

THE MYTH OF "JOBS VERSUS THE ENVIRONMENT"

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It used to be taught in business schools that "the business of business is business," and that the "bottom line" is the only goal. This is still true for most companies. Later, with prosperity and development after World War II, business started emphasising the additional goal of contributing to society by creating jobs and providing socio-economic security. More recently, in the 1980's, with the growing environmental protection movement in society and the resulting exponential growth of environmental regulations, many businesses have started espousing a new environmental ethic. They make it one more goal of their corporate policy, to map a specific and tangible business strategy for the protection of the bio-environment along with their production and marketing strategies. They also focus on "a new dimension of profit" which does not materialise at the expense of the societal well-being and leads to the destruction of natural resources. However, this cannot take place without regulations, without consumer pressure and without re-education of the management.

A Three-Fold Strategy for Environmental Protection

Integrated Management of Resources

The current, more rational way of management and decision-making involves considering, in advance, the impacts, together with the alternative plans and projects of development. Integrated management leads to better over-all cost-effectiveness and considers waste products and their disposal as a resource that has to be managed and, if possible, made use of (recycled or recovered).

Abatement of Cross-Media Pollution

For decades, engineers and managers have been concentrating on one piece, of the jigsaw-puzzle of pollution control, at a time. Many times, they were simply satisfying bureaucratic regulatory requirements without really protecting the environment or public health, as a whole. Oftentimes, the "solutions" really represented a "shell-game" whereby a liquid waste problem was solved by creating a sludge disposal problem. This, in turn, was transformed into an air pollution problem only to re-appear as something else, for example acid rain.

Pollution Prevention and Waste Minimisation

In the 1980's, many developed countries and major companies embraced the "new" philosophy of considering any discharged waste as a lost resource and placing emphasis on the new business strategy of pollution prevention. Companies started focusing on the reduction of generation of hazardous and other waste, at the source, and on the recycle and recovery of materials from the waste streams, as well as, on the use of clean technologies. To the extent that these were economically practicable, they pursued them as the best way to meet legal obligations, to improve their public image and also to save money. The United States Environmental Protection Agency (USEPA) considers waste minimisation, or pollution prevention, a top priority and the National Association of Manufacturers, as well as, the Chemical Manufacturers Association, support voluntary waste minimisation as the preferred option and good corporate practice for the management of industrial hazardous waste.

This new business strategy has been bearing continuously more fruit, as an increasing number of firms make it their corporate policy each year. To use, as an example, the New York State industries, according to New York's 1993 Toxic Release Inventory (TRI) released in late 1994, discharges of toxic chemicals to the State's air, water and land continued to decline for the fifth straight year, exceeding targets set by the federal government. According to the TRI report:

- New York State facilities already have met the federal target of a minimum 50% reduction by 1995 of releases and transfers of 17 risk-priority chemicals monitored under the EPA's 33/50 Program. The release, to the environment of 19.5 million pounds of these chemicals, represents a 65% decrease from the 1988 baseline amount of 56.3 million pounds.
- Air emissions of toxic chemicals in 1993 amounted to 45.9 million pounds, a 55% reduction since 1988.
- Releases to land in 1993 totalled 1.1 million pounds, 62% less than the 1988 total of 2.9 million pounds.
- Transfers of toxic chemicals in waste discharged to publicly owned wastewater treatment plants equalled 8.3 million pounds in 1993, which is 65% less than the 1988 total.

Pollution Prevention Reshapes Environmental Business

The United States environmental industry is a \$140-billion business that employs more than one million people. This was an industry that generated roughly \$10 billion in revenues 25 years ago, when it consisted mostly of the public services of garbage hauling, water delivery, and sewage treatment. The Environmental Business Journal defines the industry not by "technology" but by "business segments," which integrate new technologies into engineered solutions to the vast array of environmental problems. Analysis from the 1994 industry overview indicates that 74% of the revenues in the industry are from services. Only 6% of revenues in the industry result from the sale of high-tech equipment; the remaining 20% are low tech. These statistics say that countries, such as Greece, can have their own environmental protection, even with no money for computers and with no...rocket scientists. One needs education and rational planning and use of resources. The vast majority of business in the United States was related to cleaning up "sins of the past" or controlling emissions from now outdated facilities and each of these had a finite life span. Trends indicated that the industry could not sustain itself in its nascent form. The emerging "paradigm shift" in the pollution-and waste-generating community from "pollution control and cleanup" to "pollution prevention and waste minimisation" mandates a similar shift in the environmental industry.

How is the environmental industry developing around the world? With the passage of time, environmental problems have become increasingly international, as has the scope of environmental programs. The addition of hazardous materials laws further solidified the importance of national environmental policies. The effects of cross-border pollution brought environmental issues onto the international stage. A more recent, and even greater, incentive for international environmental regulation and standards is the proliferation of trade agreements. NAFTA, was the first such agreement that was held, until the field on environmental regulations was levelled "south of the border," to assure the competitiveness of United States and Canadian companies in Mexico. More such examples and specific treaties will follow. The European Union directives are also attempting to establish the same level field among its member states. On the other hand, multinationals and major national companies have already invested too much money to allow smaller companies to be competitive by polluting.

