NETGREEN
Network for Green Economy Indicators

Pathways towards a green economy: Seminar briefing paper

Introduction

This paper has been written as a contribution to the FP7 project, Network for Green Growth Indicators (NETGREEN), which aims to accelerate the transition to a green economy by collecting and structuring the existing fragmented body of work on indicators used to measure progress towards a green economy in an open-access, searchable, web-based database.

It is impossible to take stock of indicators without some understanding of what it is they are attempting to measure. However, the definition of the green economy and views on how it will be achieved are highly contested – as the European Environment Agency puts it "the term 'green economy' is not consistently defined, as it is still an emerging concept".[1] Hence, this paper aims to identify the different possible pathways towards a green economy, what they have in common, and where they differ. Our aim is not to produce a single vision of progress – clearly way beyond the remit of this project – but a coherent account of the alternatives that have been presented. Only by doing this can we ensure we include the widest possible range of indicators in the NETGREEN database, and then make sense of these. This will enable us in later work packages to assess their value and relate them to practical policy choices.

Based on a literature review of 100 reports on the "green economy",[i] and interviews with 55 experts in the field,[ii] this paper identifies:

- The major views of pathways towards the green economy
- The key assumptions on which such views are premised
- Some of the indicator types that will be needed to measure progress along these pathways

[i] See Annex 1 for a full list of the literature consulted
[ii] See Annex 2 for a full list of the experts interviewed

The Green Economy

The green economy is defined in different ways in different reports, but according to all definitions, a green economy is one that is environmentally sustainable in the broadest sense, that is, it operates without infringing environmental limits. Because our aim is to be inclusive, we are using this as *our* definition.[iii]

Broadly, the main themes around which there are points of disagreement are:

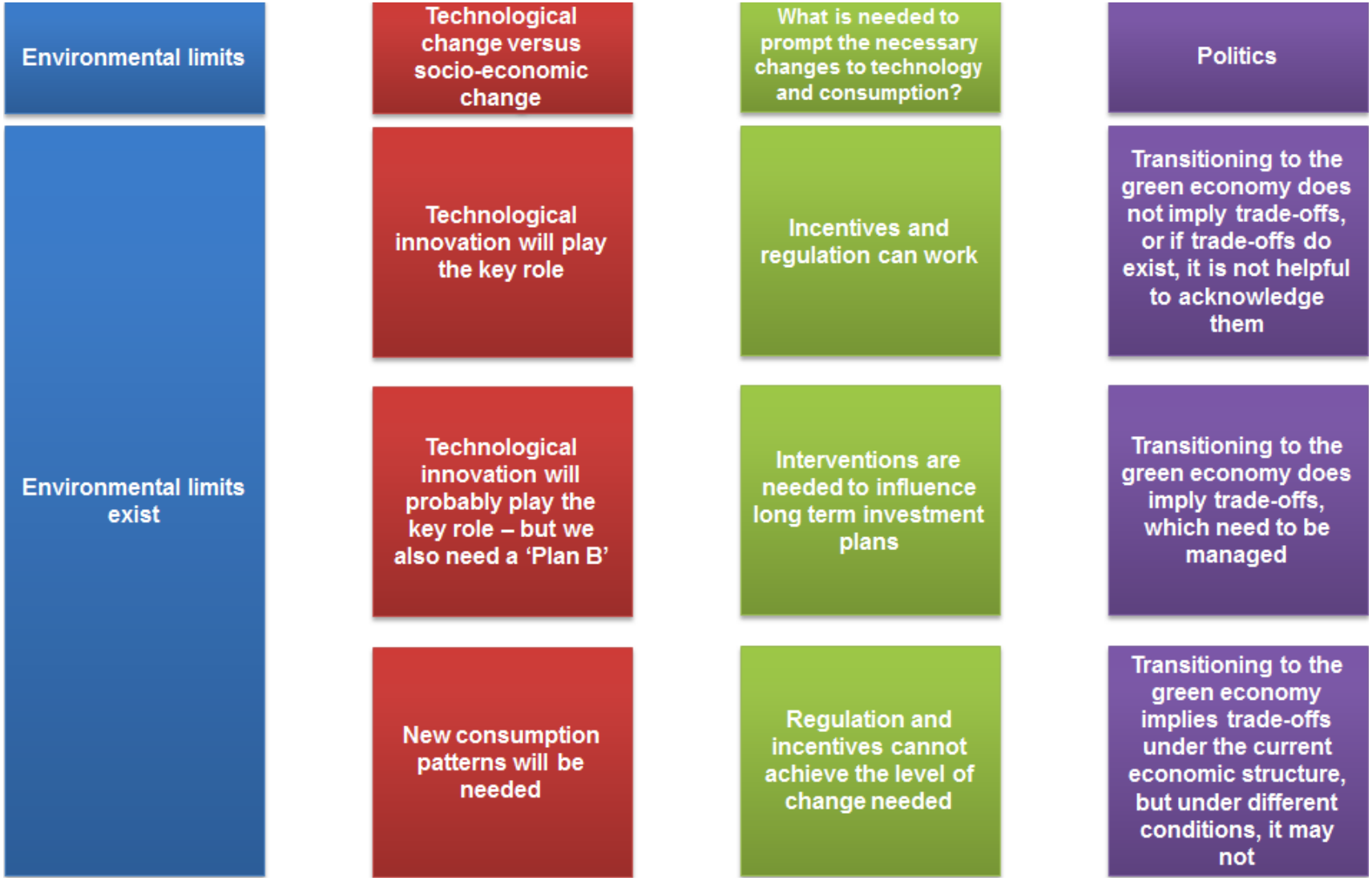
1. The environmental limits themselves
2. The balance between technological and socio-economic change needed to remain within these limits
3. The mechanisms to deliver these changes
4. The political process needed for these mechanisms to be used
    a. At a national level
    b. At an international level

Depending on one's view of the environmental limits, more or less change to production is needed. Everyone agrees that this change will result from a combination of changes in technology and in consumption patterns. However views on the likely mix differ, and reflect views on the relative achievability of technological and socio-economic change. Views on this then influence views on the kind of mechanisms needed to make the changes happen, for example regulation as opposed to structural change. Much of these disagreements are really about what is achievable politically, and views on this will influence views on what needs to be done in the national and international political arenas.

