



Club of Rome Presentation:  
Concerted Strategies to meet the  
Environmental, Economic and Development  
Challenges of the 21<sup>st</sup> Century

*Background paper 2*

Developing an Integrated Approach for Action on the  
Environmental, Economic and Development Crisis

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*The two background papers are based on the interim results after one year of research and consultation in the programme on A New Path of World Development. They reflect the broad views of the Club of Rome but do not engage its individual Members.*

## Part 1: Developing an Integrated Approach

1. From the analysis sketched in Background Paper 1, it is clear that humanity is at a turning point where an array of interconnected crises threatens the future. The political process favours short-term, incremental change, heavily oriented to meeting the needs and aspirations of people in their everyday lives. As Tip O'Neil, Speaker of the House of Representatives, once observed: "All politics is local." But policies driven by short-term local and national concerns are proving inadequate to respond to the scale and intensity of issues in an interdependent world. Radical new strategies and policies are needed to contain and manage such issues as the risks of catastrophic climate change, of ecosystems collapse, of the meltdown of the international financial system and of the deprivation, exclusion and desperation of a growing world population.

2. As expressed by the OECD: "The world is currently facing the most severe financial and economic crisis in decades... This crisis has struck at a time of great global interdependence. The response to these unprecedented events cannot be "business as usual". New institutional mechanisms are needed to generate truly global, integrated and multidimensional responses... While policy action has rightly concentrated on dealing with immediate stability concerns, a comprehensive strategy is also needed to attenuate the impact of the current recession and put the global economy back on a sustained growth trajectory... fiscal stimulus measures ... should include incentives for environment-friendly investments to maximise growth while addressing climate change... The crisis demands tough decisions now, but it must not turn our attention away from other serious structural challenges. Efforts to address poverty and inequality must be maintained, along with commitments to scale up development aid, keep global flows of investment and trade open and develop cleaner energy and production processes." (*OECD Strategic Response to the Financial and Economic Crisis*, 23/12/08).

3. The OECD further considers that, "such strategies (for putting countries back on a path of sustainable growth) should ensure that recovery is based on low-carbon paths to growth, on eco-innovation and on knowledge creation, all within a more equitable society that spreads opportunity and extends protection to the most vulnerable." In summary, "the OECD believes policy-makers need to re-think the way the world economy operates in order to make it stronger, cleaner and fairer." These views from the OECD, which emphasise the linkages of economic, environmental, energy and development issues, confirm that there is a remarkable opportunity to advance new ideas and approaches.

4. Other observers consider the issues to be more fundamental. In Club of Rome meetings, the points have been made that: "we must acknowledge that the existing economic system is unsustainable and requires fundamental restructuring;" "this emergency will only be resolved by emergency action;" and that "if we take the science seriously, any growth that is fuelled by carbon-based energy is not a sustainable option." As phrased by Gillian Tett in the Financial Times, "Faith that a mix of globalisation, financial innovation and free-market competition would build a better financial system has withered away... Thus, the critical question is, what if anything can replace this creed?" (28/1/09). The stakes are high as Martin Wolf noted, "Decisions taken in the next few months will shape the world for a generation. If we get through this crisis without collapse, we will have the time and the chance to construct a better and more stable global order. If we do not, the opportunity may not recur for decades." (FT, 4/2/09).

5. Clearly, the impacts of the credit crisis, the energy crisis and of climate change will profoundly transform the structures, processes and relationships of the global economy. As excessive freedom of market forces without adequate supervision or regulation lies at the root of the current crises, coupled with a diminution in the role of government, the balance will need to be corrected. This rebalancing is

already in progress, as governments implement vast stimulus packages and effectively take over responsibility for major financial institutions and corporations.

6. It is important that the pendulum should not swing too far in the direction of government management of the economy and protectionism. This has proved inefficient and unsuccessful in the past. What is required, in each society and culture, is a productive balance of government and the market in the common interest of society as a whole. The G-20 Summit in November 2008 concluded in regard to the processes which “worked so well in raising incomes and lifting people out of poverty all round the world over the last 35 years”...that “the global system based on the principles of trade, open and competitive markets and free flows of labour and capital...still offers the best foundation for ordering economic activity to face present and future challenges.”

7. As the world community evolves a strategic approach to the interconnected challenges we face, some broad principles seem to be of prime importance:

(i) A coherent strategy to address connected global problems must be framed within a systemic, longer-term perspective. It must integrate and balance policies to promote economic stability and progress, policies to avert irreversible climate change and to preserve and restore the environment and policies to eradicate poverty and provide decent livelihoods for a growing world population. Environmental and development considerations should not be treated as the residuals of economic growth.

(ii) While the immediate focus has to be placed on stabilising the financial and economic systems, concerted, structural policies should be rapidly implemented to lay the foundations for a new, environmentally-sound economy.

(iii) The lead times between negotiation, decision and effective action are so long that policies should be formulated to address emerging issues in a forward looking perspective: policies cannot in fact affect the problems of today but only the problems of tomorrow.

(iv) Action will, in practice, be largely implemented through national and sectoral policies, through the business and financial communities and through the efforts of civil society and individuals. But an overall vision and framework are essential if these efforts are to be coherent and mutually reinforcing. Partial, ad-hoc disconnected measures in the absence of an overall framework and purpose will prove ineffective in the face of such profound and extensive issues.

(v) A new constructive balance must be found between the roles of the market and of government as the foundation of effective cooperation between government and the business and financial communities and civil society in the definition and the implementation of the measures needed to respond to global challenges.

8. The challenges facing humanity are intimately linked and the pervasive interactions between them can only be understood through integrated, systemic analysis. Also, strategies and action to address them will require concerted decision-making and implementation across sectors, fields of expertise, specialised institutions and interest groups. Methods of analysis and policy-making must evolve gradually from the narrow, discipline-based approaches of today towards the more integrated systems approaches needed for tomorrow's world. This constitutes a major challenge to educational institutions which must adapt their curricula and methodologies accordingly.

9. The future of humanity and of the fragile environmental systems of the planet depend on our ability to take action in good

time to correct the dangerous imbalances and trends we now face. With the rapid accumulation of knowledge and analytical capabilities, we are better able to identify and diagnose the threats to the future. But our capacities to reach agreement on a common understanding of the problems and on appropriate lines of action are quite inadequate. There is, in short, a dangerous disjunction between the ability of the scientific and expert communities to perceive the dangers ahead and the recognition by our governments, institutions and societies of the urgent need to take corrective action.

10. As the choices, ethical dimensions, probabilities, risks and consequences are clarified, the central issue which will emerge may well be: how can we agree upon and implement the actions perceived as essential and urgent from a scientific point of view, in the face of the diversity of competing interests, of the intense opposition of those with interests vested in the present system, and of the realities of economic, social and political constraints. For this reason, particular attention is paid by the Club of Rome to the interface between research and analysis and policy and action. In this perspective, the role of legislators is of central importance.

## **I. Restructuring Economic Systems to Achieve Low-Carbon, Sustainable Growth.**

### ***New models for sustainable progress***

11. Background Paper 1, (*GLF/2*), sketches some critical issues in the fields of environment and development which will determine the future. It shows first how these are caused, in large part, by the values, concepts, models and strategies which drive the current path of economic growth. It then outlines the root causes of the economic, environmental and development crises as: excessive belief in the “magic of the marketplace”; determination to cut back the role of government; a damaging concept of economic growth; and counterproductive values and assumptions. It proposes that concepts and strategies for economic growth and for globalisation must be reconceived to

manage the connected challenges of the 21<sup>st</sup> Century.

