ELLINIKI ETAIRIA
For the Protection of the Environment
and the Cultural Heritage

MAKING TAXES WORK FOR THE ENVIRONMENT

ΦΟΡΟΛΟΓΙΑ ΓΙΑ ΤΟ ΠΕΡΙΒΑΛΛΟΝ

Εκδοτικός Οίκος
Α. Α. ΛΙΒΑΝΗ

Early in 2001 ELLINIKI ETAIRIA called together a Working Group to approach this important subject, realising that even the best of efforts to save the environment are ineffective, in the face of contrary signals from the market. A few months later, we were called to join a similar Group organised by the European Environmental Bureau (EEB), which led to the launch of a pan-European campaign for Environmental Fiscal Reform (EFR) in November of the same year. ELLINIKI ETAIRIA plays a leading role in this effort through the chairman of our Working Group on Environmental Fiscal Reform, Yannis Paleocrassas, who coordinated the Meeting in Athens on November 7th and 8th 2002, of which this publication serves as the record.

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ELLINIKI ETAIRIA
For the Protection of the Environment
and the Cultural Heritage

INTERNATIONAL MEETING
On Environmental Fiscal Reform

Athens, 8-10 November 2002

PAPERS AND PROCEEDINGS

LIVANI PUBLISHING ORGANIZATION
March 2003

Σειρά: ΟΙΚΟΛΟΓΙΑ
Τίτλος: MAKING TAXES WORK FOR THE ENVIRONMENT – ΦΟΡΟΛΟΓΙΑ ΓΙΑ ΤΟ ΠΕΡΙΒΑΛΛΟΝ

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Σωματείο μη Κερδοσκοπικό
Τριπόδων 28, Πλάκα
105 58 Αθήνα
Τηλ.: 210 3225245, 210 3226693
Fax: 210 3225240
e-mail: elet@ellinikietairia.gr
www.ellinikietairia.gr

ELLINIKI ETAIRIA,
For Protection of the Environment and the Cultural Heritage
28, Tripodon street, Plaka
105 58 Athens
Tel.: 210 3225245, 210 3226693
Fax: 210 3225240

Παραγωγή και κεντρική διάθεση:
ΕΚΔΟΤΙΚΟΣ ΟΡΓΑΝΙΣΜΟΣ ΛΙΒΑΝΗ ΑΒΕ
Σόλωνος 98 – 106 80 Αθήνα. Τηλ.: 210 3661200, Fax: 210 3617791
http://www.livanis.gr

Production and trade distribution:
LIVANI PUBLISHING ORGANIZATION S.A.
98 Solonos Street, 106 80 Athens, Tel.: 210 3661200, Fax: 210 3617791

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ISBN 960-14-0751-0

CONTENTS

Foreword 9

Opening Session

Opening Address
Rodoula Zissi, Deputy Minister for the Environment 15-18
Opening Messages, Remarks
MEPs Meni Malliori, Konstantinos Hatzidakis,
Mihail Papayannakis 19-26
Opening Messages by the Sponsors of the Meeting 27-32
Opening Address, Scope and Objectives
Costa Carras, President, Elliniki Etairia 33-39
Opening Presentation: The European EFR Campaign
John Hontelez, General Director, EEB 41-47

First Session: Fiscality, the Environment and Employment

Environmental Fiscal Reform: the European Experience
Dr. Stefan Speck 51-70
Response
Prof. Georgios Alogoskoufis,
Member of Parliament 71-73
Summary of Discussion 75-76

Second Session: Sustainability and the Fiscal System

Sustainable Development: A Contradiction in Terms or an Economic Necessity?
Prof. Ernst von Weizsäcker, Chairman of the
Environment Committee of the Bundestag.....79-87
Summary of Discussion.....89-95

Third Session: An Environmental Fiscal Reform

Physical Planning as a Tool of Sustainable Development
Aristidis Romanos, Architect-planner.....99-107
Responses
Dr. Theodora Lazaretou and
Richard Simmons (Union of European SMEs).....109-123

A Radical Fiscal Reform: Shifting the Tax Burden from Labour to Environmental Protection
Yannis Paleocrassas,
Member of the Board of Elliniki Etairia.....125-140
Discussion – Conclusions and Recommendations
Costa Carras and Stefan Speck.....141-159

Appendix A
Cultural Heritage, Richard D. Simmons.....161-171
Appendix B
5 Working Papers on EFR, Elliniki Etairia Working Group....173-207

FOREWORD

Early in 2001 ELLINIKI ETAIRIA called together a Working Group to approach this important subject, realising that even the best of efforts to save the environment are ineffective, in the face of contrary signals from the market. A few months later, we were called to join a similar Group organised by the European Environmental Bureau (EEB), which led to the launch of a pan-European campaign for Environmental Fiscal Reform (EFR) in November of the same year. ELLINIKI ETAIRIA plays a leading role in this effort through the chairman of our Working Group on Environmental Fiscal Reform, Yannis Paleocrassas, who coordinated the Meeting in Athens on November 7th and 8th 2002, of which this publication serves as the record.

The Working Group of ELLINIKI ETAIRIA consists of the following:

Yannis Paleocrassas, former European Commissioner for the Environment and former Minister of Finance as Chairman, Costa Carras, President of ELLINIKI ETAIRIA, members of the European Parliament Ms Meni Malliori and Messrs Konstantinos Hatzidakis, Giorgos Katiforis, Mihail Papayannakis, Professors Georgios Kottis and Dimitrios Panayotakopoulos, lecturer Nicolaos Yannoulis, environmental academic specialists Theodora Lazaretou, Alexandra Mexa, Nicolaos Georgiadis, Kostas Symeonidis from the Association of Greek Industries and Dimitrios Stratoulis from the Confederation of Greek Employees. Professor Andreas Papandreou participated in the early stages the work.

The results of its work were communicated to the Ministers of National Economy-Finance and the Environment and presented at a

press conference in March 2002 with a press release accompanied by 5 working papers:

1. *Environmental Fiscal Reform.*
2. *Fiscal changes for sustainable farming.*
3. *Energy and sustainability.*
4. *Waste management and sustainability.*
5. *Physical planning, construction and sustainability.*

Meanwhile, the European campaign was launched through a press conference on 27 November 2001, by John Hontelez General Director of EEB, Bart Martens President of Bond Leefmilieu (the Belgian NGO) and Yannis Paleocrassas, who presented the campaign demands as follows:

1. *An additional minimum 10% shift in the tax base from labour to natural resources by 2010, at EU and national level.*
2. *Removal of all environmentally adverse subsidies and reform of all subsidies that have a negative impact on the environment by 2005.*
3. *Energy efficiency policies.*
4. *Financial incentives for environmental protection.*

On 7-8 November 2002, ELLINIKI ETAIRIA, with the generous sponsorship of ELAIS SA, FYSIKO AERIO ATTIKIS SA and the JOHN HICKS FOUNDATION of Oxford organised the International Meeting of Athens on Environmental Fiscal Reform. Speakers and respondents included distinguished specialists and politicians of various affiliations, who spoke in surprising unison in favour of a new development approach respecting humanity and the environment. Broad agreement was reached that environmental fiscal reform is among the most powerful tools, in our arsenal of economic and financial instruments, particularly effective in changing consumption and production patterns in the direction of sustainability.

A novel aspect of the Meeting was the discussion of physical plan-

ning as a tool of sustainable development and its connection to environmental fiscal reform. The two respondents to the main paper showed how a proper environmental fiscal reform might exert a strong influence in the implementation of sustainable physical plans and in the preservation of our architectural and historical heritage.

The presentation of all papers and responses was followed by a vigorous discussion in which participants both debated the various arguments and proposals and raised their own additional points and concerns. For obvious technical reasons it has not been possible to reproduce a verbatim record of the proceedings, but only render a summary version of the debate, carefully trying to preserve the substance of all argumentation. Although this is a matter of judgment for the reader of this report, the organisers cannot help stating how impressed they were with the level and depth of the discussion. A final note of warning to the readers: Yoy may come across certain apparent discrepancies among tax revenue figuresand their relationship to gdp. These are due to the use of different databases (OECD and Eurostat).

In my capacity as coordinator of the International Meeting of Athens I would like to express my warm thanks to:

- Rodoula Zissi, Deputy Minister for the Environment, for her opening address.
- MEPs K. Hatzidakis, G. Katiforis, M. Malliori and M. Pappayannakis for their opening remarks.
- Costa Carras, Chairman of Elliniki Etairia for his opening address.
- John Hontelez, General Director EEB, for his opening presentation.
- Dr. Stefan Speck, Prof. Ernst von Weizsäcker and Aristidis Romanos, for their excellent papers.
- Prof. Georgios Alogoskoufis, Dr Theodora Lazaretou and Richard Simmons for their spirited and informed responses.
- Costa Carras and Stefan Speck for their expert summing up of the Meeting, especially at such short notice.

Without their efforts the Meeting could not have been such a success.

Thanks are equally due to all participants, who made the Meeting so interesting and lively, as well as to Vasso Lyberidou and Dimitra Mavrikou, without whose devoted assistance the Meeting would not have happened at all.

Finally, on behalf of the organisers I would like to express our gratitude to Spyros Desyllas President of ELAIS SA, FYSIKO AERIO ATTIKIS SA and Anthony Courakis Chairman of the JOHN HICKS Foundation, whose generous sponsorship enabled ELLINIKI ETAIRIA to organise the Meeting in the first place.

Yannis Paleocrassas, Coordinator of the Meeting

OPENING SESSION

Χαιρετισμός της ΡΟΔΟΥΛΑΣ ΑΘ. ΖΗΣΗ,

Υφυπουργού Περιβάλλοντος, στο Διεθνές Συνέδριο με θέμα:
«Περιβαλλοντική Φορολογική Μεταρρύθμιση»

Αγαπητοί Σύνεδροι,

Έχει αρχίσει πλέον να γίνεται κοινή πεποίθηση ότι η βιώσιμη ανάπτυξη, ως ένα πολυσύνθετο μεν, ιστορικά ωστόσο αναγκαίο εγχείρημα, αφορά σε σημαντικό βαθμό τον περιβαλλοντικό αναπροσανατολισμό της παγκόσμιας οικονομίας. Τα στοιχεία μάλιστα που προσκομίζει η επιστημονική κοινότητα και αφορούν την κρίσιμη παγκόσμια κατάσταση του περιβάλλοντος και τα δραματικά αναπτυξιακά ελλείμματα σε μεγάλο μέρος του κόσμου μας συνηγορούν στο ότι η περιβαλλοντική μεταρρύθμιση της οικονομίας πρέπει να αναχθεί σε κύριο μέλημα της πολιτικής.

Είναι σχεδόν βέβαιο ότι μόνο μία οικονομία, που θα παράγει περισσότερα προϊόντα και θα παρέχει περισσότερες υπηρεσίες, χρησιμοποιώντας ωστόσο σημαντικά λιγότερους φυσικούς πόρους από ό,τι σήμερα, θα μπορέσει να διατηρήσει τη βιωσιμότητά της και να επιτελέσει, κατά συνέπεια, τον κοινωνικό της ρόλο. Το πώς θα καταστεί δυνατό να έχουμε ταυτόχρονα παραγωγή περισσότερων αγαθών και σημαντική μείωση στη χρήση των φυσικών πόρων, ώστε να καλυφθούν μεν οι αναπτυξιακές ανάγκες (ιδίως στις αναπτυσσόμενες χώρες), αλλά να μην τεθεί σε κίνδυνο το φυσικό κεφάλαιο, είναι ένα ζήτημα που έχει απασχολήσει ιδιαίτερα το χώρο της περιβαλλοντικής οικονομίας. Ο καθηγητής και βουλευτής του Σοσιαλδημοκρατικού Κόμματος της Γερμανίας κύριος Ernst Ulrich von Weizsäcker είναι ως γνωστόν ένας από τους πρωτεργάτες στο πεδίο αυτό και τα έργα του αποτελούν πλέον σημείο αναφοράς στη σχετική συζήτηση που διεξάγεται διεθνώς. Ο Πα-

Χαιρετισμός της ΡΟΔΟΥΛΑΣ ΑΘ. ΖΗΣΗ,

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ράγοντας Τέσσερα (Factor Four) είναι για παράδειγμα ένα μοντέλο στο οποίο θα ήταν χρήσιμο να προσανατολιστούν σταδιακά οι σχετικές ενέργειες, καθώς μπορεί να βοηθήσει σημαντικά στην περιβαλλοντική μεταρρύθμιση της παγκόσμιας οικονομίας.

Το ότι πράγματι απαιτούνται περιβαλλοντικές μεταρρυθμίσεις στο πεδίο της οικονομίας κατέστη φανερό και κατά τη Συνδιάσκεψη του Γιοχάνεσμπουργκ. Η διεθνής κοινότητα αναγνώρισε συγκεκριμένα στο Γιοχάνεσμπουργκ ότι α) η εξάλειψη της φτώχειας, β) η αλλαγή των προτύπων παραγωγής και κατανάλωσης και γ) η προστασία και διαχείριση του φυσικού κεφαλαίου ως βάσης για την οικονομική και κοινωνική ανάπτυξη είναι οι πρωταρχικοί στόχοι και τα ουσιώδη προαπαιτούμενα για τη βιώσιμη ανάπτυξη. Είναι εύλογο λοιπόν να σκεφθεί κανείς ότι στην τριπλή αυτή, ιδιαίτερα σημαντική πρόκληση μπορεί να ανταποκριθεί αποτελεσματικά μία περιβαλλοντικά προσανατολισμένη, άρα μεταρρυθμισμένη, παγκόσμια οικονομία.

Επομένως, το αντικείμενο του Συνεδρίου σας είναι πράγματι πολύ σημαντικό. Προσβλέπουμε στο ότι τόσο οι ομιλίες των εκλεκτών εισηγητών, όσο και οι συνεισφορές κατά τις συζητήσεις που θα ακολουθήσουν θα περιλαμβάνουν και μία σειρά συγκεκριμένων, ρεαλιστικών προτάσεων, που θα μπορούσαν να συμβάλουν άμεσα στο να προωθηθούν σταδιακά και με τις ελάχιστες δυνατές οικονομικές και κοινωνικές επιπτώσεις οι αλλαγές που χρειάζονται. Αλλαγές που θα πρέπει να πραγματοποιηθούν στη βάση μιας ισότιμης αντιμετώπισης των τριών δομικών στοιχείων της βιώσιμης ανάπτυξης, της οικονομίας, της κοινωνίας και του περιβάλλοντος, δίνοντας μάλιστα έμφαση σε θέματα όπως στη διανεμητική διάσταση των μεταρρυθμιστικών πολιτικών. Με τις σκέψεις αυτές χαιρετίζω την ημερίδα σας και σας εύχομαι ολόψυχα μια ζωντανή και εποικοδομητική συζήτηση.

Opening Address of RODOULA ZISSI

Deputy Minister for the Environment

Dear Participants,

It has started becoming a common belief that sustainable development, as a complex but historically necessary endeavour, concerns to a considerable extent the environmental re-orientation of the global economy. The evidence brought forward by the scientific community, referring to the critical state of the global environment and the dramatic development deficits in a large part of our world, support the view that the environmental reform of the economy must become a major political concern.

It is almost certain that only an economy, which produces more goods and services but uses much less natural resources than today, will be able to retain its sustainability and therefore its social role. How we can achieve this so that, on one hand we may cover development requirements (especially in the developing world) without prejudicing, on the other, our natural capital has been the main concern of environmental economics. Professor Ernst Ulrich von Weizsäcker, social-democrat member of the Bundestag, is one of the pioneers in this field and his works are common reference points in the relevant international debate. Factor Four, for example, is a model to which it would be useful for all relevant activities gradually to be related, as it may contribute substantially to the environmental reform of the global economy.

The fact that environmental reforms are necessary in the field of the economy, became more than obvious during the Johannesburg Convention. More specifically, the international community recog-

nised in Johannesburg that a) the elimination of poverty, b) the transformation of production and consumption patterns and c) the protection and management of natural capital as a basis for economic and social development, are the primary targets and necessary preconditions for sustainable development. It is therefore reasonable to consider that only an environmentally oriented transformation of the globalised economy may answer this triple and particularly significant challenge.

Consequently, the subject of your Meeting is extremely important. We expect that the papers of the distinguished speakers as well as the responses of participants in the debate, will contain a number of concrete, realistic proposals that may contribute directly to the promotion of the necessary changes, gradually and with minimum economic and social cost. Such changes must be realised with equal respect to the three structural elements of sustainable development, namely the economy, society and the environment. Moreover, emphasis must be laid on the redistributive aspect of the reform policies.

With these thoughts I welcome your Meeting and I give you heartfelt wishes for a lively and constructive discussion.

Opening Remarks by MENI MALLIORI

Member of the European Parliament
and its Committee on the Environment, Public Health
and Consumer Policy,
Associate Professor Medical School University of Athens

Let me first express my warm thanks to the Eliiniki Etairia for this initiative and for inviting me in this meeting.

The European Union's commitment to the adoption of principles and the implementation of strategies for the sustainable development of the European countries becomes a crucial issue, as the awareness on pollution and climate change is growing and the overuse of natural resources is continuing.

It is therefore necessary, in the process of the implementation of environmental protection measures, to adopt the recommendations of the European Union concerning the use of economic instruments, which are based on the "polluter pays principle".

Environmental fiscal reform is a key instrument for sustainable development as it creates a positive relation between the environment, the economy and employment. That is why the 6th Environmental Action Program finally adopted in July this year endorses economic instruments as one of its strategic approaches.

Environmental taxation has already produced good results in several European countries by reducing pollution emissions and toxic waste and by promoting the use of renewable energy resources.

Despite these results, the introduction of taxes at a national level raises arguments concerning the question of domestic competitiveness.

The need for action and reaching of an agreement in the direction

of formulating the framework on environmental taxation, with concrete proposals concerning tax rates, is clear, according to the obligation imposed by the Barcelona Summit conference.

An agreement on minimum energy taxation including electricity, gas and coal, will allow for progress on Environmental Fiscal Reform both at the European Union and national levels.

The European Environmental Bureau demands in its campaign an additional 10% tax shift from labour to environmental use by 2010 as well as the removal of environmentally adverse subsidies by 2005.

Governments should promote and implement environmental fiscal reforms, and phase out environmentally harmful subsidies, with the aim of moving towards greater sustainability and with respect to employment and distribution concerns.

Environmental Fiscal Reform must be economically and socially acceptable. The citizens of Europe will play their part in achieving the goal of the protection and improvement of the environment, as well as support the European Union's environmental policy, as this is a pan-European issue.

In this context, the initiative of Elliniki Etairia to launch an "Environmental Fiscal Reform and sustainable development campaign" is a very important step in the direction of increasing the public awareness and opening a public debate on these matters.

Considering the issues of sustainable development and regional planning in Greece, it is important at this point to examine the possibilities for a proposal of a more integrated system of environmental fiscal reform, based on a "user pays principle" versus the "polluter pays principle".

In Greece, sensitive ecosystems with limited natural resources, particularly in the insular and coastal regions, experience intensive development pressures: i.e. tourism, quarries, transportation infrastructures etc.

Permissions granted for the installation and functioning of economic activities should be based not only on environmental regulations and restrictions, but also on a taxation system and appropriate economic instruments to compensate for the use of natural resources.

This complementary approach should aim at the compensation of the use of environmental resources including the natural resources (air, water etc.), and the landscape, the construction environment, the cultural heritage etc.

The protection of natural resources and the accomplishment of sustainable development are issues of high priority at the national level, as well as a key pursuit in European countries.

Therefore, I sincerely hope, that this meeting will accomplish its purpose by guiding accordingly all those who are wiling to contribute to the understanding of the importance of environmental fiscal reform in Greece, in Europe and the rest of the world.

Thank you for your attention.

Opening Message of KONSTANTINOS HATZIDAKIS

Member of the European Parliament,
Chairman of its Committee
on Regional Policy, Transport and Tourism

I would like to congratulate both Elliniki Etairia for taking the initiative to highlight the connection between the tax system and environmental protection, and Mr. Paleocrassas for coordinating this effort. I was honoured with the possibility to participate in this work, to which I tried to contribute with my views in the development of proposals on how a fiscal reform can support the protection of the environment.

If we examine the structure of the tax system in our country, we shall ascertain that it is mainly based on the taxation of human effort and very little on that of natural resources. The low cost for the use of environmental resources leads to a squandering of natural resources and to the pollution of the environment.

The proposal for a gradual shift of a tax burden, equal to 10 percent of current revenues, from labour to environmental taxes, which is made through specific propositions, such as the calculation and allocation of environmental costs to producers, the taxation of motorcars on the basis of their emissions, the use of the tax system to discourage urban and tourist sprawl to the benefit of growth in urban areas equipped with networks of infrastructure, will help both in the strengthening of competitiveness and in environmental protection.

I hope that the proposals of Elliniki Etairia for an environmental fiscal reform will be adopted by the Government and political parties in their totality. These ideas gain continuously more and more ground within the European Union.

Opening Message of MIHAIL PAPAYANNAKIS

Member of the European Parliament
and its Committee on the Environment, Public Health
and Consumer Policy

Dear Friends,

In June 1993 Jacques Delors had stated at the Copenhagen summit "the taxation of natural resources gives us the possibility to reduce the excessive tax burden on productive labour, increasing in this way the international competitiveness of Europe". That statement had been considered as particularly advanced and utopian, but who would guess that ten years later Europeans would maintain the same view.

In the last 25 years taxes on all these that modern humanity calls goods have been increased considerably. The result is a tax system that encourages the reduction of natural resources and of course discourages the increase in the employment of human resources. At the same time a world debate takes place as to how we can move away from the taxation of "goods" that is of activities we would like to develop more, towards the taxation of "bads", i.e. of all negative activities, such as pollution, that we would like to discourage.

Green taxes or "corrective taxes", as many describe them, have occupied the attention of many economists and policymakers; certainly it is not the first time we hear about them. However, nothing substantial has been done towards this direction, with the only exception of fuel taxes. Despite the fact that in certain cases such taxes have been used as source of funds to cover the damage of previous pollution, or for measures preventing future pollution, or to force polluters to be more careful in their business, it seems that European lawmakers are

still refusing to push forward with a systematic imposition of green taxes; particularly in the more general context of sustainable development, which is what we look for.

The Johannesburg texts speak of a change in "production and consumption patterns". One can think of many policy measures for the attainment of this general target: administrative, restrictive, communicative. But it is certain that the use of taxation that encourages or discourages, by integrating in the price of goods and services the broader cost of use or abuse of natural resources, is one of the strongest tools in our disposal. The search for modern ways and methods for the use of such tools in the right direction should and I hope will be the object of this Meeting.

DONORS' STATEMENTS

ELAIS SA Environmental Statement

Sustainable Development and Environmental Protection

Sustainable development forms a basic pillar of ELAIS policies. By monitoring and improving the environmental impact of our plants and services we contribute substantially to the sustainable development of our company and our country.

ELAIS was the first company to be certified, as early as 1996, to the Environmental Management System ISO 14001. The continuous training of our personnel and the commitment of our Management constitute the necessary "environmental education" which calls for constant improvement.

The results of this "education" are that:

All extension and development works carried out in ELAIS plants incorporate all the necessary elements for the improvement of environmental conditions. In recent years major projects that were completed with "clean" environmental features include the tele-heating of a school of 2.500 students, the installation of cocks for natural water cooling, and the operation of a most modern natural gas steam production plant. These continue yielding their results, year after year, contributing to the improvement of the atmosphere in their respective locations.

Our model systems of preventive maintenance, as well as the continuous training of our staff, ensure effective environmental protection and savings in the use of natural resources and energy, which are the prerequisites of sustainable development.

All ELAIS employees participate in environmental protection through the system "chances for improvement", while the best are put forward for "corporate recognition award". They all know that their work produces sustainable development only if it is carried out with employee safety and with respect for the environment.

Important Projects with a "Decisive Role" in Our Environnmental Performance

ELAIS Plant

- Secondary water recycling before final disposal.
- Electric energy saving systems.
- Calibration of 3rd steam generator.
- Steam traps (new control technology).

Results

- 5% reduction in utility water consumption.
- 3% reduction in electricity consumption.
- Reduction in natural gas consumption.
- "0" steam losses.

Constant improvements and awareness that water is a "white gold" and a good in "scarce supply" for our country have led to a reduction in its consumption of the order of 85% during the period 1996-2002.

The use of new technologies (BMS) and a systematic effort allow us to keep a low coefficient in electricity consumption.

ELAIS separates and disposes solid waste (timber, paper, metals) to contractors, while used oil diatomic filters containing oil are disposed of as fuel to the cement industry.

Constant monitoring of our effluent processing plants, which are equipped with modern industrial automations and are staffed by

trained personnel ensures a steady improvement in the outflow features.

PELARGOS Tomato Plant at Gastouni Ilia

- Redesign and operational adjustment of biological effluent treatment plant.
- Installation of 2 new filters for removal of solid matter >2 mm.
- Replacement of electric reduction gear in biological treatment plant ventillators.
- Replacement of borehole pump station and piping.

Results

- Excellent effluent values (COD).
- Further improvement of COD-BOD5.
- Reduction in electric energy consumption by 3% – improvement in the efficiency of biological treatment plant.
- Reduction in water consumption by 10% and avoiding mixing of groundwater table.

Solid waste (tomato remnants) are disposed of as fertilisers, while tomato skin and seeds are disposed of as cattle feed.

Investment in the redesigning and operational improvement of the biological treatment plant resulted in a 75% improvement in quality.

«If the Environment is our World
Then it is Worth Making it Better»

ATTIKI GAS SUPPLY COMPANY SA
Environmental Statement

Attiki Gas Supply Company SA was established at the end of 2001, with the participation of Hellenic Gas Corporation, as well as Cinergy and Shell, which have the management of the company. It has undertaken the supply, distribution and sale of natural gas in the Attica region through the gradual activation and extension of the supply network.

Natural Gas is the most environmentally friendly of fossil fuels, as it does not contribute as much to the greenhouse phenomenon and causes no acid rain. It is a safe fuel and – contrary to liquid gas – it is lighter than air, so that in case of leakage it escapes to higher atmospheric strata. Finally it is not toxic, a feature, which – added to others – explains why today there are 70 million households and 6 million industries that use Natural Gas in the European Union.

The contribution of Natural Gas to the sustainable development of Attica is obvious. The very low level of emissions produced in its combustion, its easy use and the substantially lower investment that it necessitates, make it much more advantageous than other liquid and solid fuels. Rightly Natural Gas is described as the fuel of the 21st century.

Environmental protection is one of the most serious and most frequently debated subjects in contemporary society. Attiki Gas Supply Company SA in parallel with its commitment to development displays a systematic approach to the management of health, security and environmental issues. At the same time it adheres to the "polluter pays" principle believing in and supporting the view, that damaging the environment produces no advantage to business.

For these reasons Attiki Gas Supply Company SA congratulates ELLINIKI ETAIRIA for this activity and for its contribution to Environmental Fiscal Reform and expresses its thanks for the opportunity it had to be a sponsor to the International Meeting organised in November 2002.

Dimitris Zissis,
General Director,
Attiki Gas Supply Company SA

Opening Address by COSTA CARRAS

President, Elliniki Etairia

I extend to you all a warm welcome to this two-day meeting on Environmental Fiscal Reform, all the warmer a welcome because it is a day to which I have long been looking forward.

One of my first actions after I was elected President of Elliniki Etairia at the end of April 2001 was to approach Yannis Paleocrassas and to ask him to form a Working Group on Environmental Fiscal Reform within Elliniki Etairia. I was knocking at an open door. Yannis concluded a distinguished career in Greek politics by serving as Commissioner for the Environment in Brussels. He had already showed a sensitivity to environmental issues rare in the Greek political world, but I think it is fair to say that his experience as Commissioner changed the course of his life. During his period in Brussels, he collaborated closely with Jacques Delors in preparing the White Paper on Growth, Competitiveness and Employment that the European Commission produced in 1993. Since then, the relationship between the environment and the market has been at the centre of his concerns. He thus at once agreed to form and to chair the Working Group I proposed.

Very early in our work however we discovered that the European Environmental Bureau was about to launch a campaign on the same subject throughout the EU. Elliniki Etairia has since then taken an active part in this campaign, with Yannis addressing three important meetings in various parts of Europe, and it is a particular pleasure to have with me on this welcoming panel today John Hontelez, General Director of the European Environmental Bureau, who has tirelessly

coordinated the European campaign since its inception in November 2001.

Those Greeks whose work takes them most frequently to Brussels are also those who are most aware of the widespread discussion on environmental fiscal reform currently taking place in many EU countries. It is not surprising therefore that several Greek MEPs have lent their support to Elliniki Etairia's Working Group. These include the Greek members of the European Parliament's Environment Committee, Ms Meni Malliori, who will speak immediately after me, and Mr Mihalis Papayannakis, as well as Mr Kostas Hatzidakis and Giorgos Katiforis. I would like to thank all the members of Elliniki Etairia's Working Group, who between them have given a great deal of time and energy to our work. They will need to continue to do so, because we cannot and do not expect the walls of Jericho to fall at the first trumpet. We know we have a long period of campaigning ahead of us for these ideas to be gradually assimilated into the mainstream of Greek political and economic thinking to the degree they have already been in countries like Denmark, Finland, Sweden, the Netherlands, Germany and Britain.

I would like to make three points of substance in relation to our meeting. You will hear frequently in the next two days the phrase "double dividend". This does not refer to the benefit governments may gain by increasing taxes while improving the environment, a benefit which cannot be considered a benefit for society at large unless higher rates of tax are called for at that particular moment for reasons unconnected with environmental considerations, or unless, of course, one is positively in favour of higher taxation on the grounds this will lead to better public services.

The phrase "double dividend" here, refers instead to the fundamental principle of Environmental Fiscal Reform as we are proposing it, namely that we must avoid like the plague either the exploitation of environmental issues as a means of raising taxes or new environmental taxes being misunderstood as convenient excuses to increase government revenue. The correct level of taxation in any country at any

particular time is and must remain, an argument entirely separate from any concerning the environment. What we maintain as environmentalists is not that taxation should increase, but that it is at present, *at any level*, skewed in the direction of an overemphasis on the factor of human labour and an under-emphasis on the factor of physical resources and emissions of pollutants.

The phrase "double dividend" here therefore refers, first, to the environmental benefit obtained by increasing taxes and charges or removing subsidies, thus gradually reducing the emissions of polluting substances and the consumption of scarce physical resources, as for instance water, for long considered a "free good" by all too many, especially farmers, in Greece; and, second, to the benefit obtained directly by enterprises and indirectly by people in search of a job, through the reduction in the first place of employers' social security contributions, thus attacking unemployment. The increased cost of some goods to the consumer, especially some types of energy, as a result of environmental taxes, which reveal the true costs of those goods, is matched by an overall increase of consumption through an increase in employment.

At this point we face an almost inexplicable oxymoron. The majority of northwestern European countries that are advanced in environmental tax reform do not seem to need a "double dividend" in the sense I have described it, because most already enjoy almost full employment. There is however the alternative of a reduction in rates of tax or social security contributions for the lower paid, so our form of "double dividend" is in fact still available, even if in a less dramatic manner.

Be that as it may, these countries have displayed the economic maturity necessary to accept the inconvenience associated with the increase of certain costs, particularly in respect of energy, so as to obtain their "double dividend" whether in an obvious or less obvious way.

Now let us turn to the Mediterranean countries, among which of course is Greece. Here we meet the highest unemployment levels in the European Union, and we have therefore the clearest case for a

"double dividend" in the most direct sense. Yet it is here that we find, irrespective of political orientation, the slowest uptake of the message of environmental fiscal reform.

Actually in some Mediterranean countries we should not speak of a "double dividend" but of a "triple" or even a "quadruple dividend". After all, most – though not all – the economies of the northwestern European countries have traditionally been dominated by heavy industry – and it is often precisely these industries that face problems of competitiveness when, for instance, taxes on the currently more usual sources of energy, such as coal and oil, are increased. In some Mediterranean countries, by contrast, it is not heavy industry that traditionally earns the largest portion of foreign exchange, but tourism. Now countries dependent to a substantial degree on tourism are effectively using their cultural and environmental assets, as "selling points" so for them to maintain the environment and cultural heritage is not just environmentally and culturally, but economically vital. And tourism is also par excellence a labour intensive business. Thus we can legitimately speak here either of a "triple dividend" or a "double dividend squared". This was a point well made at one of the meetings of our Working Group by George Katiforis, who sits on the Economic Committee of the European Parliament.

The argument however does not end even at this point. Unemployment in Greece comes in two forms – the officially recorded and the disguised. Part of this disguised unemployment is among the farming population, much of it elderly, working uneconomic pieces of land, who have benefited over the last twenty years by the high support payments system of the CAP. Not for much longer however – we may of course speak of reprieves, but the writing is on the wall. Effectively, the economic survival of several regions in Greece depends on their becoming once again attractive for enterprises to create opportunities for employment. It is entirely legitimate therefore, in a country like Greece, to speak of a "quadruple dividend".

I turn now to my second point and note a contrast between, on the one hand, the political class together with that substantial section of the

business community dependent on public contacts and contracts, and that section of the business community which is financially independent. This meeting is an example. It has not received one eurocent of official financial support, whether from Athens or Brussels. Whatever its contribution may be we shall owe to the knowledge of Yannis Paleocrassas and his colleagues in our Working Group, to the European Environmental Bureau and to our other expert speakers, but also crucially to two enterprises, both major presences in Greece, whose enlightened generosity has made this meeting possible. I speak of course of ELAIS and Fysiko Aerio Attikis, or Natural Gas of Attica and to them let me add the John Hicks Foundation of Oxford, named after the distinguished economist of an earlier generation.

I would like to express Elliniki Etairia's warm appreciation of the support given by ELAIS and Fysiko Aerio Attikis. They have made possible this meeting, and thus also the communication to public opinion in Greece of an already well-developed theory as to the interrelation of economic and environmental thinking. They have in addition provided us with a good example of a controversial thesis of mine, namely that many of those involved in Greek enterprises are ahead of much of our political class on environmental issues. There is no contradiction between believing that the best economic results are achieved as the consequence of the operation of market forces and accepting that the indicators given by the market must, in order to be complete, price in all the factors involved in the process of production and consumption, including the environmental costs of using natural resources, once inaccurately considered "free goods", or emitting pollutants and piling up waste.

