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Chapter 4

The Theory of Environment Governance

Preface

If we are to have any hope of overcoming the diversifying problems that affect the environment, many actors will have to play a part, not only governments but citizens, too, and, of course, the corporations, and the various actors will need to make use of a variety of policy instruments. One of the proposals designed to achieve a solution to these problems is the concept of "Environmental governance". In seeking to solve an environmental problem, environmental governance asks for the participation of people from many and various walks of life so as to lay down the structure of the policy and set out its integrating policies. The enforcement of the Kyoto Protocol for the prevention of global warming is a typical instance of such a procedure.

In this chapter, I shall therefore describe the framework that incorporates an environmental governance theory within the theory of environmental economics, and I begin by introducing the notion of "regime and actor" analysis as a method of environmental governance: as my example of how this works I shall take the recycling society of Japan. At the same time, I shall outline, from the viewpoint of environmental governance, the environmental policy of the EU, which has had a strong influence on how to build a worldwide framework of environmental policy.

1 What is environmental governance?

The word 'governance' is, these days, becoming quite widely used, and we hear of 'corporate governance', 'environmental governance', and more. Yet what, we may ask, distinguishes 'governance' from 'government'? The lexical meaning of the term 'governance' signifies the actions or conduct of an administration, its management practices and systems of regulation. The Commission on Global Governance established a standard definition of global governance when it stated that "Governance is the sum of many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and co-operative action taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest" (The Commission on Global Governance, 1995: 4).

Ms. Sadako Ogata, the distinguished Japanese diplomat who from 1991 to 2001 was the UN High Commissioner for Refugees, has emphasized that while

'governance' is not the same as 'government', it is not wholly *un*related to 'government'. She understands 'governance' to signify a concept of both 'government' and 'self-government' (an idea similar to that discussed in chapter 5 below). The notion of 'governance' focuses on acts and actions carried out by acknowledged administrations, whereas the meaning of 'government' focuses on the mechanism of rule making and on systems of political science, and we have to pay special attention to the point that 'governance' devolves action from the public authority such as the national government to other less centralized entities.

Nevertheless, the nation state (the National Government) still has a role to play even if only in the field of 'environmental governance', and it is necessary to confirm that governments as constituted bodies wielding authority still have the power to take administrative action.

Today, various regimes and structures of global governance that were not seen during the period of the Cold War have recently emerged, both in the field of economics, and with regard to the environment and international security systems. This is because of [a] the dramatic increase of problems in situations and conditions of an extra-national nature that need to be addressed, [b] cases where participation by actors other than the nation are becoming more common, and [c] the growing practice of new methods and a variety of forms of cooperation: this is what is called "global governance" (Yamamoto, 2008: 181). On the basis of the concept of global governance, a cognate concept known as 'environmental governance' has come to be used when speaking of the environmental problem. The reasons for this are [a] the increasing participation of actors and agents other than the nation state and the consequences of this are [b] the increasingly wide variety of participating actors and [c] a diversifying of economical tools with greater disclosure of information, and a strengthening of voluntary actions other than by direct regulation as an instrument of policy (Jänicke and Jörgens, 2006). In other words, we are beginning to see a more flexible, decentralized and cooperative environmental regulative order (Dryzek, 2005: 109). 'Environmental governance' simply means a structure that enables society to manage the environment, just as a conductor unifies and adjusts the overall performance of an orchestra. It is thus useful to place the theory of "governance" within the domain of environmental economics as it searches for an analysis that will provide a concrete policy structure for the environmentally sensitive conservation society.

'Environmental governance' is realized when a variety of actors use various tools to work actively through interrelationships and interchange to plan and operate a regime based on the aim of conserving the environment, at

a time when the problems that affect the environment are spreading into more and more areas.

What, then, is the content of 'environmental governance'? To answer this question, it is necessary to analyze in greater detail the concept of 'environmental governance' itself. We must first distinguish the variety of actors and the coactions of the policy instruments in more general terms. An effective analytical method is 'the regime and the actor' paradigm (Jänicke, 1995), where, from an overall viewpoint, the regime restricts the actions of the actor, while, at the same time, it has developed a concept device that analyzes the social aspect of the environmental problem for which the actors have established the regime. This double viewpoint enables the analyst to grasp the capacity of the social environment as a whole and it was devised for the purpose of making it easier for us to understand the problems. The procedure assumes the model that those "various actors who have an interest in a particular environmental problem plan a strategy and carry it out under the framework-condition that the system imposes on the problem structure (character) under a concrete situation". The results of the actions taken by the actors will come under an influence of five factors.

[a] The action of each and every actor as an individual
[b] The structure of the problem
[c] The framework conditions that the regime imposes
[d] The concrete conditions
[e] The strategy

And since the ability of the actor to align the structure of problem and the wider issues will be affected by the current economic conditions (cf. Figure 4-1), we therefore propose 5 categories that combine to constitute the regime: these may be termed the actors, a Strategy, the Conditions of the structural framework, the situational context, and the character of the problems.

The actors

The actors will be the proponents and opponents of the actions that are being proposed to deal with whatever is perceived as the problem, along with their support groups and unaligned third parties. Usually the actors are representatives of organization and coalitions. Within the organization, the actor has stable interests and "core beliefs". If the term stakeholder is used, it will point in the main to the economic stakeholder.

A strategy

A strategy is the general and long-term approach to the problem. A strategy is the purposeful use of instruments, capacities and situational opportunities designed to achieve the actors' ultimate goals. It cuts out all useless work, and effectively analyzes power relationships on this side and that. Strategies depend on such capacities as available knowledge or the possibilities of strategic and coordinated actions.

The conditions of the structural framework

Specifically, there are three sets of conditions.

[a] The cognitive informational framework conditions:
These conditions relate to the availability of information, the involvement of the media and the actors' personal values. We need information to highlight the issues at stake, for without general knowledge of the problems there can be no public awareness and no policy process, which are the factors that directly influence the actor.

[b] The political and institutional framework conditions:
These conditions relate to the constitutional, the institutional and the legal structures, the institutionalized rules and the internalized norms, and they affect long-term participation in the regime and policy.

[c] The economic and technological framework conditions:
These conditions relate to such economic performance markers as the GDP and levels of technology, as well as to available industrial and material resources, and they will have only a relatively indirect influence on the actions of the actor.

The situational context

The situational context embraces the short-term conditions of the action. Such incidents as the Chernobyl Nuclear Accident spark off debate about specific and concrete pollution problems, and, in environmental policy and management they are strong motors of environmental change.

The character of the problems

Does the particular character of the issue at stake make that particular issue difficult or easy to solve? For instance, does the problem of contamination affect the general public as a matter of urgency? Does the problem, which may at present be simply latent, threaten future generations? These are significant questions.

This method of analysis does not see the regime as exerting one-way top-down control over the actions of actors; rather, it examines the conditions in which actors create the regime, seen from the standpoint of interaction among actors and their particular, individual dynamics.

As we saw in Chapter 3, the citizen as actor is the agency who thinks and evaluates, and has independent and subjective points of view. Here, the system ranges widely from organizations and forms of government to such matters as respect for the law and social norms, for what we might call the rules and practices of the game.

