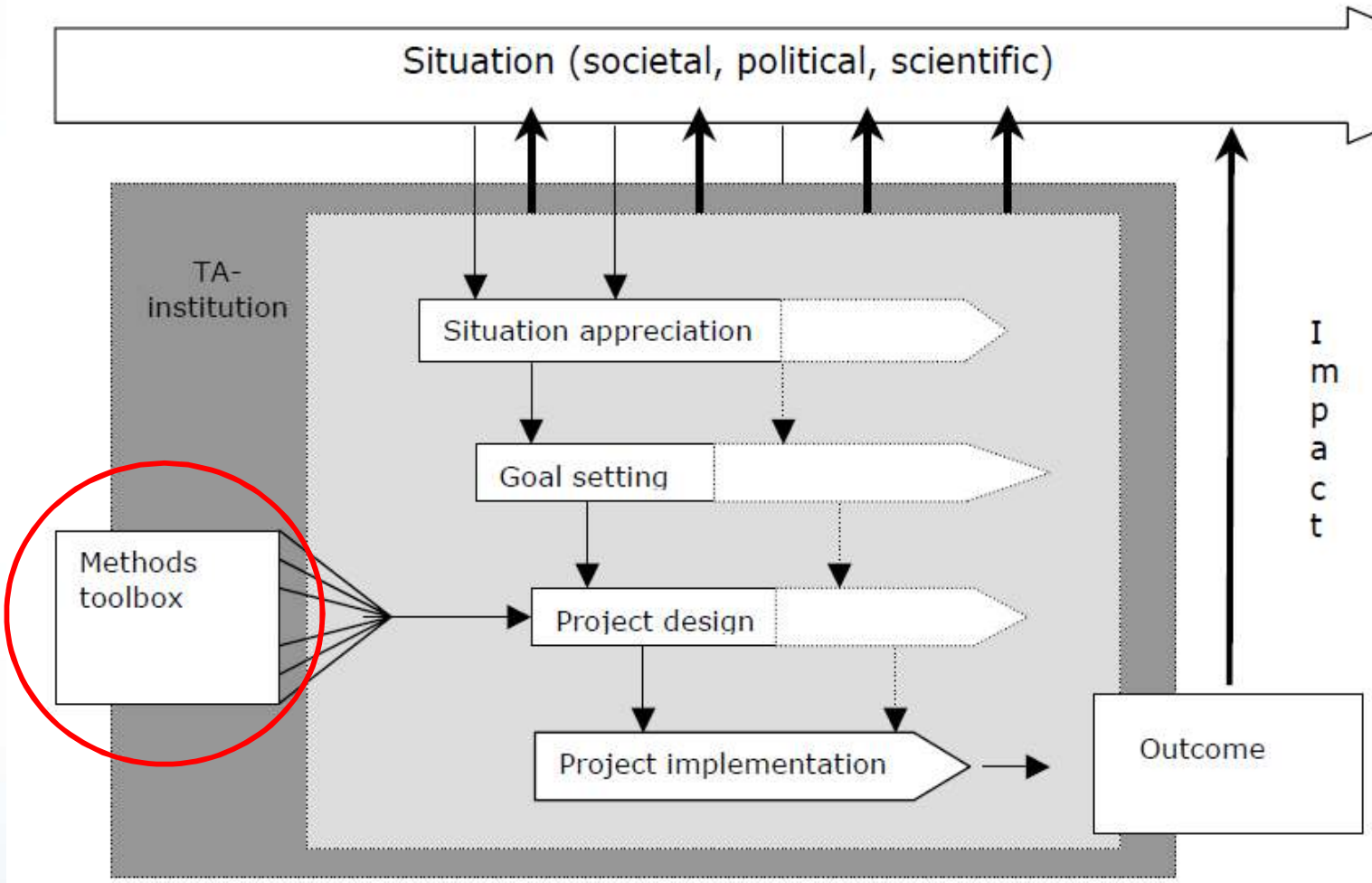
# Method Toolbox

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# Classes of methods

- Classic or scientific methods
- Participatory or dialogue methods
- Communication methods

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# Classes of methods - Classic or scientific methods

Scientific methods are developed in disciplines of natural or social sciences applied to TA problems, in order to collect data, to allow prediction, to make quantitative risk assessments, to allow for the identification of economic consequences, to investigate social values or acceptance problems, to enable for eco-balancing.

