

APPLICATION OF ECONOMIC TOOLS FOR ENVIRONMENTAL MANAGEMENT IN VIETNAM

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Environmental management tools are the methods or measures used for the environmental management of the State, scientific organizations and production activities. Such tools are quite various and support each other. Each tool owns a specific function and particular influence scale. The world as well as Vietnam is facing environmental disadvantages due to the pressure of socio-economic development. Environmental problem in the modern society is already putting negative impacts on human life and the general development of our society. In this essay, the writer is going to clarify major factors that influence the global environment; current conditions of Vietnam environment; the use of some economic tools being used in the environmental management in Vietnam; then suggest certain measures so as to enhance the application of such tools in the coming days.

I. The disadvantageous political developments to global environment

For many years, especially after the International Conference on the Human Environment (Stockholm, 1972), the world community has achieved so much in environmental protection activities. However, global environment continues to retreat. The world has to face these following environmental challenges:

- Soil crisis is increasing. There are up to 3 billion ha of degraded land and there is 50% agricultural land which is degraded because of drainage, erosion, acidification, and lack of nutrition...

- In the 1990s, forest all over the world disappeared about 94 million ha (2,4% of the world's forest area), including 79% of area of the lost forest turned into agricultural land. The speed of losing tropical forests is about 1% a year.

- Global biological variety has rapidly decreased. In the three past decades, it is estimated that 24% of mammals and 21% of birds is threatened to extinct. Natural fishing sources are also quickly falling because of overexploitation, which rapidly decreases natural resources.

- The lack of water because the surface and ground water are widely

overexploited. According to the United Nation's World Water Development Report, 2006, about 20% of the world population, 1,1 billion of people has no approach to safe drinking water resources and 40% of them cannot use the basic hygienic condition because of unfair distribution, poor management and inadequate investment to infrastructure, which leads to 5 – 6 million people die because of water related diseases.

- Human and environment is under the increasing impact of natural disasters, climate change. Many of the areas on Earth is considerably influenced by flood, drought, and other unusual weather. The numbers of people who is influenced by natural disasters are increasingly nonstop, especially for the poorest community. Because of the rise in the amount greenhouse gases, as well as the overall impact of ozone concentration, smoke, fine dirt in the air cause climate to change complicatedly

- The ocean and inshore environment is degrading more and more. The cause is the population growth, urbanization, industrialization, tourism activities, waste water from mainland and the release of waste matters into the ocean which lead to the explosion of seaweed, especially the frequency of appearance. The warming of the Earth as well as impact from El Nino, La Nina has influence on the coral reef. The phenomenon of white dead coral happens all over the world, there are even places where 90% of coral is dead.

- The rate of unemployment and poverty increases. About 25% of urban population lives under the poverty level.

Due to inadequate garbage collection and poor management of waste matter, overload of technical urban infrastructure, environment degradation and unapproachable to urban services are the main causes of pollution and health threat in cities, especially in the developing nations.

II. State of Vietnamese environment

1. Soil environment

The natural area of Vietnam is more than 33 million ha. With land for manufacture and residence is 19.981.769 ha, forest land is 10.421.404 ha, about 31%. Soil degradation is the popular trend from delta to midland, mountainous area. Stalinization and acidification has seriously occurred in Cừu Long River Delta. Soil degradation leads to decrease in plant productivity. Many areas are in danger of desertification, the soil becomes too exhausted to cultivate.

The forest area in our country has fallen from 14,2 million ha (1943), occupying 43,5% natural area, to 8,6 million ha (1993). The types of forests that are uncontrollably cut down are natural watershed forests, primary forest, protection forest, MANGROVE FOREST, because pressure from economic development has seriously resulted in flood and erosion. Some mountainous areas with steep slope but low rate of forest coverage, for example some areas in Northeast; Northwest has only 15 – 20% left. With the project of 5 ha forestation in 58/63 provinces, until now, forest coverage can only reach about 38% area of natural soil all over the country.

