



Samuel Neaman Institute
FOR ADVANCED STUDIES IN SCIENCE AND TECHNOLOGY

NATIONAL ENVIRONMENTAL PRIORITIES OF ISRAEL



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For Advanced Studies in Science and Technology

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National Environmental Priorities of Israel

Position Paper III

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A Position Paper outlining the *National Environmental Priorities* was first published in 1999 by the S. Neaman Institute at the Technion-Israel Institute of Technology, together with the Israel Economic Forum for the Environment. The second *National Environmental Priorities* report was published in 2001, once again through constructive cooperation between the S. Neaman Institute and the environmental organizations in Israel, operating under the non-governmental umbrella organization to promote the quality of life and the environment in Israel "Haim v'Sviva" (Life and Environment).

This Third *National Environmental Priorities* report is now being published by the Neaman Institute, and reflects the input of many professionals, to all of whom we extend our thanks.

In the previous Position Papers, an overview was presented covering the main areas of environmental concern, followed by professional recommendations regarding appropriate priorities. Both documents were widely distributed and attracted a large number of participants at professional conferences that coincided with their release.

Our motivation in preparing these documents was to conceptualize and define Israel's environmental policy, at the professional and public levels. The previous documents were positively received both by individuals and organizations, and we are now seeing that many of our recommendations have been implemented by the responsible organizations and government bodies, and have been incorporated into widely accepted policy guidelines. Still, in many cases we are still calling for changes in policy and the recognition of some very basic points that, if not addressed, will result in irreversible environmental damage (i.e. exploitation of open spaces), or economic damage (non-ratification of the Kyoto Protocol and the loss of economic incentives that could have been derived from it).

In the previous two documents, we focused on recommendations for environmental policy over a 4-5 year period, one that coincides, in principal, with one government administration's term of office. In reality, the government terms have been shorter, which has made the adoption of our recommendations more difficult. We hope that circumstances will enable a return to our original timeframe.

In the current document, we review a number of subjects that are central to the environment in Israel. Some of them were discussed in the previous documents but from a different perspective (agriculture and open spaces, for example). In this document, however, we

address subjects that tend to be ignored, mainly because of political or social considerations (the connection between demographics and environment, for example).

This third *National Environmental Priorities* report includes recommendations and creative directions for thought that heretofore have not received sufficient attention, and is intended to be a tool for promoting action in these directions.

This document is divided into three sections:

Section A. On the interrelationships between demography, agriculture, water policy and the environment.

Section B. The environmental responsibility of public transportation companies in Israel.

Section C. Reviews of central environmental subjects:

- Environmental Taxation in Environmental Management
- Social-Environmental Justice
- A survey of the Knesset Commissioner of Future Generations

Section A. On the interrelationships between demography, agriculture, water policy and the environment.

1. Open Spaces, the Environment and Agriculture

In the previous *National Environmental Priorities* reports, it was determined that the subject of open spaces and a policy to preserve them is one of the most critical issues in Israeli environmental policy, where unsuccessful planning and faulty management of land resources threaten to cause irreversible damage. In the current document, we are emphasizing this issue once again in the hopes that the Ministry of the Environment (MoE) and public and environmental organizations will mobilize public support to prevent wasteful use of forest- land and open urban spaces for construction.

Changes in the structure of government ministries and the transfer of the Planning Authority from the Ministry of Interior to the Ministry of Industry and Commerce undermine the planning process and will continue to do so in the future. As is evident from the review of the Knesset Commissioner of Future Generations, this is one of the areas, which will be addressed by the 16th Knesset. The MoE and those Ministries responsible for national infrastructure planning must work to strengthen the public system whose duty it is to safeguard the land, whether through legislative or administrative procedures.

Agriculture is one of the most important components of the country's open spaces; it sculpts the country's landscape and contributes to environmental quality. Israel without agriculture (a frightening idea, yet, one that is actually coming to be - already today, over 10% of the country's agricultural land is barren and abandoned) is a country whose most fundamental environmental system, as well as social and moral values, have collapsed.

