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## UNIT 6 LOCAL AND GLOBAL PUBLIC GOODS

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## 6.0 OBJECTIVES

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After reading this unit, you will be able to:

- outline the characteristic features of ‘local public goods’ (LPGs) with illustrations;
- discuss the applicability of Tiebout model for providing efficient local public goods;
- differentiate between ‘club goods’ and ‘public goods’ with illustrations;
- specify the classificatory framework and characteristics of GPGs (global public goods) with illustrations;
- highlight the importance of ‘peace and security’ for global peace and GPGs;
- write a note on ‘global peace index’;
- present the perspective of GPGs on environment and poverty reduction; and
- explain how ‘knowledge’ is regarded as a ‘global public good’ (GPG).

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## 6.1 INTRODUCTION

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Unlike Private goods, the two important characteristics of a Public good are: (i) non-excludability and (ii) non-rivalness in consumption. Due to ‘free-rider problem’ in ‘public goods’, market failure occurs. This requires government intervention for the production and provision of ‘public goods and services’ through public expenditure. In this context, ‘local public goods’ (LPGs) are goods provided by local governments/authorities for the consumption of local

population. ‘Global public goods’ (GPGs), on the other hand, are such goods like ‘knowledge’ whose benefits could reach across borders of national boundaries benefiting the world or the mankind in general (e.g. a vaccine for a dreaded disease). In light of this, the following as ‘priority’ characteristics are identified for GPGs: (a) preventing the emergence and spread of infectious disease, (b) tackling climate change, (c) enhancing international financial stability, (d) strengthening the international trading system, (e) achieving peace and security and (f) generating knowledge. There are thus characteristic differences between local and global public goods each of which requires distinct policy approach.

## **6.2 LOCAL PUBLIC GOODS**

Local public goods (LPGs) are goods like ‘common property resources’ established by local authorities/governments mainly for the consumption of local population. From an administrative standpoint, local bodies have certain advantages in the provision of local public goods and services. These are: (i) local knowledge required in their provision (e.g. local preferences), (ii) local accrual of benefits and costs and (iii) appropriate incentives at local level. Local governments across the world provide a variety of local public goods [e.g. (i) water supply and drainage, (ii) street lights and pavements, (iii) waste management, (iv) parks and recreation spaces, (v) roads and traffic management, (vi) museums and galleries, (vii) libraries and swimming pools, (viii) education and healthcare and (ix) social housing]. These public goods have many differentiating factors based on which they can be categorised into either: (i) pure public goods or quasi/semi public goods or (ii) public goods that can be provided by private agencies. Table 6.1 shows a criteria of classification of public goods based on a ‘low-medium-high’ trichotomy in terms of their extent of usage.

**Table 6.1: Characteristics of Local Public Goods and Services**

Excludability of Consumption	Rivalry in Consumption		
	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Low</i>	Street lights, parks and recreation	Streets, pavements	
<i>Medium</i>	Flood protection	Sports grounds, public conveniences	Arterial roads, economic development
<i>High</i>	Museums and galleries	Libraries, swimming pools, recreation spaces	Public transport, waste water, waste disposal, parking

The provision of public goods and services by public agencies is based on the costs of services (rather than on demand, as in the case of private goods/services). The consumer demand is therefore not considered in the process. Public choice theory, however, argues that the consumer’s demand should be elicited through a democratic political process. For instance, in a democracy, citizens could

explicitly vote 'for or against' the quantum of public goods/services to express their preference. The preference of median voter choice is then considered for identifying the demand. However, it could be difficult or costly to get the 'median voter choice' for every set of public good/service provided by the local government. Moreover, in representative democracy, elected politicians who choose the quantum of public good/service provision, may not reflect the public preference. Thus, although local governments have been providing local public goods (and services) for a long time, their choice is largely reflective of the control of political and bureaucratic system. There is thus a lack of explanation of 'citizen-consumer' choice. Tiebout attempts to offer an explanation to this as follows.

