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# **Designing an International System to Prevent and Adapt to Global Warming: the Japanese Perspective**

**Tadashi Otsuka**  
**School of Law, Waseda University**

This paper discusses the Japanese legal perspective that comes into play when considering ways to design an international system to prevent global warming. Generally speaking, Japan's environmental law can be characterized by the following two attributes. First, Japan is an "advanced pollution nation". Its citizens have directly experienced pollution that has caused bodily harm. Therefore, the responsibility for pollution has been a significant social problem, with a history of widespread debate concerning both responsibility and compensation dating back to the 1960s. Second, Japan has always responded with great sensitivity to recommendations and other decisions issued by the Organisation for Economic Co-operation and Development (OECD). In the 1960s, Japan became the first Asian country to join the OECD, and it has always carefully monitored OECD trends regarding environmental problems, particularly the issue of the Polluter-Pays-principle (PPP). However, it should be noted that Japan has also developed its own PPP.

Japan's past legal experience with environmental issues might shed some light on the current issue of global warming. With this in mind, I will first examine debates about cost burden and responsibility as defined by environmental law from a theoretical perspective, focusing primarily on Japan's experience (I); then, I will address the issue of reduction targets for future greenhouse gas emissions, and the adaptation cost of counteracting the effect of global warming (II).

## **I. Cost Allocation and Responsibility as Defined by Environmental Law**

### **1. Introduction**

It costs money to prevent pollution and to restore and protect the environment. The question is, what principle should be applied to determine who bears the cost? And who should be responsible for preventing pollution and restoring and protecting the environment?

### **2. The Polluter-Pays-Principle and the Public-Pays Concept**

In environmental law, the issue of cost burden often comes down to a question of how to allocate costs between the causal party (polluter) and the public. I would like to point

out the relation between "causal party" and "polluter". "Polluter" originally means the person who directly polluted air, water or soil. The factory emitting CO<sub>2</sub> is not considered "polluter", although it is regarded as "causal party", because CO<sub>2</sub> does not cause direct harm or damage. A "polluter" is one kind of "causal parties". Though precisely speaking, the concept of "causal party" is larger than that of "polluter", they are used interchangeably when referring to cost allocation.

Occasionally, the responsibility of those who benefit from the pollution also becomes an issue. The concept of beneficiary burden applies in cases, where a certain party receives special benefits from a public works project, or when a party makes special efforts to protect the environment at a level that exceeds the standards set by administrative agencies. I will address this aspect in more detail in Section 3 below.

### **(1) Polluter-Pays-Principle(Causal-Party-Pays-Principle)**

(A) The Polluter-Pays-Principle (PPP) asserts that the polluter should bear the expenses of preventing pollution to ensure that the environment is in an acceptable state. This principle was originally formulated in items 2 through 5 of the OECD Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies in 1972. Its goals are to 1) internalize the external diseconomies represented by environmental pollution; and 2) prevent distortions in international trade and investment.

It is important to note that the OECD recommendation of this time was a principle regarding the allocation of pollution-prevention costs. The reasoning behind it was that it is difficult to prove a direct cause-and-effect relationship between the emission load of individual polluters and the loss that occurs through pollution. It is also more economical to prevent pollution from occurring in the first place than it is to restore environmental losses after pollution has occurred. It should be noted that this OECD recommendation seems to be based on the concept of typical pollution where substances emitted by factories contaminate the air and water.

Later, however, in the 1989 OECD Recommendation of the Council Concerning the Application of the Polluter-Pays-Principle to Accidental Pollution, the definition of PPP was expanded to include "the cost of reasonable measures to control pollution after an accident." This idea of expanding PPP to include having the polluter shoulder the costs after pollution has occurred was subsequently incorporated in Article 174 (2) of the Treaty Establishing the European Community (EC Treaty) and in Principle 16 of the Rio Declaration. This idea took concrete shape in EU Directive on Environmental Liability.

