

ADVANCING THE CONCEPT OF PUBLIC GOODS

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Recent decades have seen major shifts in what is considered and treated as private and as public. Economic liberalization, technological advances, and privatization have allowed markets to expand into new product areas and be integrated across national borders. In addition, ever-increasing numbers of private corporations have gone public, floating shares on stock markets.

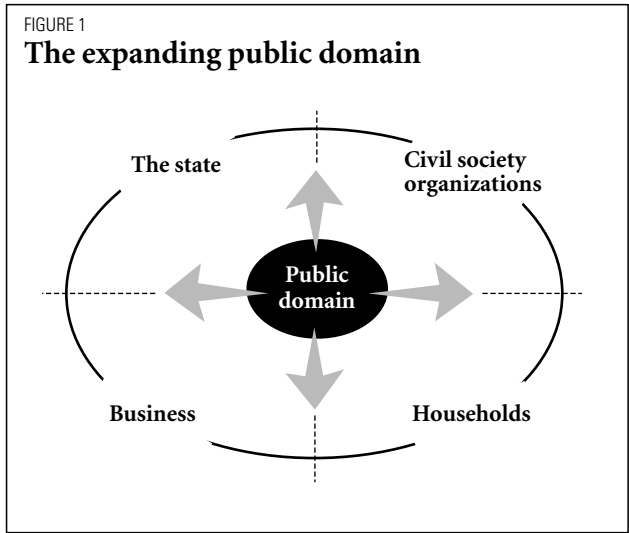
As a result the public—people in general and shareholders in particular—want to know much more about companies’ production and marketing principles. Consumers insist on product labeling. Labor and environmental policies can no longer be hidden behind boardroom doors. Public norms define expected standards. And civil society organizations assess and publicize corporate citizenship (Keane 2001; UNRISD 2000). Moreover, private businesses engage in self-regulation, in setting norms and standards, and in arbitrating conflicts—functions usually associated with the state (Cutler, Haufler, and Porter 1999).

Meanwhile, government programs increasingly follow market principles, outsourcing service delivery to private providers and recovering costs through user fees and other charges. There are also calls, from businesses and civil society organizations, for governments to operate more transparently and accountably. As the growing literature on good governance signals, the public sector often lacks publicness.

Yet as Edwards and Zadek (in this volume) show, businesses and states are also shining the spotlight of publicness on civil society organizations—on their representativeness and legitimacy. The shifts between private and public thus reflect greater shared concern for the public domain among all the main actors—the state, businesses, civil society organizations, and households—and for what others expect of them and how their private activities affect others (figure 1). A wider arena, and probably a new era, of publicness have emerged.

Assessments of these trends vary widely. Some analysts applaud the greater freedom granted to Adam Smith’s “invisible hand” (Micklethwait and Wooldridge

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2000). Others fear that the world is headed toward ruthless “turbo” capitalism, driven by shareholders and property owners (Luttwak 1999). Still others waver, recognizing both risks and opportunities. As Giddens and Hutton (2000) point out, optimists and pessimists write with equal fervor because they share the same preoccupation: trying to strike the right balance between markets and states.

Markets and states are two of society’s mechanisms for coordinating economic activity.¹ Each plays a role in providing private as well as public goods. Sometimes one mechanism works better, sometimes the other. It all depends on the good (or service) to be provided.² Curious, then, that there is hardly any debate on how to strike the right balance between private and public goods. Yet that is essentially the balance on which people’s well-being depends.

Even the lives of the richest people depend on this balance. Enjoying wealth is difficult in the midst of crime, violence, political turmoil, virulent disease, or excessive financial volatility. Thus public goods complement private goods. Similarly, escaping poverty is difficult if there is no public consensus on respect for all people’s lives—on people’s need to drink unpolluted water, eat safe food, have a limited working day, enjoy the security of lawfulness, and be protected against ill health. A decent life depends on having such goods in the public domain, available for all people to consume.

But what are private goods? And what are public? Economics textbooks define private goods as those that are rival in consumption and that have excludable benefits (or costs).³ That is, consumption of a private good by one person or group diminishes its availability for others—and one person or group can exclude others from consuming it. Private goods meet the requirement for market transactions. Their ownership can be transferred or denied conditional on exchange—that is, paying their price.

Public goods are defined as having the opposite characteristics: as being nonrival in consumption and having nonexcludable benefits. The market cannot price these goods efficiently. Accordingly, they are often classified as market failures and as justified cases for government intervention. Thus the textbook definitions return to the market-state issue: the provision of private goods is assigned to the market, and public goods to the state. The public domain appears as a residual category, with states performing tasks that markets cannot. But as noted, “private” can no longer simply be equated with markets, and “public” with states. Both contribute, among others, to the public and private domains. Moreover, the properties of goods can change from being public to private and from private to public.

This chapter revisits the standard definition of public goods, suggesting that a distinction be made between these goods’ basic or original properties (such as being nonrival or nonexcludable) and their actual characteristics—those that society has assigned to them. For some goods the basic and the actual qualities may be the same. But for many, perhaps even most, they are not. According to this expanded definition, public goods are those that are nonexclusive—that is, *de facto* public in consumption.

The next section shows how this definition may require reconsidering some aspects of the theory of public goods. The discussion then turns to global public goods, the public goods of interest in this volume. The analysis covers the definition and typology of these goods, the politics of their provision, and the dimensions of their production—highlighting issues clarified in subsequent chapters.

The discussion shows that to better understand global public goods, it is important to advance the concept of public goods in general, including that of national public goods.⁴ This is especially important because most global public goods are national public goods that, in the wake of globalization, have gone global. Viewed from the production side, they can be seen as national public goods plus international cooperation (see also the chapter on institutions by Kaul and Le Goulven in this volume). So, understanding global public goods requires understanding national public goods, and under current conditions the theory of public goods would be incomplete without a full discussion of global public goods. This chapter identifies some aspects of the theory of public goods that may need to be reconsidered and subjected to further study and policy debate.

RETHINKING THE DEFINITION OF PUBLIC GOODS

Although the literature on public goods is extensive and diverse, there is a standard definition of public goods anchored on nonrivalry and nonexcludability.⁵ But the properties of goods do not always correspond to this standard definition. The main reason is that society can modify the (non)rivalry and (non)excludability of a good’s benefits. Goods often become private or public as a result of deliberate policy choices. That is why consideration should be given to expand-

ing the definition—to recognize that in many if not most cases, goods exist not in their original forms but as social constructs, largely determined by policies and other collective human actions. According to this revised definition, public goods are nonexclusive or, put differently, *de facto* public in consumption.

Public and private as social constructs

The conventional approach to defining private and public goods is to identify a good's (non)rival and (non)excludable properties (figure 2), then define the good as private or public based on those properties. As noted, rival benefits mean that one person's consumption of a good diminishes its availability for others. For example, if one person consumes a glass of milk, it is no longer available for others. Although the link between rivalry in consumption and excludability of benefits is not always automatic, the example of the glass of milk shows that by consuming a rival good, a person can exclude others from its enjoyment. In this sense milk is both a rival and an excludable good, and so falls into quadrant 1 of figure 2. It is a private good.

Another example, land, is also both rival and excludable in its original state. As a result land has been a source of conflict throughout history. Many struggles over land continue, but many societies have introduced property rights regimes that regulate land ownership, minimize uncertainty, and reduce the need for constant vigilance to defend territories against potential claimants. Thus property rights make excludable goods, such as land, a private good of recognized and reliable stature. Private goods usually have clear property rights specifying who has the exclusive right to determine how they can be used, including the ability to trade them in the market.

Even though land is a rival and excludable good, many traditional societies maintain open, nonexclusive grazing and hunting grounds. And some communities still manage as commons such natural resources as land, forests, water, and plant and animal species (Barzel 1997; Bromley 1990; Demsetz 1967; Ostrom 1990). These approaches reconfirm that excludable resources do not necessarily have to be made private or exclusive. Doing so is a policy choice, and often a societal choice to ensure the sustainable use of certain goods.

Compare the standard classifications in figure 2 with those in figure 3, which groups goods primarily according to their socially constructed status. The main difference between the two sets of classifications lies in where in terms of "private" and "public" goods fall when assessed according to their basic properties and their socially determined status.

