



Public Goods: A Positive Analysis

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Abstract

Taking as its point of departure the conventional definition of public goods, this paper examines three issues: 1) whether (non)rivalry in consumption and (non)excludability of benefits predict that a good is actually public in consumption; 2) whether publicness in consumption justifies and entails state-provision; and 3) how to answer the aforementioned questions in the case of global public goods. The finding is that reality in many instances runs counter to these predictions, especially in the case of global public goods. The paper suggests ways in which this finding could be reflected in a modified, expanded concept of public goods. First, it proposes a two-tier definition distinguishing between the *potential* of a good to be public in consumption and its *de facto* publicness. Second, it submits that public goods tend to be collective-action products to which diverse actor groups contribute, with the state's role being often limited and imperfect—but pivotal.

In light of the many current policy reforms such as those in the social security, investment or environment areas, which could in significant ways shift present private/public boundaries, revisiting and clarifying the concept of public goods is not just an academic exercise but a matter of immediate practical-political relevance. A clear concept of public goods (and by implication, private goods) could provide important guideposts to more sustainable development and to managing globalization more efficiently and equitably.

JEL Classification: H1-H41.

Introduction

Although the literature on public goods is extensive and diverse, there is a standard definition of public goods. According to this definition, public goods have two main properties: nonrivalry in consumption and nonexcludability of benefits. These properties are said to entail that the goods are public in consumption, i.e. available for all. However, markets do not provide goods with such characteristics efficiently. The fact that markets fail is seen to justify state intervention. And therefore, mainstream theory often refers to public goods also as state-provided goods.

This paper takes a somewhat different approach to conceptualizing public goods. It presents a positive analysis aimed at clarifying three main questions. The first question concerns the properties of goods that are *de facto* public in consumption, i.e. actually in the public domain and available for all to consume. How can they be characterized? What are the factors contributing to their publicness? Put differently, the issue is whether and to what extent nonrivalry and nonexcludability are indeed predictors of a good's publicness in consumption. This issue will be discussed in section I of the paper.

The second question asks whether and to what extent publicness in consumption is a predictor of state provision. To clarify this aspect of the standard definition, section II of the paper describes how public goods emerge, notably the actors involved in this process and the coordination mechanisms, policy tools or other instruments employed.

Considering the importance of global public goods, such as the risks of financial crises and international terrorism, section III focuses on this class of goods. It seeks to determine the factors that contribute to goods being global *and* public and how they are provided, notably how their provision differs from that of national public goods.

As pointed out by Desai (2003), the concept of public goods has changed over time; and the concept prevalent during any one era has tended to reflect the realities and policy experiences of its time. The basic elements of the present standard definition were formulated in the 1950s.¹ So it is not surprising that, coming some 50 years later, the analysis below shows that present-day realities have outpaced the current mainstream definition of public goods in a number of respects. Therefore, besides summarizing the main findings, the concluding section of the paper also offers suggestions on how to expand and advance the concept of public goods.

Curiously, the notion of public goods does not figure very prominently in today's policy debates. And by implication, the same applies to its opposite, the notion of private goods. It has been the increasing number of contested global issues, which has, in recent years, drawn some renewed attention to the concept of public goods (see, for example, Sandler 1997; Stiglitz 1995). Perhaps the concepts of public goods and private goods do not figure on the political center stage because they have become identified respectively, with the state and with the market. The current mainstream definition of public goods

¹ Samuelson's 1954 paper is usually regarded as the foundation of modern public goods theory. For an overview of this theory, see, among others, Cornes and Sandler (1996), Oakland (1987), and Stiglitz (2002).

certainly suggests such a reading. And of course, where to draw the boundaries between markets and states is a frequently and hotly discussed topic.

However, the analysis in this paper shows that it is no longer correct (if ever it was) to define public goods simply as state-provided goods. In most instances they are multi-actor products. So the challenge is to understand the role of different actors and the comparative advantage each brings to public goods provision. Moreover, publicness in consumption does not depend only on nonrivalry or infeasibility of exclusion. It often is a social construct, i.e. human-induced. This raises the question of the forces and factors that prompt goods to be placed in either the public or the private domain or shift from one to the other realm. Is a good's publicness in consumption a deliberate policy choice? Or, does it reflect neglect and oversight?

People's well-being ultimately depends on the balance between private and public goods. Private income and the consumption of private goods are both essential. But neither the best private goods nor any amount of them will be worth much where the public domain is denuded, or worse, filled with public "bads"—war, crime, collapsing stock markets, communicable diseases, or natural disasters. Even markets need for their efficient functioning such public goods as the rule of law, norms and standards, or information. Thus, understanding the nature and provisioning of public goods is not just an academic exercise; it is a matter of practical-political relevance.

Several of the points set forth in this paper have been made in earlier studies. In fact, many were made in the contributions that emerged in the 1950s in direct response to Samuelson's 1954 paper (see, for example, Colm 1956 and Margolis 1955). Further points have been raised in the responses of public choice and political economy scholars to market failure theories of government intervention.² Yet while some of the issues have been stated before, the present mainstream concept of public goods has not yet been recast. The purpose of this paper is to suggest for further research and debate, possible modifications to allow public goods to advance conceptually as well as politically.