When markers are given in good time responsible enterprises will adapt in good time and will usually do so in a manner that demonstrates not just a sense of social responsibility, but an ability to innovate scientifically, technically and commercially, so as simultaneously both to maintain their profits and improve the environment.

Earlier this year I had the honour of being one of the members of a jury appointed by the European Commission for a competition with

over one hundred entrants from all but three European Union countries and with entries also from six Candidate countries. I was in fact, by chance, the only representative of a national environmental organisation. It may seem strange that when a dispute broke out over a proposed award to a major multinational that had developed a technological and environmental breakthrough, "well before regulations are enacted", to quote its own words, some jurors questioned whether this motivation should not invalidate the rationale for an award. I was amongst those – the majority – who argued strongly that the exact opposite was the case. It is the task of the political world to set markers as to the direction in which our societies are to proceed: it is for enterprises to respond to such markers by a process of experiment and innovation and, if possible, to act even before such regulations are implemented. The failure of a government to set such markers, but instead in all too many instances to await unfavourable judgements of the European Court of Justice before taking action even in areas of its own direct responsibility, represents a double failure: a failure first in carrying out its obligations and second in providing leadership by setting down the sort of markers, with fair, indeed even generous time-limits, that encourage the creative forces in society to shoulder their responsibilities in turn.

Allow me to conclude with a third point, a few words about the issue of competitiveness, which will certainly be mentioned several times during our meeting. Environmental concerns, as for instance that concerning climate change, are all too gradually introducing as great a revolution into the economic system as did, in their days, the industrial and, more recently, the communications revolutions. Inevitably at the end of such a process some types of enterprise will come to play a far smaller role, if any at all, than once they had, while many more will successfully adapt. In such circumstances the argument for competitiveness can be used in two ways, one totally invalid, the other entirely legitimate. The invalid use of the argument is to dispute the general direction in which we must move: any successful use of such an argument in the short term merely makes adjustment harder, or even

impossible, in the medium and longer-term and will increase the damage to the societies and enterprises concerned. The legitimate use of the argument is to suggest and work out time lines within which changes can take place without unbearable strain on the competitiveness of enterprises and constantly adjust those against the time lines within which they must take place for environmental reasons. This process, if inevitably painful, is also both necessary and creative. It is one which we in Elliniki Etairia are determined should begin in Greece without further delay. I hope that through this conference and the publication of its proceedings we shall be sending a message that will be noticed by the Greek political leadership of all parties but also by Greek public opinion generally.

Opening Presentation by JOHN HONTELEZ

General Director, EEB
(European Environmental Bureau)

EEB Campaign Objectives

The objectives of the EEB campaign, which was launched on 26 November 2001 in Brussels are the following:

- Improving the quality of the political discourse on EFR and overcoming resistance.
- Raising awareness about EFR among the public, governments and private sector players.
- Implementation of ambitious and effective Environmental Fiscal Reform (EFR) throughout Europe.
- Changing consumption and production patterns towards greater sustainability.

EEB Campaing Demands, on the other hand are as follows:

- An additional 10% shift in total tax revenue from labour to environmental use by 2010, at EU and national level.
- Removal or reform of all environmentally adverse subsidies by 2005.
- Measures to address any potential social impact.
- Energy saving and efficiency policies.
- Fiscal incentives for environmental protection.

Energy & Environmental Taxes

The current environmental situation, which is characterised by increasing pollution, an adverse climate change and other problems, calls for urgent remedying action. Such action cannot take place without the market contributing to the reduction of that pressure. The market does not do so because external environmental costs are not currently reflected in prices. Ecotaxes by integrating these costs in prices push the market to send the right signals to producers, consumers and investors with the main signal to save on natural resources. Thus the market mechanism fosters resource use efficiency and innovation, by spurring technology towards resource and not only labour saving. Ecotaxes lead to substitution by less polluting and more resource efficient products and processes.

Experience with ecotaxes, although limited, indicates that they are quite efficient in reducing pollution and promoting resource use efficiency. I would like to give the following examples:

- In Sweden between 1987-94 CO_2 emissions by industry and households were reduced by 19% and SO_2 emissions between 1980-91 were reduced by 80%. In Denmark SO_2 emissions fell by 24% between 95 and 97 (Swedish EPA, Nordic Council of Ministers).
- Differentiating tax rates according to environmental criteria is a good way of accelerating the substitution by cleaner products. Example: In the UK lower taxes on unleaded low sulphur petrol led to a 43% market share of this motor fuel in 1999 (EEA).
- Tax exemptions on renewable energies in the Netherlands have led 1 million households to opt for green electricity.

Shifting the Tax Burden

A basic demand of the EEB campaign is to shift 10 percent of the tax burden from labour to environmental taxation. An analysis of OECD

tax revenue figures in 1994 indicated that an average of 84% of all taxes in the EU are levied on human effort (of which 50% are from labour taxes) and *only* 7% are environment related taxes. The proposed 10% shift from the first to the second category will:

- Reduce resource waste and pollution thanks to a greater internalisation of external environmental costs.
- Increase resource efficiency.
- Reduce labour costs.

However, there are two perceived obstacles:

- Competitiveness.
- Income distribution.

Let us first examine the arguments relating to competitiveness.

Competitiveness

The main argument advanced by some economic circles is that the increase in prices of energy and natural resources involved in EFR will reduce the competitiveness of those countries that implement it and lead to a loss of jobs.

However, practice indicates that on the contrary EFR can actually lead to increased competitiveness thanks to innovation. This leads to new green products and a great number of new industries, while it fosters increased resource use efficiency in existing industries. On the other hand, the lowering of labour taxes leads to increased employment. This is confirmed by the following examples of countries with strong climate change policies, including EFR:

- Eco-employment now represents 3.6% of workforce in Germany (German EPA, 2001).

- Denmark has become world leader for wind turbines, with vast exports and strong employment in this industry.
- Environmental technology and services could become Sweden's "*next major export industry*" (Swedish Environmental Technology Network, 2001).

But a basic feature of EFR as we campaign for it is strict FISCAL NEUTRALITY. We are talking about a tax shift: i.e. increased ecotaxes = lower labour taxes. In other words, ecotaxes are recycled towards reduced labour taxes. EU countries with the most advanced EFRs, such as Sweden, Denmark, the Netherlands, Germany have respected this principle, facilitating acceptability of the reform and the growth of employment.

Thus it may be argued that EFR is business- and employment-friendly. Many sectors of the economy, which happen to be labour intensive will actually gain from EFR. Studies such as that by SEED-Scott in 1997, Danish Finance Ministry in 1999 clearly show significant net savings for service industries. A DIW study in 2001 showed a 250 000 job creation potential in Germany only from the effect of lower labour taxes. In addition there will be many new "green" jobs from the innovation effect and substantial cost savings in public services.

The truth is that the only negative short-term impact is on heavy energy-users, who pay for their over-use of natural resources on the basis of the polluter pays principle, which is now generally accepted. However, even for these mitigation measures are available. I refer to

- Gradual introduction of the tax.
- Regional aid and restructuring programmes.
- Energy efficiency subsidies.
- European harmonization and (if possible) international co-ordination.

We can conclude this section by the OECD testimony in a 2001 report: "*To date, environmentally related taxes imposed by OECD countries*

have not been identified as causing significant reductions in the competitiveness of any sector".

EFR and Income Distribution

There is no doubt that EFR may have certain adverse effects on income distribution. But as explained in a study on German EFR by DIW and Osnabruck and Oldenburg Universities in 2001: "The tax shift alone is regressive, a comprehensive EFR is not". That is why we call for a broad Environmental Fiscal Reform, which takes in the tax shift, but also accompanying social measures.

For wage earning – households, we recommend:

- A fair split of social contribution cuts between employees and employers. E.g. a 50/50 formula compensates employees and business and helps boosting employment.
- Concentrate social contribution cuts on lower wages.
- Changes in income tax brackets with the aim of counterbalancing the regressive effect.

Mitigating options for non-wage households:

- Increases of some social allowances such as unemployment benefit, housing benefit, income support, state pensions, student grants, child allowances etc.
- Tax credits offsetting the negative impact of EFR on lower income groups.

To the extent that the above recommended social accompanying measures affect the energy budget of households, they must be designed in a way that they maintain a strong incentive for energy saving and efficiency. I.e. benefit increases should be explicitly linked to EFR.

Trends in EU on EFR

Elections in several EU countries in 2001 have led to a change in governments in EFR "frontrunner" countries, which are now less favourable to this movement. Such is the case in Denmark and the Netherlands. On the other hand more favourably disposed governments have remained in power in Sweden and Germany. At the EU level there is little or no progress at all. Frontrunners feel that the constraints of the single market will continue posing problems in the further phases of EFR. Current emphasis is on emissions trading.

Trends in EU on Energy Taxation

We call on the Danish Presidency to strive to get an agreement on energy taxation, preferably with the least possible exemptions and increased rate on professional diesel too. The Barcelona summit asked for an agreement at the end of 2002. We urge EU finance ministers not to waste this opportunity. The EU needs definitely an agreed energy taxation framework before the enlargement. If this fails to be realised the proposed informal cooperation is something, but EU enhanced cooperation may be more efficient.

The EEB believes that the EU needs a more vigorous environmental fiscal policy. The proposed Directive for harmonization of energy and fuel taxation is only a minimum step: we campaign for a more ambitious EFR involving a wider range of environmental taxes and other accompanying measures coupled however with equal reductions in labour taxation. In this we coincide with the 6th Environment Action Programme, which calls for increased use of fiscal/financial instruments. The introduction of European emissions trading is a good scheme but it is in no way a substitute for a developing EFR. In fact the two instruments can be compatible and mutually reinforcing.

The EEB Campaign

The basis for our campaign is an active and motivated NGO European Working Group from 17 EU and accession countries. The EEB and its member organisations lobby the Council on energy taxation and other related measures. At the same time we have many complementary actions by our members including lobbying for EFR in their respective countries, conferences, awareness raising campaigns etc.

The EEB is active in the communications field with various publications on EFR, a monthly newsletter and an active website www.eco-tax.info. We are also busy in the networking area and in keeping EFR on the agenda even under adverse political climate.

Conclusions

National EFR experiences in Europe have been good first steps, but the scale and nature of the specific reforms have been too timid and with too many exemptions. That is why we call for significant tax shifts so as to have an appreciable impact on the conservation of energy and natural resources as well as on curbing pollution.

There is no doubt that every policy has side-effects. Those of EFR should not be exaggerated. In fact, even opponents of EFR are hard put when asked to produce evidence of such side effects, for example in the competitiveness field. We believe that good design of a comprehensive EFR, together with well studied accompanying or compensating measures, particularly in the area of fuel poverty and income distribution, may increase the political and social acceptability of this movement.

The EU is suffering from pollution, overuse of natural resources and unemployment. At the same time it is a leader in the environmental effort and must honour its Kyoto commitments. A fiscally neutral, radical and comprehensive EFR, with its double dividend effect is a right instrument to remedy the European environment as well as the unemployment problem.

FIRST SESSION:
FISCALITY, THE ENVIRONMENT AND EMPLOYMENT

First Paper

Environmental Fiscal Reform: the European Experience

by STEFAN SPECK[1]

I. Introduction[2]

The concept of an environmental fiscal reform (EFR) has been on the political agenda in many European countries for some years. The general rationale behind this policy package is the systematic shift of the tax burden from the production factors of labour and capital onto the use of energy and other environmental resources under the aspect of revenue neutrality.[3]

This paper discusses the concept in more detail by analysing the recent development of such policy packages. The first part of the paper is describing environmental taxes on a more theoretical level, and in the context of their macro-economic importance in contributing to overall tax revenues. An overview of implemented tax shift programmes in OECD countries is the main component of the second part of the paper followed by an analysis of the employment effect of this

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1. Contact details: Stefan Speck, Vierthalergasse 6, 1120 Vienna, Austria, e-mail: stefan.speck @chello.at

2. This paper is partly based on reports written by Ekins and Speck (1998, 1999, and 2000).

3. The term environmental fiscal reform is used in this paper in a somewhat "narrow definition" because – for example – the main focus lies on environmental taxes and does not discuss the removal of "perverse environmentally subsidies" which is regularly part of proposals for implementing EFR.

policy and the issue of competitiveness. The paper ends with a conclusion.

II. Environmental Taxes

During 1970s and 1980s environmental policies were based primarily on a system of regulations. However, it became increasingly recognised that traditional regulatory environmental policy, despite some successes, was not managing to prevent further unacceptable environmental damage, and it was feared that the costs of attempting to make it do so would be great. During the 1980s the emphasis changed, and policy makers showed an interest in market-based instruments of environmental policy. An early indication of this change was the emphasis given to economic instruments in environmental policy by the report of the World Commission for Environment and Development in 1987.

Generally, environmental taxes (sometimes also called environmentally related taxes) are defined "as any compulsory, unrequited payment to general government levied on tax-bases deemed to be of particular environmental reference. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments (OECD 2001, p. 15)". Revenues accrued by environmental taxes are part of the national budget. On the contrary, charges are requited payments; "they are levied more or less in proportion to services provided (e.g. level of wastes collected and treated) (ibid)".

In the context of EFR, an environmental tax must have a stable revenue base as will be discussed below in more detail. Provided that, at least, part of the purpose of the tax is likely to be to change behaviour, it is not clear whether this will always be the case. Therefore, it is useful to classify environmental taxes as follows:

- *Cost-covering charges*, whereby those making use of the environment contribute to, or cover the cost of monitoring or controlling

that use. The level of a cost-covering charge is determined by the service it is intended to deliver or the other purposes to which its revenues will be put.

- *Incentive taxes*, which are levied purely with the intention of changing environmentally damaging behaviour, and without any intention to raise revenues. Indeed, the success of such a tax may be judged by the extent to which initial revenues from it fall, as behaviour changes.
- *Revenue-raising taxes*, which may influence behaviour but still yield substantial revenues over and above those required for related environmental regulation.

Clearly, these three types of environmental tax are not mutually exclusive: a cost-covering charge may have incentive effects, as may a revenue-raising tax, or, the revenues from a revenueraising tax may partially be used for related environmental purposes.

In the context of the European Communities the new interest in economic instruments was reflected in, and amplified by the following events and reports: the Commission's Task Force Report on the environment and the internal market in 1989; the European Parliament's hearing on economic instruments in June 1990; as well as the decision by the Environment Council in September 1990 in Rome to develop a proposal for a European carbon-energy tax.

Another impetus was provided in the early 1990s, when recession resulted in unemployment moving up the public policy agenda. All these developments resulted in increased interest in the possibility of an EFR.

The European Council's Dublin declaration from 1990, and the Fifth Environmental Action Programme from 1992 both have more formally pointed out the need to adopt such new approaches in the use of policy instruments. The wider positive macro-economic implications of such environmental policy have been emphasised in the Delors' White Paper on Growth, Competitiveness and Employment:

"The serious economic and social problems the Community currently faces are the result of some fundamental inefficiencies: an

'under-use' of the quality and quantity of the labour force, combined with an 'over-use' of natural and environmental resources" (EC 1993, Chapter 10).

III. Environmental Fiscal Reform

Environmental fiscal reform (EFR), meaning the systematic shift of the tax burden from the production factors of labour and capital onto the use of energy and other environmental resources, including the use of the environment as a sink for wastes, has gained in profile among policy makers in EU countries through the 1990s. Its twin objective is to address environmental problems by making the use of environmental resources more expensive, and to improve the operation of factor markets, especially labour markets, by reducing the taxation-induced distortions to which they are subject. The hope is that this policy approach will generate both environmental improvement and increased employment.

The twin objectives (also known under the phrase 'double dividend' hypothesis) refer to the possibility that a revenue neutral environmentally related tax shift could generate two possible benefits or dividends (so called a win-win situation):

- An *environmental dividend:* a dividend in terms of effective environmental protection.
- An *economic dividend:* recycling environmentally related tax revenues by reducing distortionary taxes may have positive impacts on economic growth, employment, or technological development – a dividend because of reduction of distortionary taxes.
- Revenue neutrality – the provision of some form of redistribution ("recycling") of the fiscal revenues, so that they do not become a part of the government's general spending programme and budgetary process.

Only the revenue-raising taxes are important in the context of the dis-

cussion of factor tax shifting, since the other two types of taxes clearly have other principal objectives. It also is important to realise that not all of the environmental taxes can raise significant revenues because their tax base may not be sufficiently large. For example, taxes on plastic carrier bags will never raise revenues on a scale to contribute significantly to a tax shift, and in particular to a worthwhile reduction in labour taxes.

IV. Current Situation in OECD Countries

During mid 1990s the ratio between total tax revenue to GDP has risen by around 2% to around 38% in most OECD countries, with the average around 3% higher in EU member states (see Table 1). The trend in Greece is similar, with the increase much higher than in the other EU member states; this share rose from around 31% in 1994 to more than 40% in 1997, while a slight decrease occurred during the period 1998-2000. This development is in a sharp contrast to some other cohesion countries, such as Spain and Ireland, where the ratio remained almost constant (Spain) or was reduced (Ireland).

The contribution of different taxes (such as personal income, corporate income tax, VAT, excise taxes, etc.) to the total tax revenue in Greece slightly differs from the situation in other OECD countries. The share of personal income tax has slightly fallen during the last years and contributes around 27% to the total tax revenues in OECD countries, compared to around 15% in Greece. Also, the share of corporate income tax in Greece was at the end of the 1990s lower (around 6%) than the OECD average (9%). The picture is completely different in the case of social security contributions: the average in OECD countries is around 25% compared to 31% in Greece at the end of 1990s. There is an overall trend of a rise on VAT revenues in OECD countries, with simultaneous fall in excise tax revenues. These taxes on goods and services are still a major income component for total tax revenues; i.e. around a third of total taxation in OECD countries, compared to a much higher contribution of around 40% in Greece.

Table 1:
Total Tax Revenue as a % of GDP

	1994	1995	1996	1997	1998	1999	2000
Czech Republic	42.8	40.1	39.3	38.6	38.1	39.2	39.5
Denmark	50.8	49.4	49.9	49.8	49.5	51.2	48.8
Germany	38.4	38.2	37.3	37.0	37.0	37.8	37.9
Greece	31.3	37.2	39.5	40.5	35.6	36.9	37.8
Ireland	35.6	33.1	32.9	32.2	31.7	31.3	31.1
Poland	43.2	39.8	39.4	38.8	37.6	35.2	34.0
Spain	35.0	32.8	32.6	33.6	34.1	35.0	35.2
OECD Arithmetic average	35.4	35.1	35.6	35.8	36.8	37.1	38.4
EU Arithmetic average	41.2	40.4	41.1	41.4	40.9	41.4	41.5

Source: OECD database on environmentally related taxes (www.oecd.org).

The contribution of environmental taxes to GDP and total tax revenue remained almost constant during the period 1994-2000 in many OECD countries (Tables 2 and 3). However, the share fluctuations during the period are presented in the tables.

Table 2:
Environmental Tax Revenues as a % of GDP

	1994	1995	1996	1997	1998	1999	2000
Czech Republic	3.2	3.3	3.0	2.9	2.9	3.0	2.9
Denmark	4.0	4.3	4.5	4.6	5.0	5.1	4.7
Germany	2.5	2.4	2.3	2.2	2.2	2.3	2.4
Greece	4.0	4.7	5.1	4.7	3.6	3.1	2.7
Ireland	3.3	3.1	3.1	3.0	3.0	3.0	2.9
Poland	1.8	1.5	1.7	1.6	1.6	1.8	2.0
Spain	2.3	2.2	2.1	2.1	0.4	2.1	2.0
OECD Arithmetic average	2.6	2.6	2.7	2.7	2.6	2.7	2.6
EU Arithmetic average	3.1	3.1	3.2	3.2	3.0	3.1	2.9

Source: OECD database on environmentally related taxes (www.oecd.org).

A number of developments in some OECD countries require a brief discussion. An upward trend can be reported for Denmark, a well-known forerunner in the context of implementing new environmental taxes. A slight increase is recorded for Poland (Table 3), while the share almost halved in Greece: in 1994 with the share of 12.7% it was the highest of the countries shown in Table 3, while in 2000 the share dropped to 7.2%. The share in Greece is still higher compared to the situation in other countries, for example in Germany, and in OECD and EU member states.

Table 3:
Environmental Tax Revenues as a % of Total Tax Revenue

	1994	1995	1996	1997	1998	1999	2000
Czech Republic	7.5	8.2	7.7	7.5	7.5	7.8	7.3
Denmark	7.9	8.8	9.1	9.3	10.1	10.0	9.6
Germany	6.4	6.3	6.1	5.9	5.8	6.1	6.3
Greece	12.7	12.7	12.8	11.7	10.0	8.4	7.2
Ireland	9.1	9.2	9.3	9.2	9.3	9.5	9.3
Poland	4.1	3.8	4.2	4.2	4.4	5.2	5.8
Spain	6.6	6.6	6.6	6.4	1.1	6.0	5.6
OECD Arithmetic average	7.3	7.4	7.5	7.4	7.3	7.5	6.9
EU Arithmetic average	7.6	7.8	7.9	7.7	7.3	7.5	7.1

Source: OECD database on environmentally related taxes (www.oecd.org).

The problems of using these ratios as an analytical instrument for assessing the functioning of environmental taxes in different countries are particularly observable when figures of Table 3 are compared with the per capita revenues shown in Table 4. For example, the share of the revenues as a percentage of total revenues continues to be higher in Greece than the OECD/EU average. However, figures showing the generated revenues as per capita amount clearly present a different picture, i.e. these amounts are around half of the OECD/EU average (Table 4).

Table 4:
Environmental Taxes per capita (Unit: US$ per capita)

	1994	1995	1996	1997	1998	1999	2000
Czech Republic	124	165	169	148	158	161	142
Denmark	1149	1495	1586	1492	1675	1700	1431
Germany	633	724	668	568	569	591	544
Greece	378	450	482	452	414	373	292
Ireland	493	558	621	660	708	781	762
Poland	43	50	62	61	68	74	80
Spain	282	319	329	302	55	319	282
OECD Arithmetic average	488	573	608	572	567	591	534
EU Arithmetic average	620	736	784	730	742	773	691

Source: OECD database on environmentally related taxes (www.oecd.org).

An analysis of the current situation in OECD countries undoubtedly shows that around 90% of revenues generated by environmental levies are collected in the transport sector, raised by taxes levied on petrol and diesel, and levied on vehicles (OECD 2001, p. 55). It is unquestionable that these ratios cannot be used for any indication of the extent and effectiveness of environmental levies in the different countries.

All these indicators do not show whether the environmental policy in a specific country is "environmentally friendly" and effective. For example, an analysis of a whole range of different instruments aimed at reducing NOx emissions introduced in OECD countries shows completely different consequences in terms of generated revenues. Sweden introduced a refundable NOx charge system which was designed to return all revenues, except the administrative costs to the participating plants, in proportion to their production of useful energy. The aim of this system was to avoid distortions in competitiveness between the plants subject to the charge by creating an incentive for ongoing investments in pollution reduction and energy efficiency infrastructure. This latter point is a clear advantage of economic instruments compared to regulatory, i.e. command-and-control, instruments referred in the

economic literature to the concept of "dynamic efficiency". Other European countries, such as France and Italy, introduced straightforward NOx taxes and the revenues generated accrue to the national budget. Such a policy instrument affects the general budget figures rather more compared to the Swedish approach. A completely different approach to emissions reduction has been applied in the USA by using tradable permits for NOx. Again, this policy approach does not lead to any revenues for the national budget.

These examples of different environmental policy approaches, all addressing the same environmental issue of reducing NOx emissions, show that such indicators, based on revenues generated by environmental levies, are not good tools for discussing the environmental performance of a country. In the above case of NOx arguably the most effective instruments have the least impacts on net revenue generation. Reports published by OECD (OECD 2001) and the European Environment Agency (EEA 1996 and 2000) show that the use of environmental fiscal instruments has become quite common. Revenues from taxes on labour and on capital are of a reliable quantity, and taxes, which are to be used as their substitutes, must have the same characteristics. However, not all environmental taxes may yield revenue stability. Some environmental taxes may generate revenue stability, while for others, behaviour changes may erode the tax base, while the tax continues to raise revenues. Inevitably environmental effectiveness and revenue stability are to some extent inversely related.

Nevertheless, there is no question that some environmental taxes, in particular energy taxes, fulfil all the requirements for revenue stability necessary for an environmental fiscal reform programme. Examples of such taxes include energy taxes and taxes on motor transport. They both have a broad tax base and are characterised either by an inelastic demand, or an underlying trend of growth. Both conditions mean that these taxes can continue to raise substantial revenues over a longer time period, and contribute to environmental improvement, either by being levied at an increasing rate in the face of slowly changing behaviour (inelastic demand), or by serving only to contain growth.

Table 5:
Overview of implemented tax shifts in OECD Countries

Country and date of introduction	Tax Shift		Revenue Shifted
	Main taxes cut[4]	Taxes raised on	Magnitude
Sweden 1991	Personal Income	CO_2 and SO_2 and VAT on energy	2.4 % of total tax revenue
Sweden 2002	Increase in the basic income tax deduction by 900 SEK	Further increase in CO_2 tax, electricity tax and waste tax rates	0.17% of total tax revenue and 0.09% of GDP in 2002 (total revenue 2 billion SEK)
Belgium 1993	Labour	Energy	
Denmark 1993, 1995 and 1998	Personal Income, Employers' Social Security Contributions	Various (electricity, water, waste, cars), CO_2 and SO_2	Revenue of envir. related taxes is estimated at around 3% of GDP by 2002, or over 6% of total taxes
Spain 1995	Personal Income	Motor Fuels	
Netherlands 1996	Personal Income, Corporate Profits, Employers' Social Security Contributions	Energy and CO_2 (Regulatory Tax on Energy)	2.5 (0.6)% of total tax revenue (GDP) in 2001 (5.5 bil HFL in 2001)
Finland 1997[5]	Personal income	Energy, CO_2 and landfill	
United Kingdom 1996	Employers' National Insurance Contribution (NIC)	Landfill	0.13 % of total tax revenue (projected revenue of 500 mil GBP in 2002/3; 0.1% of total tax revenue)

4. Apart from the tax cuts countries have also earmarked a small proportion of the additional generated revenues for incentives to invest into energy-efficiency measures (for example Denmark, Netherlands, Germany) or for different other environmentally friendly measures (for example the sustainability fund in the UK which funds biodiversity projects).
5. Finland introduced a series of tax cuts in labour taxation between 1997-2001.

Country and date of introduction	Tax Shift		Revenue Shifted
	Main taxes cut[4]	Taxes raised on	Magnitude
United Kingdom 2001	Employers' National Insurance Contribution	Climate change levy	A cut of around 0.3% projected on employers' NIC (projected revenue of 800 mil GBP in 2002/3; 0.2% of total tax revenue)
United Kingdom 2002	Reduction of Employers' National Insurance Contribution	Aggregates levy – to be introduced in April 2002	A cut of around 0.1% in employers' NIC projected (projected revenue of 285 million GBP in 2002/3=0.05% of total tax revenue)
Italy 1999	Reduction of Employment Charges	CO_2	Less than 0.1 per cent of total tax revenue
France 1999	Plans to reduce taxes on labour	Generalised pollution tax (known as TGAP)[6]	
Germany 1999	Social Security Contributions paid by employers and employees Personal Income	Energy (mineral oils, natural gas and electricity); the tax rates will be increased annually during the period 1999-2003	a reduction by 1.5% of the SSC in 2002 (around 2 (0.9) per cent of total tax revenue incl. SSC (GDP) in 2001; around 11.4 bn EUR in 2001 and 56 bn EUR tax revenues during the period 1999-2003 – est.)
Norway 1999		CO_2, SO_2 and diesel oil	0.2% of total tax revenue in 1999

Source: Ekins and Speck 1999, OECD 2001, Netherlands (www.minfin.nl), UK (www.hm-treasury.gov.uk), Germany (www.bundesfinanzministerium.de), and Sweden (finans.regeringen.se).

6. The French Generalised Pollution Tax (TGAP) was established in 1999 grouping 17 environmental taxes on waste, water and air pollution together. However, the tax was subsequently ruled unconstitutional.

Two issues raised by the implementation of an EFR are regularly identified as requiring special attention: the possibility of regressive effects (disproportionate impacts on poor households), and possible impacts on competitiveness. With regard to regressivity, poor households will be disproportionately affected by an energy tax if their spending on energy is relatively high. This has arisen as a major political issue in the UK, for example, because the poor thermal characteristics of much of its low-income housing stock require its occupants to spend a higher proportion of their income than richer households on energy for warmth. However, regressive effects can always be mitigated by compensating poor people for any energy tax out of the revenues raised, or by introducing rising block tariffs or taxation thresholds for basic use of the resource.[7]

V. The Employment Effect of an Environmental Fiscal Reform

An environmental fiscal tax reform has thus come to mean a systematic shift of the tax burden away from labour and onto the use of environmental resources. As Table 5 shows, such tax shifts can be carried out through a range of different taxes. Environmental taxes include well-established instruments, such as taxes on energy, or relatively new taxes such as landfill taxes. Also a variety of different taxes on labour can be reduced, including income tax and/or social security contributions. The potential effects of these options differ in a way that any attempt to study the impact of a tax shift on employment must distinguish at least between:

- A reduction in employers' social security contributions (SSCs), or other payroll taxes (non-wage labour costs).
- A reduction in employees' income tax rates and/or an increase of a tax-free allowance.

7. For further discussion about issues surrounding regressivity see: Speck 1999, and Symons et al. 2002.

- A reduction in employers' and employee's social security contributions.

V.1. Reduction in Employers' SSC

This type of tax reduction directly increases labour demand, encouraging employers to employ more people, including the unemployed, by cutting labour costs. Output will increase across the economy, inducing a second-round increase in employment as well.

The reduction of employers' social security contributions reduces real labour costs paid by employers and this reduction has an effect on labour demand. A study by Cambridge Econometrics (CE) has shown that when employers' SSCs are reduced, real wage costs fall in the short term, leading to a long-term reduction in the relative prices of labour-intensive goods and services (CE 1998, p. 26). CE concludes that "reductions in employers' taxes reduce real labour costs after allowing for full responses of prices and wage rates; the lower labour costs lead to an increase in employment" (CE 1998, p. 27).

V.2. Reduction in Employee's Income Tax

Reducing income taxes, in contrast, increases labour supply by encouraging existing employees to work longer hours. There is no direct effect on labour demand. Unemployment is only reduced via the second-round effect of increased output, due to the longer hours worked. It would be expected, therefore, that an EFR would achieve a greater impact on unemployment, and probably on total employment, by cutting employers' SSCs and other payroll taxes rather than employees' income taxes. Tax reforms that reduce income tax are primarily motivated by a desire to reduce high marginal tax rates, or a desire to compensate households for an increase in environmental taxes, or both. Thus the Swedish tax reform in 1990-91 led to a significant reduction of the income taxes, and to a decrease of the tax wedge[8] by

8. A "tax wedge" for an income tax is the difference between what an employer pays in wages and what the employee actually gets after tax.

around 10% between 1989 and 1991 (Ministry of Finance 1997, p. 9). An evaluation study of this reform draws the conclusion that 'the decrease of the tax wedge had contributed to an increase of hours worked by around 1 percent. The reduced marginal taxes seem to have induced employed people to work more' (Ministry of Finance 1997, p. 9). This reform package was clearly aimed at compensating households for the increase in environmental taxes.

The type of recycling measure adopted within an EFR is of great importance and largely determines the actual effects of an EFR. There is widespread agreement that such a reform package should not increase the overall tax burden but should decrease taxes on so-called "goods" such as labour. The reduction of employers' SSCs can certainly be such a goal because these contributions "act essentially as a tax on employment and thereby could be seen as a harmful economic disincentive to employ people" (CE 1998, p. 47). Such a policy of reducing the employers' SSCs was recommended by the Norwegian Green Tax Commission; 'because a reduction of these [employers' SSCs] will have the most direct and immediate effect on enterprises' labour costs' (NGTC 1996, p. 139).

V.3. Summary

On the issue of employment effects of an EFR the findings of empirical analysis and models suggest, though not unanimously, that a tax shift from labour taxes to taxes on natural resources can lead to a positive employment effect apart from the clear and demonstrable environment benefits. However, the employment effect depends on the recycling mechanisms implemented through the tax reform. All studies agreed that the most significant employment effect would take place by using the environmental revenues to reduce employers' SSCs or other payroll taxes. This effect can be enhanced by targeting the reduction on the low paid.

However, it is impossible to predict the potential employment effects of environmental fiscal reform with any certainty. They will depend on the actual structure of any fiscal reform package, such as:

which taxes will be introduced or increased, how much revenue will be generated from these taxes and which recycling scheme will be adopted, i.e. which taxes will be reduced, and will vary significantly between countries. However, as already noted, the available evidence suggests that the employment benefits of a tax shift from labour to natural resources are likely to be positive and small, but not insignificant, and they will occur in the long term.

VI. The Effects of Environmental Taxes on Competitiveness

The major obstacle to further implementation of environmental fiscal reforms remains business fear about its effect on competitiveness. In this context, policy makers need to remember that national competitiveness is a fundamentally different concept to the competitiveness of firms.

A substantial literature is available on the effects of the past, and possible effects of future environmental policy, on the competitiveness of businesses and countries. Herein it is only possible to summarise the main arguments and results of this literature [for better overview see Ekins & Speck (1998 and 1999), more generally, Barker & Johnstone (1998)].

Evidence on the past impacts of environmental policy is fairly conclusive and is summarised thus by the OECD: "The trade and investment impacts which have been measured empirically are almost negligible (OECD 1996, p. 45)". More specifically, Jaffe et al. (1995, p. 157)'s review concludes that "studies attempting to measure the effect of environmental regulation on net exports, overall trade flows, and plant-location decisions have produced estimates that are either small, statistically insignificant or not robust to tests of model specification".

However, the fact remains that certain sectors could be vulnerable to an environmental tax reform, which, to some extent is both necessary, and desirable. One of the principal rationales of an environmental fiscal reform is to change the structure of the economy away from

environmentally intensive sectors towards more labour intensive activity. On the other hand, if important economic sectors go into sudden decline, there will be costs of transition, in terms of bankruptcies and unemployment, possible exchange rate adjustments and a reduction in economic activity that are likely to be painful and politically unpopular. This reinforces the case for well-formulated, cost-effective environmental policy with a long time lead.