The S. Neaman Institute, together with the Zenovar Consulting Group, Ltd., initiated a research project dealing with development of a national agricultural policy. Even if it wasn't planned as such from the beginning, it has become evident that environmental considerations, and specifically agriculture's contribution to the environment, are factors that must be taken into consideration when planning for agriculture in Israel on a national scale. As such, agriculture must be considered as an integral part of the country's environmental system.

One of the basic principles of this work was the fact that agriculture produces two kinds of products. The first are consumable, market goods – food, grains, etc. The second kind of product is not sold on the market, yet, plays an important part in our lives – a green environment, absorption of different pollutants (organic wastes, sewage sludge and treated wastewater for irrigation), preservation and perpetuation of social values and traditions, preservation of the traditional landscape with everything that that entails, preservation of the land, and borders, and more. For all of these products and functions of agriculture, there is no market, and unlike traditional agricultural products, the country's unique landscape, social values and environmental quality cannot be exported.

As in the song: "This is our civics lesson.. on the wall a picture of a farmer plowing the land..." it is clear that our national consciousness cannot abide a situation where there is no agriculture, where all our food is imported and the beloved landscape of our countryside is covered with concrete and asphalt, even if there are profits to be made in the lucrative real estate market. To protect agriculture and to prevent our country from turning into a land of highways, concrete and desolation, economic and legislative mechanisms must be developed that are fair to the farmers, while protecting the environment.

Agriculture contributes to environmental quality in numerous ways, by protecting the landscape, improving air quality, serving as a sink for waste from the cities, preserving social and traditional values, providing a basis for rural tourism and particularly in this country, protecting territory and borders. Even though some of these contributions to Israeli society are difficult to quantify, an attempt was made to evaluate them using economic measures. The conclusion was that the indirect economic value of agriculture reaches hundreds of millions of dollars, even if this doesn't represent an exact calculation.

Obviously, if those returns could be transferred to the farmers, in return for environmental services, it would be instrumental in preserving agriculture in Israel, as is the practice in other countries. The authors of this section offer some suggestions and raise some thoughts on this subject.

Also in this section is a review of the factual background for the current situation, a description of some of the approaches taken by other countries for supporting agriculture, as well as some initial thoughts on such mechanisms that are needed in Israel. We hope that the publication of this section will bring the subject of agriculture to the public agenda with a perspective that is different from the prevailing one; that takes into account the critical role that agriculture plays in protecting environmental quality, while at the same time demanding from farmers compliance with sound environmental practices.

2. Demography and the Environment

Israel is becoming the most densely populated country in the Western World. According to estimate published by the World Bank, given in table 1, by 2040, there will be almost 20 million people living in the land of Israel. It has to be noted that population density is a factor that will influence the environment, perhaps more than any other.

<i>Year</i>	<i>Population</i>
2000	8,900
2010	10,900
2020	13,400
2040	19,100

Table 1: Population estimates based on Braverman, A. & alt.,
ISRAEL WATER STUDY FOR THE WORLD BANK, 1994

Until now, this subject has not been openly presented for the public agenda, due to its political sensitivity. This situation must be remedied, and soon. Not only must policy guidelines be defined that relate to population growth and possibly changing present paradigms; but we must also establish guidelines for developing a country that is densely populated, yet, where future generations will still want to live. It would not be too far-reaching to say that this is a matter of national survival.

One of the pioneering researchers in demographics in Israel, who first raised the issue of population growth many years ago, was Professor Arnon Sofer of the University of Haifa. Because of the importance of this subject and his prominence in the field, we asked

Professor Sofer to prepare a review for the current *National Environmental Priorities* report. The review Professor Sofer prepared was circulated to several people, some of whose responses are attached to the full document.

In his report, Professor Sofer analyzes the demographic processes in Israel, and presents his conclusions regarding environmental quality in the future. The report does not include a prescription for resolving the predicted problems because many elements of the demographic process are not under our control. Regarding those elements that are, ostensibly, under the control of the government of Israel, the remedies require a far-reaching change of approach, including changes in policies regarding population growth. Those individuals who responded to Professor Sofer's report each added new perspectives to be considered.

