

**Feasta**  
the Foundation for the Economics of Sustainability

**Submission on Globalisation**

to the Select Committee on Economic Affairs  
House of Lords

October 2001

*'Cad a dhéanfaimid feasta gan adhmaid? Tá deireadh na gcoillte ar lár'*  
'What will we do in the future without wood? The end of the forests has come.'

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## Abstract

Feasta thinks that the Select Committee should make sustainability the key issue in its inquiry: in our view, the crucial test of whether globalisation is desirable or not is whether it is tending to make the world and, as part of that world, the United Kingdom, more sustainable economically, socially and environmentally.

In our judgement globalisation has been, and is set to continue to be, harmful on all three counts. We have tried to summarise some of the evidence for this conclusion in this submission: the *Feasta Review* amplifies some of this and we'd be happy to provide further material if so requested by the Committee.

Feasta does not believe that a sustainable world with anything like the current population can be built within the framework provided by a system based on the free movement of capital to wherever it generates the highest rate of return and the free movement of goods from the places where they can be produced most cheaply to wherever they fetch the highest price. A world economy which was sustainable would be almost the exact opposite of the present unsustainable one. It would be localised rather than globalised.

Our submission therefore identifies some of the ways in which international regulation could enable and facilitate the development of a world consisting of many hundreds of largely self-reliant sustainable local economies.

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### **Feasta, the Foundation for the Economics of Sustainability**

Feasta is an educational charity founded in October 1998. It has its offices in Ireland but has active members in several European countries. Its aim is to identify the characteristics - economic, cultural and environmental - that a society must have in order to be truly sustainable and to communicate this analysis to the widest possible audience.

Leading economists and other experts on sustainability issues who have worked with Feasta since its formation include Herman Daly, David Korten, James Robertson, Michael Rowbotham, David Fleming, Aubrey Meyer and Richard Douthwaite. The first issue of the *Feasta Review* published earlier this year contains articles by these and others concerning some of the crucial issues facing human societies today.

There is general unanimity amongst Feasta's membership that the current corporate-capitalist global economy is unsustainable. We are concerned to identify the flawed elements of the system and to promote alternatives.

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# **Feasta, the Foundation for the Economics of Sustainability**

## **Submission on Globalisation to the Select Committee on Economic Affairs**

From its perspective, Feasta considers that a crucially important series of questions was left off the list of questions the Select Committee suggested for answer by those making submissions. The first omission was 'Is the globalisation process tending to make the world and, as part of that world, the United Kingdom, more or less sustainable economically, socially and environmentally?' If the answer to that turned out to be that current globalisation was increasing unsustainability, the follow-up question has to be 'Could international regulations alter the nature of globalisation sufficiently to make it change direction and push the world towards the achievement of sustainability?' If such regulations are theoretically possible, then the next question has to be 'Do the required regulations stand any chance of being agreed internationally and put into effect in time to prevent a more serious deterioration in the economic, social or environmental systems that support the global community?'

We therefore intend to ask, and answer, these three questions in our substantive submission. We will then briefly answer the questions raised by the Committee.

### **Feasta's substantive submission**

#### **1. Is globalisation tending to make the world and, as part of that world, the United Kingdom, more or less sustainable economically, socially and environmentally?**

Globalisation is tending to make the world more unsustainable under all three heads, for reasons which are closely linked.

##### ***A. Economic sustainability.***

1.A.1 The globalisation of the past thirty years differs from the forms of international trade which preceded it because international investors and transnational corporations (TNCs) have become so powerful since 1970 that national governments now have little option but to run their countries in ways which suit commercial and financial interests rather than those of the majority of their citizens. The TNC tail wags the national dog. TNCs can threaten to manufacture or invest in another country and as they now employ 20% of the world's labour force outside agriculture their threats carry weight<sup>1</sup>. Governments can no longer use high top rates of income tax, widespread wage increases and the social welfare system to ensure that a fair proportion of the gains from growth go to the less well-off. This has reversed long-running trends to greater equality and has widened the gap between rich and poor.

1.A.2 In Britain, for example, the proportion of national income going to the wealthiest 10% fell by almost a quarter between 1948 and the mid 1970s but since then the rich have become very much better off in relative terms.

1.A.3 Much the same has happened in the US. Between 1947 and 1973, the proportion of national income going to the poorest fifth of the population rose from 5.0 to 5.5% while the top 5% of the population saw its share decline from 17.5% to 15.5%. After 1973, however, the trend was thrown into reverse and the bottom 20% of the population now only get around 4.2% of national income, down almost a quarter from its level a generation earlier. The top 5% of the population, however, more than restored their position.

The top 1% did best of all. Between 1976 and 1997, they more than doubled their share of private wealth, raising it from 19 to 39%.<sup>2</sup> .

1.A.4 Britain and the US are not isolated cases. Income inequality increased in about half the OECD countries between the mid 1980s and the mid 1990s, while none of the remaining countries recorded an unambiguous decrease in inequality<sup>3</sup>. Looking at the world as a whole, the UNDP's 1999 *Human Development Report* stated that "Global inequalities in income and living standards have reached grotesque proportions." In 1970, the gap between the richest fifth of the world's people and the poorest was 30:1, it said. By 1990, it was 60:1 and by 1999 it was 74:1. Although the world economy grew, 1.6 billion people in 100 countries had lower incomes in the late 1990s than they did in the early 1980s.

1.A.5 In addition to its social effects (see below), this concentration of income in the hands of the rich has had a serious economic impact because it has destroyed, or failed to create, the expanding markets the world economy requires if it is to continue to grow. The rich do not spend all they earn – they save a much higher proportion of it than the rest of society. Their savings find their way into investment. As a result, too much production capacity was installed and ex factory prices had started to fall even before the Thai economy collapsed in 1997. Almost every type of commodity was affected, from raw materials and food, to clothing, electronic goods and cars. The situation is even worse today because the problems in Asia, Russia and Latin America have removed hundreds of millions more would-be consumers from the world market.

1.A.6 Investment in the 'old economy' stopped when the over-capacity appeared. For a time, this did not appear to matter because of the seemingly rosy prospects offered by the 'new economy', but when those did not materialise, investment slowed or stopped there as well and within the past few months hundreds of thousands of people have lost their jobs in OECD countries. Long before September 11<sup>th</sup> over half of the world economy was in severe difficulties and the US was heading that way.

1.A.7 In short, the globalisation of the world economy, by reducing the power of governments to share out incomes between stakeholders in a way that ensures that everyone's wealth expands together, has destroyed its own markets.

1.A.8 A second economic reason why globalisation is not desirable relates to the business cycle. In the past, some countries could be relied upon to be on the upward phase of their business cycle while others were coming down. This stabilised the world because the expanding markets took in products from the contracting ones and thus limited their fall. Globalisation, however, by creating a single world market, has managed to synchronise the economies of the component countries so that they are currently all on the downward leg together. This is bound to make recessions much deeper and longer-lasting.

1.A.9 Unregulated financial markets are an obvious source of economic instability. There can hardly be a better authority on this subject than George Soros, one of the world's most successful financial speculators. Reviewing Soros's book *Open Society: Reforming Global Capitalism*, David Korten summed up the Soros critique thus:

"Unregulated financial markets are inherently unstable. Soros observes that, contrary to conventional economic theory, financial markets are not driven toward a relatively stable and rational price by the objective value assessment of such things as the soundness of a company's management, products, or record of profitability. Rather they are constantly driven away from equilibrium by the momentum of self-fulfilling expectations: a rising stock price attracts buyers who further raise the price to the point of collapse. The recent massive inflation and subsequent collapse in the price of the shares of unprofitable dot-com companies illustrates Soros' point.

"Bank lending also contributes to the instability, because the price of real and financial assets is set in part by their collateral value. The higher their market price rises the larger the loans banks are willing to make to their buyers to bid up prices. When the bubble bursts, the value of the assets plummets below the amount of the money borrowed against them. This forces banks to call their loans and cut back on the lending, which depresses asset prices and dries up the money supply. The economy then tanks until credit worthiness is restored and a new boom phase begins."

## **B. Social Sustainability**

1.B.1 The polarisation of wealth and incomes caused by globalisation has set up stresses both within countries and between them which the development of a global media has exacerbated. Also, as Richard Wilkinson has conclusively shown<sup>4</sup>, a deterioration in one group's income relative to another's damages the health of the group which has become poorer because its members feel less good about themselves. Relative, rather than absolute, incomes are crucial determinants of how long people live, how violent or criminal they become, and how tall and fit their children grow to be and how well they do at school. On this basis alone, then, we can say that, by damaging health and by setting up societal stresses, globalisation is unsustainable. It is possible to interpret the September 11<sup>th</sup> attack as evidence of that.

1.B.2 Contrary to mainstream assertions, globalisation has been, and is set to continue to be, disastrous for most so-called 'developing' countries. A summary of the viewpoints of two leading observers in those countries, Martin Khor, director of the Third World Network, and the Peruvian diplomat Oswaldo de Rivero, is summarised in Appendix A.

1.B.3 The bleak conclusions of these observers are consistent with those of the Washington, D.C.-based Center for Economic and Policy Research (CEPR) which recently published compelling data comparing growth rates from 1980 to 2000 (during the period of ascending IMF/World Bank power, when countries throughout the developing world adhered to the IMF/Bank structural adjustment policy package of slashing government spending, privatizing government-owned enterprises, liberalizing trade, orienting economies to exports and opening up countries to exploitative foreign investment) with the previous 20 year period (when many poor countries focused more on developing their own productive capacity and meeting local needs). The results:

89 countries -- 77 percent, or more than three-fourths -- saw their per capita rate of growth fall by at least five percentage points from the period (1960-1980) to the period (1980-2000). Only 14 countries -- 13 percent -- saw their per capita rate of growth rise by that much from (1960-1980) to (1980-2000).

CEPR found that the growth slowdown has been so severe that "18 countries -- including several in Africa -- would have more than twice as much income per person as they have today, if they had maintained the rate of growth in the last two decades that they had in the previous two decades. The average Mexican would have nearly twice as much income today, and the average Brazilian much more than twice as much, if not for the slowdown of economic growth over the last two decades.

A follow-up CEPR study used a similar methodology to look at social indicators. CEPR found that progress in reducing infant mortality, reducing child mortality, increasing literacy and increasing access to education has all slowed during the period of corporate globalization,

especially in developing countries<sup>5</sup>.

### **C. Environmental Sustainability.**

1.C.1 Our current economic system is grossly unsustainable on a number of environmental grounds. To take just two, it is using up oil and gas reserves at such a rate that the total output of both will fall sharply within the next 20-25 years and, secondly, it is changing the world's climate. As both climate change and the impending shortages of the most versatile forms of fossil fuel will force massive changes in the way people live, our current way of life is not sustainable.

1.C.2 The fossil fuel and climate change issues are the subject of more detailed analysis in Feasta's recently published *Review* and are copied in Appendix B.

1.C.3 The extent of the adverse impact of the current system on the global environment generally is the subject of two earlier reports. In 1998 the Worldwide Fund for Nature, together with the World Conservation Monitoring Centre and the New Economics Foundation, published the *Living Planet Index* which measures changes in the health of the world's natural ecosystems since 1970, focusing on forest, freshwater and seas. It comes as no surprise that forest ecosystems have declined. It is less well known that during this period there has also been a very severe deterioration of freshwater and marine ecosystems. Putting these three together the *Living Planet Index* shows a decline of a horrifying 30% since 1970 "which can be interpreted as meaning that the earth has lost nearly one third of its natural wealth in that time".

1.C.4 The report also analyses global consumption patterns to calculate the burden placed on the natural environment by humanity through the production and consumption of resources such as grain, fish, wood, and fresh water, and the emission of pollutants such as carbon dioxide (CO<sub>2</sub>). "Globally, consumption pressure is growing rapidly – at about 5% per year – and is likely to exceed sustainable levels, at least for fish consumption, meat consumption and CO<sub>2</sub> emissions, if indeed they have not been exceeded already."

1.C.5 In 1999 the United Nations published its *Living Planet Report*, an update on the state of the world's natural ecosystems and the effect of human pressures on them. The report concludes that "at some time in the 1970s humanity as a whole passed the point at which it lived within the global regenerative capacity of the Earth." It estimates that today our ecological footprint is at least 30% larger than the Earth's biological capacity: that means that humanity is consuming the world's resources at a faster rate than they can be renewed.

"We are stamping over the planet, gradually crushing the life out of it and putting ourselves at risk in the process. But the process is not evenly distributed. If you compare the excess consumption of these vital resources country by country and region by region, you will see that those of us who live in the North are wreaking this havoc at four times the rate of our fellow citizens who live in the South."  
Jonathan Dimbleby "Change is in the Air" *Resurgence* July/August 2001 p 17.

1.C.6 A globalised system of production and consumption is less environmentally sustainable than a more localised one because it involves moving more goods for longer distances, thus requiring the use of more fossil fuel, inorganic fertilisers (because nutrients taken up by food plants cannot be returned to the fields from which they came), transport equipment and packaging materials. In addition, because agricultural

production is less diverse than it would be if almost all a country's requirements were grown within its borders, more pesticides have to be used.

1.C.7 There are also indirect effects of globalisation on the environment. Because of the fierce competition between countries to secure inward investment, governments refrain from imposing environmental protection standards which might scare investors off. In some countries, export plantations have been allowed to displace small farmers producing for the home market, forcing the farmers to move to marginal, sloping land which has then deteriorated rapidly.