Environmental taxes and other policy instruments should be imposed gradually and predictably, to minimise adjustment costs and ensure that they are taken into account in investment plans. Environmental policy should seek to encourage innovation and continuous improvement by being stable and focused on outcomes, rather than the means of achieving them, and by being informed by effective dialogue between government, business and environmental stakeholders.

Negative effects of environmental policy on the competitiveness of even the most affected sectors will be offset if firms in the sector respond by improving the efficiency of their use of the relevant environmental resources. Some of the revenues from environmental taxes may be used to encourage investment that will achieve this. As has been seen, the fear of the competitiveness effects of environmental taxes resulted, in most countries that have introduced environmental taxes, in giving vulnerable firms or sectors tax exemptions or concessions. Theory suggests that these reduce the economic efficiency of the environmental tax and reduce the economic advantage to be gained from clean production systems. They also slow down the process of structural change in the economy such that energy – and environment – intensive economic sectors both become less intensive and less economically important relative to less environment-intensive sectors. It is, therefore, important to note that the overall effects on business competitiveness from the tax will depend on how the tax revenues are recycled through the economy: while environmentally-intensive sectors may end up worse off, clean businesses are likely actually to benefit from it.

The possible effects on competitiveness from environmental taxes

would be considerably reduced if they could be implemented simultaneously throughout the European Union, since most of the EU Member States' trade is with other EU countries. One of the biggest obstacles to such implementation is the unanimity rule that applies to tax policy at the European level, i.e. changes in taxes have to be agreed by all Member States. There would seem to be little prospect of this rule being changed, and therefore of green taxes being introduced at the EU level, in the near future. However, a partial way forward on harmonisation is that contained in the proposed Directive "Restructuring the Community Framework for the Taxation of Energy Products" in 1997, which suggests minimum tax rates that have to be adopted by Member States. This would be in accordance with the current VAT regime in EU Member States, which stipulates a floor and a ceiling. However, there is still resistance to this proposal in some Member States and it is far from certain that even this modest measure will be implemented.

National governments may also seek to protect the international competitiveness of vulnerable sectors by making border tax adjustments (taxing imports, rebating the tax on exports). However, there is doubt as to whether such adjustments are compatible with world trade rules. Undoubtedly a more satisfactory policy approach, to remove international market effects from EFR, would be an international harmonisation of the tax measures, especially across such trading blocks as the EU.

However, the slight effect of environmental policy on competitiveness to date may not hold true for the future. Three observations are pertinent in this regard.

The first is that the past environmental policies have not resulted in a diminution of environmental concern and the new goal of sustainable development seems to be requiring more stringent policy, with more potential effects on competitiveness, than in the past.

Second, there is widespread agreement that in today's global economy "ever fiercer competition prevails (HMSO 1993, p. 1)", which, according to the US Office of Technology Assessment raises the possi-

bility that "environmental regulations could be more of a competitive disadvantage than before (OTA 1992, p. 8)".

Finally, it seems likely that environmental policy will, in the future, make more use of environmental taxes than it did in the past. Such taxes have distinctive implications for competitiveness.

VII. Conclusion

A move towards greater and more consistent use of environmental taxes as a complement, or a substitute to other policy instruments, such as regulation, can be found in environmental policies in OECD countries.

The evidence suggests so far that, with careful design, EFR can increase the efficiency of the macro-economy, and increase employment, without unacceptable sectoral effects. While the main rationale for introducing environmental taxes remains environmental improvement (and in many situations this policy instrument will be more efficient than the alternatives), the fact that with EFR small increases in employment and macroeconomic efficiency may also be achieved adds to the attractiveness of this policy approach. However, it should be kept in mind that the principal rationale of introducing environmental taxes is the cost-effective environmental improvement.

What is done with the revenues generated by environmental taxes is a separate policy decision and has to be decided case-by-case and country-by-country. They can be, and have been, used to compensate groups relatively disadvantaged by the tax increase, to give further incentives for environmental improvement or, through EFR, to reduce other taxes.

The fact that the latter option seems likely to ensure that the environmental benefit is at least achieved at zero cost to the economy as a whole, and even with modest benefits in terms to employment, all adds to the attractiveness of EFR as a policy option. It also explains why it has been implemented in a number of European countries in the 1990s, and why this implementation is likely to increase in the years to 2010.

However, environmental policy makers are facing a real challenge in combining aspects of economic efficiency and political and social acceptability versus environmental effectiveness of economic instruments; the need for a balanced approach remains the key.

Environmental fiscal reform is a powerful tool for protecting the environment and enhancing economic efficiency.
BUT, environmental fiscal reform is not a "panacea":

- Environmental fiscal reform is a component of a wider policy package to protect the environment, i.e. in combination with other environmental policy instruments such as regulations, standards, voluntary agreements, tradable permits, etc.
- Environmental fiscal reform can contribute to the stabilisation of the social security system.
- Environmental fiscal reform can contribute to solve the unemployment problem.

Environmental fiscal reform cannot in itself solve the current problems of social security systems and unemployment – this is a problem that requires a broader policy reform with regard to the labour market, as well as pension reform.

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Response
by Professor GEORGIOS ALOGOSKOUFIS
Member of Parliament

Yes, I will be very brief because the presentation has been very good and exhaustive. The presentation started with a definition of environmental taxes and continued with a survey of the current situation with regard to environmental fiscal reform in Europe, including a definition of what constitutes an environmental fiscal reform. Then it proceeded with an analysis of the employment effect, the facts on competitiveness and it ended with the conclusions, on which I shall make some comments.

Let me just start by saying that the definition of environmental fiscal reform that underlies this presentation is a relatively narrow one, in the sense that it has one major restriction which is revenue neutrality. Essentially, we are looking at a reform that says we are going to raise taxes mainly on pollution and things that adversely affect the environment and we are going to lower taxes on employment; all kinds of labour taxes.

In my opinion this is a narrow definition. Of course, an environmental fiscal reform does not have to be that narrow. What I mean is that in substance this is just an environmental tax reform, not an environmental fiscal reform in general. For example, if one focused on the environment only, an environmental fiscal reform could involve raising environmental taxes, as in the first leg, and using the revenue on expenditures that improve the environment. Which is even better for the environment, as you know.

Now, what is the advantage of this revenue neutrality? Revenue

neutrality makes EFR a bit more acceptable politically. Raising some taxes and lowering others, is a reform that probably the electorate will be more prone to accept than a reform that increases both taxation and Government expenditure. So, revenue neutrality is also a politically attractive notion and so, having made my remarks, I, too, shall concentrate on this narrower definition of environmental fiscal reform. But, we have to keep in mind that we are looking at a relatively narrow definition of environmental fiscal reform, although, politically, it is probably the most realistic definition and that explains why the interest has been on this type of reform.

Now, of course, putting the word "environmental" and not "labour" in front of this proposed tax reform could be a misnomer in a sense because this reform does two things. It reduces taxes that are bad because taxes on labour, which are the main taxes in our tax systems, are indeed very bad taxes in the sense that they reduce the incentive to work. They reduce the incentive of firms to employ more people. So the proposals would reduce a bad tax and increase a good tax, in the sense that it protects the environment.

So, from an economic point of view, this is a wonderful reform. It makes the tax system a lot better and there is no, I mean, *no*, analyst or economist who would ever find anything to say against this type of reform.

The main issues that could be raised are quantitative issues. That is, how much does the destruction of the environment or rather activities that contribute to the destruction of the environment respond to prices? How elastic is the response of firms to an increase in the costs of activities that pollute the environment? I will give you one example.

How elastic is the use of automobiles to the price of petrol? Most environmental taxes are taxes on petrol. Are they not? Now, is it not true that the consumption of petrol is relatively inelastic? I would say yes. But if the consumption of petrol is relatively inelastic, then the effect on the environment will be a relatively small effect. So, although it would be probably in the right direction, it will be quantitively so small, that it will not save the environment.

So, as I said, to make it again, very, very clear. The direction of the effects is positive. You protect the environment, you increase employment but there is a question mark – and this is a fundamental question of course – how significant are these effects? If the elasticity of demand or supply for the environment or labour is very small then we should not expect much from an environmental fiscal reform.

I raise this question because all the empirical studies that I have in mind suggest, *first of all*, that use of petrol and other things that affect the environment negatively is relatively inelastic. Which suggests that we shall not get too much from raising prices, from affecting the cost of those activities. And, *secondly*, that the demand and supply of labour is also relatively inelastic with respect to the wage level, in which case the employment effects will also be relatively small.

So, we are talking about something that has very small effects. And we must bear in mind that the magnitudes that have been applied in practice are very small increments of total tax revenues. I think 2,5 percent was the biggest switch from labour taxes to environmental taxes. We are talking about small changes that have had small effects, almost nothing. So, in theory, it is great, but there are question marks about the practical impact of an environmental fiscal reform.

This brings me immediately, before the conclusions, to two other points of the paper. I shall start with the employment effect. I accept that for realistic environmental tax reforms, the employment effect will be small. They will be there but they will be very small and I expect and agree that the effects on competitiveness will also be small because if something does not affect labour costs or costs in general too much it will have a small effect on competitiveness. So, in the end, the question remains whether there is an alternative.

In order not to take up all the time, my conclusions on Environmental Fiscal Reform – and I agree to a large extent with the conclusions that were put forward by Doctor Speck – are that it is a good thing but we should not expect too much from it. Thank you very much.

Summary of Discussion

YANNIS PALEOCRASSAS: Elasticity of car fuel consumption in the short run is quite low, but in the longer term it triggers the development of new technologies. The doubling of fuel prices after the two energy crises of the 1970's produced a relatively small fall in fuel consumption that did not exceed 15% in any country. However, the same event led the Japanese and later the European car industry to develop the lean motor and in general the lean technologies, which produced motorcars with half the fuel consumption of their pre-1973 counterparts. In general elasticities, including labour elasticity increase with time. So the effect of EFR should be judged over a period of at least 5 years.

COSTA CARRAS: I fully agree with YANNIS PALEOCRASSAS. I can give you further comprehensive evidence from my experience as an employer, both in the UK and Greece, that the level of social security contributions produces great differences in the employment propensity of enterprises and the economy in general, over a longer-term period. If we judge EFR on the basis of one year and 1 percent changes in tax rates then Prof. Alogoskoufis is right, but if we judge it – as we should – over ten years, then EFR has a tremendous impact on both the consumption of natural resources and employment. I should stress the importance of advance markers, whether in the form of environmental regulation or tax measures. A pre-announced gradual tax escalation is much more effective than a sudden, higher tax hike.

JOHN HONTELEZ: I agree with both previous speakers but I must add that sometimes the market may not work well for reasons other than

costs and prices. For example, quite often the reason for the overuse of the private car, which everybody recognises as catastrophic from an environmental point of view, is the lack of good alternative public transport. Another example is the goods transport sector, where the prevailing custom of long-term contracts with road haulers renders freights absolutely inelastic at least for a year.

SECOND SESSION:
SUSTAINABILITY AND THE FISCAL SYSTEM

Second Paper

Sustainable Development: A Contradiction in Terms or an Economic Necessity?

by Professor ERNST VON WEIZSÄCKER
Chairman of the Environment Committee of the Bundestag

Sustainable development, in the long run, is an economic necessity, by definition. It essentially means that we should not destroy natural wealth and that we should have sustainable development over the generations. This is the objective of sustainability.

Now let me at the outset distinguish two different tasks of environmental policy:

- One is pollution control, which is predominantly a local and a national activity. The first twenty years of environmental policy in advanced industrial countries were almost exclusively devoted to pollution control and to the setting of relevant standards. Since that time, most environmental professionals both in the public and private sectors deal with pollution control.
- The other task of environmental policy relates to global and long-term challenges, such as climate change, biodiversity losses and unsustainable lifestyles. This is rather a new field of concern and is still in its conceptual phase regarding policy-making.

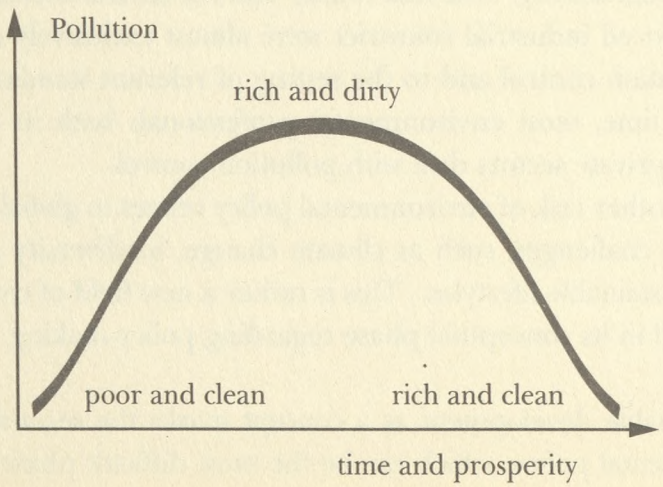
Sustainable development as a concept marks the second phase of environmental policy, which can be the most difficult phase. The first

phase, by comparison, was easy because it tacitly had a wonderful harmonious feature, which nobody expressed better than Indira Gandhi, when she said in the first UN Environment Conference in Stockholm 30 years ago: "poverty is the biggest polluter". Meaning in other words you need to be rich to afford pollution control. Which was correct at the time, particularly, if you referred to end-of-the pipe pollution control.

Let us imagine there is a factory here, producing goods. Then, it produces emissions. What you do is build another factory on top of it, not producing anything but preventing the pollution from going into the environment. Material costs with no benefits except environmental benefits. So, it is quite clear, by definition, that for pollution control you have to be prosperous. And you could also see this, in the historical development of industrialisation, which sort of had a harmonious finish in the last phase, the phase of pollution control.

If you plot pollution upwards and prosperity and time from left to right and then you see the inverted u curve. Countries start poor and clean and then they become rich and dirty; and then they are so rich that they can afford pollution control and end up rich and clean.

Graph 1:
Polution and Prosperity



This is the harmony mentioned before and of course everybody loved it. It went down very well with the developing countries because for them it was the perfect excuse for doing nothing with pollution control at the time. You know some of that in Greece. It also went down well with the rich countries. Because it gave the message to industry "*well, yes, of course you are absolutely right, you have to be very, very profitable*". This is phase one. I have caricatured matters, I am sure, but it shows why I call this the easy phase. But then the trouble starts when you start to ask. What does rich and clean mean in environmental terms?

Now comes the bad surprise: rich means that you have more land use – this you can also see in Athens – you have more carbon dioxide emissions, you eat more fish and begin depleting the fish stocks world wide, you have ecological rucksacks, according to my friend Friedrich Schmidt-Bleek.[1] He says a typical German would have an ecological rucksack weighing some 70 tons a year. That is all the material turnovers needed to produce our annual wealth. Even more dramatic are the calculations done by William Rees and Martin Wackernagel of the ecological footprint,[2] which calculates the space needed continuously to produce our wealth. Such as the cotton for our underwear, the maize for our cattle feed, for the meat we eat; it is the space for energy, the equivalent in terms of renewable source of energy, oil and nuclear; it is the space for living, for streets, for schools, for convention buildings, for all kinds of things. You need a lot of space. You end up in the US with an ecological footprint per capita of 8 hectares and in Germany with roughly 4 hectares. What does it mean for Germany? We have roughly 80 million people; if you multiply those by 4 hectares you have 3,2 million square kms. Unfortunately Germany has only 370.000 square kms. We are over-populated with regard to ecological

1. For more on this concept see: F. Schmidt-Bleek (with W. Bierter); *Das MIPS-Konzept. Weniger Naturverbrauch-mehr Lebensqualität durch Faktor 10*, München 1998.

2. *Our Ecological Footprint: Reducing Human Impact on the Earth* by W. Wackernagel and W. Rees, New Society Publishers, Canada, 1995

footprints by a factor of 9. Similar things can be said about Japan, essentially about all EU countries. Even the USA and Canada are over-populated, while India is not. The Indian ecological footprint is roughly 0,8 hectares. You multiply this by 1 billion Indians and you more or less have the size of India.

So we seem to be entering a phase of environmental policies where prosperity is the biggest polluter and not poverty. This, of course is embarassing and therefore nobody wants to speak about it. The easiest way out, politically, has been the so-called sustainable development triangle, of the environment, the economy and social welfare. The political idea behind this triangle is perhaps to re-establish the coalition between labour and capital. Capital representing the economic corner, labour representing the social corner and those two will always beat the environmental corner.

But then, by definition, this alliance is not sustainable. Because if one day 6 billion people, let alone 8 or 10 billion people attain footprints of the German size, let alone the American size, we would need 2 planets earth or 4 planets earth respectively. But we have got only one. So we will be obliged to take that challenge seriously.

The question is of course how can we approach that? The classical instruments of environmental policy, essentially the command and control instruments will not do the trick. It will be sort of silly to say that your underwear have to be manufactured in a way that less than 1 hectare is used for it. That does not make sense. The land required is not in your country anyway and it cannot be measured and monitored properly. Essentially the same holds for greenhouse gases.

Of course you can have building codes like in Sweden, saying that no more than 5 litres of heating oil per square metre per year is permitted. But what if you look into some of the biggest problems of these days, namely of pollution from transport, from airconditioning from added consumption.

Let us face it, command and control is inadequate in addressing the second phase of environmental policy. We just have to think anew, to begin from scratch. Now how can you address it really? At the Wuppertal

Institute for Climate, Environment and Energy we have come up with ideas which culminated in a book we wrote, which was called Factor 4, with the sub-title *Doubling Wealth Halving Resource Use*.[3] It is a book featuring 50 examples of how you can do at least four times better in the use of energy, water, space, etc. in manufacturing goods or providing services.

It begins with my co-author's favourite – my co-author is Amory Lovins from the US – who has worked on the design of an automobile using not more than 1,5 litre of petrol per hundred kms. Or we look at his Institute and home the Rocky Mountain Institute, high up in the American Rocky Mountains mostly in ice and snow, which is not using any external energy, except for some biomass from his garden, because it is optimised with regard to energy use. This is modern building technology and he pioneered that. Meanwhile, it has become standard architecture, at least in Germany, for new buildings where at least 90% of the heating requirements can be done away with.

You can go through the entire spectrum of goods and services and whenever you care to look in depth into the manufacturing process and at each step into the alternatives that are available, you end up finding a factor of four, in some cases even a factor of 10 or a factor of 1000. For example, if you replace the mailing of a manuscript from here to Chicago via airmail by e-mail, you have a factor of 1000 in saving resources.

Factor Four creates a new vision for yet another decoupling, as in the first phase, but this time it is the decoupling of prosperity from resource use. This would allow us to have prosperity and ecology at the same time. However, this new decoupling process cannot be completed in 10 or even 20 years. It requires a sort of industrial revolution, taking fifty years or a hundred. It means opening a new era of technological progress.

The first era of technological progress the industrial revolution was

3. *Factor Four: Doubling Wealth, Halving Resource Use*, by E. U. von Weizsäcker, A. B and L. H. Lovins, Earthscan London 1997.

essentially all about increasing labour productivity; which was a good thing. It is the basis for our prosperity. Imagine the poverty, which was around the Acropolis 2000 years or 200 years ago, let alone that of the Germanic tribes in what is now Germany. People were really fairly poor.

And now we have shown I believe at the Wuppertal Institute, using engineering and scientific knowledge that there is no physical or technological reason, why we cannot increase resource productivity also by a factor of 20, roughly. But for the next generation a factor of 4 is what we can reasonably do, given that we have all these 50 examples in all walks of life and production. Now the question is how do we achieve it?

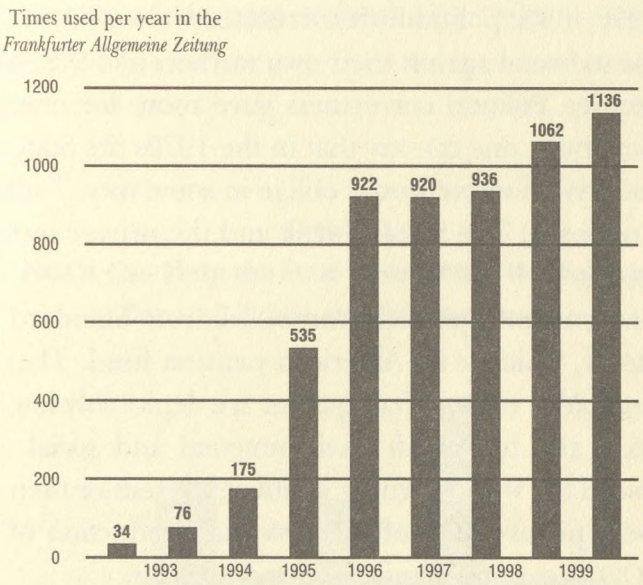
And here finally I come to the environmental fiscal reform. Essentially what we have to do is to emulate a process, which has been initiated in the industrialised countries by the labour movement, namely that of increasing the unit cost of a strategically important factor, which in the industrial revolution was labour. The labour movement, together with more or less generous employers, was able to steadily increase wages roughly in line with technological progress in productivity gains.

Concerning the price of the environment, the problem is we have no mass movement of people demanding higher prices. We therefore have to engineer the increase of prices politically. Under the influence of gradually increasing resource prices, rationalisation in the industrial domain will lead to replacing mega joules and tons of water and tons of virgin ores, or space, by more elegant technologies. This is essentially the core of the story. We just have to understand the historical situation that we are in and find the best instrument for achieving this new revolution. But then, this political engineering of a long-term environmental tax reform, of fiscal reform, or other mechanisms leading to steadily increasing resource prices, needs quite a mouthful of political skills.

Actually it has been one of the main reasons for me, finally at a very old age, to enter politics. Because I realised this is not something for a think tank to do. You have to do it inside politics.

Let me end up with a little reflection on the political situation that we are facing after 1990, which we have to understand if we are to be successful in this political engineering. During the last two and a half years in the German Parliament I have been Chairman of the Select Committee on Economic Globalisation. I believe, without understanding globalisation, we shall not be able to get environmental fiscal reform to the forefront of economic policies. Because globalisation dominates the international economic scene. Globalisation has implied a weakening of the public sector.

Graph 2:
The Rise in the Use of the Word
Globalisation in Germany



The truth is that the end of the cold war was also the end of the strong negotiating powers of the State against the private sector. During the cold war, it was essential for capitalist countries to win over democratic majorities for the Western model, against that "bloody communist" Eastern model. This was the reason for the victory of

inclusive capitalism over the old-fashioned neo-liberal capitalism. In Germany we had Luwig Erhardt, who was once Chancellor, the father of inclusive capitalism, which is also called the social market economy. If you re-read his speeches from the 1950s you can smell the existence 300 kms to the east of the communist antithesis. Inclusive capitalism was meant to beat communism in its own turf of social equity.

But with the iron curtain disappearing, the bargaining position also disappeared. Now you have got the dominance of the shareholder value concept and extremely brutal competition worldwide. I believe it is a fair assumption to say that the Fiat Company in Turin did an excellent job in technological improvements over the last 10 years and yet it is essentially bankrupt today. Because Volvo and Toyota and GM did a trifle better in cost cutting. Globalisation thus reduces the scope for social politics, or for that matter environmental politics.

Before 1990, it was politically incorrect for Volvo, Toyota, Mercedes and GM to be so brutal against their own workers and the environment and social equity. Political correctness gave room for manoeuvre for the State. Generally, one can say that in the 1970s the State was dominant and the private sector would oblige in some way. Today the situation is the opposite. The State is weak and the private sector tells the State what to do.

So the Governments get their homework from Standard and Poor, or from Fidelity, which is an American pension fund. They complain that the shareholder values of companies are deplorably low because of too high taxes and too much environmental and social regulation. They go around the world inviting countries to reduce their corporate taxes. I have a picture here of the systematic reduction of corporate taxation in OECD countries and the trend goes on.

This is the new situation in which it is virtually impossible to have any environmental taxation that can hurt the competitiveness of the local business community. The only way of applying environmental taxes is taxing the end consumer. That however is extremely unpopular. So you run into a dilemma.

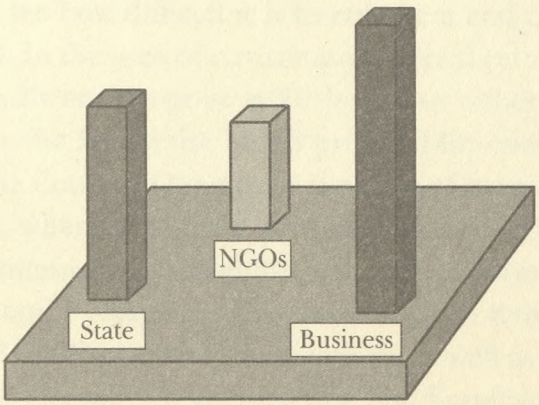
What I am suggesting in the end is to re-balance public and private

actors. In my model, the public sector remains as it was. The private sector also remains the same, except for its increasing power. But now comes a third actor, civil society, which has to line up with the State and partly also with the private sector, to work towards public goods, such as a healthy environment, basic education, human rights etc. This could at least help re-balance the power structure. It would also facilitate the creation of global governance structures for a better world, for public goods etc. You cannot do this unless you have the pressure from the environmental groups.

We have a very long road ahead of us; we need the support of lots of people in the State and in the NGO camp and in the business sector. With that I believe we can manage to redirect technological progress towards quadrupling, eventually decupling the resource productivity. And we have to persuade increasing segments of our societies of the beneficial effects of a long-term ecological tax reform.

Thank you

Graph 3:
NGOs Can Help the State Re-establish the Balance Between Public and Private Goods



Summary of Discussion

YANNIS PALEOCRASSAS: I would like to express to the Meeting the regret of Mihalis Papayannakis that he cannot be here and respond to this thrilling paper, due to the fact that he is down with flu and high fever. I can only try to convey to you what I think would be his main message, which – if I know him well – would be his profound frustration with the way European politics are run, especially with regard to the environment. In a game such as this its difficult to apportion the blame but I think it is only fair to assume that it should be laid less upon the Parliament and more upon the Commission and especially the Council, which is de facto the legislative body.

The EU, although assuming a protagonistic role on the international environmental scene, has relatively little to display at home in concrete achievements in the same area. Its policies belong mostly to the first phase in the terminology of Prof. Ernst von Weizsäcker, i.e. that of pollution control. As however European legislation and regulation proliferate, we see how difficult it is to enforce it and coordinate it at European level. In the area of environmental fiscal reform, in particular, there is hardly any progress at EU level, but rather backstepping, as illustrated by the fate of the Monti proposal for energy taxation at the hands of the Council. One misses the days of strong leadership of Jacques Delors, when despite the provision of unanimity for Council decisions the Commission pushed through such important measures as the Packaging and Packaging Waste Directive, the Existing Chemical Substances and the Eco-labeling Regulations, as well as the important White Paper for Growth, Competitiveness and Employment.

In response to the speaker's appeal to my political experience,

I would give you one example going back to 1978. At that time, I was Minister in the government having the responsibility for both regional development and the environment. Faced with a dilemma I had no hesitation whatsoever, in cancelling the construction of a highway through a bird protection area in Evros, in northeastern Greece. For that I was bitterly attacked by the local population, including fellow members of Parliament. Five years later, while visiting the area, exactly the same people hailed me as a hero for bringing them the prosperity of environmental tourism that made the Dadia bird protection area known all over, not just Greece but Europe. This example illustrates the cardinal role of civil society in defeating or winning our battles for the environment and brings me to my first question which is: How would you describe in more operational detail the ways in which civil society may be mobilised towards the achievement of environmental goals.

JOHN PAVLIDIS: As a representative of the Communist party, being proud and grateful for being part of this Meeting, takes strong exception to the expression "*bloody communist regime*" used by the speaker. **Prof. Von Weizsäcker** quickly explains that this was a quotation of what representatives of inclusive capitalism called it at the time.

COSTA CARRAS: I should like to express my reservations about the measurement of environmental pressure on the planet through the footprint concept, which is based on the notion of the space taken up for any activity. With reference to India in particular, which I have travelled through extensively I would like to say that my visual impression contradicts the description of India as much less over-populated than the US. It looks exactly the opposite. How can you explain this?

ERNST VON WEIZSÄCKER: My explanation is that this is a quotation out of the book I mentioned in my paper and that the underlying principle of such calculations is that the amount of space, taken up in India for the production of a good, which is then exported, is debited not to India but to the importing country. To illustrate it by a better example

I would refer to Brazil, from which Europe imports a lot of orange juice or coffee, but then goes on to blame Brazilians for cutting down their tropical forests, to clear the ground for the production of such products.

MICHAEL SKOULLOS: I share the reservations of Costa Carras about the practical understanding of the footprint concept and I would argue further that it may lead *ad absurdum* to the conclusion that we all have to be poor to protect the environment. In my own writings I avoid blaming either poverty or prosperity for environmental degradation and I argue instead that it is *the way in which we invest our wealth* that matters. A car is a bad investment environmentally, but a work of art is not. The footprint idea often leads to some caricaturistic situations.

I would now refer to your thesis that civil society should be a balancing factor, siding with governments to control business. This is in direct contrast with the current practice of NGOs, which still attack the State in order to get at business. Apparently this has to be reversed. I would like to hear more of your views on this.

JOHN HONTELEZ: I would like to say that I disagree with the statement of Yannis Paleocrassas that the European Parliament is the most innocent of the three European partners and that only the Council and the Commission are to be blamed. The European Parliament, after the Treaty of Amsterdam, has obtained quite a lot of power, especially in the environmental field, but the more power it gets the more cautious it becomes particularly under the lobbying pressure of both industry and governments.

I should further point out that in connection with environmental policies of the first type, i.e. command and control, the Environment Committee of the European Parliament is a natural ally. But when it comes to economic and market instruments, or to the integration of the environment in other policies, which are in the competence of other Committees, their first concern is an efficient Single Market. The problem is also institutional and the Parliament shows no sign of deal-

ing with it. Instead they call for more and more dialogue on matters that are already exhausted, to disguise the issue, where all that matters is strong political leadership as in the days of Delors.

Finally I would interpret the current shift towards right wing parties in Europe, not as a desire of the public for a smaller state, but as a consequence of the socialist parties failure to deliver essential public services, such as health or education, for which the electorate turns now to the right.

NIKOS GEORGIADIS: I would like to ask the speaker what he thinks of the creation of a sort of third pillar to the Bretton Woods Agreement (which established the IMF), in other words of an international regulatory body controlling the pricing of natural resources as a solution to the current lack of State powers at the international level.

ALEXANDRA MEXA: First of all I would like to request professor von Weizsäcker to elaborate more on his proposal for a new balance of power among the States, the private sector and civil society. My second question refers to the vision of decoupling prosperity from resource use and whether the Wuppertal Institute has elaborated on such a vision.

COSTA CARRAS: My question is: would you agree with Professor Skoullos that civil society should no longer take up States. In case the anwer is "yes", my opinion is that indeed civil society should continue taking up the States, if only for the reason of not diligently enforcing the frameworks they create through their own legislation and regulation, including the one at EU level.

HARIS CALLIGA: With regard to civil society we have a good historical example, from the days of the Roman empire of a balance between a strong central government and civil society in the form of cities, but with the underlying foundation of efficient infrastructure. The combination produced wealth and prosperity with art as a focal point.

ARISTIDIS ROMANOS: I too find the paper thrilling but also alarming and I would ask the speaker to comment on the importance of ideals and ideology in sustainable behaviour, especially with reference to the example of Amory Lovins, who apparently restricts consciously his material needs on the basis of a certain ideology. Does this behaviour promote sustainability or does it lead to a clash with economic powers?

ANSWERS BY PROFESSOR ERNST VON WEIZSÄCKER

The situation is indeed alarming. My use of caricature language is meant to convey this sense of alarm. The nice, old, harmonious, universal pollution control is no longer the issue. The issue is how to face the inevitable conflict between the ultimate agreed goal of sustainable development and the aspirations of people around the world, including the rich countries, of getting more prosperous.

Of course you can achieve a better distribution of wealth and resources; you can deplore the widening gap between rich and poor worldwide and you can also attribute it to globalisation, but the classical pitch of politics about distribution and redistribution does not solve the problem of sustainability. A new vision is needed for technology and politics.

In terms of *technology* the Wuppertal institute has created a vision of improving resource use efficiency by a factor of 4 (within the next generation) or factor 10 in the longer term. In terms *of politics* I should stress the parallel between the 200 year-old story of improving labour productivity with the new agenda of improving resource productivity. Labour is no longer the scarce factor, but resources are. This has to be in the limelight of politics, but politicians seem to be extremely conventional and fall back to the familiar old redistribution games.

Having established the vision of decoupling prosperity, which of course I support, from resource overuse, which I want to avoid, we arrive at the question of politics. Civil society originated in flourishing nation-states and it was critical of existing power structure. In such a context the natural thing for an NGO was to attack the State; because the State represented power. Through it they attacked industry but the

remedy they expected from the State, by environmental legislation, which was the right thing to do in the times of the nation-State.

Now comes the big surprise. The nation-State does not deliver anymore. And there are essentially two ways of responding to the situation:

One is the reactionary way of the extreme right movements who keep dreaming of the nation-State. But this does not address the challenge of globalisation: it does not solve any problem. So I see with a certain alarm the Le Pen type of movement. They try to fall back on a cosy sort of nation-island, which is not realistic. The nation-State has been made to look ridiculous by the global corporation, which emigrates to wherever it finds the lowest tax. The headquarters may still be in Amsterdam but the Government of the Netherlands has no power whatsoever, over the subsidiaries in Colombia or Thailand or elsewhere in the world, where production takes place and profits are generated.

The second says that we need State presence in two mutually supportive roles. Regional or international governance is necessary, on one hand to control the global corporation and, on the other to come to some international agreement on how to face environmental problems. Because, if a nation-State – say Greece – enacts very strict environmental legislation and others do not, Greek businesses under the pressure of global competition will move their production elsewhere, say to Tunisia. If Tunisia does not come on board the battle is lost. It is not that the governments do not want it any longer, but they have no muscles.

The solution is to think and act globally. The problem is that there is no Global Parliament, no world rules. The solution is not easy. I have my own doubts as to the wisdom of a global Government. You could not even emigrate anywhere. It is not easy to work it out. So it is better to forget this dream and concentrate instead on a rules-based international community, which has been the buzzword at Johannesburg.

