

Why easing the planet's growing pains will help business to profit

Ground-breaking research for the Observer reveals a dramatic truth: the looming environmental and demographic crisis will send weak firms to the wall. We name those likely to adapt and survive

The Observer GOOD COMPANIES GUIDE The co-operative asset management

A few diehards in the City still think sustainability is just for sandal-wearers. But how we deal with the major ecological and social challenges facing the world will have enormous implications for the global economy and for the prospects of the UK's leading companies. It will also have an impact on the pension savings and the purse strings of virtually every household in Britain. The BP oil spill, which wiped billions of pounds off the value of pension funds, is evidence that no investor, large or small, can afford to ignore the environment, or the issue of how we manage our resources.

The Observer has commissioned in-depth research from The Co-operative Asset Management into how the UK's leading companies might be affected by five key sustainability issues: resource depletion, climate change, pollution, demographics and resource distribution. Its analysis suggests that 56%, or more than half of the FTSE 350 by weight, will suffer negative financial effects from depleting resources, climate change and pollution. Only 10% stand to gain by providing solutions.

This is a warning of testing times ahead for both business and society. It also presents a major challenge for the pensions industry, which needs to ensure its investments will be able to provide people with retirement incomes.

ECOLOGICAL

Business should care about ecological sustainability because of the increasing scientific evidence that human society is overshooting its limits. Sources of food, energy and water are being exploited at rates that cannot be sustained for long, and many pollution sinks are overfilled. This is likely to jeopardise economic activity and growth, and leaves us at risk of a sharp contraction.

Both climate change and oil production are inextricably linked to food, energy and water systems. Oil depletion, for example, would have significant effects on food supplies, as many fertilisers, herbicides and pesticides are oil-based. Biofuels often compete with food for land use and oil use drives climate change, which adds pressure to the water, food and living systems.

The critical questions for economic sustainability are, first, whether these factors will come to impose an absolute ceiling on global economic growth and, second, to what extent these limits can be pushed back or overcome. As the government-commissioned Stern report pointed out, our actions now and in the coming decades could create risks of major disruption to the economy and society on a scale similar to the two world wars and the Great Depression.

Large companies recognise that they have a vested interest in this. In 2008, Shell outlined two distinct and plausible scenarios. It describes the bleaker scenario as a "scramble" or a disorderly decline in conventional economic growth as resources are exploited past the point of no return, in an environment where policy becomes dysfunctional and governments become protectionist about their national resources. The alternative, "blueprint" scenario involves a rocky transition to a new economic paradigm that requires a mixture of restrained use of resources, technological revolution and increasingly co-ordinated policy at local, national and global levels.

In June, the Green Investment Bank Commission Report put a price of £550bn on the infrastructure spending needed before 2020 to decarbonise the UK alone.

TOP 10 FOR ECOLOGY

| Company | Score |
|--------------------------|-------|
| Eaga | 5 |
| Hansen Transmissions | 5 |
| Invensys | 5 |
| Atkins (WS) | 4.5 |
| Johnson Matthey | 4.5 |
| FirstGroup | 4 |
| Spirax Sarco Engineering | 4 |
| National Express Group | 4 |
| Severn Trent | 4 |
| Unilever | 4 |

TOP 10 FOR SOCIETY

| Company | Score |
|------------------------|-------|
| Smith & Nephew | 5 |
| Synergy Health | 5 |
| Carnival | 4 |
| Eaga | 4 |
| National Express Group | 4 |
| Pearson | 4 |
| Standard Chartered | 4 |
| Old Mutual | 3.5 |
| Promethean World | 3.5 |
| SSL International* | 3.5 |

*Being taken over by Reckitt Benkiser

If the right policies and investment are put in place this will not only help ensure the future, but provide opportunities for businesses and investors.

Even with such spending, companies – and the rest of us – face huge challenges including peak oil, the point at which production begins an inexorable fall, and the decline in biodiversity.