1.C.8 Even OECD countries feel compelled to assume a free trade framework when they develop national policies for essential sectors of their economies within a free trade framework. A recent example is the terms of reference set by the UK government for the Policy Commission on the Future of Farming and Food. The Commission is "To advise the Government on how we can create a sustainable and diverse farming and food sector which contributes to a thriving and sustainable rural economy ... and is consistent with the Government's aims for....increased trade liberalisation". The UK currently imports about 47% of the vegetables and 99% of the fruit it eats. Much of this could be grown locally. The Commission's hands have been tied behind their backs.

1.C.9 Another problem with a global economic system is that it tends to lead to a global culture. First, competitive forces usually ensure that the same methods of production and distribution come to be used in every country in the world. Even countries with low labour costs have abandoned labour-intensive production systems for more capital-intensive ones.

1.C.10 If a country uses the same high-tech production methods as other countries, it needs similar systems of education to train a suitable workforce. All the same support occupations such as computer programmers, telephone engineers and accountants become necessary too, and training must be provided for them. This tends to shape the country's economic and social structure. And naturally, people with a similar education and training doing the same job in different countries aspire to live in the manner adopted by their counterparts with what seems to be the most attractive lifestyle.

1.C.11 In short, a global monoculture tends to emerge, with people all around the world living in the same sort of way. They drive the same, or equivalent, cars, eat many of the same foods, wear similar clothing - at least when they want to be 'smart', and have similar houses or apartments, built with identical materials.

1.C.12 This means that more people on the planet begin to compete for the same limited range of resources such as wheat, meat, cotton, oil, cement and steel rather than devising very different ways of living with very different inputs. The uniform demand places much more pressure on the environment than a more diverse one would. Vast areas come to be devoted to growing a limited range of varieties of rice and wheat, for example, while other varieties, and other potential food crops get ignored. The FAO estimates that 10,000 plant species have been used for human food in the past but now we depend on just 120 species for 90% of our intake. More than 90% of the agricultural diversity that existed a century ago has been lost because of the way the market operates.

1.C.13 In summary, then, we can say quite definitely that globalisation has made the world less sustainable over the past thirty years. It is true that if more localised systems of production had been used to increase output instead, they might have made the planet less sustainable too, but this would have been by a lesser amount. Moreover, it would have been easier for governments to limit the damage localised systems did by imposing more stringent controls because the risk that production, employment and incomes would move elsewhere would not have been a consideration. Countries or communities

dependent on local resources have a greater incentive to preserve the viability of the systems on which they depend and, crucially, have much greater powers to do so.

## **2. Could international legislation change the nature of globalisation sufficiently to make it a means of reducing unsustainability rather than increasing it?**

2.1 If the Earth is to support 6 billion or more people in a sustainable way, Feasta believes that a wide diversity of cultures will be required so that humanity can exploit every environmental niche and thus minimise the pressures on individual eco-systems. This means that there will have to be thousands of micro-economies, or micro-cultures, rather than one global one. In these local systems, people will develop ways of living well largely on the resources of their own areas. New vernacular architectures will be developed based on materials from the immediate district. Cuisines using local foodstuffs will be re-born. Clothing will be made from local crops. Energy will come from local renewable resources.

2.2 These micro economies will need to protect themselves from being undermined by imports. For them to make the fullest sustainable use of their local resources, they will have to have the freedom to develop differing price relationships between the various goods they make in order not to be confined to producing only those things that are competitive at the ruling global prices. Trading between the various economies is therefore likely to be limited to inessentials – the exchange of apples for oranges, perhaps, to give variety - and to highly sophisticated products that cannot be sensibly produced in more than a few places in the world. Certainly, almost all the necessities of life will come from the region itself or from others close by.

2.3 Each locality also needs to be able to prevent net capital flows across its borders either by enacting laws against them or by creating a social climate which makes investing elsewhere a matter for shame. Why? Consider what happens when a sustainable economy becomes mature, by which we mean that although its buildings are repaired and its capital equipment is replaced as it wears out, few new buildings are erected and little extra equipment is installed because the benefits from doing so are so small it's not considered worth while. In other words, the territory's economy has ceased to grow significantly although from time to time new technologies do come along which make additional production possible without upsetting the area's sustainability by using more resources and releasing more waste, or by damaging its social fabric.

2.4 The low rate of return in a mature sustainable economy means that the owners of capital there will always be tempted to remove their funds to unsustainable or immature sustainable economies to get higher rates of return. If these capital movements take place, the mature economy runs down because funds which would have been used to repair buildings or replace worn-out equipment get invested elsewhere. The resulting shortage of equipment causes unemployment to appear, increasing competition for jobs and pushing down wage levels. Moreover, less goods and services are produced, pushing prices up. Both these changes enable businesses to make additional profits and thus pay higher interest rates and when these rates match those available elsewhere, the capital outflow will cease.

2.5 Capital movements out of sustainable economies therefore reduce the territory's total output and shift a larger share of this smaller output to the owners of capital, who also benefit from the interest payments they receive from their investments outside. Put another way, allowing capital movements maximises the return per unit of capital but not per citizen. It therefore means that no territory can become sustainably mature until everywhere else in the world does too.

2.6 In summary, Feasta does not believe that a sustainable world with anything like the current level of population, and hence environmental pressure on the planet, can be built within the framework provided

by a system based on the free movement of capital to wherever it generates the highest rate of return and the free movement of goods from the places where they can be produced most cheaply to wherever they fetch the highest price. A world economy which was sustainable would be almost the exact opposite of the present unsustainable one. It would be localised rather than globalised. It would have no net capital flows. Its external trade would be confined to luxuries rather than essentials. Each self-reliant region would develop to a certain point and could then stop, rather than being forced to grow continuously. Investment decisions would be made close to home so that the full impact of the project could be assessed and not just the financial rate of return. This would in turn mean that assets would be owned by the people of the area in which they were located.

2.7 A fundamental change is thus needed in the nature of globalisation. It has to be transformed into a global system of local economies. This could be expressed as an outright rejection of globalisation, but to do so ignores the real difficulties individual countries face in standing out against the current regime. The approach which governments may find more acceptable, assuming they see the force of the economic, social and environmental case against the present system, is that they need to explore how the most responsible and enlightened action can be taken.

2.8 Basically it should be for local areas - whether national, sub-national or supra-national, i.e. regional, - to take power into their own hands by making their own rules about what they should import and on what terms and what rules restricting the flow of capital are needed. But for countries to feel free to make these decisions, international agreements may be needed, at least during the period of transition from the current system.

2.9 International agreements will also be required to ensure that every micro-economy works towards making itself sustainable. This is because there are many historical examples of states which became militarily or economically powerful by exploiting their own resources in an unsustainable way and then using the resulting power to seize further resources from lands where life had been carried on in a more sustainable way. Indeed, one does not have to look too far to see that such seizures are still going on today. Also, if a micro-economy fails to run itself sustainably and breaks down to such an extent that its population starves – as is currently the case in North Korea – then the resulting movement of environmental refugees might well destroy the sustainability of neighbouring territories.

2.10 To avoid either situation, the international community will have to set and enforce sustainability targets for micro communities and provide them with border protection. Particular attention will have to be given to the protection of the global commons. By this we mean that the micro economies' sustainability targets will have to cover such areas as the maximum amount of greenhouse gases they can release, the rate at which they can exploit marine fish stocks, their use of the sea for waste disposal, and the release of persistent chemicals and genetically modified organisms into the environment. The allocation to each micro-economy of rights to use the global commons will have to be carried out on a universally acceptable basis. Feasta believes that this will have to be based on equal per capita entitlements, both on moral grounds and because this is the only basis on which global agreement could be reached.

2.11 The fact is that no part of this planet can regard itself as living sustainably unless every other part is doing so as well. Collective international action is therefore required to bring sustainability about.

**3. In practice, could the required regulations be agreed internationally and put into effect in time to prevent a more serious deterioration in the economic, social or environmental systems that support the global community, and the possibility of catastrophic breakdown?**

3.1 The answer to this question lies in the willingness of governments to take action. We have already observed that sustainability lies in local areas taking many powers into their own hands. At the national and supra national levels this means governments must not only allow micro-economies to emerge but actively encourage them to do so. However, as we noted, governments throughout the world are currently dominated by multinational companies and so long as this remains the position they may be unwilling to act in a way that would fragment the global market. If this is the case, it will require a serious sustainability crisis to get them to want to change track and for the TNCs to allow them to do so.

#### **4. Summary**

4.1 In conclusion, the present globalised economic system is not sustainable economically, socially or environmentally and cannot be made to be so unless its core principles – the free movement of capital, services and goods – are given up. A sustainable world is much more likely to consist of a large number of largely self-reliant autonomous local economies rather than a single universal one. Each of these local economies would need to be so protected from external competition for markets and investment as to allow it

1. To maintain sufficiently high social and environmental standards to achieve sustainability, and,
2. To use its local resources to develop a stable diverse economy rather than limiting its activities to those which happened to be economic at whatever world prices were ruling at any given time.

The local economies will also need protection from other economies which are acting aggressively or unsustainably.

## **Preliminary questions asked by the Committee**

*How should economic globalisation be defined? Does it mean anything different from an open and integrated world economy?*

Ans: economic globalisation is a system based on the free movement of capital to wherever it generates the highest rate of return and the free movement of goods from the places where they can be produced most cheaply to wherever they fetch the highest price. That identifies its essence more clearly than wording such as "an open and integrated world economy".

*Is globalisation a new phenomenon or just a new label?*

Ans: globalisation has ancient roots and is still being developed; but it was improved communications, computerisation and the liberalisation and deregulation in the 1980s that gave it its modern character.

*Should the main focus be what is called the real economy or the financial economy?*

Ans: it is essential to focus on both. Far too much economics looks at the financial economy whilst ignoring the real economy (typical examples being the emphasis on GDP to the exclusion of measures of welfare, and the way economists ignore the physical limits of the real world); whilst environmentalists fail to appreciate the crucial influence of the financial economy on the way the real economy works. What the world needs is a financial economy that promotes and facilitates a just and sustainable real economy.

*How does globalisation impact on the UK economy, and how does it impact on UK national and international policy making?*

Ans: it dominates the UK economy and it dominates national and international policy making.

*How does globalisation affect the major world economic institutions?*

Ans: it dominates them too.

*Does globalisation require regulation and, if so, is this possible at the national level, or will the need for international regulation be reinforced?*

Ans: see our substantive submission. It needs to be regulated, at both the national and international levels.

## **The numbered questions raised by the Committee**

We answer these briefly so that the Committee can see the gist of our position on each; but we do wish to emphasise our concern that the overarching question is the desirability or otherwise of globalisation from the fundamental viewpoint of social, environmental and economic sustainability.

### *1. What are the driving forces causing globalisation? Are they chiefly real or financial?*

Ans: the corporate-capitalist system's need for continual economic growth, coupled with the deregulation of finance and trade. They are thus both financial and real.

### *2. How are firms changing their business methods and the international location of their activities? What are the implications of any change?*

Ans: capital is moved to wherever it generates the highest rate of return; goods are moved from the places where they can be produced most cheaply to wherever they fetch the highest price. The effects are adverse in economic as well as social and environmental terms: see our substantive submission.

### *3. Has globalisation affected goods and services differently?*

Ans: the service sector is usually better protected from international competition than the production of goods, but this is not a key issue.

### *4. How is globalisation affecting employment (a) in the UK, (b) more generally in the advanced world, and (c) in the developing world? What are the implications for skill structure, job security and income distribution?*

Ans: trade displaces less skilled workers in the UK and other industrialised countries: other things equal, this will have some depressing effect on the wages of other workers in those countries. It creates badly paid, highly pressurised and unstable jobs in poorer countries. The cheaper goods globalisation makes available benefit people in protected parts of the economy (whether in a rich or poor country) by increasing their real incomes. Everyone else loses. All economies become less stable, with a smaller range of employment available. The implications are all adverse.

### *5. Who are the gainers and who are the losers?*

Ans: while the better off and those in occupations, such as lawyers, which are protected from international competition are better off in the short term, in the long run everyone is a loser.

6. *How will globalisation affect product market competition and consumer choice? How dominant are the transnational corporations? Is their dominance growing?*

Ans: globalisation favours corporate growth, which adversely affects competition and consumer choice. TNCs are unquestionably becoming more dominant. This invalidates the idea that globalisation has anything to do with the economists' ideal of perfectly competitive markets.

7. *What is the connection between globalisation and the communications revolution?*

Ans: the communications revolution has hastened globalisation.

8. *What is the connection between globalisation and labour mobility?*

Ans: globalisation is not necessary to achieve labour mobility.

9. *Does it matter to a nation who owns its companies, including UK banks and financial markets such as the London Stock Exchange?*

Ans: yes, of course ownership does matter because it determines where profits go. Globalisation has gone hand in hand with privatisation. Not without reason is globalisation often seen as the enemy of democracy. We would however advise the Committee against seeing the issues too much in terms of traditional differences between public and private ownership: there are more fundamental issues at stake, issues on which people of all political persuasions can agree, as shown in our substantive submission.

10. *How significant is global banking? What role should the government play in determining the capital adequacy of international banks present in London?*

Ans: global banking is one of the instruments of globalisation and is part of the financial tail currently wagging the real economy dog. A sustainable world needs banking services appropriate to serve localised economies.

11. *Are capital and money markets more interdependent than before? Are international capital flows too volatile? Is international financial instability increasing? Has market uncertainty increased?*

Ans: yes, yes, yes, yes.

