



UK Parliamentary Inquiry into the Global Food Crisis

**The All Party Parliamentary Group on Agriculture and Food for Development
The Associate Parliamentary Food and Health Forum
The Parliament and Scientific Committee**

Minutes of the Food Security inquiry meeting on Wednesday 1 April 2009

Inquiry team members present: Ian Gibson (Chair), Lord Cameron, Lord Joffe, Kerry McCarthy, Lord Rea and Alan Simpson MP.

First panel of witnesses: Professor David King, former Government Chief Scientist; Professor Richard Mkandawire, Advisor and Head of Agriculture Unit and the Comprehensive Africa Agriculture Programme (CAADP); and Professor Callum Roberts, Marine Conservation Biologist.

Introduction

Ian Gibson welcomed members and witnesses to the meeting and invited the witnesses to make a brief statement before questions began.

Dr Christie Peacock, Chief Executive of Farm Africa

FARM-Africa works at the grassroots in Africa and wants to see smallholder farmers being given a fair chance; they have lacked support for too long. Indeed some of these principles of fairness could be applied to UK farmers too. Evidence shows that farmers involved in past agricultural revolutions, for example in Asia, have always been supported through state support to infrastructure, for example in irrigation and roads, and this support has allowed them to demonstrate their potential. Farmers need access to technology and farming inputs. FARM-Africa is getting a return of up to \$24 for every \$1 invested over a two year period. Investing in Africa's smallholder farmers offers remarkable returns to investors. The decline in support for agricultural development which has coincided with an increase in food aid – a sticking plaster solution – has been a mistake. Africa's farmers should be seen as part of the solution and not part of the problem.

In response to a question from David Curry, Christie Peacock (CP) said that the three things we could best do to help would be to improve the access of African farmers to new technologies; support farmers' organisations, in some cases providing financial support to them; and help to reduce the risks they face, for example through more supportive insurance schemes.

Professor Richard Mkandawire, Head of NEPAD's Agriculture Unit and the Comprehensive Africa Agriculture Programme (CAADP)

Richard Mkandawire (RM) said he is one of thousands of Africans who have had good training in British institutions. They cherish education support from Britain, but they are concerned about the de-linkage of training between British institutions and African agricultural scientists. We need to reinvigorate this support. We also need to develop links with Asians and between Asian and UK institutions. NEPAD wants to build bridges between all these scientists.

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The late 1980s and subsequent years was a period of lost opportunity, but African leaders are now looking at agriculture as a priority. They are committed to supporting a common framework for the development of African agriculture (CAADP) and NEPAD are delighted that DFID and other donors are supporting this framework.

There is a programme, Research Into Use (RIU), that is looking at the outputs of DFID supported research. This is an excellent model which African and British academics have developed. It needs to be developed and supported further because it is very valuable in addressing issues of hunger and poverty.

There are very few DFID scientists working at country level which is a matter of great concern to NEPAD. It wants to strengthen the number of these scientists. There is also a need to increase opportunities for scholarship for scientists from Africa. African leaders are convening a Summit on agriculture in July which is testimony to their commitment to agricultural development.

Sir David King, former Government Chief Scientist and Director of the Oxford School for Enterprise and the Environment

Sir David (DK) congratulated the inquiry team on its choice of subject. He said we need the type of foresight the inquiry team is attempting. He placed food security in the context of the 21st century challenges we face which are much greater than those of the 20th century and an outcome of that century's successes. Humans now have a life span of some 70 years compared with only 45 in the early 20th century. It's important to recognise that because our life span is increasing, more young people are living to maturity so the population is growing. Population growth is slowing, but it will be 9 billion by 2050 and then probably plateau at that level. The well being of that population is challenged by the fact that we are messing up the natural resources on which they will depend. We need to achieve sustainable development. The key issues we face include climate change, biodiversity, health and the spread of disease (which is more dangerous in densely populated areas), energy supplies, water supplies, the state of the oceans and food security. Unless we manage these issues holistically we will face conflict at levels we have not seen before. We have time to manage this, but we need to move in a short space of time.