The numbers of non-human vertebrates have fallen more than 30% between 1970 and 2005: a decline highly detrimental to the functioning of ecosystems on which food supply depends. Many other species are also suffering – the dramatic decline in the bee population, a major pollinator for agriculture, is a key example.

Businesses are likely to be pushed into innovation and behaviour change to optimise resource efficiency and pollute less. That may reduce the constraints on growth and lead to new markets, for instance in clean energy. But there is still a significant risk that global economic activity will slow and turn negative because of ecological limitations. There is also significant potential for resource wars, particularly civil and border conflicts over water and fertile land.

SOCIETY

We all need food, shelter, education and healthcare, along with the ability to make a decent living. A key aspect of sustainability is meeting basic human needs within the planet's means. These concerns are shaping the actions of some of the world's very richest: this month 38 billionaires have joined Warren Buffett and Bill Gates in pledging to give away over half their wealth.

An equally pressing problem is linked to the limited availability of arable land. A shortage of farms for growing crops has led to a land grab across the world as governments and corporations seek to secure food supplies. The issue is explosive, as Madagascar discovered two years ago. A proposed deal in 2008 with Korean car giant Daewoo to lease 1m acres of land to grow corn for Korea resulted in a civil revolt and a coup. Compounding such issues, in many countries where water is in short supply it is used intensively for crops or products which are then exported.

Politics is not the only significant factor. Around the world, natural habitats are being converted to human use at an alarming rate, accelerating climate change, with deforestation at the worst end of spectrum.

Experts suggest that the underlying trend is for commodity prices to rise. How will this affect business? A good rule of thumb is that a bit of inflation is good for industry, while too much destroys demand.

Companies that may benefit from the new challenges are likely to include those that can ensure continuity of supply and have enough pricing power to pass on costs. In general, food producer

building sustainable societies by being responsive to the needs of poor people. The financial crisis has shown that corporate social responsibility and "ethical business" are no longer an add-on activity aimed at "taking off the worst edges" of the free-market system, but critical to a more stable functioning and should therefore be embedded in the way companies work and think. For forward-thinking enterprises, there is frequently a reward to be found in new markets.

In particular, companies need to be wise to the situation of women. More than two-thirds of the billion people living on less than a dollar a day are female. In developing or agricultural economies, women undertake a vast proportion of the work, particularly relating to water and food gathering. Women in traditional societies have a wealth of farming experience and present a major opportunity for efficient husbandry of resources, but only if they are empowered to make decisions.

Similarly, if women are educated, skilled and able to work, research has shown they use their incomes to plough back into their family, creating benefits for societies as a whole by spending on healthcare, education and better food.

FOOD

When the Russian wheat harvest failed this year because of drought, it drove wheat prices up 80%. This echoed a broader surge in food prices in 2008 that caused social unrest in a number of countries. We do not know if climate change caused the drought, but we do know that it will bring increased volatility in future.

In general terms, we are witnessing symptoms of an agricultural system that is reaching crisis point at a time of growing demand from millions of people in Asia whose standard of living is rising. The biggest mining company in the world, BHP Billiton, is bidding for the world's largest listed producer of potash, a fertiliser that will be in much demand as emerging markets show increased appetite for meat and dairy products.

Unpredictable weather and bottlenecks affecting critical resources are enough of a problem, but the agricultural system will have to meet a host of other challenges.

