

Review

Adaptation limits as sufficiency entitlements of justice

 Ivo Wallimann-Helmer^{*} and Simon Kräuchi


Overstepping adaptation limits is often conceived as a negative impact to be avoided. This assertion towards adaptation limits implicitly assumes distributive entitlements of communities and their members. By reviewing different principles of distributive justice, this paper suggests sufficientarianism to be best suited to capture these entitlements. We argue that, in the context of climate adaptation, a sufficientarian approach can best deal with the challenges faced by egalitarian and prioritarian principles. In the literature on climate justice, sufficiency thresholds in adaptation have most recently been defined in terms of capabilities to live a decent human life or as the capabilities necessary for climate resilience.

Address

University of Fribourg Environmental Sciences and Humanities Institute, Switzerland

Corresponding author:

Wallimann-Helmer, Ivo (ivo.wallimann-helmer@unifr.ch)

^{*} University of Fribourg Environmental Sciences and Humanities Institute, Departement of Geosciences, Chemin du Musée 4, 1700 Fribourg, Switzerland

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Introduction

In addition to biophysical factors, social, economic, and cultural circumstances affect the vulnerability of communities and their adaptive capacity [1,2]. Biophysical factors are considered hard limits and define insurmountable barriers to adaptation. Social, economic, and cultural circumstances can become soft limits. In principle, soft limits to adaptation can be overcome if the necessary resources are available and used to fundamentally transform a social system. The use of these

resources depends on appropriate institutional and social conditions and the availability of technology and finance. Even if the habitability of a coastal region threatened by sea-level rise can be secured against salinization by building dikes and drainage systems, at a certain point, it becomes physically impossible to secure agricultural food production, that is, a hard adaptation limit is reached [3,4]. If raising dikes or improving drainage is physically still possible but not done due to a lack of economic resources and technology, or due to social resistance, then the coastal community faces a soft adaptation limit [5,6].

The literature on adaptation limits is fragmented and, to a large extent, focuses on ecological systems and their limits as demonstrated by the IPCC's sixth assessment report [7]. Exceeding adaptation limits is often conceived as a negative impact that should be avoided [8,9]. This assertion implies that adaptation action should protect against the overstepping of such limits and thus implicitly assumes that adaptation limits are accompanied by entitlements on the part of threatened communities and systems not to reach them, that is, they should dispose over the necessary resources and capacities to act accordingly. In the sparse research explicitly dealing with adaptation limits and their normative implications, the suggestion emerges to conceptualize these entitlements as sufficientarian principles of distributive justice [10]. In what follows, we systematically review this conceptualization, embed it in the wider philosophical debate on distributive justice, and provide an argument for why a sufficientarian understanding of adaptation limits appears most appropriate.

Adaptation limits as entitlements of distributive justice

It is common to define adaptation limits in terms of risk [1,2,8]. The IPCC WG II Glossary defines adaptation limits as "The point at which an actor's objectives (or system needs) cannot be secured from intolerable risks through adaptive actions." [7] Three factors must be considered to understand this definition: first, the changing climatic conditions defining at what point risks become intolerable and make adaptation necessary; second, the natural or social constraints that restrict the adaptive capacity of a community; and third, the objectives and needs that are threatened by climate impacts [1,11]. The first two factors must be empirically assessed. The third factor may also be the object of empirical research, but it also establishes a normative

dimension. Since objectives and needs are usually valued, it triggers a duty to protect them.

For example, if salinization makes traditional rice cultivation increasingly difficult despite drainage systems or dikes, it is usually assumed that the members of such a smallholder farming system are entitled to protect their livelihoods and to receive assistance if necessary. Protecting threatened objectives and needs may be achieved by incremental adaptation safeguarding objectives and needs within given adaptation constraints or, in case of soft adaptation limits, by transformational adaptation enhancing adaptation capacities by transforming social, economic, and cultural constraints to adaptation [12,13]. Thus, a rice-growing community may improve its drainage system to minimize the effects of salinization or change its livelihood by growing other crops or leaving the agricultural sector. However, if adaptation action fails or dikes cannot be built any higher anymore, loss and damage measures may minimize the harm suffered and rectify what is damaged or lost [7,14,15].

