the futures company

the coming together of
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DFID Scenarios for Low Income Countries

A report for the Department for International Development

Contents

Introduction

This report provides four scenario narratives, and associated model, on the implications of the global financial crisis for low income countries. The scenarios have been designed to answer the following project question:

"What are the implications of the global financial crisis and its aftermath, regionally and globally, for low income countries (LICs) taking a 5-10 year view? What are the implications for DFID's work?"

The scenarios and modelling were developed by The Futures Company and the Institute for Development Studies, and included extensive consultation with a broad range of stakeholders (see the Appendix for more detail on relevant stakeholders) in the UK, India and Kenya.

A note on scenario planning

Scenarios are a tool for thinking about different possible futures. Using scenarios to explore and rehearse uncertainties may highlight a number of issues or potential options, which require further detailed investigation or analysis.

The underlying principle of scenario planning is that there is not a single predictable or forecastable future, but multiple possible futures, any one of which could emerge if trends, values, and events combine in certain ways. As Jerome Glenn[1] wrote, "The value of futures research is less in forecasting accuracy, than in usefulness in planning and opening minds to consider new possibilities and changing the policy agenda. Its purpose is not to know the future but to help us make better decisions today via its methods which force us to anticipate opportunities and threats and consider how to address them. And strategically it is better to anticipate, rather than just respond to change."

Thus, the aim of futures work is to improve the quality of anticipation by looking at the world in different ways, reducing the number of surprises, and also to increase our ability to influence the future (to the extent that one can) to point it closer to a direction you would wish to travel in.

Scenarios are most commonly used as an analytical tool in a strategic context, for example:

- to broaden and deepen the way organisations sense their external environment, and then to connect this to the way they respond to these stimuli
- to help define future vision and strategic priorities
- to rehearse different policy options to highlight potential strengths and weaknesses, or unintended consequences

1 Jerome Glenn, Director of the Millennium Project, World Federation of UN Associations

- to future proof a decision or potential investment that is "on the table" [2].

Scenarios are often used to provide answers to *unstructured* or *wicked*[3] problems - messy, adaptive problems that are not amenable to conventional approaches. Having been developed, scenarios are typically used to rehearse different policy options available to the organisation, and to highlight their potential strengths, weaknesses and unintended consequences.

Scenarios should…	**Scenarios should not…**
Effective scenarios should provide descriptions of alternative coherent and plausible futures, informed by structured and rigorous analysis of the most significant drivers of change. The narrative should present a logically coherent world that highlight the drivers of change which combine to produce particular outcomes. The scenarios should be internally consistent, so that the relationships between the core drivers of the scenarios should be clear. Crucially, effective scenarios should provide a specific strategy-focused view of the future. Rather than describing a future world in general terms, they should provide specific and strategically relevant information around pertinent areas.	Scenarios should not be considered as predictions of the future. In reality, the future is likely to contain variations of elements found across each of the four narratives. So, the narratives should be considered as a way of illustrating the range of potential future outcomes of combinations of drivers, rather than definitive statements around future developments or variations around a midpoint or base case. Importantly, scenarios should not present a generalised view of feared or desired outcomes. In any future world, there will be a range of 'winners' and 'losers', and it is important that the scenario narratives reflect this. Finally, it is crucial that scenarios are not the product of outside futurists or consultants. In order for scenarios to gain traction within an organisation, it is important that people feel a sense of ownership over the narratives, and have a clear and robust understanding of the process undertaken to develop them.

[2] For a good overarching introduction to scenario planning, see van der Heijden, K (1996) *Scenarios: The art of strategic conversation*. Chichester: John Wiley & Sons

[3] For more detail on wicked problems, see: Chapman, J; Edwards, C and Hampson, S (2009) 'Connecting the Dots'. London: Demos (http://www.demos.co.uk/files/Connecting_the_dots_-_web-2.pdf?1259947418)

A note on the project process

Developing the scenario narratives

The scenarios in this report were developed using a technique called 'Morphological Analysis'. This approach focuses on identifying and analysing the most significant drivers of change within the global financial and political system over the next 8-10 years, and allowed the project team to establish and develop a set of four coherent and internally consistent scenarios, and economic modelling based on analysis of those drivers.

The project has developed over several stages. The first of these involved building an evidence base which provided an overview of relevant social, economic, environmental, technological and other 'drivers of change' likely to influence the development of the global economy to 2020. This longer list of drivers was clustered and tested with a range of stakeholders, and a list of six core uncertainties were identified:

- The shift in global wealth distribution
- Trends in multilateralism
- Polarisation of wealth/ income inequality
- The nature of aid and development funding
- Rising energy prices (over the long – term)
- Information flows

The interrelationships between these drivers were then identified, and the range of outcomes associated with each of the core uncertainties were identified. Variations in these outcomes were then tested, and the plausible combinations of outcomes formed the basis for the scenario narratives. The implications of these plausible combinations of outcomes were then developed further during the modelling phase.

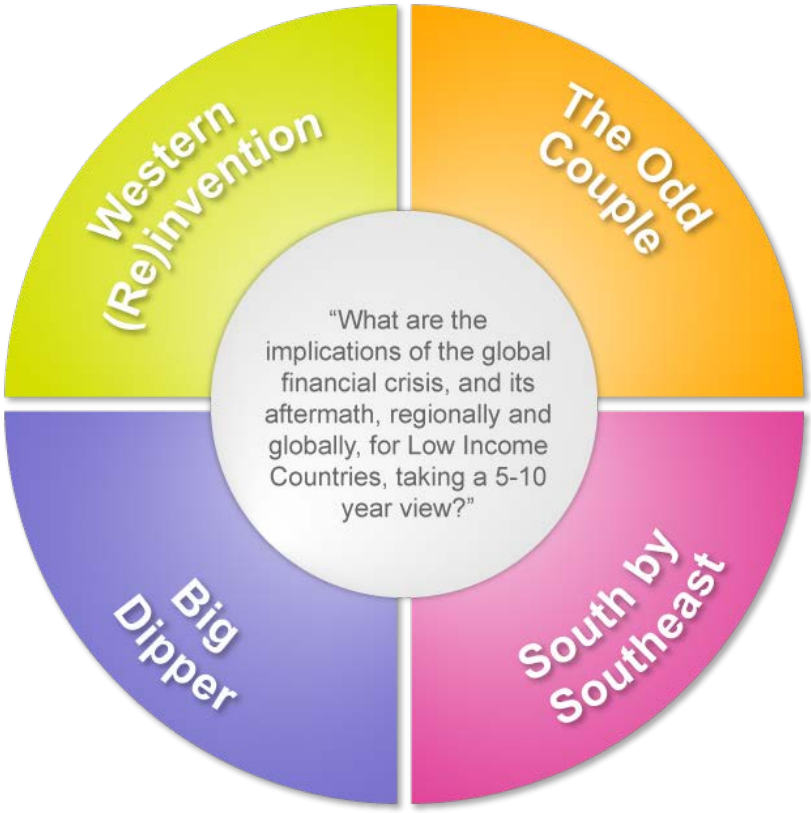
Modelling the scenarios

The implications of each scenario have been investigated with a modelling approach that seeks to demonstrate possible pathways, causal linkages and transmissions between the scenarios developed. This modelling approach also shows economic growth and poverty reduction via key economic variables, with an explicit statement of underlying assumptions. The result is a narrative that outlines the implications of each scenario for a range of LICs, which can help to inform possible policy responses for different types of LICs.

Different scenarios have different implications for fuel and non-fuel prices, and for aid and capital flows. We ask what each scenario means for medium term economic growth and poverty reduction prospects for four LIC country groupings.

For additional information on the scenario development methodology, please see the Appendix.

The scenario headings



Additional work in India and Kenya

The global economic and social scenarios were tested with a range of stakeholders in both Delhi and Nairobi (please see the Appendix for a full list of workshop participants). These sessions were designed to provide an additional review of the global scenario narratives, and to enable participants to consider more specific, country-level implications of the scenarios for India and Kenya.

India and Kenya were chosen since their economic profiles are considerably different, and as such they were intended to pull apart different sets of implications emerging from different scenarios.

- Kenya is a net fuel importer and commodity (>50% export earnings) dependent
- India is also a net fuel importer, but with neither aid or non-fuel commodity export dependency.

A note on the specific country-level implications for India and Kenya is included at the end of each of the scenario narratives.

The structure of this report

This report contains:

- The economic scenarios in 2020 – the fundamentals of the global economy and how this will actually affect the global political economy.

- Associated modelling work, on how they will affect growth rates and ultimately poverty to our 30 PSA countries, including some lessons from country workshops in India and Kenya.
- Observations on the scenarios/modelling on DFID policies.

South by Southeast

Outline narrative

Stagnating West, Resurgent East

The recession of 2008-10 proves a significant event in driving the financial rebalancing away from Western powers towards the East. Hampered by billions of dollars of bad loans, failure to significantly reform the banking system and huge pension deficits, Western economies continue to stagnate. Even following the 'official' end of the recession growth remained slow, and significant stimulus expenditure ultimately failed to revitalise industrial sectors in developed countries. The West appeared to be slipping into a Japan-style 'lost decade' of ongoing low interest rates and low levels of growth.

In contrast, many developing countries handled the fallout of the financial crisis with greater success. Cash-rich China increased the level of domestic investments, leveraging their significant foreign exchange reserves to buy foreign assets, provide direct financial assistance and making long term deals with resource rich countries (many in Africa) lacking liquidity. This move proved adroit given the sharp increase in the price of oil and energy prices, driven largely by increasing demand from emerging economies and also by the failure of energy technologies to deliver predicted efficiency gains.

Moreover, the burgeoning middle classes in China, India and South America proved able to maintain domestic levels of demand, promoting continued rapid economic growth in these areas. Their growing influence is economic, as well as cultural. Cricket's IPL, Bollywood films, tai chi and Chinese food all challenge the hegemony of Hollywood, burgers and the Premier League.

Mini-Lateralism

Though there were calls for a 'New Bretton Woods' to better regulate the global economy, policymakers failed to agree on a set of globally transparent and effective rules to apply to a world of differing capitalisms and levels of financial and institutional development.

The result was that the idea of a single 'international community' comprised of nation states is no longer a reality. Rather, a series of *de facto* trading blocs emerged. China has liberalised its economy by opening up to controlled forms of investment from 'partner states' such as Singapore, Malaysia and South Korea, and signed a host of financial and trade agreements with much of the rest of Asia, Middle Eastern oil producers and Russia. These agreements were typically legitimated under the rubric of protecting these nations from "destabilising Western speculation", and emphasised many features of what commentators called the 'Chinese model' of development, with tighter capital controls and greater state intervention across the economic cycle. Calls for greater democratic accountability in many countries are left unanswered.

Meanwhile in developed markets ongoing economic stagnation led to a resurgence of nationalism, and growing calls for economic protectionism: ‘Buy Local’ campaigns (many endorsed by local politicians) grow in popularity in Europe and the US. Politicians and pundits watched their relative economic decline, ‘hollowing out’ of the industrial base, and the growth of China’s economic sphere of influence with a growing sense of alarm. One response was much closer ties between the EU and NAFTA trading blocs.

