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# **Practical Sustainable Development: the challenge of long term strategy in day to day government**

Presentation to the International Centre for the Environment, University of Bath

14 March 2006

Nick Mabey, Founder Director E3G

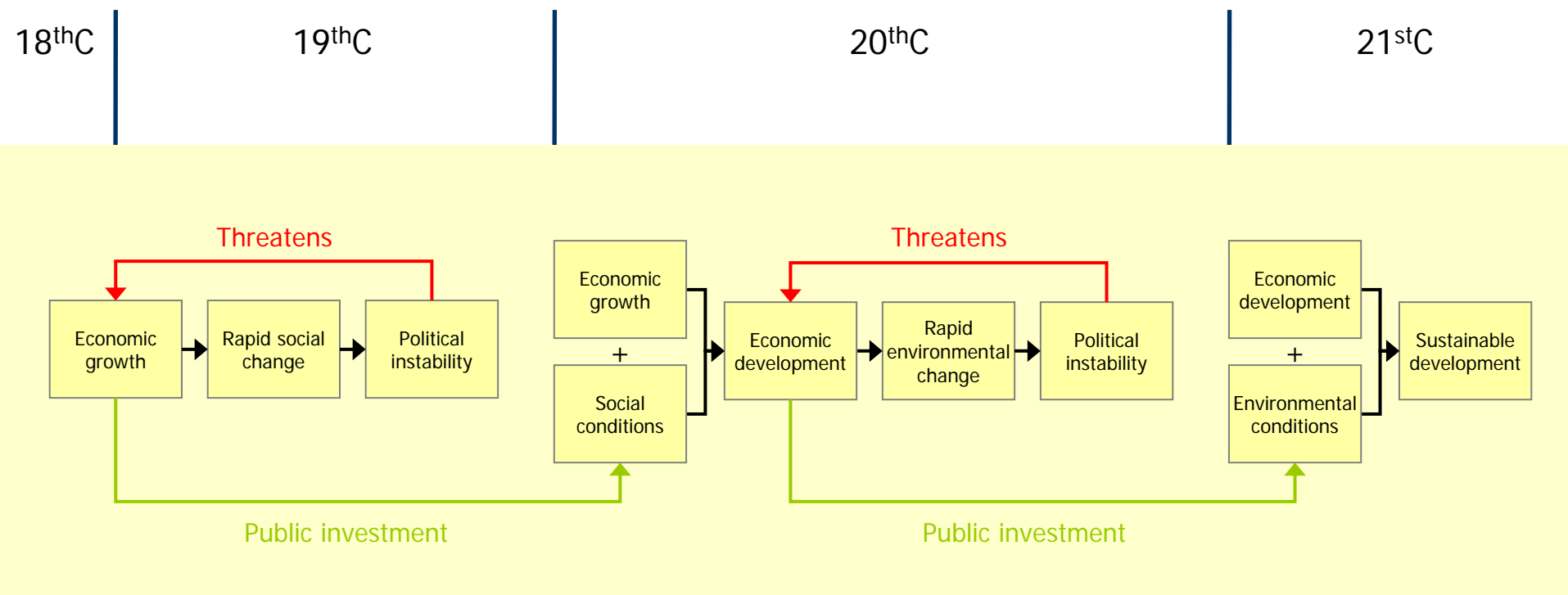
# E3G – Third Generation Environmentalism



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- Mission: “To accelerate the transition to sustainable development”
- Build on success of 2<sup>nd</sup> Generation (advocacy) organisations to mobilise networks of aligned and motivated insiders in mainstream institutions in order to generate action
- Founded 2004 by three “outsider-insiders”: **Tom Burke** - ex-Head FoE, environment special advisor; **John Ashton**, 25 years in FCO; **Nick Mabey**, ex-WWF, FCO and Prime Minister’s Strategy Unit.
- This presentation based on joint E3G thinking and my experience in PMSU

# Sustainable development is the preservation of the environmental conditions for economic development.



# The Prime Minister's Strategy Unit

## What is the PMSU?

- A unit of Cabinet Office formed in 1997 as the Performance and Innovation Unit

## What does PMSU do?

- Provide a central capacity for strategic, long term and cross-cutting thinking
- Promote strategic thinking and better policy making across HMG

## How does PMSU work?

- Work in small project teams
- Undertake specific commissioned projects which take 3-9 months
- Bring together civil servants and secondees from private sector, voluntary sector, academia, public sector and other governments



# PMSU and Sustainable Development

- **Some classic “sustainable development” areas addressed by PMSU:**
  - Energy
  - Waste
  - Fisheries
  - Rural economies; GM Crops
  - Resource productivity
  - Trade and Social, Health and Environment issues
  
- **Other areas with strong sustainability themes**
  - Wealth creation and the knowledge economy
  - Pensions and Aging
  - Global Health
  - Countries at Risk of Instability
  - Strategic Audit

# This talk aims to illustrate a simple set of propositions (provocations?) based on this experience

- Sustainable development requires a conscious driving of (global) societal change towards specific goals over limited timescales – this is an unprecedented human project
- The real challenge of SD is driving the necessary amounts of **change** – not setting targets or being “optimal”
- The transition to sustainable development will only be possible if we can change the fundamental “operating system” underpinning political choices and institutions

**Without reformed institutions to drive the transition to SD progress will rely on political will of key leaders. This is a very uncertain base on which to build a sustainable future.**

# Practical Sustainable Development?



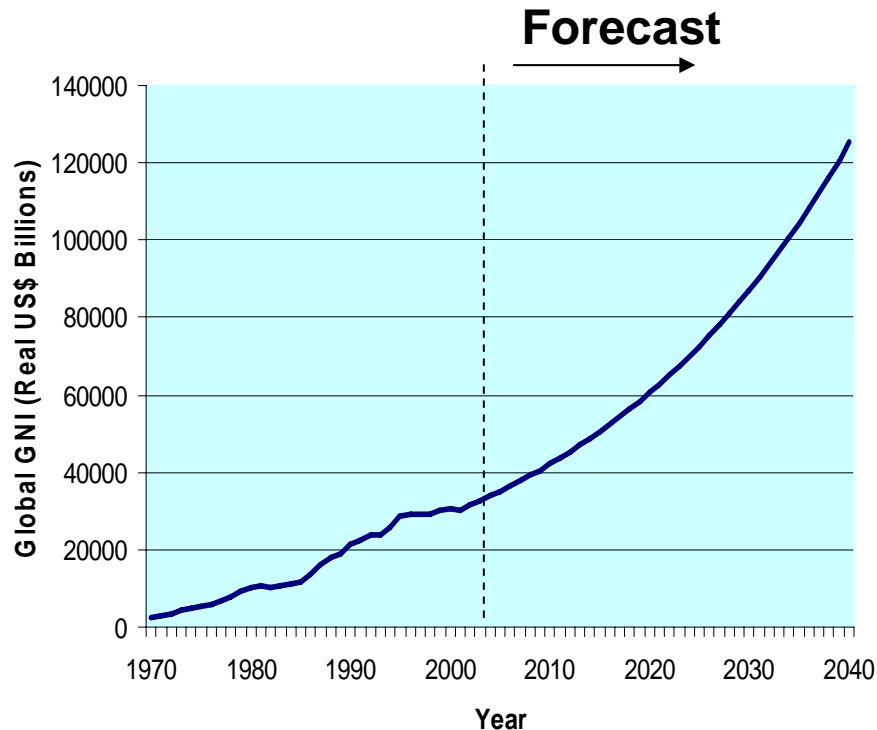
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*'There is nothing a government hates more than to be well-informed; for it makes the process of arriving at decisions much more complicated and difficult'*

***John Maynard Keynes***

# Technocratic descriptions of sustainable development give an illusion of continuity and control

Global GDP will increase by 400%  
in 40 Years



(Source: World Bank)

- 400% change in 40 years is incredibly disruptive growth
- Trade will probably grow by 600-1000% with large shifts in production and consumption
- Regional distribution of growth will swing to South and East Asia
- This will have large changes in cost of commodities changing incentives for land use, water use, conservation etc

**Being “on this curve” will be exhilarating, frightening and confusing**

# Real change is a messy and complex process. A reactive stance often makes sense.

Pandolfo Petrucci, Lord of Siena, to Machiavelli (Florence, c. 1515):  
**'wishing to make as few mistakes as possible I conduct my government day by day and arrange my affairs hour by hour; because the times are more powerful than our brains'**



Change is driven by contingent, messy and complex events – it rarely happens in smooth rational processes

9-11 shows how “the times” can force previously impossible changes e.g. to banking secrecy laws

Disruption, conflict and crisis are often necessary parts of change

UK experience of top-down managerial targets has shown their limitations: hospital waiting lists; education targets;

**Need to understand the real constraints on decision makers – not just assume they lack “political will”**

Demands to integrate sustainable development into policy are often seen as unrealistic. Policy Makers are often right as choices are not thought through!