12. *Is it important that individuals (and companies and pension funds) should be allowed unlimited access to international capital markets?*

Ans: it is important that they should not have such access.

13. *What UK government policy responses are required in areas including education and infrastructure investments, social safety nets, and the regulation of financial and other markets?*

Ans: see our substantive submission for the general principles on which answers to these questions should be developed.

*14. Bearing in mind the last of the broad questions listed above, what part should international organisations, such as the IMF, the World Bank, the WTO, play in the regulation of globalisation? Should their roles be changed in any respect?*

Ans: see our substantive submission for the general principles on which answers to these questions should be developed.

Signed

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21 October 2001

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## **Appendix A - 'development' as seen from the so-called 'developing' countries**

The history of 'development', has been summarised by Martin Khor, director of the Third World Network, in *The Case Against the Global Economy*:

“Before colonial rule and the infusion of Western systems, people in the developing world lived in relatively self-sufficient communities, planted rice and other staple crops, fished and hunted for other food, and satisfied housing, clothing and other needs through home production or small-scale industries that made use of local resources and indigenous skills.

“Colonial rule – accompanied by the imposition of new economic systems, new crops, the industrial exploitation of minerals and participation in the global market (with developing world resources being exported and Western industrial products imported) – changed the social and economic structures of developing societies. The new structures, consumption styles and technological systems became so ingrained in developing world economies that even after the attainment of political independence, the importation of Western values, products, technologies and capital continued and expanded. Developing world countries grew more and more dependent upon global trading and financial and investment systems, with transnational corporations setting up trading and production bases in the developing world and selling products there. With the aid of infrastructure programmes funded by industrial governments, multilateral institutions such as the World Bank and transnational banks, developing world governments were loaned billions of dollars to finance expensive infrastructure projects and to import highly capital-intensive technologies. They were also supported by foundations, research institutions and scientists in the industrialised countries who carried out research on new agricultural technologies that would ‘modernise’ the developing world – that is, would create conditions whereby the developing world would become dependent on the transnational companies for technology and inputs.

“To finance the import of modern technology and inputs, developing world countries were forced to export even more goods, mainly natural resources such as timber, oil and other minerals, and export crops that consumed a larger and larger portion of the total agricultural land area. Economically, financially and technologically, developing world countries were sucked deeper and deeper into the whirlpool of the world economic system and consequently lost and are losing their indigenous skills, their capacity for self reliance, their confidence and, in many cases, the very resource base on which their survival depends. But the Western world’s economic and technological systems are themselves facing a crisis. The developing world is now hitched onto these systems, over which they have very little control. The survival and viability of most developing world societies will thus be put to the test in the next few decades. Even now, there are numerous examples of how the Western system has caused the degradation of the environment and the deterioration of human health in the developing world”.

A sobering account of the impact of the present system of globalisation on underdeveloped countries is given by the Peruvian diplomat Oswaldo de Rivero in *The Myth of Development*.

“The history of the majority of the countries of Latin America, Africa and Asia, since their independence, has merely recorded a gradual process of dysfunction and global marginalisation.

“At the end of the twentieth century, the world really consisted, aside from the 24 developed countries, of more than 140 non-developed countries and of only 4 developed ‘newly industrialised countries’ (NICs): two city states (Singapore and Hong Kong) and two small countries (South Korea and Taiwan). These constitute only 2% of the population of what the experts have been calling, for the last forty years, the ‘developing world’. The four are the only cases in which it is possible, despite the financial crisis of 1997, to verify a significant technological modernisation of production and of exports, a continuous process of income redistribution and a significant shift of population from the poor to the middle class, nearly comparable to what happened first in the United States and Europe, and later in Japan. In spite of such progress, these NICs are far from enjoying the scientific, technological and cultural development and the standard of living – and, even less, the democratic development – of the United States and Europe.”

Many African and Asian countries, de Rivero says, have failed to ‘develop’ and now have severe problems. He lists 37 countries which he calls non-viable national economies (NNEs). Typical features of a country in this category are

- there is no technological modernisation of its export products
- it hardly receives any productive transnational investment
- it is a mono-producer or depends on the export of a few primary products with unstable prices – its participation in world trade has diminished
- it has a high population growth – by 2025 it is likely to have doubled its total of inhabitants, while food production diminishes
- food imports represent between 25% and 80% of its total imports
- it lacks a secure energy supply, so that people resort to firewood, thereby causing rapid deforestation, which erodes soil and reduces food production
- imports of energy average 22% of total imports
- more than 70% of their population lacks drinking water and sanitation
- 53% of the population live in poverty.

“In the countries with non-viable economies, the majority of the population lives in a hell, a small middle class lives in purgatory, and only a handful enjoy the paradise of a consumer economy, with instantaneous gratification”.

There is another large group of countries in Latin America, Asia and the Middle East which are incubating similar symptoms of non-viability. Typical of these countries are the following

- they export mainly raw materials and manufactured products with low technological content, for which the demand is not growing appreciably and the prices for which are barely profitable - their participation in world trade has diminished
- they do not receive the critical mass of productive transnational investment that would serve to modernise their exports to enable them to compete in the global economy
- they have a very high urban population growth rate that will double their population by 2025
- they have large, fast growing cities
- several have lost ground in terms of food security
- several are also no longer covering their energy requirements
- they are all beginning to suffer a serious shortage of water.

“Both the first group and the second group have in common an export structure that is technologically dysfunctional with the global economy. These countries continue to export virtually the same primary agricultural and mineral products that were in vogue in the nineteenth and the first half of the twentieth century. Their archaic integration corresponds to the first capitalist industrial revolution, typically intensive in its use of raw materials and abundant unskilled labour. This type of exportation is now totally out of touch with the trends of the new global capitalist economy”.

"The prospects for the remaining underdeveloped countries are mixed:

- Whilst Argentina, Chile, Columbia, Costa Rica, Mexico, Uruguay and Venezuela have increased their exports, have reduced their demographic growth rates and have established food, energy and water security, the goods these countries export are still principally primary products, or manufactures with far less technological content and global competitive advantages than the exports of South Korea, Malaysia, Singapore, Hong Kong or Taiwan
- Argentina and Venezuela alone, de Rivero thinks, may be sure of being more or less integrated into the global economy in the next 20 years, thanks to their position as exporters of petroleum and cereals, two extremely strategic products for the future in view of the world urban population explosion
- Chile, Columbia, Costa Rica, Mexico and Uruguay are still have a long way from being NICs
- There is no guarantee that such mega-countries as China, India and Brazil will manage to reduce their enormous poverty. They have colossal social and environmental problems. Urbanisation will transform their economies into gargantuan consumers of energy, food and water.

"Unemployment, with 30% of the world's working-age population unemployed, remains a grave issue and shows no sign of going away. The present regime shows no sign of significantly increasing income per capita, providing jobs for 700 million unemployed workers, and extricating from their extreme poverty 1.6 billion inhabitants of the underdeveloped world. For a great many poor countries, survival is all they can hope for.

“For a great many poor countries, the option during the coming decades will not be to embark on a development process, as occurred in South Korea or Taiwan twenty years ago. Their only hope will be merely to survive, in some manner, the challenges of the technological revolution and global competition. This fact may seem shocking, since until now it has always been assumed that every country has the capacity to become developed. The experience of the twentieth century, however, indicates the contrary and obliges us to think the unthinkable: that many of the wrongly named ‘developing countries’ are not on the road to becoming newly industrialised countries (NIC’s); instead they are slipping towards the status of non-viable national economies (NNEs). If their situation should worsen, they could implode into violence, as ungovernable chaotic entities (UCEs), as has already happened with some countries of Africa, the Balkans, Asia and Latin America”.

## Appendix B - two articles from the Feasta Review

*Humanity has already burned nearly half of its endowment of oil and, within the next five years, its most convenient form of energy will become increasingly scarce, as **Colin Campbell** explained at the Feasta 'Money, Energy and Growth' conference in March, 2000.*

### ***THE IMMINENT PEAK OF GLOBAL OIL PRODUCTION***

The world's economic prosperity over the best part of the last century was driven by an abundant supply of cheap oil-based energy. This energy source has also played a critical and increasing role in agriculture, which has successfully fed a rapidly growing population. Given this dependency on oil, it is surprising that more attention has not been given to studies of its endowment in Nature, including its distribution, and above all, its depletion. All finite natural resources are subject to depletion which follows a general bell-shaped curve, starting and ending at zero with a peak in between.

The oil industry has made great technological advances since exploration began 150 years ago. These achievements have not, however, been matched in properly defining oil and gas or reporting discovery and production. The unreliable database has given many vested interests the opportunity to mislead and confuse. Explorers have a vested interest in exploration; economists have a blind faith in market forces; engineers have a belief in technology; managers have no alternative but to sing to the investment community, whose interest is confined to short-term financial gain; and governments rely on voters with a thirst for good news. So far, this obfuscation and denial has not particularly mattered as oil production from past discovery continued to grow, although it has indirectly led to damaging fluctuations in oil price. But now the moment of truth approaches as the peak of discovery in the 1960s delivers the corresponding peak of production. The world is ill-prepared to face this historic turning point.

It is now too late to make many useful preparations, and the effort has to concentrate on education. Governments and the people at large need better information if they are to react sensibly

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**Colin Campbell** obtained his doctorate in geology from Oxford University in 1958 and has worked since then as a petroleum geologist with companies including BP, Texaco, Fina and Amoco. He was exploration manager for Aran Energy, Dublin, in 1978-9. More recently he has been a consultant to the Norwegian and Bulgarian governments, and to Shell and Esso.

In 1998, he and a colleague, Jean H. Laherrère, were largely responsible for convincing the International Energy Agency that the world's oil output would peak in the next ten years. He is the author of two books and numerous papers on oil depletion and has lectured and broadcast widely on the topic. He lives in Ballydehob.

## THE GENERATION OF OIL AND GAS

Advances in geochemistry over the past twenty years have made it possible to relate the oil in a well with the source-rock from which it came, and to map the productive trends, once the critical information has been gathered from key boreholes. In fact, the bulk of the world's oil comes from only a few epochs of extreme global warming, which caused the proliferation of algae, effectively poisoning seas and lakes. The resulting organic material was preserved in favourable plate-tectonic settings. Thus, most of the oil from the United States to northern South America, including the vast degraded deposits of Venezuela, comes from a few hundred meters of clay, deposited 90 million years ago. Another such event, 140 million years ago, is responsible for most of the oil in the North Sea, the Middle East, and parts of Russia.

Gas was more widely generated in Nature than was oil, but this is offset by its tendency to leak from geological traps. Salt and permafrost form the most effective seals. The presence of salt is an important factor contributing to the preservation of large amounts of oil and gas in the Middle East.

The world has now been so extensively explored that virtually all the productive trends, at least in the accessible parts of the world, have been identified, leaving much less scope for surprise than was previously the case.

The world is not about to run out of oil, but it is about to face the peak of production. To determine the date and size of peak involves identifying the many different categories of oil and gas to see how each can contribute. Each category has its own endowment in Nature, its own costs and characteristics, and above all, its own depletion profile. There is obviously a world of difference between a Middle East well flowing at 30 000 barrels per day and processing a few barrels a day from a tar-sand or oil 'shale'.

It is convenient to distinguish *Conventional* oils, which have produced most oil to-date and will continue to dominate all supply far into the future, from *Non-conventional* oils, but there is no standard definition by which to do so. Here, the following categories are treated as *Non-conventional*:

- Oil from coal and 'shale' (actually immature source-rock)
- Bitumen (defined by viscosity)
- Extra-Heavy Oil (less than 10° API. API is an index which measures viscosity - the lower, the thicker)
- Heavy Oil (10-17.5° API)
- Deepwater oil and gas (more than 500 m water depth)
- Polar oil and gas
- Coalbed methane, gas in tight reservoirs, gas in geopressured aquifers, hydrates etc

Gas liquids, comprising condensate, liquids from processing and new Gas-to-Liquids technology, belong to the gas domain and should be treated apart from crude oil, although the industry's database does not distinguish these adequately.

Economists tend to picture a seamless transition driven by market forces, such that as the production of one category becomes expensive another will take its place, making it difficult to measure anything. It is therefore better to base measurements on physical attributes, although economic and technological factors do influence extraction.

Since peak production is controlled mainly by *Conventional oil*, we will concentrate on it here.

## THE SIZE OF DISCOVERY

An oilfield contains what it contains, having been filled in the geological past. Its size will be known exactly only on the day of its final abandonment, but reasonable estimates may be made earlier. The terminology and practices of

reserve estimation and reporting are subjects in themselves. But to simplify greatly, we need to use the estimate most likely to result in revisions being statistically neutral: the best estimate for this purpose is that commonly termed *Proved & Probable*. Published reserves are generally reported as *Proved*, although in reality they are closer to *Proved & Probable*, save in the onshore USA. Revisions have to be backdated to the discovery of the field containing them to obtain a valid discovery trend. The amount discovered at any given reference date is the sum of *Cumulative Production* and the *Reserves*.