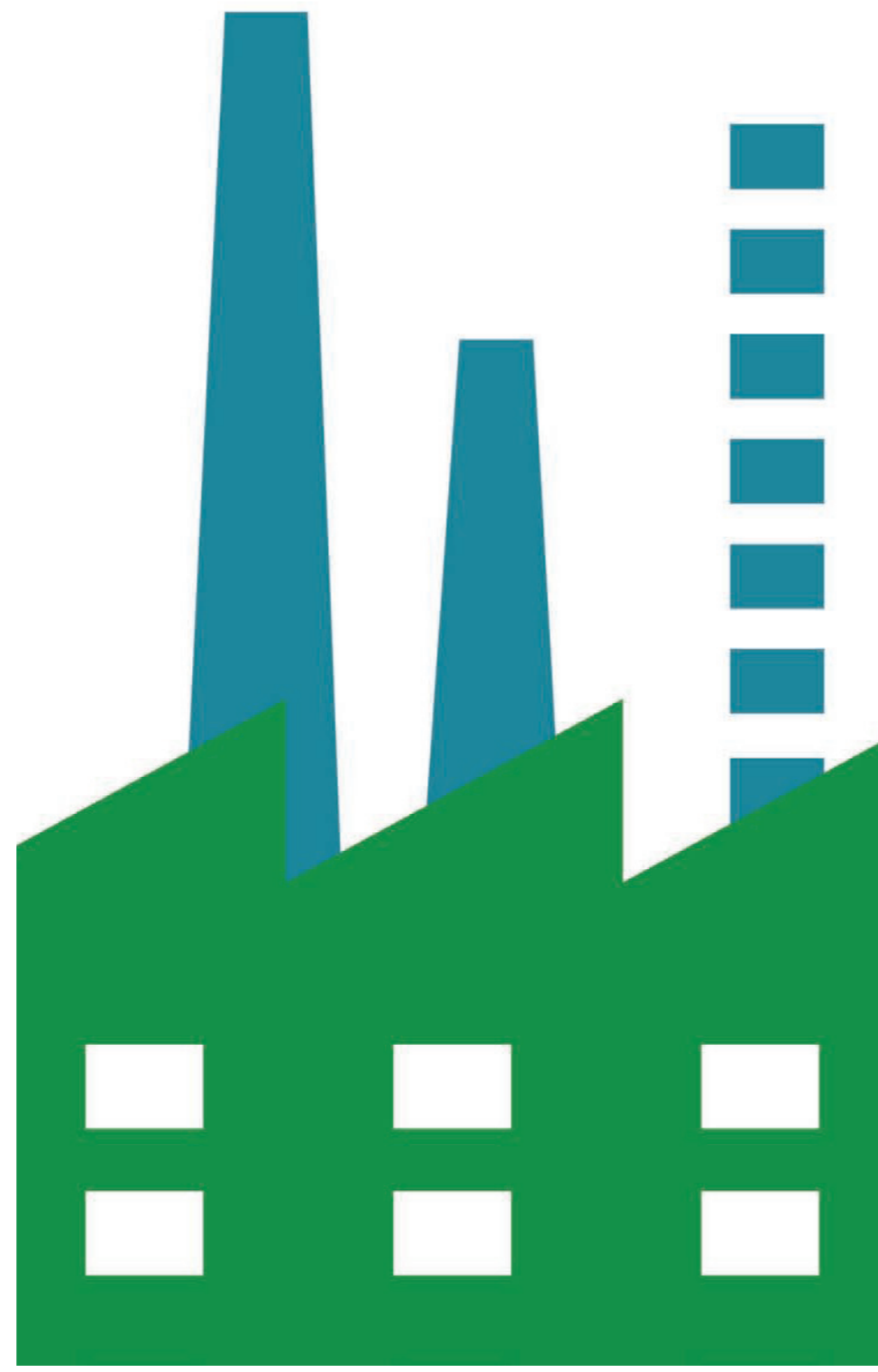
The first challenge comes from within the industry itself. Agriculture has a huge impact on the environment as many fertilisers release nitrous oxide, which has 300 times the global warming potential of carbon dioxide.

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HOW WE ASSESSED THE COMPANIES

There have been many studies that aim to show how businesses affect the environment. Investors, however, usually want to know the opposite: how businesses will be affected, for better or for worse, by developments such as demographic growth, climate change and resource shortages.

Our research for this Good Companies Guide set out to answer these questions and understand what will happen to businesses, rather than what should happen.

For the ecological score, we looked at resource depletion, climate change and pollution, and considered what effect

these were likely to have on companies' competitive position in the long term. For the societal score, we considered demographics, including the age structure of target markets and exposure to the growth in consumption in emerging markets, as well as resource distribution – where companies were providing services that helped ensure a more equal, more stable society.

