

THEORY OF CHANGE

The Theory of Change (ToC) describes how and why it is appropriate/relevant to make a change by developing a narrative between the starting point and the intended point to reach. To create a ToC study, the desired long-term goals must first be identified and, based on them, the "intermediate" conditions required to achieve the desired goals must be analysed. It is a non-linear process that seeks to understand better the link between the desired change and the actions that must be taken to achieve it (theoryofchange.org). In addition, the process considers unwanted effects (Folke et al., 2005).

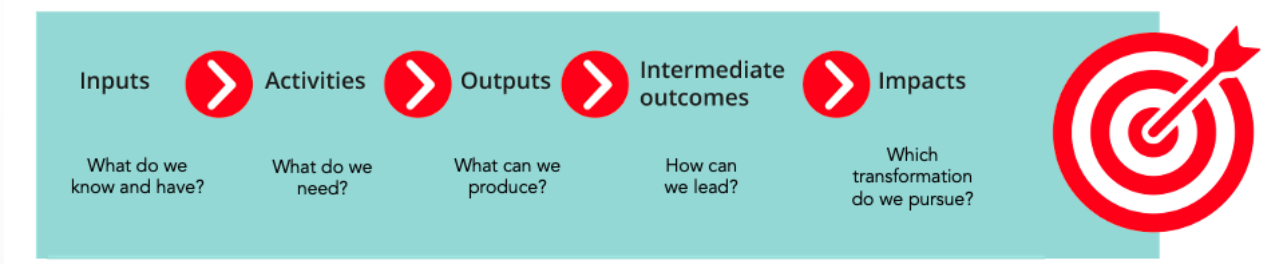
ToC can be applied before, during or after a project for evaluation or monitoring. One of the characteristics of this methodology is that it seeks to involve different stakeholders to build a more accurate narrative that captures the vision of all the people that the intervention may impact.

A ToC should be (knowhow.ncvo.org.uk):

- **Credible** - based on previous experiences and knowledge of key stakeholders.
- **Achievable** - have the necessary resources to carry out the intervention.
- **Supported** - involvement of main stakeholders to define, agree and build the project together.
- **Verifiable** - through a job description, measurable results and with use of indicators.

A simple way to define this methodology is: *how you see the world, how a change would occur and how you intervene to achieve those changes* (Vogel, 2012). It serves to understand how stakeholders' concern initiatives are based on sustainable development (Oberlack et al., 2019).

This process is developed with a map describing each point on how this change should occur (Norfund, 2019). ToC can be represented in a visual diagram, as a narrative, or both, to explain how various project elements are linked to our hypotheses (CRS, 2020).



Oberlack et al. (2019) propose some areas in which ToC can help sustainability (Fig. 1):

1. Facilitates the development of project objectives in a meaningful and achievable way.
2. Facilitates project planning considering social transformations.
3. Integrate a process of continuous reflection.
4. Supports critical reflection and continuous learning by providing indicators and procedures for the project.
5. Facilitates mutual learning between participants.

Some of the challenges associated with ToC are creating a working group integrated by key stakeholders and maintaining their willingness to participate throughout the process. ToC is an iterative process that develops around a shared objective, involving disciplinary, interdisciplinary and transdisciplinary activities (Oberlack et al., 2019).

