

Annex 1: Workshop 1 Report

Local Economic Development and the Environment (LEDE) Toolkit

Action Research and Demonstrator Phase 2

Workshop Report

for workshop attendees
and those unable to attend

22nd January 2013



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Prepared for

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22nd January 2013

Quality Assurance	
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1 Introduction

1.1 Overview

This report summarises discussions at the Local Economic Development and Environment (LEDE) start-up workshop held on 10 January 2013 at Dragonfly House, Norwich. The workshop included two sessions; the morning session was attended by senior managers of New Anglia and Wild Anglia and interested partners, and introduced the background and aims of the LEDE toolkit and trial. The afternoon session was attended by operational New Anglia/Wild Anglia members and interested partners, and aimed to give an overview of how the toolkit works and develop focus areas for data collection.

A full list of workshop attendees is provided in Annex 1, with the workshop agenda included as Annex 2.

The workshop began with a brief presentation from Tim Sunderland of Natural England introducing the background to the LEDE project. This was followed by a presentation from Teresa Fenn of Risk & Policy Analysts (RPA), giving a brief introduction to RPA and their approach to this study. A summary of the discussions during and after the presentations can be found in Annex 3.

The afternoon session began with a summary of the LEDE project from Tim Sunderland, followed by a more detailed breakdown of how the toolkit works by Teresa Fenn. Both presentations can be found in Annex 4.

1.2 Brief Summary of the Study

The LEDE toolkit, created by Natural England, aims to help Local Enterprise Partnerships (LEPs) consider the environment in their economic development planning in a sustainable way. The toolkit has been through an initial trial stage, where changes were made to improve the process. It has now reached the point where a further trial is needed before it can be rolled out to other LEPs in the coming financial year (2013-2014). One of the outputs from the initial trials, which the LEPs and Local Authorities headed themselves, was that the toolkit may be better undertaken by expert consultants. Therefore, this study will be headed by an independent consultancy, Risk & Policy Analysts (RPA), with a view to simplifying the process so that it may be more suitable for use by LEPs, or so that expert consultant time is reduced.

The main aims of this study are to:

1. Trial the LEDE toolkit with New Anglia LEP/Wild Anglia LNP;
2. Compile a list of recommended modifications aimed at simplifying the toolkit with a view to making it more usable by LEPs themselves, and/or a record of any modifications made during the trial itself; and
3. A report on the process of undertaking the trial.

1.3 Objectives of the workshop

The workshop was intended to provide a background to the LEDE toolkit and the trial taking place with the New Anglia LEP/Wild Anglia LNP consortium. It provided the opportunity to bring together representatives of various organisations/bodies and enabled mutual gains to be achieved from their participation. The views and ideas of the various bodies can thus be considered when running through the toolkit, and the relevant holders of information and data identified and consulted.

2 Developing Focus Areas for Data Collection

2.1 Introduction

At the end of the presentations in the afternoon session attendees were asked to take part in a short exercise. The aim was to provide a starting point for RPA to focus efforts on the most relevant areas of the workbook, so that the outcomes are appropriate and useable for those involved.

Initially attendees were asked to think about their views on what the plan/vision for the LEP should be. These ideas were written down on post-it notes and stuck on the wall.

Attendees were then asked to come up with categories to group their ideas together, considering each idea separately. Categories that the attendees felt should be included but for which no plan or vision had previously been identified were added afterwards. Attendees were then asked to think about data needs and list potential sources from which these data may be obtained. An expanded list of the abbreviations used in the potential data sources identified can be found in Annex 5.

2.2 Ideas on plan/vision grouped into categories

Sustainable growth:

- Measuring Green Economy Pathfinder (GEP) achievements to value/consider environmental impacts;
- Need for Wild Anglia manifesto to inform LEP plan/vision;
- Improve business start-ups and increase innovation;
- In line with National Planning Policy Framework (NPPF) and Natural Environment White Paper (NEWP);
- To underpin GEP objective of developing Norfolk and Suffolk as a test bed for innovative solutions in relation to climate change – “the open air lab”;
- Greater connections between development and environmental delivery;
- Drive costs, resources and energy efficiency across all sectors;
- Demonstrate how environmental savings/improvements can = cost savings;
- Create Unique Selling Point (USP) for Norfolk and Suffolk as national green economy leader; and
- Norfolk and Suffolk to lead the green economy.

Business and skills:

- Develop key sectors and other local economic opportunities;
- Improve productivity and earnings;
- Enable innovative, entrepreneurial and radical solutions to business challenges and opportunities; and
- Upskill the workforce and improve aspiration.

Funding and finance:

- Establish evidence to inform how business can invest directly in nature and how nature develops a sustainable profit centre; and
- Maximise funding and investment opportunities.

Land:

- Defra mapping project (by Norfolk Biodiversity Information Service, NBIS) needs turning into opportunity map.

Land management:

- Long-term solutions for environmental land management;
- Low input industrial agriculture; and
- Agriculture – agri-environmental schemes used to protect and enhance the environment/nature and support farmers in key areas.

Accountability, leadership and monitoring:

- LEP to publish its accounts to include value of environmental (and social?) factors; and
- LEP leading by example – triple bottom line assessment of projects it funds.

Communications:

- To establish evidence base that can be utilised in branding and communication around Wild Anglia and the wider Green Economy Pathfinder objectives;
- Enable to LEP's population to better understand the monetary value of their environmental impacts; and
- Communicate effectively and share information to drive sustainable growth regionally and nationally.

Tourism:

- Marketing to iconic landscapes.

Social:

- More greenspace accessible to communities; and
- Tourism in the broads and sea level rise?

Water:

- Water efficiency;
- PR14; No deterioration in Phosphate, Ammonia under the WFD. Is this considered in economic development? Growth but no access to water;
- Restoring Sustainable Abstraction (RSA); effect of abstraction on ecology and climate change, asking abstractors to reduce but allowing growth;
- Water resources – sufficient water (surface and groundwater) to meet sustainable development and environmental needs; and
- Water quality – improvements attained to required standards, i.e. PSA (Public Service Agreements), WFD (Water Framework Directive).

Energy:

- Hydropower – scope and cumulative effects

Biodiversity and habitat:

- Net gain for biodiversity as a result of development;
- Protecting nature;
- Protected sites; and
- Habitat, cultural? Is diversity considered the same as wild species diversity? Often can't have one without the other – links to river restoration cost-benefit.

Infrastructure:

- Links to green infrastructure strategies;
- Transparent links must be sustainable;
- Rural broadband/telecommuting;
- Investment in infrastructure; and
- Climate change – our infrastructure is resilient to changing weather patterns (floods and drought) and flood plains allowed to function.

Partnership Working (added as a category after collation of ideas)

Risk Management (added as a category after collation of ideas)

2.3 Potential Data sources by category:

Sustainable growth:

- Local authorities will have figures on how much they would like to grow and where (districts and boroughs);
- Energy suppliers (but may not release data on specific sectors);
- Sustainability groups – may de-personalise and release;
- Much work on this by EU funded projects;
- UKCIP;
- UEA;
- Climate change team at Norfolk County Council (NCC) and Suffolk County Council (SCC);
- Chambers of Commerce;
- Business demography from Office for National Statistics (ONS); and
- EU funded projects – DCLG will hold overall outputs.

Business and skills:

- SCC has skills team;
- NCC employment and skills board;
- WRAP – business efficiency and innovation; and
- Aspirations – more difficult to quantify.

Funding and finance:

- Green Economy Pathfinder document – UEA (John French);
- NCC and SCC – would know about major funding opportunities;
- Homes and Communities Agency (HCA);
- Heritage Lottery Fund (HLF);
- Waste companies (for landfill tax, etc.);
- DCLG – overview of EU money;
- BIS;
- DECC; and
- Private sector – but how to obtain these data?

Land and land management

- Natural England – for agri-env schemes;
- Forestry Commission for woodland management and creation grants;
- National Farmers Union (NFU);
- Country Land & Business Association (CLA);
- NGOs (WTs, NT, RSPB, etc.); and
- Farming & Wildlife Advisory Group (FWAG).

Accountability, leadership and monitoring:

- Suffolk chief executives group (also Norfolk) – not a source of data, but could ask questions and have discussion.

Communications:

- Partnership, who to involve – feeds into all categories.

Tourism, social, green space:

- District and local councils;
- Visit Norfolk, Visit Suffolk, Visit East Anglia;
- NE dataset (Monitor of Engagement with the Natural Economy, MENE);
- Access to Natural Green Space Target (ANGST);
- RSPB – economic impacts of tourism to their sites;
- Broads Authority;
- AONB;
- National Trust;
- Mapping opportunities – NBIS (contact Haidee);
- Forestry Commission – visits to forests, woodlands, etc.; and
- Indices of deprivation, etc.

Water:

- Environment Agency (contact Rory);
- Agricultural bodies (demand for water);
- Water use in agricultural study (AONB);
- Lead Local Flood Authorities (LLFAs);
- NFU;
- Water companies;

- County councils – flood risk;
- Water cycle studies – local authorities lead on these; and
- State of the environment report (Environment Agency).

Energy:

- Norfolk and Suffolk Energy Alliance;
- East of England Energy Group;
- Forestry Commission;
- Wood Fuel East (Forestry Commission);
- Woodland Working Group; and
- DECC.

Biodiversity and habitats:

- Suffolk Biological Records Centre (SBRC);
- NBIS; and
- Environment Agency.

Infrastructure:

- NCC infrastructure plan, SCC infrastructure plan, cross reference to Natural England. (Contact Marie re infrastructure plans);
- Haven Gateway;
- Greater Norwich Development Partnership (GNDP);
- DfT;
- Planning authorities;
- Rural broadband – county council economic regeneration teams;
- Suffolk Climate Change Partnership;
- Sustainability East;
- Climate ready (Defra);
- UK Power Networks;
- Major infrastructure unit; and
- Utilities companies.

Also:

- Other universities; and
- Norfolk Insight – old observatory but does not have much information on the environment. Also Suffolk Observatory.

2.4 Concluding Discussions:

Teresa Fenn (RPA) informed the attendees about the project hub which will be set up by RPA to store documents/progress reports etc. Attendees should let RPA know if they wish to be invited to have access to the project hub since it is a secure password protected site.

A request for a detailed project programme was made, so attendees know when they may be required to feed in information.

Annex 1 List of Attendees

Morning Session:

Keith Moore, Environment Agency
Tim Sunderland, Natural England Principal Specialist Economist
Iain Dunnet, New Anglia LEP
Heidi Thompson, Norfolk County Council
Haidee Bishop, Wild Anglia LNP Coordinator
David Dukes, Norfolk County Council
Sarah Wilson, Natural England Area Manager (covering Norfolk and Suffolk)
Gareth Price, The Land Trust (also Wild Anglia)
Sue Hooton, Suffolk County Council Senior Ecologist
Marie Finbow, New Anglia LEP
Chris Saville, Environment Agency
Teresa Fenn, RPA
Elizabeth Daly, RPA
Lucy Garrett, RPA

Afternoon Session:

Keith Moore, Environment Agency
Tim Sunderland, Natural England Principal Specialist Economist
Iain Dunnet, New Anglia LEP
Chris Blincoe, Adapt UEA
Heidi Thompson, Norfolk County Council
Haidee Bishop, Wild Anglia LNP Coordinator
Rory Sanderson, Environment Agency WFD Catchment Manager
Huw Richards, Environment Agency
Marie Finbow, New Anglia LEP
Ellen Jones, Norfolk County Council (infrastructure and growth)
Gareth Price, The Land Trust (also Wild Anglia)
Sue Hooton, Suffolk County Council Senior Ecologist
Chris Saville, Environment Agency
Teresa Fenn, RPA
Lucy Garrett, RPA
Elizabeth Daly, RPA

Annex 2 Workshop Agenda

Local Economic Development and Environment Toolkit Demonstrator and Trial Phase 2

Senior Manager Meeting. 10:00 – 12:00. Harnser Room, Dragonfly House, Norwich.

10.00 Building welcome (someone familiar with the building)

10.05 Welcome to the morning (Keith Moore)

10.10 Roundtable introductions

10.20 The LEDE project (Tim Sunderland)

- Rationale
- Aims and objectives
- Work so far
- New Anglia demonstrator and trial

11.20 RPA presentation

11.40 Clarification of process and next steps

Technical Meeting. 13:00 – 15:00. Harnser Room, Dragonfly House, Norwich.

13.00 Building welcome (someone familiar with the building)

13.05 Welcome to the afternoon (Keith Moore)

13.10 Roundtable introductions

13.15 Introduction to the LEDE project (Tim Sunderland)

13.20 RPA introduction and overview of LEDE workbook (Teresa Fenn)

13.40 Workshop exercise:

- Ideas on plan and vision for the area
- Grouping ideas into categories
- Types of data and sources
- Initial opportunities and threats (time permitting)

14.50 Clarifications and next steps

15.00 Close

Annex 3 Morning Presentation Notes

Brief notes from the discussion during Tim Sunderland's presentation:

- Main point of the toolkit is to make the connection between the environment and the economy.
- The toolkit is to help the LEP meet its goals and aid with decision making and planning. Natural England want to be able to offer the LEDE toolkit to LEPs and Local Authorities (LAs) by the end of this financial year. Although the toolkit is targeted at LEPs, it will be useful to LAs in terms of economic development and growth. The toolkit does not produce a holistic plan for the area, but rather is aimed at economic growth targets. It could help LEPs and LAs to do things more effectively (i.e. economic goal achievement). But it will also ensure that the environment and health are brought in early on.
- The toolkit is based on a SWOT analysis:
- Strengths and weaknesses – these are internal to economic development planning too.
- Only Opportunities and Threats are considered in the toolkit.
- Aim of trial – NE would like to be able to get the LEP to recommend the LEDE toolkit by the end of the process.
- Circular economy – things are designed for disassembly. But a circular economy cannot deliver green growth alone. We need to go beyond this concept, and consider both environment/economy relationships and the health of the environment.
- Sections of the toolkit include: 1) economic planning – data for this can come from pre-existing reports; 2) physical economy – businesses do this normally, but getting local data may be difficult; 3) relationship with the environment; and 4) opportunities and threats.
- The toolkit aims to consider the relationship between the economy and the environment now and how things will change into the future. Previous trial LEPs did not have a plan or strategy so they used business as usual (BAU). The original trial included Worcestershire, Staffordshire and Cornwall and Isles of Scilly LEPs.
- There are two ways to go: 1) promote good development and businesses; and 2) deal with the bad aspects of an area, e.g. low wages, poor skill levels, etc. How much detail does the toolkit go into with regard to this? In terms of Great Yarmouth and Lowestoft, we are learning from history. The oil and gas opportunity was missed, hence Aberdeen developed. The renewables industry is the next opportunity for this area.
- Regulatory services – these are traditionally the responsibility of governments.
- Threats – these can be negative feedback from services, e.g. more houses leads to more demand for water which then puts pressure on resources.
- In which service is the quality of the natural environment considered (i.e. the environment and biodiversity)?
- What about public opinion and the political environment?

- Both looking after the environment for its own sake and social capital are outside of the scope of the toolkit.
- The toolkit is aimed at the strategic vision rather than the detail. It will need data, but also conversations with relevant local experts.

It is not yet clear whether the final toolkit should be completed by consultants, or by the LEPs themselves (with the LEPs picking up the tab in terms of time and money). The criteria (i.e. proportionate, accessible outcomes, etc.) need to be clarified (e.g. what exactly is proportionate?).

Comments on Teresa Fenn's presentation:

- Timescales – a plan is to be developed so that people can see who to contact when, and when input is needed.
- Amount of time spent data searching and having conversations – it would be useful to have a record of this, especially for future LEPs who want to know what will be required when they use the toolkit.
- A report on the process would be useful – how did the work go, which bits were easier than others, links to proportionality, etc.
- There is a need to write for a specific audience (i.e. businesses).
- Continual communication will help avoid surprises and the end result not being accepted.
- Transparency is important.
- Data availability and where to find sources – a record would be useful for those involved, as a point of reference.
- Is there a need to involve district/borough local authorities? County councils could be the conduit. Districts/boroughs probably do not know anything about the toolkit yet and should be involved.

