Food or Fuel?
Hard choices before the policy makers

The governments world over have been agonising over the sharply rising food prices. Biofuels have become the whipping boy. Lord Stern, author of the UK government's influential review of the economics of climate change and former World Bank chief economist, has recently stated "the use of biofuels was very worrying, particularly the grain-based [fuels] which compete with food."

Rising food prices, and the role of biofuels in making the problem worse will be on the agenda of the Group of Eight summit in Japan in July. As countries stake out their positions, ignorance and politics seem to be bliss.

The Food and Agriculture Organisation (FAO) has warned that wheat production can drop by 10% to 142.6 million tones in 2008, as compared to 2007. The price of corn in the US has doubled in the past one year. This is attributed to the diversion of increasing amounts of corn to the production of green fuel, ethanol. During 2006- 07 America used an estimated 20% of its corn crop to produce five billion gallons of ethanol and figure is projected to double again over the next two years.

Mr Gordon Brown, the British Prime Minister, has called for an examination of the links between biofuels and food prices. Japan is urging the world to rethink the use of biofuels. Japan has pledged $100m (64m, £50m) in emergency food aid over the next three months. But Japanese officials say that, as well as tackling the short term causes, G8 leaders should also address long term causes of food shortages. Tokyo is concerned that the increasing use of biofuels could be one of the factors behind rising crop prices.

Michael Barnier, France's agricultural minister, while defending his own country's support for biofuels, ciricised the US and Brazil for unilaterally stepping up production. The US government has been defending its support for biofuels. The administration acknowledges there is a limit to how much corn can be diverted for use in biofuels, but sees "first generation" fuels such as corn based ethanol as a way to develop the industry.

The United Nations' Food and Agriculture Organisation estimates biofuels have contributed to about 10 per cent of the current food price rise. It argues that the surge of oil prices – through costlier fertiliser and diesel – is having a greater impact on food prices. The FAO considers that biofuels "offer opportunities and risks" as they can contribute to rural income but can also help to drive food prices higher.

Jeff Tschirley, the chairman of the Inter-Departmental Working Group on Bioenergy at FAO in Rome, said: "Biofuel has been made a culprit, but we don't see it as the major [factor] responsible for high food prices." Other organisations such as the International Monetary Fund and International Food Policy Research Institute, the Washington based think-tank, have estimated biofuel's contribution to current higher food prices at 20-30 per cent.

Biofuels have long been considered a "greener" alternative to fossil fuels. The environmental benefits though are not as great as originally expected. "There are good biofuels and bad biofuels," warns Sir David King, former chief scientific adviser to the British government. Some result in savings in greenhouse gases, some do not.

Until recently, biofuels were the sacred cow and enthusiastically embraced by all environmental groups. In 2004, a group including Friends of the Earth, WWF and the Royal Society for the Protection of Birds urged the government to "encourage the use of biofuels". Today, these groups want governments to abandon biofuels. The turnaround reflects concerns over the effect on food prices and the realisation that many biofuels are much less green than they appear. The analysis of food prices shows biofuels such as ethanol are not the only reason, or even the main reason, that food prices are rising. Australia, the world's wheat granary, has been reeling under an unusual drought for the past eight years, the longest spell that the country has faced in the last two centuries. The International Monetary Fund thinks the use of crops such as corn for biofuels account for only about 20 per cent of the rise in prices over the past couple of years; other estimates suggest the effect is even smaller.

Clearly we have moved into an era, in which food prices and fuel prices are linked much more closely than ever before. Fertile land has suddenly become a prime commodity. Farms are competing with oil wells as destination for investment. Hedge funds and investment banks are swapping their Gucci boots with gumboots as they bet on rising food prices by buying farms. The realisation has led some environmental groups including Friends of the Earth, who were among biofuels' biggest cheerleaders only a few years ago – to urge policymakers to stop use of land for biofuels.

Politicians including Mr Gordon Brown, the prime minister of UK,have supported these concerns by calling for a rethink of biofuels policy. Targets for the EU to meet 10 per cent of its fuel demand from biofuels by 2020 and for the US to have 36bn gallons of "renewable" fuels in its consumption by 2022 are at risk.

Putting a sudden brake on the expansion of biofuels is not the right choice. Cutting biofuels production could make food inflation even worse. Higher oil prices will push up the prices of fertiliser and transport, biggest components of agricultural costs and put food beyond the reach of poor.

