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Food security as a global public good

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Summary: Food security brings a number of benefits to humanity from which nobody can be excluded and which can be simultaneously enjoyed by all. An *economic* understanding of the concept sees food security qualify as a global public good. However, there are four other ways of understanding a public good which are worthy of attention. A *normative* public good is a good from which nobody ought to be excluded. Alternatively, one might acknowledge the *benevolent* character of a public good. Others have argued that public goods demand being public in the sense of being *visible* to all. Finally, it has also been argued that public goods are those goods which need *joint action* to be produced and maintained. This chapter discusses these five understandings of the public good in relation to food security and highlights the advantage of assessing policies from each of these perspectives.

Introduction

In standard economic parlance, public goods are defined as goods that are non-excludable and non-rivalrous in consumption (Stiglitz, 1999). Since these goods can be enjoyed by all, but require resources, political will and effort to be produced and maintained, they are often in short supply or absent entirely (Anomaly, 2015). Well-known examples of public goods are world peace, a stable climate, and scientific knowledge. Communities collaborate to develop a public good by pooling resources together. Over recent decades we have observed a variety of attempts to provide public goods that are specifically designed to be enjoyed by everyone worldwide, the so-called global public goods. The characteristic of global public goods is that they are meant to make “humanity as a whole the *publicum*, or beneficiary” (Kaul, Grunberg, & Stern, 1999, p. 3). The aim of this chapter within this handbook is to highlight the advantages and shortcomings of applying to food security the concept of the global public good, as such an examination is crucial in drawing comparisons with the central concept of this handbook: food as commons.

To recognize food security as a global public good we need an understanding of the concept of the “public good” that goes well beyond economic reasoning,

incorporating normative and societal goals. Food security, similar to world peace, produces benefits from which humanity as whole will profit, irrespective of the level of individual well-being. Food is also a basic need, continuous access to food being crucial to the enjoyment of other interests, therefore every human being has a fundamental interest in food security (Page, 2013), or at the very least, their own food security. Yet which understanding of the global public good should be supported? And what are the advantages of using the concept of the public good as a policy instrument? Wide, interdisciplinary interest in public goods has brought a number of different understandings and usages of the concept. The aim of this chapter is to answer these questions by discussing five prominent characteristics attributed to public goods and their relation to food security. We begin with a short introduction of the concept of “food security” and then briefly introduce five different understandings of the concept of “public goods” before moving on to discuss them in detail.

1. The Multiple Interpretations of Food Security

The concept of food security is deeply rooted in the human rights discourse and has repeatedly changed its emphasis over recent decades due both to the dominant political and economic pressures and new insights gained from international development experience. To understand how food security is being understood one must first briefly consider the different interpretations of the concept, as the various interest groups defending food either as a tradable good or those activists and organizations claiming that food is a special, protected good, tend to adhere to different understandings.

Perhaps the most elementary and oldest understanding of food security is to calculate the total amount of food that is available in a country in proportion to the population (Burchi & De Muro, 2016). A country or region is labelled as food secure if the total availability of foodstuffs (usually measured in calories) matches the currently official standard per capita caloric requirement. This view ignores how food is distributed within the region and neither recognizes variations due to special needs, such as child-bearing or hard physical work, nor special circumstances, such as old-age or ill-health (cf. Gilson, 2015). This understanding has been partially motivated by political factors, reducing chronic hunger being seen as a central factor in improving the stability of a country or region. Moreover, food insecurity could make socialist movements more attractive (Perkins & Jamison, 2008). A major problem of this perspective is that it focuses on food availability without paying sufficient attention to actual access to food (Jarosz, 2014). Neoliberal agriculture and food policies, which are particularly keen to rely on market incentives and international trade, have embraced this understanding as it is compatible with a highly-industrialized, export-oriented food sector.

After recognizing this shortcoming, a modified view identifies a household as a measurement unit (Burchi & De Muro, 2016). Whilst this perspective has the added advantage of recognizing important differences in terms of food availability within a country or region, it fails to be sufficiently alert to food insecurity within the household, particularly that suffered by female family members. Such revisions have seen the improvement of human agency as an important goal. The focus is not only on the absence of hunger, but how adequate nutrition could improve human functioning (Sen, 1981). With this change in mind, it becomes important not only that people have sufficient access to food but a new concept of “food utilization” has been introduced to highlight the key point that food is actually used to improve nutrition (Burchi & De Muro, 2016). This understanding remains of interest to the food industry as it gives a significant advantage to those food producers which can produce and sell food cheaply. As an approach that particularly welcomes food utilization it often leaves the adequacy of foodstuffs as a secondary consideration.