On the surface, it appears intuitively convincing that an actor's valued objective or a system's needs should be protected from climate threats. From a normative point of view, however, the simple assumption that those who value certain objectives and needs are unconditionally entitled to their protection by being provided with the necessary resources for doing so appears problematic for at least two reasons. First, according to most theories of distributive justice, there needs to be a normative justification of why objectives or needs are legitimate and thus establish distributive entitlements for protection [16–19]. Second, relying on actually pursued objectives and needs makes it difficult to prioritize the distribution of scarce resources because such a definition of entitlements does not distinguish between more basic and other claims. A smallholder farming community seems clearly entitled to maintain its subsistence agriculture, but it is less clear whether a large rice company with high economic profits can legitimately claim resources from international institutions to fully pay for its climate adaptation actions. Without any normative orientation, both claims would have to be accepted as legitimate with the same priority, even though it seems clear that securing one's livelihood is more fundamental than maintaining high economic profits.

These considerations make apparent why it is insufficient for climate policy to only empirically establish what the factual objectives and needs of a community are, but it must also be evaluated from a normative point of view which of these objectives and needs legitimately should be protected. This appears especially important in the case of soft adaptation limits when transformational adaptation is concerned. Social transformation changes social structures but should ideally preserve

objectives and needs legitimately to be protected. This is why it is crucial to define what are legitimate objectives and needs and which of these should have priority in the distribution of available resources for adaptation action, because they are of crucial importance to a community [20]. To determine such claims, one needs a normative theory of distributive justice. Such a theory explains what can legitimately be claimed in distributive terms and what are the relevant principles to justify such claims.

In our context of adaptation limits, this means to explain what legitimate entitlements of distributive justice underpinning adaptation limits are. In the following sections, we discuss different proposals from the literature on climate justice in the context of the three most standard approaches to distributive justice. All of them can deal with the above challenges because they aim to justify distributive claims by showing what a just distribution should look like and hence how distributive priorities should be set. In our discussion, we show why sufficientarianism is the most plausible approach to distributive justice for dealing with adaptation limits.

Defining adaptation limits as principles of distributive justice

In environmental contexts, justice claims are typically identified within one or several of the following three categories of justice: distributive justice, procedural justice, or justice as recognition [21]. Recent research on the normative implications of climate change has focused primarily on distributive justice and thus on how to fairly allocate responsibilities in emission abatement and other areas of climate policy [22–24]. We here also focus on distributive justice but not to assign responsibilities. We focus on distributive entitlements in adaptation and its limits. In this perspective, principles of distributive justice provide justifications for why and to what extent it is legitimate to demand resources to protect certain goals and needs. They define what is owed to all those affected by particular climate threats in terms of resource allocation. In the philosophical literature, the most standard principles of distributive justice to allocate distributive entitlements are egalitarian, prioritarian, and sufficientarian.

In climate justice, egalitarian principles are most prominent regarding the question of how to allocate the rights to produce emissions [25,26]. Given a restricted emissions budget, everyone should be entitled to the same amount of emissions. The core idea of egalitarianism is based on the so-called presumption of equality [27]. This presumption states that the default distribution of resources should be an equal distribution unless there is a convincing justification for inequality. Thus, if people have less than an equal amount of relevant resources, they can

legitimately claim that distributive equality is being restored or that inequality is convincingly justified [28–30]. A key element of egalitarianism is, therefore, its comparative character: in the absence of a compelling justification, everyone can legitimately claim the same amount of relevant resources compared to others.

In the context of adaptation limits, this may mean that a community that is no longer able to sustain its livelihood through agriculture has a legitimate distributive claim to assistance that enables it to resume its livelihood in a comparatively similar way to other communities. However, according to the egalitarian principle, the legitimacy of such a claim depends strongly on how other communities fare. If several communities prone to salination lose their agricultural capacity to the same extent, no community will have a legitimate claim to remedy its situation, because each community is as well off as all others. That is, several communities facing similar challenges with their drainage system must, according to the egalitarian principle, be considered comparatively equally well off and, therefore, not entitled to assistance, even though their most basic interests may be at stake. This seems intuitively problematic. The distributive entitlements of communities to secure their livelihoods should not depend on how others do but on what their legitimate objectives and needs are. Thus, at least in this respect, an egalitarian principle to justify the distributive entitlements underpinning adaptation limits seems problematic.