LICs lacking in significant natural resources frequently find themselves left out of major trading blocs in this scenario. Though the African Union encouraged the development of a regional trading bloc across the continent, in reality this attempt was only partially successful, since many of the resource-rich African countries tended to focus their diplomatic energies and calls for FDI from one or other of the regional trading blocs.

Power is more dispersed in this scenario. Though the United States remains the single most powerful actor, its relative strength is in decline and US leverage is more constrained. Without any significant central coordination, regulation tends to be led at a regional level and varies significantly between economic jurisdictions. Capital and goods flow between the blocs is impeded, and financial service firms have to frequently compete as regional entities with separate balance sheets. There is little co-ordination between the different trading blocs, and the Bretton Woods institutions (World Bank, IMF) are increasingly marginalised.

A piecemeal approach to climate change

Globally, there is no overarching ‘deal’ to significantly reduce carbon emissions. Instead, the approach to emission reductions is piecemeal, and often dealt with at a regional level. There is little coordination in terms of emission cuts between the major trading blocs, and pledged reductions are typically non-binding in nature. LICs are generally excluded from any requirement to reduce CO2 emissions until an emission threshold is reached.

Restrictive communications

Communications and connectivity are more controlled and monitored by governments than they were in the 2000s - a trend which has been increasingly stealthy as data surveillance techniques have become more sophisticated. One result is to reduce further political activism and the influence of NGOs in both the South and North.

What are the major patterns of production in this world?	Production in this world is much more regional in nature. Global flows of goods are reduced both by the establishment of global trading blocs with limited flows of goods and capital between them, and by sharp increases in energy prices, which in turn increase the cost of shipping.
What are the major patterns of consumption in this world?	Overall consumption falls in this world – there is less international movement of goods, and so what is consumed tends to be more regional in nature.
How do people connect to one another in this world?	Connections intensify within economic blocs within this world, but tend to decrease outside of it. English declines as the global lingua franca – particularly in countries closely tied to China – meaning that websites are typically read in local languages. There is considerably more state monitoring of electronic communications – the internet proved not to be the democratising force that many had hoped for in the 1990s.
What are the institutional structures which support this world?	The Bretton Woods institutions such as the World Bank and IMF have been significantly reduced in influence in this scenario, and tends to be much more regional in nature.
Which groups are marginalised in this world?	Countries outside of the major trading blocs are often marginalized in this world. While some LICs attract significant investment – typically in their resource sectors – many others exist outside of the major trading blocs, with negative economic impacts. Western economic powers stagnate economically – and to a degree socially – in this world.
Which groups are heard?	Energy producers, leading countries in regional trading blocs, regional governance bodies.
Who gains from this world?	Gainers in this world include resource rich countries and developing countries who emerge relatively unscathed from the recession.

Scenario flows

Trends in non-oil commodity prices	Overall direction of the trend: Increasing Non-fuel commodity prices rise due to significant demand from China and India, and greater protectionism may increases prices too.
Trends in size and volume of aid flows	Overall direction of the trend: Declining Aid flows are falling overall due to declining influence of West but offset somewhat as aid flows shift in composition to non-traditional donors.
Trends in size and form of private capital flows	Overall direction of the trend: Mixed Private capital flows are stagnating overall but there is a shift in composition as non-OECD capital flows increase at the same time as a decline/stagnation in OECD capital flows. Regional investment patterns become more pronounced – i.e. Chinese FDI in ASEAN; South Africa in SADC; Russian in the Stans and remittances from EC stagnate or fall but remittances from Middle Income Countries (MICs) to LICS increases and regional migration expands in 'growth centres', (i.e. Beijing) and migration fluctuates with growth in those centres.

Scenario Modelling

South by Southeast is a scenario where:

Fuel prices are rising steadily; non-fuel commodity prices rise due to significant demand from China and India and greater protectionism may increase prices too; **aid flows are falling** overall due to declining influence of the West but offset somewhat by non-traditional donors as aid flows shift in composition to non-traditional donors; **and private capital flows are stagnating overall** but there is a shift in composition as non-OECD capital flows increase at the same time as a decline/stagnation in OECD capital flows. Regional investment patterns become more pronounced – i.e. Chinese FDI in ASEAN; South Africa in SADC; Russian in the Stans and remittances from EC stagnate or fall but remittances from MICs to LICs increase and regional migration expands in 'growth centres', i.e. Beijing and migration fluctuates with growth in those centres.

Table 2. South by Southeast: Variables and trends

Variable	Direction of variable	Trend details
Fuel prices	⬆	Rising steadily
Non-fuel commodity prices	⬆	Higher prices due to robust BRIC growth
Size of aid flows	⬇	Falling because of declining influence of West. Shift to non-traditional donors
Size of private capital flows	⬇	Overall stagnating. Fall in OECD private capital flows offset somewhat by rise in non-OECD private capital flows

What does the South by Southeast scenario mean for different types of countries? Table 3 provides an overview. *For fuel exporters* this is again a **potentially positive** scenario due to rising fuel prices fuelling growth and public spending. Labour demand might benefit in a limited way from fuel-led growth and/or from robust demand from the BRICs. As a result income poverty, education and health indicators have the potential to improve steadily.

- For *fuel importers* things are more mixed. *For fuel importers with neither primary commodity export dependency nor aid dependency* the outlook is **potentially positive** too due to robust growth in the BRICs fueling growth and labour demand. Again, as a result income poverty, education and health indicators have the potential to improve steadily.
- *For fuel importers with commodity dependence but without aid dependency* this is a **potentially positive** scenario because higher non-fuel commodity prices would support growth and healthier public budgets, and thus income poverty reduction and improved education and health indicators.
- *For fuel importers with commodity dependence and aid dependency* this scenario is potentially **more negative** because although rising commodity prices would support growth and public spending, the impact of drastically declining aid budgets could have greatly influenced income poverty, and education and health.

Table 3. South by Southeast: Medium term prospects for each country grouping

	Significant fuel exporter	**Net fuel importer with neither aid or non-fuel commodity export dependency**	**Net fuel importer and commodity dependent**	**Fuel importer and commodity and aid dependent**
	FUEL EXPS	FUEL IMP	FUEL + COM	FUEL IMP + AID + COM
	Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen.	Bangladesh, India, Nepal, Pakistan, and China.	Kenya and Jamaica.	Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana.
MACRO-ECONOMIC PROSPECTS				
Strong economic growth	**GREEN**	**GREEN**	**GREEN**	**ORANGE**
Strong labour demand	**ORANGE**	**GREEN**	**GREEN**	**ORANGE/RED**
Healthy public budgets	**GREEN**	**GREEN**	**GREEN**	**ORANGE/RED**
POVERTY REDUCTION PROSPECTS				
Reduction in the dollar-a-day poverty headcount ratio	**GREEN**	**GREEN**	**GREEN**	**ORANGE**
Improvement in primary school enrollment/completion ratios	**GREEN**	**GREEN**	**GREEN**	**ORANGE/RED**
Improvement in child and infant mortality rates	**GREEN**	**GREEN**	**GREEN**	**ORANGE/RED**

Code: GREEN = positive prospects; ORANGE = mixed prospects; RED = negative prospects.

High level implications for India and Kenya

Indian implications

A **relatively positive scenario** for India, as India's political and cultural influence grows under this scenario – both in South Asia and globally. There is a **significant increase in regional trade and investment**, promoting India's development and reducing poverty. Notably, trade with China increases dramatically under this scenario, and political relations between the two countries are more cordial then they have been for many years. While overall levels of Indian growth are not as fast as boom years – restricted partly by labour and skill shortages – the economy continues to expand at a healthy rate. Overall, **poverty levels in India are in** decline, though the growth elasticity of poverty will rise – the pace of poverty reduction will pick up as more spending goes on social programmes and general economic prosperity increases, so growth is not as fast as boom years but more pro-poor.

The implications for **Bihar** within this scenario are also broadly positive, though underdevelopment and poverty within the region remains rife. Educated Biharis often migrated to other areas of the country, and continued to send back a flow of remittances. Moreover, continued national economic growth resulted in rising incomes in the region, as well as increases in social and development spending.

Kenyan implications

While resource-rich countries in Africa benefitted from India's and China's growing need for primary commodities, Kenya missed out on much of this investment during the 2010s and saw **economic stagnation** under this scenario. **Unemployment and poverty levels remain stubbornly high**, and there has been a general **increase in economic inequality**. As developed economies struggled to maintain significant levels of growth over the decade, levels of remittances and aid from 'traditional' donors have stagnated, and have not been replaced by investment from fast-growing emerging economies. Poverty levels remain **correspondingly high.**

Kenyan manufacturing and exports under this scenario are damaged by the continued flood of **cheap Chinese imports**, reducing their competitiveness. In rural Kenya, there has been some Indian and Chinese investment in agriculture, though hopes that these developing markets would become significant customers for Kenyan coffee, flowers and beans proved ill-founded – **Kenyan exports do not grow significantly**.

There was some **increase in tourists from developing markets**, and Kenya had some success in attracting (relatively) wealthy tourists from India in particular, however, these visitors tended to spend less per head than the declining numbers from developed countries, meaning that the tourism sector in Kenya does not experience significant growth.

Western (Re)invention

Outline narrative

US and EU reinvention

Policies put in place to prevent the worst excesses of the recession prove successful in developed markets, and many return to robust levels of economic growth by 2013 – their economies proving resilient, flexible and adaptive. Financial institutions taken into public ownership during the depth of the financial crisis were quickly returned to the private sector with their capital ratios strengthened and investment banking and securities operations broadly intact. The US dollar and the Euro have fallen against a basket of international currencies - increasing the competitiveness of exports - and US bond yields remain low and stable. Equity, oil, and commodity prices have risen - creating challenges for exporters such as China - while stock, bond and currency prices in emerging markets have increased by even greater proportions.

The push for renewable energy in the EU and US slowly reduced their demand for fossil fuels, reducing trade surpluses with Russia and Middle Eastern countries. Moreover, the greater focus on developing a more sustainable national infrastructure provided a further economic stimulus in developed economies shifting from the consumption-led growth of the 1990s to investment-led growth.

The EU, meanwhile, reasserted the Lisbon goal of becoming a dynamic and competitive knowledge-based economy by 2020, while the United States, emboldened by the success of its stimulus spending and re-assertive financial sector, appeared ready to continue its leading role in developing and managing global financial architecture.

Challenges in developing countries

One significant outcome is that, while emerging economies continued to grow, the differences in the level of growth was lower than it had been in previous decades. Infrastructure bottlenecks, resource shortages (including water shortages), as well as limits on the productive capacity of the land and increase in the pace of desertification all proved a drag on the pace of development, as did a global carbon trading system which penalise energy-inefficient production. The steady increase in the price of oil finally reduces the comparative advantage of export-orientated economies, as the cost of shipping goods increased with the cost of oil, and there was a parallel decline in levels of FDI in emerging markets.

In China, there is social unrest following the succession of the fifth generation Chinese leaders in 2012. While the immediate causes were clear – a slowing economy and alarm over the effects of environmental damage – the protesters were increasingly middle class, concerned to hold Chinese officials and politicians to account for how they spend their taxes and for their political choices.