A newer worry is the issue of food adequacy, which accommodates not only personal and circumstantial needs, but also cultural and religious preferences. This understanding is presently one of the most widely-supported definitions in food advocacy, the concept demanding not only access to a continuous and sufficient supply of food, but also leaving some room for food choices:

“Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (1996 World Food Summit, cited in FAO, 2008)

This view not only focusses on whether food is being utilized based on nutritional standards, but that it is also perceived as adequate in terms of social, cultural and individual preferences and needs. Such an understanding is especially important when addressing malnutrition, since people who avoid some of the available foodstuffs will have a less diverse diet (Thompson, 2015).

It is important to underline that food security is not the same as the absence of hunger; in order to have food security people need to have their dietary needs met to live an active life. As is well known, active people have greater food needs than their sedentary peers. The overwhelming majority of people need access to sufficient food to safely endure the strains of physically demanding work, such as growing and preparing food as well as engaging in work that will allow them to purchase food. One problem which arises is that usually people who do physically demanding jobs receive lower wages and therefore can afford a lesser diet than people with sedentary jobs; and women

who become mothers need access to an adequate diet that will allow them to cover the physiological demands of childbearing and breastfeeding without overburdening their own and their children's health.

Despite the widespread awareness of people's different food needs, the major international organizations' policy analysis interprets hunger as chronic undernourishment, that is, when a person receives less than the minimum amount of energy needed to survive a sedentary lifestyle over the period of a year (FAO WFP and IFAD, 2015). In day-to-day life, it is crucial that people attain access to more food than this core minimum. Because, in order to maintain energy and health, people need access to a continuous and sufficient supply of food, they have to sell their labour or engage in work to produce their own food. As most countries lack food distribution programmes sufficiently extensive to guarantee food supplies for all the non-working population, performing work is the only way to have the resources to buy or produce the food they need (Elver, 2016; Pogge, 2016).

As a general rule, the different food security concepts focus mostly on people having access to adequate food; they do not place a particular value on how and where food is produced, as is the case with the principle of food sovereignty that is currently supported by a plethora of peasant organizations and agroecologists (Agarwal, 2014; Timmermann, Félix, & Tiftonell, 2018). The food sovereignty discourse emerged from farmers' organizations and food advocacy groups to counter neoliberal practices and the globalization of food and agriculture by demanding democratic control over food and agriculture policies and over the means of production (Beuchelt & Virchow, 2012; Jarosz, 2014). In our present analysis it is vital that one bear these crucial differences in mind.

2. Multiple understandings of a Public Good

This admittedly narrow snapshot of the academic literature identifies five different understandings of the concept of the public good applicable to the establishment of food security. First, there is the aforementioned, standard economic understanding of public goods, that is goods from which it is not possible to cost-effectively exclude others and which are not depleted when consumed. Second, some authors claim that public goods incorporate a normative call. Nobody ought to be excluded from the good in question. This approach to the concept is supported by the notion of human rights, in this context the human right to adequate food (UN Committee on Economic Social and Cultural Rights, 1999). A third understanding emphasises the benevolent nature of the good for the public. A fourth attribute of public goods is having a public dimension – in the sense of being visible – in contrast with the private dimension of goods that are meant

for individual consumption. Here we defend the idea that a failure to address food security, in particular the consequence of hunger, is at odds with attempts to recognize others as equals, as it provokes in our society a tendency to both ignore and block images of those suffering from hunger. Most people need to ignore images of hunger in order to enjoy day-to-day life and in this way they marginalize the needy. Fifth, as a public good, food security is a social product that requires “jointness of production”, demanding global, coordinated participation. As such, eradicating hunger has to be a continuous global commitment. Let us proceed by examining in detail these different understandings.