Annex 4 Afternoon Session Presentations

Local Economic Development and Environment Toolkit Trial 2: New Anglia/Wild Anglia

Slides presented at Norwich, 10th
January, 2013 with explanatory
annotations



These slides provide a high level introduction to the trial covering:

- 1) Project aim
 - SWOT analysis
- 2) Why New Anglia / Wild Anglia?
- 3) Greening Growth
- 4) How does it work?
 - Economic development
 - Physical economy
 - Ecosystem services
 - Disclaimers
- 5) Work so far
 - Reflections
- 6) New approach
 - Final product flexibility
- 7) Outcomes



1) LEDE project aim

- LEPs are required to provide “the clear vision and strategic leadership to drive sustainable private sector-led growth and job creation in their area” (BIS, Local Growth)
- This growth is required to be “environmentally sustainable and inter-generationally fair” (BIS, Local Growth)
- It is hugely challenging to make sense of the mass of information about environment and economy and apply in meaningfully to a local context.
- The toolkit will support LEPs to **make operational sense** of this information, so that it can **support vision development** through feeding in to **SWOT analysis**.



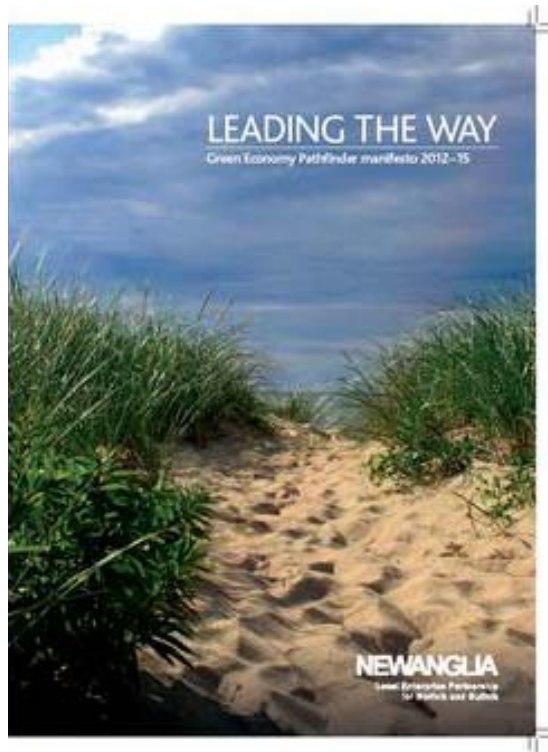
1a) SWOT analysis

- There are no agreed operational metrics for sustainable development
- The toolkit will be based on a SWOT analysis
- Our interest is in factors external to normal economic development planning – hence focus on **opportunities** and **threats**

Internal	External	
Strength	Opportunities	Positive
Weaknesses	Threats	Negative



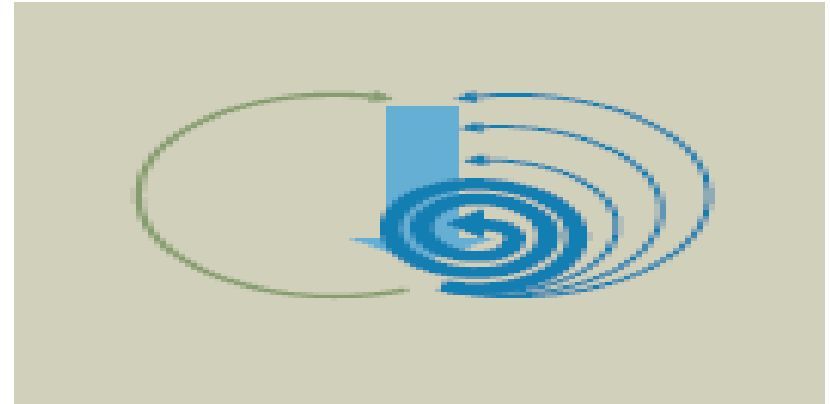
2) Why New Anglia/Wild Anglia?



- Because it's the Green Economy pathfinder
- Because this is one of the most progressive public policy statements I have ever read about the relationship between the environment and the economy
- Because there is a commitment in here to consider the value of the natural environment
- Because I am looking for a champion for the toolkit as well as a new trial



3) Greening Growth

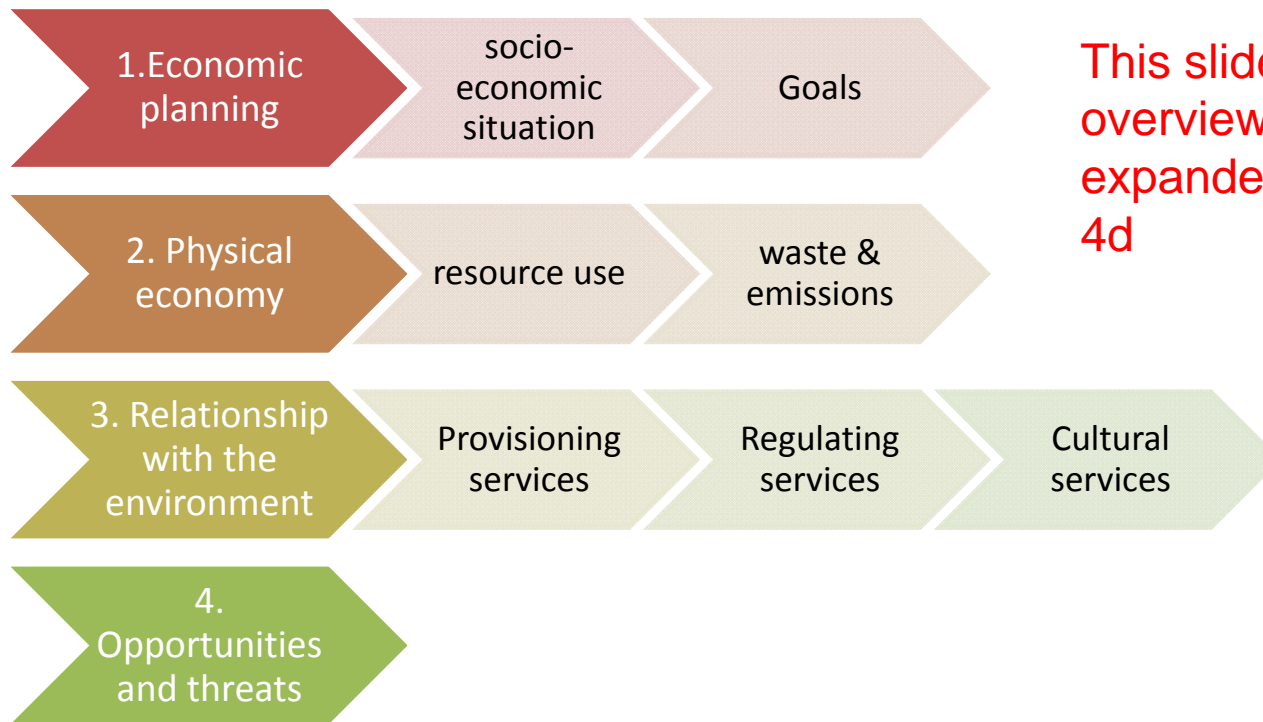


- Most of the discussion around green growth, focuses on recycling, material efficiency, or at its most advanced, design for disassembly and the circular economy.
- But although this approach is necessary and useful, but it is also insufficient.
 - the economy is a sub-set of the wider environment.
 - It has dependencies on ecosystems and has impacts on ecosystems. This means that the economy/environment relationships must be considered, as well as efficiencies within the economy.
 - This is particular pertinent if you have responsibility for the health of the economy in a particular *place*.



Graphic from:
http://www.thecirculareconomy.org/uploads/files/032012/4f6360009d31c6098f000006/original/Exec_summary_single.pdf?1331912704

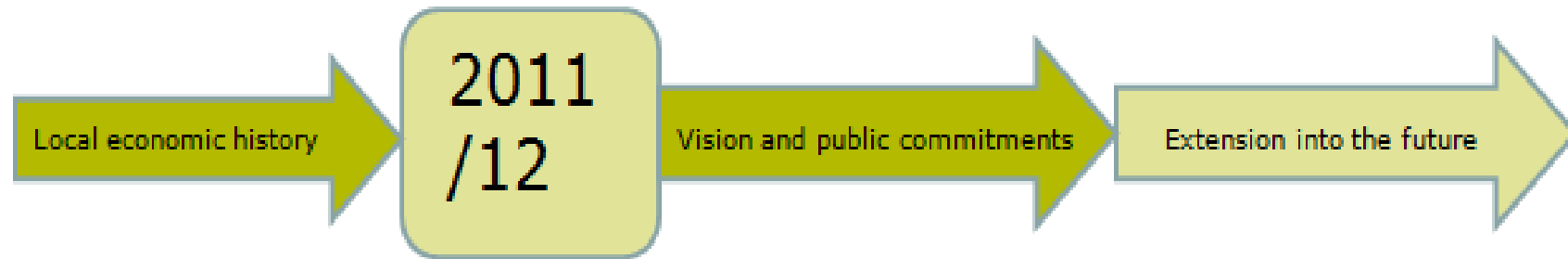
4) How does it work?



This slide provides an overview, which is then expanded upon in 4a - 4d



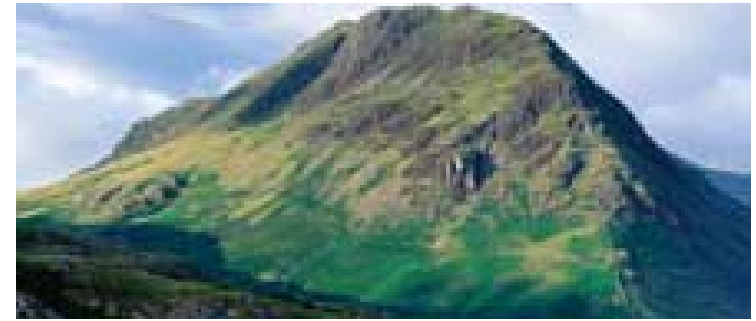
4a) Economic development section



- Path dependency implies that present and future are constrained by the past
- Toolkit will consider history and present situation
- One positive, plausible future *path/vision* will be examined
- This will be made up of current public comments, plus a logical extension into the future, to allow for longer term effects



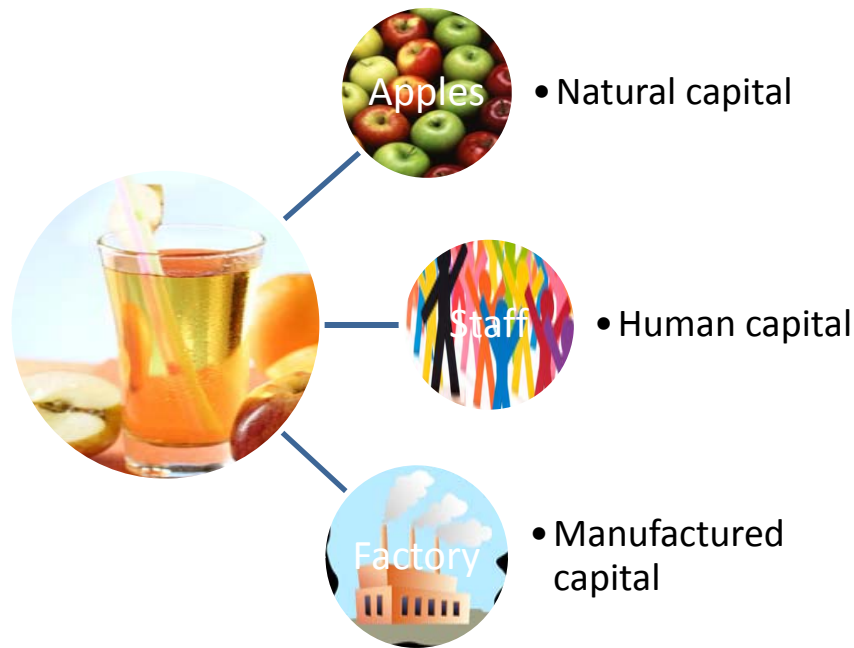
4b) The physical economy



- We are used to thinking of the economy primarily in terms of circular flows of money, but for this project we also need to think in terms of the physical or material economy
- However, there are some other relationships but matter greatly to the economy but are not material – such as people travelling to see particular landscapes. Sometimes these relationships can be quantified, sometimes they have to be dealt with qualitatively – but they remain important.



4c) Ecosystem Services



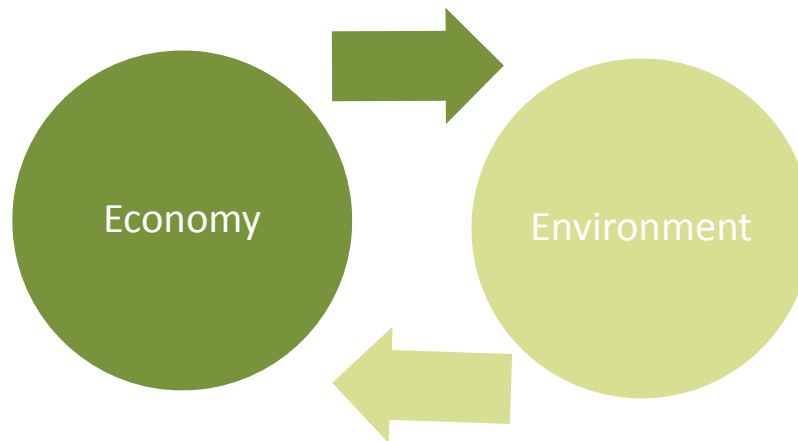
- Producing goods and services requires natural capital as well as human and manufactured capital
- As well as direct products – such as apples for cider - nature offers many less tangible, but equally important services



Provisioning services	Regulating services	Cultural services
Food	Air-quality regulation	Cultural heritage
Fibre and Fuel	Climate regulation	Recreation & tourism
Genetic resources	Water regulation	Aesthetic value
Bio chemicals, natural medicines, pharmaceuticals	Natural hazard regulation	
Ornamental resources	Pest regulation	
Fresh water	Disease regulation	
	Erosion regulation	
	Water purification and waste treatment	
	Pollination	

- The toolkit uses the Ecosystem Service framework





- For each Ecosystem Service we will consider whether the Environment to Economy relationship is positive **and** whether the Economy to Environment relationship is positive
- Negative relationships may suggest a treat, depending on significance and scale
- Positive relationships, which are not fully exploited by suggest an opportunity



4e) Disclaimers

- Not new research – making sense of existing data
- Quantitative and qualitative
- Varying levels of accuracy, confidence and uncertainty
- Will not provide a ‘*value of the natural environment in x*’
- Will not provide the optimal development pathway for your area
- Will systematically consider ecosystem services in your area



5) Work so far

Concept developed by Defra Network

Draft toolkit developed by Defra Network

Feedback and additions from across Defra Network and EFTEC consultancy

Trial 1 with LEPs in *Staffordshire, Worcestershire and Cornwall and the Isles of Scilly*

Feedback from trial incorporated into new toolkit draft



5a) Reflections on first trial

Successes

- 1) In-house non-specialist researchers were able to work through the toolkit successfully
- 2) Reports were welcomed by LEPs and LAs and have led to further work

Challenges

- 1) trying to fit it around their 'day jobs'
- 2) specialists possibly more efficient
- 3) Engaging the LEP - difficult in practice
- 4) Proportionality of research / confirmation bias



6) New approach



- A local commissioning consortium to take ownership of the project
- Supported by consultants who will drive the research agenda
- The aim is that a collaborative approach will maximise the value of the research to the partners



6a) New approach



- The process is shown in the graphic on the left
- These are slides from the initial workshop, at which the process was presented and ideas for data sources/ key interviewees collected.
- A final workshop, at which the report will be agreed will follow in March



6a) Final product flexibility

Must

- Support strategic economic planning
- Produce accessible outcomes
- Be proportionate in time/money cost
- Be recommended by LEPs and LAs

To be decided

- Whether some consultancy support is required or optional (with associated cost)
- Balance between generalists and specialists



7) Outcomes

- 1) An improved and recommended toolkit which can **improve strategic economic planning** through the proportionate consideration of environmental evidence.
- 2) The output of the toolkit for New Anglia – both a direct **contribution to economic planning** and a **demonstration** of the potential of the process
- 3) A report Defra Network focussing on how it could **improve its evidence offer** to support economic decision making.
- 4) Improved relationships and understanding amongst project partners in the New Anglia area



