

ENGINEERS AGAINST POVERTY

Working with the engineering industry to help
eliminate global poverty

SPARK

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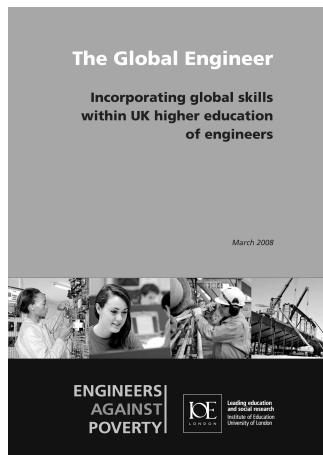
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EAP Supporters

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UK higher education of engineers', which was launched at the Engineering Council UK on March 20, 2008.

The report demonstrates why global issues are of increasing importance in framing the future of engineering markets. Specifically it identifies three ring road issues - (1) poverty reduction, (2) climate change and (3) the changing nature of globalisation - which are converging and shaping our common global future and which represent unprecedented global challenges. It maps how these issues are closely interdependent and how these issues both impact upon and are impacted by engineering.

The current consensus of most scientists and economists as set out in the recent Inter-Governmental Panel on Climate Change (IPCC) reports and the Stern Review is that the world has a brief 10-15 year window of opportunity to move towards a low carbon economy. 'Business as usual' is not an option. This represents a paradigm shift across the world of engineering with huge implications for engineering education.

No longer is it appropriate to view issues such as international development, global inequity or environmental sustainability as peripheral subjects which can be tagged on to courses as an afterthought. Instead these issues must take centre stage in course design and in understanding the global context of engineering and what global skills the engineer of tomorrow will require. With the Leitch Review and the establishment of the Department for Innovation, Universities and Skills, global skills and innovation are at the top of universities

Report urges the need to embed the global dimension within engineering courses

EAP, in partnership with the Development Education Research Centre of the Institute of Education and with the support of a wide range of academics and professional engineering bodies, has been analysing how universities can instil global issues and development education principles into engineering courses. We are now in a position to disseminate the outcomes of our work through a publication entitled 'The Global Engineer: Incorporating global skills within

agendas. However, global skills and innovation are too often seen as promoting UK plc abroad with a resulting emphasis on advanced engineering and developed country markets.

Engineering is changing rapidly. Massive investment in oil, gas and mining and infrastructure is concentrated in developing countries. It is estimated that by 2015, 80% of new infrastructure will be built in developing countries. Massive opportunities await those who can deliver low carbon energy, transport and built environment solutions or who adapt and market their goods and services to the 'bottom billions'. To respond to these opportunities, engineering graduates will require development, sustainability and critical literacy as well as the professional and personal skills to work across cultures in a complex and uncertain environment.

As well as demonstrating why global issues are so important and what the implications of this are for engineering higher education, the 'Global Engineer' looks at how universities are absorbing this global dimension into their courses and strategic thinking. The publication presents a five step framework to help universities think through the process of incorporating the global dimension into the curriculum as well as a framework of methodologies and approaches to help achieve this.

The methodologies are illustrated with

Continued page 3

Speaking at the Royal Academy of Engineering a few years ago, former Cabinet Minister Tony Benn argued, "It is no exaggeration to say that, with the tools now at its disposal, the human race could obliterate itself by the indiscriminate use of nuclear, chemical and biological weapons, or even by neglecting the effect on the environment of pollution." He went on to say, "It is also true that with the resources now available we could almost certainly eliminate many - if not most - of mankind's greatest problems: disease, ignorance and poverty." Whichever way you look at it, the power and rate of progress in science, engineering and technology (SET) is extraordinary.

If the power of SET is extraordinary, then so is the level of ethical and social responsibility that we must demand of scientists and engineers. We should start preparing them for this through the education system by raising these issues explicitly and systematically in all science and engineering programmes. And yet these issues are rarely addressed in any depth as part of the core curricula in many institutions. Why is this?

Scientist and public educator Carl Sagan argued that when the technologies that we need remain unchanged for long periods of time, such as those used by our ancestors for hunting and gathering, they are passed on almost unchanged as tradition between generations. But when what has to be learned changes quickly, perhaps even within a single generation, it becomes harder to know what to teach and how to teach it. During these periods, he argued, "Students tend to complain about the relevance of courses, respect for elders diminishes and teachers despair about the erosion of standards." Sagan could have been describing aspects of what is often termed the 'crisis' in science and engineering education in the UK.