Consider the atmosphere. In figure 2 it is in quadrant 4 as a rival, nonexcludable, open-access good. Figure 3 also lists the atmosphere in quadrant 4, but with a difference. In quadrant 4B, which is part of the public domain, the atmosphere is listed in its familiar form, as a common pool resource. But today the atmosphere's status is contested. Because of policy debates on global environmental issues, the

FIGURE 2

The basic properties of goods: a conventional approach to public goods

	RIVAL	NONRIVAL
EXCLUDABLE	QUADRANT 1^a Examples: <ul style="list-style-type: none"> • Milk • Land • Education 	QUADRANT 2 Examples: <ul style="list-style-type: none"> • Research and development • Noncommercial knowledge (such as the Pythagorean theorem) • Norms and standards • Property rights regimes • Respect for human rights • Television signals
NONEXCLUDABLE	QUADRANT 4 Examples: <ul style="list-style-type: none"> • Atmosphere • Wildlife 	QUADRANT 3^b Examples: <ul style="list-style-type: none"> • Moonlight • Peace and security/conflict • Law and order/anarchy • Financial stability/excessive financial volatility • Economic stability/flagging growth • Growth and development potential (such as an educated workforce) • Efficient/inefficient markets • Communicable diseases spreading/controlled or eradicated

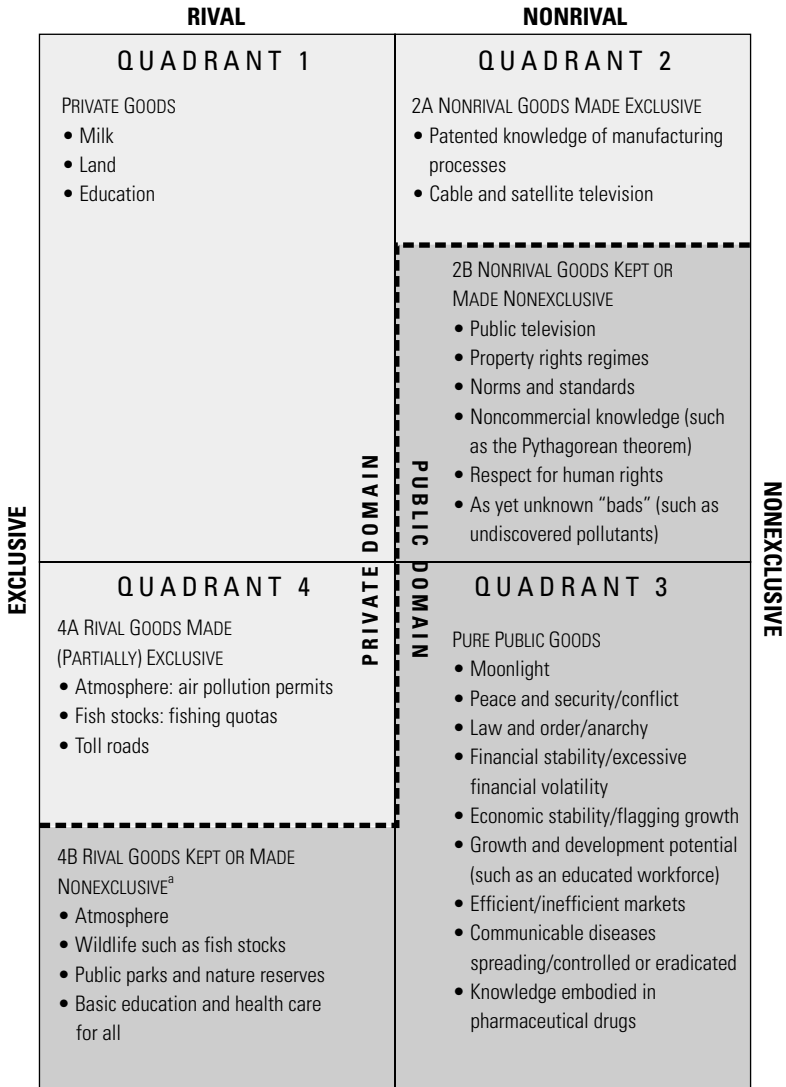
Note: These properties are basic in that they have not been altered by public policies or other human actions.

a. In the literature, goods that fall into this quadrant—those with rival and excludable benefits—are often automatically deemed private goods. But as argued in this chapter, the properties of (non)rivalry and (non)excludability only signal a good’s potential for being (public) private—not its de facto provision status.

b. Goods that fall into this quadrant are often called pure public goods—nonrival and nonexcludable in consumption. Most of these can exist in variable quantities, ranging from adequately supplied (as with peace) to inadequately supplied (as with open conflict). But the available “amount” of the good is the same for all consumers.

FIGURE 3

The socially determined status of goods: an expanded concept of public goods



a. There are two main types of goods in this category. The first are rival and nonexclusive, often referred to as common pool resources. Because these goods are innately rival, intensive use can threaten their sustainability. The solution is often to make such goods more exclusive, though not entirely so. New counterpart private goods such as pollution permits (see quadrant 4A) are often invented to manage the use of these resources. In countries with air pollution controls, for example, the atmosphere is still available for the general public to enjoy. But it can no longer be used excessively as a pollution sink by firms, which must now buy privately held and tradable pollution permits. The second type of goods in this category includes basic education and health care—public goods that can be made fully private but that are often made nonexclusive by policy choice.

atmosphere is increasingly linked to new, humanmade private products—namely, permits (allowances) for pollution (especially carbon dioxide) emissions.⁶ Such permits do not turn the atmosphere into a private good, but they limit some actors' use of it in a particular way. If an international agreement such as the Kyoto Protocol were to enter into force (see <http://unfccc.int/resource/convkp.html>), what would become a private (national) entitlement is a specific aspect of this resource: the right to use the atmosphere as a “pollution sink” or, more precisely, to emit certain types and amounts of gases into it. Limiting its use in this way would preserve the atmosphere so that all actors could enjoy it more broadly.

Hence the atmosphere appears twice in figure 3: in quadrant 4A because of national and international arrangements to preserve it and in quadrant 4B because—clean or not—it is available to be consumed by all people. Other natural commons, such as lakes, rivers, and various species of wildlife, have also developed dual status. Hunting permits and fishing quotas are widely used policy instruments for natural resource management. So are norms and standards limiting or banning the release of hazardous effluents into public waters.⁷ Thus the earlier finding for originally rival and excludable goods also holds for originally rival and nonexcludable ones, but in the opposite way: they can be public and there for all to consume in unlimited measure, but they need not be. (There are exceptions, however, discussed below.)

Nonrival goods have experienced similar policy-induced shifts. Some scholars have expanded the standard definition of nonrival goods to include those that can be made available to additional users at minimal or no cost (Nicholson 1998; Rosen 1999; Stiglitz 2000). For example, a new chemical formula could be shared with the concerned professional community simply through an email.

Yet many knowledge elements are made exclusive and private through property rights. In the form in which society often likes to see them, they fall into quadrant 2A of figure 3—in the private domain, as nonrival but exclusive goods. An example is manufacturing procedures protected by process patents. Yet scientific knowledge applied to and embodied in physical products, such as pharmaceuticals, tends to be subject to reverse engineering and authorized use.⁸ Judged on its natural properties, such knowledge is probably more of a nonrival, nonexclusive good and belongs in quadrant 3 of figure 3.

Society can also choose to make nonrival goods more public (nonexclusive) by design; see quadrant 2B of figure 3. In some cases it may even be compulsory to consume such goods. For example, people are usually required to respect property rights. Similarly, growing policy attention is being paid to encouraging respect for human rights, including gender equality.⁹ Most countries still have some way to go in making respect for human rights fully nonexclusive, ensured for all groups. Progress on universalizing more technical norms and standards—weights and measures, common currencies and languages, certain traffic rules—has been much easier to achieve.

Rival goods can also be kept or made nonexclusive; see quadrant 4B of figure 3. As noted for land, one policy option for doing so is to create a management regime that maintains broad public access. Public parks and nature reserves are examples. Another is to make rival goods available in such plentiful quantities that there need not be any competition over who gets to use them. Many societies have chosen this policy route for basic education and health services.