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	<b>Sustainable Development Ideal</b>	<b>Policy Makers' View</b>
<b>Coherence</b>	All policy should be integrated and coherent, both domestically and internationally	<b>We have enough problems agreeing what to do internally without involving anybody else who will obstruct action</b>
<b>Long term approaches</b>	Policy should take a long term and preventative view and not just focus on short term reactive responses	<b>We are overstretched just keeping day-to-day operations afloat, planning over the next budget period and reacting to events.</b>
<b>Managing uncertainty</b>	Policies should consider the full range of possible uncertainties	<b>More uncertainty is unhelpful and complicates decision making. What am I meant to do with it?</b>
<b>Systematic approaches</b>	Policies should be designed in a systematic manner embracing and controlling all parts of the problem and solutions	<b>Systematic proposals are overcomplicated and can never be implemented in the real world</b>

# Some PMSU case studies of practical sustainable development



## **Fisheries Policy**

Tackling issues of compliance and regulation inside a complex economic, political and biological system.

## **Energy Policy**

Making long run investment decisions under conditions of high uncertainty

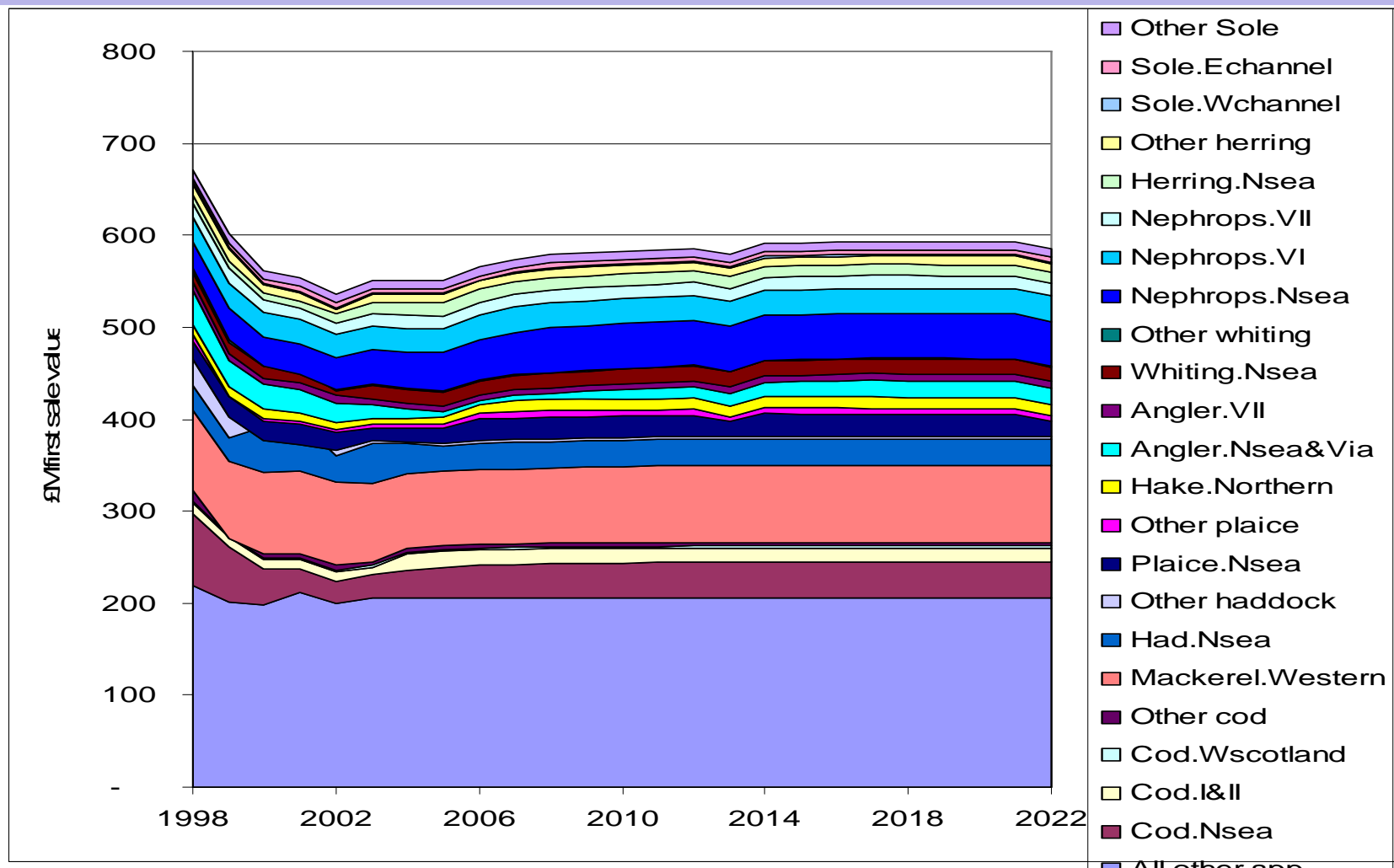
## **Countries at Risk of Instability**

Tackling barriers to effective preventative action in foreign policy



- Commission from the PM after meeting fishing industry in 2003 post large scale quota cuts
- Report – “Net Benefits: A sustainable and profitable future for UK fishing”
- Published March 2004

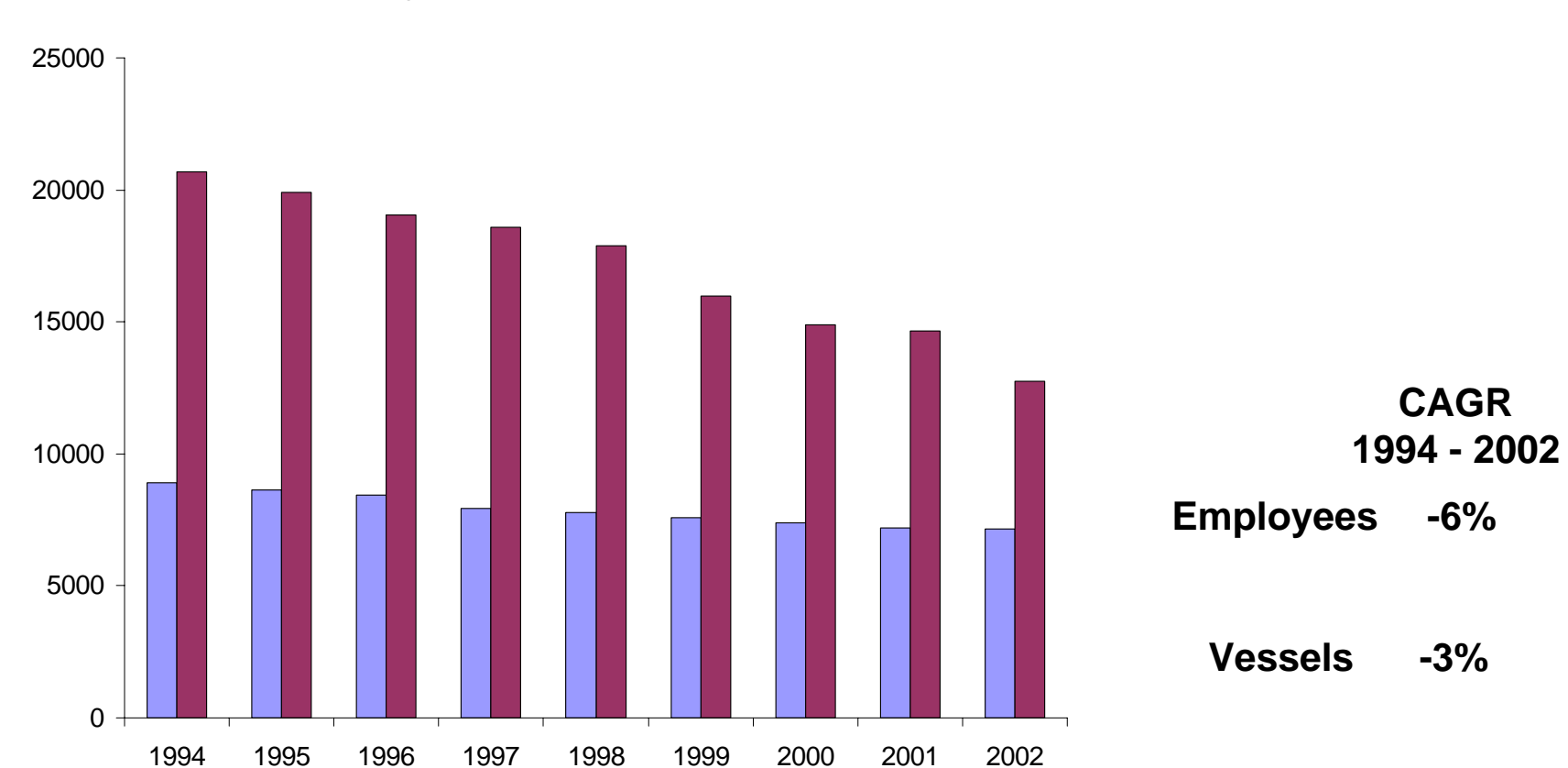
# Large number of valuable UK fish stocks – over 80 commercial species