I Publicness in Consumption: a Social Construct³

The conventional approach to defining private and public goods is to identify a good's (non)rival and (non)excludable properties (figure 1) and then define the good as private or public based on these properties.⁴

FIGURE 1 (close to here)

Rival benefits mean that one person's consumption of a good diminishes its availability for others. For example, if one person drinks a glass of milk, it is no longer there for someone else to enjoy. Moreover, those who have milk must not necessarily share it with others; or they may let others have just some of it. Milk can easily be made

² A comprehensive overview of the literature is presented in Inman (1987) and Mueller (1989).

³ This section draws on Kaul and Mendoza (2003).

⁴ For reasons of simplicity the term "public good" is used in this paper to refer to public goods, including services, as well as external effects.

excludable; and since it is both rival and excludable, it figures in quadrant 1 of figure 1—as a pure private good. Examples of pure public goods, which are marked both by nonrivalry as well as nonexcludability of their benefits, are listed in quadrant 3; and quadrants 2 and 4 refer to impure public goods, i.e. goods that have only partial properties of nonrivalry and/or nonexcludability.

I.1 Goods that are *not* what one expects them to be

Land is also listed in quadrant 1 of figure 1 as a pure private good. No doubt, it is a good with rival consumption properties; and it can relatively easily be made excludable, e.g. by building a fence. It is perhaps due to these properties that the repartition of the world's landmass into private parcels, including the delineation of national borders, has been a highly contested process, giving rise to conflict and strife within and between families, local communities and countries. Many such struggles and disputes continue. But by now states have, individually and collectively, introduced property rights regimes that define land ownership, minimize uncertainty, and reduce the need for constant vigilance to defend territories against potential rival claimants.

However, land also exists in various public forms. For example, some local communities still follow practices of communal ownership and management of land (see, for example, Ostrom 1990). Other times, governments acquire land so that all can enjoy it, e.g. in the form of a public park.⁵ Thus, when turning to figure 2, which lists goods, as they *de facto* exist rather than based on their “basic” properties, we see land listed several times. It now appears in quadrant 1 as the pure private good that, in effect, it often is, and in quadrant 4B as a rival good that has been deliberately kept nonexclusive.

FIGURE 2 (close to here)

The main difference between the classification in figure 1 and that in figure 2 lies in where goods fall when assessed according to their basic properties and their socially determined status. Comparing the two figures reveals that in many instances there is no automatic link between rivalry/excludability and privateness or between nonrivalry/nonexcludability and publicness. Irrespective of their basic properties some goods clearly can fall either into the private domain or the public domain as well as move back and forth between the two.

Exceptions (at least so far, i.e. given the current state of technology) are goods such as the moonlight or the warming rays of the sun; and therefore, they are listed in quadrant 3 of both, figures 1 and 2. The other goods falling into this category of “technically

⁵ Governments, however, may also acquire land to close it off to the public. The motivation can be such as environmental protection or national security.

infeasible to exclude” are mostly intangibles: policy outcomes or conditions, such as financial stability, law and order or communicable disease control. They can be seen as final public goods: the public things that people ultimately consume. Many other public goods are of a more intermediate character, feeding into the production of final public goods.

Intermediate public goods are mainly to be found in quadrants 2B and 4B. To illustrate, whether and to what extent markets (listed in quadrant 3) operate efficiently is often a matter of a well defined and enforceable property rights (listed in quadrant 2B). Or, the growth and development potential of a country (listed in quadrant 3) may depend on the existence of an educated workforce, which, in turn, might be promoted by respect for human rights, including people’s right to basic education (listed in quadrant 2B) and the realization of this right through making basic education universally available (as indicated in quadrant 4B). Quadrant 2B lists nonrival goods, which are kept or made nonexclusive; and quadrant 4B contains goods that, like education, can be private goods as well as public by design.

But what does “public by design” mean? And how does it come about?

Two main patterns of publicness by design can be distinguished. The first pattern can be termed “*rollout*”. It aims at promoting broad-based consumption of such intangibles as norms and rights; and thus, it is associated with the sort of goods listed in quadrant 2B: nonrival goods made or kept public in consumption. These goods are not only nonrival but additional consumers enhance their usefulness to existing consumers. For example, the more people accept, i.e. consume, a certain norm, the more established and reliable it becomes. As a result, those, who already apply the norm (i.e. the existing consumers), can feel reassured that what they do, let us say, exercising the right to freedom of speech is indeed a socially and politically acceptable form of behavior. Or, to take the example of a technical norm, credit cards can today be used worldwide. That this is possible is, among other things, due to the standardization of their size. Rolling out norms and standards and making them as public in consumption as possible facilitates networking and the reaping of network externalities.

Rollout is not always an easy process. Just think of the many obstacles that stood—and still stand—in the way of *de facto* respect for human rights such as ethnic, racial or gender equality. Many rollouts have been top down, but some, such as the struggle for democracy, have also in some instances been bottom-up, based on broad-based popular movements. Rollout patterns reflect existing power constellations and the nature of the political process. Powerful groups may place their priority norms and rules into the public domain—as a public good to be consumed by all. Therefore, it is important to distinguish between a good’s publicness in consumption (i.e. the degree to which it is affecting all) and its publicness in utility (i.e. the distribution of its net-benefits in terms of enhanced human well-being across various population groups).⁶

⁶ For a more detailed discussion on this distinction between publicness in consumption and publicness in the distribution of utility, see Kaul and Mendoza (2003). Note also that the label for the goods in quadrant 2B is “made *or* kept public”. Hence among the goods in this quadrant are not only things that have deliberately been placed in the public domain but also free-roaming public goods, such as perhaps