A new variant of multilateralism

The speed of contagion of the 2008/9 global financial crisis concentrated the minds of many policymakers on the interconnected nature of many global challenges. One of the most significant impacts of this was a re-assessment of many assumptions around multilateralism. While the view among many experts had been that a multi-polar world would lead to more representative international institutions, in reality the G20 proved too complex a structure for significant breakthroughs – amply illustrated by the grindingly slow progress of the Copenhagen talks. Instead, many policymakers (and particularly those from the developed world) argued that given the scale of the global financial and environmental challenges, effectiveness and efficiency were more important than pure representativeness – and negotiations tended to be involve 'The Quartet' of the EU, US, Japan and China.

One of the most significant impacts of this new multilateralism was a global agreement on a common framework for regulating carbon emissions – including some asset transfer from wealthy to poor countries via a carbon credits system. Centred in London and New York, the trading system had the impact of effectively providing a subsidy to LICs with small carbon emissions.

Green technologies

Both the EU and US poured significant funds into the development of green technologies, with generous subsidies for research and innovation, while the steadily increasing oil price pushed the drive for energy independence up the agenda.

Green technologies have led many commentators to refer to the new world order as 'the hourglass world' – as LICs at the bottom benefitting from asset transfer via carbon credits and the growth of new 'green' manufacture and energy generation, while developed countries at the top maintained their global share of GDP and significant influence over global institutions. It's developing and middle income countries who are squeezed.

Storing up future problems?

Fundamental reform of the banking system remained elusive – leading some commentators to warn of the dangers of a second, more damaging financial crisis in years to come. Concentration in banking was even higher than before the crisis, and attempts at a more coordinated response to risk proved unsuccessful.

Moreover, a new generation of leaders in middle income markets increasingly came to question the failure to fundamentally reform the global financial architecture, and their continued relative lack of influence over major decisions. The Brazilian Premier, an outspoken critic of the new arrangements, commented that the new system represented 'the new face of colonialism'.

In LICs, such concerns are heard less often. Carbon trading has proved a boon and there has been significant asset transfer via carbon credits, contributing to higher levels of economic growth and improved living conditions for many – though the poor don't always benefit from these transfers. Many LICs have high hopes for development strategies around the 'clean' manufacture and energy generation – 'leapfrogging' countries with older, less efficient industrial bases. Finally, one of the

most striking developments has been reverse technology transfer, from South to North, of more versatile low impact technologies – from passive building design to water treatment.

What are the major patterns of production in this world?	Patterns of manufacturing are shifting in this world. While the story for much of the 1990s and 2000s had been around the huge growth of manufacturing in China, the combination of a higher oil price and carbon trading reduced the comparative advantage of countries reliant on export of low value goods. Instead, some production is moved back to developed economies, while LICs are able to profit from the higher market in carbon through 'leapfrog' development.
What are the major patterns of consumption in this world?	One of the major trends in consumption in this world in the increasing move towards more locally produced goods. The cost of transportation – driven both by a rising oil price and the cost of carbon – mean that the comparative advantage of producing goods on one side of the world and transporting them to the other is reduced, and more production is based closer to consumers. This development has provided a relative boost for economies – and particularly Western economies – with large numbers of wealthy consumers, though the net effect is an absolute loss of welfare.
How do people connect to one another in this world?	The global ICT boom has continued – albeit with a greater focus on energy efficiency of servers and less waste in materials. The continuing spread of mobile technology in Africa has transformed information systems (and financial systems) and improved visibility of the poor areas in the North.
What are the institutional structures which support this world?	Institutional structures in this world are remarkably unchanged in this world. The World Bank and IMF continue to have significant Western influence, while there is less influence assigned to middle-income countries. Institutions which were able to act as conduits of carbon trading – and in particular the IMF – gain particularly in influence in this world, while the development of an International Carbon Trading Exchange in London is also important.
Which groups are marginalised in this world?	Middle income and developing countries are particularly marginalised in this world, as Western nations continue to dominate most global institutions. In the longer term, this marginalization leads to significant resentment among the rulers and populations, meaning that the institutional structures in this scenario may not be stable in the longer term.
Which groups are heard?	Many 'traditional' voices continue to be heard in this scenario – the World Bank, IMF and WTO all retain influence in this world. Outcomes for LICs in this scenario are also relatively positive, as they benefit both from the asset transfer afforded by the global carbon trading system, and they benefit from investment in new 'green' technologies.
Who gains from this world?	LICs are one group who gain in this world. Asset transfer via carbon credits, plus significant investment in green technologies provide a boost to economic growth, while the cost of carbon emissions reduce the comparative advantage of other primary manufacturers (such as China). Developed nations also gain in this world, as they manage to maintain their share of GDP and dominance of many international institutions.

Scenario flows

Trends in non-oil commodity prices	Overall direction of the trend: Increasing The return of strong economic growth in the West (c. 3-4%) drives an increase in non-oil commodity prices. One result of this is greater FDI into LICs with natural resources.
Trends in size and volume of aid flows	Overall direction of the trend: Declining Traditional aid flows – especially from Western powers - decline (albeit relatively slowly) as asset transfer through carbon trading comes to be viewed as an appropriate substitute. N.B.: A strong feature in this scenario is that trade and aid flows are increasingly difficult to disaggregate. While traditional flows are in decline, there is a combination of resource transfer to poorer countries via carbon trading and continued FDI (driven primarily by high priced commodities).
Trends in size and form of private capital flows	Overall direction of the trend: Increasing Private capital flow to LICs grows in this world, both as a result of high commodity prices, and asset transfer via carbon trading. In addition, some LICs are able to capitalise on the demand for low carbon technologies, and to 'leapfrog' countries with legacy dirty infrastructure (e.g. via significant investment in solar).

Scenario Modelling

Western Reinvention is a scenario where trade and aid flows are increasingly difficult to disaggregate. While traditional flows are in decline, there is a combination of resource transfer to poorer countries via carbon trading and continued FDI (driven primarily by high priced commodities). Carbon credits tend to displace other flows of aid – meaning that there is an increase in influence for organisations that become involved in brokering those flows or purchasing/selling credits (e.g. a new 'International Centre for Carbon Trading', the EC, African Union), and a decrease for those organisations less involved (e.g. IMF, bi-lateral donors).

The 'Western Reinvention' is a scenario where:

fuel prices are rising steadily; non-fuel commodity prices rise as the return of strong economic growth in the West (c. 3-4%) drives an increase in non-fuel commodity prices; **aid flows rise dramatically** and shift in composition. Traditional aid flows are dwarfed as carbon/climate aid and trading come to be viewed as an appropriate substitute; and **private capital flows increase** - both as a result of high commodity prices, and asset transfer via carbon trading. In addition, some LICs are able to capitalise on the demand for low carbon technologies, and to 'leapfrog' countries with legacy dirty infrastructure (e.g. via significant investment in solar). One result of this is greater FDI into LICs with natural resources.

Table 4. Western Reinvention: Variables and trends

Variable	Direction of variable	Trend details
Fuel prices	⬆	Rising steadily
Non-fuel commodity prices	⬆	Higher prices due to robust global growth
Size of aid flows	⬆	Rising significantly because of western recovery and climate change asset transfers
Size of private capital flows	⬆	Rising due to western recovery

What does the 'Western Reinvention' scenario mean for different types of countries? Table 5 provides a colour-coded quick reference. The table is a sea of green. This scenario is reminiscent of the period between the late 1990s and the 2008 global crisis. The only cloud on the horizon is the speed of fuel price rises.

For fuel exporters this is a potentially **positive scenario** because steadily rising fuel prices support growth and fund healthy public budgets; labour demand is buoyant due to global growth and private capital flows and as a result income poverty, education and health indicators are all likely to improve.

For *fuel importers* things are **generally positive** with a caveat on the speed of fuel price rises.

Table 5. Western Reinvention: Medium term prospects for each country grouping

	Significant fuel exporter	**Net fuel importer with neither aid or non-fuel commodity export dependency**	**Net fuel importer and commodity dependent**	**Fuel importer and commodity and aid dependent**
	FUEL EXPS	FUEL IMP	FUEL + COM	FUEL IMP + AID + COM
	Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen.	Bangladesh, India, Nepal, Pakistan, and China.	Kenya and Jamaica.	Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana.
MACRO-ECONOMIC PROSPECTS				
Strong economic growth	**GREEN**	**GREEN**	**GREEN**	**GREEN**
Strong labour demand	**GREEN**	**GREEN**	**GREEN**	**GREEN**
Healthy public budgets	**GREEN**	**GREEN**	**GREEN**	**GREEN**
POVERTY REDUCTION PROSPECTS				
Reduction in the dollar-a-day poverty headcount ratio	**GREEN**	**GREEN**	**GREEN**	**GREEN**
Improvement in primary school enrolment/completion ratios	**GREEN**	**GREEN**	**GREEN**	**GREEN**
Improvement in child and infant mortality rates	**GREEN**	**GREEN**	**GREEN**	**GREEN**

Code: GREEN = positive prospects; ORANGE = mixed prospects; RED = negative prospects.

For fuel importers with neither primary commodity export dependency nor aid dependency this is largely a potentially **positive scenario** because growth is led by global recovery and private capital flows. Public budgets are healthy as a result and income poverty, education and health all improve as a result.

For fuel importers with commodity dependence but without aid dependency this is also largely a potentially **positive scenario** because non-fuel commodity prices are rising supporting growth, labour demand is buoyant due to global growth and as a result public budgets are healthy and income poverty, education and health all improve gradually.

For fuel importers with commodity dependence and aid dependency this is again largely a potentially **benign scenario** with the same caveat on fuel price trends.

This group of countries benefit hugely from climate aid and trade as well as rising non-fuel commodity prices. Growth is strong as a result, as is labour demand and public budgets are healthy. As a result there is real progress on income poverty, education and health indicators.

High level implications for India and Kenya

Indian Implications

Western Reinvention is a **broadly positive** scenario for India. Levels of economic growth continued to be robust, particularly in the IT and business services sector, where Indian companies continued to leverage their large, educated and English speaking audience to further develop their businesses in the West. Indian manufacturers also proved adroit at taking advantage of the new 'green deal', with a range of Indian-designed low impact electric cars and motorcycles proving particularly popular in the United States.

The story for the poorest in India is more mixed, however. **Regional tensions remain,** particularly with China and Pakistan, resulting in greater pressure on the Indian defence budget at the expense of poverty-relief.

While there was some asset transfer to the poorest as a result of carbon trading, many of the **benefits flowed primarily to white collar workers** (such as carbon traders and system designers) in the urban centres. With the new, urbanised Indian middle classes becoming increasingly wealthy, the level of political focus on the poorest in Indian society was reduced, and the level of 'trickle down' from the middle classes to the poorest was limited. **Levels of inequality therefore rise** under this scenario.

Kenyan implications

Western Reinvention is a **more broadly neutral scenario** for Kenya. Continued growth of Western economies would likely result in **continued flows of aid and trade** from traditional partners. The implications for Kenyan exports are also relatively positive here, as **traditional markets** for tea, coffee and flowers (as well as traditional sources of tourism) experience **some (albeit limited) growth** – though some worry that increasing criticisms of air-freighted foods will prove a challenge for Kenyan farmers in the future. With appropriate policies, Kenya was also successful in developing some **higher value-added agriculture processing** in livestock and leather goods in this scenario. As a small carbon emitter, Kenya could also benefit from asset transfer through carbon trading under this scenario. In time, these flows could come to outweigh conventional aid flows into Kenya – though without reform to Kenyan governance systems, there is a danger that this new capital **won't reach the poorest**.