12. The analysis identifies five weaknesses in the present concepts and strategies which drive economic growth. These must be corrected in order to restructure economic systems to achieve low-carbon, sustainable growth and employment.

- 1. Externalities must be properly taken into account.**
- 2. The failure to account for public goods must be corrected.**
- 3. The interests of future generations must be respected.**
- 4. Social inclusion and fairness must become an integral part of analysis and policy.**
- 5. The systemic nature of global and domestic problems must be fully recognised.**

13. At the level of national policy, thinking on how to relate economic strategy to environmental objectives has passed through four distinct phases. First, during the early phases of the industrial revolution – or, in developing countries, during the early phases of national development – environmental damage was largely ignored and accepted as an inevitable consequence of economic progress. Then it was considered that environmental pollution should be cleaned up after the resources to do so had been generated through growth; then it was recognised that economic growth and environmental protection must be undertaken in parallel, but this proved ineffective.

14. In recent years, it has been widely understood that economic growth and environmental protection must be considered and managed together, within an integrating concept of sustainable development. The fundamental objective of this integrated approach is to avoid the creation of pollution in the first place, rather than to clean it up once it has occurred.

15. While this approach is intellectually recognised, it has not yet become an established basis for national policy making. The evolution of such thinking has been

clearly documented in the case of China by the China Council for International Cooperation on Environment and Development over the past 15 years and a series of policies and programmes have been initiated to implement the approach in practice.

16. This progression in national policy is mirrored at the international level. Climate, ecosystems and environmental issues cannot be left aside to be treated after growth has occurred, or as a disconnected set of issues in parallel. Any new model and strategy for economic progress must be conceived and implemented on the basis of systems thinking, so as to ensure that economic, environmental and development dimensions and goals are integrated at every stage, from the identification and formulation of the issues, through analysis and decision making to implementation, monitoring and evaluation. This conclusion applies with equal force to the integration of poverty reduction and humanitarian goals into economic policy.

17. We are challenged not only to add green elements to our thinking or to move towards low-carbon, energy efficient, green economies. This is only one dimension of the profound issues we face. We must rapidly achieve a new path of growth which is environmentally sustainable in every respect, which provides opportunities and generates employment through new productive activities, and which is stable, inclusive and fair. This is an immense challenge but it can lead to enormous opportunities in a dynamic new economy.

### ***New strategies for sustainable progress***

18. The scale and complexity of the issues confronting the world today, and even more, the scale and complexity of the problems which will confront the world in the near future are such that they will not be successfully managed by partial, incremental change. The real risk of catastrophic climate change, the risk of ecosystem breakdown and the food, energy, land and water crises which are aggravating poverty across the developing world all demand rapid, coordinated action. It will not be sufficient to

add some green components to fiscal stimulus packages or to invest some additional resources in new and renewable energy sources. Such policies are useful and necessary but they are not sufficient.

19. The increasingly dangerous problems of climate change and ecosystems degradation are the symptoms of sustained exponential growth in material consumption, waste, emissions and pollution. Climate change is not in fact, an environmental issue. It has enormous consequences for the environment but its causes are rooted in economic and technological choices and strategies.

### ***Restructuring national economies***

20. It follows that the threats of climate change can only be mastered by a radical restructuring of economies in the industrialised countries and by a new model and path of development to raise living standards in the developing countries within the constraints of the natural systems on which human life depends. This also implies a rethinking of the path of globalisation to reduce the widening gaps in income and wealth and to ensure a fair distribution of benefits and costs. Such radical change will only come about in the time available by the implementation of explicit strategies to restructure national economies and to re-orient the path of globalisation.

### ***A new energy path***

21. As energy lies at the heart of modern societies, clearly a central component of economic restructuring will focus on breaking the link between economic progress and the use of energy wherever practically possible. The scale of the challenge was outlined clearly by Nate Lewis of the California Institute of Technology: "The world used 14 terawatts of power in 2006. Under optimistic assumptions on energy efficiency improvements, it will need 28 terawatts in 2050. A business as usual scenario would need 45 terawatts. By focusing on easy, near term cuts, we may fail to achieve what is needed by 2050 when CO<sub>2</sub> emissions will

have to be 80% below today's to keep atmospheric levels no higher than 450 ppm."

22. As reported by Sharon Begley in Newsweek, "We need Nobel calibre discoveries...To get the right energy mix in 2050, we need breakthroughs soon, not in 2049. Yet DOE spent \$2-3 billion in 2008 on non-defence basic energy R&D, less than one fifth what we spent in the 1970's and 1980's." Professor Ernst von Weizsäcker, Member of the Club of Rome and others have demonstrated that there is immense potential to reduce the intensity of energy use. In his best seller, *Factor 4*, he outlines practical measures which would allow GDP to double while energy use drops by half.

### ***Protection and restoration of ecosystems***

23. Another key component must be the protection and restoration of ecosystems. The impacts of humanity on forests, oceans and other natural systems will have to be contained and reversed. One major possibility is to engage in a global programme of afforestation and recovery of degraded lands. If properly conceived, this would achieve multiple objectives: not only to reverse the destruction of ecosystems and the extinction of species, but also to provide food, energy and employment and the sequestration of carbon from the atmosphere on a substantial scale.

### ***Mobilising science and technology***

24. The vast potentials of science and technology must also be mobilised. Major improvements will come from the rapid dissemination of existing technologies but new breakthrough technologies are essential to find solutions on the scale required. Radical innovations in technological solutions coupled with the dissemination of existing technologies and knowhow will be critical to restructure industrialised economies and essential also to enable developing countries to improve the living standards of their growing populations while preserving a sustainable environment.

### ***Financial mechanisms***

25. The new financial arrangements which will emerge from the crisis must be conceived to stimulate new economic activities and to channel resources into areas of critical importance to restructuring economies for low-carbon, sustainable growth and employment. And the resources required to accelerate adaptation and mitigation in developing countries will be substantial. This demonstrates again the vital connections between finance and economics, climate and environment and poverty and development. The new financial architecture and policies should be conceived not only to improve the stability and performance of the world economy but also to stimulate the restructuring of industrialised and developing economies onto a sustainable path to meet the needs of global development.

26. As stated by OECD above, "The crisis demands tough decisions now, but it must not turn our attention away from other serious structural challenges." This is not only true in relation to the financial crisis but also to other emerging crises. There are opportunities for urgent and immediate action while more substantial and longer-term strategies and measures are prepared to achieve the radical restructuring of the economies which is required.

27. International agreement on a post-Kyoto Treaty in Copenhagen in December 2009 is clearly of the highest importance. But, in addition, the foundations must be laid for its early ratification, for the provision of the essential financial resources and for its effective implementation. In this perspective, the role of legislators is central as they will ratify the treaty and vote the funds and approve the budgets for its implementation. The Club of Rome is honoured to have the opportunity to present ideas and proposals to legislators through GLOBE to facilitate this process.

