# Decoding the Evolution of UN's Sustainable Development Goals using Bayesian Inference

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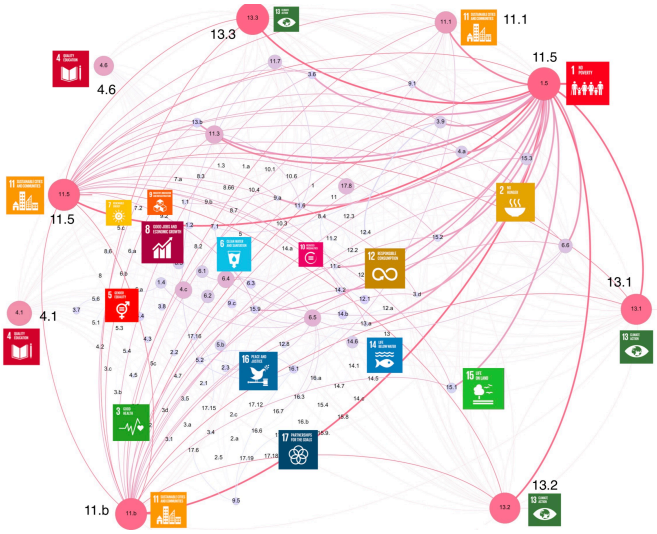
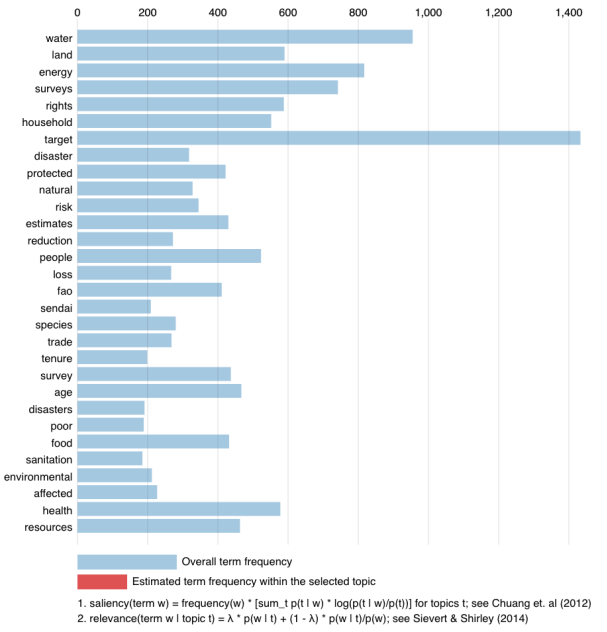
The lack of progress on sustainable development has received considerable critical attention from the United Nations. As a result, the UN has created the Sustainable Development Goals (SDGs) to provide a blueprint for global development*. In order to evaluate the success on SDGs, the UN's Inter-Agency and Expert Group (IAEG-SDGs) introduced the global indicator framework with consensus on 232 parameters. However, these parameters are broad and tend to miss socio-cultural context along with local constraints across the world. Therefore, the generalisability of the global indicator framework is problematic. A number of studies have examined interlinks and interactions between SDGs and respective indicators (e.g. Blanc, 2014, Nilsson et al., 2016, Weitz et al., 2018, Nilsson et al., 2018) through subjective measures, but to date none has systematically studied creation of SDGs beyond government agreements on indicators. In this paper, I provide a conceptual theoretical framework based on Latent Dirichlet Allocation (Blei et al., 2003), a Bayesian inference model, to study the interlinks and evolution of SDGs in the context of local constraints. I envisage that this research will provide an important opportunity to engineer quantitative measures for evaluating the success and refinements of sustainable development programs.




**(a)** *Blanc, 2014 introduced SDGs as the network of targets. The visualization showcases the network of targets that is mapped to the topic distributions from Bayesian inference model*




**(b)** *LDA and Gibbs Sampling with $\alpha$ Dirichlet prior on pre-document topic distribution, $\beta$ Dirichlet prior on pre-topic word distribution, $\theta_m$ topic distribution for document. The model generates three distinct topics covering a wide range of salient terms (e.g., water, environmental, poor, food, energy) used in the SDGs creation.*

*The Sustainable Development Goals