# Both vessel numbers and employment have been falling over the past 8 years

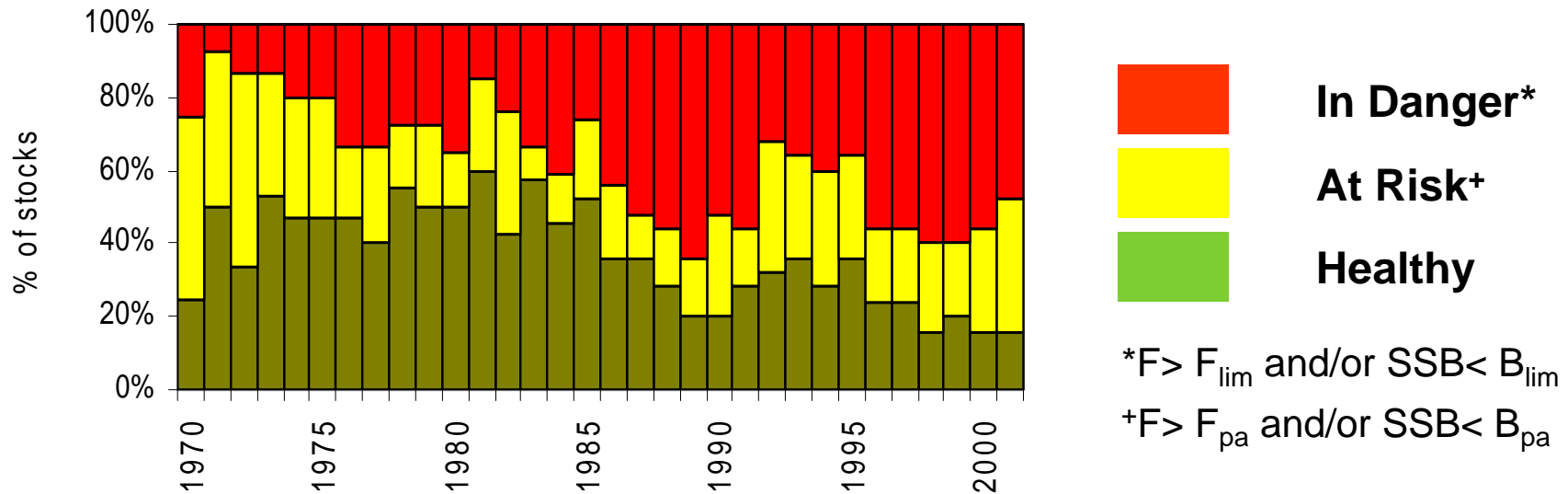


**UK Employment and Fleet Size of UK Fisheries**



# CFP seen as a management failure by scientists and fishermen

## Status of EU Quota Stocks over Time

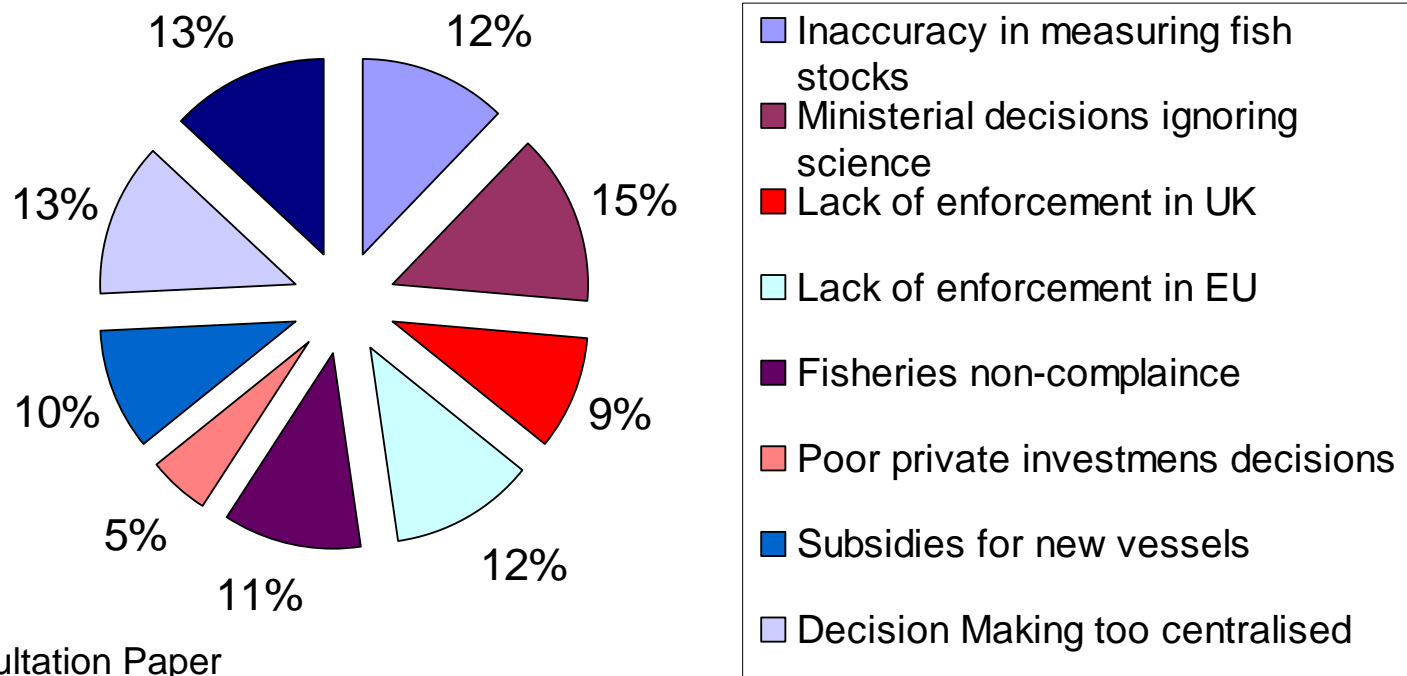


CFP has not been successful at managing fish stocks

# CFP suffers from systemic failure. Compliance identified by 32% of stakeholders as key problem.



- All parts of the CFP system have significant problems
- This system failure is recognised by stakeholders
- Lack of faith in system leads to widespread non-compliance



Source: SU Consultation Paper

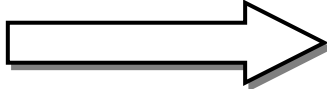
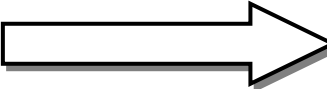
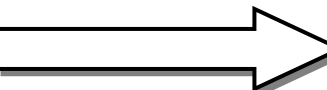
# “Hard line” bureaucratic views on lack of compliance (all countries!)



- Fishermen not obeying the rules is a criminal offence
- It undermines fish stocks and their livelihoods therefore they must be irrational, irresponsible and at the extreme congenitally dishonest/different (“fishermen are hunters”)
- Fishermen cannot be trusted to co-manage fish stocks (except UK and other EU countries have done this in overseas aid programmes for 30 years)
- Any systemic discussion of incentives for non-compliance is giving fishers “excuses” for breaking the law
- **Need stronger enforcement/better science/better fishermen – government must exert more control**

# But this approach is not economically feasible.....

## UK Sea Fishing Industry – Balance Sheet 2002

Industry Revenue		£546m
Estimated Operating Profits in Industry*		£125m
Estimated Government Expenditure**		£120M

**Government spending all value added on regulation.  
Fisheries too complex and expensive for more control.**

\*\* includes costs of administration, stock estimation, enforcement, price support and grant support

\* does not include interest payments and depreciation charges - thought to be low in all but the pelagic sector