On the one hand, the regime may be regarded restrictively as the combination of dominant systems, the aggregate of the systems (Shinkawa et al., 2004: 15), but here we regard regime and system as synonymous.

We need, however, to consider two questions that are relevant to international and domestic regimes: [1] what are the relationships and hierarchies within internal regimes, and [2] what influence do international regimes have on domestic regimes?

International environmental agreements include the London Dumping Convention (1972), the Montreal Protocol (1987), the Kyoto Protocol (adopted 1997), the Basel Convention, and various WTO-related agreements, while domestic laws promote compliance with the OECD's pollutant release and transfer register (PRTR) and extended producer responsibility (EPR). At the same time, economic globalization has encouraged cross-fertilization of regulations from country to country: for instance, the US Clean Air Act of 1970 had a strong impact upon Japanese legislators. Likewise, and of great significance in Japan, are the EU directives on regulating wastes and the environmental auditing standard ISO 14001.

Since the US has until now taken only a negative attitude towards international environmental agreements, the environmental regulations of the EU are becoming the global standard. Another notable international condition is the "affiliation effect" when, as we have recently seen, several Eastern Europe nations passed domestic environmental laws that enable them to join the EU or, in the case of Korea, to join such international organizations as the OECD. Nor can we ignore the "Olympics effect" when improvements are made to a city environment in time for Olympic Games (Tokyo, Sapporo, Seoul and Beijing). South Korea in particular has depended to a high degree on the overseas market, and has been strongly conscious of OECD participation and regulations issuing from the EU. The influence of environmental NGOs upon environmental policy has also been strong, and South Korea was

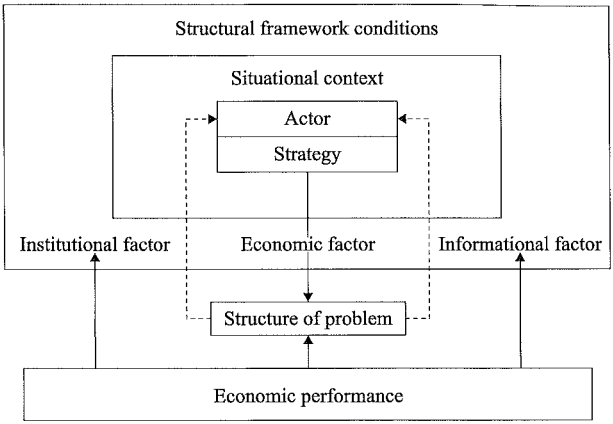

Figure 4-1 The model of the environmental policy process (Jänicke, 1995).

quickly able to adopt the EPR (Extended Producer Responsibility) regime, which includes the deposit refund system, because of the nature of Korea's local autonomy regime and a change of national government. Analysts of regime and actor inter-reaction need to pay close attention to the regime that takes care of the Korean waste disposal and recycling systems (Chong and Yoshida, 2008).

2 Regime and actor analysis of Japan's recycling society

In this Section, I offer a concrete analysis of Japan's recycling society in terms of the theory and method of the regime and actor analysis of 'environmental governance'. To analyze the waste economy effectively, it will be necessary to consider three of its aspects side by side.

[1] The material cycle
[2] The regime and actor
[3] The economic cost and benefits (For further details, see Yoshida, 2004)

2-1 Japan's waste management policy

Japan's domestic regime includes the Basic Environment Law as well as a basic framework law called the Basic Law for Establishing a Cyclical Society (which includes a Basic Plan for Establishing a Cyclical Society) in addition to laws that establish general frameworks, such as the Wastes Disposal and

Public Cleaning Law and the Law for the Promotion of the Utilization of Recycled Resources. Regulations that cover the characteristics of individual items are provided by a variety of laws: the Container and Packaging Waste Recycling Law, the Home Electrical Appliances Recycling Law, the Construction Recycling Law, the Food Waste Recycling Law, the Automobile Recycling Law, and the Livestock Waste Management Law (Figure 4-2).

No less important are the environmental ordinances issued by municipalities, and the concern here involves the coordination and consistency of the diverse variety of laws that are related to waste. Specifically, is there any place for waste reduction in the Wastes Disposal and Public Cleansing Law, and how do the different laws describe the appropriate disposal and recycling practices? Under an amendment to the Wastes Disposal and Public Cleansing Law in 2000, the Environment Minister is responsible for formulating the basic policies needed for a reduction in the generation of waste and thus a reduction in its volume, along with its appropriate disposal, while the prefectures are supposed to follow these policies in developing their own individual waste management plans. As part of this effort to control waste, the government passed the Special Measures Law on Dioxin Control to control air pollution by dioxins, which is one reason why the Wastes Disposal and Public Cleansing Law emphasizes round-the-clock operation of incinerators and other facilities through the use of the best available technology. Nevertheless, critics have pointed out that since people will continue to generate municipal waste there is a contradiction between the Container and Packaging Waste Recycling Law and other recycling laws.

If we assume the need for coordination and consistency among the various laws, it then becomes necessary to analyze certain comprehensive and far-reaching conditions, which will include those observed earlier: [1] conditions of cognitive information (information, mass media, values, etc.), [2] conditions relating to politics and institutions (participation in the regime, capacity for integration, etc.), and [3] conditions in the field of economics and technology (GDP, resources, technology transfer, etc.). These conditions will be those that affect cognitive information, environment-related information and media stance, the public's tendency to take a post-materialistic view of what makes for a good life, recent concerns over health, a wide range of occupations and personal interests, while important considerations for analyzing political and institutional conditions will be the extent of real community participation, each individual actor's dialog and negotiating capabilities, and policy integration; at the same time, it is important to recognize the extent to which recent fiscal crises, subsidy reform, political decentralization, and the development of