These challenges form part of the backdrop of EAP's work on incorporating 'global skills' within UK higher education. We have been working with UK Universities to try and help them incorporate issues such as global poverty, climate change and

sustainability into their engineering courses. This work culminated recently in the publication of the 'Global Engineer' report. At the launch event held in London, Ian Neal argued that "This isn't about introducing additional content into an already crowded curriculum, it's about recognising the importance of these issues and identifying innovative ways of teaching them within the existing content". You can read about this work and the launch event in this edition of the Spark.

An emerging technology that impinges on many of these global issues is biofuels. Until recently they were promoted by many as a way to reduce greenhouse gas emissions and increase energy security through providing an alternative to fossil fuels. But serious concerns have been raised about their impact on biodiversity, food security and the livelihoods of the poor. The latest debate between Andrew Boswell of Biofuelwatch and Jodie Keane from the Overseas Development Institute examines these issues and demonstrates to Spark readers where the current debate is.

The last few months have been a very busy period for EAP. We have been working with our partner, the Institution of Engineers Tanzania to take forward our programme on health and safety in the Tanzanian construction industry, we have also held workshops in India on using procurement to achieve social objectives and have been taking forward our work with Arup to develop ASPIRE, a tool for assessing the sustainability and poverty reduction performance of infrastructure projects. You can read the latest news on all these developments and much more inside this edition.

Whilst the 'Global Engineer' report highlights pressing challenges in engineering education, it also draws attention to some very creative initiatives within UK universities. I have met many graduates who were exposed to these programmes and have no doubt that the principle and commitment they demonstrate is closely related to those initiatives and the extra-curricular activities that they became involved in as

a consequence. This is a cause for optimism and points to what could be achieved if all undergraduate engineers were encouraged within the core curricula to think deeply about the social and ethical implications of their work.

Finally, I can report that we have moved to new offices in Holborn. This is part of a new strategic partnership we are developing with the Engineering and Technology Board (of which more below). The move comes after almost 10 years with the Institution of Mechanical Engineers (IMechE) at Birdcage Walk. We owe a debt of gratitude to the IMechE for its tremendous support over many years without which, we may not have survived. We are indebted to Robert Howard-Jones, Mike Etwell, Sir Michael Moore, Ruth Spellman and many others at IMechE who have been and remain, so supportive of our efforts.

Leading companies support EAP

Leading engineering consultancy Gifford has donated £500 in support of EAP's work. Gifford has offices throughout the UK and in a number of international centres including India and Cyprus. We have also received £250 from Jacobs Engineering Group Inc., one of the world's largest and most diverse providers of professional technical services.

UK Anti-Corruption Forum holds international conference

The UK Anti-Corruption Forum held a conference in London in October entitled 'Preventing Corruption in Infrastructure'. Speakers included HRH The Duke of Kent, Chief Executive of Balfour Beatty Ian Tyler and Gu Yue-ren who is Director of the Supervision and Auditing Department of the Beijing 2008 Olympic Organising Committee. The event was held under Chatham House rules so a detailed transcript was not produced, but a summary of the points raised is available at www.anticorruptionforum.org.uk.

Improving transparency in the construction industry

The Department for International Development (DFID) has launched the Construction Sector Transparency Initiative (CoST). It aims to reduce the estimated \$400 billion lost through corruption in the industry globally each year. DFID recently appointed PricewaterhouseCoopers (PwC) to manage the CoST Secretariat. EAP was one of three organisations associated with PwC's bid, the others being the Institution of Civil Engineers and Tiri. EAP will be providing policy advice to the Secretariat.

over 60 cases from UK universities and include:

- Examples of specialised modules
- Incorporating within design modules
- The role of UK and overseas volunteering
- Business partnerships and placements
- NGO partnerships and placements
- Promoting multi-disciplinary working
- Promoting critical learning and analysis
- Improving professional development and careers guidance
- Incorporating within student research projects

As report author, Ian Neal, explains: "Global forces are transforming engineering. Our report charts the growing importance students, employers and universities place on this global dimension and shows how leading universities are responding to this. We have found some excellent

examples of innovation and good practice and there are grounds for quiet optimism. Certainly these issues are being taken far more seriously now than they were five or ten years ago. But given the scale of the challenge to remould our engineering degrees to reflect the needs of the 21st century, the pace and extent of reform needs to be stepped up and there is no room for complacency."

For more information and for a copy of the publication, visit the EAP website.