### 6.2.1 Tiebout Model

Tiebout believed that consumer's preference/choice of public goods can be captured through a 'competitive metropolitan market' of local governments. Tiebout finds a 'market type' solution to determine the level of expenditure on local public goods. For this, he takes forward Musgrave-Samuelson's analytical framework. The major issue in the Musgrave-Samuelson's approach to public goods is the 'lack of a mechanism by which consumer preferences for public goods can be measured'. This is because rational consumers may understate preferences to enjoy goods in order to pay lower tax. Tiebout's concern is about getting this consumer preferences 'rightly revealed' so that they can feel satisfied like the consumption of private goods. This would then enable taxing him accordingly. Tiebout's theory is based on certain assumptions. These are: (i) consumer-voters are fully mobile and will move to that community where their preference patterns, which are set, are best satisfied, (ii) consumer-voters are assumed to have full knowledge of differences between revenue and expenditure patterns and react to these differences, (iii) there are large number of communities in which the consumer-voters may choose to live, (iv) the population is considered to be living on dividend income thereby avoiding employment restrictions, (v) public goods/services supplied do not exhibit any external economies or diseconomies, (vi) for every set pattern of community services, there is an optimal size in terms of cost and (vii) communities below the optimum size attract new residents so as to lower the average costs while those above the optimum size do the opposite. Those at the optimum, try to keep their population constant.

Under the above set of assumptions, the movement of consumer-voter takes place from a greater than optimal size community to a less than optimal size community so as to satisfy the preference pattern of a consumer. In the process, the respective jurisdictions will operate at the lower average costs (cost-efficient) in supplying the public goods/services. The act of moving (or failing to move) replaces the usual market test of willingness-to-buy a good thereby revealing the consumer-voter's demand for the public good (or a set of public goods with associated individual tax). Thus, each locality has a revenue and expenditure pattern that reflects the desire of its residents. This is analogous to the consumer walking into a private market place to buy his goods, the prices of which are already set. In other words, Tiebout places the consumers in a position of walking into a community where the prices of community services are pre-set. Thus, spatial mobility provides the local public-goods a private market's shopping trip. In Tiebout's terms, the preference/choice of a location by moving signals the consumption choice of public good/service in exactly the same way as the consumer's choice in a shopping mall signals his/her consumption choice of private good/service.

Policy Implications: Three policy implications are offered by Tiebout. These are: (i) municipal integration is justifiable only when more of any service is forthcoming at the same total cost without any reduction in any other service. This means, metropolitan consolidation should be considered only if it leads to the provision of more quantum of public services at same tax cost. (ii) Policies that promote residential mobility (and increase the knowledge of consumer-voter) will improve the allocation of government expenditures in the same way as the mobility among jobs improve the allocation of private resource. (iii) The policy of fixed revenue-expenditure pattern is not possible in large, dynamic metropolis but only in small rural and suburban localities. This happens because of the nature of local public goods as smaller localities spend efficiently in line with citizen preferences. Besides these, one of the main policy implications that was not proposed by Tiebout (but interpreted by others subsequently) is that decentralisation would serve better for the governance of metropolitan areas than a centralised approach. Although the argument for decentralisation comes from ‘the theory of fiscal federalism’, Tiebout’s theory accords support to decentralisation as a better means of serving the public by providing public goods/services of their choice. In other words, Tiebout’s theory supports the ‘decentralisation theory’ of public finance, policy and administration.

Critique of Tiebout Model: One of the main criticisms of Tiebout’s theory is that since ‘agglomeration and scale economies’ play an important role in large metropolitan areas, a single authority can perform better than competitive multiple local governments by leveraging the advantages. A second criticism is that it ignores the equity dimension. Sorting of people according to preferences may give rise to undesirable outcomes (e.g. racial segregation, segregation of people by income). A third criticism is that multiple jurisdictions (under Tiebout model) may lead to fragmentation and proliferation leading to urban (suburban) sprawl and complicated metropolitan governance (i.e. coordination and accountability issues). A fourth criticism is that some unorthodox economic theory groups (that do not believe in the concept of local public goods), disagree with the usefulness of taxation as an instrument for signalling the movement for re-location of individuals/firms.