Naturally, it is in the interests of the business community to avoid international rules and to do it all through stakeholders' dialogues; but at the same time the scepticism about such dialogues is absolutely justified. There are things that have to be done via rules and not via voluntary agreements.

The USA is absolutely clear that it is against international rules and it attacks the UN whenever it tries to establish such rules; because they want to dominate. American business with the backing of their government want to dominate the world. Setting rules on an international scale is very important. But this would be a lost battle right from the beginning without the support of civil society. This is where their participation is invaluable, not for stakeholders talks but for setting the resonance board for a rules-setting machinery. And it is important for civil society to learn not to attack the nation-State. If this was right 20 years ago, it is not now.

This does not mean that they should not attack the State when it does something wrong, but it is wrong to attack the State for not delivering. The State can no longer deliver. It has been actively decapacitated from delivering, perhaps not in all but in most regards. Civil society has to learn to line up with the nation-State in order to encourage it to set up international rules. This is the name of the game and this is why I put it in the context of globalisation.

THIRD SESSION:
AN ENVIRONMENTAL FISCAL REFORM

Third Paper

Physical Planning as a Tool of Sustainable Development

by ARISTIDIS ROMANOS
Architect-planner

This paper is in three parts:

The first describes briefly the background to this meeting. The *second* highlights one important conclusion of the work so far and attempts to show its validity when examined in the framework of how the planning authorities confront the problem of urban development in Athens. The third attempts to relate the sustainable urban development model to the question of social values taking the notion of mobility as an example.

1. The Background

Ever since December 1993, when the White Paper on Growth, Competitiveness and Employment was submitted to the Brussels Summit, its Chapter 10 titled *Towards a New Development Model* – whose author as we all know is the coordinator of this Meeting – has been a source of inspiration and a springboard of ideas to those focusing their work on the issue of incorporating environmental costs, which are arbitrarily considered "externalities", into the pricing system or of integrating the environmental dimension in the market mechanism.

Our host, Elliniki Etairia, has quite independently initiated an action programme on the subject in the year 2001 and, after a short

time, joined forces with the European Environment Bureau, which later on in the same year embarked on a similar course of action. Elliniki Etairia investigated both the main issue of Environmental Fiscal Reform and its co-relation with the radical improvement of our urban environment, Its working group produced 5 working papers on sustainability in different sectors of development among which the following two are of interest and were used as sources for this paper: namely, "Fiscal Reform and Sustainability" and "Regional Planning, Building and Sustainability" (February 2002).

Among the background material and sources I used are:

a) An unpublished study by Yannis Paleocrassas titled "The Environment and the Market" which, starting from the apparent discrepancy between growth and the environment, confronts the problem of the environment-related "externalities" and the overtaxing of labour and human effort as a systemic failure, penalizing unemployment and encouraging the abuse of the environment. The study analyses various categories of environmental costs and comes up with a new physical planning model, which integrates the environmental parameter, and

b) A paper by Andreas Symeon, Architect-planner, former President of Elliniki Etairia, presented as an introduction to the workshop on "Urban Environment and Sustainable Development", held in Brussels in 1993. This paper sets out in a concise way the methodology by which we can determine in what ways the new economic development model can have a maximum beneficial effect on the urban development.

2. Some Basic Findings

From the work that has been carried out so far, two conclusions stand out:

First Conclusion

There are some obvious inter-relationships between certain characteristics of the new development model and specific identifiable aspects of the urban environment.

Example i

Diminishing importance of scale economies and the shift from goods manufacture to services could lead to a new structure of urban development from the viewpoint of uses at the regional and metropolitan levels, as most business installations are location-free from sources of raw materials and conventional transport terminals.

Example ii

Production based on clean technologies (after internalizing external production costs), tele-working and tele-servicing can lead to fewer trips within the city through mixing housing with secondary and service sector uses.

Example iii

Wiser use of resources and energy for production, transport, services and domestic uses (as a result of internalizing the full costs of the use of natural resources and of damages to the natural environment) could lead to cleaner air, less traffic congestion, less noise pollution through more sustainable systems of waste management, traffic and public services in general.

Second Conclusion

Urban phenomena, urban processes and urban actors are functionally inter-dependent in a most complex way, of which there is so far incomplete understanding, among physical planners and policy makers, and total lack of concern among economic policy makers. I would go as far as to say that the exercise of overall urban development planning, as implemented by the administration for the Metropolitan Area of Athens, *judged from the viewpoint of sustainability*, is off the track.

I shall try to explain this point of view.

The basic concept of the physical planning authority on urban development in Athens has a dual aim. On one hand to initiate and strengthen programmes of rehabilitation and enhancement of central city areas and on the other to restrict urban development in the peripheral areas and the Attica countryside, under constant pressure for development.

This concept reflects the common sustainable planning maxim that, for countries in the European Union, what constitutes the urban problem is no more urbanizing new areas, but making the existing city liveable again, by the re-use of the neglected buildings, by the renewal of the degraded areas, by improving the efficiency and the sustainability of its services and infrastructure networks, by resolving the social problems caused by unemployment, urban poverty and minority groups and the urban problems of "pockets" or ghettoes associated with these, by making the benefits of new technologies and of the information society accessible to all citizens.

No one could reasonably disagree with the validity of this concept in principle. But let us see how this concept is implemented in practice in the Athens region.

a) *City Centre:* A significant amount of resources is being channelled in renewal and rehabilitation programmes in the historic centre of the city, run by the Ministry of the Environment, Physical Planning and Public Works, by the Ministry of Culture, by the Unification of Archaeological Sites of Athens SA, by the Municipality of Athens, and other agencies.

And yet the character of these programmes remains one-dimensional and the concern of the agencies managing them seems to go only as far as the physical design of public space per se. No regard for establishing efficient ways of maintaining and managing the newly uplifted, high aesthetic quality and costly public spaces; no regard for protecting them from becoming parking spaces or noisy entertainment areas; little or no regard for the design and imple-

mentation of a traffic and parking management scheme that would cater primarily for residents and would resolve through-traffic pressures;

(I open a parenthesis to discuss briefly the work of pedestrianisation of an important through-traffic route, Dionyssiou Areopagitou and Apostolou Pavlou, between the hills of the Acropolis and Pnyx, realised by the Unification of Archaeological Sites of Athens SA. This project is of a quite high standard from the viewpoint of aesthetics, construction and general environmental quality. Judged from a functional point of view, however, I would describe it as half-baked; on the one hand the project has secured priority parking for all residents, on the other no real alternative route has been provided to avoid the infiltration of through-traffic into the residential zone);

There is little or no regard for the design and implementation of a plan to manage tourist crowds visiting the important monuments of the city, a plan that would accommodate in a sustainable way the access and parking of tourist coaches; little or no regard for the implementation of a land-use plan to protect neighbouring residential areas, while safeguarding at the same time normal conditions of function for commercial uses; no regard for a system of incentives and disincentives to avoid gentrification and to protect small artisanat establishments from becoming night clubs.

Enhancing the architectural character and improving the quality of public space in the historical centre is one thing (and a *worthwhile* thing). It is another thing to make sure that in doing so, we are not diminishing the functional efficiency and the everyday amenities and services that residents demand to lead a normal life. If we wish living in the central areas to be a result of free choice by households wishing to enjoy the diversity of the city centre and not an obligatory refuge of immigrant or low-income people alone, we have to make sure that central areas retain or reclaim their "normal" living conditions. And, incidentally, this includes – unfortunately, but so it is – catering for the cars of the

residents; they also must have access to their home and a priority of parking space over visitors and other users of the city centre.

b) *The Periphery:* Going to the other end of the picture, to the vast peripheral areas of countryside, into which the city gradually expands, we find that the natural environment around the built-up area is developing under the same market conditions as always. It is difficult to discern a rational concept that explains this state of affairs. Much worse, it is impossible to discern a concept of sustainability. All we hear is the perennial motto "*no further expansion of the city is required*". Were the authorities in a position to control urban development and prohibit it from swallowing the countryside, I would go along and support this as a rational decision. But are they able to control it? Stipulating minima plot sizes as a prerequisite for building development and then cancelling them with a long list of exceptions does not advance any land saving urban policy. Urban development in the form of urban sprawl into the countryside of Attica goes on unhindered, whether authorised or unauthorised.

This is particularly true in Messogheia, east of Athens and Mount Hymettus. This region deserves our attention and concern, because it is under enormous pressure and it seems to me that little is being done to guarantee that this pressure is channelled towards a sustainable form of development. What has to be emphasised is that this area is not simply an extension of the basin of Athens. Due to its mild microclimate, its natural characteristics, its coastal zone and the limited points of access from the west (thanks to the sizeable volume of Mount Hymettus), Messogheia has retained a low profile urban development with land uses associated with vacation, entertainment, agriculture, non-noxious industry. In spite of the location there of the Eleftherios Venizelos Airport and the business and commercial development accompanying it, in spite of massive land transfers foreshadowing large-scale development, Messogheia is still a low density and

> sparsely populated area; it will not remain so for long. Above all Messogheia is a most important natural resource for Metropolitan Athens and should be developed in a balanced way. For the time being the central planning authority is not only ignoring this enormous challenge (and enormous opportunity), but is also aggravating the problem by its inverted priorities of *first* increasing the accessibility of the area and *then* thinking about controlling urban development.

I am referring to the immense programme of infrastructure projects, under way in Athens on the occasion of the Olympic Games of 2004: a multitude of both new road construction and improvements and junctions along important arteries, the tramway, the Metro extension, the Suburban Rail and, above all, the Attica Motorway, a high capacity peripheral road expected to relieve traffic considerably from the central areas. It is this latter road, which will massively increase the accessibility of the region of Messogheia from the rest of the city and thus lift the last obstacle to the extension of the unplanned Athenian style development over the other side of Mt Hymettus.

To avoid this, the Ministry for the Environment, Physical Planning and Public Works must abandon the pseudo-policy "*we do not need town expansion*" – because the city *does* expand, whether the Ministry wants it or not – and draft a Sustainable Plan for Messogheia based on *planned* development. This would aim at locating nodes for private investment in urban development, already visualised by real estate interests, with the co-operation of public funds; at servicing the important concentrations of development by road and rail; at implementing strict controls and disincentives for dispersed development (refer to the proposal of Elliniki Etairia in the relevant working paper) and at protecting the natural areas.

One important, and constantly neglected, instrument to assist this plan is public transport. So far the Metro and the Suburban Rail are used as instruments of therapy to alleviate an urban situation that was left to explode in the first three decades after World War II and to cover the whole *basin* of Athens.

Coupled with intensive control measures and a system of disincentives discouraging dispersed development beyond town plan limits, the Suburban Rail and the Metro could be used *as instruments of planning* to initiate and *determine* the pattern of urban development in Messogheia.

Based on public transport to cater for daily trips to work, a transformed urban structure of Attica (at least eastern Attica) would greatly assist the creation of a sustainable urban environment *until* the somewhat futuristic location-free employment installations, due to clean production technologies, become a reality.

You might think, it is late for this "revolutionary" idea, that planning must precede the phenomenon planned for! Tomorrow is going to be later. The picture of sustainable physical planning in Athens is not very bright. This is good, because there is room for improving it! Given these circumstances, I hope that everyone will realise how valuable the work of Elliniki Etairia is in this field and how necessary it is for this work to be continued and become more rigorous.

3. Certain Socio-cultural Ramifications

If we are to form a pragmatic view about the social consent to the new model of urban environment (the term here hides a much broader issue, in fact a new model of urban life) and hence an assurance, as to the direction that our course should take, and as to the necessary steering manoeuvres that have to be made, some fundamental questions at a philosophical level have to be answered. One such question is:

Are we prepared to accept self-imposed restrictions and limitations on certain aspects of urban life?

Take visiting sites or places of very special interest as an example. The tendency of setting limits upon certain tourist destinations, either imposing these limits by determining carrying capacities aiming at sustainability or through objective market situations, may mean that our choice of time, length of stay and other conditions of tourist trips in places, which are high in the tourist demand scale, may be seriously

curtailed. Of course, this is not a totally unknown and therefore totally surprising situation; hotel room capacity is such an objective parameter, which determines the prospective visitors' possible period of visit. So is the parameter of availability of flights, or car-space in ferryboats etc. In some cases, where strict controls can be applied, as in the holy monastic community of Mount Athos, even the ability to enter the area is subject to programmed schedule. Also some aerial routes or airports present major security problems due to density of flights.

Every system has a certain degree of elasticity and can accommodate greater volumes of demand, but every system also has its limits. At some point in time, a system's threshold is approached, these limits have to be respected and this may imply restrictions and limitations upon our "rights", rights of freedom of choice.

Take mobility as anotherother example: there are various types of mobility, a daily-basis mobility and a mobility for "getting away"; there is a forced mobility and there is a selective mobility, the first being undesirable, the latter considered as a human right.

It would seem that mobility in modern life is subject to two forces: One force works for the expansion of *mobility expectations* (through vacation and tourism advertising), and of *mobility requiring activities* (through the accumulation of participation in events, shows, meetings, conferences, exhibitions etc.). The other is emerging gradually and leads to the limitation of certain forms of mobility by bringing work closer to home, by tele-working and tele-servicing.

In an extreme case scenario city dwellers in the future may find themselves with reduced opportunities for social contacts, as a result of strictly mechanistic and technological reactions to today's daily trip-to-work problem (secluded alienated persons working and shopping at home) and at the same time deprived of their selective mobility to get away at a regional or international scale.

It is clear that mobility is a key issue in approaching a new urban environment model and has to be confronted from a balanced and synthetic viewpoint. That means that fundamental questions about social values have to be considered and answered before measures are taken.

Response

Physical Planning, Construction Activity and Fiscal Reform

by Doctor THEODORA LAZARETOU
Ministry of Economy and Finance, Tax Service

In response to Mr Romanos' speech, I would like to present this paper, which in its original form was prepared for the Working Group of Elliniki Etairia for Environmental Fiscal Reform, under the direction of Mr Yannis Paleocrassas. This paper is divided into three parts. The first part describes planning and construction as practiced in Greece today, the second concerns the current state of real estate taxation and the third offers some proposals towards a new, environmentally-friendly national fiscal policy.

1. Planning and Construction in Greece

Urban planning and construction activity in Greece have chiefly been carried out in recent decades in a dialectical relationship with the ever-changing realities of economic development and population densities. As a result of this somewhat troubled relationship, the architectural and construction models which have been primarily preferred have not had until recently among their foremost priorities the condition of the environment and the wise use of energy. The negative implications of this situation have been further exacerbated by the fact that the Greek State has, for various reasons, always been self-consciously lax in ensuring the strict compliance of citizens to its dictates.

These negative implications include:

- Illegal, unplanned construction.
- Excessive pollution (noise, litter and water contamination).
- High-energy consumption.
- Aesthetic degradation of the surrounding environment.

The negative consequences of this situation for the environment and especially for the forests and coastal areas are irreversible and have created a state that contains the contradiction of areas, which are simultaneously intensely urban and agricultural in nature.

Future environmental planning frameworks, which will be relevant to the needs of Greek urban areas will be different from the current models and from those that existed in the past. The reasons for this are simple. First, the demand for better environmental quality as part of a better quality of life will increase in accordance with the increased overall income the nation will enjoy in the forthcoming decades. In addition, increased global competition in the world tourist market will force tourist businesses to demand from government, developmental planning models which will be compatible with the protection of the natural environment. In this way, there will be a demand for urban areas, which will be planned according to physical planning models that take into consideration the following factors:

- The requirement that the elements of the environment (water, air and earth) serve as resources for the needs of the residents.
- The condition that the levels of polluting emissions into the environment do not exceed the bearing capacity of the environment.

The basic means for enforcing coherent urban planning and effectively regulating construction activities is, of course, that part of the law, which is devoted to these issues. Yet, while the imposition of environmentally-inspired measures on urban planning and construction will have to be done by means of this area of the law, simply changing

the way that property is taxed can greatly aid in the implementation of such reforms.

2. The Taxation of Property in Greece: The Current Situation

The current system of property taxation in Greece is characterised by a kind of over-taxation, which consists of both taxes and charges levied on properties. These taxes and charges include:

- Acquisition tax (the rate in Greece ranges from 9-13% while the rates in the other member states of the European Union are 2-5%).
- Gift taxes and parental gift taxes (both of these types of taxes do not exist in some other EU countries).
- Wealth tax.
- Taxes paid on the income of the property.
- Stamp duty.
- Minor supplementary taxes (on property that does not derive any income).
- Municipality taxes and charges for municipal services.

The central principle of real estate taxation in Greece is the calculation of the value of the land and the buildings, which have been erected on it. This calculation is chiefly derived from *objective values* per square metre determined by the State. The system is relatively simple: each property's value is calculated on the basis of these *objective values* as modified by a few factors, which operate to increase or decrease the value of the property in each specific instance. These factors include:

- The age of any buildings on the property.
- Whether or not there is central heating in these buildings.
- Whether or not the front part of the property is on a county or national road.

While this manner of calculation does indeed take into reasonable consideration the commercial value of the property, it has certain disadvantages such as:

- The insecurity that is created for owners in regard to the fact that the rate of taxation charged differs significantly from property to property and, due to the complexity of the calculations involved, occasionally changes in unexpected ways.
- The fact that the main priority of this kind of tax system is the simple increase of public revenue rather than any other general principles.
- The fact that this manner of real estate taxation does not uphold the principle "The User Pays". As a consequence, the tax system as it exists today does not help in the creation of a sustainable urban environment, e.g. by avoiding aesthetically incoherent buildings or environmentally detrimental practices.

3. Towards a New Environmental Fiscal Policy

In consideration of the environmental fiscal reform under discussion today, it seems that the redirection of fiscal policy from the simple revenue logic, under which it has operated so far, towards its being a tool of environmental policy, is indeed possible. The following measures are suggested:

Firstly, the replacement of all the different kinds of real estate taxes mentioned above, with a system which includes only two:

a. A one-time tax, which will be levied on the acquisition (through purchase, donation or inheritance) of any property.
b. A second tax, which will be levied on the use of the property and which will be paid on a yearly basis.

Secondly, the extension of value-added tax (VAT) to newly constructed buildings, but not pre-existing structures. In this manner, the preservation and renewal of existing property will be encouraged, while the construction of new buildings will be relatively discouraged.

Thirdly, the exemption of historic and culturally significant buildings from the above mentioned taxes (VAT reductions or even exemptions have been approved in principle for such buildings by the European Union).

Fourthly, the integration of "The User Pays" principle into the way municipal service charges are assessed, levied and collected by municipalities or other public bodies (e.g. refuse collection charges). These charges are currently assessed according to largely arbitrary standards and not according to the benefit gained by the residents from the services provided and the cost to the environment caused, as they should be. Tax rates should escalate up or down in such a way that excessive consumption will be discouraged.

Finally, the introduction of a tax or general levy on the circulation of cars and other automobiles inside urban or environmentally sensitive areas, in order to discourage their use and encourage the use of public transport. This tax could assume various alternative forms, such as:

- Tolls to enter heavy-traffic (urban) or environmentally sensitive areas.
- Charges on cars that use roads in such areas. (Cars are electronically monitored and debited with the tax).
- A periodic (monthly-annual) charge paid by cars that circulate within such areas.

4. Conclusion

The implementation of the above proposals will lead to the establishment of a comprehensive real estate as well as traffic tax system in Greece. This system, however, should be used in a way that will allow it to act as an environmental planning policy tool. For this purpose, the two basic real estate taxes suggested, the proposed modifications to VAT, the restructuring of municipal service charges and finally the circulation levies herein mentioned, would have to be assessed and collected in a manner that will serve the interests of such a policy.

The exact ways and means by which the taxation system will be restructured will vary considerably and are difficult to visualise without further study, but a few examples of the variables that would lead to the definition of specific tax rates might illustrate the practical implications involved:

Example a: The Land Use

Agricultural land use generally should be taxed lightly or not taxed at all, because the negative environmental impact of agriculture would be mostly arrested through the taxation of agricultural inputs, such as chemical fertilisers or pesticides or irrigation water, or emissions. Commercial and industrial uses should be taxed more heavily, especially when carried out in areas not covered by town planning and the necessary infrastructure. Again the tax rate should be related to environmental impact, whether this is pollution or traffic generation or other.

Example b: The Location of the Property

Properties outside town plan areas, would be taxed at higher rates, because of their greater environmental and infrastructure impact. On the contrary properties located within an urban area served by a mass transit system would enjoy a tax discount. The location factor would be compounded by the use factor mentioned above, so that commercial and industrial uses outside a town plan area would be taxed at even higher rates than housing uses in the same area.

Example c: The Type and Construction of the Property

High rise-buildings, high energy-using buildings, garage-less buildings would pay higher tax rates. On the contrary, low rise or environmentally friendly buildings would pay less or no tax at all. Depending on the area or the intensity of environmental needs at the time, they could even receive subsidies.

To sum up, the proposals offered in this paper reach towards a new kind of system: a bit hopeful, perhaps, but ultimately realistic and sustainable.

Response

Opportunities for Taxation to Promote Sustainability

by Mr. RICHARD SIMMONS

Firstly thank you for inviting me to respond to Mr. Romanos on this important issue of using physical planning as a tool of sustainable development. In speaking to such a distinguished audience, I am reminded of the words of Publilius Syrus "*I often regret that I have spoken; but never that I have been silent!*" I hope my intervention today, following the many excellent speeches we have already heard (including that of Mr Romanos) will be of value to you and that half way through you will not be praying for silence!

Mr Romanos rightly points to the importance of infrastructure and particularly transport projects in driving economic development. There are many international examples of how these projects drive the pattern of economic development, for example, the construction of the US Interstate Freeway system in the 1960's had major implications on the pattern of US economic activity, with urban decentralisation and the decline of city centres as living spaces.

My intervention focuses on the role of taxation in driving sustainable development and more especially in relation to safeguarding the character and heritage of both urban and rural settings. My comments should be seen as being "complementary" to those of Mr Romanos, since the problem of driving balanced and sustainable development is a complex one requiring action from a range of policy instruments.

Fiscal policy has many different goals including revenue raising,

promotion of macro-economic stability, income redistribution, environmental compensation and sectoral support.

Much recent work on taxation and sustainability has focused on altering the relative prices of non-reusable resources such as energy, by increasing tax rates on these items. The economic rationale for using taxation to drive the cost of environmental externalities into the market clearing price is well known and well established.

Research undertaken in 2001 shows that negative employment and growth effects have been offset, where these environmental tax measures have been matched by reductions in labour taxation and hence been revenue neutral. For example a 2001 study of the impacts of the 1999 "Green Tax Reform" in Germany found *"a small 'double dividend' in that energy consumption and CO_2 emissions decrease while employment rises. The impact on economic growth is found to be minimal. The fear that the environmental fiscal reform might interfere with the goals of social and income-distribution policy is found to be largely unjustified".*[1]

There is also significant evidence that such changes have, at the margin, been successful in changing purchase decisions. Such policy action by its very nature is focused at changing market prices *to stop someone doing something they would otherwise have done.*

On the other hand promoting sustainability is also about *starting* something we want people to do (for example, let us make sure that people start investing in conservation in run down areas). It is on this second aspect of fiscal reform that I want to dwell today.

Before I do, I would like to sound a note of caution for when we look at the economic options I am reminded of Thomas Carlyle's famous words *"Teach a parrot the terms "supply and demand" and you've got an economist."*!!

Much economic work has been undertaken, especially in the United States, on the interrelation between taxation and supply side improvements. At its crudest, this would correspond to the theoretical work

1. *The Effects of Environmental Fiscal Reform in Germany*: A Simulation Study by Stefan Bach, Michael Kohlhaas, Bernd Meyer, Barbara Praetorius and Heinz Welsch, November 2001.

supporting the "Laffer Curve", which looks at the impact of marginal cuts in income tax. At a more sophisticated level there are differing economic models that link particular tax changes to particular individual behaviours (for example models that give a logic for various tax breaks for fixed capital investment).

These models have an important contribution to make to the sustainability policy debated. In particular they can make a contribution to the formulation of policies for the promotion of a sustainably managed built heritage and landscape. This area of debate has not traditionally attracted the same volume of interest as eco-taxes and yet from a social, economic and cultural perspective is arguably just as important.

Recent estimates suggest that Heritage and Landscape at a very minimum drive an industry that is worth an estimated 2,5% of EU GDP, employing 4 million people. A European Commission report, based upon 1998-2000 figures, estimates that "*12% of Europe's Gross Domestic Product (GDP) was generated by tourism and tourism-related activities and over 20 million jobs have been created in this sector, essentially within Small and Medium sized Enterprises (SMEs)*".[2] Assuming a 50 percent market share, sustainable and especially heritage tourism may account for perhaps 6% of EU GDP or some 10 million jobs. Not only then is sustainability important environmentally, but it is also big business.

Ground breaking work by both the Tinbergen Institute and Antonio Russo have demonstrated how the value of heritage tourism depends upon adopting a sustainable approach and in particular ensuring that assets are well maintained and able to cope with visitor numbers "*...if the pressure from the global expansion of demand for cultural tourism continues to increase, endurance of tourism can be achieved only at the expense of quality. This is certainly incompatible with the preservation of the cultural assets on which tourism development is based*".[3]

Their work uses Venice as a case study and illustrates the interde-

2. European Commission: *Using Natural and Cultural Heritage to Develop Sustainable Tourism*, October 2002.

3. Silvia Caserta and Antonio Paolo Russo: *Spatial Displacement and Sustainable Heritage Tourism*, Tinbergen Institute Erasmus University; Rotterdam; TI – 2001-035/2.

pendence between quality heritage assets and attractions, managed visitor numbers and transport and infrastructure links with the hinterland.

The World Trade Organisation defines *sustainable tourism* development as meeting the needs of present tourists and host regions, while protecting and enhancing opportunities for the future. It is envisaged as leading to the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled, while maintaining cultural integrity, essential ecological processes, biological diversity and life support.

This concept of sustainability stresses the needs to manage access, create transport and infrastructure links and to reinforce the importance of physical planning and, at the same time, emphasises the importance of measures to ensure the best possible maintenance of the heritage attractions.

Although many of the grand public buildings and museums are publicly owned, the majority of minor historic buildings in Venice, in Bruges, in Rome and dare I say here in Athens are privately owned.

Faced with both increasing public expectations of the need for high quality maintenance and increasingly rapid deterioration of precious heritage assets as the results of pollution there is a need to ensure that continual and high quality maintenance and renovation works are undertaken. It is also crucial that such works are undertaken when they are required, as delays can both lead to further deterioration and raise the overall cost of the work required. In some cases this threatens a vicious circle of under-investment, deterioration and shabbiness followed by decay and decline.

A recent study found that "*The rate of deterioration, i.e. the percentage of deterioration of the building when work of restoration is delayed one period, amounts to 3,1%. That implies that the costs of restoration of a monument increase by 3,1% if work is deferred one year*".[4]

Tax policy, and especially indirect or sales tax policy has a major

4. Marc Rosiers BVBA: *La fiscalité et le patrimoine immobilier,* 12 May 2000, p. 39.

role to play in this area. A recent application was made of "targeted tax" logic in the year 2000, when the European Union agreed on a three-year experiment to reduce the rate of VAT on certain labour intensive industries, with the goal of creating new employment. The experiment allowed for a reduced rate of VAT to be applied to several sectors including repairs to private housing that is more than 5 years old.

The results have been striking, with a French government report in 2001 claiming that: "*the reduced VAT rate on home renovation works generated the creation of 30.000 new jobs in this sector and helped stimulate the emergence of new businesses (up 4,2% in 2000)*".[5] An unpublished study using a different methodology claims that 54.500 French jobs were created in the first year of reduced taxation.

A recent economic study suggested that the relationship between employment creation and VAT reductions varies from sector to sector, dependant upon how crucial any particular element of expenditure is within an owners budget. Conservation and repair work being highly discretionary are price sensitive. The French experience shows that, in this area, a targeted tax reduction *does* make a significant difference to the amount of work undertaken by qualified and professional contractors.

There are many examples of unscrupulous owners either using contractors who do not operate within the formal or registered economy, or performing the work themselves to save on cost. In the face of rising costs there is a natural tendency for some to take short route and attempt to cut cost. The conservation and heritage consequences of these decisions can cause unfortunate knock-on effects to other markets such as tourism.

The results of the recent European Commission work on tourism (previously referred to) and of the current experiment of VAT reductions in this sector also have important implications for the nurturing and growth of Small and Medium Enterprises.

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5. France: *National Action Plan For Employment 2001 and Overview of 2002* – as submitted to the European Commission.

Over 99% of the companies involved in the tourism sector are classed as SME's employing less than 250 people. In the heritage and craft trades similar percentages apply. Smaller companies provide the critical backbone to the EU economy and these smaller companies are the direct beneficiaries of such policy action in two ways, as the reduction in taxation reduces market prices and raises demand, and the inclusion of demand that was previously satisfied via the informal or black economy into the formal economy removes an area of damaging and unfair competition.

There is also evidence in a recent unpublished Belgian study, that tax reductions that are targeted at heritage repairs are almost self-funding. To quote: we obtain a payback of 98%: *the authorities thus recover the near total of their initial investment. This effect of recovery is subdivided into tax receipts (75%) and other flows (23%)*".[6]

Why, you may ask use the tax system and not subsidies?

Given that the built and landscape heritage is maintained and preserved by so many individuals, with so many differing situations, managing a subsidy system would be expensive in terms of administration. In the UK, where such a system exists to reimburse part of the VAT paid on church building repairs, the administration costs both for central government and the churches are substantial. In a case such as this where the support is general rather than limited the tax system offers a more cost effective vehicle for realising the policy goal.

Tax policy can help and is a policy instrument that is complementary to the physical planning measures that we have heard described by Mr Romanos in his paper. Tax policy also has an elegance and simplicity in its implementation. To quote Plato "*Beauty of style and harmony and grace and good rhythm depend on simplicity*", is true in public policy as any other sphere in life!

Not only can tax policy help, but the European Commission's recently announced review of reduced rates of VAT to occur early in 2003 provides an opportunity for change.

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6. Marc Rosiers BVBA, *La fiscalité et le patrimoine immobilier*, 12 May 2000, p. 37.

It is to be hoped that the Commission will feel able to "tweak" the wording of existing experimental provisions and include a lower rate of VAT on heritage, conservation and landscape works to help promote sustainability and nurture and grow the important heritage and sustainable tourism sector. The first half of 2003, during which Greece holds the European Presidency, offers a fine opportunity to realign VAT tax policy with the sustainability and cultural heritage agenda.

Fourth Paper

A Radical Fiscal Reform: Shifting the Tax Burden from Labour to Environmental Protection

by YANNIS PALEOCRASSAS[1]
Member of the Board of ELLINIKI ETAIRIA

A Dinosaur in the 21st Century

Almost ten years ago, while working on the European Commission's White Paper on Growth, Competitiveness and Employment[2] I came to the conclusion that our current economic and social system is a latter day dinosaur, struggling to survive in the mega crisis of the 21st century. Whether we call it free market economy or social market economy or simply capitalism, it is still anchored in the circumstances of the industrial revolution, which created it. I shall cite three typical examples.

- The basic concept of production, which is the *value added*, as well as its principal benchmark namely the *gross domestic product*, pertain to the industrial society. They are ill suited to the present economic structure, which is dominated by services and even less suitable for the coming knowledge economy.

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1. Yannis Paleocrassas is former European Commissioner for the Environment and Fisheries and former Minister of Finance.
2. European Commission: *Growth, Competitivenes and Employment*, White Paper, Luxemburg 1994.

- Our economic system still considers the environment a free good to be used or abused at will. Environmental costs are swept under the carpet as externalities. Together with various social costs, they are excluded from the price mechanism, causing large distortions in our production and consumption patterns.
- The accounting, auditing and tax systems do not recognise natural and human capital as legitimate or equal to economic capital. They allow for the depreciation of the latter and recognise the relevant provisions as deductible expenses, but make no allowance for the replacement of natural capital or provision for the enhancement of human resources.

The main element of the institutional framework, which packs a lot of inertia into the dying dinosaur, is the tax system. In the EU tax revenues in 1997 represented 42,6% of gross domestic product.[3] In their vast majority they are derived from the taxation of human effort and only a small fraction is derived from environmental taxes, as I shall demonstrate later with reference to the Greek example. Undoubtedly they represent an economic steamroller that literally shapes prices and promotes unsustainable production and consumption patterns.

Almost ten years ago, in an unpublished work of mine[4] I wrote: "Current European tax structure is in a way schizophrenic, as in a region where the two main problems are unemployment and a downgraded environment, it penalises the first and encourages the abuse of the other".

The negative impacts from this distorted tax structure are compounded by the nature of certain taxes and particularly of the Value Added Tax (VAT), which is one of the worst taxes from an environmental and social point of view. This tax is levied on the value added, netting VAT on inputs against VAT on outputs; in practical terms this means that the use of all materials and financial capital is tax free and

3. Eurostat: *Environmental Taxes, A Statistical Guide*, 2001 edition, Table 2, p. 27.
4. Yannis Paleocrassas: *The Environment and the Market; Friends or Foes.*

that only labour costs and profits are taxed, because our accounting recognises them as the only value added. If we add to this bias, the well-known subsidies to the coal industry in Europe, we have a completely black environmental picture and this is no black humour at all.

What is more, the short-term effects of a perverse tax and accounting system on the economy and the environment are perpetuated through their indirect but lasting impact on technology. The current strong market signal to our technological sector is: "*Develop labour saving technology! Do not bother with energy or resource saving! Both are too damn cheap to be worth the trouble*". If, however, the relative price of fossil fuel or other natural resources were any different, technological research and development would assume a totally different path.

This is proven by the case studies of the Japanese and US automotive industries. After the energy crises of the 1970's, fuel prices rose sharply in Japan – far more than the price of imported crude oil – as a result of certain fiscal and environmental measures. In the US the rise was limited to the impact from the increase in international crude oil prices. The outcome was that the cost of car fuel in Japan – and for that matter in Europe too – became about three times as expensive as in the US. This triggered an immense leap forward in Japanese technology, which developed the lean motorcar that secured a 15-year boom for the Japanese automotive industry. European carmakers followed very closely, but the US industry continued producing gas-guzzlers, soon getting itself into stagnation and aggressive take-over bids. To complete the story we should add that overall energy efficiency in Japan increased by 15% during the same period.