Figure 1 details the key views identified during our research under each of these four headings. By moving from left to right across the figure, it is possible to navigate a pathway to a green economy landing on one viewpoint in each column. The route might go from the first view, that environmental limits exist, to the top row in the second column, to the centre row in the third column, and then to the bottom row in the fourth column – or any such combination. The views represented in Figure 1, and described throughout this document, do not represent the only possible views, but rather the views which came out most strongly during our research.

[iii] Note that in adopting this definition, we are **not** suggesting that improved social justice is not a necessary part of the transition to a green economy, or is not desirable in itself. We are simply adopting a definition that allows us to be inclusive of the wide range of work in this area. Nor are we ignoring the importance of resilience in the face of environmental shocks.

Figure 1: Pathways to a green economy



1. Environmental limits

We have found little disagreement on the existence of environmental limits.

Box A: Environmental limits and natural resource depletion

The consensus with regard to environmental limits is largely based on the work led by Johan Rockström et al. in 2009[2]. This work identified nine planetary boundaries which represent the limits of the safe space for human development. The boundaries are the lower end of the range of possible values for tipping points - points beyond which "irreversible and abrupt environmental change" may result. There are boundaries for climate change, biodiversity loss, nitrogen removal from the atmosphere, phosphorus in the ocean, ocean acidification, land use, water consumption, ozone depletion, atmospheric aerosols and chemical pollution. Of these, according to the authors, the first three have already been crossed, the next five have not yet been crossed and the last two have not yet been measured.

In addition to these planetary boundaries, environmental limits can also refer to more local boundaries, defined in the same way by reference to tipping points, but where the consequences may not be global environmental change, but levels of degradation to the local environment agreed to be unacceptable. In either case, the critical point is that boundaries represent tipping points: because the consequences of breaching them are so potentially extreme, irreversible, and uncertain that the associated externality cannot be priced.

While the need to remain within environmental limits is recognised throughout the literature (either explicitly or implicitly) as a basis for which transition to a green economy is necessary, noticeably less emphasis is placed on the need to limit depletion of non-renewable natural resources. This seems likely to result from the uncertainty with which scientists are able to predict how much non-renewable natural capital remains available for extraction. This uncertainty, contrasted with current detailed understanding of safe limits for atmospheric concentrations of greenhouse gas emissions, may explain the greater emphasis on environmental limits (most notably, on the limit set for greenhouse gas emissions). In addition, the potential for environmental degradation to rapidly escalate as a result of the feedback loop effects associated with overshoot of environmental limits seems likely to increase the sense of urgency surrounding environmental limits, which depletion of non-renewable resources is not subject to (this is not to say that depletion of non-renewable resources doesn't represent significant challenges to humanity, though it may explain a reduced sense of urgency in addressing the problem).

With the exception of Herman Daly,[3] who calls for depletion quotas to be auctioned by government, those authors who do acknowledge the need to limit depletion of non-renewable natural resources tend not to set explicit policies and targets for limiting natural resource depletion, which seems likely to be due to the previously stated uncertainty surrounding remaining stocks, and therefore the degree of action required. Instead, these authors tend to call for inclusion of changes in the stock of natural resources in national accounts.[4,5]

There are, however, some criticisms of the environmental limits approach developed by Rockström et al.,[6] which have implications in terms of how indicators of the state of the ecosystem with respect to environmental limits are used in order to transition to a green economy. The criticisms – some of which are stronger than others - are:

- It ignores natural resource depletion (see Box A)
- Setting limits at a global level is problematic for several reasons: policies tend to be set at national and sub-national levels; global limits tell us nothing about distribution of impacts; and global limits fail to take account of the variance in ecosystems across the globe. In addition, there are important regional and local limits.
- There remains a great deal of uncertainty around precisely where limits lie, and we know too little about how reaching one environmental limit affects other environmental limits.
- Additionally to those scientific uncertainties, environmental limits have a normative dimension. To decide on how much human impact the environment can take, it is necessary to decide what state of the environment is still acceptable. The views on that will be contested.
- It may not be helpful in some cases to think of the boundaries as completely 'hard edged' if the state of technology and the economy means there are some political, economic or moral trade-offs to be made; in these cases the limits may be determined by the relative costs of mitigating or not mitigating.
- Degradation may be damaging before the boundary is reached, and the concept could create the illusion that this is cost free. In other words, the idea of limits or boundaries should supplement, and not replace, externality pricing (Rockström et al. would no doubt agree).
- It may be impossible to construct adequate early warning indicators – tipping points are just too unpredictable and there are time delays in signals for certain limits – the use of boundaries may therefore create false reassurance.

The criticisms described above have implications in terms of using indicators to measure progress towards a green economy. Rockström-style limits need to be supplemented in various ways. However, the concept of environmental limits is generally viewed as a valuable tool to communicate the need to transition to a green economy, despite the uncertainties associated with knowing precisely where the limits lie. Prolonged discussion to determine the exact values of limits is typically recognised as an unnecessary step which would merely postpone action in the short term, when the direction that should be taken is already clear, even if the precise final target may not be known.

Implications in terms of indicators and criteria for the indicators

The indicators required as a result of this view will include indicators which tell us something about how close we are towards each of the environmental limits identified by Rockström et al., measured periodically so that we can evaluate our direction and rate of travel towards or away from each limit. Achieving a high degree of certainty using these indicators appears to be less important than obtaining some view of our position with respect to each limit. Indicators which tell us about natural resource depletion will also be required. All of these indicators should be made available at national and sub-national levels.

Environmental limits are also an important criterion for deciding on the usefulness of indicators. Some indicators have a clear relationship to environmental limits (eg. land use indicators) other do not have this relationship which is important for the interpretation and use in policy making.