Prioritarian principles are less prominent in the climate justice literature but have some weight in social welfare frameworks dealing with climate policy [31,32]. This may be because the climate justice literature is primarily concerned with allocating responsibilities for climate action rather than with justifying distributive entitlements [22–24]. Prioritarianism assigns priority to those who are more disadvantaged in terms of their socioeconomic conditions. This means distributing scarce resources in such a way as to improve the situation of the worse off as much as possible [32–34]. In the context of climate adaptation, this may mean that those facing higher risks of overstepping adaptation limits are given higher priority for assistance. However, defining the distributive entitlements underpinning adaptation limits in this way faces the crucial challenge of not defining exactly what these entitlements consist of. This is because prioritarianism only defines that priority is owed to the worse off and that entitlements diminish gradually the better off someone is, but it does not clarify what is owed in distributive terms [33,35,36]. The principle itself does not clarify relative to what scale claims of distributive justice diminish and at what point they may extinguish.

In climate adaptation, this would mean that claims for assistance to protect valued objectives are always

legitimate as long as some other community fares better independently of how well it is doing in absolute terms [37]. If one rice-growing community is better protected from salination than another, the latter should be given priority, regardless of whether it can secure its livelihood without facing significant challenges. This seems counterintuitive because priority is usually assigned relative to some scale or threshold of distributive justice, such as needs, desert, or equality, as the egalitarian principle would hold [38].

Thus, it becomes somewhat unclear whether, in the climate adaptation context at least, prioritarianism defines an independent distributive principle of justice, or whether it rather depends on other principles that define the scale relative to which priorities should be assigned [39]. We believe that in the context of adaptation limits, the prioritarian view should rather be seen as a way of implementing distributive principles when resources are scarce: prioritizing those who are more disadvantaged relative to a distributive principle to be realized, that is, the entitlements underpinning adaptation limits. Priority should be given to those communities that are better off if they face higher risks than others or are unable to secure their livelihoods. The first corresponds to the egalitarian principle, the latter is what can be justified by a sufficientarian approach.

Sufficientarianism defines thresholds of what is enough regardless of how those entitled compare to one another [40,41]. Thus, everyone has a legitimate claim to all the resources necessary to reach the sufficiency threshold independently of whether some others have more or less than they do. A threshold of protection against salination is owed to every rice-growing community independently of how badly off others are compared to them. If they do not have the resources to achieve this protection, they are entitled to assistance. In our view, sufficientarian principles of distributive justice can meet the challenges faced by egalitarian and prioritarian principles in defining the distributive entitlements underpinning adaptation limits.

First, like egalitarian principles, sufficientarianism provides a standard relative to which the distribution of resources must be prioritized; the sufficiency threshold of entitlements. It defines that entitlements of distributive justice extinguish when someone has enough and that those further below the sufficiency threshold should be allocated more resources. Second, and contrasting with egalitarianism, sufficientarianism makes absolute statements about entitlements, thereby solving the comparative problem plaguing egalitarianism. Following sufficientarianism, adaptation priorities are assigned according to a standard of having enough, regardless of how much others have. When adaptation threatens to fail to secure the legitimate objectives and

needs associated with sufficiency and hence a community reaches a limit, those affected have a legitimate claim to remedy their situation as described by the sufficiency threshold [42]. Every smallholder rice-growing community has a legitimate claim to assistance if it lacks the resources to build dikes or improve its drainage system.

Defining adaptation thresholds in their context

Sufficientarian approaches often use lists of criteria to define the content of thresholds, such as basic needs, capabilities, or human rights. Basic needs such as food, shelter, or health define what is considered essential for basic human functioning or survival [11,43,44]. Capability approaches list the possibilities that must be open to human beings in order to realize a decent human life. Relevant capabilities beyond food, shelter, and health include the possibility of belonging, meaningful relationships with non-human nature, or leisure. Human rights approaches to sufficientarian principles of distributive justice are either practice-based, relying on the list of human rights of the current human rights regime, or propose new human rights or lists of human rights [45,46]. This latter approach is famously used to justify climate action as a matter of justice to avoid human rights violations [23]. Common to all these approaches is the idea that available resources must be distributed in a way to realize the various thresholds for all concerned.