This approach is usually taken for two reasons. First, goods such as education and health are often seen as human rights and as having intrinsic value. Societal notions of fairness might require that education be made available to all in the spirit of commodity egalitarianism (Tobin 1970). Second, an educated and healthy population generates important private and public benefits. Educated people tend to be more productive and to contribute more to economic growth and development. Thus many countries have made basic education not just free and universal but compulsory as well.

If basic education is assessed only in terms of its natural properties, it falls into quadrant 1. But when judged on its actual form, as in figure 3, it must appear three times. In quadrant 1 it figures as a private good of educated individuals. In quadrant 4B it appears as a universally available, nonexclusive service. And in quadrant 3 it shows up as having added to a country's overall productivity and economic growth potential. Two of its dimensions (in quadrants 4B and 3) are in the public domain. As social institutions evolve, many goods—private and public—develop into “mixed” cases, displaying both exclusive and nonexclusive properties.

The goods in quadrant 3 in figures 2 and 3 are technically nonexcludable and so also exist *de facto* in nonexclusive form. An example is moonlight. With current technology, policymakers have no choice but to leave moonlight in quadrant 3. Its nonexcludability—and hence its nonexclusiveness—appears to be an innate quality. Obviously such goods are not socially determined and so constitute a possible exception to the notion of mixed or evolving properties.

But goods can change their positions if new technology develops. Take television signals. There was no question of public or private television before it became possible to scramble television waves and to restrict transmission through cables. Now some channels can be viewed only for a fee. As a result television falls partly in the private domain (quadrant 2A in figure 3) and partly in the public (quadrant 2B).

Returning to quadrant 3, the main goods are policy outcomes or overall conditions such as peace, law and order, financial stability, efficient markets, and communicable disease control and eradication. Once these conditions exist, all people can—and sometimes must—consume them. The goods' benefits are indivisible, so they exist for all in the same amount and with the same characteristics.

These goods are often more evident when undersupplied. For example, conflict is more noticeable than peace, which is often taken for granted. Similarly, peo-

ple realize that they are “part of the market” much more when a stock market crashes and the value of their investments tumbles. Or they recognize the close links between general health conditions when a flu epidemic strikes. The corresponding public bads are also listed in quadrant 3.

Hence figure 3 illustrates that in most if not all cases, publicness and private-ness are social constructs. It often takes a long time and repeated efforts to anchor a good firmly in the public domain, as with equity or respect for human rights. Similarly, it often takes a policy decision to make a good private. And in the follow-up, it takes an elaborate institutional and organizational framework to define, assign, and monitor private property rights, update and revise them as needed, enforce them, and settle disputes.

Societal norms and decisions of what is and is not private and in the realm of discretion of individual actors often reach deeply into what many perceive as the private sphere of people’s lives—such as matters of matrimony and inheritance of private property. Most societies recognize that people should not be abused, even in the privacy of their homes and not even by their relatives. Children also enjoy this right, along with broader freedom from violence. On a much broader level, state borders can no longer be used as shields behind which to curtail human rights, practice corruption, spew air pollution, or pursue publicly frowned-on policies.

The standard definition of public goods has illuminated many important issues in the provision of such goods, including free riding and the prisoner’s dilemma. But that definition does not fully capture the policy approach needed when dealing with the novel nature of many of these goods. As a result many public goods are still analyzed in an almost passive manner. Too often it is assumed that a nonrival and nonexcludable good must be public, or that a rival and excludable good must be private and is best left to the market.

That approach misses a basic point. Before goods appear in the market or in the portfolio of state agents, policy choices have been made or norms established to make the goods private in the sense of being exclusive or public in the sense of being nonexclusive. And even if these decisions have already been made in the past, that does not preclude rethinking them in light of new realities. “The public will operates constantly, not only before and/or after. If it operated ‘before’, that is tantamount to admitting that it operates afterward and at all times in between” (Wildavsky 1994, p. 388).

The excludability or nonexcludability of goods often facilitates or hampers such public policy choices. But it usually does not obviate the need to make them. In any event, the defining characteristics of many public goods are not inherent and are often socially endogenous. This issue has been noted in the literature on public goods (Cornes and Sandler 1994, 1996; Malkin and Wildavsky 1991; Marmolo 1999; Wildavsky 1994). Yet its recognition has not led to the formulation of a definition to complement the standard one and help policymakers distinguish

between goods' original properties of (non)excludability and (non)rivalry and their de facto status as public or private.

Expanding the definition of public goods

The challenge is to define public goods in a way that does not leave the task of identifying “public” and “private” solely to the market but that also involves the general public and the political process. One way forward would be to develop a definition that encompasses all the goods in the public domain (see figure 3). These goods typically fall into three groups: technically nonexcludable, public by policy design, and inadvertently public.¹⁰

Technically nonexcludable—and so nonexclusive—goods have already been discussed. So have goods made or left public by policy design. It is worth adding that goods in this category can include those commonly perceived as having benefits (such as communicable disease control) as well as those generally referred to as public bads (crime, violence, air pollution). Bads left in the public domain may primarily affect voiceless future generations or politically weak groups, or may be perceived as being too costly to correct or secondary to other concerns. Uncertainty about the exact nature of a problem or its solution can also contribute to bads being left knowingly in the public domain. Such uncertainty is still evoked in discussions of how to respond to now certain global climate change.

The public domain has often contained for long periods public bads and goods not recognized as such. These may have become inadvertently public because of unanticipated or unforeseen circumstances. The first reports on the thinning of the ozone layer emerged only in the 1970s.¹¹ Even today the public domain may contain elements that tomorrow's scientists could recognize as having negative public effects and that tomorrow's policymakers might decide to ban from the public domain.

Bads also show that goods do not only migrate from the public domain into the private, or the other way around. They can also be eradicated, as with several communicable diseases (such as smallpox). Or they can move from the open public sphere into tight state control. For example, weapons of mass destruction are usually kept under close guard. Some governments also try to recapture small arms, such as guns, through special weapon surrender programs. Moreover, there is growing concern about how to reduce the risks of germ warfare as well as a host of new security threats against which present defense systems cannot protect the public.

The standard definition of public goods could be interpreted to indicate a good's potential of being public. It could be restated as:

Definition 1: Goods have a special potential for being public if they have nonexcludable benefits, nonrival benefits, or both.

This definition does not differ much from the current textbook definition except that it does not automatically categorize public or private goods based merely on (non)rivalry and (non)excludability—properties clearly malleable and subject to change by policy choice. This serves as a reminder to explore whether and to what extent all goods with the potential for publicness are public in practice. If a good is found not to be public, it is worth asking whether this is desirable from various viewpoints, including considerations of efficiency and equity.

The complementary definition, referring to the actual properties of public goods, would be:

Definition 2: Goods are de facto public if they are nonexclusive and available for all to consume.

This definition underscores the often temporary properties of goods. Some goods may be in the public domain today but not tomorrow. They may not have been in the public domain before—or even existed—but have slipped into it, perhaps due to new technologies. Examples include the recent phenomenons of computer viruses and Internet-based crime. Thus this definition stresses the need for society to be vigilant—to constantly scan the development horizon to assess whether a policy choice that seemed preferable at one time still holds. Moreover, it clarifies that the main determinant of publicness is inclusivity: the goods' being there de facto for all to consume. Public goods are not just market failures, and they are not merely state-produced goods. The public and private domains exist on their own, beyond states and markets.

It can even be argued that the state and the market are part of the public domain: they are both public goods. In its original and present form the market is an institution that is largely public. All can participate, and the more actors there are in the market, the more competitive and (potentially) more efficient it will be. Of course, to participate in the market, a person needs to have something to exchange. That many people lack means of exchange does not speak against the market as a public good. Instead it signals a problem with the distribution of income.

Similarly, a well-functioning state is a public good.¹² The more people who accept and use the state apparatus, the greater is its legitimacy. So, a state that builds its strength not on coercion but on legitimacy needs to be inclusive. As the market and the state show, being nonrival in consumption facilitates a good's inclusivity or publicness. But by itself this property does not create publicness. Nonrival goods, including knowledge, are merely goods that by design lend themselves to being made public. As noted, additional users do not reduce the goods' availability, and allowing wider consumption often enhances efficiency.