## **II. Combining an Effective Response to Climate Change with Equitable World Development**

28. The strategic dilemma facing humanity in the 21<sup>st</sup> Century can be indicated as follows: world population will

rise by an additional 2.3 billion people by 2050 and their needs, together with the unmet needs of around 2 billion people living in poverty today must be met. In addition, the living standards of hundreds of millions of people will improve, as they join the world middle class. To meet these demands, for example, to provide food security, energy, water, health and development, will require massive flows of investment which must be generated by economic growth.

29. However, the environmental and ecological systems of the planet are already under intense stress. It will not therefore be possible to extend to the world's population the patterns of consumption, resource use and waste currently adopted in the industrialised countries. New models and strategies of economic growth in industrialised and developing countries are therefore essential if this dilemma is to be resolved, as outlined in Background Paper 1.

30. This dilemma is now compounded by the present and anticipated impacts of climate change. The issue of how to combine an effective response to climate change with a renewed effort to achieve equitable world development is thus of central importance to the future. It is acknowledged that the developing countries have not caused the risks of climate change but they will face – and they do today face – the most immediate impacts with very limited capability to adapt.

31. The impacts on developing countries will be very different according to their particular circumstances but in general, they will be as follows:

- Climate change, through its impacts on ecosystems and water and through aggravated droughts and floods will reduce food security and aggravate the food crisis.
- Global warming will reduce the availability of fresh water, partly through drought and accelerated desertification and partly through the gradual melting of the glaciers which are critical to river systems and water supply.
- Global warming, and particularly the rate at which it occurs, will degrade the ecosystems on which livelihoods

depend, also reducing the biomass which is used for food and fuel.

- Sea level rise will impact on coastal populations directly and also through the salt water contamination of aquifers.
- Extreme weather events and changes in rainfall patterns will diminish development progress.

32. For all these reasons, climate change is having a major influence on the attainment of the Millennium Development Goals. Nevertheless, strategies for achieving MDGs do not generally account for climate variability and change. It is therefore urgent to assist the developing countries to build environment, energy and risk management considerations into their efforts to achieve the MDGs and into development strategies in general.

33. Although climate change is an issue of vital importance for the future, it should not overwhelm or replace the other vital objectives of development, such as poverty alleviation and the improvement of living standards, energy and food security, health and the environmental sustainability which is essential to preserve and repair the natural capital and the ecosystems services on which development depends.

34. Poverty alleviation is especially critical as poverty lies at the heart of environmental degradation in developing countries. A team of researchers from Yale University, lead by Daniel Esty has concluded that "Growth does offer solutions to the sorts of environmental woes, (such as local air pollution) which kill humans. This matters because a quarter of all deaths in the world have some link to environmental factors." According to the World Bank, the economic burden on society caused by bad environmental health amounts to between 2% and 5% of GDP. Thus expenditures on poverty alleviation and environmental protection are not simply costs but actually contribute to GDP and to the future prospects for development.

35. Developing countries will join with industrialised countries to agree on and implement targets and measures for the mitigation of climate change, provided they

are assisted with the financial and technological resources to do this. But the priority objective of many developing countries is to be able to adapt to the impacts of climate change which are already evident. Strategies for adaptation must be integrated with the wider goals of national development in a future perspective so as to meet the scale of the problems which will emerge in the future.

36. The ways in which the industrialised and developing countries can concert their efforts to manage the issues of climate change and development have been the focus of intense negotiations for many years. The strategic approach was outlined by Yvo de Boer, Executive Secretary of the UN Framework Convention on Climate Change at the GLOBE-Club of Rome Policy Dialogue in London in March. As summarised in the Final Statement, he identified four minimum criteria which must be met for success in Copenhagen:

- Commitments by industrialised countries to binding emissions reductions of 25 to 40 per cent from 1990 levels by 2020, within the context of a long-term goal of stabilising atmospheric concentrations
- Nationally appropriate plans to limit emissions by developing countries, supported by finance and technology from the industrialised world
- Clarity on large-scale, stable, predictable sources of financing to allow developing countries to engage in mitigation efforts and to address adaptation
- An agreed governance structure to manage and deploy this financial and technology support that gives developed and developing countries equal status

37. In addition, it was agreed at the London Dialogue, that the concept of "climate justice" must be a fundamental component of any post-Kyoto Treaty if it is to gain acceptance in the developing countries which did not cause the problem but which are already paying a high price.

38. According to UNEP, the problems ahead are immense: "Once a business as usual growth path resumes, global energy demand will rise 45% by 2030 and the price of oil is expected to rise to \$180 per barrel; greenhouse gas emissions will increase by 45% by 2030, leading to an increase in global average temperature up to 6°C; the world economy will sustain losses equivalent to 5-10% of global GDP and poor countries will suffer costs in excess of 10% of GDP; ecological degradation and water scarcity will increase; and there will be over 1 billion people living on less than \$1 per day and 3 billion living on less than \$2 per day, by 2015." (*Towards a Green Economy, December 2008*) This bleak forecast simply underlines the fact that business as usual is not a viable option: a new path for world development is required.

39. If these massive challenges of environment and development are not mastered, the impact will first of all be disastrous for the peoples of the developing countries. But in an entirely interdependent world, the security and prospects of the industrialised countries will also be compromised. As phrased by H.D.S. Greenway, we should "be warned of a social crisis that we should keep in mind. For, when economies collapse, bad things happen. The beast comes to poor countries first, but the potential of social upheaval awaits the rich too." The social and humanitarian consequences of climate change will be enormous, as will be the implications for migration, particularly of environmental refugees. And intensifying competition for scarce but vital resources, such as water and productive land, will create unrest and the potential for violence and conflict.

40. In this perspective, the biggest threats to national security in the 21<sup>st</sup> Century now include the impacts of climate change and ecosystems decline, instability and vulnerability in the world economy, and the exclusion and deprivation of millions of people in developing countries. New, more broadly-based concepts of national security will be needed to take account of these more diffuse threats. Resources directed to averting the threats of climate change, to re-creating a sustainable environment, to establishing a stable and progressive world

economy, and to accelerating inclusive world development are the best investment in a future of peace and security which is indivisible in an interdependent world.

41. An effective response to climate change can be combined positively with measures to promote equitable development, but as Dr. Heidi Wieczorek-Zeul, German Development Minister pointed out: "We need to prevent our development efforts from being swept away on the tide of financial markets." Calling for a New Global Deal, she continued, "If the world can mobilise billions of Dollars to save the banks, it can also mobilise the resources to save the world from poverty, hunger and climate change. It is a matter of political will....On the donor side, we must reaffirm our ODA commitments, even in financially difficult times...by increasing budgets and using innovative sources of financing, such as the proceeds from emissions trading." (*Interview with "Other News"17/11/08*)

42. The "World Economic Situation and Prospects" produced by the UN concluded in January 2009, that the crisis will present a setback for the fight against poverty and that "contagion and aversion to investing in emerging markets has taken hold among investors." According to the Institute of International Finance, "flows of private capital to emerging markets will tumble this year to just \$165 billion, a drop of more than 80% from the \$929 billion that flowed into them in 2007." As domestic stimulus packages sucked up financing and bankers retreated to local markets, "countries that have done everything right can no longer raise money." In addition to the falling off of investment and credit, revenues from tourism and remittances can also be expected to decline. And, as Gordon Brown recently said, financial protectionism is a bigger problem now than trade protectionism. (*Economist*16/2/09)

43. Thus, developing countries are in effect challenged to resolve massive and growing problems with declining resources. To find a solution to this contradiction must be central to the restructuring of the world economy and to the re-thinking of models and strategies for economic growth.

