

Institutional Innovation for Sustainable Technology

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This paper introduces the notion of 'institutional innovations', which are defined as attempts to open up dominant institutional structures with the aim of facilitating the creation and societal uptake of sustainable technologies. The notion of institutional innovation builds forth on the assumption that to create a sustainable society, new sustainable technologies have to replace current technologies. This means that so-called 'system innovations' – involving socio-cultural, institutional, and technological changes – are necessary.

In many cases, there is no absence of promising new technologies, but the proliferation of such technologies is hampered by the resilience of existing institutional barriers. In fact, sustainability problems can be seen as those problems that cannot be managed the dominant institutional framework that is composed by the domains of state, market, science, and civil society. Therefore we need, apart from technological innovations, institutional innovations.

The potential of institutional innovations will be assessed by an analysis of two types of projects that are aimed at the development and stimulation of sustainable technologies – so-called 'institutional experiments'. These two types of institutional experiments share the characteristic that they are based on the involvement of actors from different societal angles, this means that boundaries between the institutional domains of the state, market, civil society, and science are deliberately crossed. The first type of institutional experiments concerns participatory forms of decision-making oriented towards the production of new technologies. The second type relates to local activities that pursue global sustainable goals.

The question for successful institutional innovation does not just involve effective crossing of institutional boundaries. Institutional domains hand over the conditions to assess the legitimacy of an individual's actions and decisions, which means that crossing

boundaries between institutional domains might obscure the relationship between an individual's decisions and the institutional context. In other words, institutional rigidity prevents sustainable innovation, but porosity of institutional boundaries affects the legitimacy of alternative approaches to produce innovations.

This paper will address this tension, and it will explore the conditions of institutional innovations. It does so by taken account of the next two considerations. First, is the conjecture that if institutional experiments fail to attend public legitimacy as an essential issue, they will not be successful – and may even have a counterproductive effect. This concern implies that institutional experiments should not only convey an institutional form with newly established normative practices, but they should also warrant that these normative practices relate to larger institutional forms in a legitimate way.

At the same time it has to be realized that the separation of institutional domains has never been absolute – as has been forwarded by the 'boundary work'-approach. Institutional boundaries are not cast in concrete: they have always been ambiguous, permeable, applied in ad hoc and ex post fashion. Responsibilities between actors are often divided during concrete interactions. Therefore the normative content of the crossing of institutional boundaries can only be established upon a case-to-case basis.