Doug Bourn (IoE), Ian Neal (EAP) and Peter O'Neill (DFID)

EAP and Arup collaborate on sustainable infrastructure

EAP and Arup have begun working in partnership to develop ASPIRE, an integrated planning, monitoring and evaluation tool for assessing the sustainability and poverty reduction performance of infrastructure projects. ASPIRE is based on SPeAR, Arup's highly regarded software-based sustainability tool, which has been applied on over 100 projects worldwide.

ASPIRE will facilitate the delivery of sustainable pro-poor infrastructure by providing a platform for: definition of project objectives and performance indicators; risk identification and management; design evaluation; stakeholder consultation, dialogue and brokering; and information gap analysis. The primary user groups for ASPIRE will be project clients and financiers (and the engineering consultants and contractors acting on their behalf) who need to set and subsequently monitor and evaluate sustainability and poverty reduction targets for public and private infrastructure projects. EAP and Arup also are aware that the ASPIRE could be of substantial benefit to project stakeholders who do not currently have access to tools for appraising project

sustainability performance. This may include local government authorities, civil society organisations or project-affected communities. Potential strategies for reaching these target groups will also be pursued as part of the dissemination phase.

The £75,000 funding for the first stage of the project was provided by the Institution of Civil Engineers R&D Enabling Fund and the Arup DTF Research Fund. The initial 12-month consultation and development phase of the project has just been completed. An initial version of the ASPIRE tool is being developed to facilitate testing and should be available in May 2008.

Organisations interested in finding out more about ASPIRE should contact Matthew Lynch at m.lynch@engineersagainstopoverty.org or Sarah Toy at Arup at Sarah.Toy@arup.com.

On top of this collaboration, Arup has also recently become a formal corporate supporter of EAP with a generous donation of £6,000, and members of Arup's Poverty Action Network are raising money for EAP by climbing Mt Kilimanjaro (see page 7).

EAP and ICE hold procurement workshops in Delhi and Kolkata

In November 2007, the focus of the EAP/ICE joint project on procurement (Spark 9 and 10) shifted to India with workshops in Delhi and Kolkata. The workshops were facilitated by ICE local representatives in the two cities and led by Jill Wells of EAP and John Hawkins of ICE.

Construction activity in India is booming and a key issue of concern raised at the workshops was a severe shortage of skilled labour. Labour in Indian construction is provided through middlemen, but the traditional labour suppliers cannot cope with the current level of demand. In this context, Indian migrant workers are returning from the Gulf countries, as wages rise in India.

The Construction Industry Development Council (CIDC) has also begun to play a significant role in training and certification of construction skills. It has recently entered into agreements with 10 state governments to train craftsmen with the support of 29 training institutes. 120,000 workers were trained in 2007, with a target of 500,000 in 2008. Payment is from projects or from individual private firms who agree to employ the workers directly after training. A large proportion of the trainees are women and the CIDC maintain that they are taken on as skilled workers after training and paid the same as the men. If this is indeed the case, it is a big departure from previous practice.

A further issue raised at the workshop in Kolkata is the problem of acquiring land. Participants attributed the problem to the strength of the environmental lobby and the fact that the courts tend to stop all construction activity as soon as there is a complaint from the public or NGOs.

Change of address

EAP has moved to new offices at 2nd Floor, Weston House, 246 High Holborn, London WC1V 7EX.

Improving occupational health and safety in the Tanzanian construction industry

In the low income countries of sub-Saharan Africa the construction industry provides one of the main sources of wage employment. But construction is one of the most dangerous industries in which to work. The little data that exists indicates that the majority of injuries and deaths in the industry are due to falls. Yet adequate scaffolding is virtually non-existent, even on multi-storey projects in major cities, as the accompanying photograph demonstrates.

In addition to the risk of an accident, the health of construction workers is very likely to be damaged by exposure to dust, noise, vibration or chemicals, the effects of which may take many years to develop. Construction workers are also particularly vulnerable to HIV/AIDS due to over-representation of young men in the workforce and long periods spent away from home. Hence, while securing a job in construction offers a potential route out of poverty, subsequent inability to work due to workplace injury, ill health or HIV-related infections may plunge the workers and their families back into destitution, or even threaten their very survival.

New legislation was introduced in Tanzania five years ago designed to strengthen workers' right to a healthy and safe workplace. However, the majority of workers are still unable to take advantage of this, due to a variety of factors. Chief among these are poor enforcement of the regulations, the

casual nature of employment in the industry, weak or non-existent trade union presence and, above all, a complete lack of knowledge of Health and Safety (H&S) issues among the workers themselves and among the other key industry stakeholders - clients, engineers, architects, contractors, subcontractors and project managers.