Source: DEFRA, SEERAD,  
Seafish cost and Earnings,  
Strategy Unit Analysis

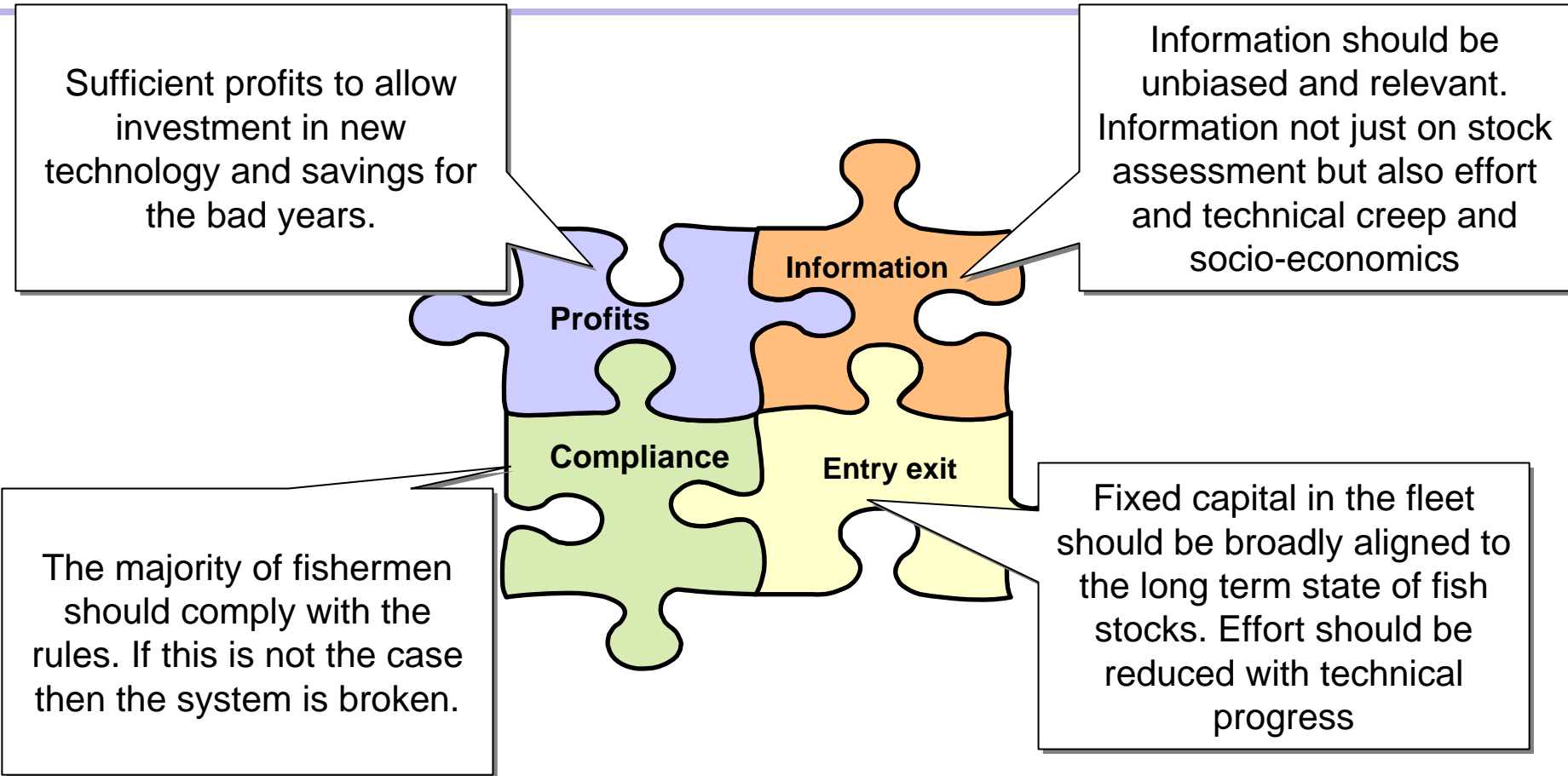
# Key insights from economic modelling of enforcement calibrated with enforcement professionals



- Increasing enforcement and penalties drives more honest fishermen out of business first – especially given number of technical penalties
- Those with new boats and high debts – possibly best entrepreneurs – are most vulnerable
- Large increases in fines would only bring marginal reductions in illegal landings – not enough to radically change system
- Just using bigger sticks will fail to improve compliance – and will undermine profitability and industry culture



# What would our ideal system look like?



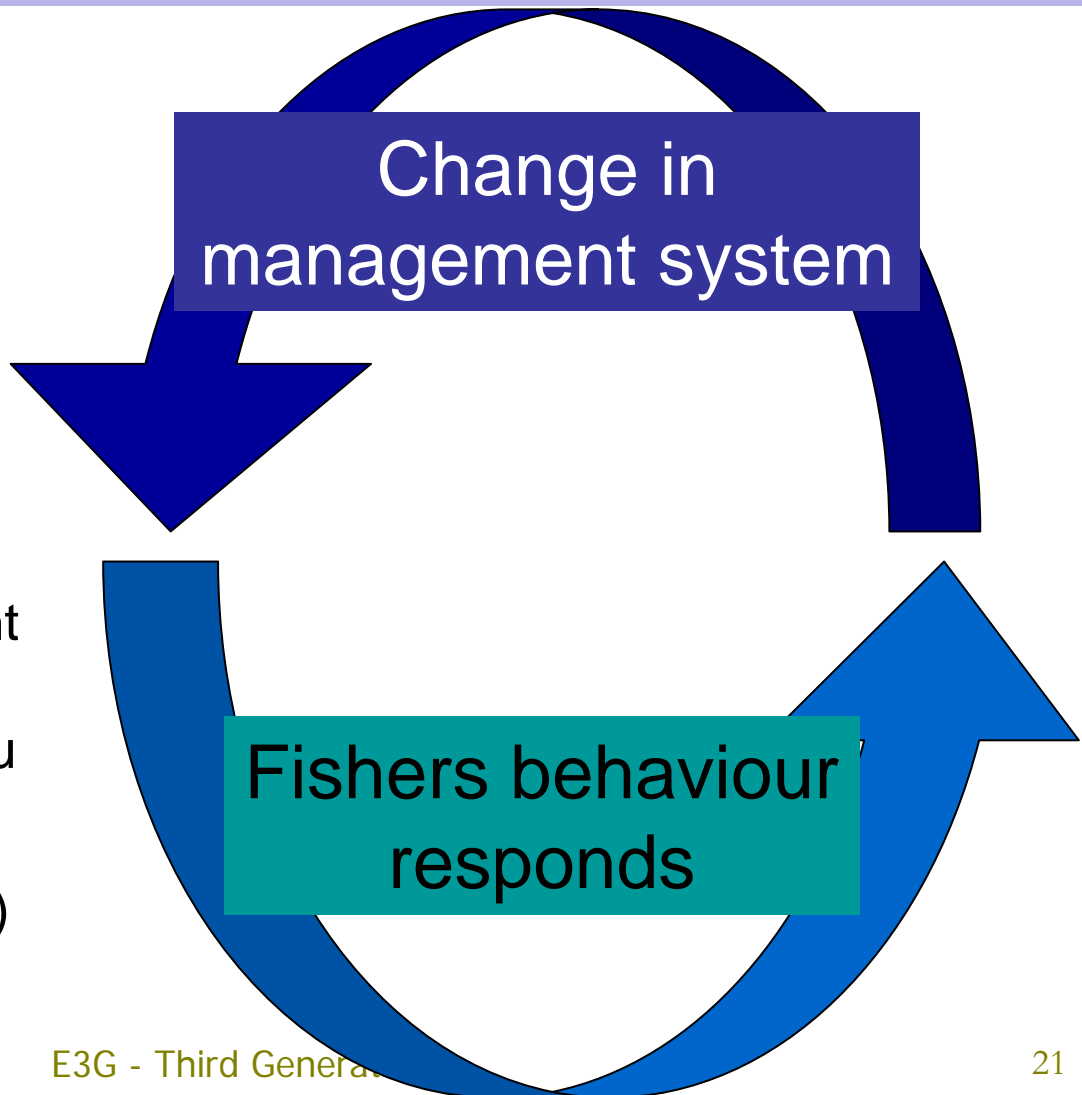
**Create a culture where compliance is the norm and the need for enforcement the exception**

# Beyond the theory: building a new management system



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- Change needed both in management system incentives and in the trust and behaviour of fishers operate within it
- International experience shows that you never get it right first time
- Political drivers important e.g. political power of recreational fishers in NZ/Au
- Need a period of crisis and adjustment (5-10 years) before reaching acceptance



# Lessons: Uncertainty addressed by Building Systems that can Learn



- Building the strategy required a large number of systems models based in different disciplines: biology; economics; game theory; business analysis.
- Key parameter was the impossibility of controlling activity in such a dispersed and fragmented industry – transaction costs too high.
- Limits of biological understanding – especially of impact of climate change – gives high future uncertainty to stock predictions. Need high trust system to have any chance of managing these future uncertainties cooperatively.
- Need to motivate further investment in continual innovation of scientific and regulatory systems, building in high degree of flexibility and innovation to future environmental and economic challenges.