(B) Before the OECD's PPP recommendation was issued in 1972, Japan had already

developed legislation that held polluters responsible for restoring the environment and compensating victims. This legislation includes the Act Concerning the Pollution Control Cost Liability of Companies (promulgated in 1970), and the 1969 precursor of the Act Concerning Pollution-Related Health Damage Compensation and Other Measures (promulgated in 1973). The Japanese interpret the principle behind these laws as follows: (i) PPP applies to both environmental restoration and victim compensation; and (ii) this principle is not a matter of efficiency, but rather a matter of justice and fairness in pollution countermeasures. With regard to (i), pollution prevention costs are thought to be inextricably linked with damage and with stock pollution. When the stock pollution is closely examined and traced back to its source, it is really the result of accumulated flow pollution. With regard to (ii), it is considered unjust for the party that caused environmental degradation to reap rewards without doing anything to clean up the contamination and without compensating those who sustained damage. The addition of (ii) can be considered the addition of a legal perspective in the PPP concept. On the other hand, an approach similar to (i) is currently considered by the EU in the Directive on Environmental Liability. The idea behind it is that recovery of damage from and compensation for past pollution will become an incentive that prevents pollution from occurring in the first place. In this sense the basic concept can be considered close to Japan's PPP approach. Some economists have criticized (ii)<sup>1</sup>, but in view of subsequent global developments, it appears that Japan's approach to PPP was actually in the vanguard of worldwide trends.

Today, there are several systems in place that conform with environmental laws that are based on Japan's PPP. Cost allocation under these laws can be divided into the following four categories: 1) damage compensation itself, prepayments or temporal payments made on someone else's behalf; 2) the cost burden generated by governmental regulation; 3) the cost burden imposed on the causal party in public works projects; and 4) the cost burden imposed on the basis of the social responsibilities of business operators.

(C) While the importance of PPP is increasing in Japan and the rest of the world, questions have arisen as to where its basis lies.

According to the German environmental law professor Michael Kloepfer, the basis for Causal-Party-Pays-Principle lies in the following regulatory rationales: a) rationality of economics and purpose ; b) rationality of norms and social psychology; c) rationality of environmental policy; and d) rationality of norms and legality.

Concerning item a), Prof. Kloepfer cites the "inducement effect and preventive effect of the Causal-Party-Pays-Principle." When environmental policies are evaluated, the

standards often applied include efficiency, effectiveness in protecting the environment, and fairness. Items a) and c) indicate that the causal-party-pays principle is most appropriately applied from the perspectives of efficiency and effectiveness of environmental protection.

The prevailing view is that the Causal-Party-Pays-Principle is appropriate from the perspective of fairness. However, Prof. Kloepfer notes in regard to item b) that, viewing the idea of fair distribution with an understanding of the social welfare state, consideration must be given to the economic capabilities of the causal party. As this observation shows, the concept of fairness is ambiguous, although the Causal-Party-Pays-Principle is widely considered fair.

Concerning the Pigouvian concept of trying to achieve an optimal pollution (environmental burden) standard through PPP, it has been pointed out that the difficulty of calculating environmental damage caused by pollution makes it impossible to deduce optimal pollution standards. Therefore, the Pigouvian concept has been gradually replaced by the concept of designing systems intended to minimize pollution-prevention costs on the basis of external standards (such as administrative environmental standards), as seen in such developments as the Baumol-Oates tax<sup>2</sup>.

## **(2) Public-Pays Concept**

The national government and local authorities have a responsibility to protect the health of citizens and maintain a certain level of pleasant environment. From this perspective, there are cases where the government or authorities must bear the cost of protecting the environment (Public-Pays Concept) including cases where the governmental body concerned implements its own environmental protection measures, as well as cases where it provides support for environmental protection measures implemented by others.

However, in environmental policies the causal-party (polluter)-pays principle is thought to take precedence over the Public-Pays Concept (as noted in Japan in the 1976 report of the Central Pollution Countermeasures Council under ex-Environmental Agency of Japan), due to the reasons already cited in the section on PPP above.

In what cases, then, would the Public-Pays Concept be applied? In recommendations issued by the OECD council in 1972 and 1974, two applications are presented: 1) application for support during transition periods; and 2) application for research and development. Also, in the 1991 OECD Recommendation of the Council on the Use of Economic Instruments in Environmental Policy, a third application is suggested: financial assistance provided in combination with an appropriate redistributive

charging system. For the most part, these applications were established as exceptions to PPP, with a view toward creating a framework for fair international competition.

### **3. Cost Allocation in Various Aspects of Environmental Law**

On the basis of the above considerations, a categorization of cost allocation for various aspects of environmental law can be made as follows. (Due to space limitations, only brief examples are given.)

#### **(1) When the issue is the cost of preventing environmental pollution (environmental burden)**

Examples: Pollution regulations; waste fee; global-warming tax (not introduced in Japan).