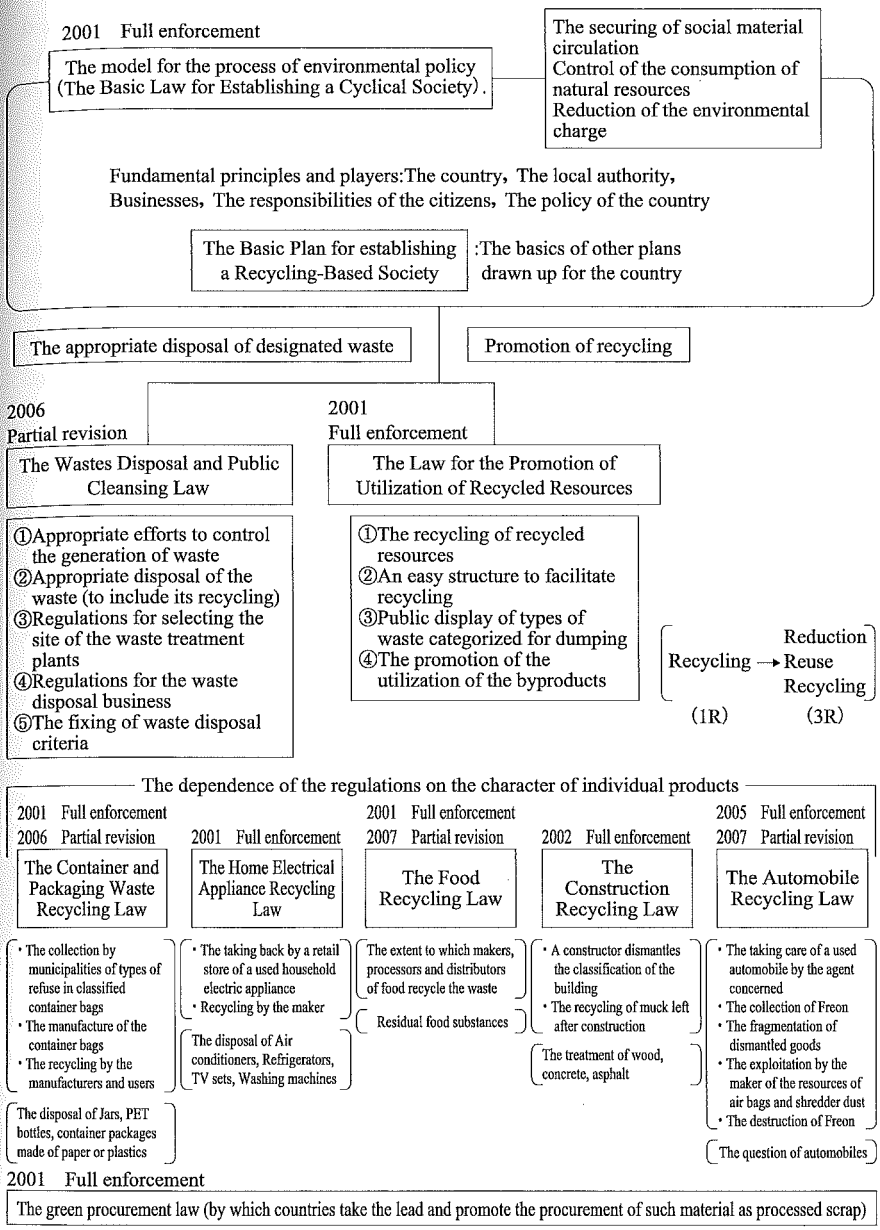

Figure 4-2 Regime of the recycling society of Japan (Ministry of Environment Japan, 2009: Figure 3-3-2).

environmental conservation technologies have all influenced the economic and technological conditions. The horrifying events of March the 11th, 2011, have thrown all of these considerations into much sharper relief and have added a greater sense of urgency to the task of finding solutions.

The actors

Let us now consider the actors. Who are they? In the first place, they are those government agencies who are concerned with waste management: this group comprises [1] the central government and legislature, [2] prefectures and their assemblies, and [3] local municipalities and their assemblies. While the prefectures provide administrative guidance on industrial waste, the municipalities are responsible for treatment of municipal solid waste. And there is the labor union — The All Japan Prefectural and Municipal Workers' Union, a federation commonly known as "Jichiro" — whose workers carry out waste pickup and disposal.

A second group of actors is drawn from the business sector and the most important of the actors here are [4] producers and distributors, [5] those businesses that actually perform waste pickup and management, and [6] the waste management equipment industry itself.

The final group comprises the citizens' sector: [7] neighborhood associations (which perform group material recovery), [8] NPOs and NGOs, among whom will be organizations that are not necessarily environmental in nature, and, finally [9], individual citizens.

While, on the one hand, Japan's environmental policy is characterized by good dialog and strong networking among the actors (for example, between the government and businesses, and within industry associations), we find, on the other hand, inadequate policy integration, compartmentalization, inconsistency and poor coordination and among the laws in the regime. An illustrative example is the issue I have discussed earlier of dioxins.

I have observed that it is actually very difficult to implement the policy for reducing the generating of waste prescribed by the Basic Law for Establishing a Cyclical Society, the underlying reasons being the inconsistency between regimes and the specific problems faced by some of the actors: it places them in the dilemma of reducing waste yet keeping their jobs, for the more the waste is reduced the more work will be lost by municipal employees engaged in trash collection and by the waste management companies commissioned for disposal.

In fact, upon the passage of the Container and Packaging Waste Recycling

Table 4-1 The principal actors responsible for waste management.

The government agencies sector	The business sector	The citizen sector
The central government, the legislature	The producer, distributor	The neighborhood association
The prefectures, the prefectural assemblies	The cleaning, waste disposal businesses	The NPOs and NGOs
The municipalities, the local legislature	The waste disposal management industry	Individual citizens

Law, which stipulates that it is the duty of municipalities to collect such wastes, the Ministry of Health and Welfare had the backing of Jichiro because the union supported the law. But in some localities the neighborhood associations, a separate actor, had already been carrying out group resource recovery and doing it much more cheaply than it had been done by the municipal workers. Each actor then used whatever power it had to preserve its vested interests, either by creating its own regime or by refusing to accept a new regime, thereby inviting a fiscal crisis and impairing the efficiency of waste management.

One possible way of maintaining jobs would be to follow the example of Germany's packaging waste recycling regime, under which responsibilities for operations and their finances were separated, and municipalities commission the company Duales System Deutschland GmbH(DSD) to perform collection. (It was the duty of this company, rather than of the manufacturers and retailers, to perform mandatory collection, to compel reuse of discarded packaging, and to commission waste management companies.) Further, if a country truly wanted to reduce waste, it would have to build a specific provision into its regime to guarantee reduction, as Denmark has done by authorizing the central government to tax municipalities on the amounts of waste they generate. Observers have pointed out that the lack of specific economic measures is a limitation to Germany's Cyclical Economy and Waste Management Act. In this sense, the struggle to reduce waste is a struggle to reform waste-related regimes.

2-2 Extended producer responsibility

Amongst the end-of-life product wastes discarded by consumers we have to include packaging/containers and household appliances, originally part of the goods that consumers purchased as products from manufacturers. Since

these "product wastes" are manufactured industrial products they entail special costs which present consumers and municipalities with severe disposal difficulties. And although they are wastes that have been generated by consumers, they are differentiated from kitchen and paper wastes in terms of the material cycle. Since the 1990s, Germany and the Nordic countries have been expanding a system in which the manufacturers of these product wastes take the responsibility for their recovery and disposal, and subsequent discussion of this provision by the OECD has resulted in the notion of extended producer responsibility (EPR); this, in turn, has been incorporated into Japan's Cyclical Society Law.

The conditions stipulated by EPR apportion responsibility for the management of products after consumption.

The Cyclical Society Law contains four provisions that are linked to EPR: the preventing of raw materials from becoming waste(Article 11.1), the improving of labeling and design(Article 11.2), the introduction of measures to facilitate takeback and recycling(Article 11.3), and making the best use of recyclable resources(Article 11.4). With special regard to the takeback and recycling measures, we need to note the following conditions (Article 18.3): [1] since municipalities cannot assume all the roles, additional roles will be apportioned to the appropriate actors, the national government, local governments, businesses, and the public, [2] since the sales process is used for recovery, the role of businesses is deemed important from perspectives that include design, the choice of raw materials, and the collection of recyclables, [3] since there are wastes for which appropriate treatment is impossible, technological difficulties impose strains on the disposing of recyclables, and [4] the consequent conditions that are necessary for the possibilities of cyclical use.

I shall now make use of the methodology of the regime and actor paradigm to offer a concrete analysis of the Japanese individual recycling law, and thereafter shall consider whether this extended producer responsibility is realized or not, and, if it is, how it is managed.