The second pattern of publicness by design is “*universalization*”. It aims at making particular private goods available for all. Some of the goods in quadrant 4B, e.g. “poverty reduction” and “basic education”, illustrate this case. For example, schools have a limited intake-capacity: a seat occupied by one student is no longer available to other students. Tuition fees can make education even more exclusive. Yet limited intake capacity and tuition fees are human-made: social constructs, not immutable properties. Where the requisite political will and the necessary resources exist, exclusiveness can be turned into inclusiveness and education can be made available universally, i.e. on a nonexclusive basis. The same holds true for basic health care and some forms of insurance, such as basic old age or disability insurance.^{7/8}

Besides listing public goods, which are, against the backdrop of the standard definition of public goods, “unexpectedly public”, figure 2 also reminds us of “unexpectedly private” goods. Quadrant 2A, for example, mentions commercial knowledge. Some public good theorists refer to knowledge as a public good *par excellence*. Being nonrival in consumption it could be made available to additional users at zero cost. Yet, intellectual property rights often grant knowledge producers a temporary exclusive right to control the use of the knowledge they generated. Such protection creates a positive incentive to invest in research, encourages innovation and promotes dynamic efficiency. But dynamic efficiency comes at the expense of static efficiency: restricting the utilization of knowledge implies its under-consumption. Therefore, ideally, patented pharmaceutical knowledge (the first example listed in quadrant 2A) should be complemented with public good measures that offset the static efficiency loss resulting from respect for patent rights. These public goods can come from quadrant 2B (such as consensus on a flexible interpretation of TRIPS should public health conditions so require) or from quadrant 4B (such as the Global Fund to Fight Malaria, Tuberculosis and HIV/AIDS, which, among other things, facilitates access to medicines for those who cannot afford market prices).

Quadrant 4A lists goods that are basically rival and nonexcludable but have, in a *quasi* way, been moved out of the public domain. But why “quasi”? The reason is that the basic properties of these goods have actually *not* been changed. For example, fish stocks and the atmosphere remain rival and nonexcludable. However, with the help of policy engineering, intangible barriers have been placed in front of them: quotas regulate fish harvesting and pollution allowances limit the greenhouse gas emissions of individual

undetected viruses or technology and capacity-building spillovers associated with foreign direct investment.

⁷ For the main rationales underpinning decisions to rollout intangibles and universalize the availability of private goods universally available, see, for example, Stiglitz (2000).

⁸ Evidently, there exists a link between the goods in quadrant 2B and those in 4B. Rolling out a norm such as “basic education for all” creates the social basis for policy action and actual development achievements. The Millennium Development Goals, set forth in the Millennium Declaration (www.un.org/millennium/declaration/ares552e.htm), are a recent example of a roll-out initiative. They have spawned a large number of national and international policy initiatives designed to achieve--universalize the actual attainment of--the MDGs by 2015. See, for further detail, United Nations (2003).

agents. These quotas and allowances are a form of property rights, and if transferable, private goods.⁹

A deliberate decision or public policy choice can also underlie the goods listed in quadrant 3 of both, figures 1 and 2. These goods are in terms of their publicness in consumption largely unchangeable, at least within the national context.¹⁰ Yet, there is ample scope for public debate and choice over how much of the goods to provide--to what extent to tolerate them as "bads" (e.g. allow markets to be inefficient) or promote them as "positive utility" goods (e.g. have peace instead of war).

I.2 An expanded definition of public goods

The challenge thus is to define public goods in a way that is both theoretically and empirically relevant as well as useful to policymaking. The conventional definition of public goods has no doubt illuminated many important issues in the provision of public goods, notably the problem of the free rider associated with nonexcludability and that of simultaneity of consumption associated with nonrivalry. It has also lent itself to mathematical formulation. But, as the previous discussion demonstrates, by themselves the properties of nonrivalry and nonexcludability are poor predictors of a good's *de facto* publicness in consumption, i.e. of whether and to what extent it is really there for all to consume, or conversely whether it is a good that is excludable is actually exclusive.

Thus, it could be useful to expand the current definition of public goods into a two-tier definition. The current standard definition could be used in order to indicate a good's potential of being public. I could be restated as:

Definition, part 1: Goods have a special potential of being public if they have, in their original state, nonrival benefits, nonexcludable benefits, or both.

This definition differs from the present mainstream one in the sense that it does not assume an automatic link between nonrivalry and/or nonexcludability, on the one hand, and publicness in consumption, on the other hand. By introducing the word "potential" it recognizes that a good's properties are malleable: they may be subject to change, and as the comparison between figures 1 and 2 has shown, move across private-public boundaries.¹¹

⁹ An extensive literature exists on the theory of, and practical policy experiences with, employing, these and other policy instruments of sustainable development. See, for example, Pearson (2000).

¹⁰ Section III.1 below will show that the degree of their *global* publicness in consumption can in many instances be modified.

¹¹ This is *not* to say that the properties of (non)rivalry and (non)excludability do not matter at all. Quite to the contrary, they are important determinants of a good's voluntary and private provision, e.g. of the amount of free-riding that might occur and/or the strategic games individual actors might play to avoid contributing to the provision costs of a good, such as pollution reduction or communicable disease control. However, these considerations mainly come into play *once* a decision has been taken to place the good in question either in the public domain or in the private domain. Take the example of fish stocks in the high seas. Without any additional public policy action, this good has the properties of a natural common: it is

The complementary part of the definition, referring to the actual properties of a good, would read as follows:

Definition, part 2: Goods are public if they are de facto nonexclusive, available for all to consume or affecting all.