The Odd Couple

Outline narrative

The rise of 'Chimerica'

The fragile economic relationship between the United States and China, in which Chinese trade and capital surplus support America's continuing debts, remains in this scenario the house of cards the global economy is built on. But the United States is vulnerable in the wake of the global financial crisis, so China takes its opportunity to turn its economic leverage into greater political and diplomatic influence.

Chinese corporations and diplomats are much more active on the world stage – not least in an ongoing search to satisfy their increasing energy and food needs. These moves are not uncontroversial, especially since resource deals are often signed with autocratic or violent states. However, international (and American) reaction to these moves is more muted than it has been in the past: US politicians realise the extent to which the Chinese have continued to underpin their currency, while Chinese policymakers in turn recognise the importance of maintaining the value of the dollar – and hence their reserves.

The big gain for China was in its increasing power and influence over international organisations, gained with American support. In hindsight, the 2016 agreement on a new constitution for the International Monetary Fund (IMF), which provided emerging economies with significantly more power to influence the direction of the Fund (along with the non-too-subtle symbolism of building a new headquarters in Hong Kong), was just the most visible of a growing number of reforms to the international system aimed at rebalancing representativeness towards emerging economies. At the same time, Chinese investment in US corporations continued to grow; the acquisition of one of the big three car-makers in 2015 was seen as a decisive moment.

The reaction to these shifts in developed economies was muted. Staggering under the weight of significant banking losses and refusing to accept that their aggressive reflationary policies and focus on industry-led manufacturing could once again prove counterproductive, their recovery from the recession was slower than many had hoped. Many found it difficult to argue that they continued to deserve additional voting rights. By the end of the decade, even the most hubristic and nationalist of American commentators had to admit that America's period as the sole superpower looked to be over, their freedom of movement increasingly restrained by the closeness of their ties with China.

But closeness with China increased the distance between the United States and Europe, with ever broadening trans-Atlantic splits on a broad range of issues from trade policy, to intellectual property rights, to defence issues, to human rights.

Driven by steadily rising energy costs and slower demand, the level of global trade flows failed to reach the heights of 2005/6, staying consistently around 15-20% below its peak. Under pressure from domestic voters, many politicians in developed countries were tempted to re-introduce old trade barriers – often under the rubric of environmental legislation.

A framework for tackling emissions

2010 saw the successful agreement on a common regulatory framework for significantly cutting carbon emissions by 2050 – the result of huge diplomatic efforts by players from a wide range of countries. Though the deal was seen as a triumph by those who had been party to the tough negotiations preceding it, campaigners and activists were quick to pick up on a number of weaknesses, foremost of these was the fact that neither the US or China were wholly signed up to the common agreement on emissions reductions. Rather, both chose to implement carbon cuts *outside* of the internationally agreed framework.

One unexpected outcome of the partial nature of this agreement was that NGOs – especially in Europe and Latin America – were energised both by the extent of the agreement reached in the months after Copenhagen, and by the fact that the US and China chose to go their own road. Both American and Chinese corporations found themselves boycotted elsewhere in the world, for their sustainability policies or for their poor labour conditions.

For LICs, the picture is mixed. The relative recovery of global prosperity mean that levels of international donations to LICs also recover. China's increasing role in the IMF means a new found pragmatism about approaches to structural change in countries that find themselves in difficulties, while the World Trade Organisation tends to concentrate on more blatant cases of trade dumping. The World Bank finds itself caught between competing models of development, and is all but paralysed as a result. At the same time, because of the extent of the agreement reached on climate change, NGOs are effective in aligning funds from European governments and private foundations with sustainability projects, which have good outcomes for development.

Storing up future trouble?

By 2020, many commentators are predicting future instability. While the partnership of China and the United States has held for a decade, questions are increasingly being asked about the extent to which Chinese creditors are willing (or indeed able) to continue to purchase American debt and, in effect, support the dollar. In China, many say that the country's prominence in important global organisations has been earned by its economic performance, and some say that China needs more concessions from the US for continuing to underwrite its economy. More assertive members of the Politburo are reported to be saying – in a coded way, of course – that there is only a limited future in being America's bagman, or (depending on the translator) its butler.

What are the major patterns of production in this world?	More green technologies produced. More trade within regions than across regions.
What are the major patterns of consumption in this world?	More efficient consumption of all goods and services, with penalties for breaching stipulated standards.
How do people connect to one another in this world?	Using online conferencing facilities mainly, which are a standard feature of any large or small organisation.
What are the institutional structures which support this world?	National governments, regional specialist trade and economic committees, US congressional political system, continuing presence of the International Monetary Fund and climate change management institutions put in place after the Copenhagen Climate Change Summit.
Which groups are marginalised in this world?	The World Bank is particularly marginalised in this world.
Which groups are heard?	China, United States, NGOs.
Who gains from this world?	Regional governance institutions, national governments/states, regional and national NGOs.

Scenario flows

Trends in non-oil commodity prices	Overall direction of the trend: Declining Food, other non-oil commodities fall in price due to reduced volumes of trade.
Trends in size and volume of aid flows	Overall direction of the trend: Decline of traditional aid Aid is tied to trade deals, foreign policy, and technological assistance to go green. Volume of aid is down for LICs without natural resources or carbon quotas to sell.
Trends in size and form of private capital flows	Overall direction of the trend: Declining With overall trade volumes down, capital flows will also be lower; however, increased regionalism also boosts regional investment, which maintains the level of private capital flows *within* regions.

Scenario Modelling

The Odd Couple is a scenario where:

fuel prices rise steadily; non-fuel commodity prices stagnate due to growth and trade volume stagnation and sluggish recovery (with commodity price declines) - perhaps slowed by protectionism; **aid flows decline and change in composition** due to a lack of multilateralism; traditional aid in particular declines but non-traditional aid increases. There are changes in the way aid is measured and defined – aid is more typically tied to trade and investment. However, if climate change aid is a result of a climate agreement this could dwarf other flows and thus reverse the overall trend on aid) and **private capital flows static/declining and changing composition** (as a result of protectionism). If trade volumes fall, capital flows will probably fall too but not necessarily. Increased regional investment could be more significant.

Table 6. ODD COUPLE: Variables and trends

Variable	Direction of variable	Trend details
Fuel prices	⬆	Steadily rising
Non-fuel commodity prices	⬇	Stagnation due to growth and trade volume stagnation and sluggish recovery (with commodity price declines perhaps slowed by protectionism).
Size of aid flows	⬇	Declining due to lack of multilateralism
Size of private capital flows	⬇	Falling as a result of protectionism

What does the Odd Couple scenario mean for different types of countries?
Table 7 summarises the implications of Odd Couple for the different country groupings across macro-economic and poverty reduction indicators using the colour coding as above.

For fuel exporters, such as Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen, this is a world of **good prospects** – good growth prospects because of fuel price rises; labour demand prospects are low though questionable as growth is fuel-led with stagnating commodity prices, aid, and private capital inflows. Public budgets, assuming the fuel revenue is used productively, should be healthy (one might question the food prices may rise due to fuel price rises, which will impact on poverty via households who are net food consumers - the urban poor and the rural poor who have little or no land). These impacts may be mitigated by creating fiscal space for public expenditures, which could also maintain education and health budgets and secure some progress of the education and health MDGs. The key policy issue is whether the fuel revenues are channelled into social spending.

For *fuel importers* things are more mixed.

For fuel importers with neither primary commodity export dependency nor aid dependency, such as Bangladesh, India, Nepal, Pakistan, and China this scenario is potentially **not too bad** because although the fuel price rise slows growth, there may be better prospects for non-commodity exports (manufactures and services) from these countries and other sources of finance; thus growth, labour demand, and public budgets may not bare the impact as much as other groupings. Furthermore, income, education and health poverty may not come under such significant pressure because of this. This, however, depends on the impact of food prices rises on consumption poverty and health.

Table 7. Summary of The Odd Couple and medium term prospects for each country grouping

	Significant fuel exporter	**Net fuel importer with neither aid or non-fuel commodity export dependency**	**Net fuel importer and commodity dependent**	**Fuel importer and commodity and aid dependent**
	FUEL EXPS	FUEL IMP	FUEL + COM	FUEL IMP + AID + COM
	Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen	Bangladesh, India, Nepal, Pakistan, and China	Kenya and Jamaica	Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana
MACRO-ECONOMIC PROSPECTS				
Strong economic growth	**GREEN**	**ORANGE**	**RED**	**RED**
Strong labour demand	**GREEN/ORANGE**	**ORANGE**	**RED**	**RED**
Healthy public budgets	**GREEN/ORANGE**	**ORANGE**	**RED**	**RED**
POVERTY REDUCTION PROSPECTS				
Reduction in the dollar-a-day poverty headcount ratio	**GREEN/ORANGE**	**ORANGE**	**RED**	**RED**
Improvement in primary school enrollment/completion ratios	**GREEN/ORANGE**	**ORANGE**	**RED**	**RED**
Improvement in child and infant mortality rates	**GREEN/ORANGE**	**ORANGE**	**RED**	**RED**

Code: GREEN = positive prospects; ORANGE = mixed prospects; RED = negative prospects.

For *fuel importers with commodity dependence and without aid dependency,* such as Kenya and Jamaica, there is potentially a **double whammy** in fuel and commodity prices so growth, labour demand, public budgets are all likely to stagnate whilst food prices rise. These countries may become aid dependent as a result. Income poverty is hit by lower growth, and education and health are under pressure due to loss of fiscal space.

Finally*, for fuel importers with commodity dependence and aid dependency,* such as Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana, there is potentially a **triple whammy** of fuel

prices rising, commodity prices stagnating and declining aid. Income poverty may be severely impacted by lower growth and place education and health under pressure due to loss of fiscal space.

High level implications for India and Kenya

Indian Implications

A **positive scenario** for India – at least initially. Economic growth in 'The Odd Couple' is relatively strong over the next 3-5 years, as domestic demand and rural development act to sustain India's development. By 2015, however, there are increasing **concerns around fiscal sustainability** – particularly around fears of unsustainable demands on public finances for military spending and energy subsidies.

Political instability within South Asia has a significant impact in this scenario. Competition between India and China for influence in the region rises, while Sri Lanka and Bangladesh are particularly vulnerable to flooding and other effects caused by climate change. Moreover, the rising power of China may embolden Maoists in India, which could increase civil war pressures, and increase defence expenditure driven by increased boarder disputes. Pressure to **increase military spending – at the expense of poverty relief** – is intense.

Overall levels of poverty in this scenario rise, as there is a shift in focus away from poverty reducing social spending, due to increased regional political fragility and demands by export sector for energy subsidies. Consequently there is less fiscal space and political will to tackle inequality. This pattern is repeated within **Bihar**, which sees increasing poverty and inequality as resources are shifted away from poverty reduction.