Last year EAP succeeded in obtaining funding from the Department for International Development, through its Civil Society Challenge Fund, to support a project which aims to change this situation. Building on an ILO pilot, the project is providing intensive training in construction H&S to a core group of men and women drawn from all the major stakeholder organisations. The idea is that this core group of 15 to 20 trained people will then be assisted to train others amongst their peers, co-workers and employees.

Responsibility for implementing the project is shared between EAP and our local partner, the Institution of Engineers Tanzania (IET). An advertisement by IET yielded a response from 88 Tanzanians wishing to become trainers in construction H&S, from which 19 were selected. Among the group are representatives of all of the key organisations involved in construction and in occupational H&S in Tanzania. The group also includes representatives from the main educational institutions responsible for training engineers, construction managers and technicians. Participation in the training programme by key staff members of these institutions is expected to facilitate the main-streaming of H&S training into professional and technical education, as



Workers preparing to plaster a wall at 6th floor level on a large building in Dar es Salaam



Participants and trainers on the EAP/IET 'Training the Trainers' course, February 2008

well as into Continuing Professional Development (CPD) courses. In this way we are building sustainability into the project.

The 19 potential trainers have now passed an international certificate course, the 'Managing Safely' course of the Institute of Occupational Safety and Health. They have also received intensive practical training in 'Teaching and Learning' methods. Currently a small group from among the trainers are preparing materials (in both English and Swahili) for the delivery of training to contractors, workers and consultants. In the next few months the materials will be tested in pilot training sessions, before rolling out a programme of training across the country during the next four years.

EAP forges strategic partnership with the Engineering and Technology Board

EAP entered into a strategic partnership recently with the Engineering and Technology Board (ETB). The ETB is an independent organisation that promotes the vital role of engineers, engineering and technology in society. The two organisations will collaborate where their interests overlap on campaigns, events and policy work. As part of the agreement, the ETB are providing in-kind support in the form of office space and services to EAP at its offices in Holborn.

Forum urges action on engineering education

More has to be done to equip young scientists and engineers with the knowledge needed to achieve global sustainability in the 21st century. This was the message that emerged from a forum entitled 'Global sustainability: the future of engineering education' held recently at Imperial College, London.

A range of speakers, including Ian Pearson MP, Minister for Science and Innovation, Jonathan Porritt of Forum for the Future and Professor Paul Jowitt of Herriot Watt University, warned of the dangers if we fail to respond to global sustainability challenges such as climate change and poverty.

The Forum was organised by Imperial College as part of its 'EnVision 2010' initiative, in association with BP, Arup, Schlumberger, EAP and the Institute of Education. The Forum proceedings are available online at www.imperial.ac.uk/globalsustainabilityproceedings.



E-debate

Biofuels and development

With the UK government currently consulting with business and NGOs on biofuels, a new Biofuels Directive expected by the EC in 2008, and pundits such as Biofuelwatch warning that from April, UK consumers will be forced "to use biofuels that destroy forest, displace people, cause starvation and damage the climate", we invited Andrew Boswell of Biofuelwatch and Jodie Keane from the Overseas Development Institute from the 'Biofuels, agriculture and poverty reduction project' to explore the issues. Can biofuels contribute to sustainable energy supply and poverty reduction? What safeguards need to be in place in order to protect food security, the rights of poor farmers and the environment?

Dear Jodie

I prefer to use the term 'agrofuels' for the biofuels that concern me the most; that is industrial scale crops grown in large monocultures.

The promise being promoted by government and industry is that such agrofuels could provide over 10% of the energy for a projected 2 billion cars within a few decades – my central thesis is that this is a false promise. It is these 'transport agrofuels' that comprise the vast majority of biofuels discussed today. When you 'take the agrofuels out of biofuels', there is very little left.

Of the part that is left, there is small scale bioenergy production in developing countries by communities for their community - for cooking, heating, lighting and electricity. This is potentially a powerful social agent for freeing women from collecting wood biomass and in protecting women's health from wood burning. It could help too as a more reliable energy source for low level power in communities not on the grid and for whom other renewables such as solar or wind may be far too costly.