2.1 The economic understanding of public goods

Perhaps the most influential definition is the classic economic understanding of public goods, which encompasses goods that are non-excludable and non-rivalrous in consumption (Drahos, 2004). Here some clarification is required. A food item, for example a potato or carrot, is both excludable and of rivalrous consumption. I can hide a potato and eat it on my own. If we consider all food, in the sense of the global food supply, food remains excludable, as access can be hindered, yet as long as we can retain the level of current food production to population ratio, food is not typified by rivalrous consumption as there is sufficient food available to satisfy everyone’s hunger (Ausín, 2010). The world currently produces more than sufficient food to feed all human beings (Tittonell et al., 2016). As far as food security itself is concerned, there is an economic public good: a food-secure world produces a number of benefits that can be enjoyed simultaneously and from which no-one can be practically excluded. Therefore establishing food security faces the three major problems public goods raise (Vivero-Pol, 2017b). First, there is the free-rider problem: people will be able to enjoy the benefits of living in a food-secure world irrespective of whether or not they contributed to the existence of this public good. Second, since most countries and people cannot recoup their investment in food security, we will have an “undersupply” of food security, i.e. some people will remain food insecure as long as there is not a sufficiently large economic incentive to remedy this situation. Third, single groups retain the full advantage of withholding their contribution towards food security, whilst the price paid for such omissions is paid by society at large, leading to the deterioration of the good, i.e. food insecurity.

Since this understanding sets a special value on the non-excludable advantages of living in a food-secure world, it is important to spell them out. Here it needs to be noted that these arise directly from living in a society that is free from the suffering which food insecurity involves and indirectly from the improved social environment food security

creates. These advantages can be grouped thus: (1) moral benefits, (2) public health gains, (3) market opportunities, and (4) enhanced stability.

First, and most obviously, there is the moral dimension. According to the majority of moral codes, a world in which people do not suffer an avoidable harm – hunger – is simply a morally better world than one in which a seventh of the population (or a ninth or any other percentage) lacks access to sufficient food to live a flourishing life (Lappé et al., 2013). There are a number of ethical perspectives which strongly condemn current levels of hunger. Let us review the benefits of food security under the utilitarian, virtue ethics and liberal perspectives.

Utilitarian ethics generally dictate reducing the number of people who suffer and the intensity of their suffering. Implementing this demand requires resources to be spent on those who can more effectively transform these resources into happiness. This makes the reduction of hunger, as an obvious form of suffering, imperative. People who act according to this ethical reasoning will have to expend their resources alleviating the worst forms of suffering instead of using them for resource-intensive banal pleasures. (Singer, 2004). Money spent on luxuries, such as, for example, trips to exotic islands or jewellery, should rather be used to support agricultural development programmes and urban farming. Similarly, in the context of virtue ethics, while others are desperately in need of help, practising the virtue of beneficence is a higher priority than enjoying resource-intensive banal pleasures. Caring for others should not only be confined to the emotional level, but also demands specific action from each individual, including lifestyle changes. For those following utilitarian reasoning or virtue ethics, a hunger-free world not only yields the advantage of eliminating a severe form of suffering but also renders morally acceptable the spending of resources upon personal pleasures, or earthly delights, such as enjoying a trip to the countryside (Alemany, 2012).

The case is somewhat more complex for ethical theories that embrace a strong element of liberalism. Generally, liberalism protects the enjoyment of one's freedom as long as one does no harm to others. The extent to which this no-harm principle limits our freedom is highly contested, as there is no consensus on what counts as harming others (Holtug, 2002). Some hard-line libertarians defend the idea that one's freedom to extend one's fist ends just before someone else's nose begins. For this group, harm is usually understood as physical violence. A very different understanding of harm is defended by those such as Thomas Pogge (2008), who considers participating in and sustaining unjust institutions as causing harm to others. If we embrace an extensive understanding of harm, we are required to establish institutions that have the power to protect people from suffering the negative consequences of our actions. Depending on the understanding of harm adopted, it would morally require – for example – redrafting trade policies and

mitigating climate change owing to their negative effects upon food security in many regions of the world (cf. De Schutter, 2009; McMichael, 2017). If we consider the prevention of harm as an ethical goal, establishing food security would amount to a guarantee that the direct and indirect harmful effects of our actions would not cause harm beyond a clear threshold, or bottom line.

Second, food security leads to an overall improvement in public health (De Schutter, 2011). People who suffer chronic malnutrition are also more likely to transmit disease. Here it is important to underline the difficulty for food-vulnerable people to procure food on their own. People who do not have continuous access to adequate food are more prone to fall sick, and when they do fall sick, they are less capable of working, which reduces their income (or ability to grow food) and thus further diminishes their health (Friel & Ford, 2015). Improving food security reduces the propensity of diseases to propagate, something that benefits all human beings.