### **III. Reforming the Financial System for Low-Carbon Sustainable Growth and Equitable world Development.**

44. The scale and depth of the crisis afflicting the global financial system are unprecedented since the Great Depression of the 1930s. How and when the crisis can be resolved is of prime importance to every aspect of the world community. The issue to be resolved is: how can the financial system be reformed so as to stimulate and support both the restructuring of economies onto a low-carbon, environmentally sustainable path and also the acceleration of equitable world development.

45. Once again, there is a wide variety of perspectives on the nature of the measures to be taken in response to the financial crisis. For President Sarkozy, this is an opportunity to "remake capitalism." For Treasury Secretary Tim Geithner, "We need to begin the process of comprehensive reform of our financial system and of the international financial system...While this is a responsibility of national governments, our markets are global and therefore national efforts cannot be fully effective without international cooperation to implement higher standards." According to Professor Stiglitz, "It is imperative that we do not just respond adequately to the current crisis but that we undertake the longer-term reforms that will be necessary if we are to create a more stable, more prosperous and equitable world economy."

46. George Soros considers that "the international financial system must be reformed. Far from providing a level playing field, the current system favours the countries in control of the international financial institutions, notably the US, to the detriment of nations at the periphery. The periphery countries have been subject to the market discipline dictated by the Washington consensus but the US was exempt from it. How unfair the system is has been revealed by a crisis that originated in the US yet is doing more damage to the periphery. Assistance is needed to protect the financial systems of periphery countries, including trade finance...." (*FT*, 29/1/09)

47. Lord Turner, Chairman of the UK Financial Services Authority presented the issues as: “The changes recommended are profound and the banking system of the future will be different from that of the past decade...The financial crisis has challenged the intellectual assumptions on which previous regulatory approaches were largely built, and in particular, the theory of rational and self-correcting markets. Much financial innovation has proved of little value and market discipline of individual bank strategies has often proved ineffective.” (*IHT*, 18/3/09). A far more radical view of the scale of the reforms needed is set out in “Agenda for a New Economy – from Phantom Wealth to real Wealth” by David C. Korten, of the Institute for Policy Studies in Washington DC, Member of the Club of Rome.

48. These comments from the core of the financial system show that, while opinions differ on specific measures, there is a degree of consensus on the way ahead. This opens up opportunities to suggest how the reform of the financial system could be conceived to support the restructuring of economies onto a new sustainable path and to integrate the goals of equitable world development. In this perspective, the financial system can be seen not as an end in itself but as an instrument to achieve other goals. As Martin Wolf underlines: “Over the past three decades, the debt of the US financial sector grew six times faster than nominal GDP. The consequent increase in its scale and leverage explain why, at its peak, the financial sector allegedly generated 40% of US corporate profits. Something decidedly was going on: instead of being a servant, finance had become the economy’s master.” Finally, in considering reforms, a point made by Joe Nocera should be remembered: “We need to face the reality that nobody can say with any certainty what will work and what won’t – nobody knows”

49. In this perspective, the reformed financial system should be designed to achieve four major related goals:

- to stabilize and support the global economy and to correct major imbalances and vulnerabilities so as to create a sound basis for future sustainable growth.

- to stimulate and support the restructuring of economies and societies on to a low-carbon, environmentally sustainable path;
- to stimulate the flows of essential investment required to accelerate the progress of the developing countries so that they can meet the needs and aspirations of their growing populations;
- to assist developing countries both to adapt to the impacts of climate change so that their development prospects are not endangered and also to undertake programmes for mitigation.

50. In its Communication to the European Parliament of 28<sup>th</sup> January 2009, “Towards a comprehensive climate change agreement in Copenhagen,” the Commission set out some key strategic elements: “There is an opportunity to address climate change, energy security and the current economic recession together. Tackling climate change will necessitate significant private and public investment, and will help secure the transition to the low-carbon economy, opening up new possibilities for growth and jobs and promoting sustainable development.”

51. As regards financing, it continues “A comprehensive Copenhagen Agreement must be underpinned by adequate financial resources to enable its implementation...Commission analysis shows that an effective global carbon market can greatly reduce costs in developed and developing countries, but there is a need to significantly scale up, redirect and optimize finance and investment....Investments to reduce global carbon emissions will need to see year on year rises. Recent research by JRC and other independent institutes estimate the net global incremental investments in the order of €175 billion by 2020. It is estimated that more than half will have to be invested in developing countries, including the forestry sector....Investments in reduced deforestation will safeguard global biodiversity and ensure long-term sustainable development. This should also be seen against the costs of non-action,

(between 5% and 20% of global GDP according to the Stern Review.)”

52. In his paper for GLOBE International of 29<sup>th</sup> June 2008, based on consensus among legislators from the G8 + 5, Lord Michael Jay emphasises that “Enhancing efforts to address adaptation in all countries should be a central component of a post-2012 framework and should be given equal priority to mitigation. However, we should recognise that the impacts of climate change fall most heavily on those countries least able to cope on their own. Therefore industrialised countries should provide additional assistance to developing countries to help them adapt to climate change. The gap between available funds (\$US 37 million per year via the levy on CDM to supply the Adaptation Fund) and the estimated funding required, (\$US 28-67 billion, according to UNFCCC) for developing countries to adapt to climate change is stark...”

53. In a recent letter to Prime Minister Brown, three senior legislators, Elliott Morley, Tim Yeo and Malcolm Bruce, together stated that: “The UK must move to a low carbon economy: not just to secure an ambitious climate deal at the UN climate conference in Copenhagen in December, but to build a modern and sustainable economy that will secure Britain’s competitiveness and future prosperity. We are seeing many of the major economies implementing stimulus packages that include a significant percentage of low carbon investment (e.g: Korea 69%, China 34%, Germany 19% and the US 16%). However, the UK’s package currently contains just 7%. We risk being left behind....the low carbon element of the UK’s stimulus package should reach a minimum of 20% as recommended by Lord Stern, including a robust commitment to finance the development of mitigation technologies such as carbon capture and storage.”

54. This concern that government must lead was expressed in different terms by Mark Lynas: “The challenge is rapid transition of the economy in order to live within our environmental means, while preserving and enhancing our general well being....it is wildly unrealistic to think that individuals alone can effect a comprehensive

re-engineering of the nation’s fossil-fuel-dependent energy, food and transportation systems. The government must lead....the plan is...to use a range of fiscal tools, new measures and reforms to the tax system...The resources raised can then be invested in a massive environmental transformation programme that could insulate the economy from recession, create countless new jobs and allow Britain to play its part in meeting the climate challenge.” (*The Guardian*, 1/8/08).

55. Clearly, finance lies at the heart of strategies and negotiations to establish a sound framework for action on climate change and, as always, for strategies to eradicate poverty and accelerate development. Very substantial resources are required, but in comparison with the many trillions of Dollars which have been generated in a few months to stabilize the financial system and counter the recession, the amounts required are modest. The financial system and the global economy have survived many previous crises and prospered. But this is not the case in the fields of ecology and environment where the consequences of crisis may be irreversible.