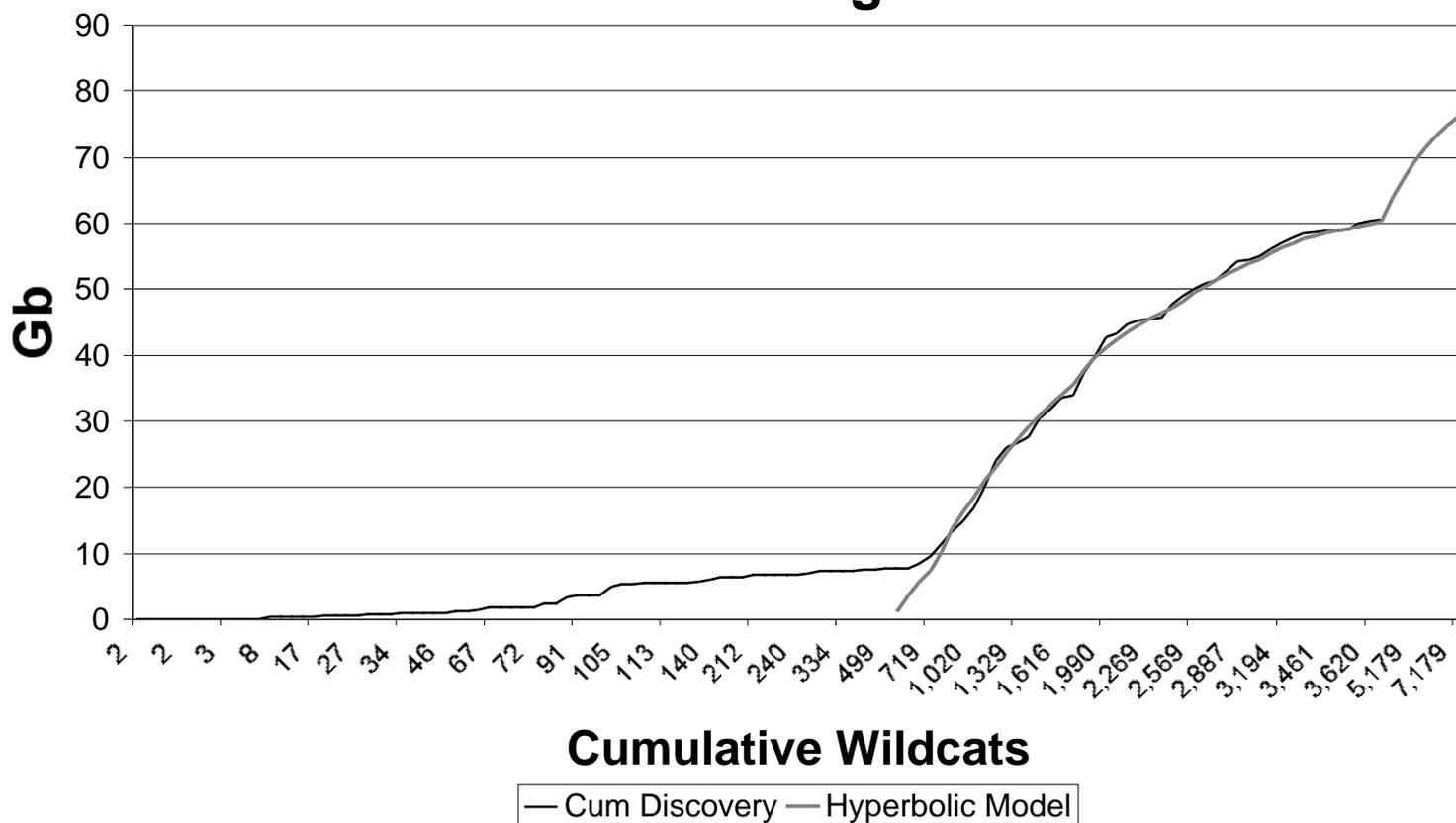
## THE ILLUSION OF 'RESERVE GROWTH'

Many claims are made that technology will extract more oil from known fields, giving what is termed *Reserve Growth*. However, plotting annual production against cumulative production for most major fields shows unequivocally that technology barely affects the reserves. The observed upward revision of reserves is primarily an artefact of reporting practices.

## THE SIZE OF THE YET-TO-FIND

It is possible to obtain a good estimate of what is yet-to-find in mature basins by extrapolating the discovery curve with a so-called creaming curve that plots cumulative discovery against cumulative wildcats or over time. The plot of a particular geological province is hyperbolic because the larger fields are found first, being too large to miss. Other statistical techniques involving size distributions and geological habitats also contribute to the estimate. Given that the world has now been thoroughly explored, most future discovery will be in ever smaller fields in currently producing basins.

## Shell's Creaming Curve



The number of exploratory wells - wildcats - drilled by the Shell oil company are plotted on the horizontal axis and the cumulative amount of oil they discovered is shown in billions of barrels (Gb, or giga-barrels) on the vertical one. The graph makes it clear that recent drilling has discovered much less oil per wildcat than in the early days.

## ULTIMATE RECOVERY

The sum of *Cumulative Production*, the *Reserves* and the *Yet-to-Find*, comprises the *Ultimate Recovery*. The key parameters of the world's oil based on a realistic assessment of each country's conventional crude oil for end 1999 are follows: *Cumulative Production* 822 Gb (billion barrels); plus

<i>Remaining Reserves</i>	827 Gb; equals
<i>Discovered</i>	1649 Gb; plus
<i>Yet-to-Find</i>	157 Gb; equals
<i>Ultimate</i>	1800 Gb. minus
<i>Used to date</i>	822Gb leaves
<i>Yet-to-Produce</i>	978 Gb;

These numbers are quoted as computed but need to be generously rounded, given the inaccuracy of the input. In principle, they apply to conventional crude oil only, but it is recognised that they include some condensate and *non-conventional* heavy oil, which cannot be properly identified in the industry's database.

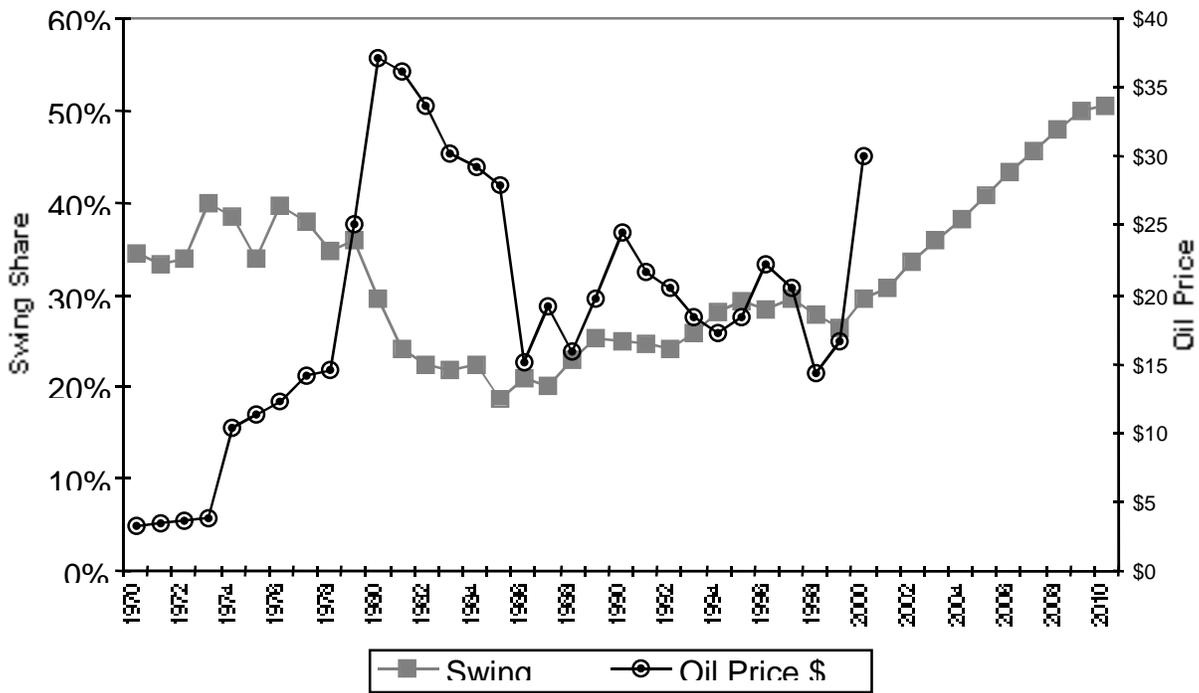
## MODELLING DEPLETION

There are several ways to model depletion once the resource base has been established to within at least reasonable limits. A simple practical model distinguishes five Middle East countries as swing producers, making up the difference between world demand, under various scenarios, and what the non-swing countries can produce. Peak production comes close to the midpoint of depletion, when half the *Ultimate* has been consumed. The non-swing countries may in turn be divided into post- and pre-midpoint groups. In the post-midpoint group, production is assumed to decline at the current *Depletion Rate*, which is annual production as a percentage of the *Yet-to-Produce*. In the pre-midpoint countries, production is assumed to rise to midpoint on the current trend or as otherwise determined. Since midpoint in most such cases is now close, alternative assumptions about the rate of increase have little overall impact. The treatment of the individual swing countries is more complex, but generally, it is assumed that each country produces in relation to its share of the regional aggregate *Yet-to-Produce* to midpoint, when production declines at the then depletion rate, with the balance being made up by Saudi Arabia.

The base case scenario assumes that demand grows at 1.5% a year until swing share passes 35%. That is taken to mark a price shock sufficient to curb further demand increases, leading to a plateau of production until share reaches 50%, when the swing countries can no longer meet the demands made upon them as they themselves are approaching their own depletion midpoints. World production thereupon falls at the then depletion rate.

Swing share is an important element. It was 38% the time of the First Oil Shock in 1973, but sank to 18% in 1985 because new provinces, such as the North Sea, were flooding the world with flush production from giant fields, which are found early in the exploration process. It is stressed that these new provinces had been found before the shock, and were not a consequence to it, as is so often claimed. Share has been rising since 1985 to reach about 30% by end 1999. This time, it is set to continue to rise because there are no major new provinces ready to deliver, or indeed in sight, save perhaps the Caspian, whose potential has been much exaggerated.

## Swing Share & the Price of Oil

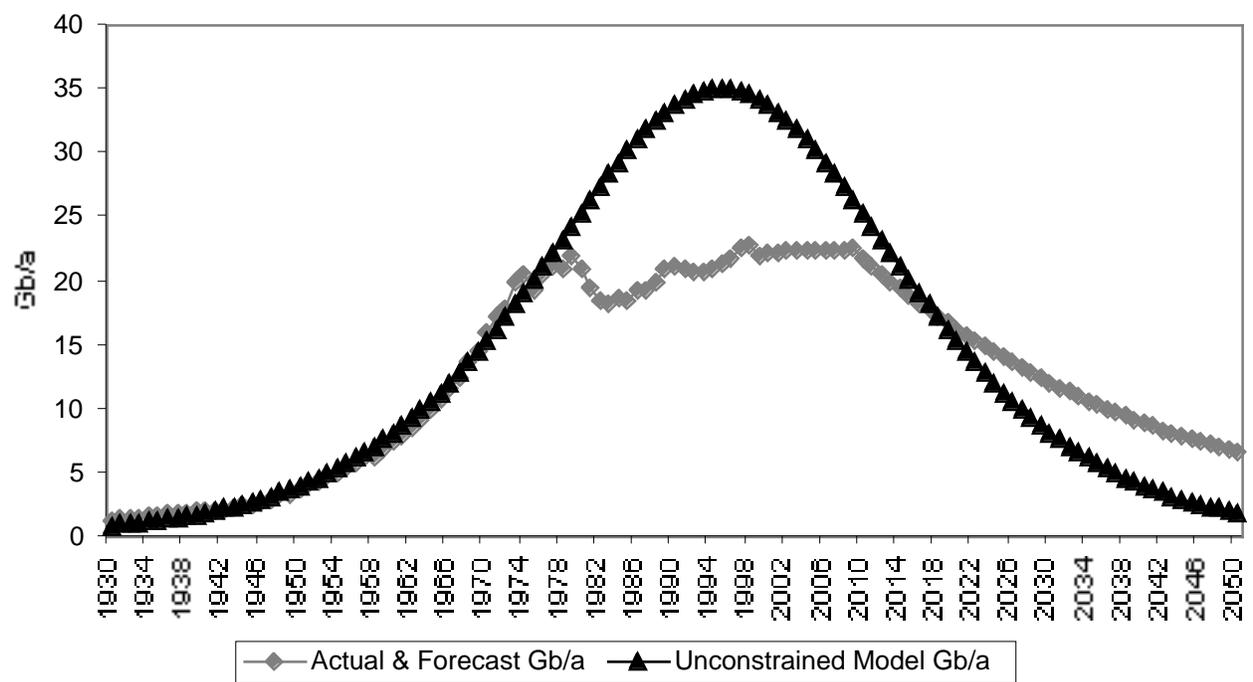


Whenever the share of the world oil market held by the five big OPEC producers in the Middle East has exceeded 30%, they have had the power to push oil prices up sharply - and have done so.

## SCENARIO

Applying the model to the database, summarised above, gives a price shock in 2002 and the onset of terminal decline in 2009. The intervening plateau is likely to be anything but flat as it will be a time of tension and volatility. A general peak for conventional oil at about 61 Mb/d (million barrels per day) can be said to arise in the middle of the plateau, namely around 2005. Adding *non-conventional* oil and gas-liquids will delay the overall peak by about five years, when production may total about 85 Mb/d. Gas itself, which is not considered in detail here, is likely to peak around 2020.

### World Oil Production - Past and Future



The darker line in the graph above is the so-called Hubbert curve and shows how oil production would have expanded and then contracted if it had been governed solely by physical constraints. The lighter line shows the amount of oil actually produced until today and what is likely to be produced in the future. As can be seen, the actual curve followed the theoretical curve very closely until the early 1970s when the five powerful Middle Eastern OPEC producers gained control of more than 30% of the world market. They took advantage of their situation and pushed up prices, thus limiting oil demand. High oil prices can be expected to cause world oil demand to stay on a plateau until around 2010. After that, output will fall whatever the price because fields will be becoming exhausted.