Third, there is the economic factor. People who have access to an adequate diet are less likely to be an economic burden upon society, or even better, people who have enough to eat become capable of cooperating in economic, cultural and social endeavours to the extent of their potential capacities. A very large portion of the global population suffers from insecurity to cover basic needs, which might not allow them to engage in productive market interactions, making them more of a cost than an opportunity to industrial nations (Homann, 2007), as desperate mass migration currently shows. Large commercial entities have an economically rational interest in the reduction (or even elimination) the worst forms of hunger and malnutrition as a quintessential element of increasing future market opportunities.

Lastly, large-scale hunger or food insecurity has a destabilizing effect that may lead to food riots and major civil unrest (Page, 2013). Food riots erupt when economic and political injustice has reached a tipping point; people take collective action to object to the direction society has been taking by attempting to bring an end to “business as usual” (Patel & McMichael, 2009). Fear, desperation and a strong commitment to social justice can mobilize large masses of people to force heads of government from office. Such revolts may have substantial short-term negative effects for both rich and poor citizens. Establishing food security has the advantage that widespread discontent is reduced, which is a stabilizing factor of benefit to everyone living in food-secure areas.

A special advantage to adopting the economic understanding of public goods is that it highlights the fact that we cannot cost-effectively exclude from the benefits of living in a food-secure world those members of our global society who do not contribute to food security. The impossibility of excluding non-contributing people or countries

from the benefits of food security brings a series of problems that need be tackled to ensure that sufficient governments commit to significant cooperation. As with any public good, the establishment of food security suffers from the problem of free riders. People generally dislike carrying others, having to do more than their fair share to achieve a common goal from which everyone benefits. Here it is crucial to note that not contributing another person's portion simply to avoid the injustice of providing more than what one believes to be one's fair share hardly serves an excuse for well-off people to fail to care for people in dire need (Stemplowska, 2016). Relieving hunger-related suffering is a higher priority than ensuring fairness in the distribution of burdens amongst wealthy contributors. People have a moral duty to contribute towards food security on the basis of capacity, not equality.

This understanding of this particular public good also clearly acknowledges the fact that the good cannot be adequately provided by the market, as food security demands that all people, irrespective of purchasing capacity, have the opportunity to cover their nutritional needs. Being aware of the positive externalities entailed by food security is of fundamental importance in justifying policies that seek to stimulate collective action to establish this public good. However, as a public-good understanding that strongly highlights the positive externalities of the provision of the good, its political support will be strongly dependent upon how these externalities are perceived. The population will have to seek out the necessary information if it is to gain an accurate perception of these externalities, something it may have little incentive to do (Anomaly, 2015). The different understandings of food security may lead to varying judgments on when food security has been accomplished, thus posing the risk that political support may be terminated under the assumption that the public good has already been delivered and does not require additional resources.

2.2 The normative call of public goods

A second understanding of public goods emphasizes the importance of these goods being accessible to all, thus embracing a certain ideal of solidarity, striving for nobody to be involuntarily excluded (cf. Brody, 1996; Kallhoff, 2014); in a stronger form, this moral imperative entails that individuals ought not to be excluded from using the good (Ausín, 2010). This latter understanding is what John O'Neill (2001; this volume) has termed a normative public good. Whilst an economic understanding of public goods refers to goods from which individuals *cannot* be excluded, public goods in a normative sense are goods from which people *ought not* to be excluded (Vivero-Pol, 2017b).

According to the understanding of food security as a normative public good, through act or omission nobody should deprive others of the right to access food. The idea of food being a good from which nobody ought to be involuntarily excluded is also well anchored in the human rights discourse.

There are, however, several problems with this understanding. In order for food to be available, it first needs to be produced. In its most basic form, this requires that food producers have some type of incentive to engage in food production and that they have the necessary resources to produce food. To stimulate food production, the most common incentive system is to give food producers, or farm owners, the right to decide what happens to their produce. As a consequence, most people need to provide some resources – usually money or labour – as a token of exchange to access food. To prevent people from being unable to access food, a number of countries have established social security programmes for their citizens so they all may access food whilst food producers receive remuneration for their work. There are other approaches to arranging access to food, although in today's world they are mostly reserved for emergencies or exceptional circumstances, such as community food banks, direct delivery of food rations or food aid.