2. Technological change versus socio-economic change

As noted in Section 1 there is consensus that environmental limits do exist, and that we should work to stay within those limits. This therefore translates into agreement that changes to production are required to varying degrees. There is also almost universal agreement that this will require changes to technology and to consumption patterns, and that both of these are also likely to require government intervention. However, there is significant disagreement over the relative role of technology and consumption patterns.

At first sight, this appears to be a question about the scope for technological innovation, or more precisely two questions:-

1. To what extent will technological innovation eliminate the threat to the environment associated with the production of certain goods?
2. To the extent that it will, how expensive will this be, and thus how great will the impact on consumers (and voters) be?

It is impossible, of course, to give a precise and definitive answer to these questions and a wide spectrum of views exists.

At one end of this spectrum, technological innovation is predicted to be so successful that the costs are barely noticed by consumers, such that increases in living standards are 'decoupled' from increases in environmental damage[iv] using new technologies. We call this the "technological innovation will play the key role" view. At the other end of the spectrum, much of the technological change that is needed is predicted to be either expensive, or simply not probable, with the result that much higher prices and reduced consumption will be needed. We call this the "new consumption patterns will be needed" view. A middle view, put forward by The World Bank[7] for example, is that technological development is critical to progress towards a green economy, but its chances of success – at any rate - are uncertain. This implies that we always need a 'Plan B'. We call this the "technological innovation will probably play the key role – but we also need a 'Plan B'" view.

[iv] A slightly different decoupling from GDP growth which is a poor measure of living standards, and which could be sustained by, for example, increased expenditure on more expensive forms of energy.

The implications associated with these three views, and the thinking behind them, are detailed below. We have attempted to identify the rationale for the positions adopted, rather than the caricatures which all too often are used in this debate to describe opponents' positions. This leads us to believe that what really divides opinion is less about technology and more about the extent to which socio-economic change will be possible.

View 1: Technological innovation will play the key role

According to this view, the economy will continue to do what it does now, producing broadly similar goods but at much higher levels of environmental efficiency. Our review of the literature and interviews with experts suggests that proponents of this view may well accept that technological development is uncertain (i.e. not all advocates of this view have a naïve faith in technological progress, although it is possible that some do), but they also believe that technological improvements are more likely to deliver a reduction in environmental degradation than significant changes in consumption patterns (the only alternative), whether the latter are the result of individual or collective (i.e. political) decisions and whether the latter involve new forms of consumption or simply less consumption. In other words, advocates of this view believe that there won't be a significant shift to environmentally sustainable consumption in the future, any more than there has been in the past 20-40 years. Some proponents of this view also believe that consumption patterns reflect free choices and that therefore changes *should* not happen, but this is an extreme view and not essential to the position. The broader point is that given the difficulty of achieving consumption changes, it is better to focus efforts on what might work than on what clearly won't work. Indeed attempting to change consumption creates the risk that voters and thus politicians will be alienated from the environmental project, and that as a result, even technological innovation will not get the support that it needs to optimise. It should also be noted that many commentators in this group compared to the other groups are more sanguine about the environmental limits, meaning they can accept a lower environmental status to achieve higher economic or social outcomes.

A variation on this view is that there is no realistic alternative to the growth-oriented capitalism that we have now – or at any rate, no high-wellbeing alternative – and that therefore de-prioritising growth (a stance typically associated with those advocating radical changes to consumption patterns) is both unrealistic and undesirable. A further variation on this view is that very significant improvements to environmental efficiency can be made given existing knowledge and that while there will be costs to the consumer, these can be lived with without major structural changes to the economy. This might entail reliance on existing technology (which the Centre for Alternative Technology[i] regards as being capable of allowing countries to reduce their greenhouse gas emissions to net zero), even if at substantial cost.

Proponents of View 1 generally accept that marginal changes to consumption patterns are possible and useful. Such changes might take the form of moral or socially-driven choices not to use environmentally damaging products, encouraged by increasing people's awareness of the environment and of how what they do affects it through the use of labels or by 'nudging' through the use of modest differential taxes on goods and services, and regulation and rationing of harmful products. However, it is accepted - at least by those who have taken on board the extent of change necessitated by environmental limits - that these kinds of changes will not be sufficient on their own.

Implications in terms of indicators and criteria for the indicators

Indicators which demonstrate the extent to which production is successfully being decoupled from environmental degradation and the cost at which this is being achieved will be necessary in order to measure progress towards this view, as well an indicator of the amount of investment in relevant sectors. As this view also accepts that marginal changes to consumption patterns are possible and useful, indicators which show the extent to which this has been successful, alongside indicators showing overall levels of consumption, will also be required in order to determine the extent of decoupling which must be achieved using technological innovation.

View 2: Technological innovation will probably play the key role – but we also need a 'Plan B'

This view reflects an uncertainty about the relative chances of technological innovation and changes to consumption patterns. Its proponents think that as things stand, we should concentrate on technological innovation and investment rather than the much more problematic socio-economic changes that are the only alternative. However, these more cautious proponents accept that given the uncertainties, we should also at least prepare for socio-economic change of the kind proposed by proponents of View 3, so that if technology does not deliver, an alternative pathway will be open to us. In other words, it is possible, even likely, that the necessary technology will increase the cost of living – and in some cases fail to deal fully with the environmental problem. It is therefore necessary to think seriously about what will make these extra costs and changes to consumption patterns politically acceptable in the way that proponents of View 3 do. In short, this view is motivated by a similar pragmatism to that of View 1 – but combined with more concern about the possibility of technological failure.

Implications in terms of indicators and criteria for the indicators

The indicators required to measure progress towards this view will be the same as those described under View 1, though it may also be necessary to supplement them with clearly defined measures of the limits beyond which, 'Plan B' should be implemented. It will also be necessary under this view to use indicators which give some indication of the extent to which changes to consumption patterns are likely to be politically acceptable.