But if it is not—or not alone—nonrivalry and/or nonexcludability that determine a good's publicness in consumption, the question then is on what else does a good's publicness depend upon. Judging from the various cases examined so far, it seems that publicness in consumption is attributable to at least three main factors:

- *Infeasibility of exclusion*—which simply rules out the option of modifying a good's basic property of nonexcludability and is, of course, subject to technological advancement and/or economic growth that may make certain policy option more affordable;
- *Public policy choice*—which may reflect such as the result of political processes, such as elections, lobbying pressures, or social and cultural norms;
- *Neglect and oversight*—which could stem from a diverse set of factors, including various types of government failure as well as informational problems.

History has shown that goods, which are public today, can be private tomorrow. Much of television has undergone such a transformation and turned from public provision, provided free of charge or against a flat radio/television charge, into cable television, requiring subscription to differently priced program packages. The suggested two-tier definition reminds us to be aware of this fact and not to assume, based on a good's basic properties, that it actually is private or public in consumption. Also, the set of goods we are dealing with is not constant. New things and new conditions are likely to emerge. Computer viruses and Internet-based crime are examples of public "bads" that until recently did not exist. SARS (Severe Acute Respiratory Syndrome) is a further case in point. The distinction between potential and actual publicness stresses the need for society to be vigilant and scan the public domain continuously, assessing whether the things and conditions, that are public in consumption, are in line with current policy preferences and institutional arrangements.

Looking at the ensemble of the goods that are public in consumption, that is, the size and composition of the public domain, is critical for analyzing how public goods impact the well-being of various population groups. It is also important to see how both,

rival in consumption and nonexcludable. However, countries individually or collectively can decide to place, as discussed earlier, a policy barrier around the good by instituting a credible system of fishing quotas—thus limiting access to the good, making it in a way excludable and "neutralizing" its property of nonexcludability. Whether or not this decision materializes depends on many factors, including such as the power of industry lobbies or the role that exploiting the particular fish resource plays in a country's economy. Yet, once a decision to introduce a quota system has been taken, the design of this system will, of course, have to take into account the basic properties of the good, notably the nonexcludability factor, if it is to be effective and reduce the risk of noncompliance. For more details on this point of (non)rivalry and (non)excludability as determinants of provision strategies and levels (as opposed to determinants of a good's publicness or privateness in consumption), to which we will revert in part II of this paper, see, among others, Sandler (2003).

contents and structure of the public domain, vary with such factors as level of national income, stage of development, political regime, emergence of new technology, or major policy experiences such as the Great Depression, World War II, decolonization, Bhopal, or September 11, 2001.^{12/13}

In sum, it is suggested that the term “public good” denote those goods that are actually in the public domain and available for all to consume. Some of these goods will certainly have nonrival and nonexcludable characteristics. But this fact alone does not indicate why they are public: are they kept or left public or is it technically impossible to make them excludable? And even more intriguing perhaps is why some of the goods with significant public properties end up being private.

II The Role of the State in Public Goods Provision: Imperfect, Limited but Pivotal

The definition of public goods is usually focused on the consumption properties of goods. Yet as noted, the present standard concept tends to go a step further. It argues that publicness in consumption leads to market failure and that market failure constitutes a justification for state intervention. Therefore, when looked at from the provision side, public goods are defined as state-provided goods. It is to this second dimension of the mainstream definition that the discussion now turns. The key question to be clarified is whether and to what extent a good’s publicness in consumption predicts state-provision.¹⁴

Even a cursory look at the production path of various (actually) public goods reveals that this process can vary widely, depending on the good’s basic properties, the social mantle it carries, and the conditions under which it is to be provided. Although being highly good-specific, provision processes also exhibit common features. *First*, they typically involve contributions from all actor groups: private individual actors and firms, civil society, philanthropists, and state agencies. *Second*, adequate provision tends to

¹² In order to determine the impact of the public domain and the sets of goods in it on people’s well-being it would be important to differentiate between publicness in consumption and publicness in the distribution of a good’s utility. The public goods literature often equates a good’s being public in consumption with it having positive net-benefits for all. However, some goods, such as noise and pollution, force themselves on people and few people, if any at all, derive benefits from this consumption. To the contrary, they may suffer loss of utility. Other public goods, such as the judicial system, may be maldesigned, favoring some population groups, let us say, men, more than women.

¹³ Examples of studies analyzing determinants of public goods provision or assessing the impact of public goods on such dimensions as poverty include among others: Besley and Ghatak (2003a); Cameron (1978); Itaya *et al.* (1997); Pottebaum and Kanbur (2001); Kaplow (2003); Persson *et al.* (1998 and 2000); Pradhan and Ravallion (1998); and Rodrik (1996). The strengthening of civil aviation safety, immigration and other types of national border controls in response to September 11, 2001 can also be mentioned in this context.

¹⁴ Some scholars, e.g. Musgrave and Musgrave (1989), distinguish between two sides of the provision process, viz. politics and production. This distinction is analytically useful, although in reality many linkages exist between the two sides. The following discussion focuses on the production side of public goods, bringing in issues of politics only to the extent that they directly affect the production side.

require a collective-action component (CaC). The state's role in providing this component is pivotal—but not unique: other actors, too, contribute to CaCs.

II.1 Multiple actors: multiple strengths and failures

No doubt, there are a few public goods that are solely the result of private initiatives. Free open-source software is a case in point. And there are also a few public goods that are exclusively state-provided. Naturalization services and the management of citizenship is perhaps one of those goods. In most other instances, however, public goods emerge as a result of a complex interplay between not only numerous agents but also many types of actors and coordination mechanisms, including markets.