2. *Water environment*

The total amount of water flowing through Vietnamese territory is 835 billion m³ per year, but the actively usable amount is only 313 billion m³ per year. Vietnamese water resources are mainly used for agriculture and life activity. For urban water supply, with the total amount of supply is nearly 3 million m³/day, only 70% of the urban population is supplied with clean water, $\frac{3}{4}$ of which is surface water sources, $\frac{1}{4}$ is underground water. However, the lost amount is quite big because the water supply system is unfixed, disorganized and downgraded as well as the poor management. Overall water environment assessment shows that on nine main river basins, there are some dead parts of the rivers on Cầu, Nhuệ – Đáy, Đồng Nai – Sài Gòn river basin and many rivers, lakes, channels in Hanoi, Hồ Chí Minh city, Cà Mau, Nam Định is heavily polluted by organic substance, heavy metal from domestic sewage in the residential areas and 80% industrial sewage is untreated, directly discharged into this system. Pollution current state is not only on the surface water but also impacts on the underground water.

3. *Air environment*

The development of industries, transportation... has polluted the air environment because dirt, toxic air, exhausted air from some industrial and urban areas are at an alarming level, exceeding the allowed standard from 5 to 7 times. Besides, behavior of weather and climate is very complicated, unstable, the temperature tends to increase, the yearly average temperature

in Hanoi rises about 0,75°C after 42 years (1960-2001), while global temperature rise about 0,7°C after nearly 150 years (1854-2000). The rainfall unevenly distributes, in some areas, the rainfall is so high that it causes flood. In West Highland, Northern Midland, serious lack of rainfall in dry season leads to drought. Generally, in the past 30 years, rainfall in the North tends to slightly fall, in contrast, rainfall in Midland and the South tends to rise. Storms, floods complicately happen, often occurs early with powerful strength.

4. *Ocean and inshore environment*

With the geographic position stretching along more than 3.200km coastline, 1 million km² area of sea surface and more than 3.000 islands, Vietnam is the nation with great ocean resource, but the sea and inshore regions are polluted because of the amount of garbage, sewage from cities, industrial area, agriculture, tourism, oil gas exploitation and marine transportation... The concentration of weight metal is 1,4 – 3,8 time higher than the allowed standards, the arsen concentration is 1,7 time higher than the allowed standard, the concentration of the other toxic matter is also higher than the allowed standards. The coral reef is quite various, it is the living area of marine life, they play an important role of prevention of shore erosion and of many damage from storms, but for many reasons, they are seriously degraded, especially in the densely populated areas, oil exploitation areas or great tourism areas such as Trường Sa, Quảng Ninh, Nha Trang, Côn Đảo.

5. Environment of urban and industrial area

Until 2008, our country had 707 cities from level four to above, with the population of 24 million people (28% population). Although the rate of urban population in Vietnam is low in comparison with other Asian countries, the urbanization and industrialization process is quite rapid, so the environment quality of cities and industrial areas is degraded because the amount of garbage from industrial production, transportation and urban life is increasing more and more rapid in amount, types and danger, with the amount of garbage up to 200.000 m³/day, but the collection is only 50-70%, the rest stays in the residential areas, the collected amount hasn't been standardly and hygienically processed or buried so it becomes biggest pollution sources in the urban areas. In the industrial areas, working environment is improved. However, there are many manufacture areas which are not hygienic and safe enough for working. The pollution with dirt, toxic chemical, noise, heat has increased the rate of occupational diseases, especially chemical, metallurgical, mining industry, v.v...

6. Countryside environment

In our country, there is about 70% of the population working in agriculture and living in the countryside, most of them have low income, birth rate is still high, the small budget of agricultural soil is gradually narrow down. In some areas, Fresh night-soil is still used for fertilizer, chemical pollution is very serious in agriculture because of over-

usage of chemical fertilizers and pesticide, while many of them are forbidden but still used, and they reduce biodiversity, badly affected to human health. Besides, about 222.000 professional villages in all the country, mainly use hand technique manufacture, too out of date technology, the garbage is unprocessed, directly exhausted into environment, causing serious pollution.