Scores range between +5 and -5 according to whether a business is helped or hindered by ecological sustainability factors. Where a company is not

materially affected either way, we have not recorded a score.

We appreciate that this list is not exhaustive and also that there may be disagreement over many of the views expressed. Also, while it may be of increasing importance, sustainability is only one factor in the performance of a business and its share price.

Finally, this is emphatically not intended as an index of responsible or ethical companies, but one view of which ones will be the winners and losers as they face the challenge of sustainability.

and retailers are likely to reap dividends from price inflation, apart from vendors of animal products, where customers are likely to be put off by sharp price rises. Tobacco and beverage companies appear to be beneficiaries: high margins indicate they have few problems in passing on cost increases.

Without action to create more sustainable societies, economic activity will be threatened by wars, political coups, terrorism and mass migration, while the shadow of resource constraints looms large. But if more people are pulled out of poverty, societies are likely to be more stable and new consumer markets will open up to companies prepared to serve them.

WATER

It is estimated that feeding a world population estimated to climb to 9 billion by 2050 will require twice as much water for agriculture compared with today.

Only 2.5% of the world's water resources are fresh, of which two thirds is frozen; oil is not the only resource we should worry about running out of. The market for water-related products and services today is put at over \$480bn and set to increase rapidly.

Opportunities for water companies are limitless. Enterprising companies can concentrate on finding new reservoirs, updating infrastructure, fixing leaks, installing water meters to encourage customers to use less, and exploring desalination technology, though the latter is energy-intensive. But compa-

nies in general have a role to play: beverage companies, for example, are among the leaders when it comes to water management. Brewer SAB Miller has invested significant management time in understanding water-supply challenges and their related business implications. It has formed partnerships with public and non-governmental organisations, having acknowledged that water is too complex an issue for any one company or stakeholder to tackle on its own.

For nuclear energy companies, challenges lie ahead. Nuclear power has been billed as a cleaner option than coal, but nuclear power plants use up to 83% more water per megawatt. The blueprint for meeting future energy demands tend to concentrate on CO₂ emissions, while largely overlooking water considerations. Clearly, there is much work to be done.

What about the implications of water for the digital industry? How many people know that a data centre operating chillers and cooling towers can consume 18,000 gallons of water daily to dissipate the heat generated by the IT equipment? The water footprint of the internet and e-commerce is huge and growing fast. Few companies will remain unaffected by the need to manage water resources more efficiently.

THE CHALLENGE

Benjamin McCarron, analyst at The Co-operative Asset Management, says: "When the recession fades, governments and companies will have to

Winners and losers in a changing environment

SECTORS

Here, analysts at The Co-operative Asset Management look at how some broad industry groups in the FTSE 350 and the companies within them might be affected by sustainability issues. These are not intended as share tips; many other factors may influence returns. A number of the companies highlighted would be ruled out by some socially responsible investors on ethical grounds, for example arms manufacturers and tobacco groups.

John Reizenstein, chair of CAM, says: "This study is different in setting aside the usual ethical question of 'who are the best corporate citizens?'. Instead, it looks at the long-term trends in the environment and society and offers a view on which companies will have a sustainable business model in a world tested by pollution, resource depletion and demographic change."

Raw materials, mining and oil

Companies in mineral and fossil fuel extraction clearly have poor dynamics from a sustainability perspective – they are running down their assets and often face severe pollution issues.

However, the big question in this sector, and for the broader economy, is what will happen to oil companies as the world moves through the peak in conventional production. The costs of oil extraction are rising sharply. This financing burden is likely to crowd out other sectors and the economy may reach a point where it simply cannot provide the capital that oil extraction requires. Shell already has to borrow to pay its dividend and BP's is on hold precisely because of sustainability factors – not good news for pension funds.

Elsewhere there are more hopeful stories. Some minerals, particularly platinum, have a significant use in solving environmental challenges, which favours Lonmin and Anglo Platinum.

Gas generates far more energy than coal or oil for a given amount of CO₂ and it may therefore become a transition fuel – good news for BG Group.