In terms of food production, we are likely to need 50% more food production by 2030 to manage the expectations of the growing population. We need to recognise the connectivity between these challenges, especially water. For example, South Australia and Victoria have become a tinder box area after 7 or 8 years of drought. It used to be a food basket area – now farmers are giving up and people cannot get enough water for normal uses. Victoria has ordered a massive construction programme of desalination plants, but these are energy intensive and burn coal; thus contributing to climate change, a cause of the droughts. We need to manage problems so they do not feed into each other. A third of Victoria's water supply will soon be from desalination, but farmers will not get any of it. This example is typical of the sort of transition that will be necessary.

Looking at the areas most at risk by 2025, North America will face problems; Australia will be in a reasonable position; but Southern Africa and Northern Africa will face increasing desertification. Rainfall is moving from place to place, not falling. India will be an area of significant risk. Monsoons are central to the Indian economy. If monsoon rainfall is 10% less than normal now there is a significant loss of food production. Modelling the monsoon is very difficult, but it will be sensitive to climate change and significant change to the African and Indian monsoons is likely. The loss of ice on land around the world will reduce fresh water supplies from run off, which is important for China and India.

As the population grows we use more water and we increasingly contaminate water, so supply falls as demand increases. These supply and demand lines cross roughly mid century around

2040/2050. Desertification will occur in some areas long before the problem is clear at a global level.

We must move forward with all available technologies. The biggest advance since the 1960s and 1970s was the application of biotechnology to India and China. We need full acceptance of properly regulated biotechnology, such as submergence tolerant rice. We lose a lot of rice because of flooding. Big increases in the price of rice like last year have lots of causes but one was a larger than usual loss to flooding. Submergence-tolerant rice, produced by GM technology, could have been available years ago, but public resistance to GM, not based on risk analysis, has slowed down development by a decade. It should be used where appropriate to safeguard supplies.

The state of the world's forests is of major significance to climate change and so is the state of our oceans. The percentage falls in fish catch across the planet is important. It is declining in every area around the world. Oceans are becoming more acidic and warmer and we are over-fishing. We need a massive improvement in global governance to tackle this.

Professor Callum Roberts, Marine Conservation Biologist

Callum Roberts said he had studied the world's oceans for the last 25 years, especially fisheries and biodiversity in the oceans, looking at how fishing is affecting the ocean environment.

We have been fishing commercially for a long time – 1000 years in northern Europe and 2000 years in southern Europe. Supply has been sufficient to satisfy demand to date, but demand has been increasing since the 19th century. As steam power was added to trawlers, fishing increased dramatically, as did the total area fished. During the 20th century there has been a huge increase in fishing capacity. There are now few places in the world's oceans that are not being fished intensively. Government statistics show that landings into England and Wales have declined 6 fold since 1889 and 15 fold since the 1920s. Landings of fish per unit of fishing power declined 94% between 1889 and 2007.

Alan Simpson (AS) asked Callum to distinguish between landed and caught fish. **Callum (CR)** said he was referring to landed fish. The discarded fish ratio varies; at its worst it is about 15:1. The ratio of discarded to landed fish is about 2:1 in the UK. Most of the discarded fish could not be used for consumption because it is under-size, but some of it could be used.

One of the difficulties is that in the past we have been able to catch fish above sustainable levels because we started to catch a wider variety of fish and we have fished in new places, but this is no longer an option, as we fish most species and most fishing grounds, so we need to manage fisheries better. There has been a problem with fish management for some time. EU Ministers competitively bargain for a share of the EU catch and push the total catch up beyond what the scientists recommend by 25-35% each year. European Ministers can negotiate with their colleagues, but they cannot negotiate with nature. If we systematically exceed sensible fishing levels, then inevitably we will exhaust supply. Unfortunately the political pressures are such that we take more in the short-term with a consequent loss of long-term supply.

European consumers have been cushioned against awareness of the problem of domestic overfishing because European fishermen have gone to new areas and fished in the waters of developing countries. Access agreements negotiated with developing countries have a raft of problems associated with them, not least the depletion of fish supplies for West African populations.