Local Economic Development and the Environment (LEDE) Workbook

presentation to
New Anglia/Wild Anglia Consortium

10 January 2013



RPA: who we are

- Independent specialist consultancy based in Norfolk
- Extensive experience of policy evaluation and assessment
- Undertaken many projects working with stakeholders and following an iterative approach
- Wide experience of the ecosystem services approach

Our approach

- To work closely with the local area consortium, providing the research skills required to apply the workbook
- To identify the potential for simplification, with a view to handing it back to LEPs (and consortia) to use themselves

Talk Overview

- Introduction to the LEDE Workbook
- Workbook structure
- Brief background to Ecosystem Services
- Types of information required
- Analysis
- Workshop exercise

Brief introduction

Aim of LEDE workbook:

- Include relevant environmental information within economic development planning
- Support tool for LEPs and LAs to meet targets sustainably
- This project takes a largely qualitative approach as there is no quantifiable definition of sustainable development
- Evidence base - used to consider opportunities and threats to planned economic development, followed by possible responses to them

Decision-making under uncertainty

- Gaps in evidence or uncertainty need to be highlighted
- But important to avoid assuming that recommendations cannot be made based on the lack of evidence
- Important to ensure decisions are as fully informed as possible - evidence-informed exploration
- Subjectivity is inevitable – transparency is needed for outcomes to be relevant to LEP/LA planning needs
- Outputs from the LEDE should be seen as an exploration of possibilities, not policy statements

Structure of workbook

Split into three sections:

- Monetary and Social:
 - background information on LEP, current economic situation and the LEP's plan/vision
- Input/Output:
 - physical economy
- Ecosystem Services:
 - economy's relationship with the environment

Monetary and social

- Provides the background to LEP
- NUTS statistics – details on economic performance
- Population size/trends
- Employment rates
- Qualification levels
- Indices of deprivation

Inputs/outputs

- Current land use – e.g. landcover maps
 - How have sectors contributed to shape this pattern?
 - What is desirable/problematic about this pattern?
- Likely changes to land use based on vision
 - What are economic drivers for land use change?
- Rural and urban land management
 - % of farming land which is arable/dairy
 - Quality of urban environment - greenspaces
- Minerals, fossils and biofuels – input refers to materials used in the local economy and output to those produced by the economy
 - Biggest in quantity terms – most important, etc.
- Waste treatment
 - Contribution of waste treatment, collection and recycling to local economy

What are ecosystem services?

As defined by the UKNEA: Ecosystem Services are the outputs of ecosystems from which people derive benefits.

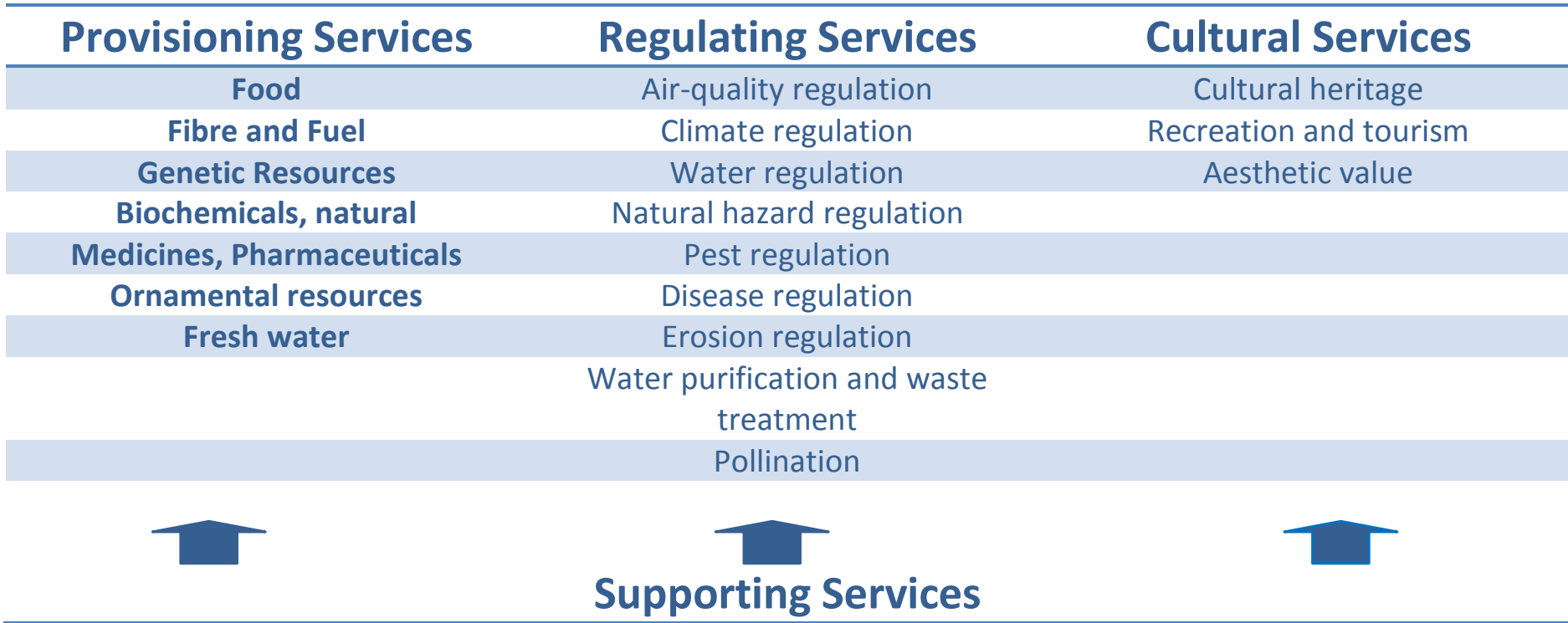
Considered under the headings of provisioning, regulating, cultural and supporting services.

Provisioning services: products produced by ecosystems – food, timber, freshwater

Regulating services: provide order and structure - climate regulation, flood and erosion control, pollination

Cultural services: non-material goods – wild species diversity for recreation, tourism, spiritual uses

Supporting services: underpin all other services – primary production, soil formation, nutrient cycling and water cycling.

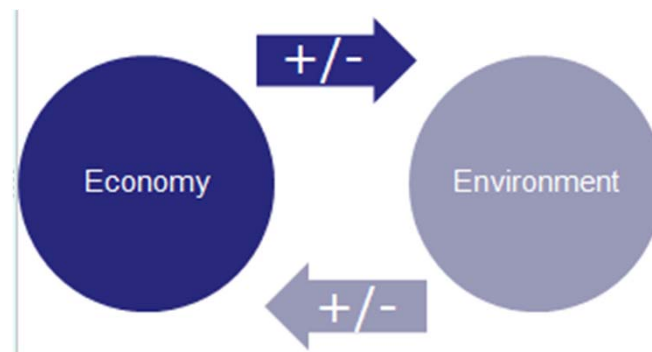


Economy – environmental linkages

For each ecosystem service the workbook considers:

- evidence about the economy's relationship to the environment – environment provides resources and inputs to produce crops thus benefiting the economy
- the economy's relationship with the environment – irresponsible farming could lead to reduced soil fertility, erosion and biodiversity loss

As shown by the examples these relationships can be negative or positive in either direction:



- Negative impacts may highlight potential problems with long-term sustainability
- Positive or potentially positive relationships may highlight areas which are not fully being taken advantage of

Ecosystem services are inter-related and the conceptual framework should not be used to imply that some can be safely exploited; there may be implications for other services.

Also important to consider geographic context:

- relationship between actions inside the LEP may affect the quality of services outside of area e.g. investment in low carbon technologies could have global benefits, or help to meet national targets



Data required

- For each section information is required to act as a starting point for deciding opportunities and threats
- Each subsection has a set of questions which can aid in focusing data collection
- Graphs and figures with meaningful data about the area under consideration may be useful

Example: Tourism

- How important is tourism to the economy in your LEP?
- What attracts tourists to your area?
- Are there external factors likely to increase/decrease tourism in your local area?
- What changes will your plan/vision lead to?

Opportunities and threats

- For each input/output and ecosystem service, collect information about the issues and usage within LEP
- This summary acts as the baseline from which the significant opportunities and threats are identified
- Each opportunity and threat is then given a rating score in terms of its importance (significance) and urgency (timescale for action)
- These scores are multiplied to give a combined score

Rating	Importance (significance)	Urgency (timescale for action)
4	Opportunity or threat could have a very significant impact on the whole of the LEP economy	Action on this opportunity or threat should have started already and either hasn't started or is underdeveloped
3	Opportunity or threat could have a very significant impact on particular areas of the LEP economy	Opportunity or threat should be considered within a three-year planning cycle
2	Opportunity or threat could have a significant impact on the whole or the LEP economy	Opportunity or threat should be considered within a ten-year planning cycle
1	Opportunity or threat could have a significant impact on particular areas of the LEP economy	Opportunity or threat should be considered within a twenty-year planning cycle
0	Opportunity or threat appears insignificant on the basis of current evidence	Opportunity or threat does not need consideration within a twenty-year planning cycle

- Note that importance and urgency scores can be assigned in any combination and are displayed in this order for ease of tabulation

Example

Opportunity or Threat	Importance Rating (0-4)	Justification	Urgency Rating (0-4)	Justification	Combined Score (0-16)
Opportunity: Demand for local produce	2	People are becoming more concerned and aware of where their produce is produced	3	Some work is underway, but should be considered for timely action, especially for farmers	6
Threat: Inappropriate development in Area of Outstanding Natural Beauty	3	Tourism is of central importance to the economy, but development is putting pressure on the landscape	4	Current protection is inadequate and additional, stronger protection is overdue	12
Opportunity: Landfill sites soon to close, invest in waste reduction	3	Potential to promote reduction and recycling ingenuity	3	Some work is already underway in this area, but it merits consideration in a three-year plan	9

Analysis

- Combined scores for each opportunity and threat are ranked to give the overall top ten opportunities and top ten threats
- These can be considered in terms of which can be dealt with through tactical responses and which need a more strategic approach

Tactical – discrete actions or projects requiring no change to LEP plan/vision

Strategic – consideration of whether changes to the plan/vision are required

Workshop exercise purpose

- Given short time frame it is important that we focus on the most relevant areas of the workbook so that the outcomes are appropriate and useable for you
- This exercise designed to highlight your thoughts and knowledge on where effort would provide the most gain

The aims of the exercise are to establish:

- The priority focus areas
- What data are available
- Where to find these data
- Think about opportunities and threats (time permitting)

Workshop exercise overview

1. What are your ideas for the Plan/Vision for the area? (20 minutes)
2. Grouping your ideas into categories (20 minutes)
3. Identifying types of data required and sources (30 minutes)
4. What are your initial thoughts on opportunities and threats? (time permitting)

Annex 5 List of Abbreviations for Data Sources Identified by Workshop Attendees

ANGST	Access to Natural Green Space Target
AONB	Area of Outstanding Natural Beauty
BIS	Department for Business Innovation and Skills
CLA	Country Land and Business Association
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
DfT	Department for Transport
FC	Forestry Commission
FWAG	Farming and Wildlife Advisory Group
GEP	Green Economy Pathfinder
GNDP	Greater Norwich Development Partnership
HCA	Homes and Communities Agency
HLF	Heritage Lottery Fund
LLFA	Lead Local Flood Authorities
MENE	Monitor of Engagement with the Natural Environment
NBIS	Norfolk Biodiversity Information Service
NCC	Norfolk County Council infrastructure plan,
NFU	National Farmers Union
NGOs	Non-Governmental Organisations
NT	National Trust
ONS	Office for National Statistics
RSPB	Royal Society for the Protection of Birds
SBRC	Suffolk Biodiversity Records Centre
SCC	Suffolk County Council
UEA	University of East Anglia
UKCIP	UK Climate Impacts Programme
WRAP	Waste Resources and Action Programme
WTs	Wildlife Trusts