There is no doubt that population growth, character (secular, religious, Arab and Bedouin), distribution (massive appropriation of land by Bedouins in the Northern Negev, for example), and the policies that are required to address these issues, are all issues that the state of Israel will have to contend with in the future. We hope that this section of the *National Environmental Priorities* report will stimulate both public awareness and discussion at the highest professional levels. Even if the subject is emotionally charged, the relationships between the country's different population sectors cannot be swept under the carpet. They must be addressed openly, candidly, and rationally.

3. Water and Sewage

In the *National Environmental Priorities* report of 1999, we predicted that the quality of water in the country's aquifers would steadily deteriorate. We recommended designating specific "clean areas" above which "water protection parks" would be established to prevent further contamination. Over the last few years, a growing number of cases of contamination of water in the aquifer have been discovered, particularly in the coastal aquifer in the center of the country. It was recommended to continue to try and minimize the infiltration of salt into the aquifer, protect the drilled wells and to increase the monitoring of groundwater. However, the organizations responsible for the country's water infrastructure have not always carry out these plans.

Urgent and comprehensive planning of wastewater treatment and reuse, from the point of the water's outlet and all the way back through to the conduction lines, to the purifying plants and the reservoirs is missing as emphasized in our past reports. A call was issued to examine the system in order to achieve maximum use of wastewater, based on the assumption that some 200 million cubic meters of wastewater are not being utilized. We also raised the urgent need for solving the sewage sludge problem.

Even though the winter of 2002-2003 saw heavy rainfall, this does not diminish the urgency of the water shortage in Israel, which is characterized by a deficit of over 2 billion cubic meters of water. For rational management of both the water and the wastewater treatment systems, economic incentives must be used.

In recent years, planning of the country's water resources policy was based on supply to the three main consumer sectors: municipalities, industry and agriculture. Mr. Giora Shaham prepared a report that outlines a Master Plan for Water Resource Planning. This Master Plan is based on comprehensive national policy guidelines, which take into account a long-term vision of the country's future development, and society's collective aspirations for how that development will take shape.

One of the central and most interesting points in his plan is the great importance placed on supplying water for supporting natural resources and a green landscape in an arid country like Israel. This is a completely innovative approach, which introduces a linkage between the country's water resources development policy and its policy of environmental protection. Furthermore, it is based on a separation of the water infrastructure system. One system would encompass water supply to the main urban population centers along the coast (including Jerusalem which receives its water from the same area), based on desalination of salty water. A separate system would be based on natural water sources and mainly support the natural landscape of the country, including agricultural lands. One of the justifications for this model is the existential need to preserve the country's landscape and its natural treasures.

Without a doubt, many of our water sources are contaminated. This estimation, already expressed in our *National Environmental Priorities* report of 1999, has proven to be true. The country's groundwater is indeed becoming polluted. In a survey conducted by the Ministry of Health, micro organic pollutants were found in 77% of the coastal aquifer wells. This level of contamination still does not justify shutting down the wells (except for seven, which represent 1% of all the wells), especially since, in the case of some of the wells, the water is treated before it reaches the consumer. It should be noted that a policy of shutting down wells is undesirable from a hydrologic perspective, since at the well site, high potential of contaminated water is created and the polluted water spills over into clean wells. It was actually recommended to continue pumping water from the contaminated areas, and treating the water afterwards. There are two advantages to this approach: one is that it prevents the contamination from spreading; the second, only small amounts of water require further purification, which saves on costs.

In the *National Environmental Priorities* report of 2001, we warned that the country is about to enter a period where water would not be able to be supplied as is without treatment to remove contaminants. In this present report, we re-emphasize that we must not allow a situation to develop where these steps are taken only when there is no alternative and there is not sufficient time to install proper safeguarding systems. Now is the time to plan and implement these systems, before it is too late.

There is a problem in obtaining up to date information regarding the quality of the water supply: Mekorot (the National Water Supplier) performs checks at its reservoirs, but not at the entrance points to the cities and certainly not at the entrance to a residence. Mekorot is currently building a computerized database and software that will measure water quality at the entrance point to cities.