The World Health Organisation (WHO) recommends fish consumption of 200-300g per person, per week. We could meet that need for everyone alive today if we ate all the fish we catch, but 30% of the catch is used to feed animals. On present trends we will soon not be

able to feed the global population at this healthy level. It does not have to be like this. There are steps we could take over the next 20-30 years to safeguard supplies. The solutions are straightforward at a technical level, but lack political support. For example, cutting the fishing effort would improve fish supplies over the long-term; and establishing large-scale protected areas would provide reservoirs for fish production.

David Curry (DC) said that new technologies enable fishermen to differentiate between fish under water, so fishermen could conserve fish if they wanted to do so. **CR** agreed, but said that fishermen will not conserve fish unless they are made to do so. We do not use the best technology to reduce collateral damage from fishing. We should legislate to require the use of best equipment and help fishermen with subsidies through the period of transition to these improved gears.

DC suggested that one problem with food production is that much farming is based on livestock. In Asia the diet was largely fish and rice, but now it is moving towards a dairy and meat diet. If we all became vegetarians it would make a significant contribution to food security. He asked how we should deal with these lifestyle choices and the ethics of food consumption, including for example the issue of food miles.

Christie Peacock (CP) agreed that ethical questions and the issue of fairness are really important. It applies to Kenyan livestock and beans. FARM-Africa has shown that livestock farming can be a vital path out of poverty for small holder farmers. The anti-livestock attitude is undifferentiated and there is a real danger that the interests of African farmers will be undervalued. Perhaps we need a system of fair trading in livestock emissions – like carbon trading – to protect the interests of African farmers in keeping livestock where it is appropriate to do so. Kenyan roses have a lower carbon footprint than roses grown under artificial light in Kent. We should encourage farmers to play to their relative strengths.

David King (DK) said that it takes 1000 litres of water to produce 1kg of maize, but 15,000 litres to produce 1kg of beef. Beef production in Mato Grosso, Brazil is an example of low density livestock farming with 1 animal per hectare. After animals have grazed the land it is used for other purposes, but all contribute to deforestation. We should take a long-term view. Subsistence farming in Africa is not a viable path for that part of the world. We need to look at population movements and the protection of bio-diverse systems; some land should be farmed more intensively and other areas should be set aside.

The oceans provide the lungs of the earth – generating 40% of the oxygen we need. As we acidify the oceans, small species are becoming endangered. Arctic phytoplankton is a key part of the food chain for arctic cod, but this is diminishing around the UK and northern Europe as the ocean surface warms up.

Callum Roberts (CR) said 30% of the world fish catch from wild sources goes to livestock, mainly chicken and pigs. In India there is increasing demand for chicken and there is a close link to over-fishing. Some species have collapsed to the point of unprofitability and they are now fishing for trash to feed the chickens. The whole eco-system has been compromised.

Kerry McCarthy (KM) asked if the 30% of fish fed to chickens is mixed in with other feed. **CR** said it is usually used for in-door farming. Some goes to aquaculture, but where the input is greater than the output it represents a net loss of animal protein. We need to change the sort of aquaculture followed and focus on herbivorous fish and shellfish such as mussels rather than predatory fish such as sea bass and salmon, which require big inputs of wild fish to support them.

KM referred to Soil Association advice that 1lb of butter from New Zealand has a smaller carbon footprint than 1lb of butter from Devon because the cows in New Zealand are fed on grass and suggested these issues are hugely complicated. She asked for advice on the best solutions given the figures for deforestation and water.

DK said it is no exaggeration to say that our ecosystem services are so critical to life on earth that we have to manage them better. The oceans are the starting point for our oxygen and food supply. The key to the 21st century is to become smarter about sustainable farming. Consumers will have to be more discriminating. European consumers are looking at labels, but we need government regulation and global governance procedures which is the weak point. Our global governance systems were developed after the Second World War to meet different challenges and they need to be reformed.