There are of course other scenarios that could advance or delay peak, but the onus rests on their proponents to demonstrate exactly where they expect the necessary production to come from and at what rate and cost. The deepwater areas, whose oil is here treated as *non-conventional*, are not as well known as the rest of the world. It appears, however, that deepwater oil prospects depend very much on divergent plate-tectonic settings as found principally in the Gulf of Mexico and South Atlantic, where reservoirs are underlain by effective oil-source rocks. In other areas where delta fronts have extended into deepwater, the prospects are likely to be gas-prone. Overall, the deepwater domain is likely to yield about 85 Gb, peaking with heroic effort at about 9 Mb/d by 2010.

## DENIAL AND OBFUSCATION

The foregoing scenario is based on a realistic assessment of the reserves as known to the oil industry with the *yet-to-find* estimate coming from an extrapolation of past results. The industry has indeed made remarkable technological progress in virtually all spheres of operation, and it has systematically searched the world for the biggest and best remaining prospects. It is, therefore, very reasonable to give weight to the past record in predicting the future, and to treat with scepticism claims that some remarkable and unforeseen technological breakthrough might open unknown doors. In any event, it is better to base plans on realism and not dreams.

It is worth examining how and why governments, international institutions and oil companies are reluctant to look reality in the face. It is difficult to penetrate the many layers of denial and obfuscation that envelope their pronouncements. We need the skills of a detective to determine whether we are dealing with ignorance, culpable ignorance, or fraud and deception.

## OIL COMPANIES

One major company overcomes its reluctance to admit to depletion by claiming that its record of forecasting has been poor, so that it prefers to develop a range of well-reasoned scenarios to cover the spectrum of possibility. In effect, it evades the issue on the grounds that it has no single viewpoint, although it does confess that at least one of its scenarios contemplates an Ultimate of about 2600 Gb for all liquids with a peak around 2010. This is close to the above assessment.

Another major oil company, BP Amoco, has made a public presentation showing that discovery peaked in the 1960s, even if failing to draw the obvious conclusion that peak production must follow. It has changed its logo to a sunflower and says that its initials stand for 'Beyond Petroleum', which is a very oblique reference to the depletion of its principal asset. Its chairman and chief executive sit on the board of an investment bank, Goldman Sachs, which in 1999 commented:

'The rig count over the last 12 years has reached bottom. This is not because of low oil price. The oil companies are not going to keep rigs employed to drill dry holes. They know it but are unable and unwilling to admit it. The great merger mania is nothing more than a scaling down of a dying industry in recognition of the fact that 90% of global conventional oil has already been found'

It would be surprising if this did not convey the opinion of the BP board. At the time it was making large acquisitions, the company stated that oil prices would remain low for the foreseeable future, but now admits that the world depends on the Middle East.

Still another chief executive comments: *'So technology is one of the key reasons why I am excited about the prospects of our industry. Our raw resources may be the same, but our processes and technology are truly state-of-the-art'*. In other words, he admits that technology does not change how much oil a field contains, with all that that implies.

In shining contrast are the chief executives of Arco and Agip who, when they felt free to speak on leaving office, both stated that they expected global production to peak by 2005.

## GOVERNMENT INSTITUTIONS

The US Geological Survey has made periodic assessments of the world's oil and gas endowment, the latest of which was issued in 2000. In a press release on the eve of a critical OPEC meeting, it claimed that *'there is still an abundance of oil and gas in the world'* and announced an estimated *Undiscovered* of 649 Gb for the world outside the USA and 612 Gb of 'Reserve Growth'. The report itself later revealed a very wide range from 239 to 1376 Gb for the Undiscovered with for example a *Mean* expectation from East Greenland of 49 Gb on the basis of a comparison with mid-Norway, which has yielded about 10 Gb after many years of search. To attribute five times more to an undrilled, unknown province demonstrates an absence of common sense. The reserve growth claim also ranges from 192 to 1031 Gb based mainly on onshore US experience, failing to appreciate that most 'growth' is a reporting phenomenon, primarily related to large onshore fields. Only the low end of the ranges can be taken at all seriously. At the same time, the Geological Survey separately released an unpublicised poster that did depict an imminent peak of production accompanied by a text stressing the consequential crisis. It has diplomatically covered the full spectrum of possibility with a wide range of estimates and contradictory material.

The International Energy Agency was established by the OECD governments in the aftermath of the oil shocks of the 1970s to monitor supply and demand. In 1998, it presented a report evaluating a so-called 'business as usual scenario' whereby demand grew to 112 Mb/d by 2020 with prices rising to \$25/b. It showed how this demand would be met, admitting that the non-Middle East peaked and declined, while the Middle East share grew to 62% by 2020. Even this was not enough, causing the IEA to introduce a 'balancing item' of unidentified unconventional oil, whose production miraculously rises from zero in 2010 to 19 Mb/d ten years later, while the identified unconventional makes a ceiling of only 2.4 Mb/d by 2010. A moment's reflection tells us that oil will not be \$25/b when the Middle East supplies 62%, and that the 'balancing item' is a euphemism for rank shortage.

These few examples illustrate the scale of denial and obfuscation that surrounds this subject.

## CONCLUSIONS

There is no particular technical difficulty in assessing the size of a field's reserves or in assessing the world's undiscovered potential. It is easy to see that the true impact of technology is to hold production as high as possible for as long as possible, without materially affecting the reserves themselves, which are set by Nature. The relationship between peak discovery, which is a matter of historical fact, and a corresponding peak of production is also evident from a moment's thought

So far, the world has been reluctant to admit that the production of one of its principal fuels is close to peak without sight of any substitute that can come close to matching its convenience and low cost. It is now too late to make any useful preparations, but much remains to be done to inform. Governments need to understand, so as to react better, and the people at large have to know, so that they will be willing to give governments the mandate for tough decisions.

The world is not about to run out of oil, but production is about to peak. The sky does not fall in at peak, but the perception of the future changes. It is likely to lead to severe political and economic tensions, including economic recession, a stock-market crash, and financial instability from the huge flows to the Middle East. There are obvious

dangers of misguided military intervention as the United States, Europe and the East vie for access to Middle East oil. The inequality between rich and poor nations will be more severe. Agriculture is at risk because it is now heavily dependent on synthetic nutrients and irrigation, both directly and indirectly dependent on petroleum. The global market may wither from high transport costs.

This is not necessarily a doomsday picture, for the end of cheap oil-based energy may carry long-term benefits. Countries will have to become more self-sufficient and self-reliant, finding ways to live in closer harmony with their environments. The excesses of capitalism that seem to have created a virtual economy, based on the notion of perpetual growth, may be curbed, and the kleptocrats who run it may be reined in. The risks to the climate from human activity may recede.

It is time to wake up, for the alarm has sounded.

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## Oil scarcity no problem, says CIA

*A report published by the US Central Intelligence Agency in December 2000 does not anticipate any problems in meeting the world's rising demand for fossil fuels over the next 15 years. The relevant section of the report touches on several issues discussed in this Review besides oil depletion. It reads:*

Sustained global economic growth, along with population increases, will drive a nearly 50 percent increase in the demand for energy over the next 15 years. Total oil demand will increase from roughly 75 million barrels per day in 2000 to more than 100 million barrels in 2015, an increase almost as large as OPEC's current production. Over the next 15 years, natural gas usage will increase more rapidly than that of any other energy source—by more than 100 percent—mainly stemming from the tripling of gas consumption in Asia.

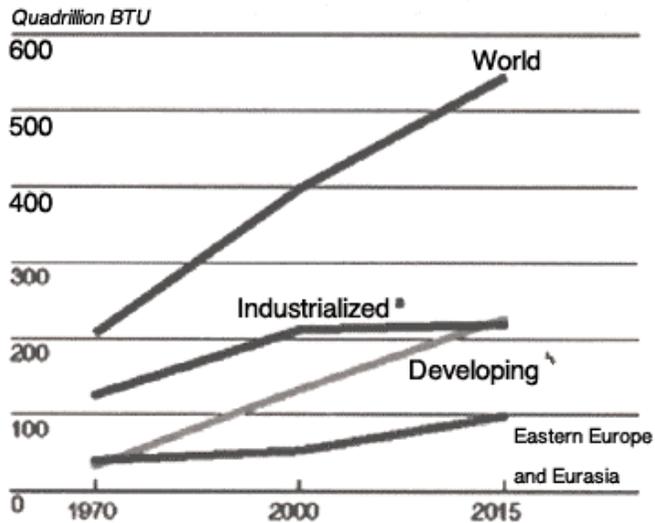
Asia will drive the expansion in energy demand, replacing North America as the leading energy consumption region and accounting for more than half of the world's total increase in demand.

- China, and to a lesser extent India, will see especially dramatic increases in energy consumption.
- By 2015, only one-tenth of Persian Gulf oil will be directed to Western markets; three-quarters will go to Asia.

Fossil fuels will remain the dominant form of energy despite increasing concerns about global warming. Efficiency of solar cells will improve, genetic engineering will increase the long-term prospects for the large-scale use of ethanol, and hydrates will be used increasingly as fuels. Nuclear energy use will remain at current levels.

## WORLD ENERGY CONSUMPTION 1970-2015

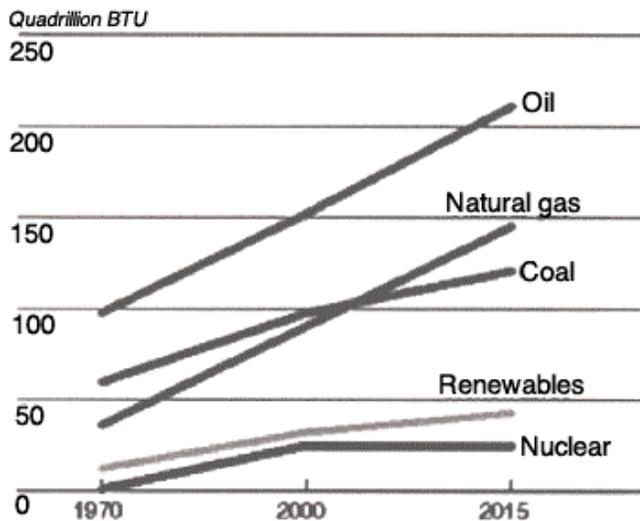
### World Energy Consumption



<sup>a</sup> includes: United States, Canada, Mexico, Japan, United Kingdom, France, Germany, Italy, Netherlands, other Europe, and Australia

<sup>b</sup> includes: Developing Asia (China, India, South Korea, other Asia), Turkey, Africa, Brazil

### World Energy Consumption by Fuel Type



Source: International Energy Outlook, 1998;

US Department of Energy

Meeting the increase in demand for energy will pose neither a major supply challenge nor lead to substantial price increases in real terms. Estimates of the world's total endowment of oil have steadily increased as technological progress in extracting oil from remote sources has enabled new discoveries and more efficient production. Recent estimates indicate that 80 percent of the world's available oil still remains in the ground, as does 95 percent of the world's natural gas.

- The Persian Gulf region—absent a major war—will see large increases in oil production capacity and will rise in its overall importance to the world energy market. Other areas of the world—including Russia, coastal West Africa, and Greenland—will also increase their role in global energy markets. Russia and the Middle East account for three-quarters of known gas reserves.
- Latin America—principally Venezuela, Mexico, and Brazil—has more than 117 billion barrels of proven oil reserves and potentially 114 billion barrels of undiscovered oil, according to the US Geological Survey. With foreign participation, Latin American production could increase from 9 million barrels per day to more than 14 million.
- Caspian energy development is likely to be in high gear by 2015. New transport routes for Caspian oil and gas exports that do not transit Russia will be operating.

Oil-producing countries will continue to exert leverage on the market to increase prices but are unlikely to achieve stable high prices. Energy prices are likely to become more unstable in the next 15 years, as periodic price hikes are followed by price collapses.

By 2015, global energy markets will have coalesced into two quasi-hemispheric patterns. Asia's energy needs will be met either through coal from the region or from oil and gas supplies from the Persian Gulf, Central Asia, and Russia. Western Europe and the Western Hemisphere will draw on the Atlantic Basin for their energy sources at world prices

***Not surprisingly, the increased level of economic activity will have serious environmental consequences but, realistically perhaps, the CIA does not expect effective international action to be taken to counteract these.***

Contemporary environmental problems will persist and in many instances grow over the next 15 years. With increasingly intensive land use, significant degradation of arable land will continue as will the loss of tropical forests. Given the promising global economic outlook, greenhouse gas emissions will increase substantially. The depletion of tropical forests and other species-rich habitats,

such as wetlands and coral reefs, will exacerbate the historically large losses of biological species now occurring. (...)

Global warming will challenge the international community as indications of a warming climate—such as meltbacks of polar ice, sea level rise, and increasing frequency of major storms—occur. The Kyoto Protocol on Climate Change, which mandates emission-reduction targets for developed countries, is unlikely to come into force soon or without substantial modification. Even in the absence of a formal treaty, however, some incremental progress will be made in reducing the growth of greenhouse gas emissions.