However, these sorts of community based schemes are at threat from the mass scale agrofuels developments and here I focus on the policy context for this. The EU Commission legislation expected early 2008 will set an extremely aggressive target of 10% agrofuels at the pump across the EU by 2020. This policy is about growing the European economy, and that is predicated on increased energy consumption. Crucially, it does not tackle the energy-addicted policies of Northern industrialised countries. Sadly, it is not really about helping development either.

This policy is promoted by governments and industry under the 'green' veneer of saving carbon emissions, yet it will do no such thing for three primary reasons. First, these agrofuel levels will not keep up with the projected increase demands for liquid fuel in Europe and rather than substitute fossil fuel use, they amount to just an additional burnable fuel source. Second, countries in the South desperate for export revenue will

develop agrofuel industries even if they will cause massive climate and ecological damage from deforestation and peatland destruction. Third, Europe is likely to see millions of hectares more of industrial agriculture for agrofuels using heavy nitrogen fertilizers that release nitrous oxide, a powerful greenhouse gas, that renders the final agrofuel more climate damaging than the fossil fuel it is blended with.

Whilst economic and energy security concerns have stimulated the rush to set targets, the process has been void of any consistent or complete scientific and policy scrutiny despite the broad evidence base emerging of agrofuels causing climate change, deforestation, peatland destruction, loss of habitats/biodiversity, water depletion, soil erosion, greater use of agri-chemicals. Further, agrofuels are causing social and human misery by generating poverty, land grabbing, land conflicts, human rights abuses, labour abuses, starvation and food insecurity.

Beyond ecological issues, these costs of Northern policies to the people in the South are on many levels and that is why there are now at least 5 moratorium calls and 17 declarations from the South against mass scale agrofuels and its policy drivers. These concerns lie behind the UK government's recent decision to review its biofuels policy and its Renewable Transport Fuel Obligation (RTFO) which was due to be introduced in April 2008. If the RTFO is implemented, it will give a green light for the most damaging biofuels, leave consumers with no choice but to be complicit in an unfolding humanitarian



Biofuels continue to provoke controversy

and ecological disaster created by UK and EU biofuels policy and likely destroy the option of small scale bioenergy in many countries too

With best regards Andrew

Dear Andrew

In discussing European Union targets for biofuels for use in transport, it is essential to distinguish between first and second generation biofuels. First generation biofuels are agriculturally produced goods, so we can use the term agrofuels to mean first generation bioethanol and biodiesel. But second generation biofuels are not necessarily agrofuels.

'First generation' biofuels refer to fuels commonly in use around the world today, primarily bioethanol produced from feedstocks, such as sugar cane, maize or grain. 'Second generation' biofuels are currently being produced in research facilities and which are expected to be in widespread use in approximately 10 years time and include bioethanol produced from lignocellulose² (forest goods) and fuel produced from biomass using synthesis gas. This distinction is important since it has implications for your current postulate.

Leading onto the threat from mass scale agrofuels to community based biofuel schemes in developing countries you suggest that 'countries in the South desperate for export revenue will develop agrofuel industries even if they cause massive climate and ecological damage from deforestation and peatland destruction'. This may well be the case, but without crop and country specific evidence of such destruction it is not necessarily directly linked to EC policy on biofuels, and trade policy in particular.

The European Commission in 2007 recognises that the supply of sustainable biofuels to the EU is constrained and that the EU should be ready to examine whether further market access would help the development of the market, i.e. the EC should be less protectionist.

Continued page 6

However, it is noted that:

"At this stage unclear whether any worldwide liberalisation will take place in the near future that would reduce this protection, due to the uncertainties surrounding the World Trade Organisation Doha Round. Free Trade Area negotiations are ongoing in parallel, inter alia with Mercosur, where the question of increased access to our markets for certain competitive ethanol producers is under negotiation. ACP (Africa, Caribbean and Pacific) and least developed countries as well as countries benefiting from the EU's "GSP+" schemes (Generalised system of preferences) have unlimited dutyfree access to the European market already" (European Commission Biofuels Progress Report 2007).

EC policy on biofuels has been to foster domestic industries through the maintenance of external barriers and subsidies for production, both for first generation agrofuels and for second generation biofuels. Unless this policy radically changes, the direct links postulated between EC policy and the destruction of community based small scale bioenergy for developing countries are questionable, without further evidence based research. We have most recently heard from the EU Environment Commissioner Stavros Dimas that the EC is proposing sustainability criteria for biofuels and certification schemes, and we expect more details to be forthcoming this year.