In recent debates on climate justice and adaptation, sufficiency thresholds have been discussed in terms of capabilities in two ways. First, if individuals are harmed by climate change and fall below a certain absolute threshold of distributive justice, such as the conditions for a decent human life, then it can be argued that this harm is illegitimate [14]. Thus, if people are entitled to the resources necessary for a decent human life in the sense of the capabilities approach, these conditions must be protected and hence could be understood as the sufficiency threshold underpinning adaptation limits. Salination that undermines decent living conditions entitles a smallholder rice-growing community to receive resources to improve its dikes.

Second, under the current climate regime, communities and their members are ascribed an entitlement to climate resilience [47]. In the case of adaptation, climate resilience means possessing the necessary resources to keep risks to objectives and needs within a tolerable range [15]. Again, the capabilities to be adaptation resilient could be understood as the distributive threshold entitlements underpinning adaptation limits. This implies more than just providing a rice-growing community with resources to build dikes or a drainage system but also to provide them with the know-how and expertise to

implement and maintain these adaptation measures. Similarly, it has been argued that, for adaptation action to be efficient and effective, the availability of appropriate know-how and stable institutions, both making local communities capable of co-deciding adaptation action, are crucial and define entitlements of distributive justice [48–52].

A sufficientarian approach to adaptation limits leaves a number of questions unanswered. We here highlight three of these from the recent literature on sufficientarianism. First, the most prominent question in the recent literature on sufficientarianism concerns distributive justice above the sufficiency threshold. Traditionally, sufficientarianism has been understood to claim that there are no further concerns of justice above the threshold [41,53]. This claim could be justified on the basis of the classical distinction in climate justice between subsistence and luxury emissions which could also become relevant in climate adaptation [54]. If a community secures objectives and needs that are more demanding than an adaptation limit or even secures luxury, it would not be entitled to assistance to protect them.

Recent research has pushed back against this idea, arguing that a threshold merely marks a level at which the nature and weight of distributive claims change in a morally significant way [55]. In the context of adaptation, this would imply that thresholds underpinning adaptation limits identify morally significant entitlements beyond which further distributive justice claims may still apply. According to this pushback, while securing rice production may be fundamental to a community's survival, other less fundamental concerns, such as access to quality recreational facilities, would remain a distributive justice concern but of different nature and weight.

Second, a related question concerns the relationship between sufficientarian thresholds and other entitlements of distributive justice. So-called strong sufficientarian approaches claim that thresholds should be given (lexical) priority over all other distributive justice entitlements; as long as resources are not distributed in a way that grants sufficiency to all, no other justice claims are legitimate [40,41]. Weak sufficientarianism, on the other hand, argues that the granting of sufficiency thresholds may be outweighed by other considerations of distributive justice [56]. Depending on the approach, adaptation priorities are defined differently. Either it is an absolute priority to secure adaptation thresholds underpinning adaptation limits for all members of a community, or this claim can be balanced with other considerations of distributive justice. Even though food security is a crucial goal of adaptation action, weak sufficientarianism would accept that even if this entitlement is not fully realized for all, some resources must be

invested to promote distributive justice for those who are not starving. Hence, even though not everyone can grow enough rice to feed their families, issues of access to recreational facilities could outweigh the more fundamental concerns.

Finally, another issue concerns cultural diversity and the question of defining the content of a sufficiency threshold. Applying community-specific definitions is consistent with justice as recognition but runs the risk of asking either too much or too little. Communities with so-called ‘expensive tastes’ may ask for too much as a sufficiency threshold and, hence, for too many resources. By contrast, communities that adapt their preferences to structural injustices may be satisfied with much less than they deserve [56,57]. Conversely, the use of a non-community-specific threshold runs the risk of cultural domination, as such a threshold tends to override community-specific values. On the one hand, it must remain the decision of the rice-growing community concerned to determine what is sufficient to meet its needs for a decent human life. On the other hand, a poor community may have the right to improve its situation but may not demand the resources necessary to do so. This justifies a community-independent definition of a sufficiency threshold of distributive entitlements.

In order to advance adaptation policy in a just manner, it is important that these three open questions are considered, and that further normative and conceptual research on adaptation limits and their underpinnings of distributive justice are undertaken.

Data Availability

No data were used for the research described in the article.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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