At $120, the oil price has almost doubled in the past year and is the main culprit for the rising prices. Gasoline prices would have been 15% higher today but for the increase in the production of bio-fuels over the past one year. What we need is an objective evaluation of competing priorities for land use. The fact is we need both fuel and food. Both are complimentary to each other. Food prices will go up if there isn't enough fuel. At the same time we do not want billions of poor to be held to ransom by the automobile using middle classes. Lester Brown, president of the Earth Policy Institute, warns of a coming "epic competition between 800 million people with automobiles and the two billion poorest people" for whom nourishment will be out of reach. He predicts that food shortages and food price inflation will lead to famines, starvation and riots.

Biofuels last year contributed about 1.3 per cent of world oil supplies: a small proportion, but still more than Indonesia, one of the earliest members of Opec, the oil producers' cartel. In the debate on fuel versus food what is not recognised that most of the agricultural land used in US and Brazil for ethanol is meant for corn which is not used as human food but animal feed. According to Bruce Date, the ethanol expert of Michigan State University, "we could feed the country's (America's) population with 25 million acres of farmland, and currently have 500 million acres. Most of our agricultural land is being used to grow animal feed." About 76% of the corn consumed in the US is used as animal feed. America exports 20% of its corn. Two-thirds of these corn exports go to 28 OECD countries, where they feed animals. So the issue is life style changes to reduce consumption of meats.

The current food problem can certainly be eased if US and Europe can open their market to sugar cane based ethanol. As the research scientist and energy expert, Dr Jose Goldemberg, has pointed out, "the potential for producing food in conjunction with sugarcane appears to be larger than expected and should be explored further." Brazil has the potential for huge growth in ethanol production on land used as pastures where the impact of expansion on either food supply or deforestation would be minimum.

There needs to be increase in R & D of renewable energy sources. A study by the Michigan State University shows that ethanol can be produced from the corn plant leaving kernel for human consumption. An enzyme from cow's guts that allows a cow to digest grasses and other plants, can be used to turn other

plant fibres into simple sugars. These simple sugars can be used to produce ethanol to power cars and trucks, said Michigan State University researchers, who conducted the study.

Traditionally, only the kernel of corn plants have been used to make ethanol, but the new discovery will allow the entire corn plant to be used, so more fuel can be produced at far lower cost. The researchers, led by Mariam Sticklen, inserted the enzyme from a bacterium in the cow's gut into a corn plant, triggering the ethanol-making process without having to use extremely expensive synthetic chemicals. "It will save money in ethanol production," Sticklen said. "Without it they can't convert the waste into ethanol without buying enzymes—which is expensive."

There is a huge potential in moving to the second generation biofuels such as cellulosic ethanol. This requires no land. This can be produced from agricultural waste and does not compete with food supplies. It is estimated that India has 600 ton of agricultural waste which has a potential to produce enough cellulosic ethanol to generate 80,000 megawatts of electricity, equivalent to 60% of current production. This not only provides energy security but also helps alleviating poverty by generating 30m jobs in rural areas.

There are no easy solutions to combat climate change. But piece meal approaches do more harm than good as we have seen in our incoherent policies on food and fuel. There can be no question of land that can cultivate crop being used for fuel regardless of its contribution in energy security. But investments in development of technologies such as cellulosic ethanol and solar energy can relieve the problem to a great degree and ultimately provide answer for energy independence. We have to recognise that all our attempts for energy independence are doomed to fail unless we can make changes to our life styles and the economic growth model. We have to minimise the intensity of energy usage. Good news is this can be done without affecting our standard of living. We have to seriously review the intensity of material usage and our transportation requirements. We have to minimise the use of material in our lifestyles and think of ways to avoid transportation. We have to price the natural capital and and use technology to radically increase the productivity of natural resources, opt for organic living , adopt zero waste and use market mechanisms to punish polluters.

The problem lies in the acquisitive character of the current growth model. This not only triggers climate change but also results in Afluenza, an emotional disorder caused by envious greed described by Oliver James in his book by the same name. The question is what can business do to replace this model by one that creates enjoyment through experience without causing environmental damage. A whole lot of companies like Disneyworld and Nintendo are creating enormous wealth by letting customers have fun. Nintendo have shown an increase of 60% in profit while high street sales are going down. Daniel Kahneman, a psychologist at Princeton University (Nobel 2002) reckons people cherish experiences over commodities. People love 'doing' than 'having'. The key question is "Can we turn this economy from an acquisitional to experiential mode?

One of the tragedies of our lives is the tyranny of 'either/or'. We are always told we can either have quality or quantity, either profit or growth, either work or play. Now we are told we can have either food or fuel. The truth is we need both.

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