7. Biodiversity

Our country is in the tropical area, and once considered one of the centers with highest biodiversity in the world, including: Forest ecosystem, Freshwater ecosystem, Marine and inshore ecosystem. However, damaged forests cause the expansion of imbalance in natural forest ecosystem. Under water, the increase in waste sources makes the water quality decrease, cause the fall in water biodiversity and the fall in numbers of individual, more dangerously, it causes the fall in the number of vegetations that are able to absorb toxic matters. Especially the numbers of endangered species are increasing; Vietnamese Red Book has 365 species of animals and 356 species of vegetations which are in danger of extinct in different levels.

8. Social environment

In the past few years, we have good economic growth so we develop manufacture, contribute to poverty reduction, social environment is more and more improved and stable. However, the rate of poor family is still high, all over the country, there are still 62 poor district, especially in the year of 2008 and 2009, inflation and recession

sinuously happened. The poor has many limitations on the approach and enjoy the basic social services. The results of poverty reduction programs are unstable; the danger of re-poverty is still high. The domestic resources are still limited, excess labor is high, the rate of trained labor is low. Along with the process of open and integration, social environment in the cities, residential concentration, especially the low – income resident have many burning problems, such as lack of accommodation, lack of environment sanitation, drug and violence tend to rise, social evils arise unless there is tight management and adequate policy for these areas.

III. Some economic tools applied in environment management in Vietnam

In order to overcome the above disadvantageous occurrence of the environment step by step, Vietnam has applied some economic tools in environment management. They are:

1. Resources Taxes: Ordinance No. 05/1998/PL-UBTVQH of resources taxes (adjusted). Resources tax payers are all organizations, individuals who exploit all kinds of natural resources in the areas of mainland, islands, internal water, territorial water, areas of economic privilege and continental shelf of Vietnam. Resources taxes is culculated according to the real amount of commercial product exploited. Income from resources taxes is the income which divided by % rate among the levels of local bugets; exclusively, income from oil gas is the income of central budget.

2. Tax incentive policies for seafood exploitation offshore: On 29/5/1997, The Prime Minister made the Decision No. 358/TTg on tax incentive for seafood exploitation offshore. Vietnames organizations, individuals, belonging to all economic components, including businesses with foreign – invested enterprises, different parties of economic contracts, business coroperation according to The Law of Foreign Investment in Vietnam, which have boats, ships, in reality, exploiting seafood offshore should enjoy tax incentive of import tax, VAT tax, enterprise income tax. Who is under the Law of Encouraging Domestic Investment, also has import tax incentive, VAT tax, enterprise income tax according to The Law of Encouraging Domestic Investment. When registering and being given lience to exploit seafood offshore; organizations, individuals who own fishing boats, ships can pay register fees with low level of 1% of the asset value when registering (register fee according to general law is 2%)

3. Fees imposed on people who cause environment pollution: Ordinance of fees was enforced in 8/2000; it has about 16 kinds of fees related to environment protection and about 10 kinds of fees related to environment management and protection. Until now, many of these fees have not been applied because of the lack of detailed implementation guide. Quảng Ninh Province is the leading local to implement some basic fees: Sewage Drainage Fees, Garbage Collection Fees, Tourism Fees.

4. Fees for license of mineral activity, according to the Law of Mineral and Ordinance No. 68/CP of the Government, on 31/12/1997, the Ministry of Finance enforced Circular No. 96/1997/TT-BTC guide the collection/payment fees system for license of mineral activity. Vietnamese and foreign organizations, individuals are allowed for mineral activity in Vietnam according to law, have to pay such fees as: Fees for Mineral Test, Detection, Exploitation, Process License.