### **6.2.2 Club Goods**

Club goods are a type of goods that are excludable but non-rivalrous until at least a point where congestion occurs. Club goods have artificial scarcity, exhibiting high excludability but lower rivalry in consumption characteristics. They essentially have ‘zero marginal cost’ and are generally provided by natural monopolies. Buchanan (1965) in his work on ‘An Economic Theory of Clubs’ addresses the question of how the size of the group influences the voluntary provision of a ‘public good’ by providing a theoretical structure of collective ownership-consumption arrangements (Fig. 6.2). He considers ‘voluntary

**Table 6.2: Club Goods and Public Goods**

	<b>Private Goods</b>	<b>Common Pool Resources</b>
<b>Rivalrous</b>	Food, clothing, cars, parking spaces	Fish stocks, timber, coal
<b>Non-rivalrous</b>	<b>Club Goods</b> Cinemas, private parks, satellite, television	<b>Public Goods</b> Free-to-air TV channels National defence

clubs' to show how an optimal number of members of such a club can maximise utility for its members. He takes the example of a private good like 'shoes' to illustrate the concept. Two people cannot wear the same pair of shoes at the same time. But two or more people can take turns wearing them. As the number of people sharing the same pair of shoes increases, the amount of utility each person derives from the shoes diminishes. Each new member (or co-owner) helps reduce the cost of the 'club good' but there is an optimal size that maximises the benefits for the members.

**Check Your Progress 1** [answer within the given space in about 50-100 words]

- 1) Define 'local public good' with illustrations.

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- 2) Identify the 'gap' that exists in the provision of LPGs by the local governments. Why does this gap exist? In what way is this gap filled-up theoretically?

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- 3) State the essence of Tiebout model/theory.

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- 4) State the 'policy implications' of Tiebout's theory.

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- 5) What are the grounds on which 'Tiebout's prescriptions' are criticised?

- 6) Distinguish between ‘club goods’ and ‘public goods’ with illustration.

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### 6.3 GLOBAL PUBLIC GOODS

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World Bank defines ‘global public goods’ (GPGs) as ‘commodities, services and systems (of rules or policy regimes) with cross-border externalities important for development and poverty reduction’. GPGs can be supplied in sufficient quantity only through cooperation and collective action of countries, both developed and developing. GPGs are, thus, goods (with benefits that extend to all) bearing the following characteristics: (i) are public goods provided by individuals, communities and nations with international implication (and hence requiring international cooperation), (ii) are essentially of public participation in the determination of level of goods, (iii) whose accrual of benefits depend on capacities and cost of access of different groups and (iv) carry priority for special problems of developing countries. The three ‘triangle of publicness’ (i.e. publicness in consumption, publicness in decision-making and publicness in distribution of net benefits) is therefore what determines whether a good is to be regarded as a GPG (global public good) or not. This concept is used to evaluate the structure of international institutions, decision-making processes, framing and enforcement of rules and distribution of net benefits among member countries. The concept of ‘triangle publicness’ is useful in designing a fair institutional mechanism for the supply of GPGs.

Public goods (PGs) can also be classified according to their geographical or spillover area. This is the range over which their benefits (or dis-benefits) are felt. On the basis of their range, the GPGs can be classified into: (i) local (benefits affecting a small locality), (ii) national (pertaining to a nation), (iii) regional (relating to groups of nations) and (iv) global (pertaining to the entire world). Thus, garbage dumped by a person is a local public ‘bad’ as the stench affects only a small locality. The donation made by a rich person to a public park falls under the same category. Defence expenditure leading to a feeling of security is a public good for the entire nation. A trade block is a regional good as it benefits a group of nations. Green house gas emission is a global public ‘bad’ as it affects people all over the globe. Achievement of MDGs (millennium development goals) amounts to ensuring the reach of the benefits of GPGs to population across nations (Table 6.3) and hence MDGs are unambiguously the most important of all GPGs.

**Table 6.3: Millennium Development Goals as Global Public Goods**

Goal	Type of GPG
Eradicate extreme poverty and hunger	Merit goods, GPG by global public choice.
Achieve universal primary education	Merit good, GPG by global public choice.
Combat HIV/AIDS, malaria and other diseases	GPG
Promote gender equity and empower women	GPG
Ensure ‘environmental sustainability’ by: <ul style="list-style-type: none"> <li>• integrating the principles of ‘sustainable development’ in the policies of countries and reverse the loss of environmental resources;</li> <li>• halve by 2015 the proportion of people without sustainable access to safe drinking water; and</li> <li>• achieve by 2020 a significant improvement in the lives of at least 100 million slum dwellers.</li> </ul>	GPG, Merit good, GPG by global public choice (all three bullets)
Develop a ‘global partnership for development’ by: <ul style="list-style-type: none"> <li>• developing an open, rule-based, predictable, non-discriminatory trading and financial system;</li> <li>• including a commitment to good governance, development, and poverty reduction – both nationally and internationally; and</li> <li>• addressing the special needs of the least developed/land locked countries and small developing states.</li> </ul>	GPG GPG (for equity) GPG by global public choice (for equity)