Clearly, because most of the water supply is derived from a mixture of different water sources (water from the national system mixed with water from local drilled wells), water quality is constantly changing, with the relative mixture being a determining factor. Often in a single city, the number of consumer connections and the type of water network can lead to a wide variety of water mixtures. For this reason, the end-user should be able to receive a water quality report according to different parameters (chemical, biological and physical).

A joint database of drinking water quality should be established that encompasses all relevant government ministries (or allow computer connections that enable each ministry to access the data of other ministries). This proposal was discussed (and agreed upon) in the past, yet, was never carried out.

This subject was also raised in the report of the Knesset Commissioner of Future Generations, which emphasized the need to present up-to-date data on environmental quality. The public is unaware of the quality of water delivered to its homes, and in many cases, doesn't believe that the water is in fact potable. It is the public's right to know this information. Local authorities or any other authority charged with the supply of water must inform the public about the quality of the water being supplied to their homes.

The previous two *National Environmental Priorities* reports emphasized the need for a Master Plan that encompasses the entire chain of collection, treatment and usage/disposal of sewage. To date, no such plan has been prepared and the events taking place in the field advance the planning. One example is the organization among municipal authorities to establish local wastewater treatment plants and compact sewage treatment systems, ahead of the official planning for such a step. Through this type of cooperative organizational effort,

water from treated sewage is used for irrigation of parks and industrial uses. Still, a Master Plan for effluents utilization is still lacking, and without it, this resource will continue to be less than optimally exploited, from both environmental and economic standpoints. Since an inter-ministerial committee is presently professionally evaluating the whole subject of effluents quality standardization, we do not feel it is necessary to present an opinion on this matter.

In addition to the above, there is a need to increase the water resources at our disposal. There are a number of complementary solutions for urban environments and open spaces that allow for increasing the present fresh water resources. In urban environments, new construction can integrate water-sensitive urban planning and solutions using infiltration of runoff water. These represent potential sources for water that have not been sufficiently exploited, although at the Technion, Professors Shamir, Carmon and Bormil are actively quantifying their potential and promoting water saving designs in urban planning. Furthermore, the country's water resources could be increased by preserving and enlarging (or at least preventing the diminishing of) open spaces, so that rainwater can be collected for further use.

Section B. The environmental responsibility of public transportation companies in Israel

In many of Israel's urban centers, air pollution levels represent a public health hazard. Conservative estimates indicate that over 1000 people die each year in Israel because of exposure to high levels of air pollution. The main contributor to urban air pollution is vehicular traffic. The number of vehicles on Israeli roads is constantly growing, and among them, the private car predominates. Moreover, private vehicles consume more space in the growing demand for road space. Consumption of space is not limited only to the road and its shoulders - it also includes land area for interchanges, shopping centers and gas stations.

In the *National Environmental Priorities* report of 1999, we raised the fact that land is the most treasured of natural resources, because it is the resource of which there is the highest deficit in Israel. Development of a system of roads and highways that wastefully misuses land resources causes irreversible damage to the environment of the country. Furthermore, the damage to the landscape is an inseparable part of this deleterious process.

To understand the gravity of this threat, it is enough to see the scope of the battle being waged against the Trans-Israel Highway (Road #6). A tunnel solution could reduce the damage to the landscape of Ramot Menashe (part #18 of the road). The road developers claim that this solution is more costly. Applying a proper environmental policy demands

that the road developers have to compensate the local citizens (and the citizens of the entire country for that matter) for the damage to their landscape. If this is demanded, then the tunnel option might indeed be adopted (see the relevant section, The Economy and the Environment, for a discussion on the taxation of external factors on environmental policies). The recommendations in the previous position paper called for promoting public transportation and a variety of measures, primarily economic ones, to reduce the use of private vehicles.

Over the last few years, we have witnessed a revolution in rail travel. Yet, in light of the long years of neglect in this area, including city and inter-city bus transportation, a renewed effort must be made to promote public transportation. At the same time there is a need to reinforce the environmental obligation of all public transport suppliers – city and inter-city.

