

## For the Solution of the Environmental Issues of Developing Nations —— The Limit of the Science and Technology Support ——

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At present, mankind is faced with global crises, such as exhaustion of resources and global environmental issues. Only by science and technology, development cooperation and environmental issues to the Third World do not reach solution. Development assistance to the Third World by advanced nations in post-World War II has produced bad results for the environment. It is urgent that a solution be reached on poverty issues in the Third World.

Key words: developing nations (the Third World), environmental policy, environmental issues, international cooperation, environmental science

### 1. INTRODUCTION

Until the present, mankind has selfishly developed and used all materials on the earth. There have not been any viewpoints for preservation of the irreplaceable biosphere, recycling, substitutive utilization of limited resources and so on.

Now, we should meet the problems head-on such as exhaustion of resources and environmental disruption. We should look back on our environmental history with modesty. And we should have a clear view of "the symbiosis with all creatures on the earth" for the coming century.

In advanced nations, modern scientific and technological approaches have been promoted.<sup>(1,2)</sup> For example, as a part of the solutions for environmental issues, ecomaterial harmonizing with an ecological system have been studied.<sup>(3-5)</sup>

Comparatively tropical forests, which are large storing places of carbon, have been burned and cut down by poor farmers without land or slum-dwellers in the Third World.<sup>(6,7)</sup> In addition to the above mentioned, global environmental issues are extended over a wide field.<sup>(8,9)</sup> These issues contain many problems that may be difficult to solve only by a scientific approach.

Especially in the Third World, with few funds and poor technology, they cannot afford to deal with environmental issues. They need an international assistance of advanced nations for their independence.

Material study is important for prevention from global warming. However, it should be more important to solve issues on poverty in the Third World instead of issues on tropical forest decrease. Therefore, we have studied a relation between issues on tropical forest decrease and an international assistance. And we offer a guideline for the solution.

### 2. TROPICAL FOREST DECREASE

The soil in tropical forest is poor. Therefore, a recovery of the forest would be impossible by a rapid tree trimming. After the tree trimming, the following would be brought about: A desertification and a runoff of the topsoil. Various problems have appeared since the forest cannot recover.

One is an energy crisis. According to the investigation of U.N. Food and Agriculture Organization, a half of the global population depends on energies in firewood and charcoal. At present, over a billion people are troubled

with a lack of firewood.

In addition, tropical forest decrease also becomes one of the factors of Global warming, because a tropical forest is a wide storing place of carbon. Latin America, South-East Asia and West Africa, where tropical forests have been left, are explosion zones of population and simultaneous poverty zones. Population growth and unplanned burning on the soil are regarded as the largest reason of tropical forest decrease. Poor farmers without land and slum-dwellers in urban areas have entered tropical forests. They have cut down firewood, and changed the forest to a plowed field or a rangeland. A lot of people have made a living by plunderous farming or grazing.

### 3. EXAMPLE OF INTERNATIONAL ASSISTANCE

In order to stop the destruction of tropical rainforest, issues on population and poverty in developing nations with tropical forests should be solved. The above problems are burdens for the Third World. Therefore, international assistance of advanced nations was expected. For about 40 years, each government and international organization has assisted the Third World.

Official development assistance (ODA) of Japan also has increased its funds year by year, and it is the world's largest contributor at present.<sup>(10,11)</sup> The ODA of Japan has carried out a development assistance for Brazil which mainly has a vast tropical forest.

For example, the ODA of Japan supported a region overall development plan of iron ores, agriculture and forestry, cattle-breeding, hydraulic power generation, etc. in the 1980's at Carajas region.<sup>(12)</sup> (It ranges from Carajas mountain district in the west of the Brazil to the plain in the east coast. And it consists of almost tropical forest and is twice as large as Japan.) Japan International Cooperation Agency made a master plan.

Financial institutions in Japan agreed in response to a request of the Brazil government in loaning 500 million dollars for this plan. However, this plan was not desirable for the environment.

As a result, a wide range of the forest was destroyed. To begin with, the forest was cut down for constructions of the infrastructures, such as railways and harbors for mine development. Settlers, who were unemployed people or poor peasants, entered the forest using Carajas railway. And they expanded an unsustainable slash-and-burn agriculture. After the settlers gave up the land, the

trees were clearcut. And the land became a pastureland. Therefore, an opportunity of the regeneration of the forest was not possible. Additionally in order to get charcoal for refining of iron ore and cement production, the forest was furthermore deforested recklessly. Life basis of the Indian society in the big Carajas region was almost deprived.

#### 4. THE POINT AT ISSUES OF INTERNATIONAL ASSISTANCE

International assist organizations have a part of the responsibilities of the above case. They had not considered such a problem. In Japan, assist fund had been furnished to the Third World without sufficient verifications. They should have examined the kind of effects caused on the environment and social life of people.

Another problem is that many nations had not known such a state. Information about the assistance had not opened very much to the public. For example, a flow of the fund was obscured. Furthermore, there was not any evaluation organizations for the assist projects. It had also made it more difficult to get the right information for the public. <sup>(13-15)</sup>

#### 5. INTERNATIONAL ASSISTANCE UNTIL NOW

Here, we look back on international assistance until now. At the beginning, poverty seemed to have automatically been solved by development. Therefore, the assistance of advanced nations was spent for construction of large-scale infrastructures around urban areas, such as factory, electricity and dam. It was planned to earn foreign currency by exports of wood and mineral resources. There were some successful examples like Singapore, Taiwan and Korea. But in general, modern industry created few jobs for the lower class.

Then the fund was allocated for an improvement of infrastructures in agricultural areas, where a lot of the lower class people had lived. But poor farmers were driven out of their land for large-scale productions. And on the contrary, a difference of poverty and wealth expanded.