### 6.3.1 Peace and Security

World peace is an ideal of ‘freedom, peace and happiness’ among and within all nations and people. World Peace is an idea of planetary non-violence by which nations willingly cooperate (either voluntarily or by virtue of a system of governance that prevents warfare). The term ‘world peace’ is sometimes used to refer to a cessation of all hostility amongst all humanity. For instance, world peace could include the agreement to allow for the crossing of boundaries (via human rights, animal rights, technology, education, engineering, medicine, diplomats), or to put an end to all forms of fighting. Since 1945, the United Nations has strived to work for resolving conflicts without war. However, nations have entered into

numerous military conflicts. The most effective way to diminish human suffering and the massive economic costs of conflict and their aftermath is to prevent conflicts in the first place. In this, the UN plays an important role in 'conflict prevention' using diplomacy, good offices and mediation. Among the tools the organisation uses to bring peace are special envoys and political missions in the field.

'Peace keeping' has proven to be one of the most effective tools of UN to assist host countries navigate the difficult path from conflict to peace. Its multidimensional peace-keeping operations are called upon not only to maintain peace and security, but for a variety of reasons (e.g. facilitate political process, protect civilians, assist in disarmament, for demobilisation and reintegration of former combatants, to support constitutional processes and organisation of elections, protect and promote human rights, assist in restoring the rule of law and extending legitimate state authority, etc.). Peace keeping operations get their mandates from the UN Security Council whose troops and police are contributed by member states. UN peace building activities are aimed at: (i) assisting countries emerging from conflict, (ii) reducing the risk of relapsing into conflict and (iii) laying the foundation for sustainable peace and development. The UN is being increasingly called upon to coordinate the global fight against terrorism. It advances international peace and security through the pursuit of the elimination of nuclear weapons and other 'weapons of mass destruction' and the regulation of conventional arms.

### **6.3.2 Global Peace Index (GPI)**

GPI measures the relative position of a nation's (and regions') peacefulness. GPI ranks 163 independent states and territories (covering 99.7 percent of the world's population). The GPI is a report produced by the Institute for Economics and Peace (IEP) with data collected by the Economist Intelligence unit. The Index was first launched in May 2007 with subsequent reports being released annually. In 2017 it ranked 163 countries. The GPI gauges global peace using three broad themes: (i) the level of societal safety and security, (ii) the extent of ongoing domestic and international conflict and (iii) the degree of militarisation. Factors are both internal (such as level of violence and crime within the country) and external (such as military expenditure and wars). It has been criticized for not including indicators specifically relating to violence against women and children. However, reliable international data on these subjects is either unavailable or very sparsely reported in many countries. The 2018 GPI indicates Iceland, New Zealand, Austria, Portugal and Denmark to be the most peaceful countries and Syria, Afghanistan, South Sudan, Iraq and Somalia to be the least peaceful. Long-term findings of the 2017 GPI include a less peaceful world over the past decades, growing inequality in peace between the most and least peaceful countries and a widening impact of terrorism with high numbers of people killed in terrorist incidents over the last few years.

In assessing peacefulness, the GPI investigates the extent to which countries are involved in ongoing domestic and international conflicts. It also evaluates the level of harmony or discord within a nation. GPI's assertion is that low crime rates, minimal incidences of terrorist acts and violent demonstrations, harmonious relationship with neighbouring countries, a stable political scene and a small proportion of the population being internally displaced as refugees could be suggestive of peacefulness. India's rank is 136 on the basis of 2018, GPI Index.



**Check Your Progress 2** [answer within the given space in about 50-100 words]

1) How does the WB define 'global public goods' (GPGs)?

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2) State the characteristics of GPGs. What basically determines the GPGs?

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3) How are GPGs determined? In what way this deterministic feature useful?

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4) What is GPI? What does it measure? How does the GPI gauge 'global peace'?

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5) State the five factors considered by the GPI to regard a region as 'peaceful'?