CR said we have to look at the resources supporting food production. In certain environments growing animals in pens looks sensible, to save land from being converted, but we need to assess the input in terms of the overall resources used to support production, such as water use and other factors.

KM said Ministers are very focused on protecting the UK farming sector, and there does not seem to be sufficient recognition of the global issues, like over-fishing, though there is some recognition of the problems associated with deforestation and biofuels.

DK said deforestation is on the agenda only because scientists calculated that 18% of climate change gases are contributed by deforestation and even so it is still going on. Oceans are not on the agenda and we are only just beginning to understand the nature of this challenge.

CR said we need to understand that the oceans are about much more than fishing; we are intimately dependent on the maintenance of ocean food webs. We are undermining the very ecological processes that we depend on and we must change this. We need to recognise the important ecological functions the oceans provide, such as water purification, carbon sequestration, oxygen production and the like.

Lord Cameron (EC) asked Callum if all fishing deals between developing countries and developed countries are wrong or whether it is possible to have responsible deals. He asked Richard Mkandawire, who was very complimentary about DFID in his advance statement, if there is anything else they should be doing, if not more research and development, perhaps in terms of technology transfer to Africa. He added that where African governments are keen to promote agriculture it makes a big difference and asked if DFID could do more diplomatically to encourage this. **CR** said you could have responsible fishing agreements that benefit both developing and developed countries. For example, when developing countries cannot fish themselves it makes sense to sell fishing rights to those with the capacity to do so. But most fishing agreements are poorly framed and favour developed countries rather than developing countries. The fisheries are not regulated sufficiently because of lack of capacity in developing countries to police them. Even when illegal fishing is going on there is very little many developing countries can do about it. In their present form, such deals are deeply immoral and compromise the future development of developing countries by robbing them of their natural resources.

Richard Mkandawire (RM) said there is broad agreement that demand for technology is growing significantly. The challenge is how to get the technology to farmers on the ground. NEPAD welcomes the Research Into Use (RIU) initiative which is looking at this, with the aim of supporting increases in agricultural productivity in Africa. NEPAD is also trying to ensure that those African governments that are making progress, participate in the challenge of increasing agricultural productivity with the support of civil society organisations (CSOs). NEPAD wants donors to increase support to these countries to encourage them.

Alan Simpson (AS) suggested the problem is not that the issues are complicated. We just need the political will to address them. In the future we will not be able to sustain consumption at present levels. Increasing the efficiency of production will not solve the problem because after the global financial crisis we will face the problems of climate change, peak oil, peak phosphate and peak water. Meeting the challenge of food security will require

much more labour devoted to food production, as in Cuba. Looking at the fishing agenda, it would help if we got rid of large-scale fishing units which operate in ways that are counter to sustainable fishing. Alan Simpson referred to the work of “Cremate Monsanto” in India, an organisation supporting farmers caught up in the consequences of agricultural development associated with GM crops, which left them poorer overall when all the associated costs and benefits were taken into account.

DK argued that we need advanced biotechnology, but we will not be able to feed 9 billion people like we eat now. We need to improve food productivity if we are going to manage ecosystems at the same time, and that will require some areas being intensively farmed and other areas being set aside to protect biodiversity. Corn is an example of a product that has developed enormously since it was a grass plant; all corn is an example of genetic engineering. We need flood resistant, drought resistant, disease resistant and salt resistant crops. Modern GM technology is the most sophisticated way of managing this. We should use the best of what science can offer and consider as a separate issue the most appropriate controls on the behaviour of companies that operate in this area. For example, submergence tolerant rice could have been developed very quickly but significant delays have been caused by political resistance.

Second Panel of witnesses: Vanessa Adams, Director of USAID’s West Africa Trade Hub; Brian Baldwin, Global Platform for Donors; Professor Simon Blackmore, an expert on precision farming and agricultural robotics; and David Nabarro, Coordinator, UN Secretary-General’s High Level Task Force on the Global Food Security Crisis.

