

## Steering system innovations – a theoretical exploration of transition management

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Transition and transition management have become major topics in scientific research over the last years. In the Netherlands, the concept of transitions was adopted by several governmental agencies as one of the leading principles for ‘steering’ sustainable development. Transitions are defined as long-term societal changes that require system innovations. Transition processes involve multiple actors within a societal subsystem and fundamentally change both the structure of the system and the relation among the actors. Transitions are not linear processes but rather shifts from an initial dynamic equilibrium to a new dynamic equilibrium. They are often represented by an S-shaped curve where consecutive phases can be distinguished: predevelopment (innovative niches), take-off, acceleration and stabilization (new equilibrium). An example are greenhouses transforming from high energy consumers to net energy producers. However, even this very successful innovation in the agricultural sector has difficulties to take-off and accelerate, amongst other things due to the emerging competition between greenhouse energy producers and traditional energy companies.

Transition management aims at better organizing and coordinating transition processes at a societal level, and tries to steer them in a sustainable direction. However, interventions to initiate, steer or manage transitions are not always as effective as hoped. Is transition management a new approach to the makeable society, a new attempt at social engineering? How manageable or steerable are transitions? We will address these questions by theoretically exploring transition management from a number of related fields on which the transition literature selectively draws, such as multi-actor negotiation, network theory, multi-level governance, social learning, systems theory, innovation and change management. By analyzing how transition management incorporates certain elements and drops other elements from these related theories, we provide additional insights on if and how transitions can be managed.