Integrative approaches in sustainable development theory

Integrative approaches

This essay is attempting to give an understanding of the integrative approaches on sustainable development and their capacity to cope with conflicts of goals. First it presents the integrative approaches, then discusses the *Helmholtz-Approach* as well as the general method of conflict solution by Marc Dusseldorp.

The term of integration was used by the *Brundtland-Report* on several occasions (UNCED 1987 pp. 9, 37, 40). It is used to describe the challenges of, and the solutions to, questions of sustainable development. Within this usage of the term lies the interdisciplinary approach of the integrative concepts to create an overview over the whole area of concern. This could only be done by generalists and specialists working together interdisciplinary with a common usage of terms and the idea that every aspect of sustainable development is the task set for them. Thus, the integrative approaches were created (Maga 2015 pp. 16-21).

Overview

The integrative approaches are namely the the *Greifswald Approach*, the concept of the federal Government of Germany and the approach of the *Helmholtz-Gemeinschaft* (cf. Maga 2015 p. 18).

The first approach to be presented is the concept of *weak* and *strong* sustainability, or the *Greifswald Approach*, as seen in (Ott 2010 pp. 163-192). Here, he expresses about the classical pillar concepts: ‘Conceptual the three-pillar-models are open for near any content of all three pillars’ (cf. Ott 2010 p. 165). Furthermore, the equality of the three pillars is highly doubtable, since it is purely theoretical, and not factual. Instead, he proposes along with some others a ‘constant natural capital rule’, which states that the natural capital, the resources of nature, should not diminish over time. He classifies weak sustainability as the viewpoint that natural capital and financial capital can be exchanged for each other. Contrary to this, strong sustainability is the view that natural capital cannot be exchanged in any manner. This concept is insofar integrative as the

constant natural capital rule is the normative basis for an over the areas of concern arching normative framework.

Since the year 2002, the federal government of Germany has a strategy of sustainable development. It highlights in (Bundesregierung 2016) that the approach is ‘universal, integrated’ (cf. Ibd. p. 12). It is designated to the idea that all humans should live in dignity (cf. Ibd. p. 11). The concept revolves around the newly designed seventeen sustainable development rules of the Agenda 2030, the regime adopted by the United Nations in Paris 2015. These goals involve the idea of the (UNCED 1987) and aim to change several severe deficiencies of the current global situation. The expressed idea is that the capability of the earth to regenerate should not be exceeded.

The HGF Approach takes into account four dimensions of the classical pillar models. They regard the ecological and social dimension as well as the economical and institutional dimension (Kopfmüller et al. 2001 pp. 47-115). The possible cultural dimension is subsumed under the social dimension. These dimensions[1] are, via the “constitutive elements” of justice, globalism and anthropocentrism, tolerated in the fundament of the concept (Kopfmüller et al 2001 p. 117). The most important role has justice, as in a certain notion of justice, important questions of sustainability are answered. If we understand justice as inter- and intragenerational justice, it is plausible to speak of ecological issues from a perspective of justice. But in order for justice to have an effect, it must be applied globally.

This notion of justice is then translated into goals that are general in nature: First, securing human existence, second, maintaining society’s productive potential and third, preserving society’s options for development and action (cf. Schulz et al 2008 p. 477). From these general goals originate five rules for each goal, although (Kopfmüller et al 2001 p. 362) stress that the rules contain more information than the general goals. Both of which can be found in (Schulz et al 2008 p. 478). A deeper description is available in (Kopfmüller 2001 pp. 190-272). This stems from the ecological and social dimensions. The economical and institutional dimensions are then translated into another set of rules that are instrumental (Kopfmüller et al 2001 p. 174). The first set of goals and rules are referred to as substantial, the latter as instrumental. Paraphrasing this would indicate the substantial rules as “What-Rules” and the instrumental as “How-Rules”. These rules are then linked with indicators, making it easy to see if a rule is satisfied or not.

1 (UNCED 1987) states clearly that the dimensions are not static, but more like the areas of concern (p. 4) or policies (p. 313) They count not only four dimensions, but enumerate several: “Ecological, economical, trade, energy, agricultural, industrial, and others” (Ibd.)