#### **(2) When the issue is the cost of dealing with a pollution/environmental burden after it has occurred**

##### **(A) In cases of pollution**

##### **(a) Victim compensation**

Examples: the Act Concerning Pollution-Related Health Damage Compensation and Other Measures

##### **(b) Restoration costs**

Examples: the Act Concerning the Pollution Control Cost Liability of Companies ; the Soil Contamination Countermeasures Act; the Waste Management and Public Cleansing Act.

##### **(B) Environmental burden (environmental damage)**

Examples: Green taxation system for automobile tax; EU Directive on Environmental Liability; natural resources damages under the US Super Fund Act.

#### **(3) Cost allocation for environmental protection**

Examples: burden borne by downstream local governments regarding the water-resource nurturing function of forests

Regarding category (3) above, active efforts are made to improve the environment at a level that exceeds the standards set by administrative authorities. In such cases, unlike cases pertaining to environmental burden, Causal-Party-Pays-Principle is not an issue,

and generally the beneficiary (or, in some cases, the public) pays. As for categories (1) and (2) above, the Causal-Party-Pays-Principle is generally thought to apply.

But what about the costs associated with global warming, which is today's theme? The cost of reducing greenhouse gas emissions falls under category (1), preventing environmental burden, while the cost of adaptation to global warming itself falls under category (2), dealing with pollution/environmental burden after it has occurred. The cost of adaptation to global warming is neither cost associated with pollution nor simply cost associated with environmental burden, but rather falls somewhere between categories (2)(A) and (2)(B).

#### **4. General Debate Concerning Cost Allocation and Responsibility under Environmental Law: What Does It Suggest?**

Debate concerning cost allocation and responsibility under environmental law suggests the following two points:

First, PPP is the most desirable approach from the perspectives of both the effectiveness of environmental protection and the efficiency of policy, and is a convincing option in terms of fairness. However, because there are many different concepts of fairness, it is necessary to take into consideration such aspects as the ability to pay (a point particularly discussed as an issue of equity). Speaking globally with regard to the citizens of developing countries, this consideration raises a particular concern about how to approach the right to develop.

Second, one of the special characteristics of environment-related cost allocation in Japan has been the incorporation of the concept that the causal party pays even in cases where a response is needed to restore the environment after pollution has occurred. This approach has since gained momentum in the rest of the world, as evidenced by its recognition by OECD and the Rio Declaration, where it has been pointed out that it is highly necessary from the perspective of ensuring the effectiveness of environmental protection measures.

## **II. Reduction Targets for Greenhouse Gas Emissions and Adaptation Cost to counteract the effect of global warming after the first commitment period of Kyoto Protocol**

Let us now turn to our main topic of discussion, which is a system to control the effect of greenhouse gases after the first commitment period. I would like to divide this issue

into two parts: problems related to reduction, and problems related to adaptation.

## **(1) Future Reduction Targets**

### **(A) Basic Approach**

A basic approach to future reduction targets can be adopted as follows.

First, I think as a major premise, it is neither effective nor desirable to try to address this problem through the dissemination of technical standards without setting specific targets for each country. Although the way reduction targets were set in the Kyoto Protocol has been criticized in various ways, no adequate response to global warming (which is said to have already begun) can be mounted without targets of some kind. My comments here should not be interpreted as support for the Kyoto Protocol itself, but as considerations to be incorporated once nation-specific reduction targets are formulated.

(a) The right to develop is recognized as a human right of citizens. This means that special consideration must be given to citizens (specifically, citizens in developing countries) who have not yet achieved a healthy and economically mature standard of living. In contrast, citizens living in developed countries who have already achieved this standard of living can have a considerably high level of restrictions placed upon them. The concept of "common but differentiated responsibilities"(UNFCCC art.3(1)) is based on this idea (and is also connected to the concept of ability to pay). As for the question of whether distinctions should be made among nations that have achieved a healthy and economically mature standard of living, one standard that could be used is the average of personal income.

(b) However, the right of citizens (particularly those in developing countries) to develop is not limitless. In the second half of the 1980s, the international community became aware of the problem of global warming stemming from the environmental impact of human activity. To prevent this global warming, it is necessary to mount a global response that includes adjustment of total greenhouse gas emissions, with each country adopting measures in accordance with its capabilities and emission levels. (Need for a balance between the right of development and the prevention of environmental burden.)