Vanessa Adams, Director, USAID’s West Africa Trade Hub

Vanessa said that after spending 6 years living in West Africa and having spent a lot of time working on value chain issues from the farmer to the consumer, she had to disagree with Sir David about GM crops. She suggested the key question is not one of capacity, but of the distribution of technology and finance. For example, farms in Africa need finance at the start of the year; for farming or processing organisations in Africa it can cost them 30% a year in interest and bank fees, and this is a major obstacle to food security. Much modern technology is available to farmers in Africa but is not distributed or known, so we could start with that.

AS referred to a recent report that suggested the claims made about the merits of GM crops versus conventional crops is not justified. **DK** said the report was poorly written and not based on scientific evidence. We should work with GM in the same way we worked to develop vaccines. **AS** suggested there are lots of conventionally based rice products that could increase productivity and much of the argument about GM crops is concerned with feeding the developed world, such as blight resistant maize offered by Monsanto. Other farmers using technology from Kenya have successfully increased productivity by inter-planting their crop with napier grass, without having to rely on expensive herbicides.

David Nabarro, Coordinator, UN Secretary-General’s High Level Task Force on the Global Food Security Crisis

The UN position is that a lot can be done with existing production systems to increase access to food by investing in small holder farmers and we should focus on this urgently. By working with CAADP and farmer organisations, including unions and cooperatives, we can help farmers get better support for their produce and more benefit from the value chain. These actions will be critical for many African farmers and increase their resilience – which is especially important during the economic downturn. It will also allow local food systems to work better with increased use of locally developed technologies. If other countries need to access food from developing countries, the optimal way for them to do this would be through support for small holder farmers as an alternative to large scale agriculture.

Ian Gibson (IG) asked if there is a shortage of agricultural scientists in the UK and, if so, does it make a difference to agriculture in Africa. **RM** said NEPAD is sorry about the decline in the number of agricultural scientists. There is a shortage of soil scientists and biotechnologists. Africa's own lack of training is exacerbated by the impact of HIV/AIDS related deaths. **IG** asked how UK agricultural scientists interact with African farmers. **RM** said that UK scientists can help support institutions in Africa, for example CSOs and research institutions. It would be very helpful to be able to draw on the pool of science developed in the UK. African institutions are not producing the right type of scientists and many of them are not linked to global institutions.

Christie Peacock (CP) said there has been a very serious erosion of capacity in agricultural research in the UK and Africa. There has been a severe brain drain in Africa for lots of reasons. A short-term attitude and lack of financial support has contributed to the problem. Few organisations or individuals support the long-term building of African institutions. There are very few young people in agricultural science in the UK now and it could be regarded as a crisis.

Brian Baldwin, Co-Chair, Global Platform for Donors

Brian Baldwin (BB) in responding to a question on levels of knowledge, said that GM technology was not a silver bullet. We need to extend the knowledge of minimum tillage, conservation agriculture and other existing technologies. Many small holder farmers are effective and efficient producers but they need support on inputs and infrastructure. The African Union Summit later this year is an opportunity to endorse the importance of food security in Africa and the role of the smallholder sector as a key response to the issue. Agriculture is currently a side issue for the Summit, but food security should be a key issue for it. The Accra High Level Forum (HLF) and Paris Declaration recognised that capacity development in all sectors, but particularly in agriculture, is a key constraint. For example, the 'cadre' of middle level managers in the public and private sectors concerned with agriculture has been decimated by AIDS and a huge reservoir of knowledge has been lost as a result. We need to support capacity development across Africa.

Simon Blackmore, Expert on Precision Farming and Agricultural Robotics

Simon Blackmore (SB) agreed with CP that agricultural scientists are a dying breed because of a lack of financial support. There are great opportunities to support developing countries' agricultural productivity through good management practices; this does not entail anything revolutionary, it can be as simple as using machines in the right way. The provision of knowledge, education and training could be an important role for the UK, as well as precision farming. The challenge applies to developed agriculture – farming in the US and UK – as well as to developing countries. The development of management information systems is critical so that knowledge gets to the people who need it. Simon and his colleagues are looking at minimising the amount of energy used for food production. Precision farming has found ways to reduce the amount of inputs needed by applying them in a more timely way and by targeting them more intelligently, for example by applying weed-killer only to weeds and not to crops. The only difference between traditional farming and precision farming is the intelligent use of energy.