Therefore, education was supported in order to cultivate abilities of the lower class in the medium and long term. However, there was no fields where they could show their abilities to the fullest, even if they graduate from junior high school or high school. And overseas runoff of the people who received the higher education became trouble.

As a charity for the lower class, food and daily necessities have been offered. But it is merely a makeshift. It has made them to have dependent hearts.

#### 6. THE ASSISTANCE OF SMALL-SCALE FINANCING

We show one example as a method of expectable international cooperation in future.

In the 1970's, a woman lived in the village in Burma (present Myanma). She had made chairs from bamboo. She earned 1 taka (about 2.5 yen) a day. Her work was equal to about one-tenth as much as the wage of the daily employment labor. She didn't have the necessary funds for material supplies, therefore she had to borrow

money from an intermediate person who had been buying her chairs.

Then, professor Yunus, who was an economics doctor and taught in the Chittagong university, lent to her 10 taka necessary for inventory out of his pocket. Thereafter, she purchased the inventory by herself, and her net income became more than 60 taka. After that, the professor lent funds to 42 people who had been in the same circumstance as the woman. Those 42 people also returned debts and increased their net income. Therefore, the professor did establish a bank for the purpose of financing for the lower class.

"The small-scale financing summit" was opened in Washington in February, 1997. A motion planning was adopted in the summit. It was adopted that they should offer the small-scale financing for one hundred million people who are in the lower class of the world by 2005. To advance such international cooperation seems to be one influential method. <sup>(16)</sup>

#### 7. THE ACTIVITY OF NGO AND NPO

In order to improve international assistance, people in advanced nations should rightly understand the relation between issues on the environment and poverty. Public opinion should be formed on the basis of the above understanding. It will produce an effective action. When we are faced with the large-scale issues, such as global environmental issues and North-South problem, there seems to be no way except for a formation of public opinion.

As an influential example, there are activities of the citizen groups who is called Non-Governmental Organization(NGO) or specific NonProfit activity Organization(NPO). In the past, an ODA monitoring activity is carried out by NGO in each country.

For example, a halt of the financing of the World Bank to Brazil Amazon development project was done by an environmental protection group in the U.S.A.. They heard a complaint of NGO in the Third World. The complaint was that tropical forests are rapidly disappearing due to enormous development project. Furthermore, they had the U.S.A. Diet to make the World Bank reform method.

At the present, NGO and NPO all over the world have exchanged their opinions using the internet. It seems to be an important form of formation of international public opinion. <sup>(17)</sup>

#### 8. DUTY OF ADVANCED NATIONS AND ENVIRONMENTAL ISSUES

For environmental issues and international assistance to the Third World, NGO in the advanced nations is expected, as mentioned above. However, the activity of NGO does not consider that there was no mistake all. There are the cases in which the failure in the ODA is caused in order to describe in the following.

To begin with, we mention a recycling promotion of NGO as a problem. Recycling by the volunteer which disregarded market principles has destroyed the recycling system that conforms to economical principles. In Japan, recovery traders of oil waste, iron scraps, paper waste, etc. are forced into discontinuance of business by the recycling promotions of citizen group. Destruction of the recycling system skillfully adapting to economic

principles will destroy a balance of demand and supply of wastes. And it seems to be very dangerous from the viewpoint of persistence.

On the other hand, NGO should not put an importance in their moral motive to an extreme, like sympathy, benevolence and feeling guilt. They should especially concentrate on a scientific understanding for the problem. For example, many citizen are getting involved in recycling programs, because they understand the limits between technology and production cost may be scarce. Scientific understanding of environmental issues should be thorough. After that, NGO in advanced nations should deal with issues on the environment and poverty.

For the future of the whole world, development of the South should continue with persistence. In order to give persistence to the development, we should not depend on a limited fossil fuel energy and we should consider the circulation of nature. For example, a concept of the entropy is indispensable in order for following to be rightly understood. : Environmental issues mainly have been caused by the utilization of petroleum and the deviation of present industry from the circulation of nature.

However, we should not place an excessive expectation for the research of nuclear power generation, nuclear fusion, etc.. These energies are fundamentally established on the basis of fossil fuel. The construction and maintenance of power generators need enormous fossil energy. It should be more understood that the persistence of fossil energy can not be expected to many people.

There seems to be no way that people in the Third World are attracted by the civilization based on utilization of fossil fuel in advanced nations. If international assistance would be based on fossil fuel indefinitely, a sustainable development can not be expected.

The development in the Third World is due to eradicate their poverty. We should assume that people in the lower class can not have a guarantee of minimum life basis, and search the meaning of their life. It is not always necessary to transmit a sense of sufficiency for materials by the civilization based on utilization of fossil fuel through international assistance.<sup>(18,19)</sup>

## 9. CONCLUSION

From the above fact, people in advanced nations should be well up in information about development and the environment in the Third World, and individual ethics should be raised. They should be sent to society ethics through the activities of NGO, etc.. It is important that fields of discussions with people in the Third World should be established.

And right information should be exchanged without forming wrong ethics of group. In order to handle right information, it is necessary that they should not be dependent only on ethics, social and economical knowledge. Their activities should be also based on scientific understanding of the problem, especially the circulation of nature should be emphasized. It should be applied with science and technology. In addition, the utilization of it should be transmitted to developing countries.

We put an importance in making the circumstances in which people in the Third World can be free from poverty. If so, the influential assist method like the small-scale financing assistance would be increased. The instillation of temporary big dollar, and the dependence on the fossil fuel energy would not produce persistence. They would cause new problem.

## 10. AT THE END

It is not exaggeration to say that we are in the end of century, and in the state of political, cultural, social, a scientific and technological obstruction. We believe that science and technology including materials development becomes worthwhile for mankind again.

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