However, the general rule is that our socio-economic system excludes from the market mechanism most environmental and social costs, leading to unsustainable production, investment and consumption patterns precipitating environmental and social crises. Currently these are mainly manifest in the greenhouse phenomenon and climate change, as well as large-scale economic migration and the rise of the black and criminal economy on a global scale. *Economic development along this obsolete path is coupled with pollution, waste and unjust distribution*

of resources and income. At the same time capital markets have been de-coupled from the production function of the economy leading to bubbles that explode at an alarming frequency.

Most recently, the misdemeanour of many global company executives, who in their greed did not hesitate to tamper with corporate accounts, has punctured huge holes in corporate credibility causing a global explosion of the financial bubble. *At no other time has humanity felt more insecure, socially, financially or environmentally.* Unfortunately, current world leadership does not seem to have grasped the real problem and resorts to the "aspirin treatment" of such crucial problems. It attempts to quell economic migration by intensifying controls; unemployment with re-training programmes; and the threat to the environment with international conventions that are not ratified or conferences of world discord, such as the latest at Johannesburg.

Towards a New Development Model

This was the title of the 10th Chapter of the White Paper of the European Commission on Growth, Competitiveness and Employment that I wrote almost ten years ago. The fact that practically nothing was done about it does not make it any less topical or imperative today. The multiple crisis that we are facing proves beyond doubt the bankruptcy of the current model. Our dinosaur cannot survive; it has to give way to more modern creatures. How can we achieve this?

First of all we have to defuse the question ideologically and go back to harsh realities. We have to depose the market from the pedestal of divinity and international panacea and restore it to its central but due place in the system. *The market is not an ideology but a simple mechanism of allocation of resources*, of time proven worth. It allocates resources *on the basis of criteria and inputs fed into it by the institutional framework, which in democratic societies expresses social choice.*

Then we must modernise our institutional framework, so that it accurately reflects current economic, social and environmental circumstances and faithfully expresses current social choice.

i. Unless governments integrate into the market mechanism the environmental and social values that are currently excluded,
ii. Unless in particular they integrate urban and transport planning into the economy and society,
iii. Unless they re-couple the financial markets to production through appropriate tax changes and/or measures of equivalent effect,
iv. Unless they take action to check both the domestic and international black and criminal economy,
v. Unless they seriously promote the potentiality of sustainable development in the developing world,

the current multiple crisis will be a very long one.

On the contrary, if action is undertaken along the above lines, we may look forward to an end of the crisis and a future of sustainable growth for the entire world.

I shall try to exemplify the action necessary by reference to a concrete proposal for a radical fiscal reform in Greece, which is very close to the EU average as regards the ratio of total tax revenue to g.d.p., the ratio of environmental taxes to total taxes, but has a higher incidence of social insurance contributions on labour costs. Naturally for me it has the overwhelming advantage of easy accessibility to detailed data.

Environmental Fiscal Reform – A Concrete Proposal for Greece

The latest data for actual budget performance in Greece refer to 2000 and are given in Table 1. "Environmental taxes", have been calculated by the author on the basis of current Eurostat definitions,[5] which

5. Eurostat: *Environmental Taxes: A Statistical Guide*, 2001 Edition.

Table 1:
Analysis of Fiscal Aggregates,
Central Government ESA 95, Greece, 2000

Category of taxes	Mio euros	percent of taxes	percent of GDP
1. Environmental taxes	**3.445**	**6,7**	**2,9**
1.1 Fuel taxes	2.188	4,3	1,8
1.2 Transport taxes	1.252	2,4	1,0
1.3 pollution taxes	6	0,0	0,0
2. Taxes on human effort	**31.707**	**62,0**	**26,4**
2.1 VAT	9.919	19,4	8,3
2.2 Personal income tax	5.224	10,2	4,4
2.3 Social insurance contributions	16.564	32,4	13,8
3. Other consumption taxes (alcohol, tobacco etc)	**2.308**	**4,5**	**1,9**
4. Real estate taxes	**989**	**1,9**	**0,8**
5. Capital taxes (deposits, loans, share transfers)	**2.082**	**4,1**	**1,7**
6. Other taxes	**7.360**	**14,4**	**6,1**
7. Other current revenues	**3.240**	**6,3**	**2,7**
8. Total current revenues	**51.132**	**100,0**	**42,6**

Source: Greek Budget 2001 as per author's regrouping.

group under this heading taxes relating to the following tax bases: emissions, pollution, waste, energy, transport, natural resources. Other categories represent groupings of official budget lines.

The first striking observation on Table 1 is the absence of pollution or energy taxes. The negligible figure of 6 million euros represents some trivial levies for the "green" and "blue" funds. The main bulk of Greek "environmental" taxes are fuel taxes. These relate to petroleum products only, but even those are below EU averages. Coal (lignite) is not taxed. The only other category is transport taxes, which are mainly in the form of car registration and circulation taxes. There are no road pricing schemes in operation, apart from some low motorway

tolls. None of these taxes was imposed with an environmental intention. There are only two such measures in operation. The first is the requirement for low sulphur crude oil in the Athens region and the other is the central Athens ring, within which cars with odd or even registration numbers are allowed on alternate corresponding dates.

The overall level of "environmental" taxes is just below the EU average, while taxes on human effort and in particular social insurance contributions are fairly high at 1/3 of total tax revenues. It is interesting that capital taxes are considerably lower than environmental taxes and represent almost 1/15th of the taxes on human effort. The very high level of "Other taxes" is due to the fact that, the central government collects a large number of charges for account of third parties, such as port authorities, state universities or local government.

The broader fiscal picture, including the expenditure side of the budget and open or disguised subsidies, is rather negative on balance. In agriculture, the impact of the Common Agricultural Policy is particularly harmful to the Greek environment as it supports intensive cotton farming, absorbing very large quantities of irrigation water, leading to river water depletion and groundwater salination in the coastal plains. Moreover, due to bureaucratic omissions and lack of information to farmers, Greece is the last country in the EU to utilise the regulations on environmental agriculture.

In other areas, Greece has one of the least sustainable energy sectors with 83% of domestic energy production supplied by lignite (1998)[6] and very low attainments in the exploitation of renewable energy sources, despite their high natural availability. This is due to the fact that the Public Power Corporation uses the lignite without paying any charge or mineral right to the State; the same applies to the use of hydro resources.

Finally, Greece has not substantial plans for solid waste management and no landfill tax or other similar charges, with the result that the majority of refuse ends up in landfills, which are owned and oper-

6. As per 1998 Energy Balance Sheet, published by Hellenic Energy Control Authority.

ated by local government mostly not in conformity with EU directives and regulations. Recycling is fragmentary and on very low scale mostly associated with private industry or local government initiatives.

In view of this general picture, our basic proposal is for a shift of 10 percent of current tax revenues, away from labour taxation and on to environmental taxes, by the year 2010. We also call for the abolition of environmentally harmful open or hidden subsidies (e.g. that on lignite), so that users of natural resources pay their full costs including environmental externalities. In this proposal we coincide with the relative campaign of the European Environmental Bureau (EEB). The proposal is portrayed in numerical terms in Table 2 that follows:

Table 2:
Proposed Shift to Environmental Taxation

Category of taxes	Current	Proposed	Cur.	Prop.
	Mio euros		percent	
1. Environmental taxes	3.445	8.559	6,7	16,7
2. Taxes on human effort	31.707	26.594	62,0	52,0
3. Other consumption taxes (alcohol, tobacco etc)	2.308	2.308	4,5	4,5
4. Real estate taxes	989	989	1,9	1,9
5. Capital taxes (deposits, loans, share transfers)	2.082	2.082	4,1	4,1
6. Other taxes	7.360	7.360	14,4	14,4
7. Other current revenues	3.240	3.240	6,3	6,3
8. Total current revenues	51.132	51.132	100,0	100,0

Source: see previous Table.

The reason for proposing an important shift of 10% of total tax revenues is twofold:

First, experience has shown that marginal shifts tend to produce marginal results and take a long time. A minimum critical mass is required to change consumption and production patterns, within a reasonable period.

Secondly, external environmental costs for European conditions are estimated by various researchers at a minimum of 10% of g.d.p., of which only 2,85% is covered by environmental taxes according to Eurostat.[7] A shift of 10% of tax revenues to environmental taxation would cover about half the gap only.

We should stress that the proposal is *fiscally neutral*. The proposed 10% increase of environmental taxes must be accompanied by an *equal* decrease on human effort taxes. Otherwise the effect will be partly cancelled and the entire operation would be seen as another tax-hiking exercise of central government.

It is not up to Elliniki Etairia, as an NGO, to define what environmental taxes should be introduced or amended and at what rates, in order to arrive at the 10% increase, or conversely what taxes on human effort should be reduced. This is a matter for the tax authorities to study and propose and for the social partners (including NGOs) to debate. However, we might indicate which areas, in Greek circumstances, present high external environmental costs and are therefore candidates for environmental taxation.

- Overuse of natural resources (fossil fuels, especially lignite, timber, water).
- Biodiversity (including fish capital stocks).
- Pollution (atmospheric, sea and inland waters, land, noise).
- Use of chemicals with adverse effects on humans and the environment.
- Solid waste management (sub-standard landfills, toxic waste).
- Transport (urban traffic congestion and attendant pollution, accidents).
- Public works (disturbance of eco-systems and landscape amenity, destruction of historic sites and cultural wealth).
- Land use (high densities, urban and tourist sprawl, quarries).

7. Eurostat: *Environmental Taxes, A Statistical Guide*, 2001 Edition.

A systematic attempt to cover these external environmental costs would involve:

i. The re-definition and adjustment of existing fuel, water, waste, car and real estate taxes or charges.
ii. The introduction of lignite, timber, plastic packaging, chemicals with adverse impact, pollution, energy, commuter, landfill and quarries taxes.
iii. The tax exemption of environmentally friendly cars, of renewable energy, of mass transportation systems and other environmentally friendly consumption.
iv. The strict implementation of all EU relevant directives, but in particular of the Environmental Impact Assessment Directive, which is usually ignored mainly in government projects.
v. The use of EU Environmental Agriculture Regulations to boost farmers' incomes.
vi. The installation of an efficient system control for fishing activity.

On the reduction side, it is again imperative that tax decreases should be debated among the social partners, so as to arrive at a maximum *double dividend*. From a technical point of view, maximum impact on employment generation can be achieved by tax cuts on employer social insurance contributions and especially on lower brackets. Politically, it is obvious that employees have to participate directly as well as indirectly in the tax cuts. A balanced solution must be attained through careful study and social dialogue. In Germany they opted for a Solomon's solution splitting the reductions in social insurance contributions 50/50.

Equally serious attention must be given to the replacement of the current funding of the Social Insurance system from contributions, with clearly earmarked portions of various environmental taxes to replace the reduced contributions.

Finally, reductions in VAT, which as we saw earlier is essentially a labour tax, should also be considered. It is obvious that VAT on main-

tenance and restoration work on historic or preserved buildings is a madman's invention and should be drastically cut, with the opportunity of the review of reduced rates of VAT recently announced by the European Commission for 2003. Green technology, manufacturing, accounting and auditing should be also taxed at lower rates. Unleaded petrol is a good precedent. Fine-tuning the VAT in accordance with environmental criteria is a sine qua non. However, a more appropriate move in the longer-term would be to scrap it altogether and replace it by a Resource Use Tax, which would be proportionate to the negative environmental impact of the particular resource use. This proposal I have developed in greater detail in an essay published in the Factor 10 Club Reports, 1999.[8] But this requires further study and elaboration as it involves the application of some environmental rucksack[9] methodology.

It is obvious that the proposed Environmental Fiscal Reform (EFR) should be the result of a serious study, both as regards the specific tax changes and their phasing, so as to cause minimum economic and social disturbance. It should be stressed that taxes and other accompanying measures must be examined in total, since there are many positive or negative interactions among them. Also there are many substitute or alternative taxes or measures of equivalent effect. For example, a commuter tax, an urban road pricing system and a system of controlled accessibility to central urban zones are almost equivalent substitutes. A system of tradable pollution permits is a close alternative to a pollution or energy tax.

On the other hand, it is the considered opinion of many environmental economists that taxes or charges have the quickest impact on

8. Yannis Paleocrassas: *Fiscal Reform, Resource Productivity and Employment.* Factor 10 Club Reports 1999. Wuppertal Institut für Klima, Umwelt, Energie, Institut Arbeit und Technik.

9. *Rucksack* according to Professor F. Schmidt-Bleek is the environmental backlog of any product or service, i.e. the total amount of natural resources that were used, polluted or dislocated in the entire chain of its production going back through all the raw materials or intermediate products or services used. In many cases the rucksack of 1 kg of a finished product may be as high as few hundred tons, including the soil dislocated in the mining operations for the extraction of raw materials.

prices and therefore on the change of consumption and production patterns towards sustainability.[10] Moreover, they produce a continuous signal or incentive, whereas many of the other regulatory devices cause threshold or ceiling effects, which restrict their effect especially on technology.

Certain Practical Considerations and Examples

It is time to address now certain practical questions that are usually raised in any EFR debate.

The first is the question of the social impact of environmental taxation, in view of the fact that the majority of such taxes are indirect consumption or production taxes that fall indifferently on rich and poor alike.

The answer is that, although this is the case, many indirect taxes can be designed to have a progressive effect. Car taxes, water and waste charges, electricity bills can and *should* escalate with the amount of emissions or consumption levels. There is a difficulty with taxes on heating oil and the so-called energy poverty, but this can also be handled with several tax devices, such as tax-free coupons or tax rebates to low income households. As already mentioned, cuts in social insurance contributions could be staggered in favour of lower incomes. Income redistribution is a legitimate goal of any tax system.

The second is the competitiveness argument. This argument claims that EFR cannot be introduced by individual states or even groupings of states, such as the EU, because the increase in resource and energy costs would curtail the competitive advantage of their industries.

The argument runs parallel with Aesop's myth of the fox that had

10. See for example: Ernst U. von Weizsäcker and Jochen Jesinghaus, *Ecological Tax Reform*, Zed Books, London and New Jersey, 1992.

its tail cut off in a trap, who was trying to persuade his fellow foxes to do likewise in the interests of comfort and agility. But it is an equally false argument. Because it has been proven time and again that any increase in the price of raw materials, energy or other natural resources leads to a direct increase in resource use productivity, securing a net gain for the firm or industry that faces it. In the long run, resource productivity gains are even more considerable and secure a competitive advantage for the economy that prices its resources correctly.

The example of the Japanese and US motor industries given earlier proves the point. But this is also proven by case studies that indicate that environmental investments, in source reduction techniques of pollution, present an astonishingly short payback period. Indeed in a sample of over 60 such investments involving operational, process, equipment, chemicals or product changes 64% were written off in under 6 months, compared with an average 6-8 years for any other industrial investment.[11] It is not insignificant that over long periods economies with advanced environmental taxation systems (Sweden, Finland, Denmark, Netherlands) have also good economic and employment performance.

A last usual question is how true is the *double dividend* claim. Do reductions in social insurance contributions or in other forms of labour taxation secure increased employment?

European experience in this matter is limited both in time and extent. The relative study of the European, US and Japanese economies contained in the European Commission's White Paper quoted earlier showed that the employment generation propensity for every unit in g.d.p. growth was highest in the US and lowest in Europe, while labour taxation was in the reverse order. Japan came in between on both scores. Various European studies indicate a positive correlation while

11. As presented by Kenneth P. Morse, Managing Director of Aspen Tech Europe SA to a Seminar at Brasenose College Oxford in 1996.

others verify the employment potential of eco-industries.[12] However, recorded evidence of both gains and losses is only limited to Denmark where a net gain of 28.000 jobs was registered as a result of "greening" the economy.

Now let me conclude with some practical illustrations of the impact that the proposed radical environmental fiscal reform would have in the case of Greece.

A study of external environmental costs of German energy production, as quoted by our guest speaker Ernst von Weiszäcker in his book Earth Politics,[13] indicates that in 1992 they came to 500 billion DM i.e. almost 18% of German g.d.p. at that time. If we adopt the same figure for Greek energy production, which as we mentioned relies to the tune of 83% on lignite, it is obvious that a tax of at least 20% on the cost of lignite extraction would be in order. This would certainly change the relative costs of electricity production in favour of natural gas or even renewable sources.

Other studies indicate that car taxes in the UK cover only about 1/3 of the external costs of private car transport.[14] In Greece, with the acute pollution problem in Athens, externalities would be even higher. This would justify at least a doubling of petrol and registration taxes on private cars. Sufficient to send a large part, if not the majority of private car commuters, to public transport or persuade them to pool three or more in one car.

Finally, two examples on the double dividend side:

If the 10% decrease in human effort taxation was totally applied to social insurance contributions it would amount to a 40% reduction of the total amounts involved. As the standard rate of such contributions on wages and salaries is 45%, this reduction translates into a decrease of 18% in average labour costs. With such a sharp fall, it is likely that

12. Ecotec Consultants: *Analysis of EU Eco-industries, Their Employment and Export Potential.* A study prepared for the European Commission 2002 found that in 1999 1,5 million people were directly employed in this sector and that every 1 billion euros invested produced an extra 30.000 jobs.
13. Study by the Consulting Institute Prognos, *Earth Politics*, p. 119.
14. *The Ttrue Costs of Road Transport*, David Maddison, David Pearce et al., London 1996, p. 141.

unemployment, which currently stands at 11 percent, would fall to frictional unemployment levels. Naturally, this is an extreme case. In reality part of the revenue from environmental taxes would be applied to the reduction of other personal taxes or to some environmental expenditure of the budget. But even a 10% decrease in average labour costs would be sufficient, on one hand to boost employment and, on the other, to reduce evasion of social insurance contributions.

In agriculture, on the other hand, where the greatest current problem is the curtailment of CAP price supports for cotton and tobacco crops, the implementation of Regulation on environmental agriculture 2078/92, as well as other environmental measures of the EU, would more than offset any losses. In fact, if Greek farmers were encouraged by the Ministry of Agriculture to have the same attainment as their Finnish colleagues, based on 1993-98 data,[15] they could earn as much as 300 million euros annually in CAP subsidies, augmenting their income by about 10%.

But, as pointed out by our Chairman Costa Carras in his opening remarks, for tourist countries there is a triple or quadruple dividend. For, the environment is an economic as well as a natural resource in our case. As Mr. Katiforis so aptly put it to the Working Group, we literally "sell" our environment as the basic resource of our tourist industry. Maintaining, cleaning or upgrading Greece's superb environment makes good business sense, as well as safeguarding a valuable resource for our children. And we should not forget that the man-made environment in a country so rich in antiquities and architectural heritage is even more valuable.

It is in view of this point that in the fiscal reform proposal, which I outlined earlier, so much is made of waste, pollution, landfill and quarry taxes and of a strict enforcement of the environmental impact assessment requirements of the European Union.

15. See *A Tax Reform for Sustainable Farming (Table 3)* by Dr. Alexandra Mexa. A paper released on March 2001 together with the other papers of the ELLINIKI ETAIRIA Working Group on EFR.

Let me conclude with certain operational remarks.

The environmental fiscal reform I described earlier has certain undoubted qualities:

- It is *radical*, with an important tax shift.
- It is *comprehensive*, referring to a wide spectrum of environmental taxes.
- It is *difficult to conceive and design* and should therefore be phased.
- But it is *easy to implement*, as taxes are levied on physical units mostly at source.
- It admits *no tax evasion* and has a very low collection cost.
- But it requires certain *counterbalancing measures* to gain social acceptance.
- *It is compatible*, with other financial instruments, voluntary schemes, regulation.

We should not entertain any illusions that it represents a colossal operation. It must be preceded by extensive research, including difficult social as well as technological considerations. Its introduction must be phased over a number of years, including trial runs. But I hope I have persuaded you that it is worth the trouble. After all, Europe spent more than 30 years in designing and introducing VAT with untold expense and upheaval, to realise at the end that we have an obsolete and harmful fiscal instrument at hand. We could spend half the effort and the time on a fiscal reform that would reintegrate the environment and the economy with current social choice.

Conclusions and Recommendations

Chairman: COSTA CARRAS

CHAIRMAN: According to the original programme, Anthony Courakis, Official Fellow of Brasenose College, Oxford, and Chairman of the John Hicks Foundation, would have drawn up the conclusions and recommendations of this Meeting. However, due to the unforeseen circumstances of the severe damage to his home during a violent storm, he was unable to come to Athens and it was decided that Stefan Speck and I would replace him in this work. So I ask Stefan to open this session with his own impressions.

STEFAN SPECK: We started yesterday afternoon with two opening addresses by Costa Carras and Meni Malliori and an opening presentation by John Hontelez, who presented the EEB campaign for Environmental Fiscal Reform. I found it extremely interesting to listen to the same theme developed in three different perspectives. First a real NGO approach and then that of a Member of the European Parliament and, finally, a much more detailed presentation by the European Environmental Bureau, which immediately went into one or two of the main problems such as the issue of competitiveness. Although as John Hontelez quickly pointed out this does not appear as a real problem, since nobody can give you a specific example of an environmental tax that led to loss of competitiveness.

CHAIRMAN: Well I would respond that it is possible to see where a competitiveness problem would arise if we made the sort of changes

that we are proposing. Precisely your paper, Stefan, indicates that the shifts made so far are too small. If one brought about shifts of the order that the EEB and Yannis are proposing, which are entirely justified, certain energy intensive industries and other activities would either be curtailed or move elsewhere. I think that, more bluntly, American, Japanese and Asian potential competition is what is terrifying certain enterprises.

In reply to an earlier question as to the reasons for opposition to EFR by employers' organisations, Yannis Paleocrassas gave a different reply. Organisations are like a convoy, moving at the speed of the slowest ship. I understand and appreciate this reply in a bureaucratic sense. I have enough experience of employers' organisations and trade unions to know that this is the way they work. However, I do not feel that this is the real problem. I think that the real economic problem is that they feel they can put up with so much, so far, but if it was really to be the sort of thing that you said, then they would be really hurt. Whether they would in fact be so, is another story but I agree that under certain circumstances they could be, at least in the short run.

And that is why in my opening address I said, if the competitiveness argument is used as a plea for more time to improve technology that seems to be in principle a valid argument. Its validity in particular instances has of course to be tested against the particular circumstances, but in principle it is a valid argument. If, however, one is using the competitiveness argument, in order not to proceed in the right direction at all, then not only is that wrong, it is actually counter-productive. Because this is not simply a situation where the EEB or Elliniki Etairia is making a special plea, "let us be nice to the environment". What is happening is very much more fundamental. We are laying a burden on the planet, which it is becoming increasingly evident year by year and is more than the planet can bear. What is more, if our commitment to social justice as between peoples holds up - which it may not, but even if does not hold these other peoples will hold us to it - the burden will become utterly intolerable.

Whether we like it or not, we are going through a great revolution,

which I compared to the industrial and the communications revolutions that took place in the 18th, 19th and 20th centuries. On the threshold of a fresh revolution, to use the argument of competitiveness in order to avoid making the changes that are needed to adjust to this revolution, is the most counter-productive thing you can do. Because all you do is to put off the day and therefore make it harder to adjust in time, to the degree that it may become impossible to adjust at all.

Yannis Paleocrassas, I think, gave us a very good first example. Of course, at the present time, the United States is considered a successful economy and Japan an unsuccessful one, particularly with respect its financial system which is a colossal failure. But where industry is concerned, the example that Yannis used on how they reacted to the oil prices hikes at the end of the 1970s is absolutely accurate and valid. That was a reaction made for economic reasons with favourable environmental consequences. It shows however that in fact, in economic terms also, it will prove an advantage to have begun adapting earlier rather than later.

STEFAN SPECK: I would call that structural change and indeed this is what we want. In such a case, almost everybody would agree that the introduction of some new environmental or energy taxes is bound to produce some losers, but the losers are probably some old enterprises that, to a certain degree we want to get rid of. On the other hand, the aluminium industry is also a good example. If more aluminium is demanded and you keep producing it in the same way, you will be using more and more bauxite, the raw material. If however you satisfy this demand by recycling more discarded aluminium cans, you would avoid electrolysis and use 1/10th of the energy required for primary production of aluminium out of bauxite. Do we want to continue this squandering of bauxite and energy, or should we not encourage recycling measures and support them via an energy tax?

CHAIRMAN: I agree with you a hundred percent.

STEFAN SPECK: What the EEB is trying to do is achieve a really European-wide approach to EFR. You want to gather all the 130 NGOs, which participate in the EEB in one movement. I think this is a very good and at the same time a necessary idea, because you need to present your information campaign and point of view as many times as possible in as many countries as possible. Then people would know who is in favour of EFR and in which country. In this respect, I would like to commend the work that the EEB and its associated NGOs are doing all over Europe and particularly in Brussels, where the last Annual General Meeting of EEB attracted all the major players in the environmental field. These included the European Commissioner for the Environment, the Danish Chairman of the Environment Council and some of the Ministers-members. I think that this shows that the idea of EFR is not dead, whereas a year ago this seemed the case, with only few countries venturing into the field and no other movement. I think the momentum reappeared with the recent German election, when the German EFR was made an election issue. With the victory of the coalition of SPD and the Greens we shall see further steps in this area.

Now, the proposed EFR for Greece is similar but much more radical with a 10 percent shift. I am very sceptical that you can achieve it but I support the idea. Obviously you have to start from a high level, so that you can come down later to say 5 percent, which would still be quite a lot.

CHAIRMAN: Yes, of course. I would like to say that the most impressive thing in Yannis' presentation, which one sees in other presentations too but remains very important, is that these very small shifts, which you analysed in depth in your paper, Stefan, have in fact had such dramatic results in Sweden and Denmark. A 19 percent fall in CO_2 emissions in Sweden between 1987 and 1994, 80 percent reduction in SO_2 emissions between 1980 and 1991, 24 percent reduction in SO_2 emissions between 1995 and 1997 in Denmark. These are very impressive, given the very small shifts in tax rates. I will therefore

agree with you that even if, as it is likely, we do not achieve a 10 percent shift but something lower, we can look forward to impressive effects in certain areas, at least in the particular areas which have been tested. Of course, there will be other areas too, because this will not be the only form of environmental tax that we shall have in our reform.

So we are not talking about something small. This is the first point I would like to make on Yannis' presentation.

The second point, which I think is extremely important and which also explains my enthusiasm that the EEB has taken up the issue, is that in the past environmentalists have asked for "regulation, regulation, regulation" and the reply has been "market, market, market". And now here we have a checkmate position. "Certainly we must work through the market. But we will work through a fair market. A market which takes into account real costs, which so far have been concealed". And this is very important, because it is possible to find – and Yannis has already found – allies in the business community for this position, as indeed we have found here in Greece specific enterprises, which will agree with this argument. This is of immense importance in making it possible to present and sell the case, politically. We must not lose that advantage which we have gained. I think therefore that this move by the EEB was extremely wise.

So shall we go on to your own paper? It is from Stefan Speck's paper that I received a vast amount of detailed and extremely important information, on which the rest of our discussion was based. It shows two things.

First, that there is an immense variety among different countries in Europe. We are really talking about a very wide range of taxes, rates and other fiscal devices in order to achieve the best possible result in each country.

Secondly, we are talking about what has been, so far, an extremely cautious process. Now, given the speed with which the stress on the urban and rural environment is increasing, it is very evident that mat-

ters are out of the kilter, even in Europe. Even in the part of the world where these things are taken more seriously, we are way behind where we should be. It is impressive that what we have achieved is so little in relation to needs, even if it is large in relation to past performance. It is very obvious that, so far, people and governments have been putting their little toe in the water and we really need to do more than that.

Mr. Alogoskoufis' response prompted Stefan to say that the theory is correct but that because of low elasticity of demand you will not have any results, at least in the short run. The more I think about it, I would like to reverse the argument. If you have high elasticity of demand in response to a particular tax, you end up with the Irish plastic tax situation, where consumption collapses. What you have achieved effectively is a perfect incentive tax that simply destroyed the previously popular use of plastic shopping bags.

Or, alternatively, if you are trying to encourage an activity you reduce VAT on it, as Europa Nostra has for years proposed and Richard Simmons has described in connection with heritage buildings. In this case you positively promote something through the tax system. Both are perfectly acceptable from the point of view of the environmental movement. Elliniki Etairia would certainly go along with both. I cannot speak for EEB but I assume they would also go along. However, this is not what we are talking about. What we are talking about is precisely the situation, where elasticity is low; you put on the tax and what you get is not an immediate collapse in demand, which will take some time to drop, but tax revenue. This is indeed part of the purpose of the exercise.

The way the whole engine works is that you have to have a long period of time, during which people, NGOs like Elliniki Etairia, enterprises large and small, can see in what direction things are going in the next five to ten years. They make their own assessments as to future tax, price and other increases or reductions and only then they plan their work and operations within this framework. There you have a different sort of effect; it is not a sudden increase or collapse of activity in response to a tax incentive. It is a clear instance of the double div-

idend effect, as I tried to define it in my opening address but as you also defined it in your paper.

So, it seems to me that Mr. Alogoskoufis made an entirely valid point in a technical economic sense, but it was an incorrect point in relation to the exercise that we are engaged in. As a matter of fact it did not refute but actually underlined the importance of what we are about.

STEFAN SPECK: I am quite happy that this point has been brought up because I would do it anyway. We can almost say that we have an inverse relationship between environmental impact and revenue generation of the tax. Taxes, such as the Irish plastic tax are excellent from an environmental point of view, but not too good as part of Environmental Fiscal Reform as they cause fiscal revenues to go down. The main idea about Environmental Fiscal Reform, in my opinion, is the gradual phasing in of the whole process and its timely communication to people and industry.

If you announce for example, that the price of energy will start increasing in three years in so many steps, you do not hurt the competitiveness of companies and you make the increase much more effective; because if you do it in one shot now, companies do not have the option to change their processes and their plans of investment. But if they know in advance, that the price of electricity, of energy will increase, in five, six, seven years by so much, then they have the time to modify their investment plans. I am quite happy that this came out in the discussion, that environmental taxes have all these different effects in their actual implementation and you have to distinguish between revenue raising and the environmental impact of raising taxes.

YANNIS PALEOCRASSAS: I think in the conclusions we should stress this timing element in connection with elasticity. Elasticity changes over time because, given adequate time, alternative solutions can be found. Developing a substitute for an environmental bad, which is

being taxed, takes time and during this time people stick to the environmental bad. In the short-run consumption patterns do not change. In the long run, especially with the aid of a good communications campaign, they do change. So, I think we should stress that elasticities are not constant. They vary over time and the longer the time, the more elasticity increases.

This goes well with what you have already stressed, i.e. the definite advance signals that a tax will be increased in so many steps, because these create an incentive for technology to act in advance and therefore speed up the transformation process. Eventually, I think that we should say that any Environmental Fiscal Reform has to have a long enough planning period and a longer implementation period. Both are necessary. And let me conclude with one more remark.

If we did not intervene through Environmental Fiscal Reform what would happen with pollution or resources? Resources would be overused and if they are finite, as most natural resources are, they would approach the point of extinction over time. Let us take crude oil as an example. Known deposits, at the present rate of consumption, are expected to last for another sixty to eighty years and that is the end. If we allowed the market to operate without any tax change, oil prices would remain low but as we approach the point of extinction, they would explode. What we should do instead is to foresee the eventual price explosion and spread it evenly over time. This is the objective of Environmental taxation in connection with resources.

CHAIRMAN: In this morning's session we had the visionary talk of Professor Ernst von Weizsäcker, not just a Member of the Bundestag as we described him at the time our programme was published, but since then the elected Chairman of the Environment Committee of the Bundestag.

STEFAN SPECK: Years ago, I was employed at Wuppetral Institute, which he founded and therefore I know about all this work that he did. I think that it was interesting that he was placing already a lot of

emphasis on technology. That available technology can lead to a better environment. With the examples he gave us today he confirmed that we have a better and environmentally friendly technology but which is still not in wide use. It is certainly coming up but it needs, again, a time lead and probably also a bigger push from the population if they want this.

I think that his view about the history of the environmental movement was also very interesting. First, we have had, he said, the end of pipe techniques, how to clean up the environment, and now we are looking more at integrated pollution control. As to his quote from Indira Gandhi that poverty is the biggest polluter, I would agree to some degree, but when you look at America, for example, I do not think that the people are poor there, but still they are the biggest polluters in terms of CO_2 emissions due to the quite high usage of cars. Perhaps he had this in mind when he referred to the u-shaped curve in the relationship between pollution and the level of wealth but there is a lot of discussion about these curves. Personally, I think they are valid on a national level but not on a personal level.

CHAIRMAN: Well, I have a slightly different reaction to Ernst von Weizsäcker's address. I like his contrast between poverty as the greatest polluter and then prosperity as the biggest polluter and I agree that there is a fundamental difference between different types of pollution at all times, but that there has been an increasing emphasis, historically, on the latter. The first period of the environmental movement, which started in the sixties, was less existential in character except where an individual reaction to the problems was concerned.

By contrast the later stage beginning more recently, probably in the late eighties, early nineties, is far more existential in the sense of seeing the problem as a threat to the future of the whole of humankind. We are facing an existential crisis and it is of two types: one is the crisis, which comes simply from the changes already occurring and one is the potential crisis deriving from our economic and political system, if the Chinese, the Indians, the Indonesians and other very large popula-

tions in the world begin producing the goods they desire as we do. At that stage the view that prosperity is the biggest polluter seems to me to be a valid one because then the pressures on the whole eco-system will become almost certainly intolerable.

On the other hand, I have a big question mark about the anti-globalisation thesis in general. Quite clearly Ernst von Weizsäcker has been influenced by this thesis. But personally I have substantial doubts about it. I am perfectly prepared to concede that there are instances where globalisation has done damage, certainly in the way that the financial markets have sometimes operated. Yannis also makes this point, very frequently, referring to their decoupling from the real economy and how it can be very dangerous. When, however, we come to questioning whether western societies should be using resources from other societies, is for me something we should not generalise about but consider case by case.

If we are talking about cutting down tropical forests in Indonesia, no, we should not be using these resources the way we are using them. But if we are talking about other sorts of import, like clothing and textiles from India which are both cheaper and of very high quality, or if we are talking about the use of Indians for working on software in Bangalore, my answer is yes, yes, yes. This is part of what it means to share a common humanity with other people and the idea that, that is bad for them, seems to me to be the exact opposite of the truth. So, unless I understand him wrongly, it seemed to me that there was a little bit too much of an easy acceptance of the theory that globalisation is a bad thing.