The Container and Packaging Waste Recycling Law

The Container and Packaging Waste Recycling Law, which became effective in 1997, stipulates that [1] consumers must themselves sort the container and packaging waste that they generate, [2] municipalities must sort, collect, and transport the sorted waste, and [3] businesses must determine who plays what role in recycling, a task that they may contract out to a designated corporation. As such, this law assumes that there are four actors, consumers,

municipalities, businesses and the designated corporation; and it creates a regime under which these actors divide between themselves the duties of sorting, collection/transport/sorting, recycling, and the performance of recycling under contract.

The Container and Packaging Waste Recycling Law can now, approximately ten years after it came into operation, be seen to entail a number of problems: these include the heavy cost burden on municipalities, weak incentives to reduce waste emissions, an imbalance between supply and demand, and the bidding system.

After the enforcement of the Container and Packaging Waste Recycling Law, the rate of the burden of expenses on municipalities was estimated at approximately 70%, and many municipalities voiced a request that the law be amended. The mayoral association, a body that unites mayors in a nationwide confederation, made a submission about the burden of expenses in a "request about the waste" (2000).

The association suggested as a present measure to lift the burden from the municipalities' shoulders that an authorized business (an association of packaging waste collectors) should pay the costs of the excessive intermediate process through the intermediary of an authorized firm. This request was not granted, however, because the costs of the collection/transport/sorting differed greatly from municipality to municipality. On the other hand, we may find a municipality that sells PET bottles to China, and because approximately 40% of collected PET bottles make their way abroad and are not collected in the domestic container package recycling system, some PET bottle recycling companies have consequently gone bankrupt. Although in 2006 the Container and Packaging Waste Recycling Law was revised to enable a charge to be levied on plastic shopping bags and to determine the priority of reuse, the regime does not seem to have undergone any major change.

Electric Appliance Recycling Law

The Appliance Recycling Law, which took effect in April 2001, aims to provide for the proper disposal of discarded appliances and the more effective use of resources. Japan's system emphasizes the effective use of resources more than, for instance, does the system operated by the EU.

Under this law, retailers must take back and manufacturers (including importers) must recycle the four types of consumer appliance: consumer air conditioners, TV sets, refrigerators and washing machines. Consumers (the waste generators) are required to pay a fee for collection, transport, and recycling when discarding any one of these four types of appliance. When

manufacturers take back and recycle such appliances, they must achieve a prescribed recycling rate (between 50 and 60%) and must recover the refrigerants from consumer air conditioners and refrigerators.

The regime of this individual recycling law regulates in detail how to collect and recycle appliances. In Japan, the retailer collects approximately 16 million of 28 million specific household electric appliances, and 19 million of those are recycled by the producer (2005). What is left over, however, becomes an issue of what is called the "invisible flow". At the time this scheme was revised "the prepayment" of the recycling cost that the consumer has to pay was also considered; but nothing has changed. One option for improving the rate of recovery was [a] to make it free at the time of disposal (internalization of the recycling cost), [b] to use in addition the municipality route, [c] to pay back money at the time of collection (in combination with the deposit). Looked at in terms of [a] and [b], South Korea is seen to have achieved a higher rate of recovery and of recovered items than Japan (Chong and Yoshida, 2008). Although, in the case of Japan, the used household electric appliances amounting to 6 million of the 28 million taken over by a collector were channeled to the other routes without the issue of a recycling ticket. This expensive recycling cost has been singled out as the chief cause whereby approximately 20% of used household electric appliances flow out from Japan to countries oversea.

While the Appliance Recycling Law covers four appliance types (TVs, air conditioners, refrigerators, and washing machines), the law does not cover such consumer appliances and electronics as VTRs and microwave ovens or such IT products as faxes and cell phones. Their recovery and disposal are carried out by municipalities (as bulky waste), or by businesses. Because municipalities landfill many of these products, observers have expressed concern that since heavy metals and chemicals are difficult to incorporate into the material cycle they will cause serious contamination.

And while many facilities for appliance recycling have equipment that can handle the recycling of VTRs, microwave ovens and other product appliances, these facilities are not necessarily operating at high capacity. In fact, since some appliance recycling plants recycle business electronics alongside the four appliance types already listed, it becomes necessary to broaden the range of products covered by the Appliance Recycling Law so as to reduce the burden on municipalities, and to improve the utilization rates of recycling facilities, as well as to raise their revenues.

The Appliance Recycling Law is a milestone law that has created a system able to recover and recycle discarded consumer appliances that had already

been landfilled. Yet since the system is limited to the four appliance types, the scheme it has adopted for paying recycling fees at disposal time induces illegal dumping and only about 20% of used TVs and air conditioners are actually exported. We need therefore to consider how we may improve the system, and we suggest four ways to do so: [1] change the pay-on-disposal scheme to pay-on-purchase, [2] incorporate the reuse and export channels, [3] extend the law to cover more product types, and [4] accommodate the law to the Basel Convention.

If Japan can do this, rather than, as at present, limiting the appliance recycling system to the four appliance types, it will be able to create a more comprehensive waste management regime, one that will make the material cycle more complete.

The Automobile Recycling Law

Japan's Automobile Recycling Law, which took full effect in 2005, follows the principles of extended producer responsibility (EPR) by requiring that automakers and importers (both termed "manufacturers") take back and recycle fluorocarbons, airbags, and ASR. It has also brought into existence a system that sets up rules for the acceptance and delivery of ELVs by the takeback businesses, dismantlers, and other such actors, and it has established recycling routes so that an ASR is bound to find its way home to the manufacturers.

The law requires vehicle owners to pay a recycling fee when a new vehicle is sold in order to cover the subsequent costs of recycling, or, in the case of a used vehicle, to be paid at the time of the first mandatory vehicle inspection. To prevent the loss of recycling funds due to the bankruptcy or dissolution of the manufacturing company, the fees already paid for recycling are to be managed by a fund management organization. Manufacturers and other actors can request payment when recycling ASR and other items. The two most important features of the law are the requirement to pay the recycling fees and their subsequent management.

The newly effective Automobile Recycling Law has had a major impact. First, businesses that accept ELVs and that recover fluorocarbons must register with their prefectural governments, while dismantlers and shredders also need permits from their local governors. Businesses which already have permits under the Wastes Disposal and Public Cleansing Law are considered to have permits under the new law if they submit notifications within a certain period of time, and by the end of 2002, 74% of Japan's dismantlers had obtained such permits. In addition, certain shredders are also entering the dismantling

business, leading to the idea that dismantlers will work in partnerships or band together in groups.

Second, because this new law calls for the recycling of ASRs, it has led to the appearance of a new actor: this is the ASR recycler, to whom automakers and importers pay fees when commissioning them to perform the recycling.

One problem anticipated by the enforcement of the regime was the likelihood that the number of the automobile to be recycled would rise initially to 5 million a year, but while the number of used automobiles that are being exported has indeed been increasing, the number to be recycled has in reality remained at approximately 3,500,000 vehicles. Two factors lie behind this trend: the demand in China for scrap-iron, while in the case of exporting used cars the ELV system undertakes to ensure that recycling costs are refunded by the automobile recycling promotion center.