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## 6.4 GPG PERSPECTIVES ON ENVIRONMENT AND POVERTY REDUCTION

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Public goods contribute to individual welfare. Such goods cannot be provided by individual producers. This is because of its two essential characteristics: (i) their property rights are non-exclusive (or imperfectly exclusive) i.e. no one can be excluded from their benefits or avoid the negative effect and (ii) they are non-rival in use i.e. the use by one person does not compete with the use by another person. Because of these two characteristics, individual use cannot be adequately priced, free-riding cannot be avoided and markets typically fail in providing these goods. Policy interventions are therefore necessary to organise collective action, starting with agreements between actors involved, to provide for specific public goods. The concept is relevant for different levels of decision-making. For instance, it can also be applied to the issue of poverty reduction and global environmental management. Providing GPGs is particularly challenging as it requires cooperation and collective action involving many countries and stakeholders. Examples of global public goods are the protection of the ozone layer, peace and macro-economic stability. Development and poverty reduction rely, among other things, on the provisioning of environmental goods, some of which are public and global and local (e.g. soil conservation) and others private (e.g. commodities). Three categories of GPGs that are relevant for poverty reduction and global environmental change are:

- ‘environmental GPGs’ for their relevance for poverty reduction at different scale;
- ‘socio-economic GPGs’ that are influenced by the change in environment and by the increasing scarcity of natural resources; and
- ‘capacity related GPGs’ that are necessary to bring about collective action at the global level to provide GPGs.

### 6.4.1 Knowledge as GPG

Socio-economic development is strictly associated with the capacity to generate, absorb and diffuse knowledge. Analysing the economic characteristics of knowledge, many thinkers (e.g. Richard Nelson, 1959; Kenneth Arrow, 1962) have noted that knowledge is a commodity quite different from others. On the one hand, it is generated for competitive purposes (e.g. armies and companies invest time and money to develop new and superior knowledge to be used against their rivals). On the other hand, it seldom happens that those who generate knowledge can manage to keep it only for their private benefit beyond a limited time frame. This means, neither industrial and military secrecy nor intellectual property rights can, in the long run, impede the dissemination of knowledge. A large portion of those generating knowledge (including academicians and their universities/institutions), diffuse their results for the sole satisfaction of seeing their achievements acknowledged and their reputation enhanced. In fact, the dissemination of knowledge is the ultimate goal of their activity.

It is not easy to identify the components of knowledge that are ‘private’ or ‘public’, ‘national’ or ‘global’ (Nelson, 1992). The debate on these issues are often passionate, especially when they have normative implications i.e. should knowledge be generated for the benefit of everybody? Is it right to keep secret (or proprietary) some knowledge that may have crucial implications for health

or security? Should the outcome of knowledge generated with the taxpayers money of a country be disseminated globally? These issues are not only theoretical but have important policy implications of far reaching practical relevance. They can be posed as follows.

- To what extent public institutions, regulations and norms should protect the intellectual property rights of inventors and innovators?
- Should universities and institutions make profit from the ideas they generate?
- Should national institutions provide free access to knowledge generated in them to scholars and students of rival countries?

Knowledge has only some characteristics of a public good, especially since it is non-rivalrous in consumption. There are economic and institutional methods that would potentially allow making knowledge excludable, but they are never totally effective. Knowledge is very close to be a pure public good when it is used on turnkey basis, viz. when it is not required of users to understand how it works and how it is developed. In most cases, users have to learn to use knowledge, and the more it is sophisticated and complex, the more it will require investment of time and resources. In these cases, even when knowledge is free to use, it can be used only by affording the relative costs. Therefore, what makes knowledge differing from public goods is not the related production process, rather its process of diffusion. This aspect has been scarcely addressed in standard economic theory.

Knowledge is so crucial for welfare, and its characteristics as commodity so different, that public players have always taken a very active role in its promotion and distribution. Public policies and regulations, in all countries, aim at rewarding the producers of good ideas, to increase the investment in knowledge and to induce inventors to disclose their discoveries. Governments have promoted knowledge to: win wars, increase security, safeguard public health, explore the sky, improve communications and advance education and learning. Policy makers may not totally perceive the characteristics of 'public good' of knowledge, but they certainly appreciate the fact that generating and disseminating knowledge has strong positive externalities.