JOHN HONTELEZ: What we are saying here about India is that India is not exploiting other parts of the world in order to maintain itself. The industrialised countries are certainly exploiting other parts of the world. I think there is nothing against trade but there is a big net transfer of resources from the south to the north. If India is exporting textiles to the north and is also getting something back which contributes to its welfare, then that is fine. But I think that what the ecological foot-

print concept tries to say is this: if the current development model of the west would be applied in other parts of the world, then simply the world could not support it. Because we are already using the resources that those societies may need to build their prosperity on. So to that extent, I think the ecological footprint is a good concept as it clarifies the debate by showing how very uneven the resource use is in the world; but if you go into specifics, it can get difficult. I understand that.

I want to say something else about Professor von Weizsäcker analysis of this shift of balance of power between states and multi-nationals. I think, for him, the biggest threat of globalisation is that the states have no control any more over companies. That is, I think, his biggest message. Companies can dictate what states are doing and this is the great change. But when he proposed that we can compensate for it by strengthening civil society and one of his messages was that NGO's should no longer attack the states but work together with them, I felt that this was somehow a typical German comment. I was immediately thinking back to the early eighties when the anti-nuclear movement in Germany was really an anti-state movement. They were talking about the Police Rheichstag and I think in other countries this has been less extreme.

On the other hand, environmentalists still justifiably attack the state. Take the case of the Spanish hydrological plan. This is done by the state, not by multi-nationals. It is a state plan to destroy an enormous amount of natural areas. It is completely water supply oriented, refusing to question water waste in the south of Spain. So, it is the state that you have to attack. There is no point in saying let us be friends and find other solutions because the state is completely irresponsible in this particular issue. However, I would also like to say that it is often very clever to work with industry, even multi-nationals rather than against them. Well, why not?

World Wildlife Fund is giving us good examples. In the Netherlands one million households are buying green electricity. They do not do that because they trust the electricity companies, but they trust the WWF, which is checking the system, putting their label on this

green electricity. So, the one million Dutch do not trust the electricity companies, they trust the NGO's and that is why they believe this is a straight exercise, that they are not being cheated. Therefore, I think that when you talk about NGO's behaviour in shifting this balance of power, you have to consider all the different methods. Work with industry and fight it, work with the state and fight it. But, you have to make this choice always case by case and you cannot just be married to the state or industry and make a once for all choice.

CHAIRMAN: I agree with everything you say. Of course, there are states and states and there are multi-nationals and multi-nationals. Some you can work with and some you cannot. I mentioned to Ernst von Weizsäcker that a member of my family was on the International Chamber of Commerce Team in Kyoto, at the conference itself. The difference between American and European multi-nationals was huge. The majority of American multi-nationals did not want to have anything to do with Kyoto and effectively had their hand forced by the American Government, by Al Gore specifically, while the majority of European multi-nationals wanted to go along.

Reverting to the issue of globalisation, the fact that the Indians and the Chinese and the southeast Asians are increasing their consumption of energy and other things at a rate faster than their population growth, is a sign that they are actually getting things that they need from the west and that is why I am less of a critic of globalisation. Because it works in some places. In Africa, not only is it not working but for various reasons the situation is an absolute disaster; but there are parts of the world where it is working. The result of its working is to make our overall environmental problem worse and our crisis even greater.

STEFAN SPECK: One or two points.

The first, about our Chairman's attitude on globalisation: we should not take the extreme. I can only agree, that on one hand you have to keep a

distance, obviously a critical distance, but you can also say, no, not so far.

Secondly, I want to say a word on the concept of the rucksack and the *ecological footprint*. I am a bit sceptical about these issues. They try to oversimplify things down to almost one dimension and this is a problem because the environment is a bit more complex. One way out is the concept of *environmental space*, which you mentioned. It is certainly more interesting but it has its own problems too.

CHAIRMAN: Well, I think we are all sceptical if you take it too far but in order to get people to think about the issue, I think all three are useful.

YANNIS PALEOCRASSAS: I share Stefan's reservations about these notions. I have not studied the footprint concept very deeply but I have gone into some depth over the rucksack. I think the shortcoming is that here we are dealing with quantities of different resources that are used in the production of goods and services, which cannot be expressed in economic terms. They are useful from certain points of view but they do not represent, as yet, benchmarks of universal application.

CHAIRMAN: I think, we all have our reservations. Shall we go on to the next papers? Mr. Romanos, who is still with us but is going to leave us soon.

STEFAN SPECK: I found this session from my perspective, the most interesting because it was an area in which I have never been involved. I learned quite a lot from Mr Romanos' paper. Towards the end, he distinguished between mobility expectations and mobility withdrawing activities. I think this is very interesting and shows the whole problem related to mobility, because now with the whole process of development you have more and more time. Therefore, your mobility expectations are getting bigger and how you can constrain this? Perhaps this is an area that you can sort out with environmental taxes.

On the other hand, you could make a much bigger mess with the mobility withdrawing activities because you would make life more expensive there. In my view this mobility aspect is going in two different directions and you cannot solve this with one instrument.

ARISTIDIS ROMANOS: Thank you. When I mentioned this issue of mobility I did not have in mind really its repercussions in terms of economics. I simply mentioned it as an example of an area where, in the future, we might have to accept certain limitations as to our freedom of choice. What we consider today as given may not be so much given in the future. But thank you for mentioning this other aspect.

STEFAN SPECK: I am only an economist. I see your point, but then my next question is: if you want to constrain this freedom of choice how do you do it? Do you want to add more regulations and so on? And then we are coming back to what I feel is important for the whole discussion about Environmental Fiscal Reform. This is not one instrument. We need a package in which regulation is a part.

CHAIRMAN: Nobody ever said anything to the contrary. Mr. Alogoskoufis seemed to suggest that at some point somebody had said something to the contrary but we take it for granted that there will also be regulation. It is not that we start saying, "no, let us not have regulations in Environmental Fiscal Reform". We take it for granted that there will also be regulation of some sort.

STEFAN SPECK: But probably, we have to improve on what will be the regulation type. I would come back immediately to Doctor Theodora Lazaretou. She described the planning structure here in Greece as a bit of a mess. In such a case, we need also stronger regulations as a basis, so that we may build on it an environmental tax system.

CHAIRMAN: Indeed we need a better regulatory system. At present we have a very major issue which was not raised today but which I will

raise now. It concerns the terrible over-development of certain Aegean islands, which is an absolute scandal. On some of these islands development has gone way beyond any conceivable level of sustainability. Mykonos is the obvious example. Santorini is another.

It is done in the name of tourism but the result is to destroy the fabric of the islands and to convert them into a totally built up area where nature is no longer visible. Mykonos has actually reached that point. It is a condemnation of the development of Mykonos in particular and a condemnation of the Greek "model" of development in general. One has to go there to see it, to understand just how serious it is. And this is now very much in the news in Greece because the current Minister for the Aegean, very much to his credit, has said this must stop. He has introduced a whole battery of new regulations and we, in Elliniki Etairia, support him very strongly. Elliniki Etairia has this specific feature as an environmental organisation, in that it covers the built environment very much more than most environmental organisations do, which is why this subject was on the agenda and perhaps why you find it interesting; because it is not the sort of thing, which is normally discussed in international meetings like ours.

But you are absolutely right. The reason why it is on the agenda is that we need a mix of tax reform, which Doctor Lazaretou pointed to, and also, a much more substantive and improved regulatory system. Beyond these two, we require, and of course this is the great problem, a change in the way we want to live. Because the situation in Mykonos today is the result of a certain ideal that Greeks have of the way they would like to live and that ideal is neither related to Greek tradition nor is it related to any concept of living in harmony with the environment.

The result is something which is unsustainable and which requires a change. So, we need three things: We need simultaneously to attack the tax system, the regulatory system and our own values.

My last comment on this session is simply that I found Richard Simmons's paper extremely interesting. But perhaps I think more of it than you do.

STEFAN SPECK: No, this paper really gives some examples where you can see the influence of taxation, but not mainly in the sense of what we are thinking; because we are thinking in terms of introducing new taxes and using the revenues. In Richard Simmon's paper you first have the tax reduction and then you see the effects. But then, in order to have a neutral tax reform, you have to have a second round involving a tax increase elsewhere. So we have to see this over a longer time period in a dynamic sense.

CHAIRMAN: Perhaps we should ask ourselves a practical question. How is it that this particular little bit of environmental tax reform has progressed faster than some others? I would just like to point out that Mr. Simmons was not originally a member of Europa Nostra. He started with the Small and Medium Industry Association. Europa Nostra has been building up a lobby of groups with their own good reasons to campaign for these things. We are going to have to do this with our more general campaign and indeed we are already beginning to do it.

CHAIRMAN: Well, shall we go on to Yannis's paper?

STEFAN SPECK: I think that this was the highlight for the Greek people. This is certainly your idea how to move forward and I can only wish you good luck with this approach. I think it would be good if you could give some more specific examples of environmental taxes. Because then, from my perspective you could show it is possible in practice. When you propose something new, everybody says, well, give us some examples and then I can see if I can accept your figures, your proposal and see its impact on the environment. Take, for example, the fuel tax. If you increased it to a minimum of thirty or forty percent, you get quite a lot of more revenue, assuming consumption does not decrease as it usually does. The real issue is by how much the fuel duty revenue has escalated in real terms.

If you spread this increase over three, four years you have quite a lot of money already in the bag. You have to bear this in mind in con-

nection with these incentive taxes. Effectively I do not think you have so many taxes, which would really generate revenues that you could use to reduce labour taxation and produce the double dividend. You have the fuel taxes and transport taxes and also what you said, that you could completely readjust your motor vehicle taxation system to cover the environmental aspects. This is only what I think would give a more powerful lever.

CHAIRMAN: I am sure Yannis and I will take this very much on board. We were very hesitant to give one or two models of different ways in which we could approach the problem and throw it out to public opinion for discussion. Greek public opinion is still very, very uneducated on this issue.

I was however very heartened by the fact that we got the message from Mrs Zissi and I think that was a very, very positive message

STEFAN SPECK: But I think you have had the same problem in all other European countries. In Germany for example, when there was the first real approach from the German Institute for Economic Research, with their results based on facts, an NGO (I think it was WWF) asked them to model this. Nobody had any clue, knowledge was quite low there, but when you bring out facts there, then it becomes possible; especially if you put in the environmental benefits, you increase public awareness. I do not know whether you have examples from other European countries. How was it in the Netherlands when they introduced this Environmental Fiscal Reform? Was there some general knowledge about it?

JOHN HONTELEZ: Well, I think what happens in several northern countries is that the political parties mention the principle when they write their programs for the elections and quite often they do something in practice.

CHAIRMAN: I believe that in the last election in Greece none of the

two major political parties mentioned it in their manifestos and of course it will be a great advance when they do so.

YANNIS PALEOCRASSAS: I appreciate the comment that you should explain and give more examples. In conceptual terms, I could give examples for every tax that I proposed, i.e. for about seven existing taxes that have to be reviewed and an equal number that has to be introduced. But, when it comes to proposing specific tax rates and brackets, then you need the Wupperthal Institute or something equivalent to do it, you need considerable infrastructure.

So, what I propose is that the working group that we have in Elliniki Etairia continues its work into 2003 along these lines, in order to introduce some more examples or applications of the principle. On the other hand I have a question: Once you fix these, once you say, ten percent on lignite, immediately, you have a group of people that become convinced enemies of the proposal so you have a political problem. If you remain at a more general level, maybe you are less convincing but you create fewer enemies and my question is: In countries where this happened, how did they deal with similar problems?

JOHN HONTELEZ: I think you can perhaps present a more convincing case if you combine it with targets, particularly if they are politically accepted. For example, take CO_2 emissions or climate change, which is an important issue in this whole debate. I understand Greece has, according to the Kyoto agreement in the EU, the right to increase by twenty five percent, but that twenty five percent has already been reached so that means by definition, from now on, you have to stabilise your CO_2 or other gas emissions.

Well, this does not sound so radical and this is probably the target for all your energy related taxation. It also shows that you can have stable revenues because we are not talking about a drastic reduction. We are talking about stabilisation at this level. It is a politically unavoidable objective and from then on, of course, I think that on the basis of elas-

ticities and so on you can arrive at a rough estimate of how dramatic the energy taxation should be.

There may be other specific areas in Greece, where you can come to some not so broadly disputed targets, such as, I would say, water consumption. You could have a kind of political agreement about to what extent you have to stabilise or reduce water consumption in your country and then come to a conclusion about the level of financial incentives you need to achieve this target.

As to the resistance of specific groups, yes, they exist in all countries and in some cases like the Danish, they have come to an agreement with these energy intensive industries by saying, we will tax you but we will give you the money back for energy innovation activities and they have accepted it. In the UK under the climate change levy scheme companies can get a reduction, if they embark voluntarily on other energy saving programmes and so on. In the Netherlands there are also exemptions. Unfortunately, governments have simply given in to pressure. That is the example not to follow.

CHAIRMAN: Well, I think we are drawing to a close. We have had two fascinating days. I would like first to express Elliniki Etairia's gratitude to Yannis Paleocrassas for doing so much work.

I would like to express very warm thanks to our three speakers who are here at this moment, to Richard Simmons, to John Hontelez and to Stefan Speck and of course, to those who have left, and I would like to wish John mutual success for all our efforts. I would like to thank you, Mrs Karagiorgou, for bringing us the message from Mrs Zissi, Deputy Minister for the Environment. I would like to thank all those who have been present and taken an active part. I would like to thank Dimitra Mavrikou, who has been doing a lot of hard work behind the scenes and I would like to conclude by saying that we shall certainly not forget the issue. We are going to continue fighting it, as John will continue fighting it. The walls of Jericho did not fall at the first trumpet. But they did fall. Thanks.

APPENDIX A

Protecting and Developing the Competitive Advantage Provided by Our Shared Cultural Heritage[1]

by RICHARD D. SIMMONS

Introduction

Europe enjoys a unique competitive advantage in the shape of its priceless Cultural Heritage. This is a main asset of the European tourist sector, which generates about 5% of EU gdp and employs 8 million people.[2] High quality conservation works directly drive long-term quality employment in associated SME craft industries (for example stone masons, thatchers, flint knappers and the like). Indirectly, this cultural heritage activity regenerates historic regions creating high value added, as well as long-term employment. At the same time, conservation work underpins our shared vision of a diverse but common European identity and citizenship.

However, both the existing benefits and future opportunities are now under threat as a result of rising public expectations as to the quality of repairs to this heritage, the ravages of rising pollution and increases in tourist numbers in prime venues, all of which directly increase the costs of maintaining these assets. Over 66%[3] of these assets

1. In fact this is a summarised version of a report under the same title submitted by R. D. Simmons to the Meeting.
2. DG Enterprise: *Tourism & The European Union.*
3. UEHHA Internal Figure.

are in private ownership and a frequent response to rising costs is the use of cheaper resources from the black economy.

The Opportunity of the VAT Rate Review

Recent experience from the application of reduced rates of VAT in some member states and from the UK Listed Places of Worship Grant scheme, demonstrates that a reduction in VAT both, increases the amount of work undertaken and reduces the resort to the black economy for such work. We believe that there is a clear case, on economic, sustainability, regeneration and cultural diversity grounds, for including repair and maintenance to heritage buildings, in a permanent version of Annex K to the 6th VAT Directive, which hopefully will be adopted after the recent experiment.

Heritage Tourism – Driving Local Economies

A recent study by the English Tourism Council revealed that 78% of holiday trips to the South West region of England are motivated by "conserved landscapes". A 1998 EU study found that "*European holiday makers choose the sea (63%) other main types of destinations are the mountains (25%), cities (25%), the countryside (23%)*".[4] A recent declaration of the European Parliament, values Tourism as accounting for 5% of EU GDP and Employment, rising to 12% of GDP if the various associated trades are taken into account.

"*Through its 8 million people directly employed in the EU tourism sector, tourism's direct contribution in terms of jobs is particularly significant in some tourism-intensive economies. It also has an important indirect effect on employment in related services. Tourism is seen as a major opportunity for job creation over the coming years, in particular in less developed and peripheral regions.*

4. *Facts & Figures on Europeans on Holiday 1997-1998.*

Some sources estimate that travel and tourism jobs will increase by 2 million during the next 10 years".[5]

There are no reliable data as to the share of heritage tourism in this total picture. The UK study quoted above indicates that almost 50 percent of tourists to SW England chose the cities and the countryside, but does not differentiate between heritage and other reasons. But it would not be unreasonable to assume that perhaps 50 percent of tourism in Europe is motivated by the prospect of visits to heritage places, which of course include antiquities and museums.

York, England – An Example of a Local Economy Driven by Heritage Tourism

A recent study undertaken by the City Council of York[6] in the UK, found that 19,9% of businesses defined their core market as tourism, supported by a further 24,7% defining their secondary market as being tourism. York's tourist attractions are all based around its well-preserved heritage, with a magnificent Cathedral, medieval shopping street and well-known museums.

The local York labour market is estimated at 103.000 people. Heritage tourism is directly supporting approximately 20.000 core tourism jobs and about 25.000 secondary jobs or 43,6% of the employed population. In addition there are a small number of specialist occupations of craft excellence (e.g. stone masons and glaziers), which through a more or less guaranteed volume of work on local heritage buildings, allow for the ancient and rare skills to be preserved.

Heritage tourism expenditure not only generates income in the city but has "multiplier effects" through the purchase of associated services from outlying villages and market towns, in its hinterland, and through tourist day drips to other local attractions such as Fountains Abbey World Heritage Site.

5. DG Enterprise: *Tourism & The European Union.*

6. York Economic Development Bulletin, March 2002 (City of York Council).

Venice, Italy – A Further Example of a Local Economy Driven by Heritage Tourism

Venice as a world famous tourist location attracts more than its fair share of tourists. Some 30% of jobs and 24% of businesses in the historic centre are directly supported by tourist activity. Tourism is also used to explain the city's overall economic and political decline as there are in effect two populations: *one* based on the tourism industry that operates in the historic city centre and generates revenues of an estimated €900 million with a further €500 million in the unregistered black economy[7] and *then* a much smaller indigenous economy registered locally (estimated at €100 million) that pays the local taxes to maintain the city.

Venice demonstrates the problems of having a widely and freely available public good (the unique heritage) that supports a plethora of businesses, but at the expense of taxes and contributions raised from the few.

Heritage Tourism – Maintaining High Quality Assets

Research undertaken by the Tinbergen institute in the Netherlands found that "*... our discussion highlights that in principle, if the pressure from the global expansion of demand for cultural tourism continues to increase, endurance of tourism can be achieved only at the expense of quality. This is certainly incompatible with the preservation of the cultural assets on which tourism development is based. Therefore, a priority in tourism development policies should be the maintenance of quality through effective destination management*".[8]

In other words, the maintenance of a high quality heritage tourism industry that maintains Europe's competitive advantage in this area

7. La Nuova Venezia, 7/08/2001.

8. Silvia Caserta & Antonio Paolo Russo: *Spatial Displacement and Sustainable Heritage Tourism;* Tinbergen Institute Erasmus University, Rotterdam, TI – 2001-035/2.

requires continual investment in the quality of the assets themselves; otherwise the deterioration in quality will result in falling prices, falling margins and a general decline in the tourist destination.

"*European tourism's main asset lies in making full use of its natural and architectural heritage. As Charles Goldfinger commented, Europe offers a whole range of tourism services and experiences, from the traditional 'sea, sex and sun' to the market segments currently emerging in response to growing demand. The exploitation of these segments (historical heritage, rural tourism, urban tourism, etc.) requires sustained cooperation between all those involved in local development: public authorities, businesses and employment/training bodies*".[9]

The changes in the tourism industry in Venice, where top class restaurants are being substituted by cheaper establishments (e.g. McDonalds), where top class hotels regularly have vacancies, where group visits are increasing (currently estimated at 32%), where the number of repeat visits is falling, and where tour operators now sell packages to other resorts with day trips to Venice,[10] are positive indications of how the tourist economy can be damaged by over exploitation.

Support for Heritage Maintenance is Nearly Self Funding

A recent micro economic study of heritage maintenance work undertaken in Belgium found that: "*we obtain a payback of 98%: the authorities thus recover the near total of their initial investment. This effect of recovery is subdivided into tax receipts (75%) and in other flows (23%)*".[11] This same study found that as regards the effectiveness of taxation policy instruments in promoting heritage repairs "the impact of indirect taxation, that is VAT, is definitely more significant than that of direct taxation".[12]

9. EU Presidency 1997: *Employment & Tourism – Guidelines for Action*, Luxembourg.
10. Antonio Paolo Russo: *PHD Dissertation on Venice*, 2002.
11. Marc Rosiers BVBA, *La fiscalité et le patrimoine immobilier*, 12 May 2000, p. 37.
12. ibid p. 41.

The study also found that each €15,83 million in grant expenditure or tax reduction generates 594 jobs.[13]

Current Arrangements Foster the Black Economy

Market demand signals are also distorted by the amount of heritage repair and maintenance activity that is undertaken in the black economy, as building owners and contractors strive to reduce costs. A recent survey found that 54% of homeowners would employ a resource from the Black Economy to save on the VAT bill.[14]

This situation is well understood in Member States such as Italy, where according to a recent study into the Black Economy: "*... the Italian [experience] (in which a policy mix, combined with a spontaneous need to regularize, have elicited regularization of 600.000 workers). Over the last years, Italy has developed a policy including tax breaks, sector studies (linking taxable income to the value of certain parameters), changes in norms, centrally-supported local initiatives*".[15]

Repair Costs Rise in Line with Public Expectations of Conservation

Around 66% of heritage buildings are in private ownership, (that is individual owners or churches, trusts or charities). These groups maintain buildings to standards that are set by the public at large and are rising over time. In part this gradual increase in standards is due to environmental concerns and in part to the growing awareness of the need to protect our priceless heritage. In the 1950's it was acceptable to use emulsion paint on medieval Church walls. Such a practice is now often unacceptable, with a revised requirement to use lime wash, which is tricky to use and so must be applied by professionals and is thus more expensive to use.

English Heritage advises that strict quality controls apply to cleaning work performed on historic masonry leading to higher unit costs

13. ibid p. 44.

14. UK National Federation of Buildings.

15. Avignon Academy: UNDECLARED WORK: Empirical Evidences and New Policy Issue at European Level, Jan. 2001.

of repair. Standard industrial masonry cleaning processes involve the use of hazardous cleaning chemicals to speed the results. As historic masonry can be damaged by these methods, English Heritage has imposed standards based on their own research and textbooks combined with the British Standard 8221:2000 that they helped to write. These standards lead to improved scaffolding protection; cleaning tests; trial cleaning; pre-cleaning works and post-cleaning works etc, but result in significantly increased costs.[16]

Pollution is also increasing maintenance costs due to global warming increasing its impact. For example, the 17th century Bolsover Castle in the UK, located in the middle of an industrial area, had to have its battlements replaced (300mm thickness of dolomitic stone wearing away to around 6mm) after just 30 years due to pollution, when the previous stone, from the same source had lasted well over 100 years.[17]

Another example comes from English Heritage, who advise that the current rate of London stone decay is 1mm/decade as measured by BRE tests on St Paul's cathedral. This rapid deterioration is caused by a combination of carbon dioxide, sulphur dioxide (from power stations) and nitrous oxides (from vehicle emissions). This leads to acid deposition both in the dry and when it rains which is then combined with ozone (from power stations) that acts as a catalyst for increased levels of damage. Even though sulphur dioxide levels are reducing, there is an environmental "memory effect" from historic levels of pollution, plus new pollutants, that when combined with global warming makes stones decay even faster than before.[18]

Repair Costs Rise if Work Is not Undertaken in Timely Manner

A recent study into the costs and benefits of maintaining the cultural heritage in Belgium found that costs of repair escalate if repair work is delayed, emphasising the benefits of ensuring timely maintenance.

16. E-mail from English Heritage, May 2002.
17. English Heritage UK.
18. E-mail from English Heritage, May 2002.

"The analysis ... highlighted ... the effect of a new degradation of the monument on the cost of the restoration. The rate of deterioration, i.e. the percentage of deterioration of the building when work of restoration is delayed one period, amounts to 3,1%. That implies that the costs of restoration of a monument increase by 3,1% if work is deferred one year".[19]

Sustainability/Regeneration

The current tax policies do not adequately promote repairs to existing buildings, leading to examples where important heritage structures are under strong pressure for demolition or significant alteration as a result of the unfavourable tax regime.

An extreme example of this occurred some years ago, when the restoration of the medieval oak roof in Norwich Cathedral was abandoned in favour of "new build approach" to save the VAT! (This did result in a court case that was lost by the VAT authorities because it was determined this was an alteration and not a repair hence incurring zero VAT). The net result was the destruction of an irreplaceable medieval oak roof, with its replacement by concrete buttresses and a significantly lower VAT bill for the Cathedral.

Refurbishment is also much more energy efficient than new build. A 1976 study by the US National Trust found that it takes 2 barrels of oil to make just 8 new bricks! The oil was consumed across a number of activities including mineral extraction for the raw materials, kiln firing and transport. Restoration is thus more energy efficient than replacement especially as building standards now reflecting forthcoming EU Directives now dictate the energy efficiency of both new build and repairs.

Heritage trades also draw on centuries of good practice in recycling and waste avoidance. For example, thatching uses the unwanted reeds from flour production that would otherwise be destroyed. Such a complete use of resources leads to a more efficient use of natural resources.

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19. Marc Rosiers BVBA, *La fiscalité et le patrimoine immobilier,* 12 May 2000, p. 39.

There are numerous examples of restoration projects that have had a major impact on the local land values. Examples can be found in Paris (Les Halles); and the inner city area in Philadelphia. Worldwide, restoration projects raise the tone of an area, bring in private capital and start a virtuous circle of further restoration, regeneration and revival of economic activity. These vibrant areas can be contrasted to the newly built estates, such as St Denis in Paris, or Hulme in Manchester (now being demolished) that have been the home of crime, violence, lack of economic activity and social deprivation. The effect of these regeneration projects can be measured through the relative changes in land values.

Cultural Diversity

The member states of the EU have a linked but diverse European heritage and identity. Evidence of the desire to strengthen such links is the large number of twin historic towns and cities in Europe. European thinking in this area was adequately expressed in the recent Council of Europe declaration at Portoroz instructing: "*the Cultural Heritage Committee and the Secretariat to ... study ... ways and means of incorporating ... provisions reflecting the broadening of the concept of cultural heritage and the changing nature of its role from the standpoint of sustainable development, inter-community relations and social cohesion*".[20]

The EU itself has since its inception recognised the importance of promoting culture as a way of helping establish the community's identity, as the following excerpt from the Treaties establishing the European Union indicates:

"*2. Action by the Community shall be aimed at encouraging cooperation between Member States and, if necessary, supporting and supplementing their action in the following areas:*

20. Council of Europe 2002 Portoroz declaration.

- *improvement of the knowledge and dissemination of the culture and history of the European peoples;*
- *conservation and safeguarding of cultural heritage of European significance*".[21]

Current Trends Are Increasingly Challenging

The demand for unrestricted access to heritage buildings, with an increasing number of tourists, both from the locality and further afield, public expectations of ever-increasing standards of conservation and maintenance and the continual ravages of pollution are imposing an ever-growing burden on the shoulders of the few that maintain our heritage for the benefit of us all.

Desired Policy Adjustments

A Lower Rate VAT for Heritage Repairs Is Key as it Provides a Substantial Support to the Sector at Minimal Administrative Cost

From an EU perspective a significant contribution can be made to improve the competitive position of tourism and address the concerns expressed by the European Parliament that "Europe is still the world's most important tourist destination, but its relative position has been worsening in recent years".[22]

These fears can be partially removed by allowing a lower rate of VAT on repairs to heritage buildings and sites. This is a cost effective mechanism, which does not call for more bureaucracy and at the same addresses the issues of the "black economy". Such a measure will lead to extra employment at a marginal cost since the reduction in VAT

21. Article 151 of Title XII of the Treaty establishing the European Community as amended by the Treaty of Amsterdam.

22. Europe Tourism – declaration of the European Parliament, 14 May 2002.

widens the tax base. The easiest way to implement it is by giving permanence to the current experimental arrangements of Annex K.

Early Results of Annex K Experiment Show Lower VAT Rates Create Jobs[23]

The initial report made by the French Government on the reduced rate of VAT for building repairs states: "the reduced VAT rate on home renovation works generated the creation of 30.000 new jobs in this sector and helped stimulate the emergence of new businesses (up 4,2% in 2000). Service jobs increased by 4,2%".[24]

A report on the experience of a reduced rate of VAT for plastering and decorating in the Netherlands has demonstrated that: "*The VAT effect in the completion and maintenance sector cannot be calculated in 'hard' figures. It can, however, be cautiously estimated, by interrelating quantitative and qualitative elements from the survey. A tentative calculation arrives at a figure of 3 to 4,5 per cent of the labour capacity in the maintenance sector*".[25]

Other anecdotal reports have suggested this experiment of introducing lower VAT rates been successful in generating employment, and in reducing the black economy.

23. Annex K of 6th VAT Directive introduced a three year experiment on 2000 to allow reduced rates of VAT on certain labour intensive activities to create employment.

24. National Action Plan for Employment 2001 and Overview of 2000 – France.

25. Economic Institute for the Construction Industry, Amsterdam, December 2001.

APPENDIX B

5 Working Papers of Elliniki Etairia on Environmental Fiscal Reform

1. Tax Reform and Sustainability	(English translation)
2. Tax Reform for Sustainable Agriculture	(in Greek)
3. Energy and Sustainability	(in Greek)
4. Physical Planning, Construction and Sustainability	(in Greek)
5. Waste Management and Sustainability	(in Greek)

All papers were reviewed by the Working Group of ELLINIKI ETAIRIA on environmental fiscal reform and presented in a Press Conference on 15th March 2002

Tax Reform and Sustainability

Working Paper

by YANNIS PALEOCRASSAS

1. Taxation and Consumption

Tax revenues including social insurance contributions represent more than 2/5ths of Greek GDP. It is obvious that taxation is the prime parameter influencing prices and therefore consumption, production and investment patterns.

Table 1:
Fiscal Aggregates
of Central Government (ESA 95)

Category of taxes	GDP percentage		€ million	
	1999	2000	1999	2000
1. Taxes on production and imports	15,2	15,3	17.016	18.364
2. Taxes on income and property	10,5	10,8	11.755	12.963
3. Social Insurance contributions	13,7	13,8	15.337	16.564
4. Other current revenue	2,7	2,7	3.023	3.241
5. Total current receipts of Central Govt.	**42,1**	**42,6**	**47.131**	**51.133**
GDP (revised)	**100,0**	**100,0**	**111.950**	**120.029**

Source: Budget 2002.

As shown in Table 2 that follows the tax burden in Greece falls mainly on labour and very little on the use of natural resources. In the year 2000 taxation of human effort (including VAT which falls on labour and profits) covered 71% of total tax revenues and more than half of this consisted of social insurance contributions!!! This is a major obstacle to the increase of employment, while the very low environmental taxes (6,7% of revenues) encourage pollution and the overuse of natural resources.

Table 2:
Analysis of Fiscal Revenue

Category of taxes	GDP percentage		€ million	
	1999	2000	1999	2000
1. Environmental taxes	**3,6**	**2,9**	**4.012**	**3.445**
1.1 Energy taxes	2,1	1,8	2.340	2.188
1.2 Transport taxes	1,5	1,0	1.666	1.252
1.3 Pollution taxes	0,0	0,0	6	6
2. Taxes on human effort	**26,3**	**26,4**	**29.461**	**31.707**
2.1 VAT	7,8	8,3	8.768	9.919
2.2 Personal income tax	4,8	4,4	5.357	5.224
2.3 Social Insurance contributions	13,7	13,8	15.337	16.564
3. Taxes on real estate	**0,6**	**0,8**	**698**	**989**
4. Capital taxes	**1,7**	**1,7**	**1.943**	**2.082**
5. Other taxes	**7,1**	**8,1**	**7.994**	**9.668**
6. Other current revenue	**2,7**	**2,7**	**3.023**	**3.240**
7. Total current revenue	**42,1**	**42,6**	**47.131**	**51.132**

Source: Budget 2002.

2. Towards a New Tax Approach

The above tax structure cannot be justified from either an environmental, or a social but even a purely economic point of view. As indicated by a large number of relevant studies[1] external environmental costs represent about 20% of GDP. Applying this figure to the Greek GDP we obtain a figure of about € 24 billion, of which only a mere 14% is covered by environmental taxes. The remaining 86% represents a hidden subsidy for environmental destruction.

Even if we did not go all the way but simply aimed at an equal tax burden among labour and natural resources, social insurance contributions would fall to € 10 billion,; a decrease of 40%. On the basis of the standard Greek insurance contributions, which total 45% of a workers wag or salary, the average workers cost to industry would fall by 18%, which would be enough to wipe out unemployment (currently at 10%).

This reasoning proves that for Greece, which is a country that "sells" environment and at the same time has one of the highest unemployment rates in the EU, a fiscal reform towards the above direction is an urgent national must. However, Elliniki Etairia realises that such radical reforms do not happen overnight. We therefore propose a shift of 10% of current revenues away from labour and on to environmental taxes that will take place gradually all the way to the year 2010. Naturally the choice of the exact items, which will be reduced and the specific environmental taxes that will be imposed and/or increased, belongs to the Government. If we assume that all reductions are applied to social insurance contributions, their level might fall by 31%. The exact impact of the tax shift on employment depends on this and on the way this reduction is apportioned between workers and employers. Table 3, below, illustrates the tax shift proposal with specific numbers.

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1. E.g. see: Ernst Ulrich von Weizsäcker, *Earth Politics*, Zed Books, London 1994.

Table 3:
Proposed Tax Reform

Category of taxes	Present structure		Proposed structure	
	€ billion	‰	€ billion	%
1. Environmental taxes	3.445	6,7	8.558	16,7
2. Taxes on human effort	31.707	62,0	26.594	52,0
3. Taxes on real estate	989	1,9	989	1,9
4. Capital taxes	2082	4,1	2.082	4,1
5. Other taxes	9.668	18,9	9.668	18,9
6. Other current revenue	3.240	6,3	3.240	6,3
7. Total current revenue	51.132	100,0	51.132	100,0

Our proposition has two basic features:

First, it is neutral from a tax point of view. Total taxes remain constant.