Annex 2: Data resources used in the workbook

Data	Source	Geographic scale	Sectoral scale	Sections using the data	Data gaps/comments
Map of LEP area	Nomis labour market profile for New Anglia	LEP	LEP	1.1	
Sector growth strategy	New Anglia (2013): New Anglia local enterprise partnership for Norfolk and Suffolk: sector growth strategy, accessed at: http://www.newanglia.co.uk/Assets/Files/Content/New%20Anglia%20Sector%20Growth%20Report.pdf	Norfolk and Suffolk	Economy, agriculture, fisheries and aquaculture, recreation, aesthetics	1.3, 2.1.1, 2.1.7, 2.4.1, 2.4.2, 3.1.2, 3.2.1, 3.5, 4.3.1, 4.3.2, 6.1.2, 6.1.3	
GVA by industry sector 1995-2008	ONS (gvanuts_tcm77-220329.xls)	Norfolk and Suffolk	by industry	1.2	Growth data only to 2008
Economic growth rates summary	LEP Network, (2012). Creating Successful Local Economies. Review of LEPs in 2012.	LEP in comparison with all LEPs	GVA	2.1.1, 2.1.2, 2.2.5	GVA and rankings only up to 2008
Affects of economic downturn	Norfolk Insight, (2012) Local Economic Assessment for Norfolk 2012 Update. Norfolk County Council, accessed at: http://www.norfolk.gov.uk/view/NCC106434	LEP	LEP indicators, productivity, indices of multiple deprivation	2.1.1, 2.2.1, 2.2.3, 2.2.5, 2.4.4	
Workplace GVA per head 1995-2008	ONS (gvanuts_tcm77-220329.xls)	Norfolk and Suffolk, East Anglia, East of England, England	Workplace GVA	2.1.1	Data only up to 2008
Suffolk social structure	The Local Futures Group, (2006). The State of Suffolk: An Economic, Social and Environmental Audit of Suffolk. Report, October 2006. Accessed at: http://suffolkobservatory.info/JSNASection.aspx?Section=77&AreaBased=False	Suffolk	Trends in population, commuting patterns, indices of multiple deprivation	2.1.2, 2.1.3, 2.2.5	
Population growth	Corke S and Wood J (2009): Portrait of East of England, National Trends 41. Office for National Statistics Report, 2009.	LEP	Trend in population	2.1.2	
Change in working age population 1992-2011	Nomis labour market profile for New Anglia time series	LEP, East England, GB	Working age population	2.1.2	Difficult to compare with GVA as GVA data only up to 2008
Commuting patterns	New Anglia (2013). Plan For Growth. Outline Approach. PowerPoint presentation, New Anglia 2013.	LEP	Commuting patterns, qualifications	2.1.3, 2.1.6	
Job density 2000 - 2010	Nomis labour market profile for New Anglia time series	LEP, East England, England also Norfolk and Suffolk	All sectors	2.1.3	
Economically active people in employment 2004-2012	Nomis labour market profile for New Anglia time series	LEP, East England, GB also Norfolk and Suffolk	All sectors	2.1.4	Difficult to compare with GVA as GVA data only up to 2008
GVA per hour worked 2002-2009	ONS subregional productivity	Norfolk and Suffolk, East Anglia compared to UK		2.1.5	
GVA per filled job 2002-2009	ONS subregional productivity	Norfolk and Suffolk, East Anglia compared to UK		2.1.5	
Gross disposable income per head 2000 - 2010	ONS subregional labour market data	Norfolk, Suffolk, England		2.1.5	
Gross earnings 2011	ONS subregional labour market data	Norfolk, Suffolk, England		2.1.5	
Qualifications NVQ2,3,4	Nomis Qualification Statistics	LEP, Norfolk, Suffolk		2.1.6	Data is readily available
Investment	Finn E (2013): EDP News article, "Get Set for Investments of". Insight Energy, Eastern Daily Press 24. Tuesday, March, 2013. Accessed at: http://www.newanglia.co.uk/Assets/Files/Content/EADT%20Insight%20Energy%20P16%205.3.13.pdf	LEP	Indices of multiple deprivation	2.1.7	
Indices of multiple deprivation	Department for Communities and Local Governments	Lower Level Super Output Area	Indices of multiple deprivation	2.1.7	
Resilience index	LEP Network, (2012). Creating Successful Local Economies. Review of LEPs in 2012.	LEP compared with all LEPs	Resilience index, productivity	2.1.8, 2.2.1, 2.2.4	General overview, not a break down of how each LEP scores in the different sections
Skill sectors	Jones E and Dukes D (2013): Planning Analyst, Norfolk County Council and Economic Development Manager, Norfolk County Council; Personal consultation, 14 th February 2013.	Norfolk	Geographical variation	2.2.1	
Indices of multiple deprivation	Oxford Consultants for Social Inclusion (2010): "The Rural Share of Deprivation in Norfolk", accessed at: http://www.norfolkcc.org.uk/wiki/index.php/Rural_Deprivation_2010	Norfolk, Suffolk	Indices of multiple deprivation	2.2.5	
Indices of multiple deprivation	Oxford Consultants for Social Inclusion (2008): "Deprivation in Suffolk, Highly deprived areas and the rural share of deprivation", accessed at http://www.suffolkcc.org.uk/files/file/OCS%20Suffolk%20Rural%20FINAL%20Report%20v1%200.pdf	Norfolk, Suffolk	Indices of multiple deprivation	2.2.5	
Sectoral variation	De Anne J and Butler J (1997): Inflation and Growth in a Service Economy, Bank of England. Accessed at: http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/service.pdf	UK	Sectoral valuation	2.3	
	Cambridgeshire County Council (2012): EEFM 2012 baseline forecasts grouped by area, accessed at http://www.cambridgeshire.gov.uk/business/research/economylab/Economic+forecasts			2.4.1	
A high level document providing an evidence base to support the development of strategy and policy to inform decision making and resource allocation.	Norfolk County Council (2012): Norfolk's Story, Norfolk County Council, June 2012, Version 3.0, Planning Performance and Partnerships Service. Accessed at: http://www.norfolkinsight.org.uk/Custom/Resources/NorfolkStory.pdf	Norfolk	Economy, skills, etc.	2.4.2	
Qualifications	UK Commission for Employment and Skills (2010): National Strategic Skills, Audit for England. Report (2010) Jobs: Today and Tomorrow' Volume 1, p.4	UK	Qualifications	2.4.5	
An Economic Action Plan	Norfolk County Council (2012): Delivering Economic Growth in Norfolk; The strategic role for Norfolk County Council 2012 – 2017' available at: http://www.norfolk.gov.uk/view/cabinet020412item11.pdf	Norfolk	Economy	2.4	
GVA	Office for National Statistics (2012): Regional Gross Value Added (Income Approach), December 2012	UK	Economy	2.4	Provides data on GVA per region and for the country as a whole.
Provides data on economy, skills, investment, etc.	Suffolk County Council (2013): Growth in Suffolk; Our Economic Growth Strategy [Draft for Consultation]	Suffolk	Economy	2.4	Provides data on economy, skills, investment, etc.
Provides data on Economy, Skills, Green growth, etc.	Suffolk Strategic Partnership (2008): Transforming Suffolk; Suffolk's Community Strategy 2008-2028, available at: http://www.transformingsuffolk.co.uk/files/comm_strat/suffolkstrategic.pdf	Suffolk	Economy	2.4	A strategy plan for Suffolk on Economy, Skills, Green growth, etc.
Land use map	Natural England (2007): Natural England Land cover Map 2007, clipped to Norfolk and Suffolk. Data received from Natural England	Norfolk, Suffolk	Land use	3.1.1, 3.2.1	
Agricultural land use	Defra agricultural statistics by Local Authority: http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-landuselivestock-june-results-localauthority2010-120608.xls	Local Authority	Agriculture only	3.2.1	
Designated sites and agri-environment agreements	Natural England (2012): Norfolk, Agri-Environment Schemes: Key Information, scheme uptake and expenditure data, accessed at http://publications.naturalengland.org.uk/category/3573102#content	Norfolk	Agriculture, natural areas, genetic resources, global climate change mitigation	3.2.1, 4.6, 5.1.1	Does not cover land outside of agri-environment payments (but this can be inferred by comparison with Defra farming statistics, which gives total area of farmed land)
Designated sites and agri-environment agreements	Natural England (2012): Suffolk, Agri-Environment Schemes: Key Information, scheme uptake and expenditure data, accessed at http://publications.naturalengland.org.uk/category/3573102#content	Suffolk	Agriculture, natural areas, genetic resources, global climate change mitigation	3.2.1, 4.6, 5.1.1	Does not cover land outside of agri-environment payments (but this can be inferred by comparison with Defra farming statistics, which gives total area of farmed land)
Energy consumption data	Department of Energy and Climate Change, (2013). Sub-national energy consumption statistics. Statistical data set, January 2013. Accessed at https://www.gov.uk/government/statistical-data-sets/sub-national-energy-consumption-statistics .	Norfolk and Suffolk	Material input	3.3	
Waste statistics	Defra (2012): Local authority collected waste management statistics for England - Final annual results 2011 to 2012, accessed at http://www.defra.gov.uk/statistics/environment/waste/wrftg23-wrmsannual/	Local Authority, aggregated to County	Household, municipal	3.4	Inconsistencies between presentation of data across years (but data seem okay?)
Water and the environment	Environment Agency (2009): Water for life and livelihoods: river basin planning: summary of significant water management issues: Anglian River Basin District, accessed at http://www.environment-agency.gov.uk/static/documents/Research/anglianswmidoc_1953860.pdf	Anglian river basin	Non-coastal flooding	3.4, 5.2.1	

Waste and Aggregates strategy for the East of England	Government Office of The East of England (2008): East of England Plan: The Revision to the Regional Spatial Strategy for the East of England. Appendix C, accessed at: http://web.dacorum.gov.uk/docs/default-source/planning-development/east-of-england-plan-may-2008.pdf?Status=Master&srvs=0	Overarching strategy for waste management	East of England	3.4	
Sustainability Appraisal	Suffolk County Council (2009): Waste Core Strategy Submission Final Sustainability Appraisal Report, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Environment%20and%20Transport/Planning%20and%20Building/Minerals%20and%20Waste%20Development%20Framework/Waste%20Core%20Strategy/WCS%20Sustainability%20Appraisal%20Report.pdf	Suffolk	Household, municipal, commercial & industrial, other, Minerals, land and soil quality, landscape	3.4, 4.1.4, 5.6, 6.1.1	
Waste Core Strategy	Suffolk County Council (2011): Minerals & Waste Development Framework, Waste Core Strategy including Development Management Policies, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Environment%20and%20Transport/Planning%20and%20Building/Minerals%20and%20Waste%20Development%20Framework/Waste%20Core%20Strategy.pdf	Suffolk	Household, municipal, commercial & industrial, other, Minerals	3.4, 4.1.4	
Per capita local carbon dioxide emissions	DECC (2013): Per capita local CO2 emission estimates; industry, domestic and transport sectors, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/publications/local-authority-emissions-estimates	Norfolk and Suffolk	industry, domestic, transport, Global climate change mitigation	3.5, 5.1.1	
Energy sales of gas and electricity	DECC (2009) Sub-national energy consumption statistics 2009, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/statistical-data-sets/sub-national-energy-consumption-statistics	Norfolk, Suffolk, East of England and UK	Industry, domestic, transport, Fuel	3.3, 4.1	Need more detailed breakdown within these broad sectors
Electricity sales	DECC (2013): Regional and local authority electricity consumption statistics: 2005-2011. Department of Energy & Climate Change, accessed at https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics-2005-to-2011	Local Authority	Industry, domestic, transport	3.3, 4.1.1	
Importance of water	Defra: Water abstraction estimates, Department for Environment, Food & Rural Affairs, accessed at: http://www.defra.gov.uk/statistics/environment/inland-water/wf12-abstrac/	UK	Water supply	3.3, 4.2	
Aggregates	Suffolk County Council (2012): Suffolk Local Aggregates Assessment, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Environment%20and%20Transport/Planning%20and%20Building/Suffolk%20Local%20Aggregates%20Assessment%20Final%20Draft%20v%2017-12-12.pdf	County (Suffolk)	Aggregates, minerals	3.5, 4.1.4	Only covers Suffolk (could not find similar for Norfolk)
Green infrastructure	Suffolk Coastal District Council (2011): Green Infrastructure Strategy for Suffolk Coastal District Council, accessed at http://scdc.onesuffolk.net/assets/Documents/LDF/C4e/GI/SCDC-GI-Report-MayFinal.pdf	Suffolk	Global climate change mitigation	3.2.1, 3.2.2, 5.1.1	Gives an indication of strategy, no specific data (e.g. current issues not clearly specified). Other strategies available (Haven Gateway, Babergh). Includes vision and principles
Land Use Change statistics (houses built on previously developed land)	Department for Communities and Local Government (2011): Land Use Change Statistics, accessed at https://www.gov.uk/government/organisations/departments-and-local-government/series/land-use-change-statistics-statistical-data-sets	Local Authority (no aggregation at county level)	New houses only	3.2.1, 3.2.2	Needs to be linked to degree of urban/rural land use within each LA area - not yet found
Urban habitats	Suffolk Biodiversity Partnership (2000): Urban Habitats, accessed at: http://www.suffolkbiodiversity.org/content/suffolkbiodiversity	Suffolk	Urban Land Management	3.2.2	
Land use data	Neighbourhood Statistics (Land Use Statistics, Generalised Land Use Database)	Local Authority	Buildings, Road, Path, Greenspace, Water, Unclassified	3.2.1, 3.2.2	Just gives 'greenspace' (also domestic gardens) - but have data on farmland and designated site, so may be sufficient (haven't checked consistency of data yet); need density if domestic properties
Suffolk Historic Landscape Characterisation Map	Suffolk County Council (2008): Economy, Skills and Environment, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Libraries%20and%20Culture/Archaeology/2011-10-28_SUFFOLK%20HISTORIC%20LANDSCAPE%20CHARACTERISATION%20.pdf	Suffolk	Describes historical land use and development of land use	3.1.1	Only for Suffolk
Most important economic sectors	Suffolk County Council (2011): Suffolk's Local Economic Assessment, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Business/Business%20Services/Economic%20development/Final%20Assessment.pdf	Suffolk	Provides data for key sectors	3.1.1	Only for Suffolk (Local Economic Assessment for Norfolk downloaded - needs to be added)
Sugar beet biofuel	BBC News (2005): Sugar beet threat to biofuel unit, accessed at http://news.bbc.co.uk/1/hi/england/4551718.stm	UK	Cropping	3.1.2, 4.3.1.1	
Ecosystem services	McInnes, R (2007): Integrating ecosystem services within a 50-year vision for wetlands. Report for the Wetland Vision Technical Document, accessed at http://wetlandvision.org.uk/userfiles/File/Annex2_EcosystemServicesScopingReport.pdf	UK, but includes case study for Little Ouse Headwaters	Not specific	3.2.1	No specific data of use for Section 3.2.1 - might be useful for Sections 4 to 6?
Ecosystem services	Natural England (2012): Valuing Ecosystem Services: Case studies from lowland England, Annex 2: Reconnecting the Broads and Fens: Norfolk, accessed at http://publications.naturalengland.org.uk/publication/2319433	Norfolk and Suffolk,	Renewable energy, recreation	3.2.1; 3.2.2; 3.3, 4.1.6, 6.1.2	Gives some background land use data - might also be useful for Sections 4 to 6? Two case studies of interest: reconnecting the Broads and Fens: Norfolk; Little Ouse Headwaters
Ecosystem services	Luisetti T (2008): An Ecosystem Services approach for the Broads, Appendix 6. Report for the Broads Authority (Lake Restoration Strategy), accessed at http://www.broads-authority.gov.uk/broads/live/authority/publications/conservation-publications/Appendix_6_Ecosystem_Services.pdf	Broads	Not specific	3.2.1	Nothing additional above Natural England case study
Ecosystem services	Hallam Environmental Consultants Ltd (2009): Valuing Ecosystem Services in the East of England. Report for the East of England Environment Forum, East of England Regional Assembly and Government Office East England, accessed at http://fpbes.uneppwmc-004.vrn.brightbox.net/system/assessment/182/references/files/505/original/Main_Report.pdf?1363947905	East of England	Not specific	3.2.2	Gives some background land use data - might also be useful for Sections 4 to 6? (includes case studies for Norwich and Great Yarmouth); also arable agriculture pilot (March 2011)
Anglian region	Environment Agency: Anglian Region, accessed at: http://www.environment-agency.gov.uk/aboutus/organisation/77998.aspx	Anglian region	Land and soil quality	3.2.2, 5.6	
Multi-functional agriculture	Renting, H et al (2009). Exploring Multifunctional Agriculture: A Review of Conceptual approaches and prospects for an integrative transitional framework. Journal of Environmental Management, 90 (2) pp112-123	General Theory	Agriculture, Environment	3.2.1	It is the underlying theory for Land Management Schemes.
Farming	NFU (2010): Why farming matters to the Broads, accessed at http://www.beckthefarms.co.uk/images/Why%20Farming%20Matters%20in%20the%20Broads.pdf	Broads	Agriculture	3.2.1	References EoE Development Agency 2020 Vision for EoE food and farming sector - may be useful (e.g. for baseline); also Defra Food 2030 agenda
Detailed information on biodiversity of the Broads (number of species recorded etc.)	Panther, C et al (2011): Biodiversity audit and tolerance sensitivity mapping for the Broads. Report for the Broads Authority, accessed at http://www.broads-authority.gov.uk/broads/live/authority/publications/conservation-publications/Broads_Biodiversity_Summary_Report.pdf	The Broads (crosses Norfolk and Suffolk)	Biodiversity, Genetic resources, global climate change mitigation	3.2.1, 4.6, 5.1.1	Very comprehensive audit, also available for the Brecks (it is unknown as to the availability of similar work for other important landscape scale areas of England)
GHG emissions and CO2	LCI and UEA (2010): Towards a GHG reduction strategy for the Broads - derivation of emission estimates, technical report supporting strategy, low carbon innovation centre and University of East Anglia. Report for the Broads Authority, accessed at: http://www.broads-authority.gov.uk/broads/live/managing/climate-change/climate-change-adaptation-panel/climate-change-carbon-audit/BA_Final_Technical_Report.pdf	Broads	Global climate change mitigation	3.2.1; 3.3, 5.1.1	Includes details of emissions from commuting to work - can we use in Section 2 (might be able to find similar data for LAs?)
Green food	Defra (2012): Green food project conclusions, Department for Environment, Food & Rural Affairs, accessed at: http://www.defra.gov.uk/publications/2012/07/10/p13794-green-food-project/	UK	Agriculture	3.2.1, 4.3.1	
Agriculture outputs, linked to ecosystem services	URSUS Consulting Ltd (2011): Valuing ecosystem services in the East of England, Phase 2 - Practical applications of the approach Arable Agriculture Local Pilot. Report for Sustainability East, accessed at http://www.sustainabilityeast.org.uk/index.php?option=com_content&view=article&id=60	East of England	Agriculture (arable only)	3.2.1	
The state of the Environment-Rural	Environment Agency (2011): The state of our environment: Agriculture and land management, accessed at http://www.environment-agency.gov.uk/static/documents/Business/SOE_-_Agriculture_and_Land_Management.pdf	East of England	Agriculture, cropping, livestock	3.2.1, 4.3.1, 4.3.1.1, 4.3.1.2	
Tourism in Norfolk	Visit Norfolk: Tourism in Norfolk Strategy 2009-2012, accessed at http://mediafiles.thedms.co.uk/Publication/ee-nor/cms/pdf/TIN%20Strategy.pdf	Norfolk	Recreation	3.1.1, 6.1.2	
Rural and urban areas	Norfolk County Council (2012): Norfolk - Place and People: an evidence base to support the County Council Plan, accessed at: http://www.norfolk.gov.uk/view/ncc090847	Norfolk	Land use, general, Noise	3.2.2, 5.8	only cover Greater Norwich.
Land Use	See for example: The Landscape Partnership, (2009). Greater Norwich Green Infrastructure Delivery Plan, August 2009.	Greater Norwich	land use, waste management, green infrastructure	3.2.2	
Water resources	Essex & Suffolk Water (2010): Final water resources management plan 2010-2035, January 2010.	Suffolk	Material inputs	3.3	
Greenhouse gas emission	European Environment Agency (2011): Why did greenhouse gas emissions fall in the EU in 2009? EEA analysis in brief, accessed at http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2011	EU	Global climate change mitigation	3.3, 5.1.1	