Kenyan implications

A world in which the United States and China maintain their close economic relationship would have a number of conflicting impacts in Kenya. As the Chinese economies continues to grow (and hunger for natural resources), it is likely that **Chinese investment into resource-rich East African countries will continue to grow**. While Kenya, lacking in significant natural resources, is not a significant recipient of much of this investment, there is some growth in inward investment under this scenario – particularly in the **energy generation sector,** and in **infrastructure more generally**. This has the impact of helping to tackle energy shortages - previously a significant bottleneck for Kenyan development.

Not all inward investment is so positive, however. **Many cities failed to effectively capitalise on the new Chinese money**, with many developments being low grade, not subject to effective planning regulation, and built by Chinese labour, which resulted in a relatively limited skills transfer to Kenyan workers. More generally, Kenyan manufacturing suffers from increased competition from low-cost Chinese producers under this scenario, and **poverty levels are not significantly reduced**.

Big Dipper

Outline narrative

A financially unstable world

Big Dipper **describes a world** in which the globe moves away from the dollar as a reserve currency. After a period of financial instability, the Euro replaces the dollar, and the economic and political instability which this creates rumbles on, becoming the overwhelming feature of this scenario.

The **headlines** for LICs are poor: none of the actors are looking out for the interests of LICs, and the overall level of aid declines. With the decline of multi-lateral organisations and the decline of regional groups, there are no political processes which countries can be 'co-opted' into to support a development agenda.

The **catalyst** is an increase in the level of hostility towards the US among younger Muslims in the Gulf. Faced with greater militancy – and sympathy – Yemen decides to start migrating oil contracts to Euro-pricing as the opportunity arises. Iran starts to follow suit. The sabre-rattling that follows from the United States makes their decision far more visible than it would have otherwise been. Attempts by governments to shore up the dollar's decline are washed away by the wall of speculative money that bets against the dollar, and the currency plummets. Suddenly the US, long used to the domestic financial benefits of being the world's reserve currency, is living on empty.

Shifts in reserve currencies are turbulent affairs. They are protracted and disruptive. One early price of instability is a quick contraction of influence of multilateral institutions, as countries turn to traditional allies and trading partners to help them through the crisis. Bilateral and other local regional arrangements rapidly replace larger scale regional and multilateral arrangements in the face of economic contraction.

Decline in the dollar, rise in the euro

The most immediate casualty is the United States, which suffers heavy exchange rate decline, despite the best efforts of economic allies, especially in Asia, to support it. Many countries which were surprised by the switch from the dollar still have substantial dollar holdings, and have a strategic interest to ensure that it stabilises. American exports are more competitive than ever as a result of the currency decline. And in a world where large countries are now net importers of food, America's grainbelt is a strategic asset. Nonetheless, the shock to America is psychological as well as economic; its politics turns in on itself.

Despite long-standing calls for a new reserve currency based on a basket of global currencies, the speed of the transition left no opportunity for this. The Euro was the only currency with a large enough economic base to take the weight. One of the advantages of the Euro's new-found seigniorage was that it was able to reflate the struggling EU economies. Frankfurt, as a result, has become an increasingly

important financial services centre, and has been bolstered by the decision to move the European Bank of Reconstruction and Development to the city, and into the Eurozone, from London. It is, surely, only a matter of time before the UK decides it needs to join.

One medium term non-economic consequence is the US' withdrawal - for budget reasons - from many of its former military bases, and a general reduction of the capability of NATO. In a world of increasing tensions, skirmishes tend to flare up more quickly and persist for longer. There's recurrent border fighting in the Himalayas, between India and China, partly caused by disputes over the mountains' increasingly important water resources.

International institutions lose influence

International institutions traditionally regarded as sympathetic to the United States have become less influential. The World Bank, marginal at the start of the crisis, is more marginal afterwards. The World Trade Organisation and associated bodies have found their judgements on trade disputes ignored and unenforceable. The International Monetary Fund gained some credibility by issuing Special Drawing Rights (SDRs) to ease the global economy during the transition from the dollar, but is regarded with suspicion. For example, Russia, now a global creditor because of the size of its energy reserves, has not forgiven the Fund for its disastrous policy conditions attached to the loans of the 1990s, while the Middle Eastern states have long been suspicious of its close links to Washington's policy-makers. Its proposed move - Singapore and Abu Dhabi are candidates - in 2022 is seen by some as a last throw of the dice to make the institution more credible. In the Arab world, the question of how an Islamic Monetary Fund might be designed is an active one.

Good international relationships are not helped by the unreliability of electronic communications. In a volatile economic world, volumes of spam, electronic fraud and theft have soared, to the point where it is unsafe to use the internet without encryption. Simpler applications for this are emerging, but the days of firing off a quick email or logging on, unsecured, to a social networking site seem remarkably distant. One of the Asian 'Stan' republics, widely regarded as a centre for electronic crime, found its electronic links to the rest of the world severed, probably by the Russians, in a move that was simultaneously decried and applauded.

In a world where the significant economic players have a strong interest in oil production, environmental issues are less prominent, and harder to articulate since global institutions have become fragmented and increasingly uninfluential. The major factor reducing carbon emissions is simply the lower levels of economic activity.

At the same time, however, the instability of oil prices, in uneven markets, has its own cost, as it makes it difficult for businesses and national finance departments to plan. Renewables start to acquire a 'security premium' against oil, which increases investment in their development. As economic instability continues, governments find themselves squeezed between their poor financial position and increasing vociferous populist domestic pressure to take action to improve economic performance. Some have already ignored the advice of their economists and simply started to print money. Where there is spare capacity, the inflationary risks are not great. And even if there is inflation, well, the winners outnumber the losers...

From the perspective of the LICs, aid flows generally decline, although there are come increases in aid tied to political and diplomatic objectives. Outcomes for LICs without natural resources are poor.

What are the major patterns of production in this world?	Production becomes more local - and there is less of it - as the global economy becomes more fragmented and energy prices become more volatile.
What are the major patterns of consumption in this world?	Consumption, generally, falls. There is less international trade, so consumption tends to be of more regional goods, or of goods produced by traditional trading partners (e.g. Britain buys bananas from the 'old Empire').
How do people connect to one another in this world?	Use of electronic connections declines because of increasing crime and identify theft in the electronic sphere. Providers who can offer secure connections and gateways prosper (e.g. mobile operators) but the cost of such provision is higher than internet based systems, so communications also becomes more expensive as a share of income - also leading to reductions.
What are the institutional structures which support this world?	Institutions generally are in retreat. There are few credible global organisations. Instead this world seems like a return to a form of mercantilism in which governments promote their own commercial interests, backed with judicious application of military power as necessary. The EU benefits in this world because the Euro has become the reserve currency and because it manages to maintain its large internal market.
Which groups are marginalised in this world?	The United States; environmental activists; internationalists.
Which groups are heard?	Energy producers; Muslims; the EU.
Who gains in this world?	Gainers include: the Eurozone countries; economic elites in resource-rich countries; Islamic social movements become more influential; pirates (and mercenaries) become more widespread.

Scenario flows

Trends in non-oil commodity prices	Overall direction of the trend: Declining This is a scenario of decline and instability – with obvious consequences for economic performance and trading relationships (both contract). Therefore the impact on industrial commodities will be that prices fall (due to declining demand); the impact on commodities which represent 'stores of value' (such as gold and diamonds) is that prices are likely to rise – gold especially with instability over the reserve currency. Lower trade is likely to exacerbate food shortages where they have started to exist (food reserves are likely to represent political and diplomatic leverage) and hence prices are likely to be higher.
Trends in size and volume of aid flows	Overall direction of the trend: Declining Increasing bilateralism, likely recession, and increased global mistrust, are likely to mean that multilateral aid flows fall. There may be an increase in bilateral flows, especially where these are linked to diplomatic, strategic or political objectives. It is also likely that there will still be multi-millionaires in this world, although they may be more anxious than at present. Hence we expect aid flows from private foundations, but these will also fall. It may be that there is an increase in regional aid in this world (e.g. resource winners helping neighbours).
Trends in size and form of private capital flows	Overall direction of the trend: Mixed It is unlikely there would be an early rebalancing of global capital reserves, and energy exporters would be the large winners under this scenario – therefore their reserves would be looking for a home, almost certainly in Europe (only location apart from the USA with the scale and robustness). China's investments would depend on how well it had played the dollar decline and the extent to which it was using resources to improve internal infrastructure and demand. The Euro question: will it use new found reserve status to spend without responsibility?

Scenario Modelling

Big Dipper is a scenario of:

Decline and instability – with clear consequences for economic performance and trading relationships.

Fuel prices are **volatile and rising**; **non-fuel commodity prices are falling** due to declining demand and recession. However, the impact on commodities which

represent stores of value (gold, diamonds) usually rise in these periods. Prices for food and water increase as less trade exacerbates food shortages; **aid flows decline** due to recession, and global mistrust increases. There may be an increase in some bilateral flows, especially where these are linked to diplomatic, strategic or political objectives. Aid flows from foundations will also fall. Regional aid may become more important; and **private capital flows decline overall,** particularly from OECD countries due to recession, which might be partially offset by non-OECD flows as China's investments take advantage of non-fuel commodity price trends.

Table 8. BIG DIPPER: Variables and trends

Variable	Direction of variable	Trend details
Fuel prices	⇈	Volatile and rising significantly
Non-fuel commodity prices	⇓	Lower prices due to global recession
Size of aid flows	⇓	Fall due to global recession impacts on aid budgets in traditional and non-traditional donors
Size of private capital flows	⇓	Fall due to global recession and volatility prevents investments.

What does Big Dipper mean for different types of countries? Again, Table 9 provides a colour-coded quick reference.

For *fuel exporters* this is potentially a world of **good prospects** due to rising (albeit volatile) fuel prices. Growth will be fuelled by the fuel price rise (albeit price volatility may lead to stop-start growth); labour demand prospects are more mixed if growth is fuel-led and the prolonged global recession leads to depressed export markets for manufacturing and services. The outlook for public budgets is good but again it could be a volatile picture if fuel prices rise on an erratic trend. The prospects for income poverty reduction are mixed if growth is fuel price-led, but health and education budgets could be expanded as a result of oil revenues.

Table 9. Big Dipper: Medium term prospects for each country grouping

	Significant fuel exporter	**Net fuel importer with neither aid or non-fuel commodity export dependency**	**Net fuel importer and commodity dependent**	**Fuel importer and commodity and aid dependent**
	FUEL EXPS	FUEL IMP	FUEL + COM	FUEL IMP + AID + COM
	Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen	Bangladesh, India, Nepal, Pakistan, and China	Kenya and Jamaica	Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana
MACRO-ECONOMIC PROSPECTS				
Strong economic growth	**GREEN/ORANGE**	**RED**	**RED**	**RED**
Strong labour demand	**GREEN/ORANGE**	**RED**	**RED**	**RED**
Healthy public budgets	**GREEN/ORANGE**	**RED**	**RED**	**RED**
POVERTY REDUCTION PROSPECTS				
Reduction in the dollar-a-day poverty headcount ratio	**GREEN/ORANGE**	**RED**	**RED**	**RED**
Improvement in primary school enrolment/completion ratios	**GREEN/ORANGE**	**RED**	**RED**	**RED**
Improvement in child and infant mortality rates	**GREEN/ORANGE**	**RED**	**RED**	**RED**

Code: GREEN = positive prospects; ORANGE = mixed prospects; RED = negative prospects.