Although some goods have significant characteristics of publicness, some potential consumers may find it impossible to acquire them. Take the Internet. To

use it, individuals usually need to have command over private means—to be able to afford a computer, telephone line, and related costs. So, the Internet is not fully in the public domain. Similarly, illiterate people remain excluded from large parts of the world's knowledge because they cannot absorb knowledge that exists in written form. Only goods that are truly available for all people to consume qualify as *de facto* or fully public. The consumption of a public good can be voluntary: some people may want to enjoy a beautiful sunset, others may not. Or it can be mandatory: it is usually a requirement to respect traffic rules.

The case of access barriers must be distinguished from that of some individuals being able to afford a private exit strategy (up to a point) from a public condition. For example, people can protect themselves against crime and violence by increasing the number of locks on their doors. But crime and violence remain in the public domain. Making greater use of private goods to compensate for degraded public goods—such as a public domain filled with negative externalities and threats to human security and well-being—is what Cropper and Oates (1992) call averting behavior. It may allow some individuals to avoid harm to their well-being, often at high cost. But it does not change the character of the public domain.

In sum, public goods are those that are in the public domain because they are technically nonexcludable, because they are placed or left there by policy choice, or because they are allowed to be there inadvertently. To the extent that access barriers limit their consumption, they are only partly public. Public goods thus form important components of the public domain, but the public domain is more than the ensemble of public goods.

More than the notion of public goods, the concept of the public domain is actively and often heatedly debated. In some societies a public sphere remains a rather unfamiliar concept.¹³ Yet as markets and states have expanded and become more differentiated, they have moved out of and away from individual households, creating the private domain and the public. The actors in the public space are primarily civil society organizations and the general public. But they are also firms pursuing profits within publicly defined parameters and in the public spotlight. The suggestion here is to refer to the various goods in the public sphere—tangible and intangible—as public goods.

EXPANDING THE THEORY OF PUBLIC GOODS

A more active, policy-driven approach to identifying public goods opens the door for an equivalent expansion of other aspects of public goods theory and research. The proposed expansion of the definition of public goods could thus be accompanied by further analyses of various provision-related policy issues. Here four such issues are discussed: public choices, the difference between publicness in consumption and publicness in utility, aggregation technologies and strategies, and the adequacy of provision.

Re-envisioning public choices

The literature on public economics and finance usually emphasizes that the provision of public goods involves both a political process and a production process. The political process is usually seen as being concerned with fiscal decisions. Voters and taxpayers are seen as having to decide how to allocate their resources between private and public spending—and for public spending, expressing their preferences for certain public goods. The question of whether and to what extent to make certain goods public (or private) is usually not considered.

Considerable attention is devoted to how politicians and government agents could encourage individuals to reveal their preferences for public goods. The reason is that public goods, being available for all to consume once they are produced, are predicted to suffer from free riding. Put differently, individuals are likely to understate their preferences for these goods to avoid being taxed and to make others pay so that they can enjoy the goods free of charge.¹⁴

Some public economics scholars see government as a solution to free riding, however difficult it might be to make individuals reveal their preferences. But others add to this challenge a host of problems stemming from the fact that politicians and government agents tend to act in “rational,” welfare-maximizing ways. They are likely to pursue not only the mandates and tasks entrusted to them by voters but also their own agendas. For politicians that could involve a desire to be reelected; for bureaucrats, an interest in advancing their careers.¹⁵

Much public choice theory was formulated before the 1980s, so its focus on the formal political process and on state agents is not surprising. The worldwide swing toward markets took off only in the 1990s (Held and others 1999), as did the tremendous growth in civil society (Anheier, Glasius, and Kaldor 2001). Yet even newer contributions to the topic, such as principal-agent and transaction cost theory (Dixit 1996), stay within the context of the state.

As noted, policymaking happens in a variety of ways. Because of its legislative and coercive powers, the state still plays a special role. But decisions on issues related to public goods are also driven by financial and other public pressures on businesses, by interactions within civil society, and by demands from civil society organizations to be consulted by governments and to influence how governments and politicians implement their mandates from voters. The public wants to be closely involved in selecting, designing, and even producing public goods—and in watching out for possible undesirable public effects that could accompany private goods or result from private consumption and production (negative externalities).¹⁶ Sometimes it even seems like the public is not hiding or understating its preferences at all. In such cases the problem is getting the attention of policymakers.

Given this altered state of policymaking, it is important to widen the focus of public choice theory and to initiate theoretical and empirical research on how political decisionmaking on public goods actually functions. A principle to be

reconsidered in this context is fiscal equivalence, first formulated by Breton (1965) and Olson (1971 [1965]). The principle suggests that the scope of a good's benefits be matched with jurisdictional borders. Doing so ensures that those affected by a good can participate in decisions about its provision and that the good reflects local preferences and conditions. Put differently, local public goods should be provided locally, national public goods at the level of the central government, and global public goods at the international level.¹⁷

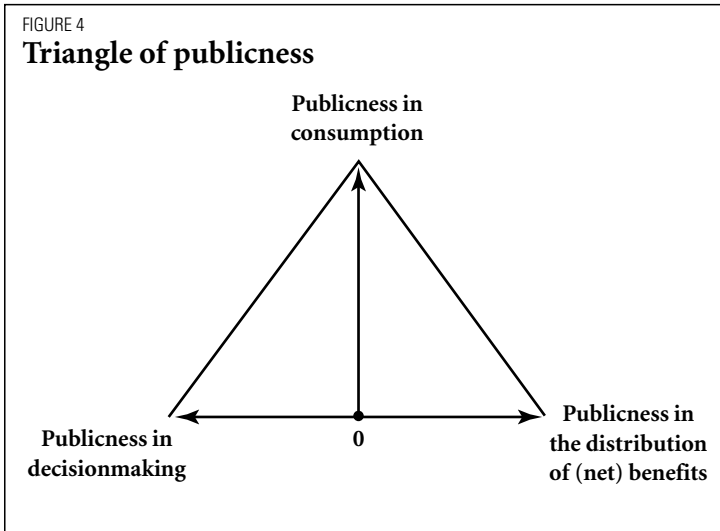
Because the provision of public goods is not just a state-centered process, it is important to broaden the fiscal equivalence principle. Perhaps it could be reformulated as an "equivalence of publicness" principle calling for the matching of the circle of stakeholders in a particular public good with the circle of participants in negotiations on its provision, either with a consultative or a decisionmaking voice. To achieve such equivalence—particularly in the international context—decisionmaking would need to expand across fiscal or political jurisdictions to encompass all the stakeholders for the good in question.

Differentiating between publicness in consumption and publicness in utility

As also underscored by Breton (1965, p. 176), that a good's benefits are public in consumption "is independent of the subjective evaluation which individuals attach to the objective benefits derived from the good." Consider financial stability. In many countries the provision of this good requires the central bank to maintain adequate reserves—often at high cost. Although poor people benefit from financial stability, they may not consider this public good a top priority. So while financial stability is public in consumption, poor people probably do not gain as much from it as do richer people.

To determine whether and to what extent publicness in consumption and utility overlap, one could determine whether consuming a particular public good adds in similar measure to what people can and want to do (Sen 1982). Not every public good can be expected to provide similar satisfaction to all population groups. Yet there is a widely shared view that the public sphere should be fair and just—a sphere of civility and decency. Indeed, it often seems that promoting a fair and just public domain is precisely why the public wants to be more involved in decisionmaking on public goods.

It can be argued that the arena—and era—of publicness has emerged to better ensure that goods public in form (in consumption) are also public in substance (with benefits distributed equitably across population groups). For example, traditional judicial systems assign women a small fraction of the voice of men but are often highly public in consumption—there to judge both men and women. As a result, in some cases they are advantageous to men and disadvantageous to women. Until recently women were often not part of public decisionmaking and so traditionally have observed the public domain with concern—and often sharp critique.¹⁸



Other disempowered groups hold similar views. Thus civil society, with its strengthened engagement in public policymaking, is seeking to change the “not so public” nature of the public sphere. Perhaps precisely because of these efforts, methodologies should be developed to systematically assess individual public goods and the public domain as a whole against two criteria:

- *The publicness—or participatory nature—of decisionmaking* on which goods to place in the public domain, how much of them to produce, how to shape them, and how to distribute their benefits among all concerned.
- *The publicness—or equity—of the distribution of benefits*; that is, the extent to which various groups (consumers of public goods) derive benefits.