In this section, a review of the environmental effects of public transportation (excluding rail) and the responsibilities that the bus companies must assume – both at environmental and social levels – is presented. As such, some solutions and mechanisms that already exist are presented and the bus companies should adopt them as part of their environmental obligation.

In fact, the bus companies already have a number of measures at their disposal for promoting environmental concerns, through which they can assume true responsibility for improving the environment and reducing negative impacts. These can be divided into logistical/planning measures and technological measures.

The logistical/planning measures for improving environmental quality include: reducing “door-to-door” time and integrating bus lines, reducing the cost of using public transportation by offering a variety of “transportation products”, and giving priority in tenders to companies that integrate different transportation systems. Other logistical measures include maintaining a fleet of efficient, new and less polluting vehicles and ensuring that they are periodically serviced and driven properly according to road conditions. From a social standpoint, the public transportation system must be accessible to the mobility-limited, operate efficient and convenient routes, and comply with posted schedules to accommodate those who depend on their services.

From a technological perspective, the public transportation companies must maintain new vehicles that use improved fuels (according to present standards, emission of no more than 50 ppm- 50 micro grams lead per 1 cubic meter of air). The bus companies must also prepare a strategic, long-term plan that will provide them with actual experience in measures for reducing emissions (such as installing oxygenating converters onto diesel vehicles,

particulate emission filters, continuous recycling filters etc.). Furthermore, alternative transportation methods need to be explored and experimented (hydrogen, natural gas, hybrid motors, etc.).

In this section, it can be seen that some of these subjects require governmental intervention (partial subsidies for purchasing new vehicles, for example), and some (priority in tenders for transportation supply, for example) require that companies comply with clearly defined environmental criteria (including vehicle age and use of unleaded fuel).

We consider the approach outlined in this document to be a new perspective, which endorses shifting the most basic responsibility for environmental quality to the ground level - with the bus companies themselves. Integrating logistical and technological means, operating fleets of new, fuel- and emissions-efficient vehicles, with correct driving practices, will all reduce the amount of fuel consumption and increase the use of public transportation, as well as increase the quality of the air we breathe.

Section C. Reviews of central environmental subjects

1. Environmental Taxation in Environmental Management

In the 2001 *National Environmental Priorities* report, Professor M. Shechter, Head of the Center for Research in Natural Resources and the Environment at University of Haifa, reviewed the subject of Environmental Funds. Taxes levied for inflicting environmental damage are not regular taxes, but are earmarked specifically for remedying the damage, as part of the obligation of the person, who commits damage today, for future generations to come. Moreover, these funds must not be used for general expenses in the national budget, but only for the purpose to which they were intended. Our recommendation was, and still is, to combine the various funds and create a joint mechanism between the Ministry of the Treasury and the MoE (a kind of “mini-Environmental Budgets Branch”) that will be responsible for allocating these funds, according to priorities it will determine for repairing environmental damages.

In addition to raising this subject in the Position Papers, the S. Neaman Institute, together with the Department of Natural Resources and Environmental Management at Haifa University, conducted a seminar in March 2003 on ‘Environmental Taxation in Environmental Management’. This seminar focused on two areas in which environmental taxes could be applied: the Waste Management System and the Energy System (including transportation). Examples of economic means employed by different countries in the world, with an analysis of the policies they incorporate, along with detailed examples of environmental taxation in Sweden, are given in the full Hebrew document.

The conclusions of the discussions at the seminar are presented in the document and the rationale of the seminar and list of participants and topics, can be found in annex 1. Furthermore the main recommendations, which were presented to the inter-ministerial committee on the subject of "Economic policy measures to reduce air pollution from fuel burning in transportation, electricity and industrial sectors of Israel", are presented.

Many of these recommendations correspond to those presented by the transportation team in the previous two Position Papers of 1999 and 2001, including the recommendation to reduce the tax on new car purchases while increasing taxes on fuel (which will accomplish several objectives: decreasing travel volume with minimal adverse impact on citizens, reducing the number of old vehicles on the road that are responsible for severe air pollution, and increasing road safety - and all this could be accomplished without negatively impacting government revenues).