This class of methods includes:

- Delphi method, expert interviews
- Expert Discussion
- Modelling, simulation, systems analysis, risk analysis, material flow analysis (for understanding the socio-technical system to be investigated)
- Trend extrapolation, simulation, scenario technique (for creating knowledge to think about the future)
- Discourse analysis, value research, ethics, value tree analysis (for evaluating and uncovering the argumentative landscape)
- Literature and database analysis

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# Example of method - Modelling

- Modelling is a description of the issues, e.g. in terms of risk or economic measures.
- It is a quantitative, analytic approach that can be used for analysis and simulation of a possible future. Modelling of this sort makes available comparable information on the issue.
- Output: Technical measures, e.g. economical estimations etc.

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# Example of method - Delphi

- Delphi is an iterative expert survey, which takes place in two or more rounds. In the second round or later, the experts receive a feedback of the first round.
- Its design allows for an exchange of opinions among experts, without having to deal with the shortcuts of face-to-face settings
- The goal of a Delphi survey is to collect and synthesize opinions on an unknown future and to achieve a certain degree of convergence.
- During the Delphi survey, experts have to give their opinion on statements related to the future.
- Outputs: reports with tables, lists and figures - > suited for policy-makers.

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# Example of project – Literature review and expert interviews

**Anti-Ageing Medicine: Myths and Chances (TA-Swiss)**

Objective:

- Shed an interdisciplinary light on the so-called ‘anti-ageing’ medicine and its current development in a ‘long life society’;
- Describe the medical and social consequences of the anticipated technological advances in medicine.

Methods:

- Literature review
- Expert opinion surveys
- Face-to-face interviews with specialists
- On-site and online clinical visits and interviews

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# Classes of methods - Participatory or dialogue methods

Interactive, participatory or dialogue methods are developed to organise social interaction in order to make conflict management easier, to allow for conflict resolution, to bring together scientific expertise and citizens, to involve stakeholders in decision-making processes, to mobilise citizens for shaping society's future, etc.

This class of methods includes:

- Consensus conference
- Expert hearing
- Focus group
- Citizens jury
- Future search conference
- Scenario workshop
- Perspective workshop

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# Example of method – Future Panel

- Parliament appoints up to 20 MPs as members of a future panel, which over a period of 1½ to 2 years is charged with carrying out a long-term, cross-sectorial, cross-disciplinary and cross-party project.
- The politicians work closely with the TA organisation in determining the focus and programme.
- Objective: to clarify and inform the public and the Parliament. Create collaborative framework between politicians and experts – and between different spheres of competence
- Process: the process comprises an introductory seminar, 4 parliamentary hearing and a concluding seminar.
- Output:
  - a description of the problems and current knowledge about the area
  - a review of possible strategies and political action proposals, which have emerged from the public hearings
  - the conclusions of the future panel

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# Example of Project – Future Panel

**The aging population – DBT (2000-2003)**

Panel of 20 members of Danish Parliament from all parties.

Objective: produce independent assessments on possibilities and consequences of technology for society and citizens in relation to the gradual ageing of population.

4 public hearings in 2001 and 2002:

- The Ageing Society (A.S.) do we need to worry about the consequences?
- The A.S., will we need changes in the labour market?
- The A.S., can we improve our efforts in relation to health care and prevention?
- The A.S., what did we learn (from the hearings)? Which new initiatives are needed?

a report based on each hearing, workshop, and final report with the conclusions published by the Parliament.

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# Example of Method – Consensus Conference

- The consensus conference allows the public rather than experts and politicians to set the agenda for the topic under discussion.
- A citizen panel of approx. 15-30 citizens are charged with the assessment of a socially controversial topic.
- The citizens put their questions and concerns to a panel of experts, assess the experts' answers and then negotiate among themselves a consensus statement including their expectations, concerns and recommendation
- The citizens panel writes a final document with conclusions and recommendations for policy makers and the public in general.
- Output: Conclusions and recommendations for policy makers. Bridge building and dialogue among experts, policy makers and citizens.

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# Example of method – Scenario Workshop

- Workshop based on scenarios of the future technological development in the area. Participants' own experiences and criticism of these scenarios form the basis for future visions and action plans.
- the aim of the scenario workshop is to create a basis for local action. In addition, the workshop is used to gather knowledge about barriers and participants' experiences and visions of the topic as well as their attitudes towards the defined scenarios and the basis for these.
- 3 basic phases; the critical analysis phase, the visionary phase and the implementation phase
- The work alternates between plenum sessions and group work.
- Two days of workshop – with some time in between
- Participants consist of 25-30 people with different roles in the local community

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# Example of Project – Scenario Workshop

**New technology in elderly care – DBT (2006-2007)**

Focus on mobile hand-held terminal for home care providers. The terminal is often a PDA unit with a mobile telephone; enabling on-line access to the task lists and records regarding the individual visits, but also the option of surveillance of care takers. The project focused on the dilemmas and conflict that appear when new technologies are integrated in the organization and management of eldercare.