View 3: New consumption patterns will be needed

Proponents of this view do not deny that technological breakthroughs could make a huge difference; however, they believe that sufficient technological innovation at sufficiently low cost is at best highly uncertain. They also believe that simply rolling out existing technology will be expensive (i.e. will have to be paid for through reduced consumption) and/or not enough (i.e. will have to be supplemented by reduced consumption). Finally, they are relatively sanguine about the possibilities of achieving changes in consumption patterns. Hence they place more, or at least as much, emphasis on the latter as on technology, some suggesting consumption can continue to grow if along new lines, and some suggesting it needs to fall, and can fall in the developed world. It should also be noted that many commentators in this group compared to the other groups are more concerned about the environmental limits, meaning they would accept lower economic or social outcomes to achieve a higher environmental status. Many commentators in this group also have other objectives then just staying within the environmental limits. So they see many of the social changes needed (lower working hours, less consumption) as worthwhile in themselves.

The foundation for this view is the evidence from survey data that beyond a certain point, consumption is not a particularly important driver of wellbeing. If this is the case, it may be possible to change patterns of consumption, or restrict growth in consumption without too much damage to wellbeing. Indeed, it may even be possible to increase wellbeing. It is generally acknowledged that attempting to restrict increases in consumption under current conditions would provoke quite strong resistance; however, it follows from the evidence on the connection between consumption and wellbeing that most of this resistance does not stem from the impact on wellbeing as such, but from something else[v]. Proponents of this view then suggest that this something else is not integral to human nature but is instead a function of socio-economic structures and culture, and can therefore be overcome. In other words, it should be possible to engineer our social and economic institutions (employing organisations, membership organisations, religious institutions etc.) and design government interventions (regulation, taxation etc.) in ways which would correct the bias to consumption engendered by modern capitalism, notably by making shorter working hours more attractive. Interventions need to go beyond regulation, but should be designed to create the conditions in which regulation is acceptable (smoking bans is the parallel commonly cited). They can also be designed to create the conditions in which static aggregate consumption levels are acceptable – for example more equality. Proponents of this view believe that there is a political strategy that can win public support and counteract the power of key interest groups, even if it has not yet been figured out.

Consumption levels are also, of course, a function of population levels, which government can influence, for example through the empowerment of women by increasing education opportunities, especially important in low-income, high-fertility countries. There are disagreements about how strong a role government should play in this, and it is an issue which tends to go largely unaddressed, due to the perception that is it not politically acceptable to talk about addressing population.

There is a fourth view, which entails pessimism about the prospects of both technological and socio-economic change, reflected in the belief that there will have to be a catastrophe before significant behavioural change is achieved. We have not described this view in detail, not because it is untrue – we do not know – but because if it is true, it renders this project pointless.

[v] The proponents of reducing consumption intend such an approach to be used to have the consumption of those citizens who have exceeded the levels of consumption shown to maximise wellbeing.

Implications in terms of indicators and criteria for the indicators

Under this view, it will be necessary to use indicators which show the extent to which production is being decoupled from environmental degradation, in order to establish the extent to which changes to consumption are required in order to stay within environmental limits, along with indicators which demonstrate the rates, types and overall level of consumption taking place, and the associated environmental degradation. Because more equal and happier societies have been promoted by some proponents of this view as making reductions to consumption acceptable to citizens, an indicator which captures levels of equality and wellbeing will also be a helpful means of determining the likelihood of continued support from citizens in favour of such an approach. We will also need measures of other changes identified as important, for example working hours.

3. What is needed to prompt the necessary changes to technology and consumption?

It is agreed that whatever mix of technology and consumption change will produce a green economy, government intervention will be required at local, national and international levels (it is also acknowledged that, on occasion, changes do happen without government intervention, for example, where waste or energy efficiency improvements are profitable at existing prices). However, there are disagreements about the form that this government intervention should take.

According to standard economic theory, environmental damage is an externality, and externalities can be dealt with through some combination of pricing and regulation. Thus theoretically, the shift to a green economy can be achieved using these conventional tools as correctly set prices will drive the market to respond appropriately, stimulating investment in new technologies, and new, environmentally friendly products. Perhaps the most perfect expression of this idea is the view that climate change could be dealt with by setting a global cap for carbon, with emissions permits allocated and traded in a global market.

In reality, almost no-one believes that such a simple solution could work; largely because there would be some serious losers subjected to injustices (e.g. fuel poverty, inequality), or there would be insurmountable resistance from powerful groups. A clear illustration of the difficulty of such a strategy is that it has arguably been impossible to achieve an effective European carbon price to drive change. Faced with this difficulty, the question arises as to how externalities can be internalised, and how change to investment in technology and consumption patterns can be achieved, to the extent that it is impossible to internalise the externalities.

There appear to be three main points of view. One is that a skilfully designed, and inevitably complex, array of incentives and regulations designed to influence behaviour and co-ordinated at an international level will be able to drive change without creating impossible opposition. We call this the “incentives and regulation can work” view. A second view is that while such an approach is part of the answer, it will only work if complemented by strategic regulation in the form of government interventions designed to influence long-term business and investment strategies and to create

policy certainty. We call this the "interventions are needed to influence long-term investment plans" view. A third point of view is that while regulation and incentives can make a contribution, they cannot achieve the level of change needed for two reasons: first, they will provoke opposition and at best be watered down, certainly at the international level at which they need to operate; second, they will become too complex and difficult to manage. Government therefore has to show initiative, by leading the way in terms of investment, creating structural change, and pushing for a new international settlement. We call this the "regulation and incentives cannot achieve the level of change needed" view. A variation of this is that the structural change will involve a radical power shift away from existing elites. The key differences of the three viewpoints are firstly the values that want to drive social change for other than environmental reasons and again the optimism about the willingness and the flexibility of the electorate (e.g. the consumers of chapter 2) to adapt their lifestyles.

View 1: Incentives and regulation can work

According to this view, existing and new regulations and incentives of the kind already in place will be sufficient to effect the transition to a green economy. The key assumption is that while there will be losers, government will still be able to introduce these without a strong backlash or fear of a strong backlash, whether from business or consumers/voters.