An additional recommendation is to drastically reduce the number of company allocated cars and the linkage of certain parts of salaries to the price of gasoline. In turn, there should be an increase in the cost for parking (including parking at places of employment), which would, thereby, encourage use of public transportation. And finally, to continue the MoE's policy of improving fuel quality. It should be noted that these recommendations were neither adopted nor advanced by any of the relevant governmental ministries.

The most just and efficient approach to financing environmental damage compensation is to incorporate external costs in the price of products or services; in other words, to have the party who produces the external cost, associated with environmental damage, pay for the damage to be repaired or compensate society for its loss. In situations where there are external benefits (for example, creation of a beautiful landscape or improvement of air quality by agricultural activity), then society should compensate the responsible party adequately for its positive external influence. (This topic is discussed in the section dealing with the interrelationship between agriculture and environment).

Use of Economic Means for Waste Management in Israel: The speakers at the seminar all agreed that a realistic costing of the entire spectrum of options for waste treatment (landfill, anaerobic digestion, composting, recycling and incineration) will provide an equal basis for determining costs and benefits that can serve as an effective tool for decision makers. When there are stricter standards and an effective system for control and enforcement, the external costs are internalized into the cost of preventing pollution and thus it is financed directly. When there are attendant environmental costs that are not included in the direct costs, they must be quantified to ensure that they are paid for (local authorities will pay for the external

costs derived from transportation of waste, for example). Developing an optimal waste management policy will be feasible once a system has been devised that will evaluate, recommend and promote better solutions that are more efficient economically, environmentally and socially. Government subsidies of any of the options should be avoided, except for initial support to get the system running.

Use of Economic Means to Reduce Air Pollution in the Transportation System: The recommendations, which were submitted on the subject to date, were presented. We regretfully report that no funding has been allocated to implement any of these recommendations. Among them are:

- A.** Differential taxation of fuel so that cleaner fuel, such as low-lead diesel, LPG, etc., is relatively lower priced.
- B.** Recognition of expenses related to reducing air pollution (catalytic converters, particulate emissions filters, purchase of a less polluting car, etc.) as tax deductible. Taxes on accessories that reduce polluting emissions would also be reduced.
- C.** Incentives to own a cleaner car. A car owner would be obliged to acquire a cleaner car within five years. Promoting ownership of a car powered by liquefied petroleum gas (LPG) would be accompanied by increased production and marketing of LPG. There is a need for a new policy that would require replacing diesel-powered public transportation vehicles for new vehicles within five years.
- D.** Increasing taxes on old cars (according to their annual registration) and tax breaks on purchase of new cars, during the transfer period.

Using economic measures to reduce polluting emissions in the energy sector. These measures include:

- A.** Incorporating external costs from increased greenhouse gas emissions, at a rate of \$10/ton of carbon dioxide emitted (typical costs of ton CO₂ in international trading schemes).
- B.** Promoting the establishment of power stations that use new and clean sources of energy.
- C.** Establishing a preferential price for electricity supplied by clean power stations.

Environmental taxes can be levied at any stage of a product's or service's life cycle (i.e. raw materials, production, use, waste treatment). Levying environmental "green" taxes will create a significant stream of funds to the government, which could in turn justify lowering other kinds of taxes that are perhaps less efficient (such as income or capital taxes), to yield, under certain assumptions, what is known as "double dividends", that is, an increase in the

public well-being resulting from a change to a more efficient form of taxation (the “green” tax).

2. Sustainable Development

In this section a review of environmental issues is presented whose common denominator is environmental-social justice. At the 1992 Earth Summit in Rio de Janeiro, the principle of “Sustainable Development” was adopted. According to the UN definition, this principle includes “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”, which is, in effect a declaration of **equal rights between generations**. But, there is also a call for “meeting the development needs in one area without compromising the needs of another area”, that is, for **equal rights within generations**; that development of more prosperous areas should not compromise less advantaged development towns, for example.

The review of the activity of the Knesset Commissioner of Future Generations exemplifies the first part of the Sustainable Development concept, and the review by Mr. Yitzhak Goren, former General Director of the MoE, who headed the Ministry from 1999-2002, addresses the second part of the Sustainable Development concept.