Intellectual property rights (IPRs) protection explicitly aim at making 'knowledge' excludable thereby preventing its imitation and curtail the possibility of its further sale. IPRs are not needed if there are technical devices that impede the forgery of technology. In that case, normal property rights are sufficient guarantee. The rationale for IPRs therefore resides on the fact that knowledge in itself is often non-excludable. Since the explicit aim of IPRs is to make the 'implicit-knowledge' in a product excludable, it appears that there is a contradiction in the government's policy of IPRs. This is because, on the one hand, it encourages the generation and diffusion of knowledge having the characteristics of a pure public good, while on the other hand, it makes it a 'private good' by making it excludable through its IPRs legislation. Hence, the issue of knowledge as a 'public good' has a direct implication for the design of IPRs. Governments have a large number of instruments to make IPRs strong and weak [e.g. (i) the length of protection provided to inventors, (ii) the requirements of novelty to qualify for the granting of a patent, (iii) courts' ruling on controversies about infringements, (iv) the level of enforcement guaranteed by the police against forgeries, etc.]. The lens of global public goods require that, the

more the governments decide to make IPRs strong, and thereby promote institutional exclusivity, the more it will need to use other channels to promote knowledge in areas of priority. Such areas of priority include health, environment, communications, mobility and security, all of which require the development of new knowledge. In such areas, new scientific and technological competencies are far from being confined to one country only. On the one hand, any significant breakthrough has an impact beyond the borders of the state that has actually produced the knowledge. On the other hand, it is very likely that the most significant knowledge are the ones which are the outcome of developments in other locations. In spite of this, many national governments develop their own agenda of science and technology policy on the implicit assumption that sooner or later they will benefit from basic research funded and performed elsewhere. But when such an attitude becomes general, the free-riding syndrome will prevail i.e. each country might be tempted to wait until others will invest in finding out a solution. This, in turn, will lead to an underproduction of the good.

Public goods are considered 'global' when they cover a large group of countries and when it is difficult or impossible to identify a geographically restricted community of beneficiaries. Financial stability, peace, combating climate change and transmittable diseases are all cases of public goods that do not have a clear geographical space as directly or indirectly they affect everybody. Besides this geographical criterion, Kaul et al. (1999) also stress the existence of a temporal dimension i.e. goods (or bads) that could benefit (or damage) not only the current generation, but also future generations. Therefore, though knowledge might not entirely fit into the framework of public goods, it is certainly a 'global good' since it is only in a few occasions, and for short periods of time, that institutions and companies manage to maintain their knowledge within their confined boundaries. Even in the case of top secret investigations, such as those associated with the military sector, knowledge is likely to spill-over to rival countries. Hence, excludability may be obtained in the short run, but less and less in the long run. If the impact on future generations is also included, it is hard to imagine how some knowledge can provide benefits to a specific local or national community and not to all the others.

Public institutions, members of national academic communities and of other publicly funded institutions always have a strong propensity to exchange their wisdom, insights and perceptions with foreign colleagues. Some of the instruments used to guarantee the international dissemination of ideas include academic societies, international journals, conferences, sabbatical years and mobility grants. National governments have encouraged the academic community to be open to cross-border collaborations because there is awareness that the outcomes are non-rivalrous and therefore they should be also made non-excludable, both within borders as well as across borders. Moreover, there is a clear self-interest i.e. collaboration implies not only knowledge outflows, but also inflows.

People potentially benefit from knowledge that has been generated elsewhere and often paid for by taxpayers of other countries. The propensity to act as free-rider is constrained by the very characteristics of knowledge. On the one hand, countries that do not invest enough have lower absorptive capacity and would be slower or inefficient in putting into practice what has been generated elsewhere. On the other hand, countries which invest more in knowledge are also those who are able to learn and assimilate the knowledge generated elsewhere. That is, countries manage to capitalise what they pay for. Thus, the potential to benefit