These two criteria can be combined with the main, distinguishing criterion of public goods:

- *The publicness of consumption*—the nonexclusiveness of the consumption of public goods across individuals and groups.¹⁹

Combining these three criteria (or dimensions) of publicness results, as suggested by Kaul (2001), in an ideal “triangle of publicness” (figure 4). This triangle shows a good that is public in consumption, based on decisionmaking that fully meets the condition of the generalized equivalence principle, and with net benefits evenly distributed across diverse population groups.

Refining the concept of aggregation technologies and strategies

Public goods are often still equated with state-provided goods—for a reason. From the 1940s to the 1970s the state played a prominent role in their provision. In particular, the state provided many essentially private goods such as fertilizer, steel, and communication systems. In most countries these goods have been moved into

the private domain and into markets. Yet while the state was often taken out of the production of tangible, excludable goods, it was expected to become more active in the provision of more intangible but equally real and important goods, such as respect for law or the creation of incentives for private activity.

It is probably because of the long-standing equation of public goods with state-provided goods that only in 1983 did Hirshleifer draw attention to the fact that “standard models have assumed...that there is nothing at all special on the supply side, in the social technology for the *production* of public goods” (p. 372). He proposed examining alternatives such as “*social composition functions*, i.e. as different possible ways of amalgamating individual productions into social availabilities of a public good” (p. 372, italics in the original). Since then a debate has emerged on the aggregation technologies for various types of public goods. The three main technologies are summation, weakest link, and best shot.²⁰

Public goods can require various inputs from different aggregation technologies. Climate stability is often mentioned as an example of a summation process because it requires all countries to limit carbon dioxide emissions to certain levels. Yet some of the building blocks of this good show that other aggregation technologies are also used, such as the required technological advances in cleaner energy that may be achieved through a best shot strategy (see figure 2 in the chapter on institutions by Kaul and Le Goulven in this volume). Furthermore, enabling all countries to stay within certain emission limits could call for a weakest link strategy of providing development assistance.

Moreover, different building blocks could be based on different production or public policy partnerships, each following different incentives and requiring different types of financing. The question of how the production of public goods works has found limited attention because for many years public goods were often financed and produced by the state. But since the 1980s government has become less involved in the production of essentially private goods such as telecommunication services. Meanwhile, it has played a larger role in creating an enabling framework for private and voluntary activities.

Yet few studies have followed particular goods to study how these changes have affected the goods’ public-private properties and production processes. There has often been an outcry about the marketization of goods. But an important dimension is whether and to what extent marketization has been—or failed to be—accompanied by public incentives to enable private actors to internalize externalities. This information is important for understanding why goods may or may not have been underprovided in certain instances.

In today’s multiactor world it is thus critical to think beyond the main types of social aggregation technologies. It is important to examine in more detail the various building blocks of public goods, exploring especially the types of incentives that different groups, notably private actors, might require to be motivated and able to deliver their expected contributions to a particular public good.

Moving from optimal public spending to adequate provision

The provision of public goods is usually considered optimal when the “Samuelson condition” is met. This condition, formulated by Paul A. Samuelson (1954), requires that the sum of all individuals’ marginal willingness to pay for an additional unit of a particular public good equal the marginal cost of producing that unit. The main issue here is not that it could be difficult to ascertain and aggregate societal preferences. It is that the Samuelson condition does only what it was intended to do—provide guidance on how to adapt government revenue and spending to the preferences of the consumers of state-provided services. But a balanced pattern of spending and preferences does not necessarily indicate that a public good is adequately provided.

Assume, for example, that effective global control of HIV/AIDS would cost \$10 billion a year in additional international funding, but that voters—taxpayers, and hence governments—are willing to spend only \$2 billion more a year. The good—control of HIV/AIDS—could be considered optimally provided from a budget viewpoint. But its provision would be suboptimal or inadequate from a technical viewpoint. Moreover, not all required spending would have to come from government sources. For HIV/AIDS, all actor groups contribute.

It is thus desirable to expand the discussion of the provision of public goods in two ways. First, technical criteria for adequate provision should be formulated for each public good. These technical assessments could then form the basis for economic (cost-benefit) assessments of each good. The main question for technically underprovided goods is whether enhancing their provision promises high social returns. Most public goods are nothing “good” in themselves. They should be promoted only if they enhance economic growth and people’s well-being. But to know their value to the economy and society, they have to be assessed in a development context, not just a budget framework.²¹

The well-established theory of public goods carries the marks of bygone eras. The first era—from the late 1940s to the late 1970s—saw the state playing a leading role in the economy, even in market economies. The second—starting in the late 1970s and early 1980s—was marked by a rebalancing between markets and states. Today’s theory of public goods defines public goods as market failures but leaves the rest of the debate within the framework of the state and the theories of the first era. Now that a new multiactor era has emerged, and with it new concerns about the balance between public and private goods, the theory of public goods requires further expansion. The basic challenge is to regain a timely notion of public goods in general. But there is an additional challenge: to begin to understand global public goods.

THE SPECIAL CASE OF GLOBAL PUBLIC GOODS

So far, public goods have been discussed without specifying the geographic or jurisdictional reach of their benefits—local, national, regional, or global.²² This

section focuses on global public goods. It starts by identifying which public goods have global benefits. An interesting issue is the extent to which some goods are global naturally and others have become global by policy choice. The analysis then considers whether any aspects of the provision of global public goods are specific to their political decisionmaking and production. This second question sets the stage for some of the points examined further in subsequent chapters.

Two main findings emerge. First, globalized national public goods are an important class of global public goods. Second, the expansion of public goods theory suggested earlier becomes even more important when considering global public goods—because such goods require and create commonality in a world of extreme disparities.

Understanding global public goods: definitions and typologies

The discussion here builds on the definition of global public goods proposed by Kaul, Grunberg, and Stern (1999):

Definition 3: Global public goods are goods whose benefits extend to all countries, people, and generations.

Goods can be potentially public as well as potentially global. That is, many goods can be made public or global (or both) through human actions or public policies (or both). This definition refers to goods that are already public and global—a stringent requirement that might not be satisfied by any good. Hence, as suggested in the 1999 precursor to this volume, a less strict but more useful definition could be that a good qualifies as being globally public when it benefits more than one group of countries and does not discriminate against any population group or generation.

Global public goods are nothing new. Many, notably the global natural commons, predate human activity. They include the atmosphere, the geostationary orbit, the electromagnetic spectrum, and the high seas. And as long as humans have been around, there have been externalities—many traveling the world, often in a diffuse and not clearly traceable way, as with emissions of carbon dioxide and other greenhouse gases.

But externalities alone did not create the links and interdependencies among different parts of the world's growing population. International cooperation has also played an important role. The Earth's landmasses have been claimed by and assigned to various nations (turned into national and, from a global viewpoint, private property). Following futile attempts to do the same for the high seas, it was decided to declare them a common heritage of humankind accessible to all (Mendez 1992).

The 15th and 16th centuries ushered in a new epoch in international relations, marked by the appearance of sovereign states in Europe and the expansion of their colonial powers and trade links (Braudel 1986). But in recent centuries

and especially recent decades the volume of externalities and intentionally created goods of global reach has surged, often growing exponentially:

- *New technologies* increasingly enhance human mobility as well as the movement of goods, services, and information around the world.
- *Economic and political openness* have provided further impetus to cross-border and transnational activity.²³
- *Systemic risks* have increased. The accumulating environmental degradation caused by human activities poses many risks, including global climate change. Integrated financial markets pose the risk of boom and bust cycles. Growing socioeconomic inequities call into question the legitimacy of the global system.
- *International regimes* are becoming more influential, often formulated by small groups of powerful nations yet often claiming universal applicability.

Nations and groups have seen their public domains become interlocked and their living conditions become interdependent (Cerny 1995; Stiglitz 1995; Woods 2000). For example, an economic downturn in a major economy usually affects many others through trade and investment links. Financial crises can spread from one continent to another in a matter of hours, often not sparing economies with good fundamentals. Lax food safety standards in one area can create health problems in many distant places through international travel or trade. And new global public platforms, such as the Internet, blunt many conventional public policy tools, including those for controlling such public bads as tax evasion, money laundering, drug trafficking, commercial fraud, and child abuse. The public and policymakers all over the world increasingly find that public goods they would prefer to have locally—or for bads, not have—cannot be produced solely through domestic action. A growing number of national public goods have gone global.