HGF-Approach

The mentioned constitutive elements of the HGF-Approach should be described further. The problem of sustainable development is put into words when the (UNCED 1987 p. 8) says: “We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions.” Justice is not something that just comes along from itself. It needs facilitation and production. And it needs definition. (Kopfmüller et al 2001 pp. 130-139) have the opinion that the notion of justice in (UNCED 1987) are of constitutive strength for the integrative concept of the HGF. It is plausible, then, to read the report in a manner that defines what inter- and intragenerational justice is. As they see it, justice for the *Brundtland-Report* is social justice, as distributive justice, performative justice and property justice. The report itself, however, uses the term “justice” very rarely. Instead, the authors of the report use the term “Equity”. This does not alter the meaning.

This view onto justice makes the step to the next constitutive element natural (cf. Kopfmüller et al. 2001 p. 144). If we demand equity - justice – for everybody, now and after, then it is only fair to take everybody on our globe into consideration. But the global orientation is not only part of a normative prescription. It is also the assessment of the problem that needs a global orientation. It appeals to an utopian character in mankind, to change the interdepending causal relations.

Humans are the only known source of value up until now. That means, there is no other being in the world where we can be sure that this being has ratio for judging (descriptive and normative) values. The integrative approach of the *Helmholtz Association* is an anthropocentric one. They state explicitly that sustainable development is an anthropocentric concept (cf. Kopfmüller et al 2001 p. 152). They differentiate their anthropocentrism from other forms with the addition of the term “enlightened” (Schultz et al 2008 p. 476). This term indicates that there are responsibilities of humans in regard to nature, but not because the nature has inherent value, but value in connection to humans (Kopfmüller et al 2001 pp. 159-163). To ascribe inherent value to nature, there would be the need of intense theoretical labour. This enlightened anthropocentrism is an effective solution to this problem of theory.

To put these three elements into action, this approach revolves around twenty-five rules. Fifteen of them are connected to three goals, five each (cf. Schultz et al 2008 p. 478). These three goals are described as “*general goals of sustainable development*” (Schultz et al 2008 p. 477).

These fifteen rules are known as the substantial rules of sustainable development in regard to the approach. They are deducted off the constitutive elements. “Since the non-fulfilment of these three

goals harms the constitutive elements, the goals are the condition precedent to sustainability." (Ibid.) All measures taken to further development in the global society have to adhere to these rules and goals. They define minimal standards of action. Every rule can be interpreted in a numerical sense as a variable between zero and one, zero meaning that there is no fulfilment of the rule whatsoever, and one meaning it is fully achieved (cf. Dusseldorp 2017 p. 169 for detailed depiction). Furthermore, it seems unanimous that if this depiction is used, the area of a certain rule could be divided by the core threshold, under which it is a harmful violation of the norm. For the area above the threshold, there is only the prescription of optimization due. Sustainable development rules, it seems, are hybrid in nature, where one area prescribes absolute adherence to the rule and the other gradual adherence. If the first is addressed, (Kopfmüller et al 2001, Schultz et al 2008, Dusseldorp 2017) speak of satisfizing normativity, the latter are described as optimizing normativity.

The ten remaining rules are described as instrumental rules (Kopfmüller et al. 2001 p. 174, Schultz et al. 2008 p. 477). They aggregate the areas in which society can achieve change on a global scale, because we have no other means of managing the commons. This role could be filled with the dimensions of policy of the institutions and the economy. The instrumental rules are important for the realization of sustainable development, especially since there are no alternatives for global, concerted actions. They answer the question of how institutions and economic actors should act. It appears that the assessments that are definitely stated for the substantial rules are also true for the instrumental rules as well, even when (Kopfmüller et al. 2001) is very brief on this matter.

In a third step the constitutive elements that derive from the dimensions, translated into rules, are put into concrete action through the normative step of indication. Indicators are tools to measure the change of society in a given perspective on the rule at hand (Schultz et al. 2008 p. 479). This finalises the method of the integrative concept; from the view on sustainability inspired by (UNCED 1987) it leads to effective institutional guidance of society's development.