Methods:

- Expert & stakeholder workshop to provide input for scenarios
- 2 Scenario Workshops. In the first participants from 5 different municipalities where divided into four groups depending on their background and function. In the second the participants were in groups according to their municipality.

Outcome: Debate paper divided into three parts: the fours scenarios; info on the methodology and process of workshop; and one with the results from our workshops.

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# Classes of methods - Communication methods

Communication should be seen as a two way process. On the one hand side communication methods are used to communicate the corporate image of a TA institute, the TA approach, the TA process and product to the outside world in order to increase the impact of TA. On the other hand communication is an important feature for the TA-Institute to keep in touch with the outside world and by that keep track with reality.

This class of methods includes:

- Newsletter and focus magazine
- pinion article
- Science theatre
- Video presentation
- (Interactive) websites (e.g. local questionnaire, debate forum, video, ...)
- Networking
- Dialogue conferences

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# Example of Method – Science theatre

The science theatre can be used to make vivid and dramatic illustrations of dilemmas etc. related to a topic and to focus the awareness of participants and qualify a subsequent discussion or focus group interviews

Output: Theatrical illustrations of visions and/or dilemmas combined with more or less structured debate with auditorium

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# Example of method – Science festival

- One or more days event, involving scientists and artists.
- Dedicated to a certain thematic

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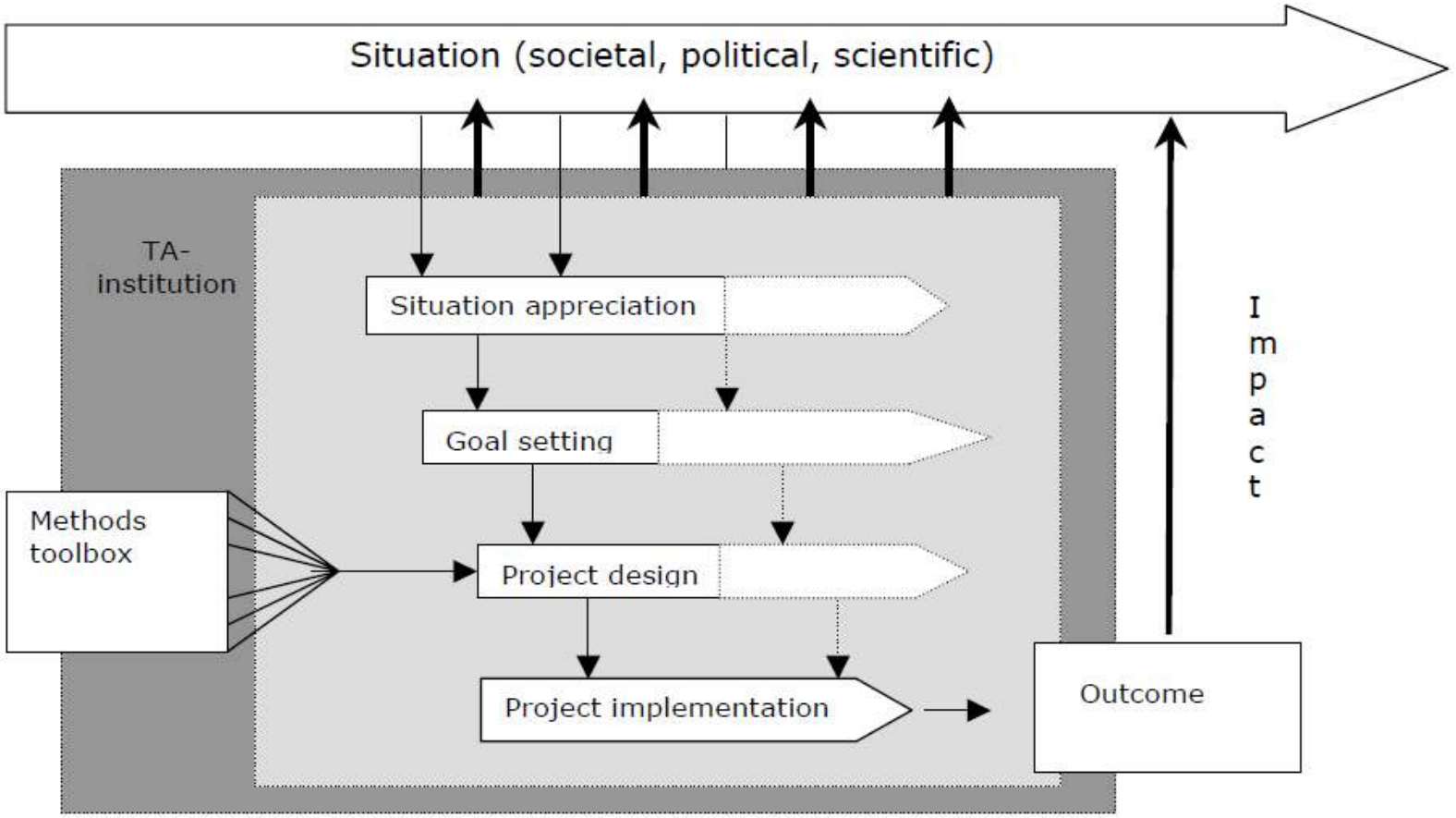
# Selecting the method