56. The risks are real that the impacts of catastrophic climate change, of ecosystems failure or of development failure will have irreversible consequences for the world as we know it. Policies and investment to avert such existential risks must be assessed beyond the calculus of cost-benefit analysis, beyond short-term pressures and beyond domestic political concerns. The political challenge is to build consensus for action to avert the risks of catastrophic change before the intensity of the threats are immediately evident to the public. By the time the threats are evident and unambiguous, it is often too late to affect the outcome.

57. The design of a reformed financial system must therefore be oriented to meet the goals of a restructured world economy, of a safe and sustainable environment, and of equitable and inclusive world development. In this perspective it is clear that, not only do the three crises have common roots, but also that an integrated approach to the economic, environmental and development crises is both feasible and essential if we are to

salvage the future. The fact that the problems in the fields of development, environment and economic growth are essentially connected presents a further important opportunity. It should be possible to build coalitions across a number of fields in support of an explicit, integrated strategy to achieve multiple objectives:

- To reduce inequality and increase opportunity within and between countries.
- To generate new employment through the innovative activities which build the future.
- To achieve real increases in welfare and contentment.
- To move towards a healthy and sustainable environment.
- To improve the prospects for stability, national security and peace.

58. We need a clear vision and strategy to build a decent and peaceful future for all, in an interdependent world where security is indivisible. Leadership towards such a positive vision for the future, directed to such objectives, would lay the foundations for action and change by stimulating the motivation and engagement of citizens to achieve a better, more prosperous, fair, secure and sustainable world.

## **Part 2: Lines of Action**

### **IV. Policies and measures for the Effective Implementation of a Post-Kyoto Strategy.**

#### ***A time of opportunity for change***

59. Public consciousness and concern about the future is rising across the world as the consequences of climate change, economic instability and recession and the impacts of the food and energy crises become apparent. It is broadly understood that old ideas have failed and that new approaches and intensified cooperation will be needed to manage the crises which have emerged in the economic and financial systems, the climate and environment and in the processes of international development.

This public concern creates the opportunity for leadership and for the mobilisation of public support for new policies.

60. It is widely understood that the economic models, priorities and strategies which have dominated policy in many countries and in the international system have failed, that they are inadequate to meet the new challenges of the 21<sup>st</sup> Century, and that they have largely created the present disasters with their direct impacts on the lives of men and women across the world, particularly the poor. Now that the confident, free market conventional wisdom of the past thirty years has broken down, there is an opportunity to advance the new ideas which are essential if the crises are to be overcome. Attitudes are changing: President Obama has announced that the world economy can no longer rely on the "voracious consumption" of the US market.

61. The inadequacies, imbalances and vulnerabilities of the existing world order have long been evident. It was clear, even before the financial crisis, that financial and economic systems must be overhauled in response to the vulnerabilities and massive imbalances arising from increasing globalisation. The financial crisis is now accelerating this necessary transformation of the international system. And, as powerful new actors such as China, India and Brazil play an increasingly important role in world affairs, a more diverse range of views is emerging, reflecting the views of different cultures, histories and interests. The days of the domination of Western thinking in international affairs are coming to an end.

62. Also, with the election of President Obama, a new political constellation is developing in the world community. This now favours international dialogue to build trust and a sense of common purpose and recognises that international cooperation and action are vital to resolving the global problems of an increasingly interdependent world. How sustained this change will be is not yet clear as nationalist and protectionist attitudes and measures are increasing in response to the political pressures driven by the economic crisis.

63. There is in effect, an intellectual, political and practical opportunity to transform the policies, relationships and institutional structures of the world community to achieve a new path for world development. Incremental change will not resolve the deep and complex problems we face. Radical change is required in the values and behaviour, the models and strategies, and the policies and structures which drive social and economic progress. The time available to change course is limited. We must rapidly move from an age of specialisation to an age of integration.

64. A new, coherent and positive vision of the future which integrates economic, environmental and development goals is badly needed to provide a coherent framework for action. Such a vision could rally the energies and aspirations of the nations and peoples of the world in a common effort to build a better future of prosperity and peace. Based on such a coherent vision of social, economic and development goals, explicit national and international strategies must be formulated to achieve multiple goals, such as:

- a stable, equitable and productive world economy;
- new opportunities for sustainable employment;
- increases in well being and the quality of life, within ecological and environmental constraints;
- the prevention of irreversible climate change;
- efficiency in the use of energy and resources;
- the conservation and recuperation of the ecosystems and environment on which humanity depends.
- the eradication of poverty and the inclusion and wellbeing of the poor and vulnerable.

65. At the international level, the efforts of developing and developed countries and of the public and private sectors and civil society to achieve agreed goals must be concerted within a common vision of the future. This will build a sense mutual trust and responsibility and lay the foundations for the concerted action which is vital to manage and resolve the intensifying threats to

stability, progress and peace. Targets, technical solutions and agreements will have no force if they are not driven by vision and commitment, leadership and a sense of common purpose.

66. In comparison with this need for a change of course and for an integrated approach to the systemic and interconnected environmental, economic and development challenges of the 21<sup>st</sup> Century, the focus of current international discussion is on disconnected responses to an array of separate crises. These are viewed as distinct problems – principally the financial crisis, rising unemployment, the collapse of international trade and the climate.

67. In this perspective, the critical negotiations in Copenhagen on a post-Kyoto Treaty must be framed in a broader context, properly related to the present and future challenges of world development and the environment, and integrated with new strategies for economic restructuring, financial system reform and globalisation.

68. The G20 Summit has its origins as a forum for finance ministers. In April 2009, it focused principally on financial and economic issues, with the principal purpose of returning the world economy to a “normal” state of growth. The consequences of a reversion to such consumer-driven growth for the environment and the climate, for energy and resources and for equitable development, were largely overlooked. It decided to increase the resources of the IMF and the World Bank and to tighten regulation and supervision. These steps are necessary and useful but they will not facilitate the new thinking, partnerships and strategies which are vitally necessary to address the root causes of the connected crises rather than the symptoms.

69. The G-20 also endorsed the goal of building a resilient, sustainable and green economy. "We will make the transition towards clean, innovative, resource-efficient, low-carbon technologies and infrastructure." The G 20 also reaffirmed a commitment to address climate change and to reach agreement at the December 2009 UN Conference on Climate Change in Copenhagen.

70. As a grouping of key industrialised and developing countries, the G20 has the potential to play a significant role in facilitating international agreement and cooperation. But it must also broaden its vision and participation to achieve an integrated vision and strategy to manage global issues, in which the goals and policies for international development, for climate and environment and for the economic and financial systems are properly articulated.

71. The scale and depth of the challenges confronting the world community are such that business-as-usual or a return to “normal” are not viable options. A serious effort must be made to redirect policy into new directions in many fields. And it is urgent to achieve practical results rapidly and on a substantial scale.

72. While high level negotiations continue, there are in fact, many productive opportunities for action in parallel to move towards low-carbon, equitable and sustainable development. Innovative programmes are already under way in communities, cities, states and nations across the world and a great deal of practical experience has been accumulated. In all the areas sketched below, there are opportunities for immediate action and for the wide dissemination of knowledge, technology, lessons-learned and best practice which could rapidly make an impact on a significant scale.