For example, the state may pass a law to ban cigarette smoking in public places. But the achievement of a smoke-free environment, let us say, in restaurants depends very much on restaurant owners helping to ensure compliance with this law and on a myriad of customers actually changing their behavior. Similarly, a traffic light can only serve its purpose, if the general public, pedestrians as well as drivers of cars, bicycles and other means of conveyance, know and respect traffic rules and regulations.

Or consider the production path of the public good "malaria control". Besides governmental public health measures, a major input into this good is the private purchase of insecticide-impregnated bed nets. Individual persons or households could conceivably buy these nets solely for the purpose of sleeping more comfortably at night, i.e. not at all concerned about malaria control. Nevertheless their action contributes to achieving this goal. Given this social effect or externality, some countries aim at making bed nets affordable for all by offering public policy incentives (e.g. tax credits) to private producers. Thus, state intervention does not replace markets; it enables markets to enhance their contribution to malaria control. Furthermore, since an effective control of the disease calls for the development of new medicines, the current provision process also involves public support (subsidies) for relevant R&D and product development, largely carried out in private pharmaceutical companies. Various state and nonstate actors (including also private foundations) provide the financing for this purpose. The resources are made available among others, to an international public-private partnership, the Medicines for Malaria Venture (www.mmv.org).¹⁵

Figure 3 graphically depicts some of the building blocks entering the production of another public good "food safety". The message is, once again, one of complexity and multiple private-public linkages. The figure also highlights that different actor groups can play quite similar roles. In the case of food safety, for example, governments as well as firms are shown as being involved in standard setting; and governments, firms and civil society organizations are listed as contributing to certification and inspection.

FIGURE 3 (close to here)

Clearly, public goods provision today transcends the role of the state. It is of a hybrid nature: partly private—involving markets and firms; partly state—with careful

¹⁵ For a more detailed discussion of the production path of malaria control and other communicable diseases, including among others, tuberculosis and HIV/AIDS, see Commission on Macroeconomics and Health (2001) and Arhin-Tenkorang and Conceicao (2003).

consideration being given to the principle of subsidiarity and assigning issues to the “right” level of government; and partly voluntary—relying on philanthropy, civil society, social norms and culture, and leadership of different types. Private and voluntary involvement in this process has no doubt grown in recent decades with the reengineering of the role of the state that has occurred in many parts of the world since the mid-1970s (see, Anheier and List 2000; Foundation Center 2003; Glaeser and Shleifer 2002). But even in earlier decades it perhaps was somewhat of an oversimplification to refer to public goods as state-provided. Although then the state was more directly involved in the provision of a number of essentially private goods, such as steel and cars. And it also financed and produced such public utilities as water, sanitation, electricity or communication services.

By now, many of those goods have been privatized, either in full or in part (see, Megginson and Netter 2001); and the state's role has been re-oriented, emphasizing provision of incentives and supporting individual actors in aligning their private interests and activities with society's overall policy goals and objectives. Even in cases, such as defense, for which the state has usually retained primary political responsibility, earlier forms of market-state dualism are breaking down. Sub-contracting and public-private partnerships now are a familiar production mode also in this sector (see, Held *et al.* 2002, Foucault and Bellais 2002, and Parker and Hartley 2003). But despite these trends towards privatization and public-private partnering, government agencies, of course, continue to finance *and* directly produce some goods. Examples are basic education, health care, justice, political norm and standard setting, as well as various forms of general administration, including among others, the registration of births and deaths and the provision of vital statistics.

Yet while all actor groups and coordination mechanisms play a role in public goods provision, each one is also known to fail.

The case of *market failure* has been well established. Theoretical and empirical studies have shown that private provision of a nonrival good and charging a price for making it available to additional consumers violates the condition of equality of price and marginal cost required for optimal provision and implies underconsumption. Yet not charging a price will lead to underprovision. Nonexcludability as well as nonexclusiveness of a good's benefit presents the problem of the free rider, i.e. reluctance on the part of individual agents to reveal their true preferences. This causes public goods to be underprovided. Much, of course, depends on the exact nature of the good and its social composition function, i.e. whether its production follows a summation, weak-link or best-shot aggregation technology (Hirschleifer 1983; Sandler 1997) as well as on other factors, such as group size (Olson 1971 [1965]).

As Sidgwick (1969 [1901]) and many other public choice and political economy scholars after him have noted, there is no easy solution to market failure: *government failure*, too, impedes public goods provision.¹⁶ Politicians and bureaucrats pursue not only the public mandates and tasks assigned to them but can also demonstrate self-seeking and personal-utility-maximizing behavior. Information problems are another important cause of government failure. Because governments may also fail, it is

¹⁶ For overview studies on these and related points, see, for example: Inman (1987) and Mueller (1989).

important to justify and design their intervention in the economy carefully. Yet as Sandmo (2002) notes, economists and policy-makers have often taken this task all too lightly.

In recent decades, civil society has emerged as a powerful watchdog both of consumers, private corporations and states. Men and women in fur coats are being frowned at by the general public—pressured into not supporting the killing of animals for fashion purposes. Consumer groups boycott goods they consider to contain such public “bads” as exploitation of child or prison labor; disrespect for workers rights and unfair wages or chemicals harmful to the environment or human health. As a result, some private corporations have become more socially responsible, willing to internalize negative externalities—lest their market share shrink. Similarly, civil society organizations are pressuring states into being more public—transparent and accountable—as well as more concerned about longer-term issues and problems transcending their territorial boundaries, such as global warming. Civil society organizations are also involved in the delivery of some public goods, especially conflict management, where in-depth knowledge of local conditions may be critical (see, for example, Anheier 2001, Ben-Ner and Hoomissen 1993, Edwards and Gaventa 2001).