5. Petroleum Fees: On 26/12/2000, the Government enforced Decision No. 78/2000/ND-CP about Petroleum Fees, enforceability since 01/10/2001. This is one of the fees with high income, replace transport fees system through petroleum prices before, to limit consumption of polluted matters (such as: petroleum, oil, the production of concrete, paper, paint, and other toxic chemical...). The ones who have to pay petroleum fees are gasoline, oil, grease consumed in Vietnam and the organizations, individuals who import (including mandate import), manufacture, process all kinds of petroleum under the fees of sale petroleum in Vietnam. Petroleum fees are collected only once when sold or exported the amount of imported petroleum

6. Fees of environment protection to sewage: On 13/6/2003, the Government enforced Decision No. Pnh 67/2003/NĐ-CP about Fees of environment protection to sewage. On 18/12/2003, Ministry of Finance and Ministry of Resources and Environment

had joint circular for detailed guide on this Decision implementation. According to that, this Decision had the enforceability since 01/01/2004. The payer of Fees of environment protection to sewage (industrial sewage and life sewage). For life sewage (households, units, organizations) environment protection fees collection level is calculated as the percentage rate per price of 1m³ clean water (not exceed 10% of the price, exclude VAT). As for the area without clean water supply system, it is based on the average amount used per person and the clean water price in wards to calculate (excluding the sewage from hydroelectric plants, sewage from salt production, life sewage from household which is getting a subsidy from the government, sewage from countryside household and places without clean water supply systems). Fees of environment protection to industrial sewage is calculated according to each pollutant in the sewage, including BOD, COD, SS, Hg, Pb, As and Cad. Collection level is defined according to the receiving environment (A, B, C, & D) based on the fact that whether it is countryside or urban area; for urban area, there is distinction between center and suburb, and types of urban according to State's classification.

7. Deposit to recover environment in mineral activity: the Law of Mineral and Decision 68/CP on 1/11/1996 of the Government state that: organizations, individuals are allowed to exploit mineral, before exploitation must send an amount of money or metal, gemstone or valuable paper into the escrow

account of a Vietnamese credit organization or foreign credit organization which is operating in Vietnam to ensure the duty of environment recovery due to mineral exploitation activity.

8. Deposit for mineral detection license: The Law of Mineral and Decision No. 68/CP on 01/11/1996 of the Government defines the deposit for mineral detection license. Organizations, individuals who are allowed to detect mineral (excluding activity of detecting mineral which belong to oil gas and other types of natural water which are adjusted by other law documents) in 6 months or more (exclude organizations, individuals who have mineral detection license to operate by direct investment from the State), all have to pay money for deposit. The level of money for deposit is 25% estimated expenses to detect in the first year of detection and is carried out once before issuing license to detect mineral. After 6 months since the validity of mineral detection license, the detection is carried out as the rate of process and plane, the organizations, individuals will be repaid the deposit. If after 6 months since the validity of the mineral detection license, the work is carried out, the mineral detection license will be withdrawn, the money of deposit will be submitted into State Budget.

9. Environment budget: is a financial structure, with two factors which have decisive role in existence and operation of the Budget is the organizational structure and source of capital. To diversify financial resources for environment management and

protection activity in our country, on 26/6/2002, the Prime Minister made the Decision No. 82/2002/QĐ-CP about the establishment, organization and activity of the Fund of Vietnam environmental protection. The Fund operated since the early of 2004, carries out the privilege financial support for organizations, individuals who have projects in 5 areas: waste treatment, prevention and correction of environmental problems; Reseravation of biodiversity; Education, communication about environment and stable development. Supportive forms of the Fund are mainly unrecover or lending with preferential interest rates. Until now, in Vietnam, some environment has been established and operated, including: the Fund of Vietnames environmental Protection, the Fund of Local Environment (Hanoi Fund of Environment; Fund of minimization industrial and handicraft pollution in Hồ Chí Minh city) and the Fund of enterprises for environment (the Fund of Coal Company for Environment).