**Limits of measurement, modelling, control and understanding motivated investment in a high trust system that can learn**



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# Energy: Routemaps, Options and Uncertainty

# The Energy White Paper 2003 (basis PMSU Energy Review 2002)



Four objectives for UK energy policy:

- **security**: maintaining secure supplies at stable prices in the long term
- **environment**: primarily climate change
- **competitiveness**: industrial energy costs comparable to key competitors
- **social**: eliminating UK fuel poverty

UK energy policy has been driven by **economic imperatives** for 20 years

Energy self-sufficiency meant UK energy policy has been **nationally focused**

# UK Hydrocarbon Production Falling



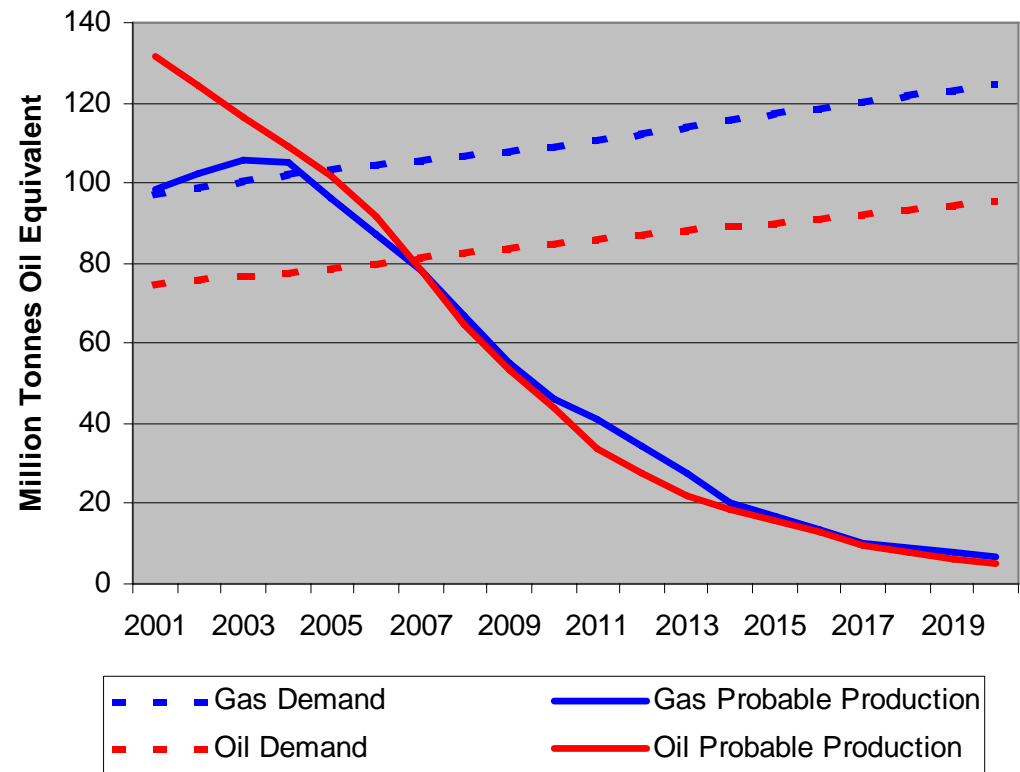
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The UK is currently a net exporter of both oil & gas

Demand for oil and gas is widely projected to rise by 2020

Domestic production is projected to fall leading to rising import dependency

### UK Oil & Gas Demand and Production



Source: DTI 2002

# Based on high level analysis UK took strong strategic decision to lead on climate change



- Set a domestic goal of 60% reductions from 1990 levels by 2050
- This target seen explicitly in the context of moving forward international consensus on tackling climate change
- Decision to undertake short to medium term policies to put UK emissions on a trajectory consistent with the 2050 goal:
  - 20% reductions by 2010
  - Around 30% by 2020

**Challenge was to build a credible package of measures to support the 2050 target without over-committing or over-investing - taking into account UK is just one player in key international markets**

# 2005 Review: Off target due to implementation failure



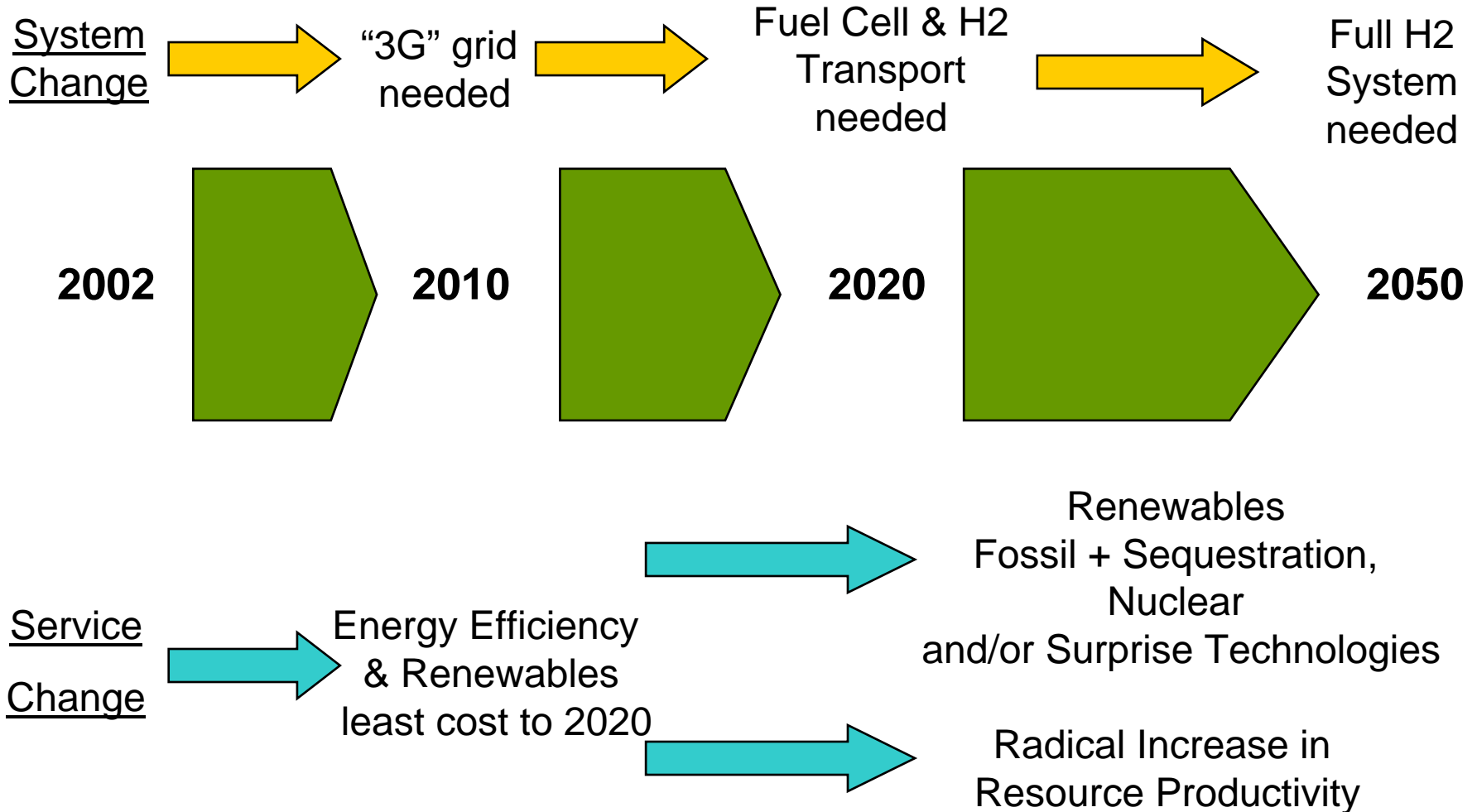
- 5-6%age points off 2010 target – mixture of baseline increases and policy implementation failures. Climate Change programme review under way.
- Renewable energy targets will be met in most scenarios – very rapid growth from low base
- Investment and strategic focus on innovation increasing:
  - Renewables innovation review 2004
  - Energy efficiency innovation review 2005
  - Hydrogen innovation review 2005

**Challenge of managing national carbon budget is far harder – and cruder – than anticipated. Need to develop practical risk management system.**

# Simplified Low Carbon Routemap for UK



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# Not All Futures are Equal

The future might be uncertain - but some scenarios are more likely:

- some technologies will penetrate less quickly than expected
- new scientific evidence is likely to show climate change will be more damaging
- this will probably imply the need for steeper and quicker emissions cuts
- but unexpected new technologies will lower the cost of reaching these targets - these will be determined mainly by activity in global markets - not UK R&D
- emissions growth in developing countries may jump with personal car use

**Hedging strategies should take into account the likely need for stronger CO2 reductions**

# Pathway 2020 - 2050 - Technology Uncertainty



## Uncertainty around technological solutions under development....

Wind Energy	rate of cost reductions as global markets grow
Solar Energy	rate of cost reductions as global markets grow
Biomass Energy	cost-effectiveness of next generation technology
Nuclear Energy	cost-effectiveness and safety/proliferation characteristics of next generation technology
Carbon Sequestration	cost effectiveness and environmental integrity

## and potential surprises.....

Solar Technology	appearance of ultra-cheap solar technology
Biotechnology	development of high efficiency cellulose conversion
Nanotechnology	development of ultra-efficient energy use technologies

# Carbon Catch 22 – the balance of driving innovation and investment vs retaining flexibility



- Where should UK invest its R&D? As 5% of global R&D spend how do we ensure technologies we need are actually developed?
- Which technologies will only be developed with immediate market pull rather than technology push? How can we spread the risks of building new niche markets for technologies (e.g. solar; wave; micro CHP)?
- Should we bet now on investment in radical system transformation as it is cheaper to sequence as incremental investment occurs – or will new innovations appear which make these redundant?
- How much risk can we push onto the private sector? How much reversals in govt decisions cost in terms of price premia?