For *fuel importers* things are **much less positive**.

For *fuel importers with neither primary commodity export dependency nor aid dependency* the high fuel prices will dampen growth, which is unlikely to be offset by other export markets due to a global recession so labour demand will also be weak and public budgets under pressure leading to likely potentially **adverse impacts** on income poverty, education and health indicators.

For fuel importers with commodity dependence but without aid dependency things are potentially **worse** due to the stagnation of non-fuel commodity prices as a result of the recession in addition to the fuel price rise. Both will dampen growth; labour demand and depress fiscal space potentially leading to adverse impacts on income poverty, education and health indicators.

For fuel importers with commodity dependence and aid dependency this scenario is potentially even worse than for the grouping above. The triple-shock of fuel price rises; declining non-fuel commodity prices and falling aid budgets overall (even with rises in non-traditional aid) make this scenario **particularly bleak** for this group of countries.

High level implications for India and Kenya

Indian Implications

A **challenging** scenario for many countries, Big Dipper implies **significant disruption for export-oriented economies reliant on Western markets**. India, with less of a focus upon global exports and a high rate of domestic savings, is reasonably insulated from this economic turmoil and over the medium term is successful in promoting an **expansion in domestic consumption** to counteract the collapse of exports to developed markets. This has meant a refocusing of sectors such as IT and business services away from developed international markets, and towards both developing countries, and the Indian domestic market. Some also took the opportunity to **purchase foreign assets relatively cheaply**, and a number of well-known Western technology brands fell into Indian hands. Internationally, in this more multipolar world, India also becomes a **stronger voice in regional and global affairs**.

The economic story is not all positive, however. While absolute poverty in India continues on a downwards trajectory, levels of **relative poverty** (particularly between urban and rural areas) **increase**. With incomes continuing to rise among the educated elites, the call for political reforms required to improve the living conditions in rural areas go unheeded. In **Bihar**, continued political instability leads to non-inclusive economic growth, with many of the poorest continuing to live in poverty.

Kenyan implications

A **negative** scenario for Kenya in many respects: a world with such significant economic and political turbulence would have an adverse impact on the Kenyan economy, political system, stability, and for the living standards of many Kenyans.

It seems likely that financial constraints in this scenario would slow rates of Kenyan economic growth, and result in an **increase in levels of poverty**. In addition, this scenario also contains the possibility of a **reduction in levels of trade, aid and remittances** from traditional large donors such as the United States and UK. There are some opportunities to compensate for this decrease through increased trade with the growing BRIC economies and with local East African markets, though these flows are unlikely to compensate in the medium term. The relative lack of natural resources in Kenya means that they are **unlikely to receive significant inward investment** from resource-hungry emerging economies such as China, while these new relationships are likely to be extractive rather than developing the domestic value chain. There is some evidence that this scenario could see an increase in levels of capital flows (in aid and investment) from China – though it seems likely that these will primarily be focussed on infrastructure investment, rather than health or education expenditure.

A Big Dipper world is likely to see **increased political disruption and even rioting** in both urban and rural Kenya, as rising fuel prices drive inflation in the cost of food, while transporting goods to market becomes more expensive. Such disruption could also feed into a further decline in levels of tourism (and associated foreign exchange) into Kenya.

One positive impact of this scenario could be a reversal of the ‘brain drain’ impacting Kenya, as a declining global economy reduces the flow of educated Kenyans abroad.

Broad scenario implications

The following section presents some high level scenario implications for LICs around economic growth, trade, fragile states, climate change and the shifting dynamic between multilateralism and bilateralism.

Economic growth

Western reinvention	A more balanced global growth path is likely to emerge from this scenario, with safety nets and continued aid flows enable a more equitable redistribution of income to LICs. There are no significant losers under this scenario, relative to today.
The Odd Couple	Countries with few natural resources, and those which are not neighbours of China are most vulnerable under this scenario. Countries reliant on trade with US and EU also suffer.
Big Dipper	Frequent sharp economic shocks adversely impacts all – this scenario represents an increasingly volatile world. Though all countries lose out under this scenario, large fuel or commodity exporters feel the effects less. Aid flows are erratic and tied to trade objectives under this scenario.
South by Southeast	BRIC-led growth benefits regional neighbours under this scenario through aid and job creation. Land-locked SSA countries with little natural resources will tend to be the biggest losers under this scenario.

Challenges ahead:

- Countries reliant on single export and aid flows are in a particularly perilous position under many of these scenarios.
- There is clearly a huge demand for additional jobs in developing markets – however it is not necessarily clear what their comparative advantage is in a more fragmented world
- Increasing oil and energy prices are clearly a huge challenge for many LICs – both in terms of impact on their fiscal position, but also in terms of how higher energy costs impact on the dynamic of trade.

Trade

Western reinvention	A more balanced world under this scenario - Doha negotiations are concluded to the benefit of LICs, and low carbon growth commitment also enables LICs to catch up.

The Odd Couple	There is a rise in protectionism and mini-lateral arrangements under this scenario. Doha negotiations are concluded, but their outcomes watered down and LICs do not significantly benefit.
Big Dipper	Conversion from dollar to other currencies hits LICs adversely under this scenario. Swings in growth can lead to civil unrest and capacity building of state-led delivery.
South by Southeast	Job creation in emerging economies are generated by new global powers, particularly those with natural resources.

Challenges ahead:

- In future, world trade may develop a much more regional structure.
- Non-fuel commodity price fluctuations are likely to be an ongoing challenge for many LICs.

Fragile States

Western reinvention	Global deals improve efficiency and transparency of aid, leading to bigger and balanced ODA levels.
The Odd Couple	FDI continues to rise in resource-rich fragile states as China continues to invest/trade with them. Land-locked countries are most at risk of falling behind.
Big Dipper	Growth rates erratic. Traditional aid flows fluctuates as economic growth volatility persists. LICs extremely vulnerable to global swings in demand.
South by Southeast	Aid coordination becomes increasingly difficult as new donors emerge. State-controlled information flows affect civil society and accountability of governments.

Challenges ahead :

- Fragile states dependent on aid and non-fuel commodity exports are probably be least resilient of countries.

- The global aid architecture will need to account for new types of aid and investment from developing nations (such as China), private companies and foundations.

Climate Change

Western reinvention	A common framework for emissions reductions achieved and asset transfer from rich to poor countries via carbon credits and ring-fenced aid.
The Odd Couple	There is partial agreement in this scenario on a common regulatory framework for emissions.
Big Dipper	Reduction in aid leads to pressures on global funding of low carbon growth in LICs. There is little interest from developed nations in ratifying further commitments.
South by Southeast	There are no further climate change deals at a global level; rather the issue characterised by to piecemeal deals. LICs are excluded from deals until they reach higher income levels.

Challenges ahead:

- In three of the scenarios a common framework for emission reductions is not achieved.

Multilateralism and Bilateralism

Western reinvention	The global recovery further reaffirms the benefits of multilateralism. Developed countries commit to 0.7% target and LICs benefit.
The Odd Couple	World Bank is marginalised by competing development models of aid development. WTO reforms in time and effectively becomes a collection of bilateral trade blocs.
Big Dipper	Besides the IMF, which effectively becomes the lender of last resort as countries make the switch from $ to the €, all other major multilaterals are sidelined.
South by Southeast	IFIs fail to adapt to the changing political economy in time. The shift in economic power consequently marginalises the WB and the WTO.

Challenges ahead:

- If things become so dire, do we restrict bilateral spending only to crisis and humanitarian response and the most basic of services?

Appendix

I) Stakeholder engagement

The project engaged with a wide range of stakeholders through in-country workshops, depth interviews with senior DFID staff, as well as working sessions with Heads of Profession from within DFID.

Workshop Attendees, Delhi:

Ashok Desa, Consultant Editor of The Telegraph, Kokata and columnist for Businessworld. Former Chief Consultant in the Finance Ministry.

Ulrich Bartsch, Senior Macro-Economist for India, World Bank

Rakhi Mehra, Managing Director, Micro Home Solutions – Social Housing Initiative

Arbind Singh, Founder Nidan and Chief Coordinator of National Association of Street Vendors of India (NASVI)

Madhuri Dass, Regional Communications Officer, Asia, Save the Children

Michael Dickerson, Consultant, Indian Council for Research on International Economic Relations

Indira Yadav, CEO Pratham Delhi and Former Director of Education, Municipal Corporation of Delhi

Anoop Kaul, National Head, Financial Inclusion, BASIX

Jonathan Burton, Strategy Director for Asia, Save the Children UK

Santosh Mehrotra, Director, Institute of Applied Manpower Research, India Planning Commission

Sumati Nagrath, Director, Mirabilis Advisory

Sareena Singh, Senior Vice President; Head Domestic Operations, India, ABN-AMRO

Harshit Magon, Consultant, India Planning Commission

Esha Chhabra, Research Associate, NCAER

Ganesh Prasad, ADITHI (Bihar)

Ms Shreya Agarwal, Research Associate, Centre for Civil Society

Atma Shivalanka, Director, Avatar FieldServe Private Limited

Anand Shivalanka, Director, Avatar FieldServe Private Limited

Matthew Morris, Senior Economic Adviser, DFID India

Anand Singh Bhal, Economic Adviser, DFID, India

Shveta Sarin, Mirabilis Advisory Pvt Ltd

Guirane Ndaiye, Economist, Global Development Network

Anupam Khanna,Senior Advisor to the President, Global Development Network

Divya Gupta, Development Consultant and Writer

Workshop Attendees, Nairobi:

Charles Appleton, Partner, KPMG Kenya

Betty Maina, Chief Exec, Kenya Association of Manufactures

Stuart Tibbs, Senior Economist, DfID Kenya

Grace Lubaale Managing Consultant (Planning Consultant). Mpereeza Associates

Albert Padros, Head (Ag) Resource Mobilization Unit, Office of the Executive Director - UNHABITAT

Esther Kimani, Programme Officer, Rich and Poor Project-Regional, Society for International Development (SID)

Sammy Musyoki, Fellow, Institute of Development Studies

Kenyatta Maita, Governance Adviser, Plan International

Stephen Okoth, Monitoring, Evaluation and Research Coordinator, Plan International

Blessings Chinsinga, Chancellor College, Department of Political and Administrative Studies, University of Malawi

Lydia Ndirangu, Analyst, KIPPRA

Gen Argwings-Kodhek, Researcher, Future Agricultures Consortium (FAC)

James Kashangaki, Financial Sector Deepening, Kenya

II) Scenario development methodology

The scenarios were developed using a version of a method known as Field Anomaly Relaxation (FAR), which is based on morphological analysis. This approach aims to create a backdrop of internally consistent futures for policy formation and decision making. Reflecting the breadth of the project question, it allowed a greater level of depth and variety to be incorporated into the scenario narratives than the traditional '2x2' scenario approach, and enabled a closer link to the modelling work. Morphological analysis is a deductive process, in that the scenarios are 'deduced' from an analysis of the drivers of change[4].