*Colin Campbell's comment (4<sup>th</sup> January 2001) on the CIA's report was: 'This organisation is in the business of subterfuge and deception, so we should not expect otherwise when it addresses oil supply. Its motive for exaggerating the world's oil supply is to undermine the Middle East's confidence in its ability to control world oil supply and thereby price. The US is already facing the onset of recession, partly triggered by high oil price. It is a situation that can only get worse'*

**The full report can be downloaded from:**

<http://www.odci.gov/cia/publications/globaltrends2015/index.html#link8c>

**- Editor**

## Where next for slowing climate change?

*US opposition to meaningful steps to curtail greenhouse gas emissions is putting the whole world in jeopardy. Aubrey Meyer outlines an approach which might end the American veto*

If humanity's reaction to the threat of global warming is not fast and effective, we might as well not bother to respond at all because the only thing slow and grudging actions would achieve would be to delay the onset of whatever is to happen by a few years. The choice we face is therefore between making determined, drastic changes now, or doing nothing. There is no middle road.

This is because, if we allow the warming to proceed too far - and we've no idea how much warming is safe - powerful feedback mechanisms will kick in and there will be no clawing back from where they take us. We don't even know whether these feedbacks will be positive or negative, whether they will lead to another ice age or to a runaway warming, as the panel explains. But they will happen. They've happened before and they work very quickly, as the ice-core and pollen records show.

It doesn't really matter whether a rapid warming or an ice age occurs - either would be equally catastrophic. So the message is clear: greenhouse gas concentrations in the atmosphere have to be stabilised within the next ten or twenty years if we are to have a decent chance of avoiding the one or the other. This in turn means that we don't have the luxury of waiting until the most economically powerful countries on the planet decide to attempt to solve the problem. That might be too late. A structure has to be found within which those countries that recognise the seriousness of the problem and are prepared to act can do so without waiting for the others, who can always join the effort later. After all, it would have been impossible to establish the EU if it had been necessary to get all 15 countries to sign up at once. Why should action to halt climate change be any different?

One part of that structure is Contraction and Convergence, the method of controlling greenhouse gas emissions I've developed over the past ten years with colleagues at the Global Commons Institute in London and about which I spoke at a Feasta conference in March 2000. So what is C&C and how might it help slow, or even halt, the warming process that is making people so concerned? Essentially, it involves three steps:

1. An international agreement is reached on how much further the level of carbon dioxide (CO<sub>2</sub>) in the atmosphere can be allowed to rise before the changes in climate it produces become totally unacceptable. Fixing this target level is very difficult as the concentrations are too high already.

## World's climate liable to sudden, rapid changes

'The paleoclimate record shouts out to us that, far from being self-stabilising, the Earth's climate system is an ornery beast which overreacts to even small nudges.' Wallace Broecker, a paleoclimatologist at Columbia University, says.<sup>6</sup>

Broecker personally believes that the reaction he fears will be strongly negative and that the climate in the northern hemisphere will cool by as much as 10°C in as little as ten years if the Gulf Stream halted. This would give Dublin a climate equivalent to that of Spitzbergen. How might this happen? Well, at present the large volumes of warm water that flow from the Gulf of Mexico across the Atlantic to Europe lose heat and freshwater to the air by evaporation along the way. This makes the water cooler (its temperature drops from 12-13°C to 2-4°C), saltier and thus more dense until, somewhere off the coast of Iceland, it becomes heavier than the surrounding sea, sinks and flows south along the seabed. Much of it then rounds Africa, joining the Southern Ocean's circumpolar current.

Broecker calls this flow 'The Conveyor' and says that it is equal to that of 100 Amazon Rivers! 'It's similar in magnitude to all the planet's rainfall. The amount of heat carried by the Conveyor's northward-flowing upper limb and released to the atmosphere is equal to about 25% of the solar energy reaching the surface of the Atlantic north of the Straits of Gibraltar.' he says. Hence its massive effect on Europe's climate.

If global warming prevented the Gulf Stream from cooling sufficiently to sink, its flow would stop. This seems to have happened about 8,000 years ago when, it is suspected, fresh water from melting ice in Canada flowed into the Atlantic and, by making the water in the Gulf Stream less salty for about 400 years, caused a mini ice age.

Certainly, the last Ice Age proper started so suddenly it was almost as if something had been turned off. An analysis of pollen deposits in France shows that the switch from a warm inter-glacial climate to tundra conditions in which it was too cold for fruit and nut trees to grow took less than twenty years. The end of that Ice Age was very rapid too. Ice core samples from Greenland show that there was a 5-10°C rise in temperature in the space of twenty years. Was this the Gulf Stream starting up again?

While they accept that the Earth's climate can flip in a matter of years from one stable regime to another, very different one, most authorities fear that, rather than cooling, the flip might take the form of a rapid warming which would continue until some new balance between heat inflow from the sun and outflow to space was reached. In November 1998 the British Government's Hadley Centre for Climate Prediction and Research issued a set of projections<sup>7</sup> which showed that if nothing was done to restrict fossil fuel consumption, the rate at which the world warmed would accelerate. Average world land temperatures, which have risen by almost 2°C since 1900 would soar by a further 3°C over the next fifty years, the report said. This would be the most significant change in the global climate since the end of the last ice age<sup>8</sup>.

The warming would not be uniform, however. Increases around the poles would be much greater than at the Equator, with northern Russia, northern Canada and Greenland acquiring average temperatures some 6-8° C above their current level. Naturally, a lot of snow and ice would melt and the resulting water, coupled with the thermal expansion of the warming seas, would cause sea levels to rise by 21cm. Unless massive defences were built, this rise would put some 78 million people at risk of annual flooding compared with 10 million in 1990. Indeed, this figure is almost certainly a gross underestimate because the model which produced it does not allow for any increase in the number or ferocity of storms.

Although the warming would allow trees in the northern hemisphere to grow closer to the pole and thus take in extra carbon dioxide from the air, forests would contract elsewhere and release greenhouse gases as they rotted or burned. Quite soon, the rate at which forests in one place were releasing CO<sub>2</sub> would outweigh the rate of CO<sub>2</sub> absorption in others. 'Tropical forests will die back in many areas of northern Brazil. In other areas of the world, tropical grasslands will be transformed into desert or temperate grassland' the Hadley report said. 'After 2050, as a result of vegetation dieback and change, the terrestrial land surface becomes a source of carbon releasing approximately [10 billion tonnes of CO<sub>2</sub>] into the atmosphere [each year].' Although this release rate is equivalent to a third of current emission levels and would consequently accelerate warming, the report says that the feedback 'is not yet included in climate models.'

A second positive feedback was also left out of the Hadley model because too little is known about it. Huge quantities of methane - a much more powerful greenhouse gas than CO<sub>2</sub> - are stored on the seabed and in permafrost, the permanently frozen earth which covers at least a fifth of the planet. The gas is combined with water or ice to form a solid called methane gas hydrate. 'Rising temperatures destabilise the hydrate and cause the emission of methane' Euan Nisbet of Royal Holloway College, University of London, writes in his book<sup>9</sup> *Leaving Eden*. 'One of the nightmares of climatologists is that the liberation of methane from permafrost will enhance the Arctic warming because of the greenhouse effect of the methane, and so induce further release of methane and thus increased warming, in a runaway feedback cycle.' He fears that warming will also release methane from hydrate in shallow Arctic seas. 'Any slight warming of the Arctic water will release hydrate from the sea floor sediments almost immediately' he writes<sup>10</sup>. 'The danger of a thermal runaway caused by methane release from permafrost is minor but real... The social implications are profound.'

Several other potentially damaging feedbacks were also omitted from the Hadley study. One is that as oceans warm, they become less capable of absorbing carbon dioxide which therefore builds up in the air more rapidly. A second is that changes in the chemistry of the upper air will affect the rate at which methane - which is relatively short-lived in the atmosphere at present - gets broken down. Taken together, these four effects can only mean that there is a significant risk that warming will spiral out of control during the next half-century unless greenhouse emissions are drastically reduced before then.

2. Once the ultimate overall limit to CO<sub>2</sub> concentrations as been agreed, it is a simple matter to use an estimate of the proportion of the gas released which is retained in the atmosphere to work out how quickly we need to cut back on current global emissions in order to reach the target. This cutting back is the Contraction part of Contraction and Convergence.

3. Once we know by what percentage the world has to cut its CO<sub>2</sub> emissions each year to hit the concentration target, we have to decide how to allocate the fossil fuel consumption that those emissions represent.

Should it be left to the market to do so? - If it did, we would effectively allow the industrialised nations, which have caused the warming problem and have become rich through their overuse of fossil fuel, to continue to use the lion's share. Or should we say, as the Americans once did, that all countries should cut back by the same percentage? This proposal would, of course, mean that those countries which use most fossil fuel now would continue to use most in the future. That would scarcely command worldwide support. Or should we say, as the C&C approach does, that the right to emit carbon dioxide is a human right which should be allocated on an equal basis to all of humankind? This might appeal to a majority of the countries of the world but the overconsuming countries would have to be allowed an adjustment period in which to bring their emissions down before the Convergence on the universal level. So C&C has a period for that built in.

After convergence, each country would receive the same allocation of CO<sub>2</sub> emissions permits per head of its population at some agreed base year. Those countries which were unable to live within their allocation would be able to buy more permits from countries which ran their economies in a more energy-frugal way. This feature would lead to a steady flow of purchasing power from the countries which have used fossil energy to become rich to ones which are currently poor. It would thus not only shrink the gap between rich and poor but also encourage the South to develop along a low-fossil-energy path.

But what currency would the fossil-fuel-hungry countries use to buy their extra emissions permits? I put this question to Richard Douthwaite on the telephone about three years ago and he immediately said that, if reserve currencies like US dollars, Euros, Sterling and Yen were used, the countries which issued those currencies would get their extra permits at a discount. This was because a proportion of the money they paid over would not be returned to them in payment for their exports but would be used instead as if it was a world currency to finance international trade. Obviously, this would give these countries an unfair advantage over the rest of the world. Consequently, if C&C was to work fairly and well, it had to become even more radical. We had to extend it into the area of international monetary reform.

Richard put forward proposals for doing so in his Schumacher Briefing, *The Ecology of Money* which was published in October 1999. He suggested that an international agency

be set up to handle two things. One was the allocation and issue of greenhouse gas emissions permits he called Special Emission Rights or SERs according to the C&C formula. The other was a new global currency which would be used for trading SERs internationally. This he called the ebcu, an acronym for emissions-backed currency unit.

Ebcus would get into circulation by being distributed, free, to the nations of the world on the basis of their populations, just as everyone gets the same allocation of cash when they start a game of Monopoly. Richard wants ebcus to be used for all international trade, not just the purchase of SERs, and thinks that a majority of countries might be prepared to insist on payment in ebcu to avoid giving the countries with reserve currencies a permanent trading advantage. If, after trading with ebcus began, the price of an SER in ebcu rose above a certain figure, the issuing agency (IA) would sell more SERs for ebcus, thus putting a ceiling on their price. The ebcus the IA received for the sale would be permanently removed from circulation. This would reduce the number in use, restricting the amount of international trade it was possible to carry on, and thus the world demand for fossil fuels. In other words, the system automatically restricts the level of economic activity to one which is compatible with bringing greenhouse gas emissions down along the internationally-agreed trajectory and hitting the atmospheric concentration target. On the other hand, if humanity learns to manage with less fossil energy, there's no barrier to the amount of trade going up.

The next step came in October 2000 when I spent ten days in Westport with Richard working on my Schumacher Briefing on C&C. A lot of our time was spent discussing the apparent impossibility of getting the US actually to make even the totally-inadequate emissions reductions it had pledged under the Kyoto Protocol, let alone the savage cuts urgently required to reduce the risk of a catastrophic climate change. It was vitally important that the US should not be allowed to block action by other countries.

The inclusion of the ebcu proposals in the C&C package would make it very attractive to most nations in the Majority World (MW) as it would give them emissions permits to sell each year and also an initial allocation of the new world currency which would go a long way to clearing their debts. However, it would be very unpopular with the US, which would not only have to buy emissions permits every year but which would also lose the advantages given it by the power of the dollar. The main OPEC countries would oppose the system too, as making it necessary for oil companies to buy emissions permits before they could take delivery of oil or gas would mean that they could afford to pay less for the fuel. The cost of the emissions permits would come straight out of the fossil energy producers' pockets. Some fossil energy-producing countries might be in an intermediate position, though - they might lose oil revenue but gain from the sale of permits.

Our idea that a part-world, let's-ignore-the-US-and-go-ahead-anyway solution might be practical developed quickly. The Dutch alternative newsmagazine *Ode* had called a conference on international monetary reform in early December, billing it as an attempt to produce a Bretton Woods agreement (the agreement under which the World Bank and the IMF were set up) for the 21<sup>st</sup> century. It had even booked a five-star hotel at Noordwijk aan Zee with the same style and ambience as that on the other side of the

Atlantic used in 1944 by the original Bretton Woods negotiators. Richard had been invited to speak, others in the Feasta network were going to be involved and he thought the organisers would invite me too. It seemed a great chance to give the C&C plus monetary reform package an airing.

As over two years' preparatory work preceded the original Bretton Woods agreement, Richard thought we'd better prepare a draft treaty to take with us. I was tied up in the climate negotiations at The Hague, so, with the help of other Feasta members and particularly John Jopling and James Bruges, he drew up the following document which spells out in some detail how a more sustainable climate and monetary regime might be achieved. The explanatory comments are part of the original paper.

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## **The Treaty of Noordwijk - Discussion Draft**

### **Preamble**

The world economy is not working well. Its over-use of the Earth's resources threatens the stability of the climate and is causing the fastest rate of species extinction since the disappearance of the dinosaurs. Moreover, fisheries and forests are being destroyed by over-exploitation, aquifers pumped out and soils eroded with little thought for the consequences. The natural capital on which future generations will depend is being rapidly lost.