from scientific and technological expertise by ‘catching-up countries’ is constrained by the level of capabilities of the absorbing (or free-riding) countries. This is a typical case where the difference between the freely available knowledge and knowledge that can be used without incurring costs becomes relevant. Even if significant portions of knowledge are freely available, it does not mean that other countries are able to enjoy the benefit of transfer without the necessary infrastructures and skills. Countries that have managed to absorb knowledge generated are also those that have invested massively in endogenous infrastructures i.e. R&D and education. Japan in the 1950s and 1960s, South Korea and Taiwan in the 1970s and 1980s, China in the 2000s are all examples of countries that have taken advantage from knowledge generated elsewhere because they made an enormous endogenous effort to acquire it. To consider knowledge as a pure public good is therefore fraught with risks of diffusing the view that developing countries could benefit from the competencies of developed countries if the latter are prepared to remove ‘barriers to the transfer’. Clearly, this is inaccurate because institutional hindrances (such as IPRs) or economic hindrances (such as industrial secrecy) are not the main obstacles to the use of knowledge. The main obstacle faced by developing countries is the lack of ‘endogenous absorptive capabilities’.

The business sector is increasing its role in the development of knowledge not only within borders, but also internationally. Companies contribute to perform R&D, upgrade skills, disseminate technical and engineering capacities, both at home and abroad. Firms are therefore less and less associated to a national territory. The activities they carry out outside their nation, including R&D, have increased substantially. Several leading MNCs have built their own intra-firm and international innovation centres. New products introduced by firms are traded in the international markets. Likewise, new processes are scrutinised and diffused by competitors at home and abroad. Ultimately, therefore, the externalities associated to knowledge generation are less and less restricted to a specific nation. It, therefore, raises the question: ‘to what extent the knowledge generated by MNCs is private or public while their investment in R&D and innovation are multi-national (rather than uni-national)?’. This is particularly important since they generate substantial externalities across national borders. MNCs are therefore important vehicles for the international spread of knowledge. They do not necessarily manage to keep their knowledge to themselves but often act as ‘fertilisers for skills that are picked-up and further developed in host countries’.

**Check Your Progress 3** [answer within the given space in about 50-100 words]

- 1) State the three categories of GPGs that are relevant to reduce poverty and protect environment.

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- 2) Is ‘knowledge’ a ‘public good’? Why?

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**Public Goods and Externalities**

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- 3) If you concede that 'knowledge' may not often be a 'pure public good', on what grounds the rationale for IPRs arise?

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- 4) When is a 'public good' considered a 'global public good' (GPG)? Give examples of GPGs.

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- 5) On what grounds does Kaul (1999) hold out that though 'knowledge' may not be a 'public good', it certainly qualifies as a 'global public good'?

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- 6) Do you agree that in case of 'knowledge', potential to free-ride is implicitly curtailed? How?

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## 6.5 LET US SUM UP

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The unit explains the concepts of ‘local public goods’ and ‘global public goods’ with the help of Tiebout model, Millennium Development Goals, Peace and Security, Environment and Knowledge. Tiebout model explains the existence of competitive market for provision of local public goods. Knowledge has some characteristics of public good, such as being non-rival in consumption and in the long run non-excludable. But knowledge cannot be transferred at low or negligible costs i.e. prospective users should invest to develop their ‘absorptive capacity’. Consequently, free-riding in knowledge is less likely to be successful than with pure public goods. This aspect has important implications for national and global policies.

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## 6.6 KEY WORDS

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- Free-rider Problem** : Due to non-excludability and non-rivalness in consumption characteristics of public goods, nobody is willing to pay for it thinking that there is no chance for getting deprived of it.
- Tiebout Model** : Says that people who are not pleased with the goods and services being provided by their town can improve their welfare position by moving to a locality offering a mix of goods and services more in harmony with their preferences.
- Economic Theory of Club** : Conveys that the size of the group influences the voluntary provision of a public good by providing a theoretical structure of collective ownership-consumption arrangements.
- Triangle of Publicness** : Refers to publicness in consumption, publicness in decision-making and publicness in distribution of net benefits.

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## 6.7 SOME USEFUL BOOKS

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- 1) Aronson, J. Richard (1985). *Public Finance*, McGraw Hill Book Company, International Student Edition.
- 2) Arrow, Kenneth. (1962). “ Economic Welfare and the Allocation of Resources for Invention” in the *Rate and Direction of Investment Activity: Economic and Social Factors*, edited by Richard Nelson for the *NBER* , 609-626. Princeton: Princeton University Press.
- 3) Ostrom, M. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press.