Thus firstly, the judgement is that a critical mass of *business* will welcome regulation and incentives that helps them to green their operations. This may be because their assessment is that the measures reduce the risks associated with resource scarcity or the risks associated with more stringent regulations being introduced in the future (i.e. because they believe that regulation will create new markets and for some firms create a competitive advantage in those markets), or because corporate social responsibility plays an important role. In general, this support will depend on any regulations or negative incentives (taxes etc.) being introduced at an international scale over a reasonably short period, i.e. preserving a level playing field and preventing 'carbon leakage' and similar distortions. This means that supporters of this view must assume that international agreement on a package of measures can be agreed (having said which, there are some relatively low-cost improvements in efficiency that could be introduced unilaterally, and which could drive improvements in other countries who want to export to the regulated markets.)

The assumption is also that *consumers and voters* will also support such policies for one of the following reasons:

- They take a long-sighted view and therefore perceive the necessity of action in order for the benefit of future generations.
- They can be convinced that an increased cost of living is not implied by such policies, or that the increased cost will have less of a negative impact on their wellbeing than damage done to the environment.
- It is also suggested that consumers and voters can be persuaded because of the prospect of green jobs, whether these are the results of investment in green infrastructure or processes (i.e. in the transition to a green economy) or the results of new competitive advantage.

We return to the assumptions about consumers and voters in the section on politics below.

To the extent that environmental limits are not seen as absolute, and particularly where they are seen as uncertain, it is possible to take the view that governments can make a trade-off between the future costs of environmental damage and the present costs of regulation. Then, if structural change is ruled out because no political mechanism has been identified for delivering it, the 'solution' becomes as much regulation or incentives as the existing system can tolerate.

Implications in terms of indicators and criteria for the indicators

Because the support needed will depend on any regulations or negative incentives (taxes etc.) being introduced at an international scale, an indicator of the international scale of regulations, as well as an indicator which captures the carbon leakage (or the movement of investors between countries and the result emissions of such) are required in order to determine any need for adjustment to this strategy. In addition, because this view assumes little resistance from businesses and citizens, indicators of features that would seem to support or oppose this view (such as the impact of resource scarcity, or the costs to business associated with greening their operations) will be useful determinants of the likely future success of such an approach.

View 2 Interventions are needed to influence long term investment plans

Proponents of this view agree that regulation and incentives are needed, but draw attention to the lack of policy credibility: that is to the widespread belief amongst investors and in the business community that government policy will not develop sufficient teeth to deliver a green economy, and therefore that long term investment decisions should not be made on the assumption that it will. At the very least, businesses believe bets should be hedged. The resulting investments then create lock-in to unsustainable production, rather than the kind of technologies that will help to achieve government-set targets. This lock-in then drives business to lobby against regulations and incentivises the regulation of the kind advocated by proponents of View 1. What is needed, it is argued, are measures to stimulate long-term investment in the green economy, and thus create a different kind of lock-in. This will then incentivise business to lobby *for* the right regulations and incentives, making them far easier to achieve.

These measures are all commitment devices – ways of building the credibility of statements about future policies. They can include legally binding contracts (as in the case of energy prices), treaties (including the treaties underpinning the European Union), investments by government ('putting your money where your mouth is'), and cross-party agreement on core policies.

Implications in terms of indicators and criteria for the indicators

In order to measure progress under this view, indicators which demonstrate the extent to which long-term investment in the green economy is being achieved, the perceived credibility of policy/the legal strength of policies, and the extent to which there is cross-party agreement on core policies will be required.

View 3 Regulation and incentives cannot achieve the level of change needed

Proponents of this view agree that the existing system creates lock-in to an unsustainable economy and that this needs to be corrected. However they do not think that the kind of commitment devices proposed in view 2 will be sufficient. This may be because such devices cannot signal effectively the very significant level of change needed (the more radical the change, the stronger the device needs to be). It may be because financial investors are particularly unresponsive to signals and incentives about the long-term. And it may be because such devices do not deal with political opposition from consumers/voters, but only from business. Dealing with this latter opposition will require changes to consumption patterns – along the lines described under View 3 in section 2, that "new consumption patterns will be needed – but we also need a 'Plan B'".

In addition, some proponents of this view believe that in the absence of structural change, regulation and incentives will become inefficient: too extensive and too complex to manage, as well as too unpopular.

Thus proponents of this view tend to believe that a more radical set of socio-economic changes are needed. These may be designed to *create constituencies for change*, including businesses that can thrive in a sustainable world, and so help overcome political barriers to regulation and incentives, *create new decision making structures* (including financial decision making structures) that side step the existing market system and all of its well-recognised failures, or *provide an alternative to (unacceptable) regulation,* for example through direct investment in sustainable infrastructure. They are also designed to *undermine the forces that block change*.

For the most part, the strategy as just described is not made explicit. The actual proposals include: ways of creating higher levels of wellbeing for any given level of output; higher levels of equality; encouraging fewer working hours; more of the economy serving local markets, perhaps encouraged by local currencies, and thus relatively less long distance trade; fewer very large enterprises; a financial sector that is owned locally and serves local industries and small-medium enterprises; an active role for the state in planning and developing green industries and businesses that generate high wellbeing for both customers and staff; more mutual organisations and other changes to governance structures; new political narratives and headline measures of societal and economic progress; reducing the power of global financial markets – and so on. To some extent this view is motivated by a belief that many of these proposals are desirable anyway – or at least are not undesirable.

There is a variation on this view: that structural change is needed, and that the focus should be on reducing the power of elites and business.

Implications in terms of indicators and criteria for the indicators

This view requires indicators which provide information on the extent of government investment, the perceived credibility of policy/the legal strength of policies, the extent to which financial investors are particularly unresponsive to signals and incentives about the long-term, and the extent of political opposition from consumers/voters, as well as from business. It also requires some indication of the extent to which changes to consumption patterns are probable. Indicators which could be employed to test that this is the correct pathway to pursue would include those that give us information about public support for regulation and incentives, investment in sustainable infrastructure and the power of forces that block change.

4. Politics

Much of the disagreement described so far can be reduced to politics: it is disagreement over what will be politically acceptable – i.e. what it will take to create the support necessary for effective collective action. This question is critical within both developed and developing countries, and at the international level. Box B sets out the four main types of policy proposed in the literature in order to build this support.