Like figure 3, figure 5 classifies global public goods primarily according to their humanmade (social) properties. Bearing in mind the first section of this chapter and figures 2 and 3, one can discern the differences between the original and current properties of the goods in figure 5. As before, various goods have moved within or across quadrants or are slated to do so. These changes in status show that global public goods are public in two senses: public rather than private, and global rather than national.

Given the conditions often summarized by the term *globalization*, many decisions on whether and to what extent to make certain goods public or private—decisions on which it is often difficult enough to reach consensus at the national level—must now be made by nations together. Agreeing on policies can be difficult, as indicated by recent discussions of the World Trade Organization's agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

The goods in quadrants 2 and 4 of figure 5 require harmonization of national policies. Policy harmonization is often intended to encourage countries to inter-

nalize cross-border externalities: to help generate positive ones and to take back negative ones. Several goods in quadrant 2B involve such efforts. Efforts to increase the inclusiveness of such goods as international communication and transport systems are aimed at improving the worldwide availability of network externalities. The same intention usually drives initiatives to increase adherence to norms and standards, including for human rights, and foster respect for national sovereignty. Most of the goods in quadrant 2B are oriented toward unleashing what various national and transnational actors perceive as global benefits.

By contrast, many of the goods in quadrant 4 involve the internalization of negative cross-border externalities. These spillovers can be diffuse, emanating from almost all countries—as with carbon dioxide emissions, which combined create the risk of global warming. Or they can originate in certain countries but potentially affect all, as with the outbreak of a new contagious disease. The policy response to diffuse externalities could be to establish an international regime that all countries would be expected to comply with. The promotion of basic human rights, shown in quadrant 2B, is an example. But depending on the public good under consideration, alternative policy options might be preferable, as shown in quadrants 4A and 4B.

Quadrant 4A lists goods with policy responses that involve defining and assigning new (national) property rights, such as national pollution allowances or the exclusive economic zones created by the 1982 UN Convention on the Law of the Sea.²⁴ Quadrant 4B includes goods involving measures similar to those in the national context and are aimed at making certain crucial goods—such as basic education and health care—universally available. Moral and ethical concerns often motivate the international community to undertake such measures. But sometimes externalities also matter. For example, there might be concern that the potential global repercussions of failing states, including conflicts and wars, could impose much higher costs in the future than addressing today the root causes of political tension, such as extreme poverty and inequity.²⁵

A further message of figure 5 relates to the pure public goods listed in quadrant 3. Many of the goods in this quadrant are the same as those in figures 2 and 3. As national borders become porous and cross-border economic activity increases, these goods become indivisible across borders, or transnational. All nations face the same international economic conditions. All face the same conditions in international financial markets. All face the same risk of global climate change. Because of this indivisibility, environmental sustainability is included in figure 5 as an umbrella concern whereby countries are encouraged to internalize the environmental externalities they generate. Environmental sustainability requires more than occasional, unfocused corrections. Fundamental changes are needed in global production and consumption patterns to avoid irreversible environmental damage and the possible foreclosure of future generations' development options.

FIGURE 5

The de facto mix of national goods and global public goods



a. The goods in this quadrant are kept or made nonexclusive to current generations (as with education) and future generations (as with the atmosphere).

b. Refers to the International Treaty on Plant Genetic Resources for Food and Agriculture (see <http://www.fao.org/ag/cgrfa/>).

c. These goods are included in the Millennium Development Goals (to be achieved by 2015) adopted by the UN General Assembly (see <http://www.un.org/millenniumgoals/>).

The considerations in figure 5 make it possible to develop a typology of global public goods (table 1). This typology differentiates between goods based on the nature of their benefits—not the scope of their benefits (they are all global), but the type of their publicness. Differentiating between the types of publicness associated with particular classes of global public goods sheds new light on some of the political tensions accompanying globalization. It shows that understanding these tensions requires assessing globalization not just for cross-border private economic activity but also for what is happening to goods in the public domain: Why have some been taken out, partly or fully? Why are the benefits—or costs—of other goods increasingly becoming public? To what extent are global public goods a shared fate of all, making international cooperation compulsory?

International cooperation seems essential for global policy outcomes or conditions (see table 1). For global humanmade commons the international community has more latitude in pursuing international cooperation. In addition, international cooperation can often take the form of more concerted national policy action. Yet for global policy outcomes or conditions and the shaping of their indivisible benefits there is often a need for truly common action—raising all boats to the same level.

Provision of global public goods: politics and production

If so many global public goods are humanmade, and if even the elements of the natural global commons so often carry a social mantle (or should but do not as yet), key questions need to be studied to determine how well the three dimensions of publicness—consumption, decisionmaking, and distribution of benefits—are met for global public goods. That global public goods are largely national public goods that have gone global has important implications for the social aggregation strategies used to produce them.

Politics. Nations have been described as communities with shared tastes. To some extent this is correct. But consider the many political and other differences within nations, such as those between rich and poor people. Tastes and preferences vary even more between nations.

The world is globalizing. But are the various dimensions of today's realities—such as decisionmaking—globalizing in tandem and at the same pace? This question is especially important for global public goods because they affect all people. More precisely, the question is whether the global scope of these goods' benefits and costs has been accompanied by a corresponding publicness in national and international policymaking. This question is urgent because publicness in consumption is often a requirement, not an option.²⁶

As noted, some people—notably the world's richer people—sometimes have the option of exiting from the public domain and protecting themselves through various private means. Where commercial airline travel is too unsafe, private jets

TABLE 1

A typology of global public goods by the nature of their publicness

Class of good	Nature of publicness
Global natural commons (such as the atmosphere or the high seas)	<i>Free (managed) access.</i> In their original state these goods are typically rival and nonexcludable. Some global natural commons (such as the ozone layer) have taken on the social form of a managed access resource. But they are usually still available for all to consume—though sometimes only in limited measure.
Global humanmade commons (such as global networks, international regimes, norms, and knowledge)	<p><i>Free access.</i> Noncommercial knowledge, for example, is often accessible to all. It is nonrival and difficult to exclude. It typically has limited (if any) commercial value but can be important to people’s daily lives or to economic and political governance.</p> <p><i>Limited access.</i> Patented knowledge, for example, may be in the public domain but its use is restricted, at least for a period. The rationale is that providing incentives to private producers of knowledge will enhance the economy’s growth and its dynamic efficiency.</p> <p><i>Inclusiveness being promoted.</i> Many efforts are under way to enhance the inclusiveness of goods with network characteristics and whose expansion promises “additional user” benefits or positive network externalities. Examples include international regimes (multilateral trade regime, Universal Declaration of Human Rights), global communication and transport systems, and informal norms. Efforts to increase the inclusiveness of these goods will widen the range of users, globalizing the benefits and costs. Globalization of public goods includes both top-down (from international to national) and bottom-up efforts.</p>
Global policy outcomes or conditions (such as global peace, financial stability, and environmental sustainability)	<p><i>Universalization of essentially private goods.</i> Examples include global (national and international) efforts aimed at “for all” goals—basic education, health care, and food security.</p> <p><i>Indivisibility of benefits and costs.</i> Goods in this category have indivisible benefits that form the core of the interdependencies among countries and people. These goods tend to be technically nonexcludable and so de facto inclusive and public.</p>

can be used. Or where global warming occurs, it may be possible to escape some of its effects by retreating to air conditioned rooms. Poor people rarely have such private exit options.

As Hirschman (1970) emphasizes, when people have no exit options—when they cannot refuse consumption—they cannot help but belong to the community of stakeholders. Often the only strategy available to them is to seek a stronger voice and more direct participation in matters that affect their lives. Such “no exit” situations are often the case for global public goods. It is not surprising that civil society has become more active and determined, and in some cases more forceful, in making its voice heard. Developing countries are also becoming more concerned about gaining seats at the tables of international negotiations.

A stronger voice is often sought for its own sake, in the interest of democracy and pluralism. But it is often sought to enhance decisionmaking and increase the economic, technical, and political feasibility of policy actions. When international cooperation is required to curtail costly, inefficient global public bads, an effective voice for all is also critical. This is particularly evident in cases where international institutions are assigned to implement international standards to promote certain public goods (such as international security and international financial stability), often resulting in incursions on domestic policymaking and lawmaking. The legitimacy of such incursions hinges on more participatory decisionmaking (Woods 2000). Hence it is important to assess the main global public goods, notably those involving high interdependence, against the ideal triangle of publicness.