The Construction Recycling Law

Construction and demolition (C & D) waste is a category of industrial waste and comprises many types of waste matter: these include demolition waste (concrete and asphalt concrete debris), sludge (construction sludge), wood waste (generated from construction), waste plastic (waste PVC piping, etc.), as well as glass and porcelain (broken glass, roof tiles, wall/floor tiles, etc.). It also accounts for about 60% (240,000 tons) of the 400,000 tons of illegally dumped industrial waste.

Let us now use the perspective of regime/actor analysis to examine the C & D waste-generating mechanism, since this brings up a matter that is peculiar to the construction industry: its subcontracting system, which involves a large number of general contractors with a multi-tiered hierarchy of subcontractors below them. On a demolition site, for instance, one will see not only the demolition contractor but a tier of subcontractors, collection and transport contractors, intermediate processing contractors, final disposal contractors, and other participating actors.

One does not, however, see what lies beneath this surface, the complex and multi-layered substructure; this is a world of the darkness and obscurity where a confederacy of outlawed agents acts secretly and often illegally. These actors may consist of a one-shot gambler transporting industrial waste by himself, a person tying up the one-shot gambler, a person digging the hole for the illegal waste dumping, a person doing land price rigging to fix the right spot, a gang seeking a commission on the transaction, a developer who may intervene in the procuring of the official license, the financier who handles black money: all of these are working for their own financial interests (Ishi-

wata 2002).

Amongst the primary features of the Construction Recycling Law (Building Construction Materials Recycling Law) promulgated in 2000 we find [1] the required sorting and recycling of demolition waste, [2] contracts between demolition customers and contractors, and [3] the creation of a registration system for the demolition contractors. Indeed, C & D waste is now being handled in a much better fashion, thanks to a ban on outdoor incineration, stricter regulation of small incinerators, the establishment of the Special Measures Law on Dioxin Control and the Construction Recycling Law, as well as tougher regulations on the types and conditions of C & D waste.

From the perspective of the actor, the Construction Recycling Law requires demolition contractors (waste generators) to sort demolition waste and recycle it, but as yet there is no clear requirement to ensure that those who request demolition (the customers) should bear the burden of any costs. Furthermore, demolition contractors are supposed to report to their customers on the completion of the recycling process, but since it is quite possible that both actors will conspire to circumvent the law, proposals have been suggested for linking proof of proper demolition with the issue of official building certification, and for a security deposit system to ensure proper demolition and recycling.

The Food Recycling Law

An examination of food waste recycling from the regime/actor perspective turns up the following problems. [1] These days, citizens/consumers tend to have a rather gluttonous lifestyle and depend too much on the public sector to deal with the generated waste. Amongst actions needed to overcome this development, we would hope to see less generation of kitchen waste, wholehearted participation in separate collection schedules, and a networking of the citizens' initiatives. [2] Businesses likewise depend too heavily on the public sector, as well as on chemically synthesized materials: their challenges are to establish better environmental management, improve collaboration with other businesses, and build a proper network with consumers and farmers. [3] The administrative sector itself faces the problem of an inadequate institutional framework, and needs to remedy this through improved institutional design and coordination.

The Food Waste Recycling Law, which came into force in 2001, is meant to reduce the amount of food waste generated by food processing plants, restaurants, and other businesses. What lay behind the enactment of this law was the insufficiency of landfill space and the dioxin produced by incineration

facilities. The law set a target to be reached by 2006 of a 20% reduction of the 2001 level. Specifically, the law requires that businesses [1] generate less food waste, [2] reduce waste volume through drying and other means, and [3] reuse it as compost or animal feed, or in other ways. Although when initiatives by businesses generating at least 100 tons of food a year are found to be seriously deficient in dealing with these problems their names are made public or they are fined, the system is not sufficiently stringent to induce earnest efforts because, for instance, a 20% volume reduction in food waste can be achieved by dewatering and the disposal fees for business waste are not expensive.

This law was revised in 2007 with the aim of setting the recycling implementation rate target for 2012: 85% of food manufacturing industries (in 2006 81%), food wholesale business 70% (61%), food retailing 45% (31%), and the food service industry 40% (21%).

Although Japan has begun to take its first steps towards creating a recycling society by passing the Basic Law for Establishing a Cyclical Society and other laws related to recycling, certain problems of regime remain and need to be tackled. What are they? If we submit this question to the analytical method of regime and actor, we may be able to clarify the issues at stake. To do so, we must first analyze our presuppositions with regard to [a] the cognitive information conditions, [b] the political and institutional conditions, and [c] the economic and technological conditions.

Japan itself has traditionally solved its environmental problems by concentrating on [c], the economic and technological conditions. Although the regime as a whole has maintained a workable domestic regime, simple compatibility between regimes is not enough, and certain aspects of the different regimes actually contradict each other, while vested interests make it hard to incorporate a precisely defined structural regime designed to limit and control the generation of waste. At the same time, the analysis takes note that the Japanese domestic regimes are greatly affected by the international regime. The reasons are not hard to find: Japan must import a high proportion of its energy resources, while it relies on the export of its products, even of its waste.

It is thus essential to analyze the question of the material cycle for a proper analysis of the recycling society. These days, in fact, the tendency is for the input of the total material to decrease (a reduction from 1,925 million tons of 2000 to 1,550 million tons of 2007). The decrease in non-metallic mineral resources is caused by the decrease in the political influence of public works projects. On the other hand, an increasing tendency to work in plastic has led to an increase in the import of fossil fuels.

3 Environmental governance of the EU

The environmental policy of the EU has had a strong global influence, particularly within the framework of that characteristic of environmental policy known as 'the participation of cooperative governance': [a] environmental policy based on a consistent and coherent philosophy within a stable framework, [b] an environmental policy within the integrated policy of governance, [c] cooperative governance such as that found in volunteer agreements, [d] the participation of citizens (Jänicke and Jörgens, 2006). This Section will consider the experience of the EU, and will analyze it as a good example of the practice of environmental governance.

3-1 The structure of the EU's environmental policy

Copenhagen's Design Center is famous as the exhibitor of Danish products that are known for their simple and functional design, and at the heart of its thinking and philosophy lie two slogans: "Limitation creates innovation" and "Dialogue creates inspiration". In a small country with limited resources, designers seek to improve the functionality of products and increase their usability while working in dialog with consumers and the manufacturer, thus showing how, through the concrete example of individual products, technological innovation can move ahead. Such technological innovations within limited conditions are likely to advance further if the limitations lead to a creative breakthrough, while, in the development of products, the dialog and the feedback between actors such as the producer and the consumer ought to produce new and innovative ideas. Denmark's working model offers us a philosophy and a basic concept for the application of imaginative design.