Yet despite the economy's profligate and increasing rate of resource use, the majority of humanity still lives in dire poverty and the gap between rich and poor is growing. In 1997, the richest fifth of the world's population enjoyed 74 times the income of the poorest fifth, up from 60 times in 1990 and 30 times in 1960.

The poverty has serious consequences. Dirty water and bad sanitation enable cholera and diarrhoea to kill three million of the poor a year. Indoor air pollution, mainly from cooking stoves, causes two million deaths. Vector-borne diseases such as malaria kill another 800,000.. And urban air pollution and agri-chemicals, the results of the way our economic system has developed, are also major killers. In all, roughly a fifth of all disease in poor countries is caused by factors which could be readily changed if a relatively small amount of resources were switched from other uses.

Even if we were to disregard its damaging effects on the environment and on the lives of millions of people, the world economy has to be considered dysfunctional in its own terms because of its fundamental instability. It is widely accepted that something as simple as a stock market crash could cause it to break down catastrophically and plunge the world into a depression comparable or worse than that in the 1930s. Moreover, a

national economy can be ruined almost overnight by speculative money flows, as Mexico's was in 1994.

All these problems are due in large part to faults built into the present global economic system when it was set up at Bretton Woods in 1944. At that time, in response to overwhelming pressure from the United States, mechanisms designed to redress the balance between countries with trade surpluses and those with trade deficits were left out. Consequently, the problems the system produces cannot be solved until it is replaced or radically changed.

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*The Bretton Woods system is commonly understood to refer to the international monetary regime that prevailed from the end of World War II until the early 1970s. Taking its name from the site of the 1944 conference that created the International Monetary Fund (IMF) and World Bank, it was history's first example of a fully negotiated monetary order intended to govern currency relations among sovereign states. In principle, the regime was designed to combine binding legal obligations with multilateral decision-making conducted through an international organization, the IMF, endowed with limited supranational authority. In practice the initial scheme, as well as its subsequent development and ultimate demise, were directly dependent on the preferences and policies of its most powerful member, the United States -*  
**Prepared for the Routledge Encyclopaedia of International Political Economy by Professor Benjamin Cohen, University of California, Santa Barbara.**

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*At the Bretton Woods Conference in 1944, the English economist John Keynes presented a proposal for a world monetary and economic order, aiming at an international equilibrium: a world central bank, a 'neutral' international currency (bancor), taxes on trade surpluses of stronger economic powers, and a development fund for weaker countries. Instead, the United States pushed through the White Plan, a system giving the stronger countries all the chances, and imposing the adjustment unilaterally onto the less advantaged ones. Admittedly, at first there was some form of regulation: the dollar became the world currency but was still bound to the gold standard and firm exchange rates. In the International Monetary Fund (IMF), however, the United States ensured the maintenance of a veto right bound to the proportion of funds paid in. In this way the IMF was dominated by the richest countries from the start. The development fund became a world bank. And taxes on trade surpluses were not introduced at all. In 1971-73 the few regulatory mechanisms in the system broke down and the neo-liberal phase began. -*  
**from Economic Alternatives: Responding to the Fifty Years of the Dominant Financial Systems Established at Bretton Woods, by Ulrich Duchrow and Martin Gueck, 1994.**

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Designed to allow the world economy to move towards the goals of sustainability, stability and equity, the Treaty of Noordwijk would, if ratified on behalf of a majority of the world's people, bring about most of the reforms required to alleviate the above problems. In particular it would:

- Put a genuine world currency into circulation for the first time.
- Limit the level of global economic activity to the maximum compatible with the Earth's environmental health.
- Bring about a fairer distribution of the Earth's resources.
- End most Third World debt.
- Provide annual funding for improved health, educational and social services.
- Give national governments more power over international investors and speculative currency movements.
- Remove the necessity for countries to achieve economic growth purely to avoid financial collapse in circumstances in which the growth is known to be environmentally and socially damaging.
- Make national economies much more stable.
- Allow countries to move towards sustainability as rapidly as they would wish rather than the pace of the slowest.
- Remove the unfair built-in advantages enjoyed by countries issuing 'hard' currencies in the present global financial system.

**Clause 1: We, the parties hereinafter subscribed, resolve to set up a new international institution, the Issuing Authority, to issue and manage a global currency on behalf of us all.**

Comment: A world currency is necessary in the interests of international equity. Because there is no global currency at present, the countries which issue 'hard' currencies such as the dollar, the pound sterling, the Euro, the yen and the Swiss franc all benefit very considerably from having their monies used as global money substitutes. Their benefits arise because the central banks in third countries keep their currencies in their foreign exchange reserves, effectively giving them an interest-free loan of the goods and services which were supplied to earn the money in the first place. The US is the major beneficiary - at the end of 1999, the dollar accounted for 66% of global foreign exchange reserves according to the IMF. In addition, billions of dollars are held offshore by non-US banks and lent as Eurodollars to non-US customers. In addition, many billions are used for international trade transactions not involving the US, for purchases in 'dollar shops' or are hoarded by their holders for fear their national currency will collapse or civil disturbances will break out. These vast holdings explain in part why the US has been able to run a balance of payments deficit on its current account for many years. What this means is that the US has been able to purchase a much greater value of goods and services from the rest of the world than it has supplied.

**Clause 2: The Issuing Authority will be controlled by a board of directors elected by a representative of each of the subscribing states. Each representative will be deemed to hold a proxy on behalf of each citizen of the country he or she represents.**

Comment: This clause means that populous countries will have a greater say in choosing the members of the board of the IA than countries with small populations. Once elected, the directors will be able to act independently of the countries which voted for them - they will not represent any specific bloc or part of the world. This will be quite unlike the situation in the World Bank and the IMF in which almost half of all the votes are controlled by the seven leading Western industrial countries with the result that the institutions are run to further the industrialised countries' interests.

**Clause 3: We further resolve that the Issuing Authority be responsible for issuing carbon dioxide emission rights to an Approved Organisation in each subscribing state in accordance with the broad principles of Contraction and Convergence.**

Comment: If global warming is to be curtailed, the international community is going to have to agree a generally-acceptable framework for doing so. The only framework being widely discussed at present is Contraction and Convergence. This involves setting a target for the maximum level of greenhouse gases such as CO<sub>2</sub> in the atmosphere and then working out by how much the current level of emissions needs to be cut annually so that the target is kept. Then, having set each year's emissions quota in this way, the current year's allocation is shared out among the nations of the world according to the size of their population in a base year - say 1990. Those countries which don't receive enough emissions permits to be able to consume as much fossil energy as they would like can then purchase permits to emit more greenhouse gases from countries such as India which currently use very little fossil energy per inhabitant. Every year there would be a new issue of emissions permits in line with the pre-determined, declining quota for that year. This system would not only ensure that the target level of greenhouse gases in the atmosphere was not exceeded but would also shift purchasing power from countries which have become rich by their over-use of fossil energy to poorer parts of the world.

**Clause 4: At the same time as the first year's issue of carbon dioxide emission permits is made, the Issuing Authority will distribute the new global currency to the central banks of the subscribing states on the same population-related basis as the permits. The subscribing states undertake to use the new money for trading in emissions permits and for all other international transactions.**

Comment: For the reasons already explained, if those countries with widely-acceptable currencies were able to use them to buy extra emissions permits, they would effectively be getting a discount on their purchases because a large fraction of the money they paid over would go into circulation as if it was world currency and not be presented back to the wealthy issuing country in payment for goods and services bought by the poorer country.

The new currency is intended to be used for all international transactions, not just those involving emissions permits. The IA will not be able to stop private traders using, say, dollars, for a transaction not involving the US, but all countries should be encouraged to feel that it is wrong to continue to use another country's currency for transactions not involving that country as it gives an unfair international advantage to the country whose currency is used..

The issue of the global currency will mean that countries which hold dollars and other convertible currencies will no longer need them in their foreign exchange reserves, for general international trading and for hoarding - the new money will be available for these jobs instead.. They will consequently be able to use their hard currency holdings to pay off their foreign debts. If they have too little hard currency to get out of debt entirely, they will be able to buy additional hard currency with part of their global currency

allocation.. This is likely to release most poor countries from all their external debt problems. Any surplus global currency should be regarded as capital and used for development projects.

**Clause 5. The Issuing Authority will undertake to sell more emissions permits whenever their price in terms of the world currency, which is to be called the ebcu (Emissions-Backed Currency Unit), rises above a specified level. Equally, if the price of permits falls below the specified level having once achieved it, the IA will either put more ebcus into circulation on the same per capita basis as they were originally issued or reduce the supply of emissions permits in the next annual allocation.**

Comment: This mechanism fixes the value of the global currency in terms of emissions permits. It also controls the total amount of activity that it is possible to carry on within the world economy. The Quantity Theory of Money states that the amount of money available determines the number of transactions it is possible to carry out in an economic system at any given price level if the speed at which money passes from hand to hand stays constant. Thus, if the level of economic activity in the world economy is so high that additional fossil energy is required to fuel it and the demand for this extra fuel drives the price of emissions permits up above the specified level, the IA will sell additional permits and remove the ebcus it receives in payment for them from circulation. This reduction in the world's money supply would reduce the level of activity in the global economy and thus the demand for fossil energy, causing the price of permits to fall back. Similarly, if the price of permits fell, either the level of activity in the world economy would be too low (in which case mass unemployment would be evident) or humanity would have been so successful in developing non-fossil energy sources that the demand for fossil fuel had dropped. In the latter case, the IA should reduce the quota of permits it distributes the following year in order to accelerate the fall in greenhouse emissions and achieve a lower, safer maximum concentration of greenhouse gases in the atmosphere. In the former case, just enough extra ebcus should be issued to alleviate extreme hardship.

**Clause 6. The Approved Organisations to which the IA will issue emissions permits will be independent national trusts set up specifically to handle emissions permits on behalf of the individuals entitled to them. Each subscribing state undertakes to submit for the IA's approval proposals for the means by which the trustees of its trust will be chosen. We understand that no trust will become an Approved Organisation unless it is clear that its trustees are independent of government and can act independently of it. Subscribing states grant the IA the power to cease to issue permits to any AO which it believes has not handled previous issues of permits and/or the revenue from them in the best interests of the beneficiaries.**

Comment: One of the problems with any system which involves the flow of a great deal of valuable property to any country is that the ruling elite may take most of it for itself, or use it to further its political or military ambitions. Consequently, just as the World Bank and the IMF have the power to refuse to lend to governments with policies they dislike, so the IA must have the power to see that each person in whose name an emissions allowance has been issued actually benefits from it. Generally, each trust will auction its allocation of permits and then decide how to spend the national currency it receives for them in the best interests of the people of the country concerned.

For example, as transport, water and sanitary services, health care and education are more effectively provided on a collective rather than an individual basis, a trust might choose to allocate part of its income to those directly, rather than giving all the money to the people in whose name they hold it so that they can buy these services independently. A trust might also favour operating old age pensions and children's allowances rather than giving a flat basic income to everyone, as everyone would be able to benefit from these at some time in their lives. Trusts might also make funds available for the rapid development of renewable energy sources, in order to prevent general hardship by keeping energy prices down. However, as cost structures will change considerably as the use of fossil fuel becomes much more expensive, the first

duty of most trusts will be to ensure that the very poor do not suffer from the changes. They will consequently have to distribute a proportion of their income directly to those in whose name they hold it, possibly as a citizens' income.

While the trusts will sell their allocations of emissions permits for their national currency, they need not necessarily (and perhaps should not because of the risk of corruption ) restrict the bidders to their own citizens. Foreigners whose bids are accepted will have to pay in ebcu, and these sales will fix the exchange rate between the ebcu and the national currency.

**Clause 7. The subscribing states undertake to have two national currencies, one for trading and the other for savings, in operation within five years from the date of ratification of this treaty. They agree to set each currency up so that it has its own external exchange rate which they will allow to move in such a way that inflows and outflows to and from the relevant account balance from month to month.**

Comment: The reason that speculative and/or investment capital flows can be so damaging is that they alter the exchange rate which applies to imports and exports. This is because when investment funds, foreign loans or hot money flow into a country, their conversion out of foreign currency into the national one increases the demand for the national currency above what it would otherwise be and thus lifts its value in terms of the foreign currency. This, in turn, makes imports cheaper and means that exporters earn less. In other words, inward capital flows damage domestic producers and favour foreign ones. This means that if capital subsequently begins to flow in the other direction, the country is less able to manage on its home production and its export earnings than it would have been if the capital inflow had not taken place because its home producers and exporters have been undermined. Moreover, if interest rates are raised to try to stem the outflow - as happened in Mexico - every company with any debts at all will see its profits fall because of the additional interest it has to pay on its borrowings. Some companies may be driven out of business altogether.

The solution to this problem is to keep capital flows and import-and-export money flows completely apart. This was the usual practice in most countries until the Bretton Woods system was destroyed by President Nixon in 1971 when he removed its basis by unilaterally deciding that the US would no longer sell gold at \$35 an ounce. In the aftermath, when countries abandoned the fixed exchange rates they had had with the dollar and allowed the value of their currencies to float, they mistakenly saw no need to keep current and capital flows separate.

The maintenance of separate exchange rates for the two types of money flow means that the value of a country's exports will always equal the value of its imports and also that there will be no net flow of capital into or out of the country. It will, of course, be possible for people to move their capital abroad, but only by exchanging it, through the market, with people wishing to move their capital the other way. This provision would completely halt short-term speculative flows and remove the need for a Tobin-type tax. It would also give governments much more power as, if the markets did not like their policies, the only effect would be to alter the exchange rate on the capital account. There would be no crisis. The system would be very stable.