Jodie

Dear Jodie

It is the EU targets that sadly make no distinction between first (1G-BFs) and second generation biofuels (2G-BFs) - no accident when the corporate nexus of agri-business, biotech, chemical, and car industries have consistently lobbied politicians of the false need for a 1G industry to build the infrastructure needed for a possible 2G industry. These 'no accident' targets have produced the desired investment into climate damaging 1G-BF technologies. Although emerging science shows a clear carbon debt to future generations, some of the effects of this misguided policy are now unstoppable.

Incidentally the greenhouse gas (GHG) calculator and sustainability criteria proposed by Commissioner Dimas are totally inadequate to deal with these problems and MPs on the UK Environmental Audit Committee called in late January for a moratorium on EU

and UK targets.

I do not share your optimism of 2G-BFs being 'in widespread use' in ten years time. Neither do the OECD. In their report from last year, "Biofuels: Is the Cure Worse than the Disease?" they make it clear that major technological obstacles remain that may never be economically overcome. Some scientists also warn that 2G-BF GHG and energy balances will be worse than with 1G-BFs, and water resources are likely to be stressed too.

When we burn 400 years worth of biosphere as fossil fuel a year, it is crucial that mass-scale attempts to fuel vehicles from wood are prevented – please see my recent article from Trees magazine.

I recently met a small Cambodian farmer, Mr Hak, who has created an electricity grid serving 80 homes in his community by burning crude Jatropha oil. Jatropha is a native species in Mr Hak's area and he grows just a few hectares of it. This is the type of small scale bioenergy project that can help poor communities - although long term, it is preferable that such projects use technology that do not require land or biomass such as PV.

However, contrast this with concern across Asia and Africa that large Western companies are looking for millions of hectares to grow Jatropha. How many indigenous farmers then could create community based projects like Mr Hak? How many would be deceived instead into signing contracts binding them for years with the exporters – contracts which can look very attractive, but actually give them a bad deal.

EU targets have also thrown governments into confusion about their own agrofuel policy. As Matonga Mundia from Zambia has written:

"There seems to be a lack of clarity over whether investment and targets are aimed at production of biofuels for the Zambian market or for export. It seems that companies such as D1 Oils may be promoting biofuels as a domestic energy strategy, in order to open the door to amenable legislation, while really intending to focus biofuel production on the export market".

After meeting activists from the South, hearing reports from on the ground and reading their declarations, the lofty words from the EU policy documents on markets and trade give me no cause for confidence.

With best regards Andrew

Dear Andrew

It is fair to say that the EC makes no distinction as to first/second generation biofuels and their contribution to meeting renewable energy targets, but the distinction is important when discussing the supply of biofuels from developing countries.

I am not disagreeing with you that targets and subsidies have contributed to building up the necessary industry within the EC to supply both generations of fuels. We are also awaiting further news on the proposed social and environmental criterion of biofuels; particularly relevant for developing country producers and suppliers. We also think that the development objectives of biofuels needs to be made clearer – linking to the sustainability criteria to be finalised by the EC.

I refer you here to our most recent briefing paper written on this topic, 'Biofuels and development: will the EU help or hinder?' The EU's objective of biofuels production are noted as: (1) reducing GHGs; (2) boosting the decarbonisation of transport fuels; (3) diversifying fuel supply sources and developing long-term replacement fuels; and (4) offering new opportunities to diversify income and employment in rural areas. However, we argue that the objectives of (3) and (4) are being favoured over (1) and (2).

I would stress that domestic investment policy is something for host country governments to determine. But certainly, there is a policy-driven element (EU targets and yet to be finalised sustainability criterion) which will impact multinational investment decisions.

Whether or not farmers like Mr Hak will continue to produce for community based organisations or are swayed into producing for export markets depends on the relative incentives and opportunity costs of both. The question is really how will the proposed 'sustainability criterion' of biofuels impact on developing country imports, or not and what reforms (if any) will be made to EU trade policy. If the price of oil continues to rise, it is more likely that farmers like Mr Hak are coerced into producing for the national grid as well as for community based initiatives.

Jodie

Dear Jodie

Sustainability criteria will not help the millions of small farmers and local

communities who could benefit from small scale renewables including some localised biomass. Although one might wish otherwise, these criteria have not been proposed to support development objectives.

Rather they are driven by the interests of industrial agriculture, corporations and northern Governments as the problems of biofuels have risen in the public awareness. These players want biofuels to masquerade as benign, 'clean', 'green' fuels - an obfuscation of reality.