Second, it presents a double dividend. It internalises environmental costs and therefore protects the environment, while at the same time it reduces over-taxation of labour and boosts employment.

Elliniki Etairia through its special working group has proceeded with a complete study of this proposition. However, we believe that we should not pre-empt the state and the social partners, by putting forward a specific package of fiscal reform detailed to the point of tax rates and categories. The only specific proposal we are making, at this stage, is the exemption of traditional and preserved buildings from VAT and the concentration of environmental taxes in the following groups:

1. Taxes on natural resources (e.g. petroleum products, coal, gas, timber, water, and the use of animal and marine wealth).
2. Energy taxes (excluding renewables).
3. Pollution taxes (e.g. on liquid, gas and solid waste).

4. Taxes on hazardous or polluting products (e.g. certain chemicals, or packaging materials or transport vehicles).
5. Taxes on land and space use that burdens the environment, such as dense commercial and industrial use, quarries, landfill sites, energy and transport infrastructure.

Many of these taxes already exist, but the point is to reform them in such a way that they reflect environmental goals. For example motor-car taxes should be based on the capacity of each car to produce harmful emissions. Naturally environmentally friendly cars would be tax-free.

In general, the criterion and the amount of the tax should be proportional to the environmental cost produced by the good or service in question. Elliniki Etairia is of the opinion that the government should initiate immediately a review of existing environmental taxes and of the areas where new taxes should be introduced. This effort may be assisted by the relative experience of other European states, which are more advanced in this respect.

3. Abolition of Hidden Subsidies

Despite the abolition of a number of subsidies in recent years, a number of them still persist. The most important from an environmental point of view is the hidden subsidy of lignite extraction and use by the Public Power Corporation. The latter neither pays to the state nor calculates any rent in lignite extraction. The same applies to the use of hydro resources. The result is a disproportionately high use of both resources in the production of electricity.

The direct consequence is, on one hand, the degradation of the environment in the vicinity of dams and on the other the impact of pollution on the health of the inhabitants, near the power production sites. But the indirect impact is perhaps more serious. The concentration of power production from lignite has led to the underdevelop-

ment of the capacity of power production from renewable sources, despite the abundance of such resources in Greece.

Another serious problem is the extensive hidden subsidisation of water use, in agriculture. Farmers are charged a ridiculous rate for irrigation water, which does not even cover the cost of pumping. Greece is deficient in water resources and already we have a large number of rivers and lakes, where aquatic life is seriously disrupted. The problem will become much more serious in the near future, as a result of global warming.

Tax reform should be accompanied by a careful scrutiny of all subsidies and their removal in the near future, in all cases where a harmful environmental impact is ascertained.

4. The Reform of the Institutional Framework

All the above proposals, however, drastic they may appear, are not enough. They should be accompanied by a careful but radical review of the institutional framework of our socio-economic system, which is singularly oriented towards consumerism and the destruction of the natural as well as the man-made environment. Basic elements, which must be reviewed are: *First*, the system of national accounts and the way we measure human activity, as well as our corporate accounting system which provocatively ignores the capital of nature. *Secondly*, the integration of man-made environment in our economic system and *thirdly*, a large number of the management systems, particularly in the sectors of energy, agriculture-fisheries-forestry, water, waste and physical planning. The more specialised working papers that accompany this text cover most of these areas.

Φορολογικές Αλλαγές για μια Αειφόρο Γεωργία

Υπεύθυνος Κειμένου: Δρ. ΑΛΕΞΑΝΔΡΑ ΜΕΞΑ

Σχέση Γεωργίας-Περιβάλλοντος

Η σχέση του φυσικού περιβάλλοντος και της γεωργίας αποκτά ιδιαίτερη σημασία στο πλαίσιο της αειφόρου ανάπτυξης. Τόσο η εντατική γεωργία όσο και η εγκατάλειψη παραδοσιακών κύριων αγροτικών δραστηριοτήτων έχουν προκαλέσει σε αρκετές περιπτώσεις σημαντική περιβαλλοντική υποβάθμιση.

Σήμερα πλέον αναγνωρίζεται ότι η αγροτική δραστηριότητα έχει έναν πολύ πιο σύνθετο ρόλο και η συμβολή της δεν περιορίζεται μόνο στην οικονομία (απασχόληση, συμμετοχή στο ακαθάριστο προϊόν) και στη συγκράτηση του πληθυσμού στην ύπαιθρο, αλλά και στην προστασία και διαχείριση του φυσικού περιβάλλοντος και των φυσικών πόρων. Οι γεωργικές εκτάσεις σε αρκετές περιπτώσεις αναγνωρίζονται ως περιοχές που έχουν διατηρήσει ως ένα βαθμό το φυσικό τους χαρακτήρα. Η συνέχιση των αγροτικών δραστηριοτήτων συμβάλλει στη διατήρηση του τοπίου, στη διατήρηση της βιοποικιλότητας, στον περιορισμό άλλων δραστηριοτήτων με αρνητικές επιπτώσεις στο περιβάλλον και ακόμα στη δημιουργία νέων οικοτόπων για πολλά είδη χλωρίδας και πανίδας. Άλλες θετικές επιπτώσεις είναι η λειτουργία της γεωργικής γης ως ρυθμιστικής ζώνης σε περιοχές άναρχης ανάπτυξης αλλά και σε ευαίσθητες περιβαλλοντικά περιοχές, ο ρόλος της ως παράγοντα καθορισμού και αξιοποίησης του μικροκλίματος των περιοχών κ.λπ.

Η εισαγωγή των χημικών λιπασμάτων και των φυτοφαρμάκων σε συνδυασμό και με άλλους παράγοντες συνέβαλαν στην εντατικοποίηση

της αγροτικής παραγωγής, που διατάραξε όμως την ισορροπία μεταξύ περιβάλλοντος και γεωργίας. Στις αρνητικές επιπτώσεις μπορούν να περιληφθούν η ανορθολογική εκμετάλλευση των φυσικών πόρων (νερού, χλωρίδας βοσκοτόπων), με συνέπεια την εξάντλησή τους ή την υποβάθμισή τους, η ανεξέλεγκτη διάθεση των αποβλήτων του γεωργικού τομέα, η ανορθολογική χρήση των λιπασμάτων και των φυτο-προστατευτικών προϊόντων στις καλλιέργειες, η εφαρμογή κακών πρακτικών με συνέπεια την ένταση φαινομένων διάβρωσης, η υποβάθμιση των φυσικών οικοσυστημάτων από μη συμβατές γεωργικές πρακτικές (υπερβολική χρήση αρδευτικού νερού, καταστροφές φωλιών, υπερβολική βόσκηση κ.λπ.), η μείωση της βιοποικιλότητας των καλλιεργούμενων ειδών κ.λπ.

Στη χώρα μας υπάρχουν αρκετές περιοχές (Θεσσαλικός κάμπος) με εντατική ανάπτυξη της γεωργίας και πολλές άλλες (όπως πολλά νησιά των Κυκλάδων) στις οποίες η γεωργία έχει περιοριστεί σημαντικά εξαιτίας του ανταγωνισμού με άλλες δραστηριότητες όπως ο τουρισμός, αλλά και εξαιτίας άλλων δυσκολιών (καλλιέργεια σε αναβαθμίδες). Και στις δύο περιπτώσεις διαπιστώνονται πολλές αρνητικές επιπτώσεις στο φυσικό περιβάλλον, οι οποίες θέτουν σε κίνδυνο την ίδια τη βιωσιμότητα των οικονομικών δραστηριοτήτων, συμπεριλαμβανομένης της γεωργίας.

Η προστασία του περιβάλλοντος στο πλαίσιο της αειφόρου ανάπτυξης αποτελεί βασικό στόχο. Ταυτόχρονα αυξάνεται η ζήτηση για προϊόντα ποιότητας που έχουν παραχθεί μέσω φιλικών προς το περιβάλλον διαδικασιών. Στο πλαίσιο αυτό θα πρέπει να προωθηθούν και στη χώρα μας πολιτικές και προγράμματα που θα στοχεύουν αφ' ενός στη στήριξη εναλλακτικών μορφών γεωργίας, αφ' ετέρου στην αντιμετώπιση των περιβαλλοντικών επιπτώσεων από τις γεωργικές δραστηριότητες που ασκούνται ήδη. Η χώρα μας έχει τις προϋποθέσεις για την καλλιέργεια προϊόντων υψηλής ποιότητας, ενώ ταυτόχρονα η προστασία του περιβάλλοντος θα πρέπει να επιδιωχθεί κατά προτεραιότητα καθώς το περιβάλλον αποτελεί τη βάση για την ίδια την ανάπτυξη της χώρας.

Για το σκοπό αυτό απαιτείται μία ολοκληρωμένη πολιτική η οποία θα ενσωματώνει τις προτεραιότητες και τους στόχους για το περιβάλλον στις άλλες τομεακές πολιτικές. Στο πλαίσιο αυτό θα πρέπει να αξιοποιηθούν διάφορα εργαλεία (κανονιστικά, οικονομικά κ.λπ.). Οικονομικά εργα-

λεία όπως φόροι ή η επιβολή χρέωσης για χρήση των φυσικών πόρων μπορεί να συμβάλουν θετικά, καθώς είναι δυνατό να περιορίσουν τη σπατάλη στη χρήση των πόρων, να ενθαρρύνουν άλλες μορφές καλλιεργειών (οργανικές), ενώ μπορεί να συμβάλουν και στην εξεύρεση πόρων για την αποκατάσταση και προστασία του περιβάλλοντος. Σε κάθε περίπτωση θα απαιτηθούν και άλλα μέτρα και κυρίως συντονισμός των επιμέρους τομεακών πολιτικών προκειμένου να επιτευχθούν οι στόχοι αυτοί.

Υφιστάμενη Κατάσταση: Οικονομική Διάσταση

Σήμερα καλλιεργούνται 34,5 εκατομμύρια στρέμματα, που αποτελούν και το 88,9% της συνολικής διαθέσιμης γεωργικής γης, η οποία ανέρχεται σε 38,8 εκατομμύρια στρέμματα. Το μέσο μέγεθος των εκμεταλλεύσεων δεν ξεπερνά τα 44,3 στρέμματα. Το μέγεθος αυτό δεν κρίνεται ιδιαίτερα βιώσιμο, καθώς η έκταση αυτή είναι μικρότερη από εκείνη που μπορεί να θεωρεί αποδοτική.

Με βάση τα στοιχεία της Γενικής Γραμματείας Πληροφοριακών Συστημάτων του Υπουργείου Οικονομικών για το φόρο εισοδήματος έτους 2000 (αφορά τα εισοδήματα που δηλώθηκαν για το 1999) διαπιστώνεται μεταξύ άλλων:

- *Αύξηση*, έναντι του 1998, του δηλωθέντος εισοδήματος των γεωργών, αλιέων και κτηνοτρόφων κατά 9,49%.
- *Μείωση* του φόρου εισοδήματος, έναντι του 1998, για τους γεωργούς, αλιείς, κτηνοτρόφους κατά 17,06%.
- Το ποσοστό συμμετοχής των παραπάνω στη συνολική φορολογία (φόροι δηλαδή που πληρώνουν) ανέρχεται σε 0,9%, μολονότι αποτελούν το 8,0% του συνόλου των φορολογουμένων.
- Το μέσο δηλωθέν εισόδημα ανέρχεται σε 1.439.731 δρχ. και ο μέσος φόρος σε 32.182 δρχ.
- Αύξηση του κόστους των εισροών κατά 1,2% σε σταθερές τιμές, κυρίως λόγω της αύξησης του κόστους της ενέργειας.

Υφιστάμενη Κατάσταση: Περιβαλλοντική Διάσταση

Μολονότι, όπως αναφέρθηκε, οι επιπτώσεις της γεωργίας είναι σύνθετες, στο πλαίσιο της Επιτροπής για τη Φορολογική Μεταρρύθμιση το ενδιαφέρον επικεντρώθηκε στη διαχείριση των υδατικών πόρων και στη χρήση φυτοφαρμάκων και λιπασμάτων. Και τα δύο θέματα είναι κρίσιμης σημασίας καθώς εγκυμονούν κινδύνους για την υγεία, ενώ συμβάλλουν στην υποβάθμιση του περιβάλλοντος. Ακολούθως παρουσιάζονται ενδεικτικά κάποια στοιχεία[1] για τους υδατικούς πόρους από τα οποία φαίνεται ότι η χώρα μας αντιμετωπίζει ήδη σοβαρά προβλήματα και για το λόγο αυτό απαιτείται ιδιαίτερη προσοχή. Με δεδομένο ότι η γεωργία αποτελεί το βασικό καταναλωτή υδατικών πόρων (σχεδόν 80% της συνολικής κατανάλωσης χρησιμοποιείται για άρδευση), η σχέση γεωργίας-χρήσης υδατικών πόρων αποκτά ιδιαίτερη σημασία στο πλαίσιο της παρούσας εκστρατείας.

Πίνακας 1:
Υδατικοί Πόροι και Αρδευτική Κατανάλωση

	Κατακρήμνιση/ Precipitation Mm	Εξάτμιση/ Evaporation Mm	Καθαρή κατακρήμνιση/ Net precipitation Mm	Άρδευση/ Irrigation Mm
Ελλάδα	849	492	357	312
Ιταλία	983	428	555	1188
Πορτογαλία	886	474	412	607
Ισπανία	662	432	230	546

ΕΕΑ, 1999

1. Στο πλαίσιο της παρούσας εργασίας δεν είναι εφικτή μία ολοκληρωμένη παρουσίαση των θεμάτων (ποσοτικών και ποιοτικών) που αφορούν τη διαχείριση των υδατικών πόρων και την κατανάλωση λιπασμάτων και φυτοφαρμάκων. Η παρουσίαση των διαφόρων στοιχείων είναι ενδεικτική των διαφόρων προβλημάτων.

Οι παραπάνω χώρες της ΕΕ είναι ιδιαίτερα ευαίσθητες στις επιπτώσεις από το φαινόμενο της ερημοποίησης εξαιτίας της έλλειψης ισορροπίας που διαπιστώνεται μεταξύ των φυσικών πόρων και της άντλησης αυτών για άρδευση. Η άντληση των υπόγειων αποθεμάτων σε αρκετές περιπτώσεις υπερβαίνει τους ρυθμούς αναπλήρωσης των αποθεμάτων αυτών, οδηγώντας σε πτώση της στάθμης του υδροφόρου ορίζοντα, σε απώλεια των οικοτόπων και σε αρκετές περιπτώσεις σε υφαλμύρινση των υδάτων. Στα εργαλεία για τον περιορισμό της μελλοντικής ζήτησης θα πρέπει να περιληφθεί η βελτίωση της αποτελεσματικότητας της χρήσης του νερού, η κατάλληλη τιμολόγηση σε συνδυασμό συνολικά με άλλα μέτρα της αγροτικής πολιτικής (αναδιάρθρωση καλλιεργειών κ.λπ.).

Πίνακας 2:
΄Ελλειψη Υπόγειων και Επιφανειακών Υδάτων

	Κλάσμα επηρεαζόμενου πληθυσμού Ratio of stressed population (1990)	
Χώρα	*Groundwater availability and stress*	*Surface and groundwater stress*
Αυστρία	0.14	0.00
Βέλγιο+Λουξεμβούργο	0.38	0.26
Δανία	0.31	0.26
Φινλανδία	0.33	0.00
Γαλλία	0.29	0.03
Γερμανία	0.37	0.07
Ελλάδα	0.52	0.41
Ιρλανδία	0.14	0.00
Ιταλία	0.45	0.14
Ολλανδία	0.20	0.20
Πορτογαλία	0.49	0.34
Ισπανία	0.45	0.18
Σουηδία	0.18	0.00
Ηνωμένο Βασίλειο	0.58	0.22
ΕΕ-15	0.41	0.13

Με βάση τα παραπάνω δεδομένα προκύπτει ότι οι χώρες που υπόκεινται σε μεγαλύτερη πίεση είναι η Πορτογαλία, η Ισπανία, η Ελλάδα, η Ιταλία και το Ηνωμένο Βασίλειο. Η Ελλάδα αποτελεί τη χώρα που υφίσταται τις μεγαλύτερες πιέσεις, εάν εξεταστούν συνολικά τα επιφανειακά και τα υπόγεια υδάτινα αποθέματα.

Από τα μέσα της δεκαετίας του 1980 η συνολική κατανάλωση λιπασμάτων του εμπορίου έχει μειωθεί στη χώρα μας κατά 20%. Η ολική μέση τιμή αζώτου, μετρούμενη στην επιφάνεια του εδάφους σε εθνικό επίπεδο, έχει μειωθεί από 5,6 kg N/στρέμμα καλλιεργούμενης γης το 1985 σε 3,3 το 1997. Παρότι η εξέλιξη αυτή είναι θετική, η χρήση αζωτούχων λιπασμάτων (7,8 kg N/στρέμμα) είναι πάνω από το μέσο όρο των χωρών του ΟΟΣΑ.

Σε αντίθεση με τις υπόλοιπες χώρες του ΟΟΣΑ η συνολική κατανάλωση φυτοφαρμάκων στην Ελλάδα έχει αυξηθεί την τελευταία δεκαετία κατά 23%. Η ένταση χρήσης φυτοφαρμάκων στην Ελλάδα αντιστοιχεί σε 0,23 kg καθαρού προϊόντος (ενεργών συστατικών) ανά στρέμμα καλλιέργειας, είναι δηλαδή ισοδύναμη του μέσου όρου των χωρών του ΟΟΣΑ.

Τιμολόγηση και Κοστολόγηση

Οι αγρότες δεν χρεώνονται για τη χρήση του νερού για άρδευση το οποίο παρέχεται και διανέμεται είτε μέσω μεμονωμένων αρδευτικών έργων είτε συλλογικών τα οποία λειτουργούν υπό την επίβλεψη συνεταιρισμών χρηστών (ΤΟΕΒ), οι οποίοι και χρεώνουν συμβολικά ποσά (30.000-70.000 δρχ. το χρόνο ανά 10 στρέμματα). Δυστυχώς η χρέωση δεν συνυπολογίζει την κατανάλωση η οποία γίνεται, με εξαίρεση ορισμένα αρδευτικά δίκτυα που έχουν πρόσφατα κατασκευαστεί.

Δαπάνες

Στη χώρα μας από την εποχή ήδη του Ελ. Βενιζέλου έχουν δαπανηθεί ιδιαίτερα υψηλά ποσά για την κατασκευή έργων υποδομής στη γεωργία.

Την τελευταία δεκαετία περίπου 30 δισ. δρχ. δαπανήθηκαν ανά έτος για εγγειοβελτιωτικά έργα. Το 50% των δαπανών καλύπτεται από Κοινοτικούς πόρους. Οι δαπάνες αφορούν επενδύσεις για αρδευτικά έργα καθώς και αποζημιώσεις προς τους αγρότες σαν αντιστάθμιση της απώλειας εισοδήματος κατά τη διάρκεια της κατασκευής των έργων αυτών. Αξίζει πάντως να σημειωθεί ότι η πολιτική που ακολουθείται συνεχίζει να στοχεύει στην ικανοποίηση της ζήτησης και δεν αποσκοπεί στη διαχείριση της ζήτησης (*demand management*) που αποτελεί πλέον και βασική αρχή στο πλαίσιο της ολοκληρωμένης διαχείρισης των υδατικών πόρων.

Περιορισμοί

Στο πλαίσιο της προώθησης μέτρων που θα συμβάλουν στην ορθολογική χρήση των πόρων και πιθανότατα μέσω της επιβολής φόρων στη χρήση τους, θα πρέπει να συνεκτιμηθούν και διάφοροι περιορισμοί όπως μεταξύ άλλων:

- Οι τιμές ορισμένων αγροτικών προϊόντων μειώθηκαν εξαιτίας της κατάργησης των τιμών παρέμβασης και των ελάχιστων τιμών σε βασικά αγροτικά προϊόντα. Στο βαμβάκι και στο λάδι οι ονομαστικές τιμές εσοδείας 1999-2000 ήταν οι χαμηλότερες της τελευταίας δεκαετίας. Το ίδιο χαμηλές είναι οι τιμές στα οπωροκηπευτικά, στον καπνό, στο χοιρινό κρέας αλλά και στα περισσότερα αγροτικά προϊόντα. Στα πλαίσια της ΑΤΖΕΝΤΑ 2000 προωθούνται οι νέοι κανονισμοί για το βαμβάκι, στο οποίο αυξάνεται το πρόστιμο συνυπευθυνότητας και επιβάλλονται δραστικοί περιορισμοί της καλλιέργειας. Στα οπωροκηπευτικά στα οποία μειώνονται οι επιδοτήσεις επιβάλλονται χαμηλές ποσοστώσεις και εξοντωτικά πρόστιμα συνυπευθυνότητας και καταργούνται οι ελάχιστες τιμές. Στο ρύζι στο οποίο μειώνεται η ποσόστωση και καταργείται η παρέμβαση και στη ζάχαρη στην οποία μειώνονται οι ποσοστώσεις κ.ο.κ. Επίσης καταργήθηκαν οι τιμές παρέμβασης στο λάδι και η ελάχι-

στη τιμή στα χυμοποιήσιμα πορτοκάλια, με αποτέλεσμα οι τιμές των παραγωγών να φτάσουν σε χαμηλά επίπεδα.

- Επιβάλλονται ήδη έμμεσοι φόροι (π.χ. λιπάσματα, φάρμακα, καύσιμα, επιτόκια, μηχανήματα, ανταλλακτικά, υβρίδια κ.λπ.) πέρα από την άμεση φορολόγηση των αγροτών.
- Οι αντιλήψεις ως προς τη χρήση των διαφόρων πόρων, κυρίως του νερού, δεν ευνοούν εύκολα κάποιες αλλαγές, μολονότι αναγκαίες.
- Τα εισοδήματα των αγροτών μας, εκτός από τις πολύ μεγάλες και πολύ εντατικές εκμεταλλεύσεις, δεν ενθαρρύνουν εύκολα μια μεγαλύτερη φορολογική επιβάρυνσή τους (μικρό μέγεθος μη βιώσιμων γεωργικών εκμεταλλεύσεων).

Οι περιορισμοί αυτοί καταδεικνύουν την ανάγκη υιοθέτησης *ολοκληρωμένων παρεμβάσεων* στο πλαίσιο των οποίων θα υιοθετηθούν και οικονομικά μέτρα.

Η Εμπειρία από Άλλες Ευρωπαϊκές Χώρες

Σε ό,τι αφορά τους υδατικούς πόρους, η πολιτική εστιάζεται πλέον όχι στην ενθάρρυνση νέων επενδύσεων για την παροχή, αλλά στη διαχείριση της ζήτησης και στον έλεγχο των απωλειών. Η αντίληψη αυτή αντανακλάται και στη *Νέα Οδηγία Πλαίσιο για τους Υδατικούς Πόρους* η οποία εισάγει το πλαίσιο για την ολοκληρωμένη διαχείριση των υδάτων και τη διαμόρφωση συντονισμένων πολιτικών, π.χ. για τη διαχείριση των υπόγειων και των επιφανειακών υδάτων, λαμβάνοντας υπόψη τις μελλοντικές απαιτήσεις σε νερό καθώς και την περιβαλλοντική επιβάρυνση. *Να σημειωθεί ότι ένας από τους στόχους της νέας Οδηγίας Πλαίσιο είναι να διασφαλίσει ότι η τιμή του νερού αντανακλά καλύτερα τα οικονομικά κόστη, συμπεριλαμβανομένου του κόστους της εξάντλησης των περιβαλλοντικών πόρων καθώς και του κόστους παροχής των διαφόρων υπηρεσιών.*

Ως προς την επιβολή φόρων στη γεωργική παραγωγή, φαίνεται ότι κατά τη περίοδο 1997-2000 υπήρξε μία μικρή πρόοδος σε ό,τι αφορά την εισαγωγή νέων φόρων, όπως για παράδειγμα φόροι στα φάρμακα

και τα λιπάσματα ή φόροι σε άλλα αγαθά, όπως π.χ. φόροι συσκευασίας, κατά κύριο λόγο όμως στις χώρες της Βόρειας Ευρώπης. Οι φόροι στο γεωργικό τομέα δεν είναι ιδιαίτερα συνήθεις στην ΕΕ, εφαρμόζονται συνήθως στις Σκανδιναβικές χώρες, στην Ολλανδία και στο Βέλγιο. Με βάση έκθεση της Ευρωπαϊκής Ένωσης Κατασκευαστών Λιπασμάτων, η μείωση χρήσης λιπασμάτων στην Ολλανδία και στη Δανία υπήρξε ιδιαίτερα σημαντική. Στη Νορβηγία δρομολογήθηκαν πρόσφατα αλλαγές στη φορολόγηση των φυτοφαρμάκων. Συγκεκριμένα από το 1999 η επιβολή φόρου συνδέεται με το είδος του χρησιμοποιούμενου φαρμάκου. Τα φυτοφάρμακα κατατάσσονται σε διαφορετικές ομάδες με βάση τους περιβαλλοντικούς κινδύνους και τους κινδύνους για την υγεία. Ο φόρος που επιβάλλεται διαφοροποιείται ανάλογα με τις διαφορετικές ομάδες κινδύνου.

Κατευθύνσεις στο Πλαίσιο της Φορολογικής Μεταρρύθμισης

Στο πλαίσιο της εκστρατείας για την τροποποίηση του συστήματος φορολόγησης, κρίσιμη σημασία αποκτούν:

1. *Η απάλειψη ή ο σημαντικός σταδιακός περιορισμός των επιδοτήσεων* προϊόντων που καλλιεργούνται με τρόπο μη φιλικό για το περιβάλλον, καθότι ενθαρρύνουν την περαιτέρω υποβάθμιση του περιβάλλοντος και των φυσικών πόρων.
2. *Η καλύτερη τιμολόγηση της χρήσης του νερού*. Η σημερινή κατάσταση ενθαρρύνει την υπερβολική και αλόγιστη κατανάλωσή του. Στη χώρα μας η γεωργία αποτελεί το μεγαλύτερο καταναλωτή των υδατικών πόρων (επιφανειακών και υπόγειων), οι οποίοι σημειωτέον είναι σημαντικά περιορισμένοι.
3. *Η φορολόγηση της χρήσης των λιπασμάτων και φυτοφαρμάκων*, καθώς οι σημερινές τιμές δεν περιλαμβάνουν το κόστος των ρυπαντικών φορτίων που δημιουργούνται από την αλόγιστη χρήση τους.
4. *Η άμεση στήριξη μέτρων και πολιτικών για την προώθηση ήπιων μορφών γεωργικής ανάπτυξης*, φιλικών προς το περιβάλλον. Σημαντικό εργα-

λείο για την εισαγωγή αποτελεί ο *Αγρο-Περιβαλλοντικός Κανονισμός 2078/92*, ο οποίος εντάσσεται στη μεταρρύθμιση της Κοινής Αγροτικής Πολιτικής. Ο Κανονισμός στοχεύει στην εφαρμογή προγραμμάτων που ενθαρρύνουν τους γεωργούς να εφαρμόσουν φιλικές προς το περιβάλλον μεθόδους καλλιέργειας, να προωθηθούν εκτατικές (σε αντίθεση με τις εντατικές) μέθοδοι παραγωγής, να ενθαρρυνθεί η συντήρηση εγκαταλελειμμένων εκτάσεων, να ενθαρρυνθεί η μακροπρόθεσμη παύση της καλλιέργειας, να ενθαρρυνθεί η διαχείριση υπέρ της πρόσβασης και ψυχαγωγίας του κοινού, να ευνοηθεί η ευαισθητοποίηση και η κατάρτιση των γεωργών σε θέματα γεωργικής παραγωγής. Τα μέτρα που προβλέπονται για την επίτευξη των παραπάνω στόχων είναι η μείωση χημικών ουσιών σε σημαντικό βαθμό, η υιοθέτηση μεθόδων βιολογικής καλλιέργειας, η εκτατικοποίηση της φυτικής παραγωγής, η μείωση του αριθμού των βοοειδών και η εφαρμογή μεθόδων για την προστασία του περιβάλλοντος ή εκτροφή ζώων τοπικών φυλών, η συντήρηση εγκαταλελειμμένων δασικών ή γεωργικών εκτάσεων, η παύση της καλλιέργειας για είκοσι τουλάχιστον χρόνια, η προώθηση της πρόσβασης και ψυχαγωγίας του κοινού.

Στην Ελλάδα εφαρμόζονται από το Υπουργείο Γεωργίας τέσσερα Προγράμματα για την εφαρμογή των ανωτέρω, βάσει του προαναφερόμενου Κανονισμού:

1. Πρόγραμμα Βιολογικής Γεωργίας κυρίως σε
   - *οικολογικά ευαίσθητες περιοχές,*
   - *παραλίμνιες, παραποτάμιες, παράκτιες περιοχές,*
   - *νησιωτικές, ημιορεινές, μειονεκτικές περιοχές,*
   - *ορισμένες πεδινές.*
2. Πρόγραμμα για τη μείωση της νιτρορύπανσης γεωργικής προέλευσης στο Θεσσαλικό κάμπο (με βάση την Οδηγία 91/676/ΕΟΚ).
3. Πρόγραμμα για την εικοσαετή παύση καλλιέργειας γεωργικών εκτάσεων.

Πίνακας 3:
Εφαρμογή του Κανονισμού 2078/92

Χώρα	Αριθμός δικαιούχων 000	Αριθμός εκμετ/σεων 000	Ποσοστό δικαιούχων			Ποσοστό επιφανείας	Δαπάνη EAGGF σε εκατομ. ευρώ	
			Ολες οι εκμετ/σεις	*Ζώνες Στόχου 1*	*Ζώνες εκτός Στόχου*		Σύνολο (1993-1998e)	Ποσοστό συνόλου
EL	**2.4**	**774**	**0.3%**	**0.3%**	**–**	**0.6**	**16.9**	**0.3**
B	2.0	71	2.8	3.0%	2.8%	1.7	14.9	0.3
DK	8.0	69	11.6	–	11.6%	3.9	28.2	0.5
D	*	*	*	*	*	38.9	1162.9	21.3
ES	33.9	1278	2.7	3.2%	–	2.9	186.4	3.4
FR	171.0	735	23.3%	5.8%	23.9%	22.9	656.3	12.0
IRL	32.2	153	21.0	21.0%	–	24.1	273.7	5.0
I	176.3	2482	7.1	4.7%	10.0%	13.6	843.8	15.4
L	1.9	3	60.3	–	60.3%	75.9	9.2	0.2
NL	6.7	113	5.9	1.8%	6.0%	1.9	40.5	0.7
P	137.9	451	30.6	30.6%	–	16.8	227	4.2
UK	25.4	235	10.8	10.9%	10.8%	14.6	149.7	2.7
Os	173.4	222	78.2	56.7%	80.2%	67.8	1096	20.0
Fin	77.8	101	77.2	–	77.2%	86.9	531.8	9.7
S	56.5	89	63.7	–	63.7%	51.6	229.7	4.2
E-14 (excl. Germany)	**905.4**	**6774**	**13.4%**	**7.4%**	**20.0%**			
E-15						**19.5**	**5467**	**100%**

DGVI Commission, 1998

4. Πρόγραμμα για την προστασία και διαχείριση της βιοποικιλότητας και της γενετικής ποικιλομορφίας: προστασία ποικιλιών καλλιεργούμενων φυτών και φυλών ζώων που κινδυνεύουν με εξαφάνιση και γενετική διάβρωση.

Ας σημειωθεί ότι η χώρα μας δεν έχει αξιοποιήσει ακόμα τις δυνατότητες που παρέχονται μέσω του κανονισμού 2078/92. Αυτό επιβεβαιώνεται και από τον πίνακα που ακολουθεί. Η χώρα μας έχει το μικρότερο ποσοστό συμμετοχής με μεγάλη διαφορά μάλιστα και από τον κοινοτικό μέσο όρο.

Εκτός από τον παραπάνω κανονισμό υπάρχει και ο *Κανονισμός 2080/92 (Afforestation Council Regulation)* που στοχεύει στην αποζημίωση των αγροτών για τις σχετικές δαπάνες που πραγματοποιούν και την απώλεια εισοδήματος που προέρχονται από τη φύτευση δέντρων σε γεωργική γη.

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Ενέργεια και Αειφορία

Κείμενο Εργασίας

Υπεύθυνος Κειμένου: Ι. ΠΑΛΑΙΟΚΡΑΣΣΑΣ

1. Η Δομή του Ενεργειακού Συστήματος

Η Ελλάδα δεν είναι πλούσια σε ενεργειακούς πόρους. Μέχρι στιγμής το πετρέλαιο που έχει βρεθεί είναι ελάχιστο, ενώ ο λιγνίτης είναι σημαντικός σε ποσότητα αλλά χαμηλής θερμικής περιεκτικότητας. Είναι όμως από τις πλουσιότερες ευρωπαϊκές χώρες σε ανανεώσιμες πηγές ενέργειας, γιατί εκτός από το ανεπτυγμένο υδροδυναμικό διαθέτει άφθονους φυσικούς πόρους ηλιακής, αιολικής και θαλάσσιας ενέργειας, καθώς και αρκετή γεωθερμία. Ιστορικά όμως η ανάπτυξη του ενεργειακού μας συστήματος χαρακτηρίζεται από μια μονομερή εμμονή στους λιγνιτικούς πόρους, όπως δείχνει και το πιο πρόσφατο ενεργειακό ισοζύγιο του 1998.

Πράγματι το 1998 ο λιγνίτης κάλυψε ως πρώτη ύλη το 83% της εγχώριας παραγωγής ή το 31% της ακαθάριστης εγχώριας κατανάλωσης, ενώ οι ανανεώσιμες πηγές ενέργειας μόλις το 10% και 4% αντιστοίχως. Οι συνέπειες είναι εξαιρετικά δυσμενείς σε δύο τομείς: *Πρώτον*, η παραγωγή ενέργειας γίνεται με μεγάλες απώλειες που φτάνουν σχεδόν το 70% και οφείλονται σχεδόν καθ' ολοκληρία στο λιγνίτη. *Δεύτερον*, οι εκπομπές αερίων του θερμοκηπίου είναι ιδιαίτερα αυξημένες με όλες τις δυσμενείς συνέπειες τόσο στην υγεία των κατοίκων των περιοχών που βρίσκονται οι λιγνιτικοί σταθμοί όσο και στην ένταση του φαινομένου του θερμοκηπίου σε παγκόσμια κλίμακα.