Separating the two flows and having differing exchange rates for each essentially means that a country gets two types of money, each with a different function. One would be exchange money, used solely for buying and selling. This would be the money to be spent into circulation by the government as described in Clause 8. The other type would be the money in which one's savings were kept. This second currency would be expected to keep, or increase, its value relative to the exchange currency over the years. Its existence would mean that a government would not have to worry too much if the exchange currency lost a little of its value each year from inflation because it had chosen to keep plenty of exchange money in circulation to ensure that there was plenty of work.

The two currencies would be linked as follows: Supposing you wanted to buy a capital asset, such as a block of shares or a house. You would take your exchange money, the sort in which you would get your pay, and buy savings money to use for the asset purchases. This savings money would come, via a broker, from someone who had sold some of their capital assets and was wanting to get hold of exchange money to pay for living expenses. The exchange rate between exchange money and savings money would be fixed by the market. If a lot of people wanted to save and fewer people wanted to cash in their savings, then more exchange money would have to be offered for the savings money.

If you wished to buy shares or a house overseas, you would buy savings money with your exchange money, and then use your savings money to buy savings money in the country in which you wanted to invest. If ever you wanted to sell up abroad, the steps would be reversed.

All this might sound very complex the first time it is encountered. In practice, however, it would be easy to carry out and, by ensuring stability and enabling national economies to run at their maximum capacity consistent with keeping greenhouse gas emissions below the global target, bring many benefits.

**Clause 8. For reasons of national and international financial stability, the subscribing states undertake to issue their national trading currencies by spending them into circulation themselves rather than by allowing their commercial banks to create these currencies by lending them into use.**

Comment: Of all the money we use, only the notes and coins are issued by the government though its central bank. The rest - the money we transfer when we write a cheque, authorise a direct debit or use a credit or debit card - is created by the commercial banking system and only exists because we, or someone else, has borrowed it and is paying interest on it. As notes and coins are now mostly used just for minor transactions, 97% of the money in use in a typical industrialised country has been created by someone going into debt. This makes the financial system very unstable because, if people begin to feel a little uncertain about their economic future, they will not be prepared to take out as many new loans as they did, in total, in the equivalent period the previous year. As the earlier loans are being repaid, the fact that the total value of new loans has fallen means that less money is being put into circulation than is being taken out by the repayment of loans and the payment of the interest due on them. In other words, the amount of money in circulation will contract and, as we have already seen, the Quantity Theory of Money suggests that, unless prices fall or the smaller amount of money is passed from hand to hand faster, the amount of trading carried out in the economy will contract.

The lower level of trading will cut business profits and these will be further reduced because the stock of money available to be divided up amongst firms at the end of a year is lower. The lower profits and tougher business conditions will make people even more reluctant to borrow, causing a further contraction in the money supply, which in turn will deter more borrowing. The economy will enter a downward spiral and end in a severe depression. This explains why governments are so keen to ensure that economic growth continues year after year, even though it might be damaging the environment and society. In the present system, growth is necessary to ensure that enough borrowing goes on to prevent the money supply contracting and causing a slump.

Allowing the commercial banks to create most of a country's money and charge interest on it gives a massive, distorting subsidy to this part of the financial system. The alternative is for the government to spend the required amount of money into circulation itself. In an expanding economy, this would allow taxes to be reduced or the level of government services increased. More importantly, by making the amount of money in circulation much more stable, it would make the level of economic activity much more stable too. If the government found that the economy was slowing down and unemployment was developing, it could issue more money to itself and spend it into use. This spending would not only create additional jobs directly but also because the additional money supply would enable an increased amount of trading to go on. On the other hand, if it put too much money into circulation so that a rapid inflation developed, it could easily correct the situation by putting up taxes and withdrawing the money from use. This would be a much more effective way of controlling the money supply than the present one which involves increasing the

interest rate so that people are deterred from borrowing. The drawback with this as a control method is that raising the rate of interest raises the price of the money which businesses have already borrowed. This is itself inflationary as it adds to business costs and, naturally, firms try to recover their higher costs by charging higher prices. As a result, quite high, and therefore damaging, increases in interest rates are often required to keep prices steady under the present regime.

**Clause 9. Subscribing states undertake not to trade with, lend to, or borrow from, non-subscriber states except on terms approved by the IA. They grant the IA the right to suspend the issue of emissions permits to Approved Organisations if the state which the AO serves allows trading with non-subscriber states without the consent of the IA or, if IA consent has been given, on terms not approved by the IA. In cases in which a subscribing state's actions are seriously undermining the interests of other subscribers, they grant the IA the right to delete the state's name from the list of subscribers.**

Comment: This clause is to deter Free Riders. A few industrial countries are likely to consider staying outside the global currency/ghg emissions control system in order to subsidise their production of goods and service by using fossil fuel for which emissions permits have not been purchased. This would give their exports a cost advantage over countries inside the global system if they were allowed to trade freely with them. Consequently, in order to prevent the global system from being undermined, countries within it have to be able to protect themselves against this type of unfair competition. If these powers enable the IA to stop subscribing states from trading with non-subscribers except on terms which it approves, the risks of the system failing are much reduced.

In practice, the IA is likely to require those importing goods from non-subscribing states to buy emissions permits to cover the emissions the production of the imports generated. The same system would work in reverse - exporters to non-subscribers would be given emissions permits to cover the fossil energy their products required to make. However, exports to non-subscribing states are likely to be small in the early years of the system as the importing countries will be required to pay in ebcus for them and they will be earning very few ebcus because the policy of the subscribing states will be to spend their stocks of now-redundant dollars and other convertible currencies for their imports and only use ebcus once these have gone.

**Clause 10. Subscribing states undertake to allow their national trading currencies to be supplemented by regional and local trading currencies. They agree to encourage regional and local governments to accept the payment of regional and local taxes in supplementary currencies which meet specified standards.**

Comment: Under the Noordwijk system, governments will cease to have their economies' rate of economic growth as their primary concern. Instead, they will give priority to ensuring that as much economic activity is carried on as is possible within the greenhouse gas emissions allocation. If they put a lot of exchange money into circulation in an attempt to reduce unemployment in peripheral or rural areas, they are likely to find that an excessive amount of money gets into circulation in the more prosperous areas and that this raises the demand for energy there, causing the exchange rate of their exchange currency to fall in relation to the ebcu. Consequently, a better way of ensuring that all areas of a country are as economically active as their inhabitants wish to be is to encourage the development of regional and local currencies in the poorer areas as these would allow local trading to be carried on even if the national currency was scarce. The local currencies would have their own variable exchange rates with the national currency. As a result, their issue

and circulation would not affect the exchange rate of the national currency with the ebcu except to the extent that more fossil energy was used by the extra activity they generated..

It has frequently been pointed out that if the North of England had had its own currency in the 1980s rather than using sterling, its shipyards, factories and mines would not have been as badly affected as they were by the high value of the pound brought about by the flow of money from North Sea oil and the earnings of the City of London. Similarly, the former East Germany was badly affected by the one-for-one exchange rate chosen for the Ost mark against the Deutschmark. The introduction of regional currencies would prevent these problems and end the social hardship which results from the one-currency-suits-all approach to money matters.

**Clause 11. This Treaty will come into force when it has been ratified by subscribing states whose total population comprises more than half the population of the world.**

## Summary

The Treaty of Noordwijk will bring an end to an extraordinary period in the history of humanity in which groups of people, their productivity enhanced by their excessive use of fossil fuel, used the wealth that their high productivity brought them to purchase whatever they wanted from the rest of the world without regard for the sustainability of what they were doing or for the effect they were having on those living in a more sustainable way.

In addition, the Treaty will end a period in which economic growth had to be generated without regard for whether or not it was proving beneficial purely to keep the economic system from immediate collapse. Such growth puts unnecessary pressure on the environment and denies resources to people whose need for them is acute.

The Treaty will bring about circumstances in which each nation, released from most international and internal debt, will have the freedom to work towards environmental and social sustainability as rapidly as it wishes without regard for international investors or its competitive situation and without having to limit itself either to the pace of the slowest country or the maximum made possible by international negotiations.

In short, the Treaty, if ratified, will bring about a more equitable, stable and sustainable future for all of humankind.

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The *Ode* conference itself was a wash-out although the company was enjoyable and the hotel was fine. The problem was that only six or seven people of the 150-plus present actually knew anything about money systems and the way they work, let alone the climate crisis. Consequently, the first draft of the 'official' statement of what had been agreed at the meeting had no mention of money at all. Richard and Bernard Lietaer, the former Belgian central banker and currency reformer protested about this (I'd gone up to my room to play my violin out of sheer frustration) but were fiercely opposed by Mickey

Huibregsten of McKinsey Netherlands, the international consultants, who, for some reason we failed to discover, had been made responsible for assembling the statement. 'We have to leave specific techniques out of this', 'We can't sign something we don't understand' and 'There's uncertainty about climate change' are some of the phrases I'm told Huibregsten used. The document he produced was so bland and toothless as to be a complete waste of time.

Nevertheless, the effort put into assembling the draft 'treaty' wasn't wasted. It has been widely circulated and discussed on the internet where it is called 'The Feasta Noordwijk Treaty' to distinguish it from Huibregsten's work. The challenge now is to assemble a group of nations which will put it, or something very similar, into effect. It matters very much which countries join the system and which don't. If only those countries which expect to have a surplus of permits to sell in the first few years join, the system won't work as there will be no 'over-consumers' in the market to buy permits although a small demand could be created by requiring firms importing from the over-consuming bloc to buy permits to cover the amount of fossil energy used to make whatever goods and services they are bringing in.

To make the market for permits work properly in the absence of an all-world membership, the number of permits issued by the IA would have to be reduced by the number the non-participants could have been expected to buy had they joined. Obviously, this cuts the benefits to those with permits to sell, so it is crucial to get some overconsumers - the Europeans, for example - to join the system too, perhaps on the understanding that a lot of the orders currently going to the US and other countries which stay out will be switched to them. The more overconsumers joining, the greater the financial flow to the Majority World (MW) and the bigger the market the MW will be able to provide for industrialised country exporters.

If the MW refused to sell raw materials and manufactures to overconsumers unless they joined the system, it would put irresistible pressure on many to do so. The MW states would have the freedom to take such a stance as most of their debts to the overconsuming bloc would have been cut sharply when ebcus began to be used for all inter-MW trade, freeing up the reserve currencies currently used for inter-MW trading for debt repayment. Moreover, the MW could make the threat without causing itself unemployment to the extent that demand in the MW rose because more money was in circulation and the MW countries needed more resources themselves.

If the MW were unhappy about a total refusal to sell to over-consuming non-members, they could merely say to the US and similar countries: 'We don't need your dollars any more. We'll only sell to you if you pay us in ebcu'. This would mean that the US had to earn ebcu before it could import. It could only do this by exporting to the MW and, before its exports could clear customs, the importers would have to buy emissions permits to cover the energy taken to make them so that the US did not gain a competitive advantage from being outside the system.

So where do we go from here? As the last few paragraphs show, the feasibility of introducing the C&C plus monetary reform package on a piecemeal basis depends entirely on which countries sign up for it and the policies they adopt towards non-participants. It would be very nice to produce a model which predicted the outcomes for each country according to whatever countries are involved, and I'm currently looking for volunteers to undertake that work.

Their results will be essential for the other strand I'm following. This is to talk to various MW governments to try to interest them in the idea of not only attempting to avert a damaging change in the world's climate but also bringing about a more equitable distribution of the world's wealth. If some charismatic MW leader - perhaps Dr. Mahatir of Malaysia, who, during the Asian Crisis, saved his country from economic ruin by going against the West's advice and introducing currency controls - took up the idea and promoted it, the chances of building a more sustainable world would soar.

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<sup>1</sup> Cited in *Dying for Growth: Global Inequality and the Health of the Poor*, Jim Yong Kim *et al* eds., Common Courage Press, Monroe, Maine, 2000, page 37.

<sup>2</sup> Cited in *Dying for Growth: Global Inequality and the Health of the Poor*, Jim Yong Kim *et al* eds., Common Courage Press, Monroe, Maine, 2000, page 7.

<sup>3</sup> TRENDS AND DRIVING FACTORS IN INCOME DISTRIBUTION AND POVERTY IN THE OECD AREA Michael F. Förster, LABOUR MARKET AND SOCIAL POLICY- OCCASIONAL PAPERS NO. 42, OECD Paris, August, 2000

<sup>4</sup> *Unhealthy Societies: The Afflictions of Inequality*, Routledge, London, 1992.

<sup>5</sup> Russell Mokhiber and Robert Weissman email dated 6 August 2001

<sup>6</sup> *Science*, no. 278: pp. 1582-1588, 1997

<sup>7</sup> A summary of the results is available at [http://www.meto.govt.uk/sec5/CR\\_div/Brochure98/index.html](http://www.meto.govt.uk/sec5/CR_div/Brochure98/index.html)

<sup>8</sup> Background Brief, Conference of the Parties 4, UN Framework Convention on Climate Change, Buenos Aires, November 2, 1998.

<sup>9</sup> E.G. Nisbet, *Leaving Eden: To protect and manage the Earth*, Cambridge University Press, Cambridge, 1991, pp.65-6.

<sup>10</sup> E. Nisbet, Climate change and methane, *Nature*, vol. 347, September 1990, p. 23