Yet again, *civil society failure* also happens. Many nongovernmental organizations are advocacy groups and issue leaders. To state their case successfully, they sometimes have to overstate it, be targeted and particularistic in their approach.

Finally, institutions can be slow to adjust to changing circumstances (North 1990). And this is one of many reasons for *failures of the system of social and cultural norms*. Beliefs and norms are often rooted in the past; and what perhaps was a functional rule or permissible behavior earlier may well be perceived as dysfunctional and impeding public goods provision now. Many societies have, for example, encouraged a change in public attitudes towards borrowing and insurance in the interest of fostering overall economic growth and development (see, Bernstein 1996, and Shiller 2003).

II.2 Public goods as collective-action goods

Evidently, public goods are not always—certainly not always exclusively—provided by the state. A more fitting description is that they are multi-actor, collective-action products, consisting of three main types of building blocks:

- *External effects of private actions*—undertaken by individual actors based on self-interest alone, including possibly their self-interest in being compassionate;
- *CaCs (Collective-action components)*—put in place either by state or nonstate actors, offering either a framework (e.g. regulation or financial incentives) to nudge individual private actions into certain directions or complementing

private and voluntary activities (e.g. through a directly state-provided facility such as a central bank or court facility).¹⁷

- *External effects of concerted private actions*—reflecting some alignment between private and social interests brought about through CaCs.

II.3 The specificity of the state's role

The state's role in public goods provision is primarily concerned with the provision of CaCs. Since other actors, too, are involved in delivering these components, the question is whether it is possible to discern any specificity of the state's role in public good provision?

It seems that the state's role differs from that of other actors in at least four important respects.

First, the state typically supports a diverse range of public goods. At least in democratic nations, it is *the* institution expected to facilitate through electoral and legislative processes an aggregation of social preferences (in whatever imperfect way), including a *bundling* of the preferences of different population groups for various public goods. In contrast, other actors tend to intervene on a more issue-specific basis. This is not necessarily to make the government provide a private good that they prefer but to ensure that public goods, to which they attach high priority, also rank high on the governments list of issues to be promoted.

Second, no other actor often matches the government's financial allocations to public goods. Its special financial role is linked to its unique coercive powers, including its power to tax and make, if deemed desirable, all contribute to its expenditure programs. The state's taxation authority implies that it can rely on a relatively predictable stream of income. And this, in turn, means it can engage in activities requiring longer-term commitments (e.g. pension systems), involving higher risks (e.g. science support or other "frontier" issues) or offering very few, if any, benefits that lend themselves to private appropriation, except via some form of corruption. In comparison, private and voluntary actors tend to make limited, one-time allocations to "their" issues; and their interventions, therefore, are more of a special project type rather than a regular program type.

Third, promulgating and enforcing compliance by all, if wanted, with binding laws and obligatory rules is another aspect of the special coercive powers of states. Nonstate actors can engage in *self*-regulation; or they can help promote consensus around certain norms (see, Cutler, Haufler, and Porter 1999). Yet in order to make such norms compulsory and enforceable, they, ultimately, have to rely on the state and its regulatory powers.

¹⁷ The interested reader may already want to turn to figure 5, which presents a schematic description of the inputs to global public goods, including among other things, the aforementioned three types of building blocks.

Fourth, state agencies may be the better-suited provider where the delivery of a good is difficult to observe (e.g. the quality of education imparted to students), and hence, difficult to monitor, verify and contract out. Government as well as nonstate, nonprofit organizations may also have an advantage over private, for-profit providers where opportunities for pecuniary rewards are limited and the provision of the good may depend more on workers being motivated by social concerns. On the other hand, where a task is unidimensional and calls for innovation and entrepreneurship, private provision may be preferable. These conclusions emerge from a growing body of studies examining the comparative advantages of various actor groups in public goods provision and how best to combine their respective strengths with the incentive structures underlying particular goods. The questions addressed in these studies include such as: the pros and cons of public and private ownership; pecuniary and non-pecuniary motivations of and incentives for workers in the private sector and in state bureaucracies; the different challenges of managing principal-agent relations in these two domains; and the experiences gained with various types of public-private partnerships.¹⁸

This juxtaposition of the possibilities of state and nonstate actors to inject CaCs into the provision of public goods suggests that the state is the core provider of these components, complemented at times, by targeted CaC interventions of nonstate actors. Of course, there is always the issue of whether these interventions are designed to reduce government failure and move state action back on track, or whether these interventions distort what would otherwise have been a socially more desirable level or form of public goods provision. However, this question can only be answered empirically, on a case-by-case basis.

In sum, a good's publicness does not necessarily predict state provision. Rather, it suggests multi-actor provision. While all actor groups contribute in often important and critical ways, the role of the state, albeit limited and sometimes imperfectly executed, is a special and pivotal one. The state clearly is the core-provider of CaCs, which help bridge private interests and social interests, and thus, are an indispensable ingredient of adequate public goods provision.