Morphology means 'the form and structure of anything'. A core assumption of the methodology is that we live in 'fields' of interactions with other people and events. These fields can include *structural* factors such as political stability, social organisations or economic growth and exchange rates, as well as *individual* variables such as personal interactions and decisions. The fields are also interrelated, in that certain combinations of different fields present a coherent frame for understanding the future, while other combinations lack coherence (for example: a combination of high economic growth with high energy prices and high levels of political instability, for example, would be considered internally inconsistent). Through examination of different combinations of fields, the full Morphological approach explores the range of imaginable and plausible patterns of interaction, eliminating those which do not satisfy an overall assessment of internal coherence. The remaining, internally consistent, patterns are then used as stepping stones to create paths into the future.

The project involved an initial analysis phase during which the project team developed a long list of around 60 key drivers of change[5] identified through a combination of desk research and interviews with development experts. Clusters of these drivers of change formed the 'fields', or sectors of interaction central to the Morphological approach. A full list of the identified drivers is further below.

A number of techniques were used to refine this long list, indentifying core drivers which were significant and had ranging degrees of uncertainty. This stage included an analysis of relationships between the drivers. The techniques included an internal drivers assessment workshop at DfID, the development of an 'impact matrix', and use of the relational Software Decision Explorer. In combination these techniques enable the identification of six 'sectors' or themes of uncertainty, from which the scenarios could be developed.

The six core drivers were:

- Shift in Global Wealth Distribution
- Trends in multilateralism

4 For a more detailed overview of one version of Morphological based scenarios, please see Coyle, G (2000) 'Field Anomaly Relaxation (FAR)', United Nations University Millennium Project

5 'Drivers of change' are forces (which can be social, technological, economic, environmental, or political) which are likely to influence the outcome for the overall system or subject defined by the project question over the specified time period. They may influence it positively or negatively. In addition, a driver of change can be characterised by the way it impedes the rate of change: e.g. "the low rate of investment in new technology". The processes of first scanning for drivers, and then analysing them for importance and degrees of uncertainty, are the platforms on which scenarios work (and futures work more generally) are based.

- Polarisation of Wealth/income inequality
- Nature of aid and development funding
- Rising energy prices (over the long-term)
- Information flows

A range of plausible outcomes or factors associated with these uncertainties over the period covered by the scenarios were then identified, and these uncertainties are then put together in plausible combinations – creating the outline scenario narratives. The table below shows the range of futures associated with each variable:

Sector	**Factor**	**Factor**	**Factor**	**Factor**
Shift in Global Wealth Distribution	Collapse of the US$	Rise in national protectionism	Rapid shift in global wealth from west to east	Rejuvenation of Western economies and slow of global wealth shift
Trends in multilateralism	Multilateralism	Mini-lateralism	Bi-lateralism	
Polarization of Wealth/ income inequality	Continued polarization of wealthy/poor	Stabilization at present levels of inequality	Political action taken to reduce inequality	
Nature of aid and development funding	Reductions in aid expenditure as aid processes lack public accountability	Vertical integration / concentration of aid	Continued fragmentation of aid	
Rising energy prices (over the long - term)	Slow / steady increase in energy price	Sharp rise in energy prices	Greater volatility in energy prices	Stagnation in energy prices
information flows (ICT)	Continued growth in information flows	Greater state control of information flows	Decline / stagnation of penetration of information flows	

Each scenario included, at core, plausible combinations of the ranges of uncertainties outlined above.

Sector	Big Dipper	Western (Re)Invention	South by Southeast	The Odd Couple
Shift in Global Wealth Distribution	Collapse of the US$	Global wealth shift slows	Rapid shift in global wealth from west to east	Rise in national protectionism
Trends in multilateralism	Multilateralism	Western-led Multilateralism	Bi-lateralism	Mini-lateralism
Polarization of Wealth/ income inequality	Continued polarization of wealthy/poor	Stabilization at present levels of inequality	Political action taken to reduce inequality	Stabilization at present levels of inequality
Nature of aid and development funding	Reductions in aid expenditure as aid processes lack public accountability	Asset transfer to poorer countries via carbon trading system	Continued fragmentation of aid	Vertical integration / concentration of aid
Rising energy prices (over the long - term)	Slow / steady increase in energy price	Slow / steady increase in energy prices	Greater volatility in energy prices	Sharp rise in energy prices
information flows	Continued growth in information flows	Continued growth in information flows	Decline / stagnation of penetration of information flows	Greater state control of information flows

There are a number of benefits to using the deductive approach. It is a structured process, with a clear flow from drivers to scenarios construction. It also provides a relatively straightforward way to connect the scenarios to their strategic and policy implications. The factor combinations, initially identified through analysis by The Futures Company and IDS, were tested with DfID staff as part of the scenario development workshop.

III) The modelling approach and assumptions

The implications of each scenario have been investigated with a modeling approach that seeks to demonstrate possible pathways, causal linkages and transmissions between the scenarios developed and economic growth and poverty reduction via key economic variables, with an explicit statement of underlying assumptions. The result is a narrative that outlines the implications of each scenario for a range of LICs and can help inform possible policy responses for different types of LICs.

Different scenarios have different implications for fuel and non-fuel prices, and for aid and capital flows. We ask what each scenario means for medium term economic growth and poverty reduction prospects for four LIC country groupings.

There are four types of country as follows:

Net fuel exporters – Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen (and borderline – Kyrgyz Republic)

Net fuel importers:

- with neither primary commodity export dependency nor aid dependency - Bangladesh, India, Nepal, Pakistan, and China
- with primary commodity dependency but without aid dependency - Kenya and Jamaica; with aid dependency but without primary commodity dependency. No country fits this category - so it is redundant
- with both primary commodity export dependency and aid dependency. There are many PSA countries in this grouping - Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana (and borderline - Kyrgyz Republic).

In the case of countries that are fuel importers and also aid dependent and dependent on non-fuel commodity exports, which is the vast majority of PSA countries in sub-Saharan Africa, as well as Afghanistan and Guyana, rising fuel prices and falling non-fuel commodity prices, aid and private capital flows in the 'Odd Couple' and 'Big Dipper' scenarios produce negative prospects for growth. These translate into negative prospects for poverty reduction. For these countries, the most favourable scenario is the 'Western Reinvention' case due to the rise in non-fuel commodity prices, aid and private capital flow. In the 'South by Southeast' scenario, prospects for these countries are more mixed, rather than negative, because rising non-fuel commodity prices offset falls in aid and private capital flows.

The table below provides a quick-reference, colour-coded guide.

TABLE 1. SUMMARY OF IMPLICATIONS OF FUTURE SCENARIOS ACROSS DFID PSA COUNTRIES

SCENARIOS	ODD COUPLE	BIG DIPPER	WESTERN REINVENTION	SOUTH BY SOUTHEAST
LIKELY TRENDS IN KEY TRANSMISSIONS VARIABLES				
Fuel prices				
Non-fuel commodity prices				
Size of aid flows				
Size of private capital flows				
PROSPECTS FOR ECONOMIC GROWTH				
Fuel exporters: Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen	**GREEN/ ORANGE**	**GREEN/ ORANGE**	**GREEN**	**GREEN**
Fuel importers (non-dependent): Bangladesh, India, Nepal, Pakistan, and China	**ORANGE**	**RED**	**GREEN**	**GREEN**
Fuel importers and non-fuel commodity export dependent: Kenya and Jamaica	**RED**	**RED**	**GREEN**	**GREEN**
Fuel importers and non-fuel commodity export and aid dependent: Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana	**RED**	**RED**	**GREEN**	**ORANGE/ RED**
PROSPECTS FOR POVERTY REDUCTION				
Fuel exporters: Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen	**GREEN/ ORANGE**	**GREEN/ ORANGE**	**GREEN**	**GREEN**
Fuel importers (non-dependent): Bangladesh, India, Nepal, Pakistan, and China	**ORANGE**	**RED**	**GREEN**	**GREEN**
Fuel importers and non-fuel commodity export dependent: Kenya and Jamaica	**RED**	**RED**	**GREEN**	**GREEN**
Fuel importers and non-fuel commodity export and aid dependent: Ethiopia, Ghana, Malawi, Mozambique, Rwanda,	**RED**	**RED**	**GREEN**	**ORANGE/ RED**

Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana				

Code: ↑ *rising* ↓ *stagnating or declining;* GREEN = positive prospects; ORANGE = mixed prospects; RED = negative prospects.

Any categorisation of countries is contentious (see Harris, Moore and Schmidt, 2009 for recent review of 'developing' country classifications). The model is based on typology of LICs. The categories were chosen to reflect any given country's relationship with the rest of the world via the balance of payments and thus the link between the future scenarios or contexts and country's key macro-economic variables by addressing these questions: is the country a net fuel importer or exporter? Is the country dependent on non-fuel primary commodity exports and/or aid?

These questions lead us to develop country groupings based on combinations of net fuel importing countries (Table A1) and fuel exporters and dependency on non-fuel primary commodity exports and aid.[6] We deal with fuel exporters as one grouping (rather than combinations of fuel exporter with aid and non-fuel commodity exporters) because under all scenarios fuel prices are rising, implying fuel revenues will accrue to those countries (the use and distribution of those fuel revenues is then a governance question).

Table A1. Combinations of aid and non-fuel commodity dependent countries

		Is the country non-fuel commodity export dependent?	
		Yes	No
Is the country aid dependent?	Yes		
	No		

The specific quantification of thresholds for these variables are as in Table A2. Of course these are not without contention.[7]

[6] The word 'dependency' is perhaps problematic but it is the used extensively in defining commodity and aid relationships by the UNCTAD, and the OECD DAC.

[7] Take for example, the well-known OECD (2003:111) volume, Harmonising Practices for Effective Aid Delivery, defines, high aid dependency as aid (net ODA) greater than 9% of GNI and low aid dependency is under 3%. The middle group is, apparently, inconclusive in terms of results. UNCTAD (2008: 26) notes on the (mean) average ODA as a % of GNI in all Least Developed Countries as 7.9% of GNI. Maxwell (2006:1) identifies 'the 20% club' and the '0.2% club'. In the former 'aid accounts for around 20% of GDP… [which is]…indicative rather than statistically precise….20% is the average aid/GNP figure for sub-Saharan Africa and 0.2% is the aid/GNP ratio for India' [in 2003 according to UNDP 2005]. The best indicator of aid dependency would be ODA/Final Absorption, (Absorption = Household consumption + Investment spending + government consumption), which shows the share of total spending on final goods and services effectively "financed" by ODA.

Table A2. Definitions used for net fuel exporters, non-fuel commodity dependency, foreign aid dependency.

Indicator	Our definition	Details and data
Net fuel exporter	>20% of exports US$ value	Countries that have more than 20% of export value in fuels There is an IMF WEO category of 'fuel exporters' by the main source of export earnings Data from UNCTAD
Net fuel importer	Positive net fuel trade	Countries who import more fuels than they export Data from UNCTAD
Non-fuel primary commodity dependency	>50% of exports US$ value in three leading commodities	Countries with more than half of all export earnings in 3 commodities Data from UNCTAD
High foreign aid dependency	>9% of GNI	Countries with ODA/GDP greater than 9% Data from World Bank WDI

Sources: OECD (2003) Harmonising Practices for Effective Aid Delivery. OECD: Paris; UNCTAD (2009) Trade and Development Report. UNCTAD: Geneva.