**Need to create a virtuous circle of demonstrating feasibility of emissions cuts so decision makers commit to credible targets for market pull**



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# Countries at Risk of Instability: Complexity and Prevention

# Countries at Risk of Instability



- **Challenge identified in Strategic Audit of UK Policy in 2003**
- **PM commissioned to improve UK responses to CRI. CRI project run from 2004-5**
- **Report “Investing in Prevention” published February 2005**

# HMG has a range of high level objectives that will not be met unless CRI are tackled

## HMG Objectives\*

## CRI-Dependence

## CRI Impact

Terrorism & WMD Proliferation

Drug Trafficking & Organised Crime

UK Prosperity & Social Inclusion

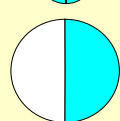
European Security & Neighbourhood Stability

Wider Stability & Humanitarian Protection

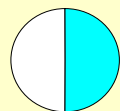
International Development



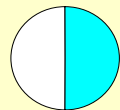
High



Drivers of international terrorism: opportunities for terrorists and proliferators



Illegal commodity sources, transit and other criminal opportunities



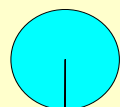
Undermines commerce, energy security, & effective inclusion of migrants to UK.



Threatens European security & impedes wider EU accession



Disrupts international relations, increases human rights abuse and humanitarian crises

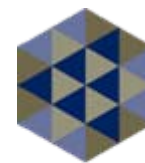


Impedes poverty reduction and other sustainable development goals

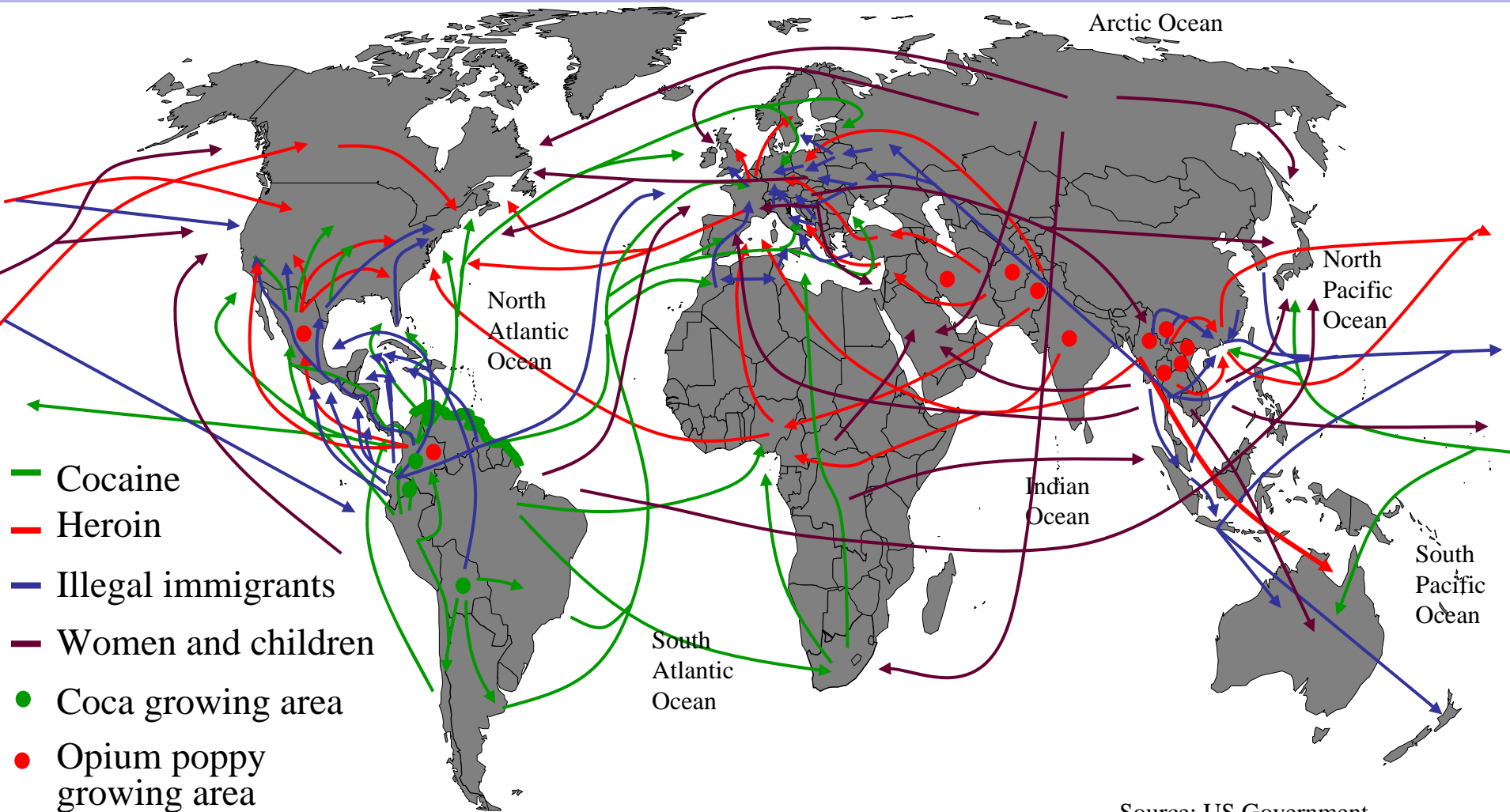
CRI prevent HMG from achieving its objectives in two ways:

- they **contribute** to several problems
- through poor policies and weak institutions, they fail to play their part as global citizens and therefore do not help us to **solve** global problems

# Need better understanding of how CRIs impact UK interests via global illicit networks



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- Cocaine
- Heroin
- Illegal immigrants
- Women and children
- Coca growing area
- Opium poppy growing area

March 2006

E3G - Third Generation  
Environmentalism

Source: US Government

# Investing in prevention is cheaper than cure but we do relatively little of it



*“The biggest source of inefficiency in our collective security institutions has simply been an unwillingness to get serious about preventing deadly violence.*

*The failure to invest time and resources early in order to prevent the outbreak and escalation of conflicts leads to much larger and deadlier conflagrations that are much costlier to handle later.”*

**UN High Level Panel on Threats, Challenges and Change 2005**

# Politics is vital – but tackling systemic issues will reduce political barriers to prevention



- “Received wisdom” focuses on a lack of political will as the primary cause of underinvestment in prevention and slow response to crises
- Political will to act is deterred by a number of factors:
  - Clashes of country interests
  - Costs and benefits of action don’t add-up
  - Perceived lack of public support for action
  - Choices for action seem unattractive and /or levers of influence are too small to make a real impact or too complex to deploy
- All of these problems can be heightened by systemic failures to provide timely, attractive options that spell out the relative costs of action and inaction coupled to effective implementation mechanisms.

**CRI Project looked the needs of decision makers (using structured interviews) as the basis for defining possible improvements**