Here we have to ask ourselves if there are any valid reasons for making exceptions that would allow the withholding of food. Under a very strict understanding of normative public goods, food can never be withheld, even in the most severe cases of punishment. People may refuse food, if they so wish, but they should not be denied access to food. Also, as recognized in human rights law, hunger should never be used as weapon of war (Elver, 2016). In a strict moral sense, this would prohibit any retaliation policies, embargos or sanctions which have the direct or indirect effect of making it more difficult for the civil population to access food. This still leaves open the question of whether someone deserves more food in cases of severe shortage, when there is no option other than rationing food supplies. Again, strictly speaking, a normative understanding of a public good would make past conduct irrelevant. In cases of severe shortage, food would have to be distributed according to urgency of need, a form of triage or a lottery system, and not by applying any concept of desert, since, as mentioned, according to this understanding nobody deserves to be food insecure.

The inclusion in policymaking of the principle of food being a normative public good would have to be linked with massive limitations on how to commercialize food products. To establish this public good, there would need to be a balance between rewards that are large enough to stimulate food production but are small enough to avoid inhibiting the population's access to food. Moreover, governmental aid programs would have to be established on a global scale to ensure people did not end up excluded from this public good due to financial limitations, thus necessarily constraining the current

liberty of food producers and commercial entities to seek profits from food, agricultural inputs, water and land (Wilkinson, 2015). To realize food security as a normative public good, we would need to centralize the dimension of food as a human right and reduce its current role as tradable commodity (Vivero-Pol, 2017a).

In a similar vein, this principle strongly affects people's liberty to discard food – a right people often assume is unconditionally attached to one's property (Strahilevitz, 2005). The current everyday understanding of ownership can make us forget that ownership has, from a normative standpoint, always been conditional and subject to usage restrictions. Famously, the 17th Century English philosopher John Locke, who upon justifying the property rights one acquires over an object through mixing a significant amount of one's labour in it, made such a right conditional upon three provisos. One's enclosure of an object should be subject to (1) leaving enough and as good for others, (2) covering subsistence needs (or charity), and (3) the claim leading to non-wastage (Widerquist, 2010). As is evident, this affects the liberty to use food in different ways. As long as people demand access to food to cover nutritional needs, others may not grab food beyond subsistence needs or discard food products to serve economic or other interests. The strong interest in not permitting hunger trumps the food owners' interest in retaining the liberty to discard food. In Locke's property theory, wastage is also theologically condemned: God gave humanity plenty for everyone to enjoy. Allowing uncollected fruit to spoil on the ground while people are hungry would be ingratitude for what we have received from God, as we as humanity would be not making the most of what has been bestowed (Locke, 1689/1960). It is unclear if this non-wastage condition should be interpreted so far as to command the most efficient use of resources (Hull, 2009; Timmermann, 2017). Adhering to a non-wastage principle would render unacceptable some practices common today in the commercial sector, such as discarding produce for cosmetic reasons or for not having received the expected remuneration (Gjerris & Gaiani, 2013) whenever this produce is claimed for hunger relief. The principle would also oblige to reduce food spoilage by establishing incentives to make food distribution more efficient and to work closer with food banks and communities to ensure the prompt use of food close to its genuine use-by date (cf. Giorda, 2014). A strict interpretation of the non-wastage principle would not only prohibit the wasting of the edible food we need, but also the wastage (or even the inefficient use) of the resources needed to produce food. This would render unacceptable such land and water distribution arrangements as lead to wastage, or fail to leave enough and as good to cover the subsistence needs of others.

By recalling that food is crucial to the satisfaction of human needs, another line of reasoning argues that thereby people can exert a legitimate claim for food out of necessity (cf. O'Neill, this volume). Such a right originating in necessity is currently being revived

from its historical roots, to claim access to resources vital to secure subsistence (Mancilla, 2016; Van Duffel & Yap, 2011). A right of necessity may trump the property rights of people who have more than they need to cover their subsistence, provided that the case of dire need is not caused by the claimant's own fault. For example, a poor farmer who has lost her means of subsistence due to drought could claim a right to access land, water and food to restore her means of subsistence (Mancilla, 2012).