In terms of DFID PSA countries we can then outline the characteristics of different countries as in Table A3 (see annex table for data which includes additional data on private capital flows - FDI and remittances - as it is relevant to the later discussion. We did not include portfolio flows as, only in two PSA countries, South Africa and Indonesia are these significant).

Table A3. Characteristics of DFID PSA countries (by our classifications)

Scenarios for Low Income Countries

	Categories				
	Significant fuel exporter > 20% of export earnings in fuels	Net fuel importer with neither aid or non-fuel commodity export dependency	Net fuel importer and commodity (>50% export earnings) dependent	Net fuel importer and aid dependent (>9% GNI)	Fuel importer and commodity and aid dependent
	FUEL EXP	FUEL IMP	FUEL + COM	FUEL + AID	FUEL + COM + AID
Ethiopia					X
Ghana					X
Kenya			X		
Malawi					X
Mozambique					X
Nigeria	X				
Rwanda					X
Sierra Leone					X
South Africa	X				
Sudan	X				
Tanzania					X
Uganda					X
Zambia					X
Afghanistan					X
Bangladesh		X			
India		X			
Nepal		X			
Pakistan		X			
China		X			
Indonesia	X				
Vietnam	X				
Yemen	X				

Jamaica			X		
Guyana					X

Note: There is insufficient data available for DR Congo, Cambodia and Zimbabwe (see annex II table)

The final result is country groupings as follows (of which one is redundant as no country has those characteristics in the PSA list:

Net fuel exporters – Nigeria, South Africa, Sudan, Indonesia, Vietnam, and Yemen (and borderline – Kyrgyz Republic)

Net fuel importers: with neither primary commodity export dependency nor aid dependency - Bangladesh, India, Nepal, Pakistan, and China; with primary commodity dependency but without aid dependency - Kenya and Jamaica; with aid dependency but without primary commodity dependency. No country fits this category - so it is redundant; with both primary commodity export dependency and aid dependency. There are many PSA countries in this grouping - Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Afghanistan, and Guyana (and borderline - Kyrgyz Republic).

We take these country groupings and consider each future scenario. First, we ask what does each scenario mean at a global level for trends in: fuel prices (explicit in each scenario already); non-fuel primary commodity prices; the size and composition of aid flows; the size and composition of private capital flows (notably foreign direct investment and remittances). Key assumptions are in table A4.

Table A4. Key variables and underlying assumptions as to determinants

Key variables linking scenario to countries	**Key assumptions at to main determinants of trends**
Fuel prices	Explicit in each scenario
Non-fuel commodity prices	Prices are a function of prevailing trends in protectionism which will raise prices; robust global growth which will raise prices; robust growth in the BRICs which will raise prices
Aid flows	Size of flows are a function of a climate regulation agreement which will increase flows; multilateralism which will increase flows; and robust growth in the BRICs which will increase flows (in non-traditional aid)
Private capital flows	Size of private flows are a function of prevailing trends in protectionism which will reduce flows; global growth which will increase flows; robust growth in the BRICs which will increase BRIC outward private capital flows; and OECD growth which will lead to increases in OECD outward capital flows

Finally, for each country grouping in each scenario we make assertions for trends in medium term economic growth prospects (based on those trends in fuel prices, non-fuel commodity prices, aid flows, private capital flows), trends in labour demand (based on fuel prices, non-fuel commodity prices, aid flows, private capital flows) and trends in public budgets (based on fuel prices, non-fuel commodity prices, aid flows - see Table A5).

Table A5. Key variables and underlying assumptions as to determinants

Key variables linking scenario to countries	**Key assumptions at to main determinants of trends**
Medium term economic growth prospects	Rising fuel prices dampen growth prospects for fuel importers and raise growth prospects for fuel exporters; rising commodity prices raise growth prospects in commodity dependent countries; rising aid raises growth prospects in aid dependent countries, and private capital flows raise growth prospects in all countries
Labour demand	Good growth prospects raise labour demand significantly if in non-fuel and non-commodities in particular
Public budget surplus/deficit	Good growth prospects lead to good public budget prospects.

Of course, many of these assumptions may not hold in reality for all sorts of reasons and many are determined by the quality of governance and social and economic policy (take for example, whether oil revenues lead to healthy budgets).

We then aggregate these trends to consider three key poverty indicators taking 3 key MDGs: the dollar-a-day indicator; primary enrolment and child mortality. Although the timeline is 5-10 years, and thus 2015 and beyond we chose the MDGs to make the modelling concrete and also because household income poverty, child education and child mortality are likely to remain key dimensions of poverty reduction post-2015. Income poverty is linked to growth, labour demand and trends in food prices (assuming significant linkage of food to fuel prices). Education and health poverty are linked to growth, and public budgets.

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IV) Data for PSA Countries

Table A5. DFID PSA countries and characteristics (data for 2006)DFID PSA	Major fuel exporters >50% [>5%]	Net fuel importer	Primary commodity dependency >50% [>20%]	Aid dependency > 9% [>3%]	FDI depend-ency >5%	Remitt-ance depend-ency >5%	Fuel as a % export trade	Fuel trade balance as % GDP	Primary commodities as % export trade	Aid as a % GNI	FDI inflows as % GDP	Remittances as a % GDP
DR Congo	[12%]		Y	Y			12.6	0.2	96.0	25.2	2.1	..
Ethiopia	NA	Y	Y	Y			n/a	-6.8	93.9	12.9	2.4	1.1
Ghana		Y	Y	Y			0.4	-5.6	79.2	9.3	3.4	0.8
Kenya	[7%]	Y	Y	[4%]		Y	7.3	-6.5	64.6	4.1	0.2	5.0
Malawi		Y	Y	Y			0.1	-4.3	86.1	21.4	0.9	0.0
Mozambique	[15%]	Y	Y	Y			14.7	-2.0	93.9	26.2	2.2	1.2
Nigeria	Y		Y	[8%]			95.0	28.5	98.6	8.4	3.7	2.3

Rwanda		Y	Y	Y			0.7	-3.2	93.1	20.5	0.4	0.7
Sierra Leone		Y	Y	Y			0.1	-3.3	90.5	26.3	4.1	2.3

South Africa	Y	Y	Y				95.0	-3.0	52.5	0.3	0.0	0.2
Sudan	Y		Y	[6%]	Y		87.5	12.0	98.4	6.1	9.7	3.2
Tanzania		Y	Y	Y			0.1	-7.6	90.2	12.9	3.3	0.1
Uganda	[4%]	Y	Y	Y		Y	4.4	-5.2	81.5	16.8	4.1	7.0
Zambia		Y	Y	Y	Y		0.6	-4.1	90.9	14.4	5.3	0.5
Zimbabwe		NA	Y	..			1.1	..	70.9	..	..	..
Afghanistan		Y	Y	Y			0.1	-5.7	68.6	31.9	..	..
Bangladesh		Y				Y	0.4	-3.1	7.2	1.9	1.1	8.8
India	[15%]	Y	[42%]				15.0	-4.7	42.5	0.2	1.9	2.8
Nepal		Y	[27%]	[6%]		Y	0.0	-6.8	27.4	5.7	-0.1	16.3
Pakistan	[5%]	Y	[19%]				5.0	-5.4	18.6	1.7	3.4	4.0
Cambodia	NA	Y		[8%]	Y		n/a	-3.4	9.9	7.6	6.7	4.1
China		Y					1.8	-2.7	7.5	0.0	2.9	0.9
Indonesia	[27%]		Y				27.4	2.4	55.9	0.4	1.5	1.6
Vietnam	[24%]		[49%]	[3%]			24.4	4.9	48.5	3.1	3.8	7.9
Yemen	Y		Y		Y		91.8	24.5	96.5	1.6	5.9	6.7
Kyrgyz Republic	[19%]	Y	Y	Y	Y		18.7	-12.5	67.0	11.0	6.5	17.1
Jamaica	[13%]	Y	Y		Y		13.5	-9.6	93.4	0.4	8.8	19.4
Guyana		Y	Y	Y	Y		0.0	-29.8	88.9	20.0	11.3	24.0

Sources: UNCTAD on-line database; World Bank Global Development Finance and World Development Indicators

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V) Core drivers of change

The following list outlines the titles of the 60 core drivers of change initially identified as part of the initial project research process. Structured analysis of these drivers was used to develop the final scenario narratives.

A separate document is available with a more detailed list of driver descriptions. Each of the drivers are supported by a range of data points.

Social drivers

1. Increasing urbanisation
2. Continuing prevalence of HIV/AIDs
3. Increasing global population, particularly in developing regions
4. Ageing in north, younger in south
5. Increasing migration, within and between countries
6. Increasing importance of religious and ethnic identity
7. Increasing fear of pandemics
8. The increasing significance of global organised crime
9. Increasing polarization of wealth/ income inequality
10. Increasing world food insecurity
11. Decline in education participation rates, as result of increased poverty
12. Greater distrust of Anglo-Saxon models of capitalism
13. Greater anti-Western sentiment
14. Declining international tourism flows
15. Greater interest in and legitimacy of “complexity science”
16. Increasing use of ‘soft power’ in foreign policy
17. Higher rates of female participation in education (over long-term)
18. Greater risk of civil unrest in low-income countries
19. Broader definitions and measures of wellbeing, poverty and development
20. Greater awareness of systemic risk

Technology Drivers

21. Falling costs of processing power/memory
22. Faster and greater information flows
23. Trades unions operate more globally
24. Increasing spread of mobile phones/ personal digital devices
25. Greater popular access to and use of visualization technologies
26. Global spread of social networking technologies
27. Spread of biotechnologies

Economic Drivers

28. Increasing economic value attached to knowledge
29. Increasing competition for food
30. Rising energy prices (over the long-term)
31. Increasing non-energy commodity prices (over long-term)
32. Greater interest in regulation of the financial sector
33. Reduced access to trade credit
34. Reduced access to financing for governments
35. Shift in global wealth distribution towards developing economies
36. Persistent public debt of Western governments
37. Greater reliance on remittances
38. Greater regional economic and political integration
39. Increasing prominence and enforcement of intellectual property
40. Rise of “state capitalism”
41. Emergence of private foundations and vertical funds
42. Greater consolidation across global value chains
43. Development of multinational companies from “emerging” economies
44. Increasing rates of economic growth in Africa

Environmental Drivers

45. Increasing water stress
46. Increasing number of extreme weather events
47. Growth of environmental regulation mechanisms (e.g. cap and trade)
48. Increasing social concern about climate change
49. Global biofuel expansion

Political Drivers

50. Greater risk of ‘failed’ or ‘collapsed’ states
51. Declining credibility of International Financial Institutions
52. Increasing influence of NGOs/ CSOs in political sphere
53. Increase in asymmetric threat (e.g. small terrorist attacks with great impact)
54. Increasing Chinese state enterprise investment in developing world
55. Greater focus on “aid effectiveness” agenda and donor-recipient partnership
56. Emergence of ethical codes of conduct in supply chains
57. Strengthening of localized producer organizations
58. Decline in level of conflict, especially in Africa
59. Role of MDGs in creating a shared development framework
60. Increasing influence of Arab social development funds
61. Increasing fragmentation of aid and development