# Critical decisions impacting stability pre and post crisis/conflict are made over many timeframes



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**10-15 years**

**2-6 years**

**.5-2 years**

**0-.5 years**

- Broad International system change

- Broad Regional system change

- National institution building

- UK military capability investment

- Economic investment

- Focused international system change

- Force reorganisation

- National governance strengthening

- Aid programmes

- Regional military strengthening

- Military Contingency planning

- Disaster/aid Contingency planning

- Policing operations

- Preventive diplomacy

- Military intervention/strengthening

- Diplomatic intervention

- Humanitarian support

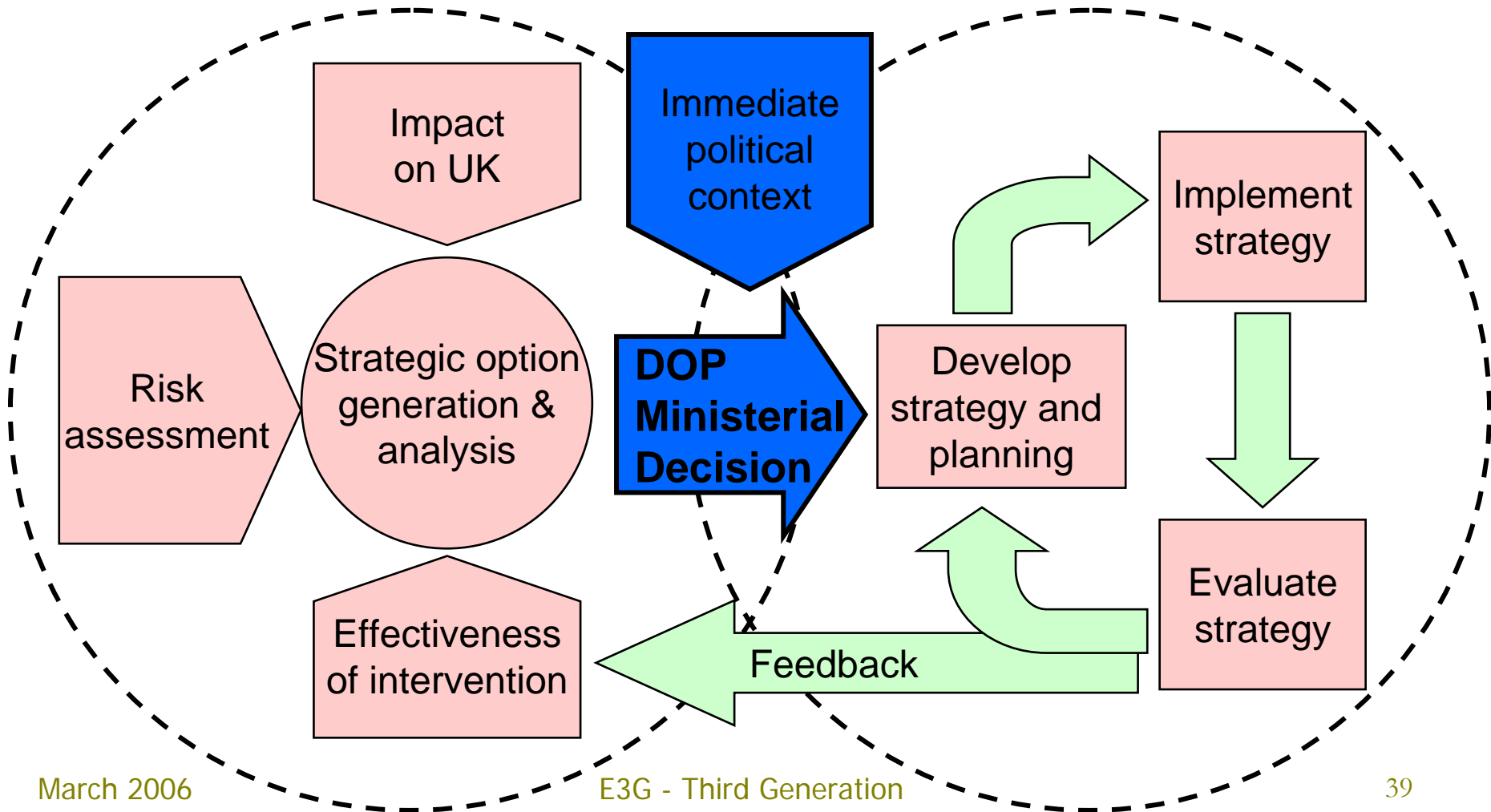
- Macroeconomic crisis support



Implementing responses to instability requires “end-to-end” strengthening of systems in Government(s)

### Decision Support

### Implementation Cycle



Joint SU/Departmental assessment of decision support across UK objectives indicates that risk and impact assessment is patchy, and evaluation & option generation are relatively weak



	Terrorism and WMD	Migration drugs & crime	UK economic prosperity	Energy security	European security & stability	Wider peace & stability	Sustainable development
<b>Risk Assessment</b>							
<b>Impact Assessment</b>							
<b>Evaluating Effectiveness</b>							
<b>Option Generation</b>							

**Effectiveness of Decision Support across HMG**

- Strong
- Evolving
- Slight
- (implied)

March 2006 Source: SU analysis based on HMG interviews

# Key to making system work is an integrated framework for structured analysis – the CRI “Instability Framework”



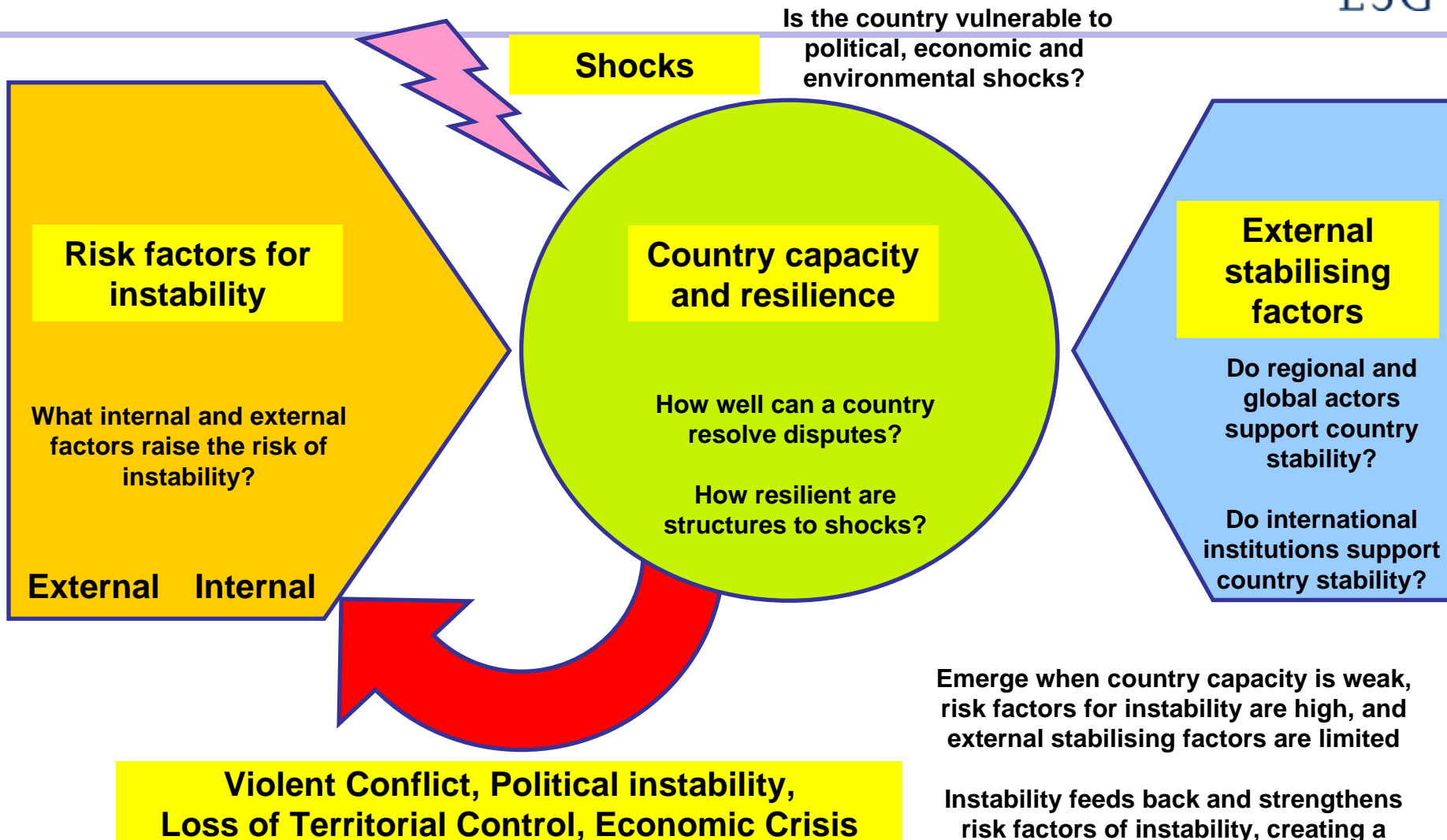
## **Design Criteria behind CRI Instability Framework**

- Provide a simple and robust high level framework for structuring discussion between different departments, analysts, disciplines and assessments
- Incorporates a the emergent dynamics of crisis and conflict
- Makes explicit critical assumptions around how risks will be effectively managed over time – allowing contest and challenge.
- Prompts analysts to consider all key generic factors (based on research) as well as country/region specific issues - preventing disciplinary bias and analysts focusing on easily available data
- Can be used to drive the full strategic country assessment process from risk assessment, futures and generating strategic options

# Building alignment through the Instability Framework: Instability arises from in balance between country capacity, internal and external risk factors and external stabilisers



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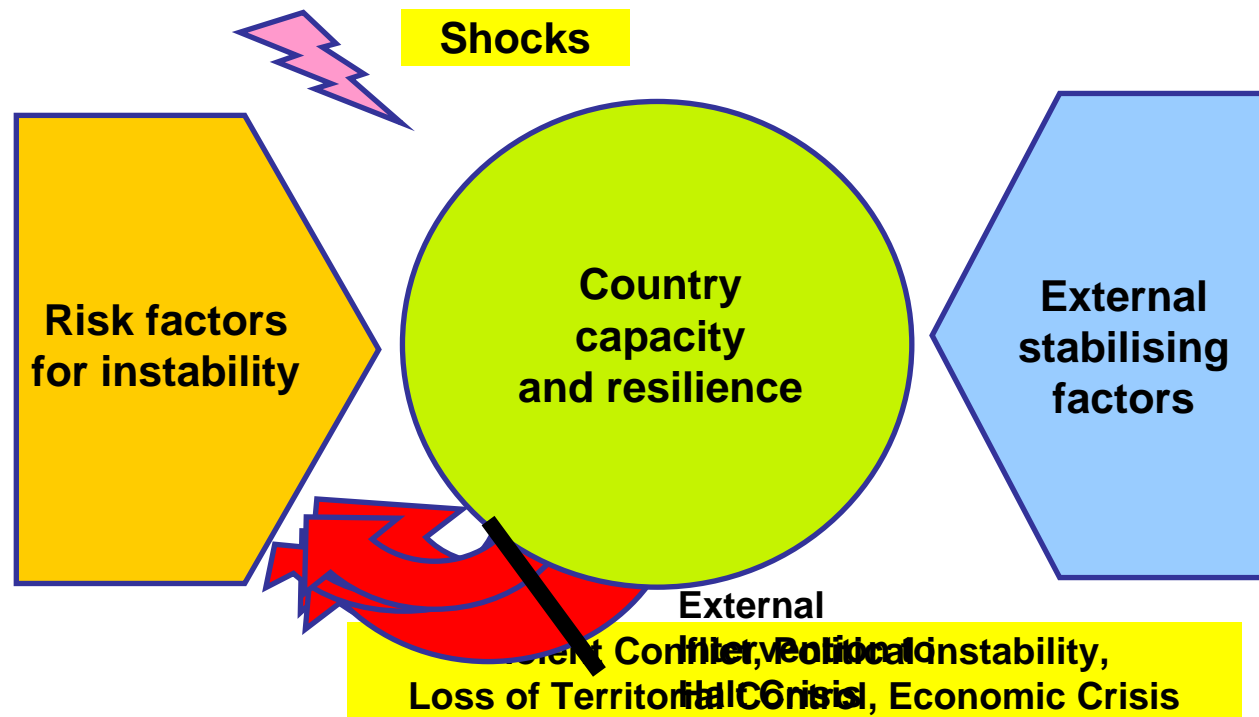