The normative understanding of a public good, when applied to food security, has the prime advantage of making it absolutely clear that for no reason does anybody deserve to be food insecure. Such a view is nowadays embraced by a number of initiatives that aim at eradicating hunger – by working towards zero hunger. The idea of zero hunger strongly embraces the normative goal of ensuring that nobody is excluded from accessing food (Paes-Sousa & Vaitsman, 2014). It does not settle for more modest goals, such as the halving of the proportion of hungry people targeted in the Millennium Development Goals. To achieve the zero hunger target, countries need both to improve the sustainability, efficiency and reliability of food production and distribution systems and to implement programmes tailored to the local social and environmental circumstances to ensure that sufficient, adequate food reaches everyone without discrimination. The demand for zero hunger has become even more pressing as humanity continuously produces more food than is needed to cover basic needs. Ending world hunger is a feasible goal and therefore should be prioritised (Pogge, 2016). As long as there is sufficient public awareness of the importance of adequate nutrition, this framework can be used to not only justify freedom from hunger, but also the more stringent requirements of the later understandings of food security.

2.3 Public goods as beneficent goods

A third understanding of a public good interprets a good both as a (tangible or intangible) commodity and as something of positive value to the general public (in the sense of being universally beneficent). From this perspective, it is important that the public at large perceives the good as a welcome social improvement. In this sense, the public interest is often contrasted with interests which are solely private (Lever, 2013), echoing the distinction Rousseau (1762) drew between *volonté générale* and *volonté de tous*. This does not necessarily suggest a strict separation between acts intended for individual profit-maximization and those addressing public welfare. Actually, a number of philosophical traditions argue the converse – that a prolonged and general commitment to the well-being of society will ultimately lead to an increase in individual welfare.

The principle that food security should be a beneficent public good also requires that we remain critical of how food security is being achieved. Here not only the public good itself has to improve social welfare, but also the way in which it is achieved needs to be perceived as socially acceptable. Short-sighted policies aiming at food security may have negative effects on social relations, nature and future generations. Let us briefly review some of these dangers.

Out of principles of humanity, the most obvious case is that there is nothing laudable in having reached food security after leaving the hungry to starve to death, thereby stopping them counting as food insecure. A major issue of concern is how food production affects agricultural workers. Regional specialization in seasonal produce demands a massive migrant workforce that is often undocumented and rarely benefits from labour protection laws (Loo, 2014). Similarly, conventional food production may negatively affect communal values and jeopardize traditional ways of life. Paying too high a price in terms of the suffering of agricultural workers in order to achieve food security is incompatible with an understanding of a public good that sees this good as benevolent.

Moreover, if we want to assess the benevolent nature of a good we need to bear in mind that public goods are also enabling goods (Vivero-Pol, 2017b) and make a distinction between food as a public good and food security as a public good. Whilst the availability of food generally has a positive effect upon society, some caution is necessary in a food-insecure world. Food needs to be sufficiently well-distributed. When we have people with an abundant supply of food co-existing side by side with food insecure people it is likely that we will observe cases of extreme exploitation (Patel & McMichael, 2009). While food security makes exploitation more difficult, situations where food is available in an insufficient quantity or unevenly distributed – scenarios we encounter while progressing towards food security – allow exploitation.

Another issue of concern lies in the extent to which food production destroys nature. Whilst some might accept the destruction of nature as an acceptable price to pay for avoiding hunger, it is by no means mandatory that such a choice be made between saving nature and eating. Similarly, conventional food producers cannot morally excuse their enormous environmental impact by claiming that this form of food production is the only way to feed the world (Thompson, 2015). We already possess the knowledge to significantly reduce the environmental footprint of food production, as agroecological farms throughout the world demonstrate (Geertsema et al., 2016; Tiftonell et al., 2016), yet such methods demand more labour and do not allow the overwhelming corporate control of food supply chains (Timmermann & Félix, 2015).

There is also much debate on how far the interests of future generations need be considered (Gosseries & Meyer, 2009). Some argue that the interests of future generations should be considered as part of the general public interest. Others claim that in order to have rights one must exist – one must already have been born. Sustainability principles and the human rights discourse demand that our current food production efforts should not jeopardize the ability of future generations to produce the food they will need (Godfray et al., 2010). Currently, our food production systems face the charge of being environmentally unsustainable by using large amounts of fossil fuels, contributing to genetic erosion, reducing the quality of soil and contaminating aquifers, rivers and oceans (Schipanski et al., 2016). This calls for urgent policy changes and investment in research into sustainable agriculture to reduce the environmental footprint of food production in order for current food security not to jeopardize future food security (Tiftonell, 2013). Food security cannot be perceived as something that benefits the public at large if achieved by sacrificing the fundamental interests of future generations (Korthals, 2004b).