Energy production (renewable and non-renewable)	NSEA (2012): An energy supply chain strategy for Norfolk & Suffolk, Norfolk and Suffolk Energy Alliance, accessed at http://www.orbisenergy.net/Assets/Files/Content/Energy%20Supply%20Chain%20Strategy%20Norfolk%20&%20Suffolk%20-%20FINAL.pdf	Norfolk and Suffolk	Energy production	3.3, 3.5, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.6	
Waste management	Suffolk Waste Partnership, (2003). Joint Municipal Waste Management Strategy for Suffolk 2003–2020. Accessed at: www.greensuffolk.org/assets/.../JMWM2003-Addendum2008.pdf	Suffolk	Waste treatment	3.4	
Waste strategy	Norfolk Waste Partnership, (2006). Joint Municipal Waste Management Strategy for Norfolk. Appendices, March 2006. Accessed at: http://www.norfolk.gov.uk/view/NCCD49080	Norfolk	Waste treatment	3.4	
Waste strategy	Suffolk County Council (2011): Waste Core Strategy including Development Management Policies, Minerals & Waste Development Framework, March 2011.	Suffolk	Waste treatment	3.4, 3.5	
Waste strategy	House of Commons (2010). Report on Environment, Food and Rural Affairs Committee on the Waste Strategy for England 2007. Report of session 2009–10. Volume 1. Accessed at: http://www.publications.parliament.uk/pa/cm200910/cmselect/cmenwfru/230/230i.pdf	England	Waste treatment	3.4	
Household waste	Defra Local Authority Collected and Household Waste Statistics (2005/2006 to 2011/2012): http://www.defra.gov.uk/statistics/environment/waste/wrf23-wrmsannual/	Norfolk and Suffolk	Waste treatment	3.4	
Gas production	DECC (2012): Gas production (DUKES F.2), Department of Energy & Climate Change, accessed at https://www.gov.uk/government/publications/natural-gas-chapter-4-digest-of-united-kingdom-energy-statistics-dukes	Bacton gas terminal	Oil and Gas	3.5	
Potential reserve growth in UK	DECC: Pie Charts Showing Potential for UK Reserves Growth, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/16093/6310-pie-charts-pot-res-grow-2012.pdf https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/16093/6310-pie-charts-pot-res-grow-2012.pdf	UK	Oil and Gas	3.5	
Oil and gas in southern North Sea	Lowestoft The Journal 24: Gas drilling upsurge for southern North Sea, accessed at http://www.lowestoftjournal.co.uk/news/gas_drilling_upsurge_for_southern_north_sea_1_1954358	Norfolk and Suffolk	Oil and Gas	3.5	
Oil and gas in Norfolk and Suffolk	East of England Energy Group: Southern North Sea remains a treasure trove for East of England, accessed at http://www.eeegr.com/news/southern-north-sea-remains-a-treasure-trove-for-east-of-england-2439.html	East of England	Oil and Gas	3.5, 4.1.1	
Energy demand	Suffolk County Council (2012): Suffolk Flood Risk Management Strategy: Sustainability Appraisal Scoping Report, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Emergency%20and%20Safety/Civil%20Emergencies/SFRMS%20Scoping%20Report%20-%20May%202012.pdf	Suffolk	Fuel	4.1	
Renewable energy	Renewables East (2009): East of England Renewable Energy Statistics, accessed at http://www.solaruk.net/resources/E%20of%20Ren%20Energy%20Stats%20June%2009%20211209.pdf	Norfolk, Suffolk and the East of England	Fuel	4.1	
Oil and Gas	Oil & Gas UK (2013): Activity Summary 201, accessed at http://www.oilandgasuk.co.uk/cmsfiles/modules/publications/pdfs/ECO37.pdf	UK	Oil and Gas	4.1.1	
UK oil and gas production	DECC (2012): UKCS Oil and Gas Production Projections, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/136390/production_projections.pdf	UK	Oil and Gas	4.1.1	
Oil and gas in Norfolk and Suffolk	EDP 24 the business: The future of Norfolk and Suffolk's energy contribution to be scrutinised, accessed at http://www.edp24.co.uk/business/the_future_of_norfolk_and_suffolk_s_energy_contribution_to_be_scrutinised_1_1964117	Norfolk and Suffolk	Oil and Gas	4.1.1, 3.5	
Bacton gas terminal	Interconnector: IBT Terminal, accessed at http://www.interconnector.com/PhysicalOps/Bacton.htm	Bacton	Oil and Gas	4.1.1, 3.5	
Oil and gas in Norfolk and Suffolk	EDP 24 the business: Oil & Gas UK report states importance of industry off Norfolk and Suffolk, accessed at http://www.edp24.co.uk/business/oil_gas_uk_report_states_importance_of_industry_off_norfolk_and_suffolk_1_1435022	Norfolk and Suffolk	Oil and Gas	4.1.1	
Oil and gas in North Sea	EADT 24: Does North Sea oil and gas have a future?, accessed at http://www.eadt.co.uk/home/does_north_sea_oil_and_gas_have_a_future_1_1468627	Norfolk and Suffolk	Oil and Gas	4.1.1	
Carbon capture and storage	East of England Energy Group: Carbon Capture and Storage (CCS), accessed at http://www.eeegr.com/carbon-capture-and-storage-cs.html	East of England	Oil and Gas	4.1.1	
Coal gasification	DECC: Underground Coal Gasification in the UK, Department of Energy & Climate Change, accessed at http://coal.decc.gov.uk/en/coal/cms/publications/mining/gasification/gasification.aspx	UK	Oil and Gas	4.1.1	
Oil and gas jobs in Norfolk and Suffolk	offshoreWIND.biz (2011): Oil, Gas and Renewable Sector Leads Way with jobs in Norfolk, Suffolk (UK), accessed at http://www.offshorewind.biz/2011/12/29/oil-gas-and-renewable-sector-leads-way-with-jobs-in-norfolk-suffolk-uk/	Norfolk and Suffolk	Oil and Gas	4.1.1	
Coal imports and exports	DECC (2012): Digest of United Kingdom energy statistics 2012: internet content only, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/84174/5965-dukes-2012-annex-g.pdf	UK	Coal	4.1.2	
Coal imports and exports	Solid fuels and derived gases: Chapter 2, Digest of United Kingdom energy statistics (DUKES), Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65755/5952-dukes-2012-chapter-2-solid-fuel.pdf	UK	Coal	4.1.2	
Energy production from coal	DECC (2012): Electricity: Chapter 5, Digest of United Kingdom energy statistics (DUKES), Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65818/5955-dukes-2012-chapter-5-electricity.pdf	UK	Coal	4.1.2	
Climate change	The National Archives (2008): The Climate Change Act 2008. Report for HM Government, accessed at http://www.legislation.gov.uk/ukpga/2008/27/contents	UK	Coal	4.1.2	
Electricity	DECC: Planning our electric future: a White Paper for secure, affordable and low-carbon electricity, Department for Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48129/2176-enr-white-paper.pdf	UK	Coal	4.1.2	
Sizewell C power station	EDF Energy (2012): Initial Proposals and Options Consultation Document: Sizewell C Stage 1 Pre-Application Consultation, accessed at http://sizewell.edfenergyconsultation.info/wp-content/uploads/Consultationdocument.pdf	Sizewell C	Nuclear	4.1.3	
Norfolk aggregates	Norfolk County Council (2010): Norfolk Minerals and Waste Development Framework, Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2013, accessed at http://www.norfolk.gov.uk/consumption/groups/public/documents/general_resources/ncc078476.pdf	Norfolk	Minerals, land and soil quality, air quality	3.5, 4.1.4, 5.6, 5.7	
Suffolk minerals and waste	Suffolk County Council (2007): Final Sustainability Appraisal Report. Report for the Minerals Core Strategy of Suffolk County Council's Minerals & Waste Development Framework, accessed at http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Environment%20and%20Transport/Planning%20and%20Building/Minerals%20and%20Waste%20Development%20Framework/Minerals%20Core%20Strategy%20DDPD/Final%20Sustainability%20Appraisal%20Report.pdf	Suffolk	Minerals, landscape	3.5, 4.1.4, 6.1.1	
Minerals in the UK	ONS (2008): Mineral Extraction in Great Britain, 2008, Office for National Statistics, accessed at http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-49800	Norfolk, Suffolk, East of England and UK	Minerals	4.1.4	
Location of peat projects UK	The Peat Compendium: Project locations, accessed at http://peatlands.org.uk/?q=map/node	UK	Peat	4.1.5	

Defra's environment protection targets	Defra (2011): The Natural Choice: securing the value of nature, accessed at http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf	UK	Peat	4.1.5	
Provisioning services	UK NEA (2011): Chapter 15 Provisioning Services, UK National Ecosystem Assessment, accessed at http://uknea.unep-wcmc.org/LinkClick.aspx?fileticket=6Hsc6TF7XG%3d&tabid=82	UK	Peat, fisheries and aquaculture, game and wild food, timber	4.1.5, 4.3.2, 4.3.3, 4.4.1	
Formation of peat	Natural England: Peat, accessed at http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/englands/peat.aspx	UK	Peat	4.1.5	
Carbon storage in peat	Natural England (2011): England's peatlands: carbon storage and greenhouse gases, accessed at http://publications.naturalengland.org.uk/publication/30021	UK	Peat	4.1.5	
Peat protection in the UK	IUCN: About the Peatland Programme, International Union for Conservation of Nature, accessed at http://www.iucn-uk-peatlandprogramme.org/about/AboutPeatlandProgramme	UK	Peat	4.1.5	
Investments in renewables in the UK	DECC (2012): Annual Energy Statement 2012, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65633/7086-annual-energy-statement-2012.pdf	UK and East of England	Renewable energy	4.1.6	
Economic value of renewable energy	DECC (2012): Annual Energy Statement 2012, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65633/7086-annual-energy-statement-2012.pdf	UK	Renewable energy	4.1.6	
Economic value of renewable energy	REA (2012): Renewable Energy: Made in Britain, Renewable Energy Association, accessed at http://www.r-e-a.net/resources/rea-publications	UK	Renewable energy	4.1.6	
UK imports and exports of renewables	BIS (2012): Low carbon environmental goods and services (LCEGS) Report for 2010/11, Department for Business Innovation & Skills, accessed at http://www.bis.gov.uk/assets/BISCore/business-sectors/docs/12-p143-low-carbon-environmental-goods-and-services-2010-11.pdf	UK and East of England	Renewable energy	4.1.6	
Bio energy company information	EPR Ltd (2013): Assets, Energy Power Resources, accessed at http://www.eprl.co.uk/assets/elv/overview.html	Suffolk	Renewable energy	4.1.6	
Generating capacity of renewable energy in the UK and East of England	DECC (2011): Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2011, Department of Energy & Climate Change, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65917/6481-renewable-electricity-2011-et-article.pdf	UK and East of England	Renewable energy	4.1.6	
Dogger Bank windfarm details	Royal Haskoning Enhancing Society: World's largest wind farm: Dogger Bank, accessed at http://www.royalhaskoning.co.uk/en/gb/fields/industryandenergy/Energy/Pages/dogger-bank-offshore-wind-farm.aspx	Dogger Bank	Renewable energy	4.1.6	
Hornsea windfarm details	Smart Wind: The Zone, accessed at http://www.smartwind.co.uk/the-zone.aspx	Hornsea	Renewable energy	4.1.6	
Government plans for energy UK	DTI (2007): Meeting the Energy Challenge: A White Paper on Energy: Chapter 5 Electricity Generation, Department of Trade and Industry, accessed at http://webarchive.nationalarchives.gov.uk/+http://www.berr.gov.uk/files/file39569.pdf	UK	Renewable energy	4.1.6	
Renewables in the LEP area	New Anglia LEP for Norfolk and Suffolk (2012): The Green Economy Pathfinder Manifesto, accessed at http://www.newanglia.co.uk/Assets/Files/Content/2012-06-08%20New_Anglia_Manifesto_art_lo-res.pdf	Norfolk and Suffolk	Renewable energy, cropping, timber, global climate change mitigation, recreation	3.1.2, 4.1.6, 4.3.1.1, 4.4.1, 5.1.1, 6.1.2	
Water availability	Environment Agency (2008): Water resources in England and Wales-current state and future pressures, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/geo1208bas-e-e.pdf	UK	Water supply	4.2, 3.3	
Water usage	Essex & Suffolk Water (2010): Final water resources management plan 2010-2035, accessed at http://www.eswater.co.uk/_assets/documents/ESW_FINAL_Water_Resources_Plan_-_V27.pdf	East of England	Water supply	4.2	
Water resources	Anglian Water (2010): Water Resources Management Plan, accessed at http://www.anglianwater.co.uk/_assets/media/AW_WRMP_2010_main_Report.pdf	East of England	Water supply, non coastal flooding, water purification	4.2, 5.2.1, 5.3	
Designated water sites failing to meet good status	Environment Agency (2009): Water for life and livelihoods: river basin management plan Anglian river basin district: Annex D: protected area objectives, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/geo1208bas-e-e.pdf	East of England	Water supply, water purification, erosion regulation, disease and pest regulation	3.1.2, 4.2, 5.3, 5.4, 5.5	Identified water availability and environmental sites that are water-related. Variation in details given (some give % by abstraction type, others do not; some give lists of habitats, others give examples only)
Catchment Abstraction Management Strategy	Environment Agency (2008): Water abstraction getting the balance right: The East Suffolk Catchment Abstraction Management Strategy, accessed at http://cdn.environment-agency.gov.uk/geo108bnou-e-e.pdf	East Suffolk	Water supply	4.2	Identified water availability and environmental sites that are water-related. Variation in details given (some give % by abstraction type, others do not; some give lists of habitats, others give examples only)
Catchment Abstraction Management Strategy	Environment Agency (2009): The North West Norfolk Catchment Abstraction Management Strategy, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/geo108bnou-e-e.pdf	North West Norfolk	Water supply, fisheries and aquaculture	4.2, 4.3.2	Identified water availability and environmental sites that are water-related. Variation in details given (some give % by abstraction type, others do not; some give lists of habitats, others give examples only)
Catchment Abstraction Management Strategy	Environment Agency (2006): The Broadland Rivers Catchment Abstraction Management Strategy, accessed at http://www.environment-agency.gov.uk/static/documents/GEAN0306BKIZ-e-e.pdf	Broadlands	Water supply	4.2	Upcoming technologies for reducing water use and more efficient use of water.
Water resources	Ashcroft, M. (2012): Water works: green solutions for a blue planet. Report for Green Futures, accessed at: http://www.forumforthefuture.org/greenfutures/shop/special-edition/water-works	Global and UK	Water supply	4.2	Upcoming technologies for reducing water use and more efficient use of water.
Water resources	Randall, I. (2012): Water works: green solutions for a blue planet. Report for Green Futures, accessed at: http://www.forumforthefuture.org/greenfutures/shop/special-edition/water-works	Global and UK	Water supply	4.2	
Water resources	Water Works: Green solutions for a blue planet. Report for Green Futures, accessed at: http://www.forumforthefuture.org/greenfutures/shop/special-edition/water-works	Global and UK	Water supply	4.2	
Water efficiency campaign	Anglian Water website: Drop 20 Campaign http://www.anglianwater.co.uk/environment/using-water-wisely/88223c4d331840b7857c03e14040c323.aspx	Anglian region	Water supply	4.2	Current campaigns for reducing water demand
Water efficiency	Anglian Water website: Drop 20 Campaign http://www.anglianwater.co.uk/environment/using-water-wisely/88223c4d331840b7857c03e14040c323.aspx	Anglian region	Water supply	4.2	
Food-Cropping and Livestock	Defra (2011): Agriculture in the United Kingdom 2011, Department for Environment, Food & Rural Affairs, accessed at http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-crosscutting-auk-auk2011-120709.pdf	UK	Food	4.3	
Food-Cropping and Livestock	Eurostat (2009): Key figures on Europe, 2009 edition, accessed at http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EI-08-002/EN/KS-EI-08-002-EN.PDF	European Union Member States	Food	4.3	
Agri-policy environment	Angus, A et al (2009): Agriculture and land use: demand for and supply of agricultural commodities, characteristics of the farming and food industries for land use in the UK. Land Use Policy, 26 pp230-242	UK	Food, Agriculture, Cropping	3.1.1, 3.2.1, 4.3, 4.3.1, 4.3.1.1	
Agri-policy environment	Defra (2006): Food Security and the UK: An Evidence and Analysis Paper, Department for Environment, Food & Rural Affairs, accessed at http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/foodsecurity.pdf	UK	Food	4.3	
Agri-exports	Defra (2012): Driving Export Growth in the Farming, Food and Drink Sector: A Plan of Action 2012, Department for Environment, Food & Rural Affairs, accessed at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69488/pb13702-food-export-actionplan.pdf	UK	Food	4.3	
Horse meat scandal	Raithatha, J (2013): Head of Economic Development of Suffolk County Council, personal communications	UK	Food	4.3	
Food consumption	Seyfang, G (2009): Local Organic Food: the social implications of sustainable consumption, CSERGE Working Paper EDM 04-09, accessed at http://prototype2010.csERGE.webapp3.uea.ac.uk/sites/default/files/edm_2004_09.pdf	UK (Norfolk case study)	Food	4.3	
Food survey	Defra (2011): Family Food Survey 2011, Department for Environment, Food & Rural Affairs, accessed at http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-food-familyfood-2011-121217.pdf	UK	Agriculture	4.3.1	
Agriculture land prices	Collinson, P (2011): Agricultural land prices hit record high. Report for The Guardian, accessed at http://www.guardian.co.uk/business/2011/apr/18/agricultural-land-prices-increase	UK	Agriculture	4.3.1	