## **V. Defining a Framework for Action.**

### **1. Understanding the issues and defining new models and strategies**

73. The analysis of Background Paper 1 demonstrates that the economic and financial crises, the climate and environmental crises and the crises of poverty and development have common roots in the values, models and strategies which drive the present path of consumption-based economic growth and globalisation. It is therefore evident that, to address these crises, fundamental changes in the models and strategies of economic growth and globalisation are essential.

74. Besides rethinking the models of growth, development and globalisation, the responsibilities and roles of government and the market in the economy and in the State must be reconsidered to meet the challenges of a new age. This is not a question of bigger or smaller government but of more effective government. And this implies particularly, a broadly-based, participatory approach to reflect the diverse needs and aspirations of society.

75. Substantial reforms will be needed if governments are to manage rapidly-changing, interconnected issues more successfully, to reconcile the demands of global interdependence with the demands of individual and local identity, and to anticipate the major changes which will occur within and beyond the nation-state at this time of massive transformation.

76. A holistic, systems-oriented approach is needed which can recognise the important connections between issues and can establish a conceptual framework within which the contributions of different disciplines and sectors can combine in the formulation, the implementation and the evaluation of policy. A focused, international programme of policy research and consultation, drawing on different cultural approaches and aspirations could create the intellectual and ethical foundation of new models and strategies adapted to the challenges of the modern world.

77. One key instrument to facilitate the emergence of new ideas, models and strategies is the education system. New approaches to education and training will be fundamental to generate the values, attitudes, openness and skills needed to understand and resolve the complex, interconnected issues of the modern world. As the issues of climate, energy, resources and environment become more severe, public understanding and wide “environmental literacy” will be essential to support corrective policies.

78. As new strategies are developed to restructure economies to low-carbon, sustainable development, the education and training of the human resources required in

every field should be the focus of explicit policies, in developed and particularly in developing countries.

## **2. Areas of Concentration**

- (i) Finance**
- (ii) Science and Technology**
- (iii) Human Resource Development**
- (iv) Information and Communications**
- (v) Capacity Building**

### **(i) Finance**

79. The task ahead is no less than to define a new, sustainable and equitable global economy for the 21<sup>st</sup> Century. The focus here is on a substantial but more limited issue: how can the financial system be reformed so as to stimulate and support the restructuring of economies onto a low-carbon, environmentally sustainable path while creating the conditions for the eradication of poverty and equitable world development.

80. The reformed financial system should, in this perspective, be designed to achieve four major related goals as indicated above:

- to stabilize and support the global economy and to correct major imbalances and vulnerabilities so as to create a sound basis for future sustainable growth.
- to stimulate and support the restructuring of economies and societies on to a low-carbon, environmentally sustainable path;
- to stimulate the substantial flows of essential investment required to accelerate the progress of the developing countries so that they can meet the needs and aspirations of their growing populations.
- to assist developing countries both to adapt to the impacts of climate change and also to undertake programmes for mitigation.

81. As economies are transformed onto an energy and resource efficient, low-carbon basis, this will entail high costs but also create major opportunities, as has always happened in the past during similar major transitions – for example, from agriculture to manufacturing and from manufacturing to services and the information society.

82. The innovative direction of financial resources into key areas of concentration can accelerate this transformation, principally by:

- ensuring that natural capital, ecosystems services, resources and public goods are properly valued and become an integral component of policy formulation;
- enabling the rapid development of new technological solutions and productive activities and ensuring the most effective use of scarce resources. Investments should not lock-in existing inefficiencies: they should promote energy efficient and cleaner “green” solutions around which new economic activities and employment can be generated.
- guiding economic activities towards agreed goals through incentives, disincentives, regulations and targets;
- developing new methods to generate both public and private finance, for example through taxes on emissions, systems of “cap and trade” and public-private partnerships.

83. As the Stern Review made clear, the climate crisis represents the largest market failure in history. As Thomas Friedman states the issue: “It is now obvious that the reason we are experiencing a simultaneous meltdown in the financial system and the climate system is because we have been mispricing risk in both arenas – producing a huge excess of toxic assets and toxic air that now threatens the stability of the whole planet...oil companies, coal companies and electric utilities today are selling energy products at prices which do not reflect the real costs to the environment and the real risks of disruptive climate change, so future tax payers will end up paying the difference.” (IHT, 2/4/09)

84. Substantial flows of finance will be needed to support the move towards a path of equitable and sustainable world development. These flows must be guided by analysis and policies which correctly evaluate risk and reflect real costs, including environmental, social and human costs, and the real costs of energy and resources. They must cease to pass on the costs to future generations. And, in determining measures for implementation, both short term and longer term costs and benefits must be taken into account.

### (ii) Science and Technology.

85. The major factor in the growth of a modern economy is technological progress, brought about by the advance of science and technology and the increasing knowledge and skills of the work force. Technological progress itself is driven by values and social choices: it can therefore be directed towards the goals of society. This was a key focus of policy during the Second World War and was for example, central to the US space programme which landed a man on the moon. To achieve the rapid re-orientation of economies onto the energy-efficient, low-carbon basis which is essential to avert the risks of irreversible climate change, the explicit, and considered direction of science, technology and innovation will be critical in four broad areas:

- **The application and wide dissemination of existing technologies.** This can be undertaken rapidly both within national economies and through the international exchange of technologies, best practice and knowhow. It also entails the development of environmental industries and services and the education and training of the skilled human resources required.
- **The adaptation of technologies to meet defined needs and objectives.** Targeted programmes of research and development can rapidly produce major improvements, for example in agriculture, water conservation and energy conservation and efficiency.

- **Radical new solutions from basic research.** The scale of the challenges ahead is such that the dissemination and adaptation of existing technologies will not be sufficient. Radically new solutions are required which must be achieved through “breakthroughs” in R & D. The CGIAR has achieved such breakthroughs in the field of agricultural research. Targeted programmes of international cooperation in basic and applied research could achieve remarkable new solutions on the path to a low-carbon economy. But the lead time between basic research and the widespread application of new solutions is long. “Crash programmes” of research are urgently needed on a substantial scale to develop radically new solutions soon, particularly in the field of new and renewable energy production with low or zero emissions.

- **Focusing R&D on the needs of developing countries and the poor.** In order to for an aspiring scientist to build a reputation in science, it is necessary to publish in respected journals. As some 90% of world R&D is carried out in developed countries, scientists in the developing countries find it hard to focus their research on issues which may be of vital importance at home but which are not of interest to the international scientific community. Special efforts are needed to encourage developing country scientists to make their careers by focusing their efforts on the problems of development.

### (iii) Human Resource Development

86. The successful implementation of all the programmes needed to reorient national economies onto a low-carbon, sustainable path depends in large part on the knowledge, skills and commitment of the men and women concerned in every area of society. The skills and attitudes of the past are not suited to the new context and to mastering the challenges ahead. Explicit programmes of education and training to generate the skills and expertise required will be fundamentally important, underlining again the centrality of education.

87. A related, long-standing issue which has never been resolved is that of the “brain drain” of talent from the poor world to the rich world. This constitutes a massive flow of invested resources from South to North. It must be resolved if the skilled talent, educated in the developing countries, is to be retained where it is so desperately needed.