IG asked where robots are used. **SB** said robots are not in commercial use yet, but the intelligent application of inputs is becoming more widespread.

Lord Cameron (EC) noted that we have closed lots of agricultural research institutions in the UK. He asked Brian Baldwin whether Platform looks at research being undertaken in different countries to prevent overlap and to pull together the research findings. **BB** said the Platform does not specifically co-ordinate research but supports the work of the CGIAR which, through its recent reform, is seeking to better co-ordinate international agricultural research agendas through the network of the international centres. The Global Forum for Agricultural Research

(hosted by FAO) focuses on co-ordinating research at the national level. The Platform identifies relevant research outputs for small sources and disseminates them to their members and through them to developing countries. He emphasised that 75% of the world's poor are in Africa and they need a specific research approach, but too many global Summits do not recognise the significance of agricultural research as a key issue. Platform is working with the World Bank and donors to try to get agriculture on the Copenhagen agenda because agriculture, which contributes 15-20% of greenhouse gases, should be a key issue for the climate change discussions, including, for example, the role of afforestation in climate change mitigation.

Vanessa Adams (VA) referred to shea butter and shea trees and said that her organisation had convened a conference at which several African agricultural scientists presented research to several of their biggest buyers, which none of them had been aware of. Nigeria has a very proactive agricultural policy at present, providing 15% subsidies to promote agribusiness processing in country, because they recognise that they cannot go on depending on oil revenues. However, we need to ensure African researchers are better funded by developing countries and that their findings are better known in Africa and the west.

David Curry asked all the witnesses to describe the one step they would take, if they could, to help the world feed itself 25 years from now.

DK said his advice to the Government on the Commission for Africa emphasised the importance of capacity building and the need to ensure the development of a wide range of skills across agriculture, medicine and engineering. Africa is facing a huge brain drain as well as the impact of AIDS. We should not focus just on primary education, because the whole education chain needs support. That part of the Commission Report has largely lain idle. The Commission for Africa wanted support for 4 or 5 African institutions of science and technology as centres of excellence. The African Union can be even more difficult than the EU to deal with and it may be easier for donors to work separately with the West African Federation and the East African Federation.

SB said education and communication are the two key issues. We need to build capacity but we also need to improve access to knowledge both in Africa and between African and developing countries. SB would like the agricultural engineering research base in the UK to be restored to the level it was at in the past.

VA said that sustainable sourcing is important. We need to develop international guidelines and incentives that companies work within; financial, commercial and legal reforms are also needed to improve competitive international access to finance.

CR said we should downsize fishing, including reform of the process of catch allocation so that politicians decide how shares in the catch are allocated among countries, not how much is caught in the first place, which is a matter for science. We should also increase the footprint of protection given to the world's ecosystems to protect sustainable food supplies.

RM said African governments are serious about addressing agricultural productivity following the CAADP framework. He would strongly encourage the UK to support the countries involved in supporting this reform agenda because it would help to ensure African countries address the problems in their own countries.

CP said she would like to see DFID thoroughly reviewed and radically reformed. She said it needs to be reviewed and challenged at every level. At present it is making itself redundant because of the way it channels money. It channels resources in an unaccountable way. Quality of aid rather than quantity of aid is important. Large sums allocated to undemocratic governments can undermine nascent democracies. We need more accountability within the international aid system. The current White Paper will be another high level set of commitments but DFID has very limited room to implement new policies. She would

encourage an All Party Group to scrutinise DFID more closely. A sensible allocation of resources would lead to more sustainable development which is not so skewed just to the achievement of the largely social goals in the Millennium Development Goals (MDGs) but towards more support for the productive sectors and long term economic development, which will be the way developing economies can pay for the MDGs in the long-term.