Currently proposed criteria exclude vital factors such as large scale water extraction, soil erosion, impacts of intensive chemical regimes, land conflicts, human rights and labour conditions of workers, food security and sovereignty. There are also numerous 'holes' such as the UK RTFO writing off peat land converted before 2005, despite the fact that converted peat land emits carbon dioxide through slow oxidation for decades. We could save 0.5 Gigatonnes of CO₂ emissions by reflooding peatlands, whereas the UK criteria encourage their continued destruction as biofuel plantations. Similarly, the EU criteria have no GHG targets until 2013 for plantations started before 2008.

Recent science shows direct and indirect land use change creates a massive hit of CO₂ release but is not covered at all. Nor are macro-level impacts such as displacement and increased food prices, for example, diversion of EU oilseed rape into fuel causes palm oil prices to rise in the food oil market which in turn promotes deforestation. Together all these factors make the proposed criteria a 'leaky bucket' that allows the most unsustainable biofuels to enter EU fuel supply chains.

Targets plus 'sustainability' criteria are not a viable way forward, and this is why

there is growing support for the moratorium call started by NGOs.

I have to conclude with reference to the emerging global food crisis that the UK Chief Scientist recently highlighted. Josette Sheeran, head of the UN's World Food Programme (WFP), also reported that record prices for people in poorer countries has caused food riots to break out in Morocco, Yemen, Mexico, Guinea, Mauritania, Senegal and Uzbekistan. Pakistan has reintroduced rationing for the first time in two decades. The UN WFP has a fixed budget and can no longer buy enough food for aid - they have warned that they need \$0.5billion to meet the gap. Yet, high prices are forcing more people into food aid - for example, in Afghanistan, 2.55 million more people need food aid because they can no longer afford wheat, largely due to biofuels.

Given this, the greatest imbecility of those creating policy in the EU is their plans to massively expand the EU ethanol sector. How? By a 12-fold EU increase of wheat based ethanol refineries. Here in the UK our wheat surplus for 2007 was around 0.75 million tonnes. With planned current UK ethanol refinery expansion, we are headed for a 3 million tonnes deficit by 2010 - bad for our food security and the world poor.

With best regards Andrew

Dear Andrew

I'm afraid I do not hold the answers to some of the most pressing issues you have raised. But I do, very much, share your concerns. It is important to try to distinguish or at least delineate some of the key issues from each other. I quote Hilary Benn in that we need more facts, more information and more country specific examples.

This is particularly important for understanding GHG pathways and the impact of increasing biofuel production on world food supplies and food prices. We have to remember that there are several other gorillas within the room with us: the US; China; Brazil; and India. All of which also have a global role to play in increasing demand and reducing supply of global feed stocks. This is on top of adverse weather effects affecting wheat harvests last year, for example and a global rally pushing up commodity prices generally, which of course also includes oil. This is not to downplay the role of EU policy. But we are not the only major players.

The current situation of world food prices and their rapid increase is arguably without unparallel in the developed world since the post-war period. Climate change is a reality. We have serious global issues to contend with: the development of new technologies to smooth the transition to a low carbon economy, included. The scale of the challenge is enormous. We must keep up pressure on politicians to ensure that the right policies are made. We must also contribute to informed research in this cross-cutting area, which ODI intends to do. I can only thank you for your time and hope that you continue your advocacy within this area.

With thanks and best wishes, Jodie

Engineers set to climb Mount Kilimanjaro in support of EAP

To celebrate our 10th anniversary, we are organising an expedition to climb Mount Kilimanjaro in Tanzania, East Africa. The scale of the response has enabled us to organise an exclusive trek between the 3rd and the 13th December, 2008. Besides trekking, participants will have an opportunity to attend an international conference on "The Role of Engineers in Meeting Millennium Development Goals in Lesser Economies" in Arusha, organised by the Institution of Engineers Tanzania.

Located on the North Eastern tip of Tanzania, Mount Kilimanjaro is the world's tallest free-standing mountain. This 10-day trek will guide participants up the tranquil Machame route where they will trek through deep forest, home to spectacular wildlife, stretching up to moorland and onwards towards glaciers before reaching the summit of Uhuru Peak (5,896m). Participants will enjoy the experience of a lifetime whilst supporting our EAP's important work in Africa and Asia.

If you are interested in this or similar events, please contact Jeff Wang on 020 3206 0488 or at h.wang@engineersagainstopoverty.org. You can also log on www.justgiving.com/engineersagainstopoverty to make a donation.

