This essay stresses limitations of "sustainable growth" as proposed by institutions of the Washington consensus from a perspective of peak everything and argues that this path might have more devastating results than previously anticipated. In favour of a transition towards "true sustainability" grassroots movements and civil disobedience are evaluated as alternatives to government-led top-down action which is seen as unlikely in the current economic and political climate. Value systems among the global North are identified as main levers for a successful transition.

**Part I: Sustainable growth vs. peak everything**

The imperative of *sustainable growth* is prevalent among many governments (German coalition agreement, 2013; HM Treasury, 2013; Oh, Pang, & Chua, 2010), leading international institutions (G-20, 2014; OECD, 2014; World Bank, 2012), many academics (Islam, Munasinghe, & Clarke, 2003; Zysman et al., 2012) and entrepreneurs (Diamandis & Kotler, 2012; Pauli, 2012). Even the Brundtland-Report "interpreted growth as being compatible, even complementary, to environmental well-being" (Cole, 2007, p. 251).

According to this notion, it is possible to uphold and even expand humanity's current wealth and living standards whilst reducing their impact on the environment. This decoupling of growth from ecological degradation is achieved via technological advancements (Naam, 2013). Steady or even declining per-capita carbon dioxide emissions in relation to GDP per-capita in countries of the global North have been taken as evidence to support the decoupling process (Schmalensee, Stoker, & Judson, 1998). In other words – with economic growth the $CO_2$ emissions decrease.

However, a rebound effect of more consumption triggered by new technology has led total $CO_2$ levels to increase, indicating that an absolute decoupling of GDP growth from ecological impact is practically almost impossible (Jänicke, 2012).

Additional challenges to decoupling are presented by the idea of *peak everything* (Heinberg, 2007). Here, extraction of every limited resource experiences a peak following

exponential growth. This relationship has been observed and/or hypothesised for e.g. *peak oil* (Hubbert, 1956), *peak soil* (Fritz, 2009), *peak coal* (Patzek & Croft, 2010), *peak phosphorus* (Cordell & White, 2011), *peak minerals* (Prior, Giurco, Mudd, Mason, & Behrisch, 2012), *peak rare earths* (Kifle, Sverdrup, Koca, & Wibetoe, 2013) or *peak water* (Gleick & Palaniappan, 2010). Grant (2010) additionally argues that earth's ability to absorb human waste could become the dominant limiting factor to economic growth. Therefore, this essay introduces *peak waste capacity* as another element of peak everything, indicating that waste production will and has to peak in order to live sustainably.

The path of *sustainable growth* as proposed by the above mentioned parties includes a transition to $CO_2$-free energy production in form of *renewable energies* such as solar panels, wind turbines or hydroelectric dams, providing a steady and almost inexhaustible source of energy, therefore allowing increasing demand for energy. However, in the public rhetoric little to none attention is given to the scarcity of factors of production (e.g., rare-earths in solar panels; Eliseeva & Bünzli, 2011) nor the ecological effects of these "solutions" (e.g., sediment discharge upstream of dams; Ligon, Dietrich & Trush, 1995) nor the efficiency and willingness of recycling (Yu, Williams, & Ju, 2010).

This is highly problematic, since renewable energies simply replace one scarce resource (i.e., oil) with another (i.e., rare earths) through technological advancements instead of solving the problem of exploitation (Paech, 2011). Despite this the terms *sustainable growth* and *renewable energies* suggest responsible handling of climate change, giving the general public a false feeling of security. By clinging to alternative sources of energy production to uphold and expand humanity's lifestyle the "ability of future generations to meet their own needs" (Brundtland Commission, 1987, p. 41) might be impaired more extensively as anticipated. Assuming that all peaks mentioned above will happen under continued *sustainable growth*, future generations might be left with little oil, minerals, rare earths or coal to produce energy as well as with little phosphorus, fertile soil and water to

nourish themselves all of which in an increasingly unpredictable global climate. While technological advancements might cushion the severity of these results the question of generational fairness remains. This conclusion adds to the urgency of a transition towards "true sustainability" (Smith, Lopes, & Carrejo, 2011) as presented in the academic literature.

Steady-state economies (SSE) and degrowth have been the main answers to the predicament of continued economic growth (Martínez-Alier, Pascual, Vivien, & Zaccai, 2010). Instead of seeing them as opposing concepts Kerschner (2010) suggests that degrowth can be "understood as the industrialized path towards a globally equitable SSE" (Martínez-Alier et al., 2010, p. 1744). Drawing on this idea this essay is concerned with the global North's transition to contribute to global intra- and intergenerational equity.

**Part II: Implementing change – grassroots movements and civil disobedience**

As indicated in the first part the impetus of the global North is clearly directed towards economic growth with the notion of making it more ecologically compatible and sustainable. While for decades critics argue that *sustainable growth* is an oxymoron (Daly, 1990; Orr, 2002) even proponents of the idea start to acknowledge that despite the efforts made in technological advancements the political direction has to fundamentally change from the neo-liberal status quo (Jänicke, 2012).

Given the political inertia since the World Summit 1992 top-down government-led action is unlikely to occur within the global North. This paper therefore investigates alternatives on the way to "true sustainability" (Smith et al., 2011).

First, grassroots movements (Ekins, 1992) are evaluated with regard to their effectiveness in bringing about social change. The cases of *Occupy Wall Street* (OWS) and the *Icelandic Saucepan Revolution* (ISP) are briefly portrayed. OWS has arguably produced mixed results, introducing on one hand the idea and salience of the 1 % opposed to the 99 % of the population, but entailing little change toward social equality and income distribution.

The ISP depicts an example of a successful grassroots movement. Their goals, namely the resignation of the government, drafting a new constitution and holding bankers and politicians responsible for the economic disaster were met, resulting in a more participatory governance scheme and referenda (Shihade, Fominaya, & Cox, 2012). However, on a more global scale grassroots movements might lack the coordinated actions required to tackle climate change and social equity. This is critically evaluated.

Second, civil disobedience as a "public, non-violent, and conscientious act contrary to law usually done with the intent to bring about change in the policies or laws of the government" (Rawls, 2009) is critically discussed in its effectiveness. The famous examples of Mahatma Gandhi, Nelson Mandela or Martin Luther King, Jr., arguably present a heroic and almost romantic picture, but might exaggerate the success of civil disobedience. Its actuality is nonetheless striking with Russell Brand's and Harald Welzer's[1] public appeals for civil disobedience. Greenpeace campaigning against Royal Dutch Shell's endeavour to drill for oil in the arctic is portrayed and evaluated as a contemporary case (e.g., Manning, 2013).

Concluding, both grassroots movements and civil disobedience are capable of questioning the status quo and its underlying value system and actively apply social pressure. These aspects are identified as key levers on the path towards sustainability in the global North.

1 The appeal not to vote is, though not illegal, also seen as bearing resemblance to civil disobedience in questioning the status quo and rebel against the current system

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