Understanding food security as a global public good that should be universally beneficent has the advantage of stimulating one to think about the price society pays for reaching this goal. The fact that food is a basic need does not mean that food procurement is not to be balanced against other important social goals, such as the protection of the environment, animal welfare, indigenous communities, agricultural workers and long-term sustainability (Korthals, 2004a; Lawrence, 2017). The road to this goal may pass through a series of injustices. In particular, relying on a concept of food security that does not fully embrace principles of long-term social and environmental sustainability may lead to the ignoring of such types of injustice. This understanding may grant us a stronger sensitivity, one appropriate for identifying such injustices and enabling an ethical evaluation of such trade-offs.

2.4 A good that has been made public

A fourth conception of a public good stresses the importance of the good being visible, a publicity requirement so to say, compared to private goods, which can be subject to requests for privacy (cf. Rabinovitch, 2005). How does being public relate to food security?

First, the people suffering food insecurity need to gain visibility. Currently a very large number of people are practically invisible to the media. In many regions of the world, richer neighbourhoods have isolated themselves from the sight of poverty, often by building high physical walls. Hunger leads to suffering and for people who are at least moderately caring, the images of hunger are something difficult to constantly ignore,

especially when confronted with a sudden increase in images of poverty. There is a general tendency to paper over the images of suffering in order to live life as usual. It has even been claimed that there is a widespread refusal to be near poverty or even the sight of poor people, often manifested in hate and hostility towards the poor, a phenomenon Adela Cortina (2017) has termed aporophobia. Throughout the world, nothing reveals poverty as strongly as signs of hunger. Irrespective of how one reacts to poverty, it is far easier to enjoy a meal when one is not directly in front of hungry people. While the ability to paper over images of suffering varies significantly among people, it is clear that it is difficult or impossible to build constructive social relationships while not visibly caring for the urgent needs of those with whom one engages.

Second, due to physiological constraints, especially chronically food-insecure people can rarely fully partake in the public sphere and thus can neither enjoy the benefits nor contribute as peers to the joint commitments of being active members in a world community. The more food-insecure people are, the likelier it is that they will concentrate their thoughts on solely on thing: food (Ziegler, 2011). Hunger and malnutrition hinders full bodily and mental functioning and development, often impeding people's participation as peers in social interactions that are not considered an immediate priority.

Lastly, if working towards food security is subject to the demands of publicity, it requires governments to be open about how food security is being achieved. Citizens should have adequate access to information on the progressive realization of the right to food and on the methodologies used to measure such developments (cf. Lappé et al., 2013). Food security becomes a public issue for which governments are publicly accountable.

By following the understanding of a public good in terms of a transparency requirement, we discover that establishing food security requires increased openness and accountability towards food and agricultural policies. Food security has the potential to bring back into the public sphere people who now suffer hunger, by facilitating their peer interaction and providing them with the strength to engage in cooperative projects. However, it is crucial that this understanding does not rely on a concept of food security that does not adequately assess nutritional needs. Today's international trade policies have made it particularly lucrative to sell processed food that satiates but lacks sufficient vitamins and nutrients, so-called empty calories, making people appear food secure, but at the cost of widespread obesity and other forms of malnutrition (Lawrence, 2017).

2.5 A good that requires “jointness of production”

A fifth perspective takes public goods as objects that by necessity have to be produced by a large group of people, that is, goods which require “jointness of production” (Waldron, 1987). The successful production – and in this case also maintenance – of the good requires collective and in most situations coordinated action. The fact that food security may require international cooperation is also recognized in the International Covenant on Economic, Social and Cultural Rights (1966, art. 11.2). This understanding of a public good highlights the fact that people need to come together to establish such a good.

Food security, as a good that demands continuous coordinated action, aptly epitomises the problem of jointness of production. Food security demands that food be accessible and available, requiring work for its production, transportation and preparation. In today’s highly populated world it is necessary to have plant breeders and extension services at work so that food production increases in proportion to population growth whilst reducing its environmental impact (McIntyre, Herren, Wakhungu, & Watson, 2009). Effective policing is also required to ensure that food delivery and production are not blocked, for reasons other than legitimate food safety concerns, by criminal organizations or interests groups. Policy analysts and state officials have to be vigilant that lobbyists do not obstruct the public interest in food production policies. Lastly, it would be negligent to fail to effectively govern and coordinate at every level the effective use of resources and to recognize the different needs of the affected population. To this end one need first understand that hunger is a multidimensional problem and therefore requires a complex set of policy measures (Paes-Sousa & Vaitsman, 2014; Page, 2013).