Bridging the gaps between different regions in the country, between different populations and between ourselves and our grandchildren, is all a function of allocation of funding. For sustainable development, particularly regarding environmental issues, the most moral and efficient way to allocate funds is by incorporating external costs as discussed above.

Continuing actions for determining priorities and oversight of execution in the area of the environment.

It is our intention to continue this effort. We are already in the process of work toward the 4th Environmental policy paper of Neaman Institute.

In summary, we wish to quote, verbatim, the closing words of the *National Environmental Priorities, 1999* report:

“In this report recommendations for environmental actions over the next five years are presented. We are aware that the available resources in Israel are limited, perhaps more than in other developed countries. This constraint was considered in formulating the set of present priorities.

It is important to emphasize that a large part of the recommendations presented require assertive decision-making and not only limited financial support from the national treasury.

The recommended activities include increased public awareness and environmental education, legislating a land law; planning the use of land and environment and urban centers; solutions to improve public transportation by providing for bus lanes and using existing railway tracks, etc. All these and others can lead the way to a breakthrough in the environmental conditions in Israel, without demanding large budgetary expenses.

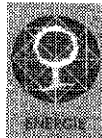
A large portion of these recommendations and the steps required for their implementation depend on the recognition of their importance as well as the ability of policy makers to make decisions and set clear cut policies in Israel.

We expect them to do it”.

In 2003, four years after these words were written, we are still waiting!

Annex 1:

Department of Natural Resources
and Environmental Management
Haifa University



מוסד שמואל נאמן
למחקר מתקדם במדע וטכנולוגיה



Environmental Taxation in Environmental Management, Conference, 16.3.03

Rational

Governments impose taxes to raise the revenues they need to operate. In addition, governments get involved in environmental matters to protect the public interest. We believe that these two circles intersect. Governments can, should and sometimes do- **use tax policies to achieve environmental goals.**

Environmental taxes come in many different forms, but as a general matter environmental tax measures either impose a tax cost on some product or activity that is environmentally damaging, or they give a tax benefit to some product or activity that is environmentally beneficial.

For example, government can impose a significant excise tax on ozone-depleting chemicals, and it offers a tax credit to people who buy electric vehicles. In both instances, the tax code has altered the "price" of the commodity, injecting an important signal into the economic calculations that affect behavior.

All types of tax systems - income tax, estate tax, property tax, and excise tax - potentially can incorporate environmental tax measures, and all levels of government - local, state, and federal - can consider environmental taxes. Environmental taxes will not necessarily replace traditional environmental regulation. In some instances, they may complement regulation, and in others they may provide an option when regulation is not appropriate.

The energy sector, based on sound science and economics, can use environmental taxes to reduce local air pollution as well as cutting greenhouse gas emissions.

Conference Program

Opening:

Prof. Arnon Bentur, SNI- S. Neaman Inst., Technion

Prof. Uri Marinov, Dept. of Natural Resources and Environmental Management, Haifa University.

Opening lecture

Environmental Taxation- Prof. Mordechai Shechter, Dept. of Natural Resources and Environmental Management, Haifa University.

SESSION I- ENVIRONMENTAL TAXATION IN WASTE MANAGEMENT

Landfill Tax- Mr. Nir Kedmi, Ministry of Environment

Waste Management Externalities- Dr. Iddo Kan, Mr. Yehuda Evra, EMC.

Life cycle assessment and taxation options, Dr. Ofira Ayalon, SNI/ Haifa University.

SESSION II- ENVIRONMENTAL TAXATION IN THE ENERGY SECTOR

Clean energy and environmental taxation. Prof. Dan Schemanski, Technion.

Clean electricity- internalization of externalities. Dr. Amit Mor, Ecoenergy.

Economic tools and trade mechanisms in the energy sector. Mr. Yaron Arnon, Ministry of Environment.

PANEL

Chair: Prof Yoram Avnimelech

Adv. Idit Reiter

Mr. Shlomo Shoham, commissioner of future generations

Mr. Ilan Nissim, Ministry of Environment

Mr. David Asoos, Electricity authority

Dr. Amit Mor, Ecoenergy