The EU, of which Denmark is a member, reached its 50th anniversary in 2007. As a result of expansion to the east, the member countries of the EU now number 27, and on the basis of its economic integration the EU is seeking greater political integration. And though, since the financial crisis of 2008, the EU's political situation has become unstable, the German Chancellor Ms. Angela Merkel and the former British Prime Minister Mr. Tony Blair have taken the lead amongst EU countries in the fight against global warming (post-Kyoto Protocol). They have advocated the ambitious target of a 20% reduction of greenhouse gases and 20% of renewable energy by 2020 (the "20 20 20 by 2020" strategy), and, in combination with technological innovation acceleration policy, they aim to lead the world in working to achieve the "Low-carbon society". Moreover, it is clear that the EU is trying not only to

reinforce environmental regulations but also to strengthen the competitiveness of the EU through emissions trading and an environmental tax. The EU advocates a bold numeric target for fighting global warming and has the long-term strategic aim of "changing the methods of economic development while leading a global revolution to save the environment". In other words, its purpose is to realize "the mature sustainable society" by integrating the three major policy pillars of competitiveness, technological innovation and climate change, thus raising "the quality of life" while lowering the environmental burden, creating employment and strengthening competitiveness.

I shall therefore now take a quick look at the history of the EU's environmental policy. The EU was created against the political background of a Europe that had been the main battlefield of two World Wars, and it was exposed after the Second World War to the dangers of the cold war between the East and the West. European unity was thus seen as a bulwark against the competing power of the U.S. and Russia, and slowly, through trial and error and after lengthy negotiations, the original member countries, reflecting upon the experience of war, reached agreement and the EU came into being.

As a partial explanation of their relatively higher environmental awareness, we note that the populations of the countries of northwest Europe and Scandinavia are well-educated, with a liberal, humanistic culture and an interest in world affairs (Kennedy, 1993: 278). The economic explanation speaks for itself: after the Single European Act took effect in1987, the creation of the Single Market gathered momentum, and in 2002 it established a common currency, the euro. Germany, the Netherlands and Denmark, sometimes referred to as the Environmental Troika, made the enhancement of environmental policy a priority, and later, in 1995, Sweden, Austria, Finland joined them. At the same time, the six nations became the countries with the most advanced environmental consciousness. By contrast, the environmental regulations of the south European countries of Spain, Portugal and Italy were expected to be loose, while the UK and France took, at that time, a middle position. The EU therefore provided the southern countries with various kinds of structural assistance. Countries with strong environmental regulations such as Germany have the prospect of protecting competitiveness by widening regulation to other countries. While the EU started life as the European Coal and Steel Community, it proceeded to develop economic integration (trade negotiations and economical friction) of a "low politics" kind while seeking economic profit rather than political integration, and, in order to achieve a real result, environmental policy was built into the system as well.

Several features of the EU's environmental policy indicate why it attracts attention: (a) its evolution and development have been stable, (b) its policy has given each member country new policy measures, (c) the policies of member countries affect each other mutually and change accordingly. The character of the EU's environmental policy can thus be termed "multilayer environment governance" at both internal and international levels. If we were to take this ideal as our starting point, multilateral negotiations would be likely to produce a global standard. Yet we must, in this regard, remember that the EU generates less CO_2 emission and waste than do the Asian countries that are becoming "the world's factory", and consequently, at the global level, the various environmental regulation and rules of the EU are still bound to exercise a kind of "imperialism" over Asian countries. The evolving division of labor has established that Asian countries produce while the EU uses and controls.

3-2 The EU's policy making process

I should now like to say something more about the EU's policy-making process. The EU is composed of three organizations: the European Council, the European Commission and Court of Justice, and the European Parliament. The European Council is the administrative organization of the EU; it works with the European Parliament in many fields, including the environment. The European Commission is the executive agency of the EU, and is made up of 27 committees, one from each member country, each with the power to recommend directives and policy. The European Parliament began as a conventional consultative body, but it has joint discretion with the Council now in many fields, including the environment. Each member country elects its own representatives, and currently the European Parliament has 732 members. Because green issues are of common concern to European countries, the European Parliament is currently focusing on social and environmental problems, which have become the main battlefield of lobbying by NGOs or trade associations generally (Figure 4-3).

I take as instances of their legislation two directives that were decided on jointly: one, that applies to all countries, is the RoHs of toxic material regulation, REACH (the Registration, Evaluation, Authorization and Restriction of Chemicals), while the other, WEEE (the waste electric electronic equipment regulation), is legislated for by each country individually. This dual structure of an EU level and an individual country level effects improvement overall and encourages the upgrading of "a new member country", widens policy learning and the possibility of policy transfer rather than

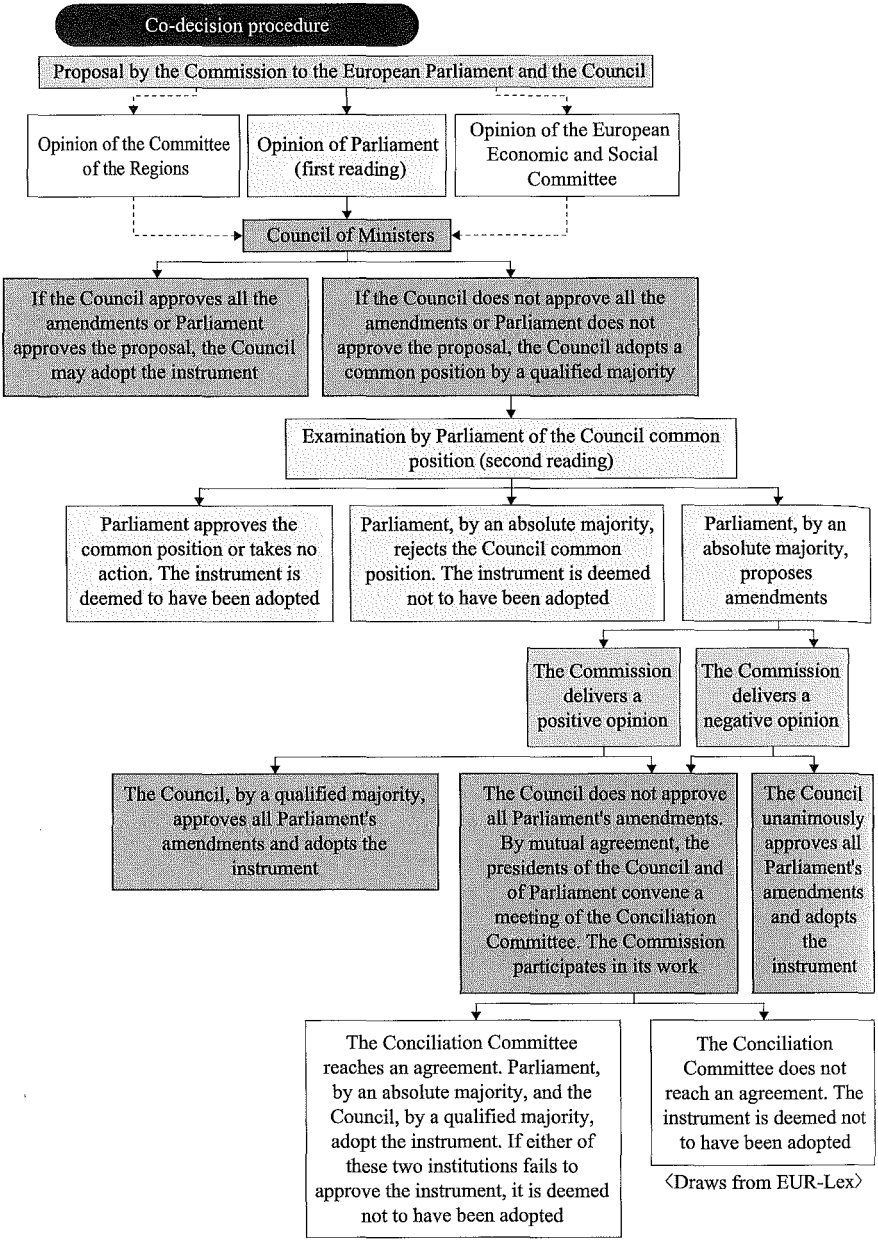

Figure 4-3 The EU's organization and codetermination model (the EU's material utilization guide).