(c) A reduction of overall emissions is conceivable in developed countries, where it is considered possible to restrict the right of development. Because it is extremely difficult to achieve a one-time, large reduction, however, many have turned to the idea of gradually reducing current emission levels. (This is based on the "causal-party-pays" concept and ultimately entails establishing the emission levels of a given year as a standard and making reductions compared to that standard at a uniform rate.) This connects with the proposal made by Brazil, however, which contends that all past

emissions should be included in the totals( a retroactive approach). As a drastic measure, this proposal is correct. However, a retroactive approach could bring up the legal issue of retroactive responsibility. I believe the only option is to use as a standard the total emissions beginning from the second half of the 1980s, when it first became possible to foresee the effect of global warming.

(d) With regard to (c) above, it is possible to adopt per-capita emissions as a standard. If this is used in developed countries, however, it must also be used in developing countries. This in turn would recognize an emission volume for developing countries greatly exceeding their current level of emissions, and pose a great problem in terms of reducing the environmental impact of human activity. It is important to consider how the world as a whole can deal with this new problem, which only became evident around 1985. We should not view this in terms of allowing emissions up to a certain amount. Although citizens' right to develop must be recognized, this does not mean that every person has a "right" to emit a certain amount of greenhouse gases. Economic development that is sought today is that geared for non-carbon-based energy society.

(e) It is difficult to place restrictions on citizens' right to develop in developing countries. If we do not set standards for per-capita greenhouse gas emissions (see (d) above), then some other means of reducing environmental burden must be found that does not infringe on developmental rights. One such means is to set targets (non-binding) for emission reductions per unit GDP.

### **(B)Two-Track System**

If the above basic view is adopted, the following two-track system becomes an option.

(a)Once personal income levels have reached a certain point (as in developed countries): The total amount of greenhouse gases emitted in one country for example in 1990 is used as the basis of the standard, which is a "vested interests approach". This is the total amount regulation. The total emissions of all developed countries of for example 2020 should be defined as [total global emissions of 2020 permitted by scientific prediction] minus [the emissions cited in (b) below] . If the total emissions of all developed countries is X, the total emissions of each developed country should be [the ratio of the emissions of that country in the world in1990] multiplied by X.

(b)Until personal income levels have reached a certain point (as in developing countries): Emissions per unit GDP are used as the standard.

This two-track system reflects both the right of citizens to develop and the issue of ability to pay.

Regarding (a) above, some will no doubt oppose restriction on total emissions because it endangers sustainable growth. As long as the "causal-party-pays" principle is in force, however, it is difficult not to introduce overall emissions regulations in cases where a country has essentially achieved a healthy and economically mature standard of living. That country is also considered capable of paying the required cost.

On the premise of the above, we can raise three points: [ i ] that it is necessary to reconfirm the Club of Rome's recognition that overall global emissions must be regulated; [ ii ] that the concept of having the causal party pay exists (because of the factors discussed in I 2 (1)(C) above); and [ iii ] that this issue has special characteristics (emissions must be reduced on a global scale; there is a relation between the greenhouse gas emissions and the economic growth of different countries; and citizens in developing countries particularly have the right to develop). The position of countries like the U.S., which oppose regulating overall emissions, undermines [ i ] and [ ii ] above.

## **(2) Adaptation Cost**

Concerning the cost of adaptation, the "causal-party-pays" principle should be adopted. This is an issue of applying PPP in the areas of restoration and compensation costs. There is a discussion with the assumption that PPP applies in the case of environmental restoration. However, that assumption is necessary partly because it is useful for prevention and partly because the causal party benefited in the past from activities that resulted in pollution.

In this case, is it possible to establish exceptions on the basis of ability to pay? According to the Causal-Party-Pays-Principle, developing countries should pay. However, if they are unable to pay, the amount can be reduced or they can be exempted.

The amount of payment levied depends on the amount of damage done in the world as a whole. The amount of damage suffered by each country determines the amount paid to it. The assessment and auditing of damage estimates promises to be a daunting task.

In theory, developed countries are also eligible to receive payments under this system, but the amounts received may be reduced or cancelled because of considerations of ability to pay.

The amount levied may be cancelled out by the amount paid.

## **(3) Capital Assistance**

In addition to this, developing countries should be given capital assistance. This assistance should not be taken for granted from the perspective of efficiency, but rather

should be paid from the perspective of equity. This is a political issue inasmuch as it is not possible to set clear standards.

Notes:

1. Akihiro Amano. *Chikyu ondanka no keizaigaku* (The Economics of Global Warming) (Tokyo: Nihon Keizai Shimbun, Inc., 1997), 31.
2. W.J. Baumol and W.E. Oates, *The Theory of Environmental Policy*, 2<sup>nd</sup> ed., (Cambridge: Cambridge University Press, 1998).