Box B: There are four main types of substantive policy advocated to build support or reduce opposition to change:

- **Job creation**, whether within existing economic structures, or within economic structures that have been reformed to better reconcile green and commercial objectives; to the extent that those advocating this admit there is a political problem, the idea is that the political gains from job creation potentially outweigh the political losses from reduced consumption. As noted in the section in production, there is disagreement on how active policy needs to be to deliver this.
- **Burden sharing**, i.e. increased equality and security, reinforced social solidarity, a focus on meeting essential needs and building human capability. This may be put forward as an end in itself, a moral imperative. However it can also be proposed as a political precondition for transition, both in domestic politics (since it means that the costs of the investment needed and of sustainable consumption are born by an electoral minority), and in international negotiations (potentially reinforcing political support for transition within developing countries). In the absence of the latter, the green economy can appear to be a rich country's objective. It can be achieved through a range of redistributive and 'predistributive' measures domestically, as well as through international transfers and investment. Most commentators will agree that some burden sharing is needed – the disagreement is over the extent of redistribution required within and between countries and how to achieve it.
- **Encouraging new conceptions of the good life** which politicians can deliver within environmental limits. This is as discussed in the section on consumption. Those with these new conceptions then care less about a loss of income as compared with business as usual. As already noted, only some commentators think this is either realistic or desirable.
- **Stimulation of locally focussed economic activity**, which involves technological and institutional innovation that simultaneously delivers environmental performance and better

lives. These innovations tend to encourage local economic activity – that is, production of goods and services that are consumed locally. The idea is that the reduced scale increases individuals' sense of control, and reduces the opportunities for an elite to appropriate value, and that these (more than) compensate for any reduced economies of scale. They also reduce the environmental damage associated with the global trading system. This can be delivered through local economic planning. To the extent that it is successful, it creates a group of people benefiting from the green economy and thus an electoral constituency.

The broad issue, then, has already been defined. But within this there are a number of views about the trade-offs.

View 1: Transitioning to the green economy does not imply trade-offs, or if trade-offs do exist, it is not helpful to acknowledge them

There is a great deal of literature which stresses that transitioning to the green economy will produce benefits (resulting from the types of policies described in Box B) which will outweigh the costs of transitioning to a green economy, and as such, there is no trade-off, and no political difficulty associated with transitioning. The extent to which this seems plausible will depend on the extent to which you believe that large-scale changes are needed.

Other commentators have addressed the political difficulty of transitioning by denying that a difficulty really exists; questioning the existence of a trade-off between environmental sustainability and economic progress. UNEP, for example implies that the *belief* that there is a problem itself creates the political problem for sustainability[vi], and that there is no underlying problem. The importance of creating at least the illusion of a pay-off or win-win associated with transitioning, in the form of green growth has been emphasised by international organisations, where it is believed that a politically attractive pay-off has to be demonstrated in order to gain support for meaningful action. This approach may be based on the recognition that citizens are more likely to be turned off than engaged by predictions of catastrophe.

Implications in terms of indicators and criteria for the indicators

Indicators which can be used to measure the benefits produced under a green economy, such as employment levels, levels of wellbeing and equality will be necessary in order to measure progress under this view. It may be prudent to use an indicator that captures the extent to which citizens appear to be convinced of such a strategy in order to test the validity of such an approach.

View 2: Transitioning to the green economy does imply trade-offs, which need to be managed

Other commentators make the case that the benefits produced by the types of policies outlined in Box B may exist, they are clearly too weak to compensate for the costs associated with transitioning to a green economy,[8] for a range of reasons, including that the benefits can be created in much more cost effective ways, or that the advantages created will only be beneficial for certain groups, and will make things more difficult for other groups. Advocates of this view call for what they would call a

[vi] This may well be true – GDP and other measures of economic progress may continue to rise, particularly in the developing world - but this doesn't mean that the consumption of certain powerful groups may not have to fall

more honest or realistic approach to overcoming the political difficulties associated with transitioning.

The types of approaches might include:

- Development of new narratives, for example framing the issue as one of security, and active engagement with stakeholders and civil society organisations. Targets, indicators and data (including new ways of presenting national accounts) are part of the armoury of making change happen: they are political tools, forming the centre piece of a narrative, in the way that GDP forms the centre piece of the growth narrative.
- Increasing transparency and accountable decision making as part of the process of challenging powerful interests. The assumption being made here is that much of the political problem is a result of the power of these interests, and that transparency will reduce this power.
- As described by the World Bank[9]: "local strategies are needed because what works depends on local political economy"; this requires an "analysis of acceptability and urgency" and prioritising accordingly – acceptability is greatest where local benefits (e.g. jobs, increased safety) offset the transition costs; urgency is where there are lock-in effects in the absence of action (e.g. land use planning).

Implications in terms of indicators and criteria for the indicators

Indicators which show the costs associated with transitioning compared to the benefits will be necessary to test the validity of this approach, and because proponents of this view argue that the advantages created will only be beneficial for certain groups, a measure of equality within society will also be required to check this. Finally, because the holders of this view assume that much of the political problem results from activity carried out by powerful interests, and that transparency will reduce this power, a indicator which can give some measure of the extent to which power (or wealth) is distributed within a society will also be a useful test of this assumption.

View 3: Transitioning to the green economy implies trade-offs under the current economic structure, but under different conditions, it may not

The holders of this view agree with the proponents of View 2 that transitioning to a green economy will not produce sufficient benefits to outweigh the associated costs *under existing conditions*, but also assume that more radical action than the kinds proposed under View 2 will be required in order to overcome this difficulty. Thus, from a similar perspective to the one expressed under View 3 of section 3, that "regulation and incentives cannot achieve the level of change needed", proponents of this view tend to believe that a more radical set of changes are needed. These will then soften the trade-offs, and thus reduce the political problem.