Methods of problem solving

Normally, within a given framework of rules, win-win situations are preferable. For instance, we are seeking financial sound measures that have a positive outcome in the ecological area. Situations in which there is a loss in every regard are to be avoided. These situations are unanimous and free of conflicts. Within a framework of rules, conflicts between rules can always happen. This is true for the sustainability rules of the HGF-Approach as well. 'Conflicts of goals are understood as cases

where an act results in diverging effect in the content-wise realisation of sustainability goals' (cf. Dusseldorp 2017 p. 26, cf p. 83). How can one rule be weighted up against another? Dusseldorp created a general procedure for scenario-based measure evaluation in five steps (cf. Dusseldorp 2017 pp. 5, 216-223). This is to state that he meant to develop a method of conflict solutions.

First, he analyses the *Helmholtz Approach* and its implications in regard to the substantial rules. Then, he looks into conflicts of goals in this approach, creates a measurement concept and finally poses the question of whether the norms of sustainability are capable of being weighted up.

The core of Dusseldorp's work is the analysis of norms. Within the analysis, he differs between three different types of norms: Hybrid, pure satisfizing and pure optimizing norms. This polarity, with the hybrid norms being anything in between the poles of satisfizing norms and optimizing norms, should be described to further the understanding of the question of weighing up and his statement about the constitution of the rules.

Rules are a sort of norms, insofar as they prescribe actions. Dusseldorp characterizes their saturation with a range from zero to one, from zero describing a state where they are not adhered to at all to one where they are fully adhered to. The types of norms become clear when another value is added into this range, the core threshold 'k'. 'k' is insofar a barrier, as it distinguishes the areas of optimization and satisfaction. With 'k' equalling zero, a rule cannot be vitally violated. With k equalling one, a rule can only be adhered to when the state is represented by a one, full adherance. In between, there is the difference between optimizing and satisfizing the norms. If a norm can be optimized, its realization is over 'k' but under one, and if it needs satisfizing, the realization is under 'k'. This is depicted in (Dusseldorp 2017 p. 169). In the area under the threshold, there is no graduation. A satisfactory rule can either be adhered to, or it can be violated. There is an absolute value in these norms. An optimization rule can be gradually adhered to. The value is relative to the state where it originates from.

This makes it clear that the rules are one dimensional scales measuring the sustainability of a development through the fulfilment of indicators. If there are conflicts, it means that a proposed measure has diverging effects on this fulfilment. (Kopfmüller et al. 2001 p. 369) say that certain types of conflicts of goals can only be solved situative. Since there is the problem of epistemic uncertainty regarding lots of the rules, they can not be quantified in a strict sense (Kopfmüller et al 2001 p. 355). Kopfmüller et al conceptualized their rules as capable of being weighed up (Kopfmüller et al 2001 p. 181) and as capable of gradually adhere to. They weigh up with 'cognitive weighting', 'social weighting' and 'voluntary weighting' (Kopfmüller et al 2001 p. 183).

Cognitive means here that they seek intersubjective arguments that weigh in one rule higher than another. Social means here that given ethics of a society is regarded when weighing in rules. Voluntary means here that certain protective values are taken into account when weighing in rules. The average weigh of a rule determines the rank of it.

Dusseldorps scenario-based heuristic measure evaluation is a five-step procedure. First, the definition of the measure in question is required. Second, the sustainability rules are contextualised. Third, the consequences and costs of the measure are evaluated. Fourth, the measure is embedded into sustainability scenarios. Lastly, the measure evaluation is formulated and presented (Dusseldorp 2017 pp. 216-223).

The definition of a measure is the unambiguous formulation of the concrete actions envisioned to take place. It can encompass building a biorefinery with this and that dimensions or to administer a new technology. A measure is defined as all objects of the integrative concept that have the character of acting, such as policies and technology (cf. Dusseldorp 2017 p. 217).

The contextualisation of the measure at hand is the evaluation of the impact of the technology. This is important, as there are many graduations between the affected area. From as little as a household up to as big as the whole globe, everything is possible. This connects the sustainability rules with the research object, insofar as the sustainability rules have to be broken down into the communities (cf. Dusseldorp 2017 p. 218). The contextualisation fixates what sustainability rules are to be met, so that the affected social area can have their contribution to a sustainable development attested.