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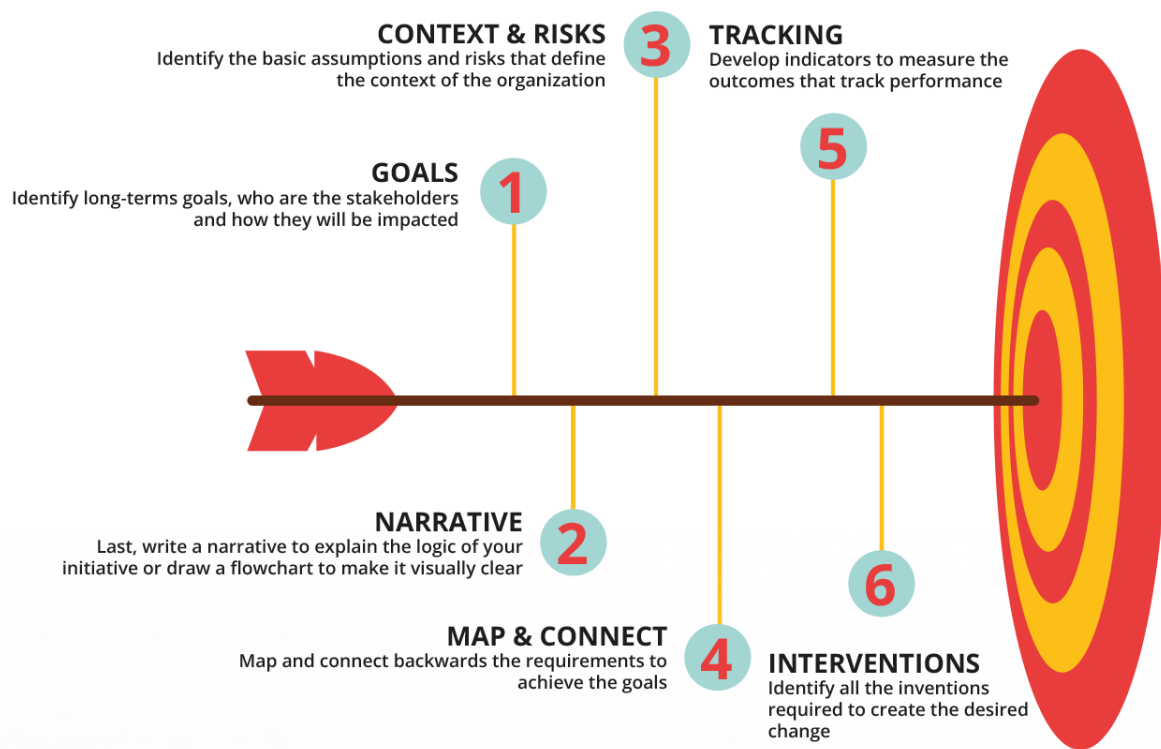


Figure 1. Elements of a Theory of Change from <https://www.corecentra.com/what-is-theory-of-change/>

In conclusion, the broader adoption of theories of change in sustainability science is a crucial step in making science's transformative ambitions and expectations in the 2030

Agenda a reality. Theory of Change processes requires sufficient resources, willingness and open-mindedness among stakeholders, including scientists.

EXAMPLE

All ToC examples vary depending on the topic and area of study. There is currently no TOC study for a CCUS project; however, we have identified that this methodology would be of great relevance in order to carry out an analysis of impact routes that supports decision-making on this type of project.

Some examples of the application of this methodology can be found in the following UK government link:

[Appendix 3: Examples of Theories of Change - GOV.UK](#)



References

- CRS. (2020). *Practical Guidance on Developing a Project's Theory of Change*. Catholic Relief Services.
- Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources*, 30, 441–473. <https://doi.org/10.1146/annurev.energy.30.050504.144511>
- Norfund. (2019). Theory of change methodology. *The Norwegian Investment Fund for Developing Countries*. https://doi.org/10.1007/978-1-137-42617-8_67
- Oberlack, C., Brey, T., Giger, M., Harari, N., Herweg, K., Mathez-Stiefel, S.-L., Messerli, P., Moser, S., Ott, C., Providoli, I., Tribaldos, T., Zimmermann, A., & Schneider, F. (2019). *Theories of change in sustainability science*.
- Vogel, I. (2012). *Review of the use of Theory of Change in international development. Review Report. August*, 83 pp. <http://r4d.dfid.gov.uk/Output/190843/Default.aspx>
- Center for Theory of Change <https://www.theoryofchange.org/>
- NCVO/knowhow <https://knowhow.ncvo.org.uk/how-to/how-to-build-a-theory-of-change>