One approach that has been suggested is making changes to the rules of the game in order to align social and private interest. The Dutch Sustainable Development Coalition of large businesses calls for aligning business incentives with social and environmental progress – with businesses actively pursuing long-term value for a range of stakeholders. Another approach which has been proposed is

the creation of a more equal economy, where shorter working weeks, accompanied by support for the lowest-earning members of society, become acceptable to citizens, and indeed, are viewed as a benefit rather than a cost associated with transitioning. Indeed, many commentators view burden sharing, and thus social justice, as an essential part of the political requirement for transitioning to a green economy. Some, but not all authors present this as integral to the definition of a green economy, i.e. a green economy is one where everyone can pursue meaningful lives while minimising their negative impacts on the environment. Examples of the types of measures proposed are outlined in Box D.

This view is also compatible with the view that, were we to take no action here, in the future, there may be a trade-off, but we don't need to confront that now. In other words, there may be less of a trade-off while we are investing in the transition to the green economy (since this creates jobs),and this will then create lock in, softening the difficulties we face in 10-15 years' time.

Box D: Measures advocated to increase social justice

A very wide range of measures are advocated, which are grouped below. An important observation is the lack of discussion of the trade-offs associated with the measures described below, which is largely omitted from discussions of social justice in the literature.

- ***Delivering good jobs***. This involves both creating and supporting jobs and ensuring that as many jobs as possible are 'good', in terms of opportunities for training, adequate wages, safe working conditions, job security, reasonable career prospects and workers' rights (all this an obligation that government needs to encourage *business* to bear, and so represents a trade-off in terms of winning support from business in terms of transitioning to a green economy). It also involves ensuring access to the labour market - provision of information, and education and training for all, including all ages. This call for higher levels of employment implies greater levels of production and consumption levels, unless the new jobs created are carefully formulated to address such.
- ***Ensuring fair access to resources and services***. In addition to education and training, this includes ensuring access to clean water and basic sanitation, clean energy, knowledge, health and care services, housing, and all other basic goods and services that are essential for life and health. A difficulty associated with this will be determining at what level such resources and services cease to become essential.
- ***Ensuring decent local environments and communities***. This includes local economic development, particularly to increase local resilience, support for culture and sports, safety, solidarity – and more broadly promoting cross-cultural sensitivity and education and anti-discrimination measures. *Business strategies* should also include strengthening communities particularly in the developing world, for example by developing products that help vulnerable people, or that are widely affordable. They can also partner with communities to preserve natural resources.
- ***Creating income and wealth equality***. In addition to what is delivered through good jobs and fair access to resource and services, this can involve maximum and minimum wage or income limits, progressive taxes (including a financial transactions tax and anti-avoidance measures), income support and social protection measures (including to help limit damage to workers most likely to be affected by the shift to a green economy), universal child-care benefits, work sharing,

addressing gender inequality, emergency poverty relief and many other mechanisms. Such measures would seem to be designed to comply more directly with the social components of definitions of a green economy, and the environmental aspects more indirectly. ***Management of property rights and rights over common resources***. This includes reviewing intellectual property rights; better definition and enforcement of common resource use rights, for example in the high seas, mangroves, coral reefs, flood plains and forests; payments for ecosystems services; and strengthening of the land and natural resource ownership and access rights of the poor. Most developing countries face enormous economic pressures to overexploit their environmental resources, especially where tenure or use rights are insufficiently defined or enforced. There could be international interest in creating conditions that reduce these pressures.

- ***Fair allocation of the costs of sustainability*** through international agreement to internalize environmental and social costs on their products; with costs shared by the government, business and individuals, and equal per capita resource and emission caps.
- ***Sustainable food security***: through sustainable systems of production and distribution, including more effective incentive systems which will allow global access to sufficient nutrition.
- ***Democratic governance structures*** such as a 'Green Economy Council' to engage both business and civil society; steps to ensure that tribal and indigenous people have power over resource extraction; access to media; strengthened democracy. *Businesses* will need a broader understanding of value creation than they have now (ie not just profit) which implies stronger engagement with stakeholders, and perhaps reformed ownership and governance structures (e.g. co-operatives).
- ***Targeted development aid designed to increase sustainability and capabilities***. This may involve increased aid overall, including debt restructuring, but there should be a focus on: technology and knowledge transfer, strengthening technical and scientific cooperation, fighting corruption, incubators, dedicated funds to de-risk entrepreneurial investments and stimulate intellectual property sharing and innovation, special funding mechanisms (such as financial transfer and transaction taxes) for renewables, energy and resource efficiency, infrastructure and the protection of 'carbon sinks' and biodiversity.
- ***An improved international trade regime*** that involves: fewer discriminatory provisions, non-tariff barriers and less protectionism - but conversely could involve a carbon levy on imports from developing countries; increased negotiating capacity of developing countries with transnational companies; improved international co-operation, governance and agreements on access to vital resources; and consistency between aid, trade, technology and other policies so as to support inclusive green economy transitions. Such measures may imply green trade rules being used, or perceived, as trade barriers against developing countries.
- ***Encourage new models of development*** that are more sustainable instead of following the path of most rich countries.

Implications in terms of indicators and criteria for the indicators

Because alignment between social and private interests has been described as being an important factor in the success of this approach, indicators which demonstrate progress in terms of social interests (including an indicator which demonstrates levels of equality within society) will be a useful measure of progress under this view. Indicators which can help policy makers to understand the trade-offs associated with this view will also be useful.

5. The developing versus the developed world

Our literature review and interviews were weighted towards developed world opinion and this section is something of an overview as a result.

There are concerns from the developing world that the aim of transitioning to a green economy is not relevant to developing-world needs. Specifically, policy instruments (such as sustainable public procurement, green subsidies and taxes, certification and standardisation tools and green industrial policy) are expected to marginalise vulnerable communities further, rather than reducing poverty. For example, small-scale farmers may not be able to afford 'green' certification systems and many poor people rely on subsidised fossil fuel prices in order to afford energy or transport. Developing world governments also fear that the green economy approach will lead to trade protectionism in international markets. As such, it is important that the transition takes account of the needs of the developing world.