The Myth of "Jobs versus the Environment"

One of the key provisions in the Republican "Contract with America," the set of bills passed by Congress where the word "environment" is not mentioned once, is a proposal (sure to be vetoed by President Clinton) to reduce the costs of regulation and federal mandates which, indirectly, attacks the progress made in the protection of the bio-environment and public health. One more time, the most common criticism of regulations is that they cost jobs. However, in January 1995, the Economic Policy Institute released one more report titled, Jobs and the Environment: The Myth of a National Trade-Off which found that most economy-wide studies show that environmental regulation has a positive impact on overall employment. Widespread fears of job loss, from environmental protection, are simply unfounded and are being cultivated by politicians and businessmen with their own personal agendas. When job creation aspects of pollution control policies are factored in, environmental protection has slightly increased net employment in the United States economy. Moreover, actual layoffs due to regulation have been startlingly small.

Environmental protection raises employment levels because it makes intensive use of labour, or domestically produced materials, or because it provides some recession-proof stimulus to aggregate demand. Government data, from the past two decades, reveal that few manufacturing plants (about four per year) shut down as a result of environmental or safety regulations. These accounted for less than 0.1% of all large scale layoffs; hardly a reason to stop protecting the environment and public health. Furthermore, the data shows that environmental regulation is not responsible for the long-term decline of manufacturing employment in the United States. The pollution haven effect, in which industrial firms relocate to poor countries to take advantage of lax environmental regulations, rarely occurs. Firms are indeed relocating but the overwhelming reason is lower labour costs and closeness to raw materials. In the mining and logging industries, where trade-offs between jobs and the environment are most evident, loss of local jobs, from regulation can be significant. Even here, new jobs are generated elsewhere in the economy to provide substitute products for the timber or minerals preserved; they are also created in fishing and tourism and in industries seeking high "quality of life" for their employees, which move into the area.

The "jobs versus the environment" debate in the United States has been fuelled by "de-industrialisation" the loss of over 3 million jobs in manufacturing during the 1980's, due, in part, to increased import competition, shifts in demand and technological change. Environmental regulation has often been blamed for contributing to a shift in the United States economy from manufacturing jobs to service employment. The report on Jobs and the Environment shows, one more time, that the employment effects of plant shutdowns, capital flight and productivity losses from environmental protection have been small or non-existent. At the same time, money spent by the government and industry to protect the environment has created jobs, according to the report, which found that some 4 million people were employed directly or indirectly on the "environmental protection industry" in 1993.

Of course, the personal and social costs of job loss and unemployment, whether they arise from environmental protection measures or general causes not related to environmental protection, cannot be minimised. But these trade-offs are local and, in contrast to the amount of notoriety they have received, extraordinarily small. More job loss appears likely as a result of (the euphemistically called) corporate "down-sizing," import competition and defence cutbacks, according to the report. In the long run, markets for clean manufacturing and clean energy technologies - the United States is currently among the world's leaders in the environmental technology field - can provide the kind of high-

wage boost to the United States economy that autos and defence provided in the 1950's and 1960's. Therefore, other countries should look at these facts and not waste time listening to or arguing about "myths" and misinformation.

The new business strategy has been recognised as a necessity and adopted by most large companies (even in Japan and China, if they want to be able to compete in the markets of the United States, Canada and Western Europe) in order to stay competitive in their national and international markets, where the consumers are increasingly environmentally conscious and boycott companies and products. They also try to force their competitors to comply with clean manufacturing standards, to level the field, and acting as "consumers" themselves in the 1990's have started forcing their various suppliers to also conform. Ashland Chemical's "Responsible Care" initiative for environmental protection is gaining new members daily, and more and more companies - even in Japan and China - are getting certified to the ISO 9000 and ISO 14000 standards (some communities, i.e., in Germany, demand that bidders are ISO-certified to bid on contracts.)

From the society's point of view and its interest in sustainable development and the protection of public health and the environment, there is no need for companies that only survive economically by their abuse of the environment and our health and their destruction of resources. There will always be better managed companies, with more socially minded owners or directors, which will provide the products, services, and jobs without as much or any damage to the planet, its inhabitants, and future generations. Citizens, consumers, other companies and governments should be supportive of such environmentally conscious businesses. However, regulatory authorities would have to become more flexible and less bureaucratic, such as in the new "Brownfields" movement ("from urban blight to reborn site"). This is EPA's new policy in working with the community and industry, using site-specific cleanup standards, in order to allow reclaiming and rebuilding of abandoned, contaminated old urban industrial sites, known as "brownfields."

Professor **Constantine Yapijakis** teaches Environmental Engineer-ing and is Director of Environmental Research at the Cooper Union for the Advancement of Science and Art, in Manhattan, New York. He has over 20 years of international experience, both academic and industrial, in all aspects of environmental engineering. He has taught in several universities in the New York metropolitan area, and has been involved in all the major projects for New York City. These include drinking water treatment and regional resources, quality management, solid waste management, industrial waste pre-treatment, and toxic waste minimisation programs. In 1997, from early May to mid-June, he was invited to visit the Universities of Beijing, Xian and Heifei, and Tongchi University in Shanghai, where he gave seminars to top management from industries on pollution prevention, waste minimisation and the ISO 14000 certification. He was also invited to visit the gigantic construction site of the Three Gorges Dam on the Yangtze River - fenced and guarded by the Army - where he discussed the environmental and socio-economic impacts of this unprecedented water resources project.