Mineral resource companies will benefit from demand from emerging markets, but many operate in territories where there is unrest or where they cause pollution problems. Companies with a poor record stand to be punished: Vedanta, with its attempts to mine bauxite from a hill in Orissa that belongs to the Dongria Kondh tribe, has attracted international condemnation and successful legal challenges.

Apart from coal-fired power generators, utility companies tend to come out favourably in sustainability analyses. Water companies such as United Utilities, Severn Trent and Pennon also perform a critical social role: the requirement to maintain supply to those in relative poverty is built into regulated returns.

Engineering, industrial, electronics, oil services, support services

Grimly, defence contractors such as BAE Systems and Chemring may benefit as competition for scarce resources increases the potential for wars. However, there are a number of businesses in this sector with an explicit environmental focus, including wind turbine manufacturer Hansen Transmissions and Johnson Matthey, with a portfolio of technologies based around catalysts that reduce local pollutants for transport and industrial processes. Environmental consulting businesses RPS Group and WS Atkins are set to benefit. Aggreko's small generators alleviate power-shortage issues and are well suited to developing markets. The prospect of power outages is also a boon for Chloride, which provides uninterruptible supply services. Spectris, Spirax Sarco and Halma all sell products that improve efficiency or assist with eco monitoring.

Few companies specifically address poverty-related markets. However, Smiths Group and Vectrex both have

significant health businesses that target age-related issues.

Property, housebuilding, construction

Property developer St Modwen is notable for its remediation business, which helps clean up polluted land. The ageing population will drive up demand for homes for the elderly, but the failure of the industry to attract a new generation of workers is leading to a skills shortage that will force up costs. Eaga's business is making homes more resource-efficient and it offers a number of services that help the elderly and disadvantaged sections of society. SIG is similarly set to benefit as its insulation products both improve environmental efficiency and support those in fuel poverty.

Food, drinks, tobacco, travel, leisure and pharmaceuticals

Food companies are likely to do well, outside of meat and dairy, where price rises are likely to be stark. Unilever is well positioned because of its strong emerging-market exposure, its significant franchise in sanitation, and as a beneficiary of food-price inflation.

Companies that should benefit from ageing populations in developed markets and the health needs of the world's poor include Smith & Nephew, Synergy and GlaxoSmithKline.

Prospects for travel-related businesses are varied. Public transport companies are favoured, both environmentally and for providing mobility to poorer segments of society. Airlines rank badly, with the sector about to be included under the EU Emissions Trading Scheme – with knock-on effects on hotels and business travel. Cruise operator Carnival may fare better: while cruises have high fuel costs and significant environmental impacts, they appeal to older demographics. While the government is subsidising low-carbon vehicles, it still seems unlikely that a large-scale automotive distributor such as Incheape will make enough per new vehicle to cover the shortfall in big-ticket sales, as demand for larger vehicles such as 4x4s recedes.

Information technology

The information economy, including telecoms, software, hardware and media, has sustainability issues, but offsetting that is the potential to improve sustainability in other sectors – for instance, through providing smart grids and smart metering. The information economy supports more equal resource distribution as it democratises access to information. This dynamic is particularly strong for BT, Vodafone and Cable & Wireless.

Financials

In the main, financial services companies are likely to be negatively affected by resource depletion and climate change. But they may benefit from ageing populations presenting more opportunities to offer services, and some also serve emerging markets. General insurers may face increased weather claims. Prudential, HSBC and Standard Life stand out for their emerging markets exposure. St James's Place may benefit from offering advisory services to those moving toward retirement. Experian has an interesting social dynamic: it helps improve financial literacy alongside its credit-checking services, though detractors point to Big-Brother tendencies.

Outsourcing

The need for greater environmental awareness may favour outsourcing companies. Serco, for example, works with local authorities to reduce their ecological footprints. Intertek may also do well as consumer concern over product safety, quality and ethical sourcing creates demand for testing, inspection, certification and traceability. Skills shortages arising as a result of the ageing population will present opportunities for recruitment companies including SThree, Michael Page and Hays.