III The Case of Global Public Goods

So far, we have discussed public goods without reference to the scope of their benefits or costs. This section will examine the predictions of the standard definition in respect of global public goods. The focus will be on understanding the global dimension of these goods.¹⁹

¹⁸ To mention but a few of the theoretical and empirical contributions to this debate, reference can be made to: Acemoglu, Kremer, and Mian (2003); Besley and Ghatak (2001, 2003a, 2003b and 2003c); Blank (2000); Brooks (2003); Burgess and Metcalfe (1999); Diamond (2002); Dixit (1996 and 2002); Feldstein (2002); Fitzgerald (1988); Francois (2000 and 2003); Harris (2003); Hart (2003); Laffont (2002); Laffont and Tirole (1998); Osborne (2000); Prendergast (1999); Sandmo (2002); Shleifer (1998); Stiglitz (2002); and Stiglitz and Wallsten (1999).

¹⁹ The term "transnational public good" is sometimes being used in the literature to refer to both regional and global public goods. There exist many similarities between these two classes of goods. So much of the following discussion also applies to regional public goods. However, when regional public goods are

III.1 Natural global commons and globalized national public goods

Public goods can be said to be of global scope if their benefits or costs extend to all countries, people and generations. Only very few goods meet these requirements. A less strict but more useful definition is that a good is globally public in consumption if its benefits or costs extend to more than one group of countries and do not discriminate against any population group or generation (see, Kaul, Grunberg and Stern 1999). Global public goods are thus public in two senses: one, they are public as opposed to private; and two, they are public (global) as opposed to national.

Global public goods are nothing new. Many, notably the natural global commons, predate human activity. They include the atmosphere, the geostationary orbit, the electromagnetic spectrum, and the high seas. Also, externalities have been around, 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 links and interdependencies between different parts of the world. International cooperation also played a role, such as in the 17th century debate on open access for all nations to the high seas (Mendez 1992). It is this second class, the human-made global public goods, which has witnessed a rapid expansion in recent centuries -and especially- in recent decades, being both a driving force and result of globalization.

Like figure 2, figure 4 classifies global public goods primarily according to their humanmade (social) properties. As before, the goods in quadrants 2 and 4 involve policy harmonization. This time, however, it is policy harmonization *behind* national borders, based on agreements, such as the World Trade Organization's multilateral trade regime, or on policy conditionality, such as the one implemented by the Bretton Woods Institutions, other multilateral and bilateral agencies (notably aid agencies) or private actors, such as "the market". Such agreements stipulate or suggest both, what to keep or make public nationally (see, for examples of goods, quadrants 2B and 4B) and what to keep or make private nationally (see, for examples, quadrants 1, 2A and 4A).²⁰

FIGURE 4 (close to here)

The globalness of many public goods, thus, results from national public goods becoming embedded in and shaped by international regimes. An especially significant feature of these regimes in the present context is that many call for the removal of national border controls. In fact, increased openness of national borders has, in many instances, preceded policy harmonization behind borders. And both together, propelled also by technological advances, have encouraged a growing volume of cross-border economic activity—and with it, a growing volume of cross-border spillovers and spillins. Only some of these externalities are being addressed by international cooperation efforts; many others so far go unchecked or inadequately checked. A result of these and other

provided within the context of a regional political union, such as the European Union, they perhaps resemble more national than global public goods. Therefore, the discussion here considers only global public goods. For an examination of regional public goods, see, for example, Arce and Sandler (2002).

²⁰ The Convention on Biodiversity, for example, stipulates that biodiversity is a national (and hence, a sort of "private") good (see, www.biodiv.org). Accordingly national biodiversity has been placed here into quadrant 1.

related trends has been the interlocking of national public domains, illustrated by the goods in quadrant 3 of figure 4. These goods now exist in an indivisible form throughout the world—for all to consume. Unfortunately, many are severely underprovided, presenting themselves as global public "bads".

Thus, only few public goods are inherently and (so far at least) unchangeably global in scope. These are primarily the natural global commons. Most global public goods are *globalized* national public goods: they are either goods, whose properties have been made indivisible by the increasing e.g. porous nature of national borders, or goods, which have become embedded in international cooperation regimes. Like publicness in general, globalness is in most instances human-induced and not—or not alone—a matter of a good's original properties.

III.2 International cooperation for global public goods provision: nation states as private actors

Globalized national public goods face a double challenge: their adequate provision depends on successful cooperation nationally as well as internationally, on CaCs as well as on international collective-action components (ICaCs) (see figure 5). Since we found earlier that despite all its limitations and shortcomings, the state plays a pivotal role in providing CaCs nationally, the question is how the provision of ICaCs can succeed, given that the institution of the state has no equivalent internationally?

FIGURE 5 (close to here)

International relations theory (see, for example, Martin 1999) argues that international cooperation in large measure functions on a voluntary basis. There are, of course, many reasons for which all or some governments may want to seek the cooperation of others. States themselves are interested in such issues as safeguarding territorial or policymaking sovereignty. There are also more transnational actors among national constituencies, both within civil society as well as among business. They may like to see their government promote cross-border cooperation of different types. However, government failure in international cooperation is perhaps more pronounced than in national cooperation. In international cooperation problems may arise not only for such reasons as informational problems or self-seeking behavior of politicians and bureaucrats. An added source of government failure lies in the *global* publicness of goods, which can tempt individual states into free-riding or other strategies aimed at not contributing their fair share to the provision costs of a good.