# Relative balance of factors changes over time as country risks change, crises emerge and are resolved



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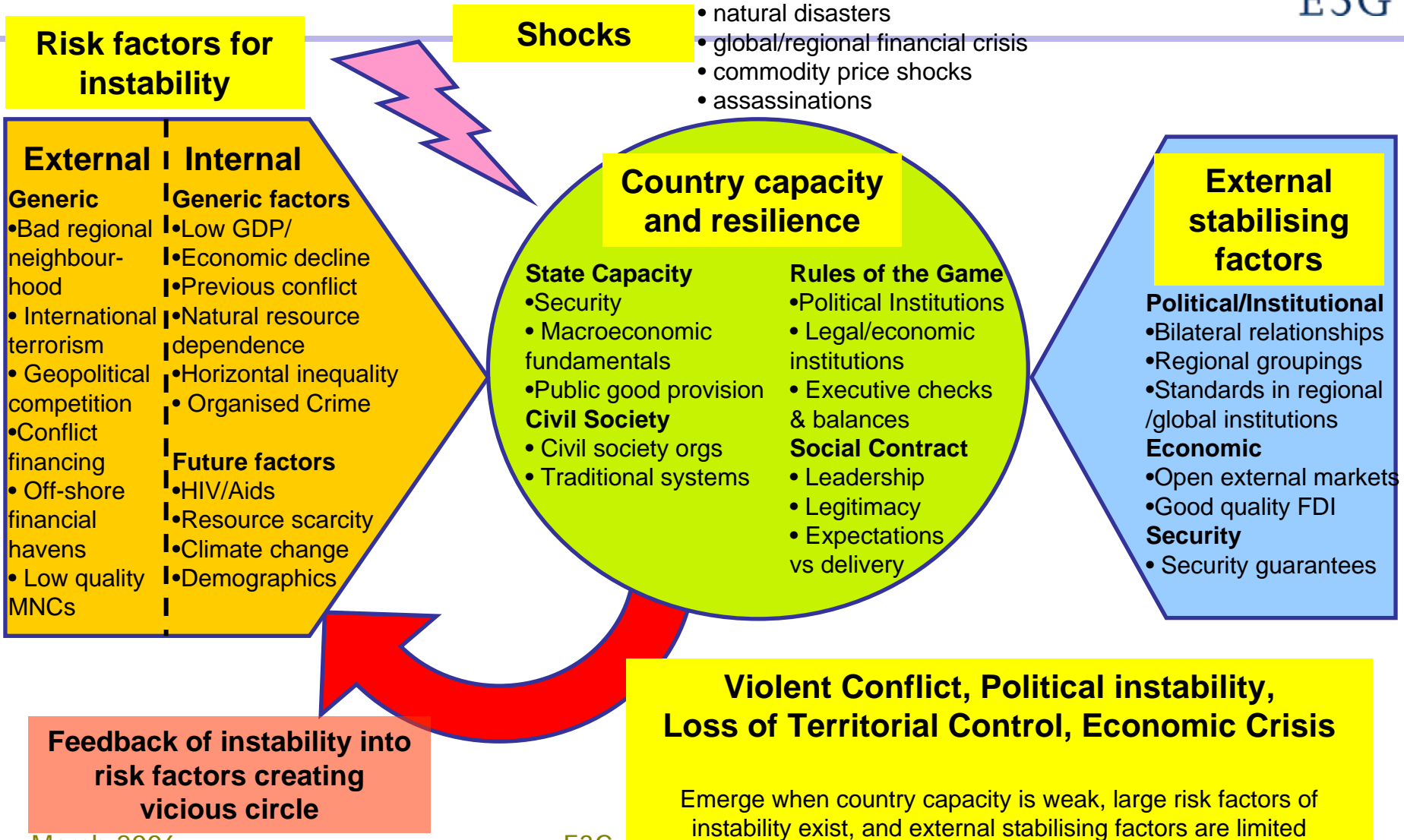
- 4. Post-Crisis with International Stabilisation
- 2. Stable Country, stability increasing



# CRI Annotated Instability Framework : Core factors to consider in country specific analysis



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# Lessons: New tools and institutions can help overcome “political” failures



- Instability and conflict issues are highly complex and not amenable to simple one size fits all policy solutions.
- Project developed a robust strategic approach and proposals for strengthening decision support and implementation systems to deliver it. Including piloting new approaches and tools with practitioners
- Credibility with stakeholders required the political realities constraining action to be kept in mind – but also needed to strongly challenge whether these were the only or main barrier to better responses
- System needs to invest in both preventive and reactive strategies for managing instability risks. This is a long term task which the project has formed one part.

**Tackling new security challenges requires major public sector reform and change – not just new policies**



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# Conclusions

# What counts as success?



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**Predictability and control will always be elusive. The business of government is inherently unpredictable, messy and shaped by events.**



**"..chance only favours the prepared mind" Louis Pasteur**

# Some Implications for Strategy and Policies?



- Understand the politics/institutions as well as the policies. 30-50% of time on an SU project is spent interacting with internal and external stakeholders – biggest payoff often comes from institutional design innovations which they help develop
- Complex change does not happen in a day – need to define a feasible pathway to making progress and not over complicate solutions. Often need to have critical “domino” policy or strategic idea which will motivate and guide future decisions.

# Produce Compelling Propositions



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Most propositions for long term, complex action fail to meet test of:

- Credibility**: will it really make a difference?
- Delivery**: can we actually make this happen?
- Desirability**: Do the costs and benefits (including politics) add up?

# Techniques for tackling difficult problems



- Difficult problems are often stuck in “impossible” loops which make it difficult for policy makers to see a way out, this can be addressed in several ways:
  - **“Reframing the problem”** to bring in new constituencies and approaches: e.g. “climate change is about investing to secure the benefits of a stable climate”
  - **Looking to the long term:** e.g. “is our fisheries management system robust to a changing climate and rising environmental consciousness?”
  - **Bundling multiple policy benefits:** e.g. “investment to prevent instability and conflict in Central Asia will benefit the UK’s WMD, terrorism, energy and OC policy priorities”

# Change the Operating System



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- Throwing more uncertainty at a decision maker without a clear framework for managing risk will motivate short term reactive approaches
- Improved outcomes require decision support systems and tools which can motivate investment in both preventive and reactive strategies.
- Design innovation, learning and creativity into responses to handle deep uncertainty and complexity (see **Silver Bullet Machine Manufacturing Company Limited** [www.silverbulletmachine.com](http://www.silverbulletmachine.com))
- Professional cultures must be understood and if possible incorporated into new approaches, or change is unlikely to happen. Though that does not mean biases and false assumptions should not be challenged.

# Challenge is developing the tools and structures of the new operating system



- Ability to combine sophisticated technical knowledge with understanding of political and institutional change processes
- New tools to analyse and communicate the impact of choices over the long term, under high uncertainty, and across diverse populations.
- New policy approaches to driving innovation, compliance, behavioural shifts and institutional performance and change.
- Ability to create spaces where all the necessary players for a solution can be convened, and with the mandate and resources to help forge solutions
- New training for policy makers and decision makers in complex and systemic decision making. For example, making them as comfortable with option analysis as CEOs of many large companies.

**Where are such skills, tools and approaches are being developed – in government, academia, consultancies, think tanks, businesses? Who is taking responsibility for driving change in the operating system?**

# The Last Word: Simplicity not Simplistic



*"I would not give a fig for the simplicity this side of complexity. However, I would give my life for the simplicity on the other side of complexity"*

Oliver Wendall Holmes

# Further Information



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All Strategy Unit reports and background papers can be found at [www.strategy.gov.uk](http://www.strategy.gov.uk)

Information on policy making methods can be found at [www.policyhub.gov.uk](http://www.policyhub.gov.uk)

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E3G can be found at [www.e3g.org](http://www.e3g.org)