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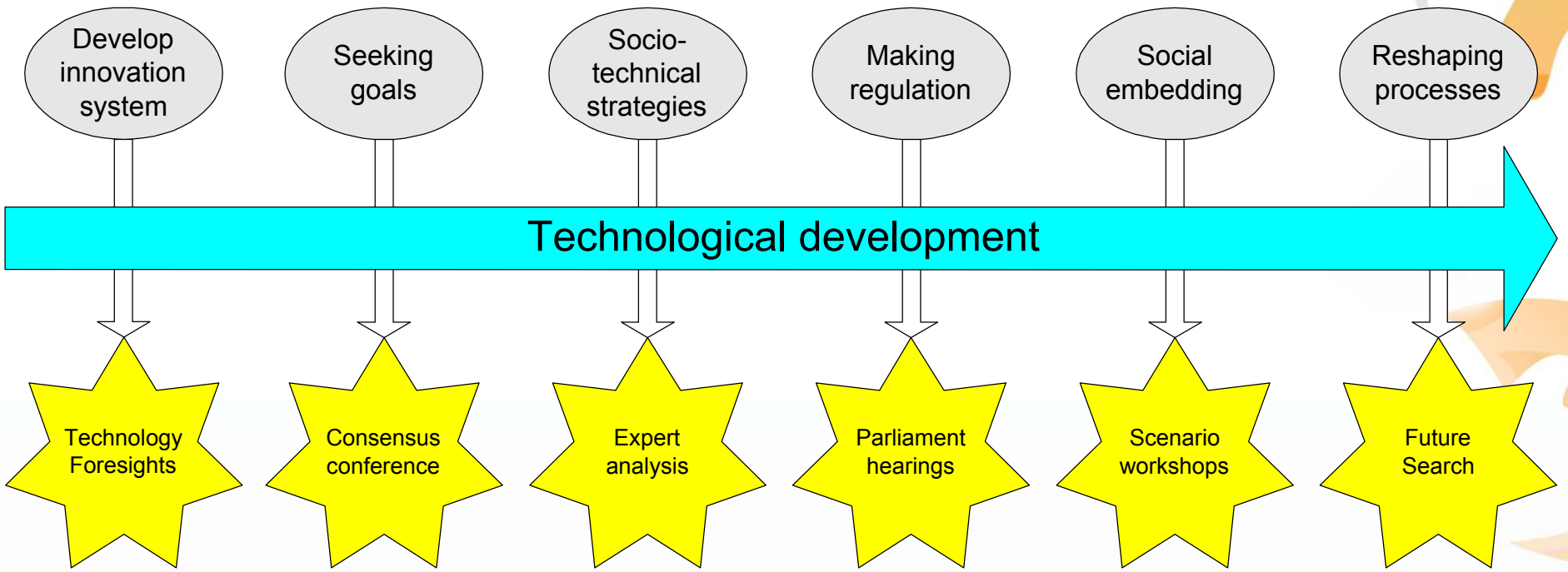
## Development and implementation of technology




## Processes - rooms for analysis and dialogue

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# Resources

Resources to help find the right method

- Technology Assessment in Europe; Between Method and Impact (TAMI) – Final Report
- Doing foresight (http://www.doingforesight.org/ )
- Participatory Methods Toolkit- A practitioners manual. (www.kbs-frb.be )
- Engage2020 (www.engage2020.eu ) (by the end of the year 2014)

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Thank you!