Maintaining food security as a public good also requires collective action. For food security to be meaningful, a number of scientists have to be employed to screen for food safety and to ensure that current production methods do not jeopardize future food production.

Furthermore, whilst some problems need be tackled at a local level, others need be dealt with globally. For example, to ensure that people are actually absorbing the nutrients they need from the food they eat, local undertakings will have to improve the sanitary infrastructure, water quality and public health in rural and urban areas (Pinstrup-Andersen, 2009). It has to be borne in mind that food security does not lead automatically to nutritional security; intestinal infections and parasites may hinder the full absorption of vitamins and minerals even for people who enjoy an adequate diet. Similarly, many problems can only be handled effectively at a global level, as international cooperation is required. Environmental and social factors increasingly determine the ability to achieve and maintain food security around the globe. In order to maintain harvest yields, we are

in need of global efforts to mitigate climate change and to control the propagation of pathogens caused by international travel and trade. In a similar way as a large sum of individual actions is required to deteriorate public goods such as a stable climate and biodiverse agroecosystems, creating public bads or harms such as climate change and vulnerable extensive monocrops, a large number of coordinated actions are also needed to mitigate and reverse such developments. Even if we adhere to the idea that addressing food security is a national responsibility, the means to achieve this target demand international coordination and cooperation, which requires making compromises regarding varying national priorities in order to reach international consensus (cf. Chen, Evans, & Cash, 1999). The interdependence of food production and distribution chains makes establishing food security a major challenge which requires cooperation at national and international level (Page, 2013).

The fact that a critical mass of people is required to provide a public good is not necessary an unfortunate outcome. The undertaking of a joint project creates a series of positive externalities, such as building networks and trust, improving dialogue capacity, establishing conflict resolution mechanisms and information exchange systems, among other community skills. Once these social capabilities are developed, these same capabilities can be used to address other urgent problems (Mormina, 2018), such as mitigating climate change, halting human trafficking and addressing neglected diseases.

Understanding food security as a public good that requires jointness of production immediately highlights some of the collective action initiated by the provision and maintenance of this public good. However, in terms of this understanding, establishing food security as a public good does not necessarily entail the use of democratic institutions. Under current levels of inequality, it is imaginable that a group of rich philanthropists or corporations might establish food security through technocratic means by hiring a wide range of specialists and managing effective food aid programs. The requirement of jointness of production demands only that an (in this case admittedly very large) number of people have to come together to develop and maintain the public good and does not presuppose a specific motivation or decision-making mechanism. Unfortunately, since most of the prominent understandings of food security place no particular value upon democratic decision-making, understanding public goods solely as requiring jointness of production, we are left without a strong normative tool to tackle the extremely high consolidation of the food sector and to improve the resilience of food systems by diversifying providers and retailers (Schiff & Levkoe, 2014).

Concluding remarks

Let us go back to our two initial questions: which understanding of a global public good should be supported? What are the benefits of using the global public good concept as a policy instrument? We have seen that all five understandings of public goods shine light on the different, sometimes slightly overlapping problems and opportunities which arise in establishing food security. An economic understanding of public goods creates awareness of the positive externalities of realizing food security for society as a whole and the necessity of looking for solutions that go beyond the market to attain the benefits of living in a food-secure world. The normative call of public goods demonstrates that depriving people of food security is a barrier to social cohesion and clashes with many deeply-anchored concepts of justice. Perceiving public goods as beneficent goods obliges us to carefully assess the costs we are currently paying to achieve food security, in terms of social relations, environmental degradation and the interests of future generations. The transparency requirement of public goods stimulates us to think about how we deal with food insecurity and to demand more openness in efforts to establish food security and assess any progress towards this goal. Lastly, understanding a public good as requiring “jointness of production” creates greater awareness of the fact that securing food needs is a complex task that requires a multiple set of solutions and coordinated collective action.

All five understandings of a public good reveal some key problems inherent in establishing and maintain food security, in addition to the many benefits of living in a food-secure world. These five understandings complement each other in the problem-benefit analysis of a public good. However, there is a central issue that is largely absent from the public good perspective, which is how and why public goods are provided and maintained. The role and design of a decision-making mechanism is largely absent and it appears that the idea of a public good is generally indifferent to how decisions are made. It is at this particular point that we may see the normative advantage inherent in the concept of food as commons and their strong ties to managing communities (cf. Vivero-Pol, 2017b).

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