"convergence of policy"; and it has greatly contributed to environmental policy and environmental improvement as a beneficial aspect of the EU's enlargement to include a number of Eastern European countries. On the other hand, such a dual structure can cause complications and difficulties in compatibility between the laws of each individual country and the EU law and their joint application. For example, in the case of the trans-boundary movement of waste, the EU functions as one entity when seen from outside, while the trans-boundary movement of waste is still under of the strict regulation by the law of each country when looked at from within. At the same time, the administrative capacity of each member country is weak, and even if a domestic law is passed, it may not be implemented; tardy domestic legislation is termed "the implementation deficit" (Knill and Liefferink, 2007: 145-161). How a rule is decided and what and how it is regulated are also both important questions. Negotiations to enforce the directive are often conducted solely within the sub-Committee that is working out the detailed regulations, rather than as a policy argument conducted at the highest level by the Parliament, the Council and the Commission. (Sbragia, 2000: 293-316).

I take as my example here the WEEE regime of the EU that corresponds to the Japanese household electric appliance recycling regime. The aim of the EU regime is to separate and collect WEEE (Waste Electronic and Electrical Equipments) as municipal solid waste by [a] a wide range of targeted items, [b] at the expense of the producer, [c] by setting the rate of recovery and recycling, [d] by restricting the use of harmful substances.

In contrast to the Japanese regime, the EU places no stress on the recovering of resources, and as member countries delayed implementation of the WEEE regime while only a few countries implemented it during the first year, it is still too early to evaluate its effectiveness. Should the quantity of recovery be 5.13 kg more than the 4 kg that is targeted per person, then it may be considered high in Sweden (12.20 kg) and the UK (9.9 kg), but low in such Eastern European countries as the Czech Republic (0.33 kg). The 2006 figures for the rate of recovery of product items when divided into ten kinds reveal that air conditioners and refrigerators registered 27%, large-scale household electric appliances 40%, IT 28%, CRTTV 30%, while monitoring and control machines managed 65%.

According to our listening survey (in the Netherlands and Germany), some of the waste flows to the scrap merchants without passing through the processing plant contracted by the municipality for recovery by the manufactures, and since the burden on the producer to collect the waste grows bigger, the incentive to recover it is weak.

The EU Review Report (UNU, 2007) recommends keeping consumers better informed about recycling, as well as strengthening institutional arrangements: improving cooperation with municipalities, who are the main recovery channel; banning the illegal movement of waste (either to countries outside the EU or to Eastern European countries and other places within the area); and removing the distinction between business and consumer products, as well as the distinction between new waste and older waste, because such distinctions only complicate the system.

The EU Commission also proposes to recast the modification of the recovery target (65%), clarify definitions, align them with other community legislation, encourage greater producer responsibility, and avoid leakage of WEEE. We shall therefore need an enforcement system that corresponds to the concept of the EPR.

Let us now examine a concrete example of household electric appliance recycling. Berlin's VfJ (Vereinigung für Jugendhilfe) helps young workers find employment in the recycling system, in particular the repair business. The VfJ was established in the 1950s to educate the young unemployed to work in TV recycling. Recently, its main purpose has been to educate handicapped persons, and in order to work for a better environment it specializes in CRT recycling and the proper recycling of complicated e-waste, as well as the proper disposal of CRT. Consequently, in 2007 VfJ founded the company VICUR Gmbh to specialize in the management of CRT. CRT equipment and the related technology have a special future and are sold to other social corporations. VICUR Gmbh employs 20–25 people who deal with 200 tons a month in 1 shift every seven hours. Usually two people rather than one dismantle the CRT monitor while they also treat small household electric appliances. For safety, each workshop is furnished with proper ventilation and the employees wear masks and earplugs to prevent exposure to lead. There are 12 recovery centers in Berlin, managed by ALBA, a company that specializes in waste disposal processes and collects the used household electric appliances from the municipality. The recovered CRT glass is exported to Malaysia, India and China.

This example of EU policy shows that recycling and reuse can be viewed not only from an environmental perspective, but also in the context of economic sustainability and social usefulness, since it retrains the unemployed, protects the socially vulnerable, finds employment for the physically handicapped, provides a market for the person with a low income and receives the assistance of social security. What we need to note most careful is that the EU's environmental policy not only recognizes the importance of innovation

but also pays attention to the evolution and the development of the policy instruments and norms themselves as well as strengthening the process by which the structure is set up and the manner in which the agreements and the negotiations are conducted. Although direct regulation still plays the central role, other roles combine to support the work in practice: [a] economic tools, such as the emissions trading and the environmental tax, [b] voluntary agreements between parties, [c] information disclosure as a newly integrated environmental policy (see Chapter 6 for cross-reference). These points are characteristics of the environmental governance in the EU.

A typical example of better regulation designed to encourage policy innovation without loosening environmental regulation is the REACH system: the Registration, Evaluation, Authorization and Restriction of Chemicals; this reduces direct administrative involvement, and transfers the *onus probandi* (the burden of proof) of safety to the producer. The background to the sponsoring of environmental policy innovations was a series of environmental pollution crises and issues of public hygiene, such as the issue of food safety and the delay of measures to counter pollution in the cases of the 1986 Chernobyl Nuclear Accident and the pollution of the River Rhine, the BSE (mad cow disease) fears, the contentious issue of GM (genetically-modified) crops, and the ravages of HIV, none of which could, or can, be settled by the application of a simple react-cure approach.

It was not until the various agencies involved recognized that a gap existed in the integration of policy between a legal system and its enforcement that a more flexible method of sharing the role between a large and discrete cast of actors came to be adopted. A proposal was consequently made to adopt the doctrine of Environmental Policy Integration (EPI). At the Cardiff ministerial meeting of 1998, the Councils — which included representatives from the finance, industry, the market, development projects, energy, transport and the agriculture — agreed to develop a strategy in the field of policy that would realize the integration of environmental policy and "sustainable development" (the Cardiff Process). In addition, when dealing with policy integration, the process requires that the actors also consider environmental policy and the employment issue (employment without environmental damage) and the question of competitiveness.

This comprehensive environmental strategy thus encourages member countries to make efforts to persevere with negotiations and with the making of agreements as stakeholders in the EU's political system, to establish a stable structure and to set up concrete targets. We stress policy development as

characteristic of "environmental governance in the EU" since it is very important when promoting innovation to weigh it with the evaluation of cost-benefit, to consider the balance between competitiveness and employment, and to address the technical issues that are important to both sides.

3-3 The Sixth Environment Action Programme

The recent Sixth Environment Action Programme of the European Community 2002–2012, which is entitled "Environment 2010: Our future, Our choice", has given priority to four major issues: A climate change, B nature and bio-diversity, C the environment and health, D natural resources and waste. The main contents of the agreed program are as follows.

[a] Although, under the terms of the Kyoto Protocol, the proposed new program focuses on a reduction target for 2008–2012 of 8%, the Commission also calls for more far-reaching global emission cuts of the order of 20–40% by 2020, and cites the scientific estimate that, as compared to the 1990 estimates, a 70 % reduction in global greenhouse gases emission will in the longer term be needed.

[b] Europe is seeing dramatic threats to the survival of many living species and their habitats. The cornerstone of its approach to avert these threats has been the full establishment of the *Natura 2000* network and a set of sectoral bio-diversity action plans.

[c] The Community recognizes the effects of environmental pollution on human health and has addressed the many problems caused by pollution. It seeks a more holistic policy approach in order to access and address the links between different environment-related health risks.

[d] One of the most difficult issues for the EU's environmental policy is the inexorable growth in quantities of waste, and 'Environment 2010: Our Future, Our Choice' calls for a decoupling of waste generation from economic growth. Particular efforts will be devoted to increased recycling, while waste prevention objectives are to be pursued *inter alia* through an Integrated Product Policy.

Let us now trace the EU's policy of dealing with climatic change through an analysis of three of the conditions of regime and actor. An important starting point for the recognition of the cognitive information conditions was when, in 1987, the World Commission on The Environment and Development launched the idea of "sustainable development". In the late 1980s, the problem of rising sea levels and flooding in the Netherlands as a consequence of global warming was high on the agenda, while, during this time, too, the

damage caused by the type of trans-boundary pollution after the Chernobyl Nuclear Accident and, in the EU, the issue of River Rhine pollution led Eduard Shevardnadze, the foreign minister of the Soviet Union and later the President of Georgia, to propose the idea of "environmental security" as a contribution at the end of the Cold War to the building of a new international dispensation. We note, too, in the late 80s particularly, and as a response in the mid-90s to the ending of the Cold War, the emergence of new ideas relating to environmental policy, such as "sustainable development", "global warming" and "biological diversity".

These principles of cognitive information have become the basis of environmental policy for the 21st century. With regard to the political and institutional conditions, a series of international conferences on climatic change and global warming have, since 1985, been held almost annually (in 1985 the Villach conference, in 1988 the Toronto council, the Intergovernmental Panel on Climate Change (IPCC), the Hague council, the Noordwijk Conference). In 1990, the first IPCC report promulgated the level of the EU's CO_2 stabilization target, while, in 1992, the UN Conference on Environment and Development (the Rio summit) submitted the Framework Convention on Climate Change and the United Nations Framework Convention on Climate Change. In 1995, the first Conference of the Parties (COP1) endorsed the Berlin mandate (with legal binding force as COP3, a resolution not to obligate afresh the developing country), and this, in turn, led, in 1997, to acceptance of the Kyoto Protocol. Thus, from the late 1980s through the early 1990s, an international framework to cope with environmental problem began to take shape, and this has led to a new orientation for the 21st century.

The EU recognizes that it needs to improve further its economic and technological policies and methods as measures to counter global warming. This is the one area where the CFC regulations that were adopted in the Montreal Protocol of 1987 remain in force, and what still needs to be resolved is the EU's specific problem with trans-boundary pollution; the EU also needs a better acid rain policy. At the same time, however, the EU was the first to adopt action towards setting a differentiated target to achieve CO_2 reduction: this was known as the "bubble approach" and the experience of the Netherlands in coping with global warming is particularly helpful. The Triptych approach aims to secure an international climate agreement among countries based on technological criteria at the sector level while recognizing structural differences so as to work out a method for allocating future greenhouse gases emission reductions. Specifically, it sets a numeric target agreed under a

long-term contract with the main emission source; this involved the participation of NGOs and resulted in the fulfillment of the 1989 national environmental plan and the exploitation of the carbon tax.

These policies and methods have meant that the global warming countermeasures have not cost very much, and it is clear that it is possible to enforce them without damaging competitiveness (Kanie, 2001). As for the US reservations about the Kyoto mechanism (emissions trading, CDM, JI), the EU at first took a critical standpoint. In 2001, however, the US left the Kyoto Protocol, and the EU took on itself the role of determining competitiveness. Consequently, in 2003, the EU established the EU — ETS (emissions trading system) regime. Part of the background to this was that, in 1994, the EU Council had not been able to come to a decision about introducing a uniform energy tax and carbon tax, for as it is likely to infringe the tax-collecting sovereignty of each member country, so it is hard to coordinate the issue of the environmental tax. Owing to the internal circumstances of the EU itself and its relationship with the US, the strategy of the EU has been to try to pull the US back to the Kyoto Protocol through the emissions trading market while aiming at the reinforcement of competitiveness (Skjaerseth & Wettestad, 2008: 150–153). The UK and Denmark have led efforts to implement the emissions trading system in the process of bringing about policy innovation and the integration of EU at one and the same time (see Chapter 9).

As we have seen, the EU has been pushing forward with the creation of a Low-carbon society that unifies the three pillars of overall policy: how to ensure full employment, how to manage technological innovation and competitiveness, and how to deal with climate change. We note, too, that the utilization of renewable energy is actively encouraged as a countermeasure to the sufferings of the global environment, and that among the Nordic countries, where the climate is similar to that of Hokkaido, Denmark supplies approximately 20% of its electric power through the generation of wind power, which again shows that the reform of the social system is as important as technological innovation.

Summary

This Chapter has tried to place the theory of environmental governance within that of environmental economics as seen from the perspective of the actor's regime, and its intention has been to show that "the making of a strong regime" is necessary when dealing with environmental problems. The theory of environmental governance entails that a society — which is composed of the

government, the community as a whole, businesses and the individual person — will negotiate together about such environmental measures as the Kyoto Protocol, reach an agreement, establish a criterion, devise a workable structure of environmental regulations, and have the necessary authority to carry out their provisions.

What lies behind the proposals for environmental governance is the realization that as the area of environmental problems spreads so the composition of the actors with parts to play has multiplied enormously, while the tools of environmental policy have grown to include not only the methods of direct regulation but also such protocols as emissions trading, the environmental tax and various forms of voluntary agreement. The methods of environmental governance are thus designed to focus on a variety of actors, of businesses and citizens as well as government administrative agencies, while analyzing the three over-arching conditions of cognitive information, politics and institutions, the economy and technology, as well as making as much use as possible of various policy instruments and the relationships between the actors. This is an effective method of conducting environment economics.

After first considering the recycling society of Japan, I have, in this chapter, applied the regime and actor analysis of environmental governance to conditions world-wide, and I have sought to make clear the validity of this method by showing how polarization of future problems and reform will be a consequence of an international regime, a regime of relationship with benefits for the various actors, by which to achieve compatibility and coordination between the regimes, to relieve the economic burden and to overcome the crisis in the world's financial system.

I have also introduced a particular method of regime and actor analysis by comparing it with an example taken from the environmental governance regime of the EU. On the assumption that the environmental governance regime of the EU could be extended to cover the world, and become the global standard of environmental regulation, I have examined the history of the EU's environmental policy, its policy innovations and its policies to cope with climatic change by analyzing three specific conditions: cognitive information, politics and institutions, the economy and technology.