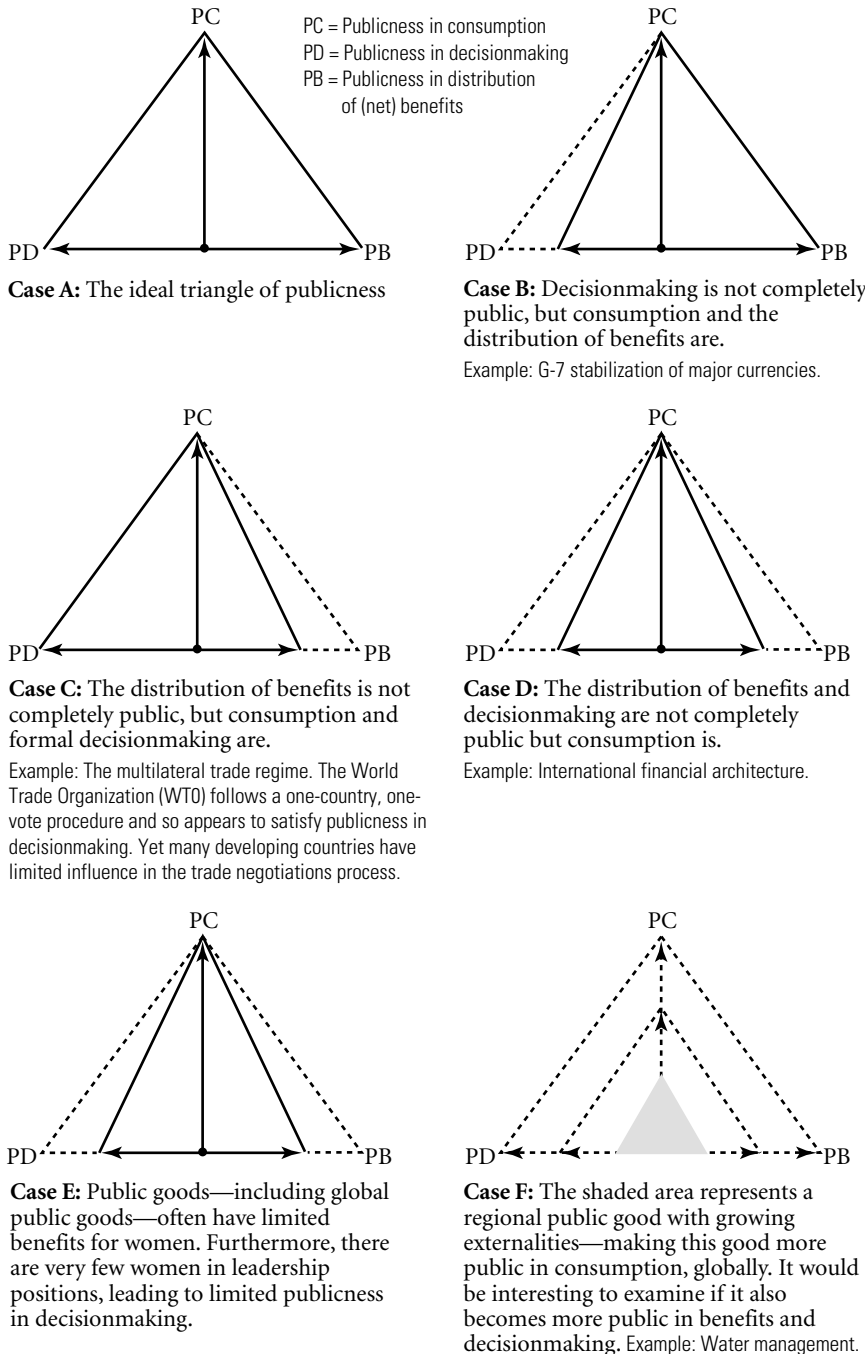
Figure 6 shows how select global public goods are likely to differ from the ideal triangle. In each case it would be important to define clear indicators and reliable measurement methodologies, but doing so is beyond the scope of this chapter. The triangles in figure 6 are intended to encourage research and debate.²⁷ The chapters in part 2 of this volume shed further light on the politics of global public goods provision, including its participatory nature and the fairness of negotiations. The case studies in part 4 provide additional information on decision-making and the distribution of benefits for specific global public goods.

Production. Few global public goods are “readymade.” Even the few that are, such as the natural global commons, often require international management regimes for their sustainable use. Most global public goods follow a complex, multidimensional, multilayered, multiactor production path. Accordingly, many are also likely to comprise a variety of building blocks. These building blocks can include national public goods, which may require harmonization or upgrading for all to enjoy a higher level of provision.

But especially where externalities of activities undertaken by households and firms are involved, private goods and changed patterns of private behavior may also be among the key building blocks. These often call for complementary

FIGURE 6

Examining global public goods through the triangle of publicness



national public policy actions, such as the provision of incentives. In addition, the production paths of global public goods are often likely to include international arrangements such as the World Trade Organization or the Global Fund to Fight AIDS, Tuberculosis, and Malaria (see <http://www.globalfundatm.org/>). The chapter on institutions by Kaul and Le Goulven (in this volume) discusses in more detail the production paths and building blocks of global public goods. Examples of elements that might enter the production cycles of global public goods are provided in table 2.

In many ways the process of assembling the various building blocks of global public goods is similar to that of producing national public goods. National public goods, however, can no longer be provided without due attention to their emerging international dimension. For example, international financial stability requires that every country be concerned with its own fundamentals as well as any threat of contagion from other countries. The same is true for goods such as communicable disease control and climate stability: without international cooperation, no amount of domestic spending could fully ensure the national public good. Hence, viewed from the production side, many global public goods can be seen as the sum of national public goods plus international cooperation.

Notwithstanding the importance of international cooperation, the issue of subsidiarity also needs to be raised: why would centralization—and thus international cooperation—be desirable? It is prudent to insist that the burden of proof be on those who advocate increased national policy harmonization or joint production at the international level. The reason lies in the tremendous diversity of conditions around the world. Increased provision of a global public good often requires all countries, even all people, to accept a change in global trends. But moving in the same direction is often best achieved through policy pluralism rather than standard approaches (as some of the case studies in this volume highlight). Allowing for policy pluralism increases the transaction costs involved in producing global public goods because it may entail more management support, monitoring, and reporting. Yet these costs could be modest relative to the dead-weight losses of excess centralization and standardization. Policy pluralism would also be ideal when there is much debate on the best approach to providing certain goods, such as financial stability, for example.

Given the complexity of producing global public goods, there is no easy or standard formula for ensuring their adequate provision. International studies often note another handicap: the fact that there is no institution with coercive powers. Perhaps this is just as well. More important are efficient, effective measures to ensure proper feedback loops: from international agreements to implementation, from implementation to policymaking and if necessary renegotiation of agreements, and so on. The actors most likely to ensure that this process moves beyond narrow national self-interests might not always be governments, since

TABLE 2

Stages and examples of the production cycle of global public goods and their components

Global public good or component	Example
Final global public good	Peace or eradication of polio.
Intermediate global public goods	International regimes (agreements and organizations). These goods have significant properties of publicness and are also being consumed. But their consumption is often of an instrumental character. Thus the medical and pharmaceutical knowledge on which the polio vaccine is based is an intermediate global public good because it is fully in the public domain. Eradication of polio is the final global public good to which it is an input.
National public goods	National civil aviation regimes and facilities, which serve national purposes but, if in line with international agreements, also constitute important building blocks of a global public good: the international civil aviation network.
Private goods and activities and their externalities	Bed nets purchased by households as a contribution to the global public good of malaria control or use of solar energy panels by businesses as a contribution to climate stability.

they are territorially bound. They might be transnational businesses, civil society organizations, and members of the public. As Sen (1999) points out, these actors often pursue interests and concerns independently of their nationalities.