Feeding the world	FAO (2009): How to Feed the World in 2050, Food and Agriculture Organisation, accessed at http://www.fao.org/fileadmin/templates/wfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf	UK	Agriculture	4.3.1	
Population forecast	Cambridgeshire County Council (2012): EEFM 2012 baseline forecasts grouped by area, accessed at http://www.cambridgeshire.gov.uk/business/research/economy/lab/Economic+forecasts.htm	UK	Agriculture, genetic resources, global climate change mitigation	4.3.1, 4.6, 5.1.1	
Environmental schemes	Fraser, R (2009): Land heterogeneity, agricultural income forgone and environmental benefit: an assessment of incentive compatibility problems in environmental stewardship schemes. Journal of Agricultural Economics, 60 (1) pp101-201	UK	Agriculture	4.3.1	
Problems with environmental schemes	Harvey, DR (2003): Agri-environmental relationships and multi-functionality: further considerations. The World Economy, 26 (5) pp705-725	UK	Agriculture	4.3.1	
Organic farming	Reganold, JP et al (1987): Long-term effects of organic and conventional farming on soil erosion. Nature, 330 (26) pp370-372	UK	Agriculture	4.3.1	
Organic farming	Mäder, P et al (2002): Soil fertility and biodiversity in organic farming. Science 296 pp1964-1967	UK	Agriculture	4.3.1	
Sustainable farming	Defra (2003): Changing Patterns: UK Government Framework for Sustainable Consumption and Production, Department for Environment, Food & Rural Affairs, accessed at http://collections.europarchiv.org/tna/20060810193049/http://www.defra.gov.uk/environment/business/scp/pdf/changing-patterns.pdf	UK	Agriculture	4.3.1	
Sustainable farming	Seyfang, G (2007): Growing sustainable consumption communities: the case of local organic food networks. International Journal of Sociology and Social Policy, 27 (3/4) pp120-134	UK	Agriculture	4.3.1	
Organic farming	Soil Association (2013): Organic market report, 2013, accessed at http://www.soilassociation.org/marketreport	UK	Agriculture	4.3.1	
Organic farming	Monks, H (2008): What effect will organic food have on your wallet?. Report for The Independent, accessed at http://www.independent.co.uk/money/spend-save/what-effect-will-organic-food-have-on-your-wallet-796117.html	UK	Agriculture	4.3.1	
Food retailing	Lloyd, T & Morgan, W (2007): Market power in UK food retailing. Euro Choices, 6 (3) pp22-29	UK	Agriculture	4.3.1	
Suffolk Show	Suffolk Agricultural Association (2013): The Suffolk Show: East Anglian farmers collect awards for enterprising schemes, accessed at http://suffolkshow.co.uk/our_news/latest_news/east_anglian_farmers_collect_awards_for_enterprising_schemes	Suffolk	Agriculture	4.3.1	
East Anglia arable crops	Culture of the Countryside: Major arable crops of East Anglia, accessed at http://www.cultureofthecountryside.ac.uk/resources/major-arable-crops-east-anglia	East of England	Cropping	4.3.1.1	
Norfolk beet growers	Pollitt, M (2013): Beet growers urge more investment in Norfolk. Report for EDP 24, accessed at http://www.edp24.co.uk/business/farming-news/beet_growers_urge_more_investment_in_norfolk_1_1856478	Norfolk	Cropping	4.3.1.1	
Norfolk beet growers	Pollitt, M (2012): Bright future for East Anglia's beet growers. Report for EDP 24, accessed at http://www.edp24.co.uk/business/farming-news/bright_future_for_east_anglia_s_beet_growers_1_1190110	Norfolk	Cropping	4.3.1.1	
EU sugar regime	NFU (2013): MEPs vote to extend EU sugar regime, National Farmers Union, accessed at http://www.nfuonline.com/sectors/sugar/latest-news/meps-vote-to-extend-eu-sugar-regime/	EU	Cropping	4.3.1.1	
Norfolk farming	EDP24 (2013): Norfolk Farming Conference will discuss threats – and opportunities – from climate change, accessed at http://www.edp24.co.uk/mobile/business/farming-news/norfolk_farming_conference_will_discuss_threats_and_opportunities_from_climate_change_1_1882263	Norfolk	Cropping	4.3.1.1	
Key crops and livestock	Defra (2010): Local authority breakdown for key crop areas and livestock numbers on agricultural holdings, Department for Environment, Food & Rural Affairs, accessed at https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june	UK, East of England, Norfolk and Suffolk	Cropping, livestock, land and soil quality, pollination	4.3.1.1, 4.3.1.2, 5.6, 5.9	
Farms accounts	Defra (2012): Farm Accounts in England – Results from the Farm Business Survey 2011/12, Department for Environment, Food & Rural Affairs, accessed at http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-publications-farmacc-2012-overview-1212181.pdf	England	Livestock	4.3.1.2	
Economic assessment	Norfolk County Council (2012): Local economic assessment for Norfolk: 2012 update, accessed at http://www.norfolk.gov.uk/view/NCC106434	Norfolk	Fisheries and aquaculture	4.3.2	
Fisheries overview	Eastern IFC: Fisheries Overview, Eastern Inshore Fisheries and Conservation Authority, accessed at http://www.eastern-ifca.gov.uk/index.php?option=com_content&view=section&layout=blog&id=4&Itemid=43	East of England	Fisheries and aquaculture	4.3.2	general overview of fishing methods and practices in the area
Marine conservation zones	Natural England: Marine Conservation Zones, accessed at http://www.naturalengland.org.uk/ourwork/marine/mpa/mcz/default.aspx	England	Fisheries and aquaculture	4.3.2	provides basic information about marine conservation zones and provides links for further information.
Finfish	Cefas (2012): Finfish news number 13, Summer/Autumn 2012, Centre for Environment, Fisheries & Aquaculture Science, accessed at http://www.cefas.defra.gov.uk/publications/finfishnews/ffn13.pdf	UK	Fisheries and aquaculture	4.3.2	
Aquaculture	SeaFish (2012): The SeaFish guide to aquaculture, accessed at http://www.seafish.org/media/publications/SeaFishGuidetoAquaculture_201211.pdf	UK	Fisheries and aquaculture	4.3.2	
Offshore wind and aquaculture	Mee, L (2006): Complementary benefits of alternative energy: suitability of offshore wind farms as aquaculture sites, Inshore Fisheries and Aquaculture Technology Innovation and Development, accessed at http://www.seafish.org/media/publications/10517_SeaFish_aquaculture_windfarms.pdf	UK	Fisheries and aquaculture	4.3.2	
Economic impacts of game and wild food	PACEC (2006): The Economic and Environmental Impact of Sporting Shooting, Public and Corporate Economic Consultants. Report for British Association for Shooting and Conservation, accessed at http://www.shootingfacts.co.uk/pdf/paccemainreport.pdf	UK	Game and Wild food	4.3.3	
Deer	UEA (2013): First in-depth deer census highlights need for increased culls, University of East Anglia, accessed at http://www.uea.ac.uk/mac/comm/media/press/2013/March/deer-cull-research	East of England	Game and Wild food	4.3.3	
UK woodland	UK NEA (2011): Chapter 8 Woodlands, UK National Ecosystem Assessment, accessed at http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx	UK	Timber	4.4.1	
Timber in the East of England	InCrops Ltd (2010): Low carbon supply chains for forest products in the East of England, accessed at http://www.incropproject.co.uk/documents/Resources/InCrops%20Timber%20Supply%20Chain%20Project%20Report%20October%202010%20%28NXPowerLite%29.pdf	East of England	Timber	4.4.1	
National Character Areas Ecosystem Services	Natural England (2013): Draft National Character Areas ecosystem services, Norfolk and Suffolk area, Natural England unpublished document	Norfolk and Suffolk	Timber, erosion regulation, land and soil quality, pollinators, aesthetics	4.4.1, 5.5, 5.6, 5.9, 6.1.3	
Map of UK woodland	Forestry Commission (2011): National Forest Inventory - Great Britain distribution of woodland 0.5ha and over, accessed at http://www.forestry.gov.uk/pdf/GB_Map.pdf/\$FILE/GB_Map.pdf	UK	Timber	4.4.1	
Theftford forest	Santon Downham Forest Enterprise, accessed at http://www.santondownham.org/foresterenterprise.html	Theftford Forest	Timber	4.4.1	
Suffolk woodland	Forestry Commission (2002): National Inventory of Woodland and Trees England: County Report for Suffolk, accessed at http://www.forestry.gov.uk/pdf/suffolk.pdf/\$FILE/suffolk.pdf	Suffolk	Timber	4.4.1	
Norfolk woodland	Forestry Commission (2002): National Inventory of Woodland and Trees England: County Report for Norfolk, accessed at http://www.forestry.gov.uk/pdf/norfolk.pdf/\$FILE/norfolk.pdf	Norfolk	Timber	4.4.1	
National Character Areas in the East of England	Natural England: East of England National Character Areas, accessed at http://www.naturalengland.org.uk/publications/nca/eastofengland.aspx	East of England	Timber, reed and thatch, genetic resources, erosion regulation	4.4.1, 4.4.2, 4.6, 5.5	
Timber production UK	Forestry Commission (2012) Forestry Statistics 2012: UK Grown Timber, accessed at http://www.forestry.gov.uk/website/forstats2012.nsf/TopContents?OpenCtx=AAE83F6D1BF93E5380257A3200575E08	UK	Timber	4.4.1	