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## 6.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

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### Check Your Progress 1

- 1) LPGs are like ‘common property resources’ established by local authorities/governments mainly for the consumption of local population. Examples of LPGs are: water supply and drainage, street lights and pavements, waste management, parks and recreation spaces, roads and traffic management, etc.
- 2) The gap is the non-consideration of public or consumer choice in the provision of LPGs. The gap exists due to the fact that it is difficult to consider consumer choice in the provision of every LPG and in democracies it is the elected leader who decides on this which may not be reflective of consumer choice. Theoretically, this gap is filled-up by the Tiebout theory or model.
- 3) Essentially, Tiebout places a consumer in a mobile situation whereby he moves from a place of less satisfaction (or preference) to a place where he gets higher satisfaction or preference. This mobility accords Tiebout’s theory the required ‘spatial characteristic’ to the consumer. Thus, in essence, the mobility accords a market-like-place to consumers to shop for where they want to settle thereby establishing a missing-market for LPGs.
- 4) (i) Decentralisation in providing LPGs should be maintained till such time their integration is proven to provide the LPGs with the same average cost. (ii) Policies that promote mobility of residents optimises the return on public expenditure. (iii) Smaller localities spend efficiently in line with citizen preferences thereby according the local authorities efficiency in adopting the ‘fixed revenue-expenditure pattern’.
- 5) (i) ignoring the effect of ‘agglomeration and scale economies’ in large metropolitan areas for one authority centralised approach, (ii) ignoring the dimension of ‘equity’ which arises by ‘sorting people according to preferences’ and (iii) multiple jurisdictions might lead to problems of ‘fragmentation and proliferation’ in large cities (e.g. emergence of slums).
- 6) ‘Club goods’ (e.g. private park) are provided by natural monopolies and bear the characteristics of ‘excludability’ but with ‘zero marginal cost’. Public goods (like ‘national defence’), on the other hand, are both ‘non-rivalrous’ and ‘non-excludable’ in their nature.

### Check Your Progress 2

- 1) As: ‘commodities, services and systems (of rules or policy regimes) with cross-border externalities important for development and poverty reduction’.
- 2) (i) public goods provided by individuals, communities and nations with international implication, (ii) have public participation, (iii) benefits depend on capacities and cost of access and (iv) carry priority for special problems of developing countries.
- 3) It is basically determined by the ‘triangle of publicness’ i.e. ‘publicness’ in consumption, decision making and distribution of net benefits. It is useful in designing a fair institutional mechanism for the supply of GPGs.



- 4) GPI is a report produced by the Institute for Economics and Peace (IEP) with data collected by the Economist Intelligence unit.. It measures the relative position of a nations' (and regions') peacefulness. The GPI gauges global peace using three broad themes: (i) the level of societal safety and security, (ii) the extent of ongoing domestic and international conflict and (iii) the degree of militarisation.
- 5) (i) low crime rates, (ii) minimal incidences of terrorist acts and violent demonstrations, (iii) harmonious relationship with neighbouring countries, (iv) a stable political scene and (v) a small proportion of the population being internally displaced as refugees.

### **Check Your Progress 3**

- 1) Environmental GPG, socio-economic GPGs and capacity related GPGs.
- 2) Strictly speaking, 'knowledge' is not a pure 'public good' since it is non-rivalrous in consumption even though there are methods that can potentially make 'knowledge' excludable. Further, if it is used without applying mind on understanding 'how it is developed' or 'how it works', then 'knowledge' qualifies as a pure 'public good'.
- 3) It arises from the fact that no technical device can impede the forgery of technology. If this were possible, then normal property rights would have sufficed. The rationale for IPRs stems from the fact that 'knowledge in itself is often non-excludable' but a product based on 'knowledge' is excludable.
- 4) Public goods are considered 'global' when they cover a large group of countries and when it is difficult or impossible to identify a geographically restricted community of beneficiaries. Examples include: financial stability, peace, combating climate change and transmittable diseases.
- 5) He does it by introducing the 'temporal dimension'. The introduction of this dimension makes 'knowledge' questionable as a 'public good' although in the short run companies or firms may treat it for their exclusive benefit. But once the temporal dimension is introduced, in the long run, any knowledge is beneficial only when it is shared widely.
- 6) Yes. This is because, even to free-ride, there should be past investment for increasing the 'absorptive capacity' of countries.



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