10. Payment for environmental services, Vietnam is deploying model of 4 projects financed by World Wildlife Fund (WWF), the International Union for Conservation of Nature (IUCN) and research institution specialize in the field of forestry (RCFEE):

(a) Create supportive resources for protection of watershed forests in Tri An lake; (b) Create stable financial resources to protect landscape of Bạch Mã National Park (Thừa Thiên Huế) (c) Build the payment structure of carbon absorption in forestation. Model project in Cao Phong district, Hòa Bình

province (d) Share the local income sources: Nha Trang gulf sea reserves to build payment structure and policy for this service is an economic tool which is applied in many countries, at the same time, promote the ability to develop economy in the process of operating the project and prove its effectiveness after finishing the project.

IV. Suggestion of solutions to promote application of economic tools in environmental management

These above result show that Vietnam have used some of the economic tools in environmental management, which firstly give the positive results. It can be evaluated that this is the suitable tools for legal tools and supervisor, control, ability, inspection, punishment of the environmental management office and levels and related Stated management offices. On the other hand, these tools are accepted by enterprises, the people who work with environment because they are easy to carry out, low costs, suitable with the ability of the carrier. However, financial items from the application of these tools are not enough to invest to repair pollution, revert the environment to the original state, upgrade infrastructure or equip with measurement and supervising equipments to prevent the offensive behavior, and make the role and effect of these tools less useful, especially the effect of warning. Because the knowledge standard of the population is low with inadequate awareness, many enterprises and people think that they must pay so much while their business or income is limited. Even some local environmental offices still ponder,

because they think that using these tools will be difficult in attracting customers (for example collecting fees of rooms in Ha Long tourism area), or rise the cost of finished products made in local area, harder in competition, may lead to unemployment.

However, it gives encouragingly effectiveness. The State should summarize to learn from experience, from the applied economic tools, adjust the inadequate problems, then expand to many types, areas, locals all over the country. This way has the international experience, especially in leading countries of Asian, Southeast Asian countries effectively apply these tools.

In the process of industrialization, modernization, as well as wider and wider international economic integration, Vietnam must solve two problems at once to obtain the goal of stable development, one is control the pollution level which is rising because of industrialization and urbanization, at the same time we must have the policy to minimize costs for environment protection, both from enterprises and State, on the base of social equal. Therefore, the State should continue to apply more economic tools in environmental management which is suitable to the real development of the country to 2020. At the same time, it should pay attention to 5 indicators that UNDP (1995) suggested for application of economic tools in environment management in Vietnam. They are: Completion of the environment standard system; the rule of guarantee lowest cost; the rule of polluting people paying money; guarantee competitive ability of the enterprises; the shift of policy

related to environment and development. These indicators can be considered as a theoretical guide, but they need to be flexibly and creatively applied. To promote application of economic tools in environment management, I suggest some following solution:

1. Continue to study, complement, complete a clear policy and increase the right to own/use resources for individual or community.
2. Continue to build and complete environmental standard system which is suitable to our country's condition, to have the basics for the carrying out and evaluation of environmental protection.
3. Build up system ability, encouraging system, examination, supervision of the rule compliance for environment protection. Complete the rules for environment examination, continue to advanced training, standardize inspector and environmental managers at all levels, especially the local level.
4. Build up communication in the community by means of people communication and upgrade awareness for the enterprises and manager about economic tools to make social agreement when they are applied in environmental management.
5. Continue to institutionalize the policy of using economic tools in environmental management to guarantee enough finance to invest to repair pollution, take the environment to the original state, upgrade infrastructure, equip measurement, supervision equipment. Promote the activity of Fund for environmental protection. Also, merge with pressure form social opinion

to increase the effectiveness of environmental protection.

6. Continue to apply more some of the economic tools to 2020 such as: Tax Law for environment, environment fees for exhausted gas and solid waste; payment for environmental services (fees for water sources enjoyment), CO2 absorption and payment system to planter and protector of the forest); Ecotourism fees, Fees for enjoyment of ecodiversity; encouragement to buy green, deposit in underground water exploitation, Model the right to transferable right to release in some river basin; Evaluate product circle life in the enterprises...

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