There appear to be two main issues:-

- To what extent should the developing world follow a development path similar to that of the developed world?
- How much does the developed world need to 'give' to the developing world in order to achieve a global green economy?

The view adopted on these is likely to determine the view adopted on a third issue:-

- How much reform of international institutions (WTO, IMF, World Bank, UN etc) is necessary to achieve a global green economy?

We have not identified specific positions under each of these questions, in the way we have done for the other issues covered in this paper. Instead we describe the issue and the spectrum along which views fall.

To what extent should the developing world follow a development path similar to that of the developed world?

The question is whether attempting to become like existing developed countries is desirable and feasible for developing countries.

Broadly there are two types of position:-

1. The developing world should attempt to become like existing developed countries in key respects (although of course preserving their distinctive cultures). After all, why should their citizens not aspire to or be entitled to the standard of living achieved in the developed world? Having said this, of course they should be more environmentally efficient than the developed world is now – but this can be achieved using existing and emerging technologies.

2. Developing countries should create their own visions of progress, which are not simply imitations of developed countries. This is for three reasons: levels of wellbeing in the developed world are not all they might be, and citizens of developing countries can aspire to more than this; if the developed world is seen as the model, the development process will produce very high levels of disruption, damaging wellbeing, and very high levels of inequality (or at least fail to address existing very high levels of inequality); a world of 9bn people with life styles similar to those in the developed world now is simply unsustainable – and citizens of the developing world will be the first to suffer the effects of environmental catastrophe. Of course the last point does not mean that citizens of the developing world should have a lower standard of living than citizens of the developed world – change is needed everywhere.

Within the second position, there are a whole range of views as to the direction to be followed.

How much does the developed world need to 'give' to the developing world in order to achieve a global green economy?

This is not an argument about morals but about what the developed world's bottom line should be in the global negotiations – although of course ethical appeals can and sometimes should be used in those negotiations. (We do not think anyone really thinks there will be a major shift in developed world positions motivated simply by altruism and we are concerned in this paper about alternative views as to how we really will achieve the green economy, not what would be ideal).

Again we can polarise the debate, although there are in reality a range of positions. At one extreme, there is the view that the developing world will suffer most from environmental catastrophe and as a result needs developed world technology. The developed world, meanwhile, needs to incentivise its businesses to innovate and win the support of its citizens for change. Therefore it should take a hard line and give relatively little. Hence measures such as TRIPS (Trade Related Aspects of Intellectual Property Rights) are justified.

At the other extreme is the view that powerful interests in the developing world (whether democratic or elite) cannot or will not make the adjustments to their development paths needed for global sustainability unless transfers (of technology or other resources) from the developed world increase very substantially. What is more the cost to the developed world of these transfers is much less than the cost of the catastrophe that is otherwise likely to follow. Therefore it should take a much more generous line and give much more. Measures such as TRIPS are not justified.

As in all negotiations, the choice of view depends at least in part on one's reading of what the other side's position is and is likely to be in the future.

How much reform of international institutions is necessary to achieve a global green economy?

We have not come across any serious study of this question (as opposed to expressions of opinion) and it is possible to say 'none', 'incremental only', 'major'. We include this here only to flag the issue – and to suggest answers may be at least influenced by answers to the previous two questions.

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Annex 2: Experts interviewed

Alexander Girvan - Cropper Foundation

Andreas Versmann - European Economic and Social Committee

Andrew Simms - Global Witness, new economics foundation

António Alvarenga – Portuguese Environment Agency

Bedrich Moldan - Charles University

Blake Alcott - Independent academic

Bram Edens – Statistics Netherlands (CBS)

Carlos Carvalho - Portuguese Institute of Statistics (INE)

Claúdia Sousa – Banco Espirito Santo

Cliff Cobb – Redefining Progress

Cristina Ramos - Portuguese Institute of Statistics (INE)

Dan O'Neill - University of Leeds

David Reiner - Judge Business School, University of Cambridge

Dorothee Braun - Council for Sustainable Development, Germany

Eric Gerritsen - Ministry of Economic Affairs, Netherlands

Farooq Ullah - Stakeholder Forum

Frank Hönerbach - Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany

Garret Tankosic-Kelly - SEE Change Network

Gaylor Montmasson-Clair - Trade and Industrial Policy Strategies (TIPS)

Gitanjali Kumar – Development Alternatives

Gus Speth – Vermont Law School

Helmut Haberl - The Institute of Social Ecology, Klagenfurt University

Jacques Bonnin - European Commission

Jayati Ghosh - Centre for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University

Jörg Mayer-Ries - Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany

Jyrki Laitinen – Syke, Finnish Environment Institute

Klaus Jakob - Wuppertal Institute

Lew Daly - Demos

Lili Fuhr - Heinrich Böll Stiftung

Luis Gamez - Public Utilities Company of Heredia (ESPH)

Luísa Serra - Energias de Portugal

Molly Scott Cato - University of Roehampton

Nuno Oliveira - Instituto Superior Técnico

Oliver Dudok van Heel – Aldersgate Group

Paola Migliorini - European Commission

Paul Allen - Centre for Alternative Technology

Paul Ekins - University College London

Pedro Paes - Energias de Portugal

Peter Czaga - European Commission

Peter May - Federal University of Rio de Janeiro

Peter Victor - York University

Philipp Schepelmann - Wuppertal Institute

Raimundo Soares – Instituto ORIOR

Rajesh Makwana - Share the World's Resources

Remko ter Weijden – Ministry of Infrastructure and the Environment, Netherlands

Riccarda Retsch - Council for Sustainable Development, Germany

Rob Dietz – Centre for Advancement of the Steady State Economy

Ross Gurdin - Confederation of British Industry

Ruth Potts - Bread, Print & Roses/The Green New Deal

Sjoerd Schenau – Statistics Netherlands (CBS)

Stefan Giljum - Vienna University of Economics and Business

Susana Fonseca - Quercus (National Association of Nature Conservation)

Tiago Domingos - Instituto Superior Técnico

Tim Kasser – Knox College

Tomás Ramos - Universidade Nova de Lisboa

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