Τα στοιχεία όμως του Πίνακα 1 δείχνουν και μια μεγάλη υστέρηση στην εκμετάλλευση του πλουσιότατου δυναμικού σε ΑΠΕ.

Πίνακας 1:
Ισοζύγιο Ενέργειας 1998
σε χιλιάδες μετρ. τόνους ισοδυνάμου πετρελαίου (ΜΤΙΠ)

Κατηγορία	ΜΤΙΠ	% Εγχώρ. Παραγωγής	% Ακαθάρ. Κατανάλ.
Α. Εγχώρια Παραγωγή			
Λιγνίτης	8.353	83,0	31,1
Αργό πετρέλαιο	316	3,1	1,2
Φυσικό αέριο	40	0,4	0,1
Υδροηλεκτρική ενέργεια	320	3,2	1,2
ΑΠΕ	1.035	10,3	3,8
Σύνολο	**10.064**	**100,0**	**37,4**
Μείον απώλειες παραγωγής	*-6.887*	-68,4	-25,6
Καθαρή εγχώρια παραγωγή	**3.177**	**31,6**	**11,8**
Συν απώλειες μεταφοράς	*274*	2,7	1,0
Συν κατανάλωση ενεργειακού τομέα	*1.985*	19,7	7,4
Συν στατιστικό σφάλμα	*359*	3,6	1,3
Ακαθάριστη εγχώρια παραγωγή	**5.795**	**57,6**	**21,5**
Β. Καθαρές Εισαγωγές			
Λιθάνθρακας	849		3,2
Υγρά καύσιμα	19.428		72,2
Ηλεκτρισμός	138		0,5
Αέρια καύσιμα	690		2,6
Σύνολο	**21.105**		**78,5**
Ακαθ. Εγχώρια Κατανάλωση	**26.900**		**100,0**

Είναι χαρακτηριστικό ότι ενώ σε αρκετές ευρωπαϊκές χώρες λειτουργούν με επιτυχία μεγάλοι σταθμοί ηλεκτροπαραγωγής με βάση την παλίρροια της Βόρειας Θάλασσας, στη χώρα μας δεν υπάρχει ούτε μελέτη για την εκμετάλλευση της σταθερής ανά 6ωρο ισχυρότατης παλίρροιας του Ευρίπου. Συνολικά, οι ανανεώσιμες πηγές ενέργειας καλύπτουν μόλις το 10% της εγχώριας παραγωγής, τη στιγμή που στην Ολλανδία και τη Δανία ξε-

περνούν το 40%. Η υστέρηση μάλιστα της ΔΕΗ είναι ακόμα μεγαλύτερη, γιατί μεγάλο μέρος της δραστηριότητας στον τομέα ΑΠΕ είναι από ιδιώτες. Εξάλλου πρέπει να σημειωθεί ότι και τα υδροηλεκτρικά έργα δεν παράγουν μεν ρύπους, αλλά εξακολουθούν να έχουν μεγάλο περιβαλλοντικό κόστος με τις τεράστιες διαταραχές που προκαλούν στα οικοσυστήματα και στο τοπίο. Δεν θα ήταν υπερβολή να συμπεράνουμε ότι *η δομή του τομέα της ενέργειας στη χώρα μας είναι η χειρότερη δυνατή από περιβαλλοντική σκοπιά.*

Αν εμβαθύνουμε λίγο στους λόγους που οδήγησαν σ' αυτή την παράλογη και ασύμφορη δομή, θα διαπιστώσουμε ότι οφείλονται στη μέχρι τώρα μονοπωλιακή παραγωγή ενέργειας από τη ΔΕΗ. Ο δημόσιος χαρακτήρας της επιχείρησης αυτής της εξασφάλιζε τη *δωρεάν χρήση του λιγνίτη αλλά και των υδροδυναμικών πηγών* και έτσι οδήγησε στη μονομερή ανάπτυξή τους, σε μια περίοδο που η τεχνολογία παραγωγής ηλεκτρισμού από αιολική και ηλιακή ενέργεια δεν είχε αναπτυχθεί. Σήμερα αυτό δεν ισχύει πλέον, αλλά η αδράνεια υπέρ του λιγνίτη και της υδροηλεκτρικής ενέργειας συνεχίζεται, δεδομένου ότι δεν επιβαρύνεται το κόστος παραγωγής των μορφών αυτών ούτε με έγγειο πρόσοδο (το κόστος χρήσης των λιγνιτικών και υδατικών αποθεμάτων) ούτε με το τεράστιο περιβαλλοντικό κόστος που προκαλούν.

Πράγματι εάν δεν γινόταν τέτοια ευρεία χρήση του λιγνίτη, η Ελλάδα δεν θα είχε πρόβλημα αερίων του θερμοκηπίου, δεδομένου ότι από τα στοιχεία της Ρυθμιστικής Αρχής Ενέργειας προκύπτει ότι το 1998 οι μισές εκπομπές διοξειδίου του άνθρακα (CO_2) και του θείου (SO_2) καθώς και το 20% του οξειδίου του αζώτου (NOx) ήταν από τον ενεργειακό τομέα, παρόλο που η συμμετοχή του στην ακαθάριστη εγχώρια κατανάλωση ενέργειας ήταν μόλις 22%.

2. Προς μια Αειφόρο Ενεργειακή Πολιτική

Το συμπέρασμα της ανάλυσης που προηγήθηκε είναι ότι τόσο από πλευράς περιβαλλοντικής όσο και από πλευράς οικονομικής αποτελεσματικότητας η εμμονή στη χρησιμοποίηση του λιγνίτη και μάλιστα η κρυφή επιδότηση του κόστους εξόρυξής του είναι ανεπίτρεπτες. Γιατί η

στρέβλωση των τιμών που δημιουργεί οδηγεί σε καθυστέρηση της ανάπτυξης των ανανεώσιμων πηγών ενέργειας και σε στρέβλωση του ανταγωνισμού γενικότερα. Η ενεργειακή πολιτική τόσο της κυβέρνησης όσο και της ΔΕΗ θέλει ριζική αναθεώρηση.

Βέβαια η αναθεώρηση επιβάλλεται και από την απελευθέρωση του τομέα που επιβάλλεται από τις οδηγίες της Ευρωπαϊκής Ένωσης. Σε ένα καθεστώς ελεύθερης παραγωγής και πρόσβασης στο δίκτυο διανομής η ΔΕΗ είναι υποχρεωμένη να καταργήσει το καθεστώς εσωτερικής επιδότησης που υπήρχε με τη διαφορετική και ανεξάρτητη από το κόστος τιμολόγηση στις διάφορες κατηγορίες καταναλωτών. Είναι ευκαιρία λοιπόν να ενταχθεί και το περιβαλλοντικό κόστος στη νέα ενεργειακή πολιτική. Αυτό μπορεί να γίνει με την εφαρμογή των εξής αρχών:

- Υπολογισμός και χρέωση κάθε παραγωγού με το περιβαλλοντικό κόστος της ρύπανσης και των άλλων δυσμενών περιβαλλοντικών επιπτώσεων που προκαλεί, αλλά και της εξάντλησης των φυσικών πόρων.
- Κατάργηση κάθε φανερής ή κρυφής επιδότησης και αποκατάσταση «αληθινών» τιμών που θα καλύπτουν πλήρως το κόστος, συμπεριλαμβανομένου και του περιβαλλοντικού.
- Απευθείας επιδότηση από τον κρατικό προϋπολογισμό των κοινωνικών ομάδων που ενδεχομένως θα πληγούν από αυτά τα μέτρα και που η κοινωνία κρίνει ότι πρέπει να ενισχύονται, όπως οι κάτοικοι απομονωμένων περιοχών, ορισμένοι αγρότες κ.λπ.

Στην πράξη αυτό θα σημάνει ότι η παραγωγή ηλεκτρισμού από λιγνίτη, λιθάνθρακα και πετρέλαιο θα επιβαρυνθεί σημαντικά σε σχέση με αυτήν που βασίζεται σε ανανεώσιμες πηγές ενέργειας. Λιγότερο θα επιβαρυνθεί η παραγωγή με βάση το φυσικό αέριο. Τέλος, σε κάποιο ελαφρότερο βαθμό θα επιβαρυνθεί και η υδρο-ηλεκτρική παραγωγή λόγω του περιβαλλοντικού κόστους των φραγμάτων και των εκτροπών.

Είναι βέβαιο ότι με την προτεινόμενη νέα δομή τιμών θα δοθεί μεγάλη ώθηση στην επέκταση της χρήσης της αιολικής ενέργειας αλλά και στην ανάπτυξη άλλων ανανεώσιμων πηγών (ηλιακής, θαλάσσιας, γεωθερμίας), που σήμερα βρίσκονται σε νηπιακό στάδιο στη χώρα μας.

Χωροταξία-Δόμηση και Αειφορία

Κείμενο Εργασίας

Υπεύθυνη Κειμένου: ΘΕΟΔΩΡΑ ΛΑΖΑΡΕΤΟΥ

Ο πολεοδομικός σχεδιασμός και η δόμηση έχουν ασκηθεί στην Ελλάδα με βασικό κριτήριο την πίεση που ασκεί σε κάθε χρονική στιγμή και σε κάθε τόπο η πληθυσμιακή πυκνότητα και η οικονομική δραστηριότητα. Παράλληλα, τα αρχιτεκτονικά και τα κατασκευαστικά πρότυπα που έχουν επιλεγεί μέχρι σήμερα δεν λαμβάνουν υπόψη τους τον περιβάλλοντα χώρο και την αναγκαιότητα συνετής διαχείρισης της ενέργειας. Αυτή η συνθήκη, σε συνδυασμό με το γεγονός ότι η εξασφάλιση της συμμόρφωσης των πολιτών με τους κανονισμούς δόμησης και χρήσεων γης, που νομοθετεί η πολιτεία, είναι ασθενής, έχει οδηγήσει:

α. Στην άναρχη και αυθαίρετη δόμηση.
β. Στα μεγάλα ρυπαντικά φορτία (θόρυβος, όγκοι απορριμμάτων, απόρριψη λυμάτων σε υδάτινα αποθέματα κ.ά.).
γ. Στις μεγάλες ενεργειακές καταναλώσεις (ψύξη, θέρμανση).
δ. Στην αισθητική παραμόρφωση του φυσικού και δομημένου περιβάλλοντος.

Οι αρνητικές επιπτώσεις αυτής της κατάστασης στο περιβάλλον και ιδίως στις παράκτιες και δασικές περιοχές έχουν οδηγήσει σε μη αναστρέψιμες καταστάσεις και στην αντιφατικότητα «η Ελλάδα να είναι πολύ αστική και πολύ αγροτική».

Το μελλοντικό περιβαλλοντικό πλαίσιο για τις αστικές περιοχές είναι πολύ πιθανό να διαφέρει από το σημερινό και από αυτό του πα-

ρελθόντος. Τούτο γιατί η ζήτηση για περιβαλλοντική ποιότητα και καλύτερη ποιότητα ζωής θα αυξηθεί μαζί με το εισόδημα των Ελλήνων μέσα στην τρέχουσα δεκαετία. Ακόμα, ο αυξημένος παγκόσμιος ανταγωνισμός στον τουριστικό τομέα θα απαιτήσει από την τουριστική επιχειρηματικότητα μια συμβατή με το φυσικό περιβάλλον ανάπτυξη. Έτσι, λοιπόν, θα αναζητηθούν αστικές περιοχές που θα διαμορφώνονται με βάση τον πολεοδομικό σχεδιασμό που λαμβάνει υπόψη του:

α. Τη φέρουσα ικανότητα των περιβαλλοντικών στοιχείων (όπως του νερού, του αέρα και του εδάφους).
β. Τα ανεκτά από το περιβάλλον όρια εκπομπών σε ρυπαντικά φορτία.

Το βασικό μέσο για την άσκηση του πολεοδομικού σχεδιασμού και της δόμησης είναι βέβαια η πολεοδομική νομοθεσία, που εκφράζεται κυρίως με χωροταξικά, ρυθμιστικά και πολεοδομικά σχέδια καθώς και με το Γενικό Οικοδομικό Κανονισμό. Για τη μετεξέλιξη του πολεοδομικού σχεδιασμού και της δόμησης προς την κατεύθυνση της αειφορίας –προσπάθεια που διαφαίνεται σε πρόσφατες νομοθετικές πρωτοβουλίες όπως ο ν. 2742/1999 για την αειφόρο ανάπτυξη και τη χωροταξία– η φορολογία στην ακίνητη περιουσία μπορεί να αποτελέσει ένα αποτελεσματικό επικουρικό μέσο.

Η Φορολογία στην Ακίνητη Περιουσία. Η Σημερινή Προσέγγιση

Η φορολογική μεταχείριση της ακίνητης περιουσίας στην Ελλάδα χαρακτηρίζεται από υπερφορολόγηση, δηλαδή από την επιβολή πληθώρας φόρων και τελών. Η ακίνητη ιδιοκτησία επιβαρύνεται με το φόρο μεταβίβασης ακινήτων (το ποσοστό του συντελεστή φορολόγησης είναι 9-13%, όταν ο μέσος όρος στις χώρες της ΕΕ είναι 2-5%), το φόρο γονικών παροχών και το φόρο δωρεών (φόροι που σε άλλες ευρωπαϊκές χώρες δεν υπάρχουν), το φόρο μεγάλης ακίνητης περιουσίας, το φόρο χαρτοσήμου, το φόρο στο τεκμαρτό εισόδημα από ιδιοκατοίκηση ή ιδιόχρηση επαγγελματικής στέγης, το τέλος ακίνητης περιουσίας, το φόρο

ηλεκτροδοτουμένων χώρων και λοιπά ανταποδοτικά τέλη (τα τρία τελευταία εισπράττονται από τους ΟΤΑ).

Κεντρικό συστατικό στοιχείο του τρόπου φορολόγησης της ακίνητης περιουσίας είναι ο υπολογισμός της αξίας της γης και των κτισμάτων με βάση τις αντικειμενικές τιμές που ορίζει το κράτος. Η αξία του κάθε συγκεκριμένου ακινήτου προσδιορίζεται με βάση αυτές τις τιμές σε συνδυασμό με κάποια σταθερά κριτήρια που λειτουργούν αυξομειωτικά, όπως π.χ. η παλαιότητα του κτίσματος, η ύπαρξη κεντρικής θέρμανσης, η γειτνίαση του οικοπέδου με εθνικό ή επαρχιακό δρόμο κ.ά. Ο υπολογισμός αυτός είναι σταθερά προσανατολισμένος μόνο στην εμπορική αξία της ιδιοκτησίας. Αυτή η φορολογία παρουσιάζει σοβαρά μειονεκτήματα, όπως:

α. Την ανασφάλεια που δημιουργεί στον πολίτη ως προς τα ποια είναι τα τελικά φορολογικά βάρη της κάθε ιδιοκτησίας.
β. Το μονομερή προσανατολισμό προς τη μεγιστοποίηση των δημόσιων εσόδων. Η φορολογία της ακίνητης περιουσίας δεν συγκλίνει με την *αρχή ο χρήστης πληρώνει* και ως εκ τούτου δεν έχει αποτελέσει μέχρι σήμερα μέσο για την αποφυγή και την άρση των αρνητικών επιπτώσεων στο φυσικό περιβάλλον και στην αισθητική του δομημένου χώρου.

Προς μια Άλλη Φορολογική Πολιτική

Με αφορμή τη συζητούμενη φορολογική μεταρρύθμιση, εκτιμούμε ότι είναι δυνατή η μεταστροφή της φορολογίας από την καθαρά εισπρακτική λογική προς την κατεύθυνση της χρησιμοποίησής της ως ενός από τα μέσα άσκησης μιας σύγχρονης περιβαλλοντικής πολιτικής, προσαρμοσμένης στις ιδιαίτερες συνθήκες και την πολιτιστική κληρονομιά της χώρας μας. Σύμφωνα με αυτές, η γη και η θάλασσα είναι σπάνιοι φυσικοί πόροι, που δεν μπορούν να παραδοθούν καθολικά σε εντατικές χρήσεις κάθε είδους (γεωργία, αλιεία, υλοτομία, εξόρυξη, βιομηχανία, οικισμός, τουρισμός, μεταφορές και άλλες). Στόχος είναι η ισόρροπη χρήση, σχε-

τικά χαμηλής έντασης, ώστε να αποφεύγονται οι αρνητικές επιπτώσεις στο φυσικό και δομημένο περιβάλλον. Προς αυτή την κατεύθυνση προτείνουμε:

Πρώτο, την ενοποίηση όλων των σημερινών φόρων και τελών στην ακίνητη περιουσία σε δύο φόρους:

α. Ένα φόρο που επιβάλλεται κατά τη μεταβίβαση (αγορά ή κληρονομιά) και καταβάλλεται εφάπαξ.
β. Ένα δεύτερο φόρο που επιβάλλεται στη χρήση του ακινήτου και καταβάλλεται κάθε έτος.

Δεύτερο, την επέκταση του ΦΠΑ στα ακίνητα, εφ' όσον αποτελεί ευρωπαϊκή υποχρέωση, αλλά μόνο στα καινούρια. Έτσι θα ενθαρρύνεται φορολογικά η χρησιμοποίηση και η αποκατάσταση ήδη κτισμένων χώρων συγκριτικά με την ανέγερση καινούριων κτισμάτων.

Τρίτο, την εξαίρεση των διατηρητέων, παραδοσιακών και ιστορικών κτιρίων από όλους τους παραπάνω φόρους (η εξαίρεση των ακινήτων αυτών από το ΦΠΑ έχει ήδη γίνει αποδεκτή από την Ευρωπαϊκή Επιτροπή).

Τέταρτο, την ενσωμάτωση της αρχής *ο χρήστης πληρώνει* στον τρόπο τιμολόγησης των ανταποδοτικών τελών που επιβαρύνουν την ακίνητη περιουσία και εισπράττονται από τους δήμους ή άλλους δημόσιους φορείς (όπως π.χ. τα τέλη συλλογής απορριμμάτων κ.ά.). Τα τέλη αυτά σήμερα τιμολογούνται με βάση διάφορες αυθαίρετες προσεγγίσεις και όχι τη χρήση που γίνεται από τους ενοίκους, όπως θα έπρεπε. Ο υπολογισμός και η τελική επιβάρυνση όλων αυτών των τελών προτείνουμε να αναθεωρηθεί με βάση την αρχή *ο χρήστης πληρώνει* και η κλιμάκωση να είναι τέτοια που να αποθαρρύνεται η μεγάλη κατανάλωση.

Πέμπτο, την επιβολή φόρου ή τέλους στη μετακίνηση ΙΧ στις αστικές περιοχές, έτσι ώστε να αποθαρρυνθεί η χρήση ΙΧ και να ενθαρρυνθεί η χρησιμοποίηση των μέσων μαζικής μεταφοράς. Το τέλος μπορεί να

πάρει διάφορες μορφές, όπως π.χ. διόδια για την είσοδο στις κεντρικές αστικές περιοχές ή επιβολή τέλους (με ηλεκτρονικά μέσα) για τη χρήση των δρόμων στις ίδιες περιοχές, ή μηνιαίο τέλος στους μετακινούμενους από το οποίο θα απαλλάσσονται όσοι αποδεδειγμένα χρησιμοποιούν μέσα μαζικής μεταφοράς.

Με την εφαρμογή των παραπάνω πέντε προτάσεων καθιερώνεται ένα ορθολογικό πλαίσιο φορολογίας της ακίνητης περιουσίας και των οικιστικών μετακινήσεων. Το πλαίσιο αυτό, όμως, πρέπει να χρησιμοποιείται ως σύστημα άσκησης περιβαλλοντικής χωροταξικής πολιτικής. Για το σκοπό αυτό, οι δύο βασικοί φόροι που προτείναμε, ο ΦΠΑ, τα ανταποδοτικά τέλη των ΟΤΑ, καθώς και ο φόρος μετακινήσεων πρέπει να κλιμακώνονται κατά τρόπο που να εξυπηρετούν τους στόχους της πολιτικής αυτής. Π.χ. μπορεί να χρησιμοποιηθούν έτσι ώστε:

- Να αποθαρρύνεται η διάσπαρτη δόμηση κοντά σε αστικά κέντρα και σε τουριστικές περιοχές σε όφελος της δόμησης σε οικιστικές περιοχές που διαθέτουν δίκτυα υποδομής.
- Να ενθαρρύνονται οι χαμηλές ενεργειακές καταναλώσεις και η χρήση ανανεώσιμων πηγών ενέργειας στη λειτουργία των κτιρίων.
- Να αποθαρρύνονται οι μεγάλες πυκνότητες και η υψηλή δόμηση.
- Να αποθαρρύνονται ορισμένες χρήσεις γης που επιβαρύνουν το περιβάλλον και γενικά η ένταση σε όλες τις χρήσεις, ως πηγή πιέσεων και τελικά υποβάθμισης των περιοχών.

Οι συγκεκριμένοι τρόποι με τους οποίους επιτυγχάνονται οι παραπάνω στόχοι ποικίλλουν, αλλά ενδεικτικά αναφέρουμε μερικούς. Π.χ. αυξημένη φορολογία ακινήτων διάσπαρτων στο χώρο. Ουσιαστική φορολόγηση ακάλυπτων χώρων εντός σχεδίου πόλεως. Βαρύτερη φορολόγηση για εμπορική χρήση ή για υψηλά κτίρια. Χαμηλότεροι συντελεστές για περιοχές που εξυπηρετούνται από το μετρό. Εκπτώσεις για περιβαλλοντική δόμηση (μονώσεις, χρήση ηλιακής ενέργειας, χρήση περιβαλλοντικών δομικών υλικών, ψυκτικών μεθόδων και άλλα). Τόσο στο παραπάνω θέμα όσο και στο φόρο μετακίνησης υπάρχει μεγάλη εμπειρία στο εξωτερικό.

Διαχείριση Αποβλήτων και Αειφορία

Κείμενο Εργασίας

Υπεύθυνος Κειμένου: Δ. Χ. ΠΑΝΑΓΙΩΤΑΚΟΠΟΥΛΟΣ
Καθηγητής ΔΠΘ

1. Το πρόβλημα των στερεών αποβλήτων

Η χώρα μας χαρακτηρίζεται ουραγός στη διαχείριση των στερεών αποβλήτων μέσα στην Ευρωπαϊκή Ένωση, με τις περισσότερες καταδίκες ή εκκρεμείς υποθέσεις στο Ευρωπαϊκό Δικαστήριο για παράνομες χωματερές. Η κατάσταση είναι εξίσου σοβαρή αλλά λιγότερο γνωστή και στον τομέα διάθεσης βιομηχανικών τοξικών αποβλήτων. Η σχετική Ευρωπαϊκή νομοθεσία απλώς δεν εφαρμόζεται στην Ελλάδα. Αυτή η κατάσταση όχι μόνο εγκυμονεί σοβαρούς κινδύνους για τους πολίτες, αλλά αποτελεί και πηγή μόνιμης δυσφήμισης στο εξωτερικό με προφανείς επιπτώσεις στον τουρισμό μας. Η ρύπανση της υπαίθρου και των ακτών μας από πλαστικές σακούλες, φιάλες, ελαστικά, αποτσίγαρα και κάθε άλλου είδους απορρίμματα που εγκαταλείπουν οι πολίτες είναι μια τρίτη πληγή για όλους. Η σωστή διαχείριση του προβλήματος αυτού αποτελεί επείγουσα εθνική ανάγκη, ιδιαίτερα εν όψει των Ολυμπιακών Αγώνων.

2. Αειφορική Πολιτική για Βιώσιμη Διαχείριση

Οι παράγοντες που επηρεάζουν τα ποιοτικά και ποσοτικά χαρακτηριστικά των αποβλήτων μπορούν να αντιστοιχηθούν σε τέσσερα επίπεδα, ως εξής:

1. *Επίπεδο Καταναλωτή ή Νοικοκυριού:* Το βιοτικό επίπεδο, οι καταναλωτικές συνήθειες, ο τρόπος ζωής, το μέγεθος του νοικοκυριού, η συχνότητα συλλογής κ.ά.
2. *Επίπεδο Γεωγραφικού Διαμερίσματος:* Το μέγεθος του διαμερίσματος, η τουριστική κίνηση, η βιομηχανική δραστηριότητα, η πρωτογενής παραγωγή, τα συστήματα θέρμανσης κατοικιών, τα πολεοδομικά χαρακτηριστικά, η διευκόλυνση που παρέχεται από το φορέα συλλογής κ.λπ.
3. *Επίπεδο Μακροοικονομίας και Συστήματος Παραγωγής Αγαθών και Υπηρεσιών:* Το Ακαθάριστο Εγχώριο Προϊόν, η Βέλτιστη Διαθέσιμη Τεχνολογία (Best Available Technology), η χρήση πρώτων υλών κ.ά.
4. *Επίπεδο Προϊόντων:* Οι πρώτες ύλες, η συσκευασία, η διάρκεια ζωής και χρήσης κ.ά.

Η Κοινοτική Στρατηγική στηρίζεται σε ορισμένες αρχές όπως: *πρόληψη, αυτάρκεια, επικουρικότητα, γειτνίαση, ο ρυπαίνων πληρώνει* και *ευθύνη του παραγωγού*. Το ζήτημα της ευθύνης του καταναλωτή (*ο χρήστης πληρώνει*) αφήνεται στα κράτη-μέλη. Στόχος είναι η *επιβολή ομοιομορφίας* (harmonization) στα κράτη-μέλη, η αποτελεσματικότητα της οποίας, από οικονομική και περιβαλλοντική άποψη, δεν είναι τεκμηριωμένη.

Η ΕΕ παράγει πλήθος νομοθετικών ρυθμίσεων για ποικιλία αποβλήτων όπως: επικίνδυνα απόβλητα, μπαταρίες, συσκευασίες, ιλύες από βιολογικούς καθαρισμούς, πτώματα ζώων, εγκαταλειμμένα οχήματα, απόβλητα πλοίων, τοξικά οικιακά απόβλητα, απόβλητα ορυχείων, νοσοκομειακά απόβλητα, ελαστικά οχημάτων, ηλεκτρικές και ηλεκτρονικές συσκευές, απόβλητα PVC, απόβλητα αμιάντου και απόβλητα οικοδομικών εργασιών. *Τα προτεινόμενα μέτρα δεν είναι πάντα σαφή και πλήρως τεκμηριωμένα, ούτε καλύπτουν το σύνολο των αναγκών.* Παρά το πλήθος διατάξεων, οικονομικών εργαλείων της αγοράς και αναλυτικών εργαλείων, ούτε οι ποσότητες αποβλήτων ούτε οι διαφοροποιήσεις στις κοινωνίες τείνουν προς μείωση.

Εν γένει, έχει υιοθετηθεί η παρακάτω ιεράρχηση στη διαχείριση αποβλήτων:

1. Πρόληψη ή μείωση στην πηγή.
2. Επαναχρησιμοποίηση (επέκταση της χρήσιμης ζωής των προϊόντων).
3. Ανακύκλωση – ανάκτηση υλικών.
4. Ανάκτηση ενέργειας (από απόβλητα που περιέχουν πετρέλαιο κ.λπ.).
5. «Βέλτιστη» τελική διάθεση.

Τα δύο πρώτα μέτρα αποσκοπούν στην αποφυγή δημιουργίας αποβλήτων και τα δύο επόμενα στην αξιοποίησή τους εφόσον παραχθούν. Η μείωση της παραγωγής αποβλήτων προϋποθέτει την αλλαγή νοοτροπίας των πολιτών ως καταναλωτών αλλά και του τρόπου συσκευασίας. Αυτό σημαίνει ενημερωμένους πολίτες που ασκούν πιέσεις (διά μέσου πολιτικών διεργασιών) για αλλαγές.

΄Ενα σύστημα Διαχείρισης Αποβλήτων είναι βιώσιμο αν, μέσα σε μια γενιά, η τελική και οριστική διάθεση των αποβλήτων δημιουργεί εκροές, εκπομπές ή επιπτώσεις που είναι περιβαλλοντικά αποδεκτές χωρίς περαιτέρω επεξεργασία. Ως βασικοί στόχοι θα μπορούσαν να θεωρηθούν οι εξής:

- Μείωση των παραγόμενων ποσοτήτων με αποσύνδεση της ευημερίας από τις ποσότητες των παραγόμενων αποβλήτων.
- Ελαχιστοποίηση των περιβαλλοντικών και κοινωνικών επιπτώσεων της διαχείρισης.
- Εξάντληση των δυνατοτήτων αντιμετώπισης των απορριπτόμενων υλικών ως εν δυνάμει χρήσιμων πόρων και όχι ως άχρηστων αποβλήτων.

Η Αειφορική Πολιτική για Βιώσιμη Διαχείριση είναι μια «ολιστική πολιτική», με σαφείς και υλοποιήσιμους στόχους βιώσιμης ανάπτυξης, και όχι ένα άθροισμα χωριστών «τομεακών πολιτικών» για το περιβάλλον. Η παρέμβαση της πολιτείας γίνεται σε βάση Ολοκληρωμένης Διαχείρισης και Ανάλυσης του Κύκλου Ζωής των παρεχόμενων αγαθών και υπηρεσιών.

2. Προτεινόμενα Μέτρα

Γενικός στόχος των μέτρων είναι η διαμόρφωση προϋποθέσεων για τη σταδιακή μεταβολή της κοινωνικής συμπεριφοράς και των προτύπων κατανάλωσης και παραγωγής/συσκευασίας. Γι' αυτό, διακρίνονται σε μέτρα για τον πολίτη-καταναλωτή, τον παραγωγό προϊόντων και τη Διοίκηση.

α. Σε Επίπεδο Κατανάλωσης – Συμπεριφοράς Πολιτών

- Εκτός από την ευθύνη του παραγωγού, πρέπει να αναγνωριστεί και η ευθύνη του καταναλωτή. Ο πολίτης, οι ενώσεις πολιτών, οι επιστημονικές ενώσεις και οι μη-κυβερνητικές οργανώσεις είναι μέρος της λύσης.
- Θεσμοθέτηση της περιβαλλοντικής εκπαίδευσης και της ενημέρωσης, σε όλα τα επίπεδα, ως τον κύριο μοχλό καλλιέργειας περιβαλλοντικής συνείδησης.
- Χρέωση των καταναλωτών ανάλογα με την ποσότητα αποβλήτων που παράγουν.
- Χρήση του συστήματος deposit-refund για σειρά προϊόντων όπως μπαταρίες, ηλεκτρονικές και γυάλινες συσκευές κ.λπ.

β. Σε Επίπεδο Παραγωγής[1]

- Επιβάλλεται η υποχρεωτική τεκμηρίωση των μέτρων προστασίας του περιβάλλοντος. Δημιουργούνται προϋποθέσεις και παρέχονται κίνητρα για την προτίμηση των «καθαρών» τεχνολογιών.
- Γίνεται καταγραφή και έλεγχος των επικίνδυνων αποβλήτων στην πηγή.
- Παρέχονται κίνητρα για τη μεταφορά ρυπογόνων δραστηριοτήτων εκτός των αστικών περιοχών.

1. Επιπλέον των φορολογικών μέτρων που έχουν ήδη αναφερθεί στο Κείμενο Εργασίας του κ. Παλαιοκρασσά.

- Ποσοστό της συνολικής δαπάνης νέων εγκαταστάσεων πρέπει να αφορά την εκτέλεση έργων προστασίας του περιβάλλοντος και βελτίωσης της ποιότητας ζωής.
- Παρέχονται κίνητρα στις επιχειρήσεις για περιβαλλοντική εκπαίδευση του προσωπικού και για εισαγωγή συστημάτων περιβαλλοντικής διαχείρισης.
- Ενθάρρυνση συστημάτων αυτοχρηματοδότησης για εγκαταστάσεις διαχείρισης και επεξεργασίας.

γ. Σε Διοικητικό Επίπεδο (Κεντρική Κυβέρνηση, Τοπική Αυτοδιοίκηση)

- Διαμόρφωση Δεικτών Επίδοσης και επιχορηγήσεις σε σχέση με την επίδοση. Η ΤΑ ενθαρρύνεται ή πιέζεται να υιοθετεί πολιτικές φιλικές προς το περιβάλλον. Π.χ. το αν η ταφή των αποβλήτων είναι προτιμότερη της καύσης πρέπει να τεκμηριώνεται, αλλιώς θα υπάρχει οικονομική «ποινή» διά μέσου των επιχορηγήσεων.
- Παροχή κινήτρων, σε συνεργασία και με ιδιωτικούς φορείς, για την απόσυρση από την κυκλοφορία των παλαιών ρυπογόνων οχημάτων όλων των κατηγοριών. Παροχή κινήτρων για την κυκλοφορία οχημάτων με μηδενικές ή ελάχιστες εκπομπές ρύπων.
- Ολοκληρωμένη διαχείριση των στερεών αποβλήτων σε κάθε νομό με μεθόδους διαλογής στην πηγή, ανακύκλωσης, κομποστοποίησης, ανάκτησης, καύσης, με περιορισμούς που αναφέρονται στην περιβαλλοντική προστασία.

Σε κάθε περίπτωση, είναι απαραίτητο να διαμορφωθούν και να εισαχθούν Δείκτες Επίδοσης που να συσχετίζονται με τα οικονομικά κίνητρα.

Στο εξώφυλλο ζωγραφιές του Αλέξη Κυριτσόπουλου
από το βιβλίο *Εδαφροπάτητα* (Αθήνα 2002)

On 7-8 November 2002 ELLINIKI ETAIRIA organised the International Meeting of Athens on Environmental Fiscal Reform. Speakers and respondents included distinguished specialists and politicians of various affiliations, who spoke in surprising unison in favour of a new development approach respecting humanity and the environment. Broad agreement was reached that environmental fiscal reform is among the most powerful tools, in our arsenal of economic and financial instruments, particularly effective in changing consumption and production patterns in the direction of sustainability.

IB013

ISBN 960-14-0751-0

http://www.livanis.gr