Timber use in construction	ECCM (2006): Forestry Commission Scotland Greenhouse Gas Emissions Comparison – Carbon benefits of timber in construction, accessed at http://www.forestry.gov.uk/pdf/Carbonbenefitsof timberinconstruction.pdf/\$file/Carbonbenefitsof timberinconstruction.pdf	UK	Timber	4.4.1	
Timber imports/exports	Forestry Commission (2012): Forestry Statistics 2012, accessed at http://www.forestry.gov.uk/website/forstats2012.nsf/LUContentsTop?openview&RestrictToCategory=1	UK	Timber	4.4.1	
Timber imports/exports	Forestry Commission (2012): Forestry Facts & Figures, accessed at http://www.forestry.gov.uk/forestry/Infid-7aqf6j	UK	Timber	4.4.1	
Timber imports	TTF (2012): Downward trend in UK import volumes accelerates, accessed at http://www.tjonline.com/news/downward-trend-in-uk-import-volumes-accelerates/	UK	Timber	4.4.1	
Value of thatched properties	National Society of Master Thatchers: Introduction, accessed at http://www.nsmthtd.co.uk/	UK	Reed and thatch	4.4.2	
Employment in thatching	Rural Development Commission (1988): The Thatcher's Craft (1988), accessed at http://www.hct.ac.uk/PDF/CraftPublications/Crafts/THEN20THATCHERS%20CRAFT%20-%2001_tcm2-18962.pdf	UK	Reed and thatch	4.4.2	
Thatching in Norfolk and Suffolk	Master Thatchers in Suffolk and Norfolk: Reed and Straw Thatching Services, accessed at http://www.thatch.net/thatchers/thatch_material.htm	Norfolk and Suffolk	Reed and thatch	4.4.2	
Reedcutters in Norfolk	The North Norfolk Reedcutters Association: Welcome, accessed at http://www.norfolkreed.co.uk/index.htm	Norfolk	Reed and thatch	4.4.2	
Higher level stewardship scheme	Natural England (2013): Higher Level Stewardship: Environmental Stewardship Handbook: Fourth Edition, accessed at http://publications.naturalengland.org.uk/publication/2827091?category=45001	UK	Reed and thatch	4.4.2	
Detrimental effects of reed cutting on wildlife	Graveland, J (1999): Effects of reed cutting on density and breeding success of Reed Warbler <i>Acrocephalus scirpaceus</i> and Sedge Warbler <i>A. schoenobaenus</i> . Journal of Avian Biology, 30 pp469-482	General	Reed and thatch	4.4.2	
Positive effects of reed cutting on wildlife	Cowie, et al (1992): The effects of conservation management of reed beds. II. The flora and litter disappearance. Journal of Applied Ecology, 29 pp277-284	General	Reed and thatch	4.4.2	
Benefits of commercial reed cutting	White G (2009): The future of reedbed management, RSPB Information and Advice note, Version 7, July 2009, accessed at www.rspb.org.uk/Images/Reedbed_management_tcm9-255077.pdf	General	Reed and thatch	4.4.2	
Detrimental effects of reed cutting on wildlife	Schmidt, et al (2005): Reed cutting affects arthropod communities, potentially reducing food for passerine birds. Biological Conservation, 121 pp157-166	General	Reed and thatch	4.4.2	
Hemp production	ADAS (2005): UK Flax and Hemp production: the impact of change in support measures on the competitiveness and future potential of UK fibre production and industrial use. Report for Defra, accessed at http://archive.defra.gov.uk/foodfarm/growing/crops/industrial/pdf/flaxhemp-report.pdf	National	Hemp	4.4.2	
Hemp production	HempTechnology: Home Page, accessed at http://www.hemptechnology.co.uk/	National	Hemp	4.4.2	
Aims of biodiversity restoration, also general characteristics of LNP area	Wild Anglia (2011): Application for LNP status: Norfolk and Suffolk Local Nature Partnership, accessed at http://www.norfolkbiodiversity.org/pdf/reportsandpublications/ANNEX%201%20-%20Application%20for%20LNP%20status.pdf	Norfolk and Suffolk	Genetic resources	4.6	An updated vision/aims of the LNP is currently being drafted - may be useful for future work
Biodiversity of the Broads and the impacts of external factors	The Broads Authority (2009): Broads Authority Biodiversity Action Plan Framework Document, The Broads Authority, accessed at http://www.broads-authority.gov.uk/broads/live/managing/broads-biodiversity-action-plan/BiodiversityActionPlanframeworkdocument.pdf	The Broads (crosses Norfolk and Suffolk)	Genetic resources	4.6	An updated version of this is due to be released, also see the latter reference for Biodiversity and Water Strategy for the Broads (2013)
Detailed information on biodiversity of the Brecks (number of species recorded etc)	Dolman, et al (2010): Securing Biodiversity in Breckland: Guidance for conservation and research: First report of the Breckland Biodiversity Audit, accessed at http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=File&file=BRECKLAND_Report.pdf	The Brecks (crosses Norfolk and Suffolk)	Genetic resources	4.6	
The Brecks	Natural England (2012): National Character Area profile, 85. The Brecks, accessed at http://www.naturalengland.org.uk/publications/nca/the_brecks.aspx	The Brecks (crosses Norfolk and Suffolk)	Genetic resources, pollinators, aesthetics	4.6, 5.9, 6.1.3	
Status, area and number of SSSIs	Natural England Sites of Special Scientific Interest (SSSI): Norfolk and Suffolk, Reports and Statistics, accessed at http://www.sssi.naturalengland.org.uk/Special/sssi/report.cfm?category=C,CF	Norfolk and Suffolk	Genetic resources	4.6	Available on National scale
Number and condition of County Wildlife Sites	Norfolk Biodiversity Information Service (2013): Norfolk County Council, personal communication	Norfolk	Genetic resources	4.6	
Number and area of County Wildlife Sites	Suffolk Biological Records Centre: Protected sites in Suffolk, accessed at http://www.suffolkbrc.org.uk/public_html/node/39	Suffolk	Genetic resources	4.6	Condition of County Wildlife Sites was not available, and provided by Suffolk Council Senior Ecologist
Suffolk coast	Suffolk Coasts and Heaths Area of Outstanding Natural Beauty: Welcome to the AONB, accessed at http://www.suffolkcoastandheaths.org/	Suffolk	Genetic resources	4.6	
Condition of County Wildlife Sites, and other information on threats to biodiversity	Sue Hooton (2013): Senior Ecologist Suffolk County Council, personal communication	Suffolk	Biodiversity (Genetic Resources)	4.6	
Green infrastructure for biodiversity	Town and Country Planning Association, and The Wildlife Trusts (2012): Planning for a healthy environment – good practice guidance for green infrastructure and biodiversity, The Town & Country Planning Association and The Wildlife Trusts, accessed at http://www.wildlifetrusts.org/news/2012/07/06/planning-healthy-and-natural-environment	UK	Genetic resources	4.6	
Green infrastructure for biodiversity	David White (2013): Green Infrastructure Officer, Norfolk County Council, personal communications	Norfolk	Genetic resources, Urban Land Management	4.6, 3.2.2	This position does not exist for Suffolk, and David does not cover the whole of Norfolk
External factors/pressures affecting biodiversity	Haidee Bishop (2013): Wild Anglia Local Nature Partnership Coordinator, personal communications	Norfolk and Suffolk	Genetic resources, Urban Land Management	4.6, 3.2.2	
Impacts of development on County Wildlife Sites	Hiskett, J (2007): Impact of development on County Wildlife Sites and other areas of semi-natural habitat. Report for Norfolk Wildlife Trust, accessed at http://www.norfolkwildlifetrust.org.uk/Documents/Reports/Impact_of_Development_on_CWS.aspx	Norfolk	Genetic resources	4.6	A little outdated and similar not available for Suffolk
Threats to County Wildlife Sites	Norfolk Wildlife Trust (2009): Assessment of threats to County Wildlife Sites, accessed at http://www.norfolkwildlifetrust.org.uk/Wildlife-in-Norfolk/Habitat-explorer/County-Wildlife-Sites.aspx	Norfolk	Genetic resources	4.6	A useful report, though slightly out of date. Similar not available for Suffolk, though some information is published on the Suffolk Biodiversity website
Potential impacts of CAP reform for agri-environment schemes	The Wildlife Trusts (2012): New threat to UK countryside, accessed at http://www.wildlifetrusts.org/news/2012/11/15/new-threat-uk-countryside-0	UK	Genetic resources	4.6	Outcomes and impacts of the CAP reform are soon to be available
The Broads strategy	The Broads Authority (2013): Broads Biodiversity and Water Strategy 2013, accessed at http://www.broads-authority.gov.uk/broads/live/authority/publications/conservation-publications/Broads_Biodiversity_and_Water_Strategydraft.pdf	The Broads (crosses Norfolk and Suffolk)	Genetic resources	4.6	
Ecological networks	RSPB (2010): Futurescapes. Space for nature, land and life, accessed at http://www.rspb.org.uk/futurescapes/	UK	Genetic resources	4.6	
Ecological networks	Wildlife Trusts (2009): A living landscape: a call to restore the UK's battered ecosystems, for wildlife and people, accessed at http://www.wildlifetrusts.org/sites/wt-main.live.drupal.precedenthost.co.uk/files/A%20Living%20Landscape%20report%202009%20update.pdf	UK	Genetic resources	4.6	
Ecological networks	Land, R (2006): Report of ecological network mapping project for Norfolk. Report for Norfolk Wildlife Trust and Norfolk Biodiversity Partnership, accessed at http://www.norfolkbiodiversity.org/pdf/ecologicalnetworks/Ecological%20network%20mapping%20project%202006.pdf	Norfolk	Genetic resources	4.6	
Ecological networks	Suffolk Wildlife Trust and Suffolk Biological Records Centre: Suffolk ecological networks project mapping methodology. Report for Suffolk Biodiversity Partnership, accessed at http://www.suffolkbrc.org.uk/public_html/sites/default/files/Ecological%20Networks%20Methodology.PDF	Suffolk	Genetic resources	4.6	
Climate change	Rosenzweig, C et al (2007) Assessment of observed changes and responses in natural and managed systems. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L. et al., Eds., Cambridge University Press, Cambridge, UK, 79-131.	Global	Climate, coastal flooding	5.1, 5.1.2, 5.2.1	Generic scientific information about the dynamics of global warming

Climate change	HM Government (2008): Climate Change Act 2008, accessed at http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf	UK	Global climate change mitigation	5.1.1	
Food security in the UK	Defra (2006): Food Security and the UK: An Evidence and Analysis Paper, Department for Environment, Food & Rural Affairs, accessed at http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/foodsecurity.pdf	UK	Global climate change mitigation	5.1.1	
Greenhouse gas emission	European Environmental Agency (2013): Higher EU greenhouse gas emissions in 2010 due to economic recovery and cold winter, accessed at http://www.eea.europa.eu/pressroom/newsreleases/higher-eu-greenhouse-gas-emissions	EU	Global climate change mitigation	5.1.1	
Flood management	Suffolk Flood Risk Management Partnership (2012): Managing Flood Risk in Suffolk: a summary of the Suffolk local flood risk management strategy, accessed at: https://www.suffolk.gov.uk/assets/suffolk.gov.uk/Emergency%20and%20Safety/Civil%20Emergencies/2012-12%20%20Managing%20Flood%20Risk%20in%20Suffolk_web.pdf	Suffolk	Global climate change mitigation, Non-coastal flooding	5.1.1, 5.2.1	
Spatial planning	Natural England: Spatial planning accessed at http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/default.aspx	UK	Global climate change mitigation	5.1.1	
Natural environment health and well-being	Barton, H (2009): Land use planning and health and well-being. Land Use Policy 26 (1) pp115-123	UK	Global climate change mitigation	5.1.1	
New Anglia economy	New Anglia LEP for Norfolk and Suffolk (2013): New Anglia Plan for Growth, Consultation briefing, accessed at http://www.newanglia.co.uk/About-Us/Plan-for-Growth	Norfolk and Suffolk	Global climate change mitigation	5.1.1	
Wildlife and people	Norfolk Wildlife Trust (2005): Making Spaces for wildlife and people. creating an ecological network for Norfolk, accessed at http://www.norfolkwildlife.org.uk/ecologicalnetworks/Revisedreport.pdf	Norfolk	Global climate change mitigation	5.1.1	
Entry Level Stewardship Scheme	Natural England (2013): Entry Level Stewardship: Environmental Stewardship Handbook, Fourth Edition – January 2013, accessed at http://publications.naturalengland.org.uk/publication/2798159?category=45001	UK	Global climate change mitigation	5.1.1	
Bumblebee conservation trust	Bumblebee Conservation Trust: Managing your land for bees, accessed at http://bumblebeeconservation.org/get-involved/managing-your-land/	UK	Global climate change mitigation	5.1.1	
Environmental accounts for agriculture	Jacobs, in association with Scottish Agricultural College and Cranfield University (2008): Environmental accounts for agriculture. Report for Defra, Welsh Assembly Government, Scottish Government, and DARDNI, accessed at https://statistics.defra.gov.uk/esg/reports/envacc/SF0601%20EnvAccForAgricultureexec.pdf	UK	Global climate change mitigation	5.1.1	
Habitat banking	Environment Bank: Habitat banking is the future of nature conservation in the UK, accessed at http://www.environmentbank.com/docs/Habitat-Banking-in-the-UK-The-Environment-Bank-Ltd.pdf	UK	Global climate change mitigation	5.1.1	
Climate	Met Office (2004): Eastern England: climate, accessed at http://www.metoffice.gov.uk/climate/uk/ee/print.html	East of England	Local climate regulation, non coastal flooding	5.1.2, 5.2.1	
Climate change impacts	Norfolk Ambition (2009): Local Climate Impacts Profile for Norfolk, accessed at: http://www.norfolkambition.gov.uk/consumption/groups/public/documents/article/ncc095340.pdf	Norfolk	Local climate regulation, non coastal flooding	5.1.2, 5.2.1	
Temperature extremes	Gilani, N (2013): 'Coldest night of winter' recorded in Norfolk. Metro, accessed at: http://metro.co.uk/2013/01/16/snow-is-here-to-stay-and-so-is-the-big-freeze-3353776/	Norfolk	Local climate regulation	5.1.2	
Temperature extremes	Woods, B (2013): Snow's economic impact on region is yet to be felt. Report for Norwich Evening News 24, accessed at http://www.eveningnews24.co.uk/news/snow_s_economic_impact_on_region_is_yet_to_be_felt_1_1796068	Norfolk	Local climate regulation	5.1.2	
Climate change effects in Suffolk	Green Suffolk (2012): Climate Change-what risk to Suffolk, accessed at http://greensuffolk.onesuffolk.net/assets/Greeneast-County/Misc-Files/Climate-Change/Climate-Change-What-Risk-to-Suffolk-leaflet-1.pdf	Suffolk	Local climate regulation	5.1.2	
Climate change and the urban environment	Handley, J & Carter, J (2006). Adaptation strategies for climate change in the urban environment. Report for the National Steering Group, accessed at: http://www.sed.man.ac.uk/research/cure/downloads/ascue_final_report_national_steering_group.pdf	UK	Local climate regulation	5.1.2	
Green infrastructure	Haven Gateway: What is Green Infrastructure, accessed at http://www.haven-gateway.org/themes/green_infrastructure/gi_in_haven_gateway/what_is_green_infrastructure	UK	Local climate regulation	5.1.2	
Green infrastructure	Natural England: Green Infrastructure, accessed at http://www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/default.aspx	UK	Local climate regulation	5.1.2	
Green infrastructure	Bridgman, H et al (1995) Urban biophysical environments. Oxford University Press	UK	Local climate regulation	5.1.2	
Climate change and hydrology	Mansell, M (2003) Rural and Urban Hydrology. London: Thomas Telford	UK	Local climate regulation	5.1.2	
Urban areas ecological performance	Whitford, V et al (2001): 'City form and natural process' – indicators for the ecological performance of urban areas and their application to Merseyside, UK. Landscape and Urban Planning, 57 (2), pp91–103	UK	Local climate regulation, non coastal flooding	5.1.2, 5.2.1	
Cities and climate change	Gill, S et al (2007): Adapting cities for climate change: the role of the green infrastructure. Built Environment, 33 (1) pp115-133	UK	Local climate regulation, non coastal flooding	5.1.2, 5.2.1	
Accessible greenspace	The Landscape Partnership and Natural England: Analysis of Accessible Natural Greenspace: Provision for Suffolk, accessed at http://www.naturalengland.org.uk/images/SuffolkReport_tcm6-21930.pdf	UK	Local climate regulation	3.2.2	
Community Infrastructure Levy	Planning Portal: Community Infrastructure Levy, accessed at http://www.planningportal.gov.uk/planning/applications/howtoapply/whattosubmit/cil	UK	Local climate regulation	5.1.2	
Green infrastructure	Haven Gateway (2008): Haven Gateway Green Infrastructure Strategy, accessed at http://www.haven-gateway.org/themes/green_infrastructure/gi_in_haven_gateway/what_is_the_haven_gateway_partnership_doing/the_haggi_s_strategy/download_the_strategy	UK	Local climate regulation	5.1.2	
Green infrastructure	Babergh District Council (2012): A Green Infrastructure Framework for Babergh District, accessed at http://www.babergh.gov.uk/assets/Uploads-BDC/Economy/Strategic-Planning-Policy/LDF/Evidence_Studies/GIFramework-Aug2012.pdf	Babergh	Local climate regulation	5.1.2	It is localised but lays out key concepts very well
Flood management	Environment Agency (2011): The state of our environment: flood and coastal risk management, accessed at http://www.environment-agency.gov.uk/static/documents/Business/SOE_-_Flood_and_Coastal_Risk_Management.pdf	UK	Non-coastal flooding, coastal flooding, Urban land management	5.2.1, 5.2.2, 3.2.2	
Flood risk assessment	Norfolk County Council (2011): Preliminary Flood Risk Assessment Report, accessed at http://www.norfolk.gov.uk/view/NCC10093	Norfolk	Non-coastal flooding	5.2.1	
Catchment flood management plan	Environment Agency (2009): East Suffolk Catchment Flood Management Plan: summary report December 2009, accessed at http://scdc.onesuffolk.net/assets/Documents/LDF/C4C/EastSuffolkCatchment.pdf	East Suffolk	Non-coastal flooding	5.2.1, 5.2.2	
Catchment flood management plan	Environment Agency (2011): Great Ouse Catchment Flood Management Plan: summary report January 2011, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0111btj-e-e.pdf	Great Ouse	Non-coastal flooding	5.2.1, 5.2.2	
Catchment flood management plan	Environment Agency (2009): North Norfolk Catchment Flood Management Plan: summary report December 2009, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0909bpce-e-e.pdf	North Norfolk	Non-coastal flooding	5.2.1	
Catchment flood management plan	Environment Agency (2009): Broadland Rivers Catchment Flood Management Plan: summary report December 2009, accessed at http://a0768b48a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0909bpck-e-e.pdf	Broadland	Non-coastal flooding	5.2.1	
Sustainable drainage	Susdrain: Sustainable drainage, accessed at http://www.susdrain.org/delivering-suds/using-suds/background/sustainable-drainage.html	UK	Non-coastal flooding	5.2.1, 5.2.2	
Flood management	Pitt, M (2008): Learning lessons from the 2007 floods, accessed at http://webarchive.nationalarchives.gov.uk/20080906001345/http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/flooding_review/pitt_review_foreword_executive_summary%20pdf.aspx	UK	Non-coastal flooding	5.2.1	
Flood risk	Norfolk County Council (2012): Managing flood risk, accessed at http://www.norfolk.gov.uk/view/NCC116395	Norfolk	Non-coastal flooding	5.2.1	