CONCLUSION

This chapter has suggested a rethinking of three notions underpinning the theory of public goods. First, it has shown that properties of (non)rivalry in consumption and (non)excludability of benefits do not automatically determine whether a good is public or private. “Public” and “private” are in many—perhaps most—cases a matter of policy choice: a social construct. Some goods lend themselves more easily to being either public or private. Nevertheless, it is important to distinguish between a good’s having the potential of being public (that is, its having nonrival and nonexcludable properties) and its being *de facto* public (nonexclusive and available for all to consume).

Second, public goods do not necessarily have to be provided by the state. All actors can, and increasingly do, contribute to their provision. And third, a growing number of public goods are no longer just national in scope, having assumed cross-border dimensions. Many have become global and require international cooperation to be adequately provided.

Rethinking the concept of public goods along these lines has a number of implications for the theory of public goods and opens up an important new research agenda. This includes the question of how in various cases publicness in consumption is matched with publicness in decisionmaking and with equity in the distribution of a good's benefits—the issues raised by the triangle of publicness. Furthermore, recognizing the provision of public goods as a multiactor activity calls for reconsideration of the current concept of optimal provision as well as for renewed analysis of the production process of public goods.

These issues are even more urgent at the international level, particularly when one considers international cooperation in support of global public goods. The reasons are that at the international level there is no real equivalent to the institution of the state and that the global public has far more diverse interests and preferences than any national public. Furthermore, many people—indeed, entire countries—often find themselves in “no exit” situations. Under these conditions a decisionmaking and production process for global public goods that is more participatory and “bottom up” is perhaps most ideal.

In summary, Desai (in this volume) is correct when stating that the debate on global public goods cannot simply build on the existing theory of public goods. The theory must be updated to reflect current realities. This chapter has tried to do just that, and opens the door to debate and discussion on a host of new issues. The chapters that follow address many of these issues, offering the opening salvo in this debate.

NOTES

1. Arguably, civil society is emerging as a third coordinating mechanism—a role with long-standing historical precedents. For example, Desai (in this volume) discusses the coordinating role that churches and charities have played in providing health care, particularly in the 13th and 14th centuries.

2. For reasons of brevity, in this chapter *goods* refer to both goods and services.

3. Throughout this chapter, references to benefits also apply to costs. To be more precise, the objective is to derive positive net benefits from public goods—or to minimize the costs of public bads.

4. Unless otherwise specified, national public goods include local public goods.

5. For an overview of the literature, see Acocella (1998), Cornes and Sandler (1996), Cullis and Jones (1998), Musgrave and Musgrave (1989), Oakland (1991), Rosen (1999), Samuelson and Nordhaus (2001), Salanie (2000), and Stiglitz (2000).

For discussions on the evolution of the concept of public goods, see Desai (in this volume) and Buchanan and Musgrave (1999).

6. Pilot projects and schemes for greenhouse gas emissions trading are already under way; see Cozijnsen (2001), Sandor (2002), and Castro and Cordero (in this volume).

7. Quotas and other quantitative limits are often only one part of a comprehensive system of sustainable ecosystem management. See, for instance, the discussion in the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem at <http://www.refisheries2001.org>.

8. The Bolar provision under the World Trade Organization agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) allows manufacturers of generic drugs to develop production and regulatory procedures before patents expire to shorten the long period of preparing generics for the market. Research on patented drugs is part of this provision (WTO 2001).

9. Respect for human rights and the norm of equity are viewed by some as pure public goods. The reason is that they are relational goods—no one can have them alone. For example, for a person to be treated equally, he or she needs to receive this treatment from others. Such goods exist only if a person can relate to others—so in that sense the goods are nonrival and nonexcludable. Furthermore, the more widespread is the acceptance of certain norms, the more established and firm they are for all individuals. Each additional user provides additional benefits to existing users (Rao 1999). So, all who accept a norm such as equity also benefit from it being shared as widely as possible—from being nonexclusive. But while it is nonrival and nonexcludable in the abstract, its application to the functioning of society often has distributional consequences and so encounters political opposition. As a result respect for human rights is sometimes an exclusive good— withheld from all or some population groups.

10. In figure 3 technically nonexcludable goods often fall into quadrant 3. Goods that are public by policy design—that are kept or made nonexclusive—fall into quadrants 2B and 4B. Goods (or bads) that are inadvertently public are those that have yet to be discovered. An example is HIV/AIDS in its nascent stages several decades ago.

11. For further information, see the British Antarctic Survey homepage at <http://www.antarctica.ac.uk/>.

12. Stiglitz (2000, p. 149) refers to “efficient government” as a public good.

13. For perspectives on the state and civil society in different cultures, see Rosenblum and Post (2002). For diverse ethical perspectives on the concept of boundaries, including political and jurisdictional ones, see Miller and Hashmi (2001).

14. Sandler (in this volume) explains how the risk of free riding and other types of collective action problems vary with the nature of the good. Barrett (in this volume) takes this discussion forward by showing how cooperation strategies can be designed to minimize noncompliance with international agreements.

15. For an illuminating dialogue between some of the main representatives of these two different schools of thought and approach, see Buchanan and Musgrave (1999).

16. Externalities are benefits conferred or costs imposed on others without compensation. Put differently, an externality is a phenomenon that arises when an individual or firm takes an action but does not bear all the costs (negative externalities) or receive all the benefits (positive externalities). In this chapter externalities are primarily seen as linked to and emanating from the activities of individual actors, making it feasible to take policy action to encourage positive externalities or discourage negative ones. Externalities can affect private well-being directly. (For example, water pollution can cause health problems.) But externalities can also affect public goods. (For example, air pollution can lead to global warming.) By diminishing—or enhancing, as the case may be—the availability of particular public goods, such externalities also change people’s living conditions. Thus the difference between externalities and public goods is that externalities are seen here as a side effect of private activity, and public goods as a more deliberately designed and produced good, such as a legal framework or judicial system. For an extensive discussion of externalities, see Papandreou (1998).

17. As Arce M. and Sandler (2002) point out, three concerns can override the fiscal equivalence or subsidiarity principle: economies of scale, economies of scope, and the nonexistence of requisite organizational capacity.

18. For a feminist discussion on the concept of the public sphere, see Meehan (1995).

19. Thus publicness in consumption is distinct from publicness in the distribution of benefits. Publicness in consumption has to do with whether a good is non-exclusive in consumption. Publicness in the distribution of benefits has to do with how consumers derive benefits from the good.

20. For a more detailed discussion on these and other types of aggregation technologies, see Sandler (in this volume, 1998) and Arce M. and Sandler (2001, 2002).

21. Conceição (in this volume) offers a first attempt at such a broader assessment of the provision status of public goods.

22. It is important to differentiate the scope of a public good’s benefits (or public bad’s costs) and the level at which it may be situated or from which its effects may emanate. For example, pollution can arise locally but spread globally, affecting people in all parts of the world. The notion of reach or scope implies that the wider concept includes all others. Put differently, global includes regional, national, and local. By contrast, a good can be situated at the international level, such as a development assistance facility, but be designed to deliver a particular regional good, such as support for the management of a lake or forest system shared by several countries. Or a locally situated good, such as an outbreak of the Ebola virus, can have global consequences. In other words, levels are distinct and separate—but the wider is a good’s reach, the more comprehensive it is of other areas.

23. As Risse-Kappen (1995) notes, international relations are often analyzed merely in terms of international, intergovernmental relations, ignoring direct links between societies and societal actors across national borders. But networks of transnational actors have become increasingly important.

24. The exclusive economic zones extend for 200 nautical miles from coastal baselines. In these zones, coastal states have “exclusive rights (1) for the purpose of exploring and exploiting, conserving, and managing the natural resources, whether living or nonliving, of the water superadjacent to the seabed and its subsoil, and (2) with regard to other activities for the economic exploitation and exploration of the zone such as the production of energy from the water, currents and winds” (Mendez 1992, p. 235).

25. There is, however, a fine line between parts of industrial countries’ populations being concerned about severe human deprivation and other parts being concerned about spillovers, such as the risk of rising numbers of international economic migrants.

26. It would also be interesting to investigate, at the international level, the applicability (or inapplicability) of frameworks for analyzing public choice at the local and national levels—including, for instance, the median voter theorem.

27. In considering the triangle as an analytical tool, several interesting issues could be further explored. For instance, how exactly would each dimension be measured? What would be the conceptual optimum (maximum or minimum) for each axis for certain public goods? If there are ideal dimensions for the triangle of publicness, what are they and how are they determined?

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