**(iv) Information and Communications**

88. Humanity is confronted with major threats and problems, but it has enormous capabilities to surmount them. Among these is the vast potential of information and communications technologies in every sphere, from the dissemination of knowledge, through the monitoring and analysis of problems, to the generation of creative new solutions and the empowerment of individuals to improve their lives. A targeted international programme to mobilise the potentials of ICT for sustainable development in both industrialised and in developing countries could bring enormous and rapid benefits.

**(v) Capacity Building**

89. It is of course true, as underlined by the G20, that global problems demand global solutions, and that international cooperation and effective national policies are key to addressing critical global issues. However, the fundamental changes required can only come about through the efforts and behaviour of communities and individuals at the local level. In many regions of the world, the underlying capacities to build new sustainable societies and economies are critically weak or non-existent. Foreign experts and investments and international projects are valuable, but they cannot create the basis of successful economies in the absence of the endogenous human, institutional, political and physical capacities required.

90. Explicit policies and international support must be directed to capacity building in every area so that less-developed societies can use the potentials of knowledge to conserve resources, to protect

the environment and to achieve low-carbon, equitable development.

91. Strengthening the capacities of developing countries to use the potentials of science and technology to accelerate their development was a major objective of international negotiations in the 1970's, leading for example to the creation of the United Nations Financing System for Science and Technology for Development. The free-market dogma of the early eighties destroyed these efforts. The ability of developing countries to adapt to the impacts of climate change and to participate in international efforts for mitigation depends on the building up of their own capacities: this must become again the focus of explicit international programmes of cooperation.

92. In all the five areas of concentration sketched above – finance, science and technology, human resource development, information and communications and capacity building – activities could be strengthened or initiated immediately, without awaiting a global, international agreement. Building on activities in progress across the world, and on the experience of successful solutions already acquired, it would be possible to make a major impact rapidly to reduce the threats to the future and to accelerate the restructuring of economies and societies onto a path of low-carbon, sustainable development.

93. In all these areas, the role of the private sector is of central importance. New strategies imply the need for new partnerships and cooperation between the public and private sectors and civil society in a concerted effort to define, agree and act on the critical issues of the modern world.

**VI. Opportunities for Early Action**

94. In spite of all the negotiations and efforts made to date, the rate of increase of anthropogenic emissions into the atmosphere has not diminished. And, whatever Treaty may be agreed at the Copenhagen Climate Conference in December 2009, it will be some time before its provisions come into effect, as it will take time to achieve ratification, financing and implementation. There will then be a

substantial lead time between the taking of action and effective results in terms of reduced emissions. It is therefore of great importance to seize every opportunity for early action in order to make impacts at the earliest time.

95. The central issue of reaching an overarching international agreement on targets for emissions and on common but differentiated responsibilities is the focus of the intensive negotiations leading to Copenhagen. The Club of Rome programme is therefore focusing on complementary efforts, principally on:

- developing the elements of an integrated strategic approach to addressing the underlying drivers of climate change;
- identifying and promoting opportunities for early action;
- suggesting measures to facilitate and build support for the processes of ratification, financing and concerted implementation of a post Kyoto climate treaty, beyond the Copenhagen Climate Conference.

96. Some of the important opportunities for early action are:

### **1. Limiting the Concentration of Greenhouse Gases in the Atmosphere.**

This issue is the centerpiece of the international negotiations and there is a wide variety of views as to what the strategic targets should be and how they can be achieved. As pointed out in Background Note 1, the current target of 450ppm, in the opinion of a growing body of scientists, is too low to guarantee that the risks of catastrophic climate change will be averted. In this perspective it is crucial that governments accept that the basis for targets and policy should be the management of risk, rather than the calculus of costs and benefits. It also follows that targets should relate to the level of concentration of all greenhouse gases in the atmosphere, rather than

to the level of man-made emissions into the atmosphere.

The Dialogue between G8 + 5 Legislators and the Club of Rome in Westminster in January emphasised the importance of “climate justice” to the successful support and implementation of a post-Kyoto Treaty. Most recently this has been underlined by an influential think tank in China, the Development Research Center of the State Council, which proposes that emissions rights should be set for each country on the basis of historical accumulations. Countries would then trade portions of those rights in an international market.

In parallel with the international negotiation of long term targets, explicit programmes should be launched to identify and exploit the enormous opportunities to increase energy efficiency and conservation, for example in the construction of new housing stock, and to disseminate and apply existing solutions on a more substantial scale, and to intensify the exchange of best practice, knowledge, successful innovation and experience wherever possible. Such simple and direct measures can make a rapid impact.

### **2. Preservation and Recuperation of the Ecosystems of the Planet.**

The international community has recognised the seriousness of the threats posed by climate change but the threats posed by the destruction and overuse of the biological systems of the planet are also a real and present danger to the prospects of future generations.

As the Millennium Ecosystems Assessment states: “The bottom line of the Millennium Assessment findings is that human actions are depleting Earth’s natural capital, putting such strain on the

environment that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted." Further, the MEA concluded that the current rate of species extinction, driven largely by human activities, is now 1,000 times the normal background rate.

Human life depends entirely on the services provided by nature. It must therefore become a central focus of policy to avert the collapse of ecosystems in the oceans and on land, just as it is essential to avert the risks of catastrophic climate change. In either case, the existence of modern civilisation is at stake. Fortunately, win-win policies can be conceived which address both climate and ecosystems.

For example, to ensure that runaway climate change can be prevented, not only must emissions be reduced but also carbon must be sequestered from the atmosphere. One immediate opportunity would be to launch a major programme, combining international and national efforts, to reduce de-forestation and to promote re-forestation and the recovery of degraded lands on a massive scale. This would achieve multiple objectives: sequestering carbon from the atmosphere; strengthening ecosystems and biodiversity; expanding the production of food and basic energy; and providing employment, principally to the poor and to indigenous peoples.

### **3. Energy.**

Energy lies at the heart of climate change. Modern civilisation is based on cheap energy and this era is coming to an end as we approach the period of peak oil. Forward projections of energy demand to meet the needs of a growing world population, even under optimistic assumptions of improvements in energy efficiency, imply a doubling of energy demand by 2050. However, to contain the threat of irreversible

climate change, emissions must be cut by around 80%. This constitutes a massive challenge which can only be resolved by radical changes in policy and behaviour, by implementing new models and strategies for social and economic progress and by breakthroughs in science and technology to find radical new solutions.

In addition, growing demand will intensify competition for vital energy resources: the secure supply and transportation of energy is now a central focus of national security strategies in many countries. And, in particular, the poorest countries will again face a major energy crisis as the price of energy will increase once recovery from the current recession begins. Special arrangements will be needed to assure the supply of energy to the least developed countries which is vital if they are to sustain the process of development to attain the Millennium Development Goals.

Besides its central role in driving climate change, energy has also contributed to the financial crisis. Oil imports represented around one third of the pre-crisis \$700 billion current account deficit of the US, and the financial flows from oil consuming countries to oil producing countries amounted to around \$ 1.7 trillion in 2007. Clearly, such imbalances were unsustainable. Energy prices are also a key factor contributing to the food crisis which afflicts the poor in many developing countries. Here again, the connections between climate, energy, environment, finance and development are of immense significance.

### **4. Fresh Water.**

The fresh water resources of the planet are under immense stress today and this stress will dramatically increase as populations grow and the impacts of global warming become more severe. Competition for water,

a truly vital resource, is intensifying, threatening violence and conflict and driving migration.