More pronounced government failure, however, has its counterpart in more pronounced nonstate actor interventions in intergovernmental cooperation. In recent decades large numbers of civil society and business actors, who in recent decades accompanied various global conferences of the United Nations, WTO negotiations and BWI meetings--in the hallways of the conference centers or out on the street. Moreover, international cooperation among and between nonstate actors is also on the rise. Global civil society networks are well established (see again, Anheier 2001); and self-regulation of private business a growing practice (see, again Cutler, Haufler, and Porter 1999).

These facts suggest that like CaCs, ICaCs are multi-actor provided. And it also seems that states again are the core-provider. International cooperation still is predominantly an intergovernmental process. Yet an important difference exists between the provision of public goods nationally and internationally: states intervene internationally not as *the state* but as *individual* nation states.

This explains why international cooperation tends to function quite successfully where all nation states see clear, significant national net-benefits, e.g. in the global physical infrastructure area, such as civil aviation. International cooperation also happens, where the interests of more powerful countries come into play and where these countries offer side payments to bring other nations "on board". The Montreal Protocol is such a case (see, Barrett 2003). But international cooperation drags wherever these two sets of conditions are not met, *unless* a major crisis occurs or nonstate actors succeed in providing a decisive impetus as they, for example, did in the case of the land mines issue.

It thus is not surprising that many global public goods today are severely underprovided or malprovided (see, Conceicao 2003). One global crisis after the other claims the political spotlight. Often the reason for these crises can be traced back to the same facts:

- *Inadequate bundling of diverse preferences*—which is linked to a number of factors, including among others: the current pattern of global decision-making and contributes to what many perceive as an unfair and overly intrusive character of the global public domain (see, for example, Nye and Donahue 2000); the large number of players in the international cooperation arena; and the manifold global and international inequities and disparities, which are much larger than national, within-country inequities and disparities (see, UNDP various years);
- *Lack of resources and of resource predictability*—resulting from the fact that the financing of international cooperation is primarily of a voluntary nature (see, Kaul and Le Goulven 2003a);
- *Lack of legitimate and credible coercive power*—which leads to mostly non-binding international agreements, left to each country to implement or not to implement; and
- *An international bureaucracy with relatively high-powered incentives*—reflecting the uncertainty of funding and resultant competition for scarce resources among international organizations, notably for operational cooperation purposes.²¹

Thus, international cooperation for global public goods is a multi-actor process, in which nation states play a critical role in the provision of the ICaC. However, intergovernmental

²¹ The tasks of many international organizations fall into two basic categories: 1) to serve as a forum for international negotiations; and 2) to assist in operational follow-up to international agreements. The financing of the former function tends to be a state obligation and amounts to some \$ 8 billion per annum. The latter, however, is mainly relying on voluntary resources and currently amounts to some \$ 24 billion (Kaul and Le Goulven 2003a).

cooperation in this case resembles more the institution of the market than the national institution of the state: it is largely voluntary and motivated by national (private) self-interest.

Summary and Conclusions

This paper has departed from the current mainstream concept of public goods to examine three questions. The *first* question was whether nonrivalry in consumption and nonexcludability of benefits are useful predictors of a good's publicness in consumption. The finding is that in many instances the prediction does not hold. It could, therefore, be useful to expand the current standard definition and distinguish between a good's potential to be public, based on its properties of nonrivalry and nonexcludability, and its actual publicness in consumption, which often is a social construct.

The advantage of such a two-tier definition is that it permits us to see the ensemble of the goods that are public in consumption and to gain an understanding of the public domain—its composition and size and the factors that shape and re-shape this domain over time.

The *second* question concerned the role of the state in the provision of public goods. The discussion on this issue suggested that public goods provision is a multi-actor process in three respects: 1) decentralized private initiatives provide important contributions, in the form of externalities; 2) further important inputs are the external effects of concerted private actions, which reflect some alignment between private and social interests fostered through various collective-action components (CaCs); and 3) both state and nonstate actors are involved in the provision of CaCs, with the state clearly not being the sole provider, but perhaps, the core-provider. While private and public goods share point 1, points 2 and 3 are specific to public goods; and therefore, the current description of public goods as state-provided goods could be replaced by a description of public goods as collective-action goods: requiring concerted or joint action.

The advantage of this reconceptualization is that it provides a fuller picture of the production path of public goods and the various actor groups involved—their respective comparative advantage to contribute and how to facilitate their cooperation.

The *third* question focused on global public goods. Like public goods in general, these goods often carry a social mantle. Many, if not most, constitute globalized national public goods, i.e. public goods that, in the wake of increased openness of international borders and growth in international regimes, have become placed or drawn into the global public domain. The provision of global public goods, too, is very much a multi-actor process; and again, nation states are key players in providing the international collective action components (ICaCs) for these goods. But in the case of ICaCs they do so not like *the state* nationally but like individual, private actors: largely with national self-interests in mind. Thus, global public goods are perhaps the goods that least fit the prediction of the current mainstream definition of public goods as state-provided goods.

Many of the controversial dimensions of globalization pertain to public, and especially global public goods issues—global warming, the design of the multilateral trade regime and of the financial architecture, the management, or rather non-management, of international migration, the control of global diseases, or international

terrorism. It thus seems timely—even imperative—to assess how well current public goods theory captures these realities. Yet although many key policy issues today are global, the challenge is broader than just conceptualizing global public goods. Since global public goods often constitute national public goods that have become linked as a result of increased openness of borders and greater emphasis on policy harmonization behind national borders, we need to rethink and update the concept of public goods as such in order to better understand the special class of global public goods—and manage globalization more efficiently and fairly. Many global public goods

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