The evaluation of the consequences and the costs of the measure are the steps required to ensure effective translation of the set of rules into action. If a measure is egalitarian in the outcome, and it requires the spending of resources, then this is relevant for the evaluation. If a measure has an positive outcome and costs nothing, then it is highly relevant for the evaluation. Technology assessment is the core of this and the second step; its evaluation are the founding stepping stones for sustainable development that is technologically progressive.

The embedding of a given measure in a sustainability scenario is important for the measure implementation through policies. Politics doesn’t always care for endeavours, but have a regulatory function instead. Can this given measure be part of a sustainability strategy? There is no need of preforming scenarios before the measure, but instead the heuristic asks this question, which puts the measure before the scenarios. The scenario is constructed with the measures at hand in mind, which can be asserted as sustainable if it contributes to a sustainable development (cf. Dusseldorp 2017 pp. 76, 220).

The last step is to argue with the help of the scenarios about given measures and giving them affirmative or negative evaluations. A concrete measure is required if it is element of a scenario in the sum of all sustainable scenarios (cf. Dusseldorp 2017 p. 222). It is forbidden if there is no scenario in the same sum that contains the measure. The formulation in natural language is an important step to envision the measure into policy-making.

Conclusion

Data repetition

The integrative approaches have been presented. Following (Maga 2018), the term of integration is used to describe a wide array of theories that intend to bridge the gap between differentiated approaches and the concrete policies. They consist of overarching principles that extend the approaches differentiated into dimensions of action into a unified theory of action. Integration means in a literal sense to unify, make something intact or to heal something into something with various parts linked closely together. We can subsume that there is an interdependence between the parts of the system (Kopfmüller et al 2001) were conceptualizing.

The strength of the *Helmholtz-Approach* is that it leads, regardless of the concrete content of the rules, to a method. It stems its validity from premises everybody can relate to: Sustainable development as a goal, justice for everybody now and then and enlightened anthropocentrism. The system seems, on the first glance, valid in its conclusions. The conclusion that is meant with that are not the concrete indicators, but the method of applying indicators derived from rules that stem from normative premises. This is something apparently adapted by policy-makers (cf. Bundesregierung).

If there are conflicts of goals, it doesn’t imply conflicts of the goals as seen just above. It is a flaw in nomenclature that is a result of lacking terms for overarching goals and goals like they are presented with the substantial sustainability rules. Out of all these goals, it appears that the goal of general sustainable development is unanimous. If one does not aim for this goal, we cannot debate with this person, since they are not sharing our premises of human dignity, equity or globalism. The second set of goals appear to be able to be weighted up against each other, without compromising the integrative approach as is. There is the possibility of a hierarchy of rules, which would then be able to regulate diverging effects on the realization of the given rules.

If we now look at a given measure, we follow the procedure presented above. It allows us to assess the impact on the environment (in a broader sense than just ecological environment) and calculate

the progress made by such a measure. It requires some work from policy-makers, since they have to conceptualize scenarios that lead the way to a sustainable development.

Interpreting the data

If there is one assessment to be made, it is that there is a common misconception in the models of sustainability as seen in popular depictions of sustainability. It appears as if the dimensions are rigid areas where action is needed. The faulty part here seems to be that the rigidity should not be allowed. (UNCED 1987) depicts the areas, or dimensions, in a way that there easily can be produced more of these. This leads to a dilemma, since the more dimensions you add into an equation, the more difficult it is to solve. The integrative approaches have a slightly higher complexity than a reductionist approach with three dimensions, but are not as complicated as the original source. They rather base upon a common theme in all of the dimensions and transform this common theme into a viable theory.

If there is the necessity of an approach that has a theory and applies this theory to the different dimensions of (UNCED 1987), then the integrative approaches come as close to this as it is possible without having to build the theory from foundation to top. They create unified wholes with the parts at hand.

The one significant flaw that begs a question is that the *Helmholtz-Approach* seems to focus on the substantial sustainability rules and underrates the instrumental rules. Here, there was the possibility to take fundamental critique of the *Brundtland-Report* and put it into action. “The earth is one, but the world is not.” (UNCED 1987 p. 27). This was true then and is true now. It is an understatement of the importance of social critique posed by the *Brundtland-Report* to not attempt to pave the way for new structures of international society. Global problems need global answers, but we cannot answer them if we don’t speak as one.

Literature

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