

Tools for the theory of change in developing green bioeconomy strategy

Wednesday, 11 March 2026 14:20 (20 minutes)

Regional Inclusive Biobased Entrepreneurship Solutions, or RIBES, is a Horizon Project that addresses the need to enhance the uptake of biobased innovations through pioneering governance and business models developed at the convergence of social entrepreneurship and rural development. It will also contribute to the shift from a linear to a circular economy in nine regions of the Eastern European countries that lag in innovation. Ribes looks beyond the 'triple helix' governance of public-private partnership between governments, knowledge institutions, and companies that has long been seen as the main driver of innovation in a region. Since 2024, we have succeeded in implementing a multi-actor transformative forum (MTF) composed of more than 25 organizations, such as authorities, businesses, and non-governmental organizations that may have an interest in applying bio-based solutions for accessing a potentially available biomass from agriculture. In the past two years, 5 MTF meetings have been organized to act for social transformative change in supporting the integration of bio-based solutions at the County level. We contributed to the organization of the Cluster of Bioeconomy as the first partnership between the European Union projects acting for bioeconomy on 15 September, 2025. Agriculture in Sibiu County may generate a minimum available waste biomass of approximately $1,030,932.60 \text{ t}\cdot\text{y}^{-1}$, calculated as a seven-year average for 118,498 ha of arable land. Biorefinery or green gas production are among the solutions to be further discussed to be integrated into the regional policies. Livestock farming in Sibiu County produces an estimated $1,179,102.75 \text{ t}\cdot\text{y}^{-1}$ of manure, of which at least 50% ($\approx 600,000 \text{ t}\cdot\text{y}^{-1}$) can be sustainably allocated to bioenergy production without compromising soil fertilization practices. The need for bioeconomy educational courses was essential at the MTF level and underlined the need for increasing cooperation among all stakeholders in the region. The major constraints are related to the poor communication between all involved stakeholders. A Road Map for bioeconomy may develop a critical mass of very well-informed public that will act to facilitate green bioeconomy development. The theory of change is already applied in the modus operandi of all MTF meetings. Among the relevant tools, Escali Drows and The Theory of Change Builder were successfully used.

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Session Classification: Green, Safe & Digital Laboratories

Track Classification: General sessions: Green, Safe & Digital Laboratories