The availability of water is also vital to the survival of the terrestrial ecosystems which act as carbon sinks, absorbing man-made emissions. Thus, the conservation and availability of water must be a focus of immediate action.

## **5. Oceans**

The state of the oceans is disastrous today and worsening. Oceans, which contain 90% of life on this planet, are vital to the climate and to human life. Increasing acidification and rising temperature are reducing their effectiveness as carbon sinks, accelerating the progress of global warming. As part of any long-term strategy to address climate change, concerted and effective action on a substantial scale is urgently needed to reverse the decline in the state of the oceans.

## **6. Adaptation**

The lead time between the rise in the concentration of greenhouse gases and the ensuing rise in temperature is of the order of several decades and the delays inherent in the formulation and implementation of action are long. However successful international action may be in ultimately reducing emissions, the impacts of climate change will inevitably increase across the world for decades to come and it is the poor and deprived who will pay the highest price: and they are already paying a high price today. International assistance of every kind must be increased and targeted in a spirit of solidarity to assist the developing countries to adapt to and to avert the worst physical, economic, social and humanitarian consequences of climate change, as an integral component of national development strategies.

## **7. Economic Restructuring.**

The analysis Background Papers 1 and 2 makes clear that the crises in the fields of finance and the economy, climate and the environment and international development have common roots in the models and strategies which drive exponential growth in consumption, pollution and waste. The restructuring of economies onto a low-carbon, resource efficient and environmentally sustainable path must therefore become the focus of explicit strategy at the national and international levels: it will not simply come about by ad hoc, incremental change, within the limited time available.

This challenge and the related opportunities were indicated in March 2009 in an Open Letter of the Copenhagen Climate Council to the G20 London Summit, in the following terms: "Over the next nine months, we are signing a contract with future generations. Either decision makers lay the foundation for sustainable economic recovery – or we will hand huge risks to our children..... The London Summit must agree that investment in low emissions technology and infrastructure must be integral to government recovery packages in order to create jobs, foster innovation and achieve energy security through the 21<sup>st</sup> century..." The scale and urgency of the needed transition are such that incremental change or adjustments brought about by market forces will not achieve the results required. A recent letter to the editor phrased the issue thus: "For how long can the resources of the earth continue to sustain worldwide growth and relentlessly increased consumption?" (*J. Jorgensen, IHT 26/3/09*). A new coherent strategy must integrate objectives in many critical fields, particularly policies for the supply, utilisation, conservation and security of energy, for environmental protection and the conservation, production and recycling of resources, for agriculture

and employment, science and technology and education.

97. As has been emphasised by José Manuel Barroso, President of the European Commission, the opportunities which will arise from the process of “creative destruction” leading to low carbon, resource efficient economies will be enormous. A new economy will emerge, creating employment and opportunity based on efficiency in the use of resources and on conservation and recuperation of the environment. Many national, urban, local and private sector examples have demonstrated what can be achieved: the economy of Denmark has grown by 70% in the past 26 years without increase in emissions. With vision and leadership, the world economy can move from an age of consumption and inequality to an age of inclusion and sustainable development.

#### **VII. Creating a Framework of Effective and Legitimate Institutions.**

98. The financial and economic crises have demonstrated that there is an urgent need for a radical restructuring of global governance, in particular, an overhaul of the global framework to assure transparency, supervision and regulation of the financial system. However, the reform of international financial institutions and policies can only address one component of the systemic challenges facing the world community. Added resources for the IMF and the World Bank will do little to change current models and strategies for growth, to achieve sustainable development or to promote greater fairness and inclusion in the processes of globalisation and world development.

99. As it becomes clear that the threats of climate change and ecosystems collapse are real and imminent and that an inequitable and polarised world of rich and poor is morally unacceptable and presents major dangers of conflict, then it will be evident that the connected challenges of the 21<sup>st</sup> Century will only be contained and resolved through a radical redesign and reform of the architecture of global governance.

100. This new institutional architecture must become more balanced, more participatory and more democratic if it is to recognise the realities of interdependence and the tectonic shifts which are occurring in the distribution of power and influence in the world community. It must mobilise international cooperation and support for a coherent strategy which integrates economic, environmental and development goals into a programme to achieve a new path for world development. Issue- and sector-oriented programmes can then be made consistent and mutually-reinforcing within this integrating framework.

101. The complex, systemic challenges of the 21<sup>st</sup> century cannot be managed with the ideas and the institutional tools of the 20<sup>th</sup> Century. To address the underlying drivers of climate change, institutional mechanisms must be introduced or adapted to implement new policies in the key areas of concentration sketched: finance; science and technology; human resource development; information and communications; and capacity building.

102. Humanity has enormous capabilities and resources to resolve the challenges which threaten the future. The question is whether we have the will, the imagination and the organisational capacities to do this. Issues of international governance and institutional architecture will be critical to the effective implementation of a post-Kyoto Treaty. They are a focus of analysis and consultation in the programme of the Club of Rome on a New Path for World Development.

#### **VIII. Generating Political and Public support.**

103. While international leadership and cooperation are needed to reach agreement on a post-Kyoto Treaty, wide political and public support will be essential to ensure its rapid ratification, to generate the financial resources required and to ensure its effective implementation.

104. All the expert analysis, intensive negotiations and international agreements to date have failed to reduce the increase of the concentration of greenhouse gases in

the atmosphere which are rising at the rate of 3 ppm per year. We are effectively on the business-as-usual path which IPCC has shown will lead to a disastrous level of temperature rise. Agreement on a post-Kyoto treaty is essential. As phrased by the Copenhagen Climate Council in March 2009, "The London summit (*in April*) must agree that establishing a new, effective global climate treaty in December this year is both an imperative and requires the intervention, involvement and leadership of the G20 heads of state." (2/4/09)

105. But agreement on a constructive post-Kyoto Treaty is only the first step towards the effective action which is urgently necessary to move rapidly onto a low-carbon path and thus reduce emissions in the real world. The Treaty must be rapidly ratified and implemented and this requires strong and broadly-based political support in legislatures and the understanding and support of the general public. In this respect, the role of GLOBE International and of legislators in general is of critical importance. Each legislator can help to build support in his or her constituency for the painful measures needed to restructure economies onto a new path.

106. History has shown that civilisations have collapsed not because they failed to identify emerging threats, but predominantly, because they found it impossible to act in time to avert disaster. They failed to act because public concern and the demand for change were not sufficient to overcome the obstruction of entrenched and powerful pressure groups with their interests vested in the established system. In this perspective, the understanding and support of civil society and the general public are vital conditions to initiate and sustain the painful measures which must be implemented to avert the risks of catastrophic climate change and to build the foundations of a sustainable and inclusive economy.

107. We cannot wait until the impacts of climate change and ecosystems breakdown or of poverty and alienation are so severe and obvious that they force a change in public attitudes: by then, it will be too late. Explicit programmes of public information and mobilisation will be essential to build the support on which policies must rest and to encourage individual efforts and behavioural change. Here again, the role of legislators is key in two respects: to explain the nature and urgency of the risks and consequences of climate change, interpreting the understandings of science and analysis to the general public; and to build and guide public engagement and support during the major social and economic transformations ahead.

A detailed documentation of this briefing session will be available on [www.clubofrome.org/G8plus5](http://www.clubofrome.org/G8plus5)