AMEC makes Christmas donation to EAP

AMEC recently contributed £5,000 to EAP as a Christmas donation. Company Secretary Peter Holland explained that AMEC has selected EAP because of its identification with EAP's principles and values. AMEC is a long-standing supporter of EAP. It has made charitable donations, contributed to the governance of the charity through nominating a trustee to our board and collaborated with us on specific projects.

Publication-Briefing Note

EAP recently released its latest publication for the extractive industries - an eight-page briefing note to guide oil, gas and mining (OGM) companies on how they can maximise the contribution of local enterprises to the supply chain of their projects in low income countries.

The document was produced with support from the International Finance Corporation (IFC). It was officially launched at the Global Local Content Summit in Oil & Gas in London, in front of an international audience of senior industry representatives.

The briefing note provides practical guidance on three major opportunity areas to increase local enterprise participation in project supply chains i.e.:

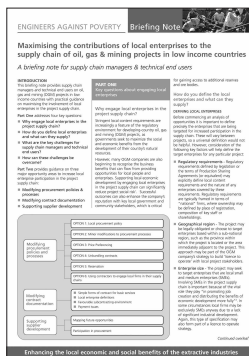
- Modifying procurement policies and processes
- Modifying contract documentation
- Supporting the efficacy of supplier development programs

The briefing note, which contains six case studies from industry, draws on EAP's expertise in contractor management, social development and procurement. In particular it highlights key lessons from EAP's on-going research collaboration with the Institution of Civil Engineers, which is investigating how social objectives can be delivered through procurement processes.

The quantity of investment in OGM projects in developing countries over the next twenty years is likely to be much greater than total international aid flows. If this investment is designed and managed to maximise sustainable economic opportunities for local communities, it can make a major contribution to the achievement of the Millennium Development Goals in many countries.

Involving local businesses and especially small and medium enterprises in the project supply chain is a crucial part of this opportunity because of the vital role these businesses play in promoting job creation and distributing the benefits of economic development more widely.

The briefing note is available at www.engineersagainstopoverty.org



Neil Bruce appointed EAP Trustee



Neil Bruce, Chief Operating Officer of AMEC's Natural Resources Division, recently became a

Trustee of EAP. Neil was appointed to his current position with AMEC in April 2006. Prior to that he was Managing Director of AMEC's Oil & Gas Division where he spearheaded the internationalisation of the Oil & Gas group.

Neil is a Chartered Engineer and has a Masters Degree both from Newcastle University and is a fellow of the Institute of Directors, with over 25 years' experience in the oil and gas industry, a career which has covered a number of senior management roles in Upstream, Midstream and Downstream, in various regions of the world. Formerly at Atlantic Richfield where Neil held various positions including Head of Greenfield and Brownfield Projects.

Neil is a keen supporter of industry development, and is currently a member of the International Oil & Gas Business Advisory Board. During April 2006, he completed the three-year Chairmanship of the Offshore Contractors Association, and was former member of the Step Change in Safety group, CRINE Industry initiatives and the Northern Offshore Federation. Neil is a Patron of CLAN (Cancer Link Aberdeen & North-east) charity and recently received a Burgess of Guild of the City of Aberdeen.

EAP Chairman Douglas Oakervee said, "I am delighted to welcome Neil to EAP. He is an outstanding individual with a wealth of international experience that will be of great benefit to the work of the charity."

Engineering institution appeals raise over £10k

EAP recently held its annual appeal to members of the Institution of Civil Engineers and Institution of Mechanical Engineers. For the first time, we also staged a similar appeal to members of the Institution of Structural Engineers. By the end of February these appeals had jointly generated more than £10,000 and provided a tremendous boost to our work in Africa and Asia. Petter Matthews, the Director of EAP, has written to the Chief Executives of the three Institutions to thank them and their members for their support.

Atkins becomes Corporate Supporter of EAP

Multinational engineering and design consultancy Atkins has become a Corporate Supporter of EAP and has donated £5,000 in support of our work. Atkins is the largest engineering consultancy in the UK, the largest multidisciplinary consultancy in Europe and the world's fifth largest design firm. Ivor Catto, Executive Board Director of Atkins, said that following his recent attendance at an EAP event, he has gained greater understanding of the valuable contribution that EAP makes. EAP Director Petter Matthews welcomed Atkins by saying, "We are very grateful to Atkins for this generous donation and we will certainly benefit through our association with this prestigious company".

If you would like to sponsor a future edition of *the Spark* contact Petter Matthews at p.matthews@engineersagainstopoverty.org

**ENGINEERS
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