BB said he would like to see an extension of the commitment to food security by the UK to include leading and endorsing the review of food security at country level throughout Africa, Asia and Latin America. The current group should seriously consider how it would lead that initiative together with partner countries. Having seen DFID in action, he believes it is leading on the front foot at making aid more effective and putting agricultural development on the political agenda. We need to put the issue of climate change, (including the role of agriculture) and its impact on food security more on the agenda of forthcoming high level meetings to exemplify the political will to address these issues, including, specifically, the Copenhagen Summit in December.

AS said the UK and others have started looking at food security around the term “resilience” and he asked if there is any country where resilience assessments are taking place.

DN said that the UN system would like to see all Heads of Government taking food security much more seriously both now and in the future. Increasingly, civil society organizations are challenging governments to ensure that their citizens are able to realise their right to food. This will involve increased access to social protection, attention to women’s interests, better links between production and marketing, fair trade and an emphasis on investing in household and community resilience in the face of climate change, broken supply chains and conflict. The UN would like to see international support for good quality country plans for developing smallholder agriculture as well as adequate provision for food assistance to those that are hungry and at risk of malnutrition. The UN is proposing a mechanism for the better coordination of different strands of assistance, including the World Bank and donors, so that governments of developing countries are more easily able to access the financing and support they need. Ideally national plans will be the result of consultation between governments and CSOs, and of involvement of regional entities like CAADP. The UN believes a co-ordinated approach like this could make a real difference to the prospects for smallholder agriculture, and for nations in which a large proportion of the population makes its living from agriculture. To make this change, to secure better investment in agriculture, requires stronger advocacy. The UN Secretary-General is a strong advocate for tackling climate change and improving food security (there is a lot of common ground between these concerns). Both issues have to be addressed through inclusive global partnerships. Food security is rising up the global agenda, but a lot more work is needed to push it up more quickly and to a higher level. Private sector, CSOs, NGOs and regional organisations, especially ASEAN and CAADP, need to be working with governments to ensure the right political momentum for food security to receive the political attention that it needs in the current very difficult global environment.

IG thanked the witnesses for the clear messages they had given. He said if the inquiry team can help in raising awareness of the issue of food security and putting more pressure on political leaders to act on it, it would be a privilege to do so.

DN asked the inquiry team to encourage the Inter-Parliamentary Union (IPU) to take the issue on board to help give it fresh political impetus.

AS asked about the significance of water for resilience and whether the Secretary-General is exhorting people to look at their water footprint because the existing terms of trade are leading to water sequestration from the South to the North. He asked if we should be calculating our water footprint, as we are calculating our carbon footprint. **DK** said internalising external costs, as with the European Emissions Trading System, is a start, but we have not applied this to the oceans and we do need to think about water as a critical issue and apply a pricing mechanism.

DC asked whether the Marine Conservation Bill provides a useful opportunity for action. **CR** said it will be of enormous benefit to the seas around the UK if it is bold enough in the protection it offers to our ecosystems.

AS said the inquiry team needs advice on the acidification of the world's oceans in the context of carbon capture and storage (CCS), which risks exacerbating acidification if there are any leaks from CCS.

Lord Rea encouraged DN to send the inquiry team a paper outlining his views. He suggested there is a role for free trade and scope for some protectionism to help small farmers. He expressed support for the suggestion that the IPU should be encouraged to take up the issue of food security and suggested it would make a good subject for an IPU conference.

DC commended the work of David Attenborough in raising public awareness of global environmental problems. He asked what we could do to raise awareness internationally, particularly in countries such as China and India where politicians are pre-occupied with other issues. **DK** referred to the G20 Summit and suggested that if the Presidents of the US and China could be persuaded to address these problems it would have a huge impact, but we need leadership from these two countries.

Conclusion

IG thanked all the witnesses for throwing down the gauntlet to the inquiry team. He said the inquiry team would be meeting Ministers from DFID, and hopefully Defra, shortly and it hoped to persuade some celebrities to help raise awareness of the issues.

CLC, April 2009