Flood management (non-coastal)	Environment Agency: Catchment Flood Management Plans – Anglian Region, accessed at http://www.environment-agency.gov.uk/research/planning/114303.aspx	UK	Non-coastal flooding	5.2.1	
Flood management (coastal)	Environment Agency: Shoreline Management Plans – the second generation (SMPs), accessed at http://www.environment-agency.gov.uk/research/planning/105014.aspx	UK	Coastal flooding	5.2.1	
Shoreline management plan	North Norfolk District Council: Shoreline Management Plan 6 – Kelling to Lowestoft Ness, accessed at http://www.northernorfolk.org/coastal/9871.asp	Norfolk	Coastal flooding	5.2.2	
Coastal defence funding	EDP24 News website (2011): Everyone in West Norfolk could pay for sea defences at Snettisham, Heacham and Hunstanton http://www.edp24.co.uk/news/environment/everyone_in_west_norfolk_could_pay_for_sea_defences_at_snettisham_heacham_and_hunstanton_1_814706	North Norfolk (Snettisham, Heacham, Hunstanton)	Coastal flooding	5.2.2	
Climate change scenarios	Hulme, et al (2002): Climate change scenarios for the United Kingdom: The UKCIP02 briefing report, accessed at http://www.ukcip.org.uk/wordpress/wp-content/PDFs/UKCIP02_briefing.pdf	UK	Coastal flooding	5.2.2	
Drinking water	DWI (2010): Drinking water 2009: Eastern region of England, Drinking Water Inspectorate, accessed at http://webarchive.nationalarchives.gov.uk/20120906081707/http://dwi.defra.gov.uk/about/annual-report/2009/cir09eastern.pdf	East of England	Water purification	5.3	
River basin management	Environment Agency (2009): Water for life and livelihoods: river basin management plan Anglian river basin district, accessed at http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0910bspq-e-e.pdf	Anglian river basin	Water purification	5.3	
Investment in the environment	Natural England (2012): Microeconomic Evidence for the Benefits of Investment in the Environment – review, accessed at http://publications.naturalengland.org.uk/publication/32031	UK	Water purification, Disease and pest regulation, health	5.3, 5.4, 6.2	
Regulating services	UK NEA (2011): Chapter 14 Regulating Services, UK National Ecosystem Assessment, accessed at http://uknea.unep-wcmc.org/LinkClick.aspx?fileticket=XPPBQJwUlk%3d&tabid=82	UK	Water purification, noise, pollinators	5.3, 5.8, 5.9	Very generic information, not detailed enough
Invasive aquatic species	Environment Agency (2009): Water for life and livelihoods: river basin management plan Anglian river basin district: Annex D: protected area objectives, accessed at http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0910bspq-e-e.pdf	East Anglia	Pests and diseases	5.4	A little out of date
Invasive species	Mike Sutton-Croft (2013): Coordinator of the non-native species initiative, Norfolk County Council, personal communication	East Anglia	Pests and diseases	5.4	
Floating pennywort costs	Norfolk Biodiversity Partnership (2011): Co-ordinator's progress report for the period: 13 July – 16 November 2011, accessed at http://www.norfolkbiodiversity.org/pdf/progressreports/Co-ordinator's%20progress%20report%20-%2013%20July%20to%2016%20Nov%202011.pdf	UK	Pests and diseases	5.4	
Ash die back	Forestry Commission: Chalara dieback of ash (<i>Chalara fraxinea</i>), accessed at http://www.forestry.gov.uk/chalara	UK	Pests and diseases	5.4	
Ash die back	Plant Health (2012): The Plant Health (Forestry) (Amendment) Order 2012, accessed at http://www.legislation.gov.uk/uksi/2012/2707/pdfs/uksi_20122707_en.pdf	UK	Pests and diseases	5.4	
Non-native invasives	Norfolk Biodiversity Partnership (2012): Norfolk non-native species stakeholder's forum 2012, accessed at http://www.norfolkbiodiversity.org/nonnativespecies/stakeholderforum.aspx	Norfolk	Pests and diseases	5.4	Very useful - same established information is not available for Suffolk
Killer slugs	BBC (2013): 'Killer slugs' find in Norwich garden is a 'UK first', accessed at http://www.bbc.co.uk/news/uk-england-norfolk-20971787	Norfolk	Pests and diseases	5.4	
Invasive non-native species	NNSS (2008): The invasive non-native species framework strategy for Great Britain, The GB Non-Native Species Secretariat, accessed at https://secure.fera.defra.gov.uk/nonnativespecies/home/index.cfm	UK	Pests and diseases	5.4	
Stop the spread of non natives	NNSS: Stop the spread, The Non-Native Species Secretariat, accessed at https://secure.fera.defra.gov.uk/nonnativespecies/checkcleandry/documents/check-clean-dry-poster.pdf	Norfolk	Pests and diseases	5.4	
Priority Catchments failing due to soil erosion	Natural England: Priority Catchments, accessed at http://www.naturalengland.org.uk/ourwork/farming/csf/cgs/catchments.aspx	East of England	Erosion regulation	5.5	
Environment Act	HM Government (1995): Environment Act 1995, accessed at http://www.legislation.gov.uk/ukpga/1995/25/contents	UK	Air quality	5.7	
Air quality strategy	Defra (2007): The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Department for Environment, Food & Rural Affairs, accessed at http://archive.defra.gov.uk/environment/quality/air/airqualitystrategy/documents/air-qualitystrategy-wol1.pdf	UK	Air quality	5.7	Very generic information, provides links to further data sources.
Air pollution	Defra: About Air Pollution, accessed at http://uk-air.defra.gov.uk/air-pollution/	UK	Air quality	5.7	Provides info on air pollution throughout the UK as well as links to further info.
Air quality remediation	Travel Ipswich website, Urban Traffic Management Control, accessed at http://www.travelipswich.co.uk/urban-traffic-management-control/	Ipswich, Suffolk	Air quality	5.7	
Air pollution from farming	Defra (2012): Air pollution from farming: preventing and minimising. Department for Environment, Food & Rural Affairs, accessed at: https://www.gov.uk/reducing-air-pollution-on-farms	UK	Air quality	5.7	How to comply with legal restrictions on burning farm waste and measures you can take to reduce agricultural emissions.
Environment	Environment Agency (2008): Environmental report: strategic environmental assessment of the draft river basin management plan for the Anglian river basin district: appendices, accessed at http://www.environment-agency.gov.uk/static/documents/Research/Environmental_report_appendices.pdf	Anglian river basin	Air quality, landscape, health	5.7, 6.1.1, 6.2	
Environmental overview of Suffolk	Suffolk Observatory (2011): The State of Suffolk Report: The Environment, accessed at http://suffolkobservatory.info/ISNASection.aspx?Section=77&AreaBased=False	Suffolk	Air quality	5.7	An overview of the environment in Suffolk. It doesn't provide in-depth detail. Chapters cover economy and employment, healthy standards of living (health?), population diversity, population overview, social and community networks, transport
National Ecosystem Assessment	UK NEA (2011): Synthesis of Key Findings, UK National Ecosystem Assessment, accessed at http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx	UK	Air quality, aesthetics	5.7, 6.1.3	
Felixstowe port	Hutchison Ports (UK) (2011): Ship2Shore: Issue 11, accessed at: http://www.portoffelixstowe.co.uk/common/publications/documents/ship2shore/issue11.pdf	Felixstowe	Air quality	5.7	
Air quality and pollution	The Environment Agency: Air pollution, accessed at: http://maps.environment-agency.gov.uk/wiwyby/wiwybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&textonly=off&lang=en&topic=air-pollution	England and Wales	Air quality	5.7	Map showing air pollution (as well as other environmental issues)
Noise and visual intrusion	Land Use Consultants (2007): Developing an Intrusion Map of England. Report for CPRE (Campaign to Protect Rural England), accessed at http://www.cpre.org.uk/resources/countryside/tranquil-places/Item/1790-developing-an-intrusion-map-of-england	England	Noise	5.8	Provides general data for England. Little qualitative information on individual regions.
Traffic noise	Grimwood, C (2002): Trends in environmental noise. Clean Air, 30 (1) pp15–20	UK	Noise	5.8	
Population and migration	ONS (2013): Regional Profiles - Population and Migration - East of England, March 2013, Office for National Statistics, accessed at: http://www.ons.gov.uk/ons/dcp171780_301596.pdf	East of England	Noise	5.8	limited info available on regional scale
Population and migration	ONS (2011): Regional Profiles - Population and Migration - East of England, October 2011, Office for National Statistics, accessed at: http://www.ons.gov.uk/ons/dcp171780_234372.pdf	East of England	Noise	5.8	Provides data on population, projected population growth rates, etc. by region
Rural and urban areas	Suffolk County Council (2012): Suffolk Diversity Profile 2012, accessed at: http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Your%20Council/Plans%20and%20Policies/Equality%20and%20Diversity/2013_01_03%20Suffolk%20Diversity%20Profile%20Final.pdf	Suffolk	Noise	5.8	
Ecosystem services	Boland, P & Hunhammar, S (1999): Ecosystem services in urban areas. Ecological Economics, 29 pp293-301	UK	Noise	5.8	very general data
Declining bee population	Potts, et al (2010): Declines of managed honey bees and beekeepers in Europe. Journal of Apicultural Research, 49 (1) pp15-22	UK and Europe	Pollinators	5.9	Not specific information for Norfolk/Suffolk area
Bee populations	Bumblebee Conservation Trust: Why bees need our help, accessed at http://bumblebeeconservation.org/about-bees/why-bees-need-help/	UK	Pollinators	5.9	
Help for bees	The Soil Association: Help to keep Britain buzzing, accessed at http://www.soilassociation.org/supportus/keepbritainbuzzing	UK	Pollinators	5.9	

Pesticides harming bees	Carrington, D (2013): Bee harming pesticides escape proposed European ban. Report for the Guardian, accessed at http://www.guardian.co.uk/environment/2013/mar/15/bee-harming-pesticides-escape-european-ban	UK	Pollinators	5.9	
Bee health	Defra (2009): Bee health, Department for Environment, Food & Rural Affairs, accessed at https://www.gov.uk/bee-health	UK	Pollinators	5.9	
Protecting bees	Buglife: The B-Lines Project, accessed at http://www.buglife.org.uk/conservation/currentprojects/Habitats+Action/B-Lines/The+B-Lines+Project	UK	Pollinators	5.9	
King's Lynn and West Norfolk LCAs	Chris Blandford Associates (2007): King's Lynn and West Norfolk Borough Landscape Character Assessment, Final Report. Report for King's Lynn and West Norfolk Borough Council, accessed at http://www.west-norfolk.gov.uk/pdf/Final%20LCA.pdf .	Local	Landscape	6.1.1	
Landscape character	Natural England: Landscape character, accessed at http://www.naturalengland.org.uk/ourwork/landscape/englands/character/default.aspx	National	Landscape	6.1.1	
Landscape character assessment	Natural England: Landscape Character Assessment, accessed at http://www.naturalengland.org.uk/ourwork/landscape/englands/character/assessment/default.aspx			6.1.1	
South Norfolk LCA	Chris Blandford Associates (2012): South Norfolk Council, South Norfolk Local Landscape Designations Review. Report for South Norfolk Council, accessed at http://www.south-norfolk.gov.uk/planning/media/11115101R_Final_DW_06-12.pdf	Local	Landscape	6.1.1	
Landscape character assessment	North Norfolk District Council (2009): Landscape Character Assessment of North Norfolk, accessed at http://consult.north-norfolk.gov.uk/portal/planning/lca/draft_landscape_character_assessment?pointid=273373	Norfolk	Landscape	6.1.1	
Landscape character assessment	Land Use Consultants (2008): Waveney District Landscape Character Assessment, Final Report. Report for Waveney District Council, accessed at http://www.waveney.gov.uk/site/scripts/download_info.php?fileID=742	Waveney	Landscape	6.1.1	
Suffolk Coast LCA	Alison Farmer Associates (2012): Touching the Tide, Landscape Character Assessment Final Report, accessed at http://www.suffolkcoastandheaths.org/assets/Projects-Partnerships/Touching-the-Tide/FinalReport.pdf	County (Norfolk, Suffolk)	Landscape	6.1.1	
Common agricultural policy	European Commission (2012): The Common Agricultural Policy: a partnership between Europe and farmers, accessed at http://ec.europa.eu/agriculture/cap-overview/2012_en.pdf	National	Landscape	6.1.1	
Renewable energy infrastructure impacts on landscape	LUC (2012): Broads Landscape Sensitivity Study for Renewables & Infrastructure: Broads Landscape Sensitivity Study for Renewables and Infrastructure. Report for Broads Authority, accessed at http://www.broads-authority.gov.uk/planning/landscape-character-assessment/landscape-studies/landscape-sensitivity-study-for-renewables-infrastructure.html	The Broads (crosses Norfolk and Suffolk)	Landscape	6.1.1	
Heathland	Norfolk Wildlife Trust: Heathland, accessed at http://www.norfolkwildlifetrust.org.uk/Wildlife-in-Norfolk/Habitat-explorer/Heathland.aspx	County (Norfolk, Suffolk)	Landscape	6.1.1	
Heathland recreation	Eglinton, S & Horlock, M (2004): East of England Heathland Opportunity Mapping Project, Final Report, accessed at http://www.forestry.gov.uk/pdf/eng-ee-heathland-mapping-report.pdf/\$file/eng-ee-heathland-mapping-report.pdf	Regional	Landscape	6.1.1	
Transport impacts on landscape	Eftec (2007): R105 – Valuing Transport's Impact on the Natural Landscape http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CEQJQAD&url=http%3A%2F%2Fwww.eftec.co.uk%2Fsearch-all-uknee-documents%2Feftec-projects%2Feftec-valuing-transport-impact-on-the-natural-landscape-143%2Fdownload&ei=XCVcUdm1Mum70QWc1oHBA&usq=AFQjCNGeVdX43T6CynSRjG3-EX69gq7a_g	National	Landscape	6.1.1	
Number of trips and tourism spend in Norfolk and Suffolk	VisitEngland: England Local Authority, County and Towns 2006-2011., accessed at www.visitengland.org/insight-statistics/major-tourism-surveys/overnightvisitors/Index/Regional_Results_2011	Norfolk and Suffolk	Recreation	6.1.2	
Employment in tourism	ONS (2012): The Geography of Tourism Employment, accessed at http://www.ons.gov.uk/ons/rel/tourism/the-supply-side-of-tourism/the-geography-of-tourism-employment/rpt-tourgeog.html	Norfolk and Suffolk	Recreation	6.1.2	
Popularity of English towns for tourism	VisitEngland (2011): Most Visited English Towns 2011, Great Britain Tourism Survey, accessed at http://www.visitengland.org/Images/Top%20Towns%20-%20BY%20Trip%20Purpose_v2_tcm30-33063.pdf	National	Recreation	6.1.2	
Popularity of urban vs. environment	Tourism South East (2010): Economic Impact of Tourism: Norfolk County 2010 Results. Report for VisitNorfolk, accessed at http://mediafiles.thedms.co.uk/Publication/ee-nor/cms/pdf/2010%20VolumeValue.pdf	Norfolk	Recreation	6.1.2	
Trails in Norfolk	Tim Lidstone-Scott (2013) Senior Trails Officer for Norfolk County Council, personal communications	Norfolk	Recreation	6.1.2	
Tourist destinations and preferences	Research International (2006): England Leisure Visits: Summary of the 2005 Leisure Visits Survey. Report for the ELVS Consortium	National and Regional	Recreation	6.1.2	
Features of the natural environment in the Anglian River Basin District	Environment Agency (2008): Anglian River Basin District Environmental Report: Appendices, accessed http://www.environment-agency.gov.uk/static/documents/Research/Environmental_report_appendices.pdf	Anglian River Basin District	Recreation	6.1.2	
Coastal access	Natural England: Improving coastal access report, accessed at http://www.naturalengland.org.uk/ourwork/access/coastalaccess/improvingcoastalaccessreport.aspx	National and Local	Recreation	6.1.2	
Wensum footpath	EDP24 (2013): New Wensum Way footpath will fill in 'missing link' in Norfolk Trails network, accessed at http://www.edp24.co.uk/news/environment/new_wensum_way_footpath_will_fill_missing_link_in_norfolk_trails_network_1_1830795	Local	Recreation	6.1.2	
Visitor attractions in England	VisitEngland (2010): Visitor Attractions Trends in England 2010: Annual Report, accessed at http://www.visitengland.org/Images/Final%20report_tcm30-27368.pdf	England	Recreation	6.1.2	
Number of tourists visiting the natural environment	Natural England (2012): MENE PHOF 1.16 map of results, accessed at http://www.naturalengland.org.uk/Images/MENE-PHOF-results-map_tcm6-33881.pdf .	Norfolk and Suffolk	Recreation	6.1.2	
Climate change in the Anglian river basin	Environment Agency (2009): River Basin Management Plan Anglian River Basin District, Annex H: Adapting to climate change, accessed at http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98f72d550b.r19.cf3.rackcdn.com/gean0910bbspu-e-e.pdf	Anglian River Basin District	Recreation	6.1.2	
Erosion of the North Norfolk Coast	Environment Agency (2013): Long term planning: North Norfolk Coast, accessed at http://www.environment-agency.gov.uk/research/planning/108980.aspx	North Norfolk	Recreation	6.1.2	
Effects of climate change	Broads Authority: Climate Change, accessed at http://www.broads-authority.gov.uk/managing/climate-change.html	Broads	Recreation	6.1.2	
Market opportunities from the environment	The Tourism Company Ledbury (2006): The Broads: Market Opportunities From The Environment. Report for the Broads Authority, accessed at http://www.broads-authority.gov.uk/broads/live/managing/sustