

Sustainable Development and the Management of the Japanese Inland Sea

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1. The Japanese Inland Sea has five main features: (i) it is a typical enclosed sea with numerous islands, (ii) it has a rich history and culture, (iii) it serves as an important east-west maritime route, (iv) it possesses abundant fishing resources, and (v) it has experienced much coastal landfill and the expansion of heavy chemical industries in the post-war period.

2. It is important that efforts are now made to implement sustainable development, the internationally-accepted common guideline for environmental conservation, in the Inland Sea area. The concept of sustainable development can be summarized into the following five points: (i) conserving the ecosystem and planetary life-support systems, protecting all plant and animal species, and maintaining genetic diversity; (ii) satisfying the basic needs of the populace; (iii) securing equality between different regions and between generations; (iv) ensuring people's participation; (v) applying the principle of integration.

3. Has past management and development in the Inland Sea created problems for the conservation of the ecosystem and protection of species' diversity? Was it based on the basic needs of the local populace? Was the participation of residents guaranteed? Were inequalities among different areas, such as overcrowding and depopulation, eased? Was equality between generations ensured? Were all plans and their implementation integrated according to the idea of sustainable development? The answers to these questions suggest the following requirements: (i) effecting strict environmental assessments, with priority on the conservation of the ecosystem; (ii) guaranteeing consideration of local citizens' needs, and concrete procedures for resident participation in managing the environment, including planning and decision making, for the integration of development and conservation; (iii) controlling the movement of population to the cities and promoting locally-generated development; (iv) integrating laws and administration according to the principle of sustainable development, and removing various contradictions.

1. What is Sustainable Development?

The term 'sustainable development' is now much in vogue. As far as environmental problems are concerned, it serves as a common indicator for governmental agencies, research organizations and private groups around the world. In Japan too, the term is already known and used. However, several different Japanese translations of the English phrase sustainable development can be found in various publications, including those of the Environment Agency, and it is therefore uncertain to what extent the true idea of sustainable development has been correctly understood and explained in Japan.

It was in the *World Conservation Strategy*, published in 1980 by the International Union for Conservation of Nature and Natural Resources (IUCN), that sustainable development first appeared as a key term. In this landmark manifesto, priority was clearly placed on conservation of the planet's basic life-support systems and the protection of all its plant and animal species; sustainable development was seen as the means to improve the quality of life within these stated limits. Actually, even earlier than this, following the United Nations Conference on the Human Environment held in Stockholm in 1972, we find the term beginning to be used among European environmental protection groups, though the emphasis then seems to have been on the North/South problem, with social justice (equality), residents' participation and sustainable development being regarded as elements of a single broad concept.

More recently, in 1987 the United Nations World Commission on Environment and Development (WCED) published its final report entitled *Our Common Future*. In clarifying the issues and making realistic proposals for

dealing with them for the consideration of member nations and concerned individuals, this carefully-written document again takes up sustainable development as one of its core concepts, though it appears to be interpreted somewhat more broadly than the IUCN's 1980 conception of sustainable development outlined in the *World Conservation Strategy*. Perhaps this has resulted in some confusion in interpretation. Some people put emphasis on conservation of the ecological system, some place more importance on development rather than on the protection of the ecological system, while others seem to regard sustainable development as a convenient environmental conservation concept in terms of North/South problems. However, people are now using sustainable development as a key term for world environmental conservation, and it seems that while the basic emphasis is put on 'sustainability', this idea is considered together with that of 'development'. Sustainable development should not be regarded merely as a concept of convenience. This is clearly wrong. Not only is sustainable development meaningful as an important guideline to harmonize and unify environmental conservation and economic activities worldwide, the idea can also be regarded as a new watchword for our future activities in general.

In my view, sustainable development is a deeply philosophical concept, with nature as its dialectical base. Man is standing at the end of a line extending from the earth's creation through the evolutionary history of living things, carrying the burden of his modern culture, and we are forced to realize that we exist through mutual dependence, in the same way as do all other life forms in the biosphere. We are also made to appreciate the balanced system within which all life forms evolve and diversify in a relationship of mutual interdependence. That is to say, harmony with diversity exists in the development of 'interdependent evolution'.

Thus, we must not allow the incalculably important biosphere, the life-support system on which we ourselves depend, to be cut off or destroyed by human tyranny. This is the fundamental spirit of sustainable development. Guaranteeing the sustainability of the biosphere and the ecological system is a fundamental prerequisite for man to coexist with nature, and man's basic requirements must be satisfied while protecting the ecological system and making use of it in a correct manner.

2. The Five Elements of Sustainable Development

Examining the progress of the discussion from the appearance of sustainable development as a key idea up to the present, we can identify three phases - integrity with social justice and residents' participation, a background and concept in which to plan man's development within the limits of conserving the life-support system and ecosystem as put forward in the *World Conservation Strategy* (1980), and a wide-ranging strategy for man's development as proposed by the WCED (1987). To clarify the idea of sustainable development by bringing together these three concepts, two basic feelings can be said to underlie it. The first is a deep respect for the 'mutual dependence relationship' of all life on earth, which forms the foundation of the biosphere and the ecosystem. The second is the need to judge the propriety of human activities, and make choices from the viewpoints of sustainability and developability.

It is on this basis that I believe the idea of sustainable development, as it has been discussed up to now, is a concept which places priority and emphasis on the following 5 points. It can be regarded both as a new philosophy of development and as a beacon to illuminate our future and guide us as to the procedures and methods we should adopt.

The first important point is the conservation of the life-support and ecological systems of the earth. The priority of the total conservation of the biosphere (air, water cycle, energy cycle etc.) and the ecological system (diversity of life and its mutual interdependence) must be respected, the ecological systems of regions or of the earth as a whole must not be destroyed any further, use and development which deviate from the laws of nature must be prohibited, and the diversity of species and genetic diversity must be maintained. In short, use beyond the recovery ability of the ecological system and the tolerance ability of life-support systems of the earth must be controlled or prohibited, and the principle of recycling must be firmly established.

The second point concerns satisfying fundamental human needs. The basic requirements of all people, of both present and future generations, that is clothing, food, housing, health, safety, and so on, must be provided. Safe food and a secure and comfortable living environment must be provided, safety and hygiene maintained, and distress caused by preventable illness, starvation and poverty reduced. Our aim must be development and growth which improves the quality of human life.

The third point is the principle of social justice and equality. The unfair relationship through which the North prospers by sacrificing the environment and resources of the South must be corrected, and the unfairness of passing on unreasonable risks to future generations by the present blind exploitation of resources and destruction of the environment must be eliminated. That is, we must aim to achieve equality between regions and generations

and to realize social justice.

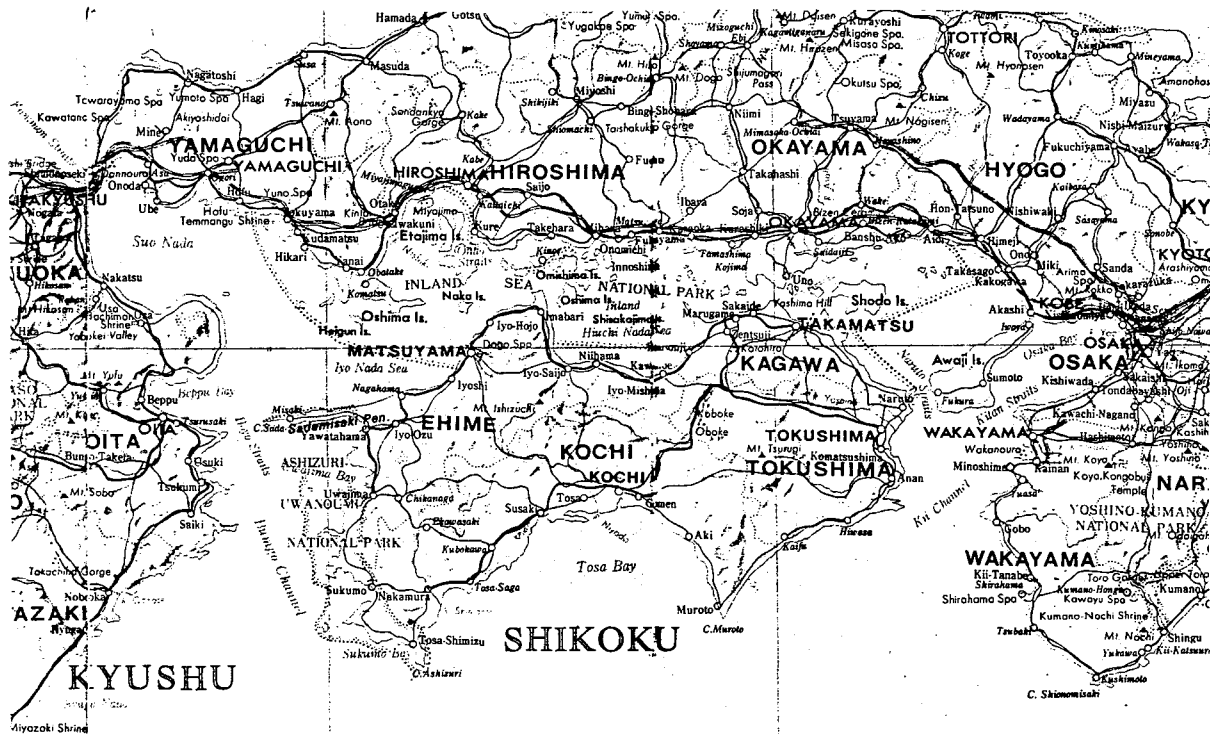
The fourth point is the principle of participation by the people. It can be said that the people are at the core of the sustainable development concept since they are the beneficiaries as well as the final decision makers when sustainable development is implemented. Only by guaranteeing effective participation by the people can true sustainable development be achieved.

The fifth and final point is that sustainable development functions as a principle of integration. The concept of sustainable development is an index for policy formulation in any field and any region. It should serve as a democratic, unifying idea for political, financial, social system and technical reforms.

3. Features of The Japanese Inland Sea and Sustainable Development

The Japanese Inland Sea is characterized by five features. (i) It is a typical enclosed coastal sea with numerous islands and picturesque scenery of great natural beauty. (ii) It is abundant in fish resources. (iii) It is rich in history and culture. (iv) It serves as an important east-west waterway. (v) It is an area which has seen much coastal landfill and the advance of heavy chemical industries due to post-war economic development.

(i) The Japanese Inland Sea, surrounded by the three large islands of Honshu, Shikoku and Kyushu, extends 450km from east to west, has an average north-south width of 55km, covers an area of 22,000km, has a coastline stretching some 6,000km and an average depth of 37m. It is studded with over 700 islands, large and small, and there are many bays and straits, as well as stretches of open water. The Inland Sea is connected to the open sea by the Kanmon Strait, and the Bungo and Kii Channels. With its numerous islands, beaches of white sand and pine-clad hills, the area is renowned for the beauty of its coast. The central part of Inland Sea, which is a National Park, is one of the best natural parks in the world.

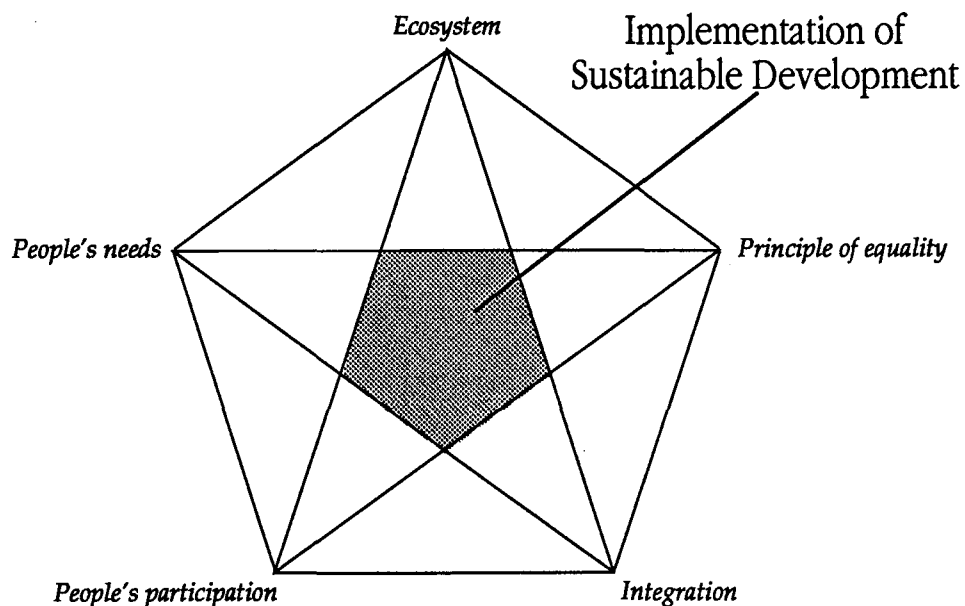


(ii) The Inland Sea is a treasure-house of living things, with about 3,000 types of animal life and 300 kinds of plants - 600 fish, 1,000 molluscs, 400 crustaceans, 150 annelida, 300 zoo-plankton, 200 phytoplankton, and 300 types of seaweeds. With about a quarter of the coastal fishing production of Japan (sea-fishing 450,000 tons, aquaculture 300,000 tons) the area has a highly productive fishing industry. The Inland Sea is a spawning ground for sea bream, Spanish mackerel, sardine and plaice, and a growing area for many other types of fish. Cultivation of oysters, seaweed and young yellowtail also flourish. (iii) The history of the Inland Sea is old and supported by a rich culture. In various coastal areas, fossils such as those of ancient elephants and vestiges of the old stone age have been found, so the dawn of human history in Japan is recorded in the Inland Sea. It also flourished as a waterway for the import of continental culture - an important route for exchanges with the Asian continent, for in-

stance in the passage of Japanese envoys to China in the Tung and Sui dynasties, as a stage on which the rise and fall of the Genji and Heike clans occurred, and as a road for the entry of Buddhist culture. (iv) The Inland Sea has been an important waterway since the days of sailing ships, and it still is today. Many harbors have been developed, and one quarter of the important ports in Japan are concentrated in the Inland Sea. Ships entering and leaving these ports make up one-third of all the ships trading in Japan. In addition to the conventional Inland Sea traffic, it is increasingly used by large vessels serving the many industries concerned with overseas trade, creating a rather complex pattern of shipping. (v) Turning to the development of Inland Sea coastal areas, as if symbolizing postwar Japan, new industrial cities were designated in the southern part of Okayama (Mizushima), Tokushima, Oita, and Ehime, as well as in other districts, under the 1962 National Comprehensive Development Plan and the New Industrial Cities Construction Promotion Law enacted in the same year. In addition, under the Industrial Improvement Special Area Promotion Law of 1964, places such as Bingo (Fukuyama), Harima (Himeji) and Shunan (Yamaguchi) were designated as special industrial improvement areas, thus rapidly expediting development. Many coastal areas of the Inland Sea were given over to industrial development, particularly in the heavy chemical industry, adding to the established traditional industries of shipbuilding and textiles. By 1972, 53% of Japan's steel production, 40% of oil refining, 35% of petrochemicals, 42% of electric power generation were concentrated along the coast of the Inland Sea.

These developments, which did not occur without sacrifices - for example the disappearance of fishing resources, the loss of natural coastline to landfills, and antagonism among developers, fishermen and local residents - resulted in serious destruction of nature and environmental pollution. At present, due to changes in the industrial infrastructure, further expansion of coastal industry is somewhat stagnant. However, construction of the Kansai New International Airport and other landfill schemes in Osaka Bay, landfills for waste disposal, large-scale landfills for new resort areas, construction of three new routes with gigantic bridges to connect Honshu and Shikoku islands, and resort development in various coastal areas under the recent Resort Law are being carried out. Thus, the Inland Sea is an area which is still experiencing a variety of large-scale developments.

The development and management of the Inland Sea as outlined above prompts the consideration of a number of questions: (i) Did it affect the conservation of the ecosystem - air, water cycle, protection of species' diversity, etc? (ii) Were past developments based on local residents' basic needs? (iii) Were the differences and inequalities between overcrowded and underpopulated, and between rich and poor areas, eased? Were inequalities left for the next generation? (iv) Was residents' participation guaranteed? (v) Were various plans and their implementation integrated on the basis of the idea of sustainable development? It is necessary to examine past management and development in the Inland Sea in terms of the priority given to these five points.



4. Problems and Future Outlook from the Viewpoint of Sustainable Development

From the five elements of sustainable development mentioned previously, the following problems can be identified.

- (i) It is clear that past management and development in the Inland Sea failed to consider the basic invariable rules - conservation of life-support systems and protection of the ecosystem, and human development within the relationship of mutual dependence with nature. We have been too tyrannical towards nature. How much consideration was given to the importance of maintaining an abundant ecosystem and vital ecological functions in the coastal areas? How far was the importance of the water cycle considered when sea water, rain water, forests and rivers were transformed into other uses and development? How much consideration was given to the ecosystem in town planning and the building of apartments and roads, and how much effort was put into maintaining greenery, clean water and clean air in cities and new towns? The answers are all negative. From the viewpoint of conservation of the ecosystem, postwar developments have been seriously at fault. Air pollution, pollution victims, man-made disasters, deterioration of the living environment due to the loss of nature, PCB contamination, deformed fish, reduction of species, all of which have occurred in the Osaka-Kobe-Okayama area, shows what has been done in the past.
- (ii) Satisfaction of people's basic needs is at the core of the sustainable development concept. Development in Japan has an extremely abnormal structure, since the needs of the people concerned have usually been subjugated. First of all, plans for the development of an area or for land usage are mainly drawn up by financial interests and politicians, after which the administration takes a hand, or sometimes the administration draws up plans together with financial circles. It might be considered extraordinary that this sort of practice persists in a democratic society. The needs of the local residents are neglected. In sum, the needs of financial interests take priority over the basic needs of the people, and this is where the problem arises. The needs of the people concerned should form the basis of national needs, and if these match the needs of the financial interests, politicians, and administrative organizations, the policy can be implemented. But conventionally, the needs of financial circles do not match those of local residents, and it can therefore be said that financial interests have led the suppression of residents' needs. We must not forget the purpose of sustainable development is not to secure company profits, but to ensure and improve the basics of life for the people in the region.
- (iii) How much have the differences among cities, towns, villages, mountain areas, islands, etc. in each prefecture of the Inland Sea coastal region been eased as a result of past development and management? The population has become even more concentrated in the city areas, resulting in various service industries, information, culture, etc. becoming concentrated in the city areas as well, and thus further depopulating the mountainous districts and agricultural villages. Also, the wage differences between city and rural areas have not been corrected. Can we not say that structural inequality has advanced even further? In terms of the ideas of social justice and equality, past development policy in the Inland Sea has many shortcomings.
- (iv) A system does exist permitting direct petitions or requests for inspection, based on the Local Government Act, and also on the Inland Sea Environmental Conservation Special Law etc. Submission of residents opinions is guaranteed at the stage of environmental assessment. However, in practice, a system of resident participation in which people in an affected region are positively requested to participate in all processes from planning to execution has not yet been established. There have been many cases in which resident participation was neglected, resulting in trouble from residents at the stage of implementation, resident dissatisfaction and opposition, and finally, court action. We can say, by looking at these facts, the idea of resident participation has hardly been put into practice.
- (v) The integration of the various plans with the concept of sustainable development, that is an integrative function, does not exist. Compared with the administration of development, the administration of pollution and nature protection has always been weaker in terms of organization, power, personnel, and finance, and has always taken second place. Furthermore, various plans affecting nature and development of the Inland Sea in the future have been implemented without integration between each administration, which should have been done according to the idea of sustainable development.

Therefore, the following elements are necessary to implement sustainable development in the future management of the Inland Sea: (i) An environmental management plan for the entire Inland Sea area, in which execution of strict assessment, development and conservation are integrated, with priority being placed on conservation of the ecosystem. (ii) Concrete methods for citizens' participation; the introduction of a voting system for local residents in order to ensure their needs are addressed, the development of production and technical systems aimed at coexistence with the ecosystem. (iii) Control of population concentration in the cities, easing of overcrowding and depopulation, correction of financial discrepancies, and promotion of locally-generated development. (iv) Enacting a basic law on the principles of sustainable development, and integration of individual laws and administration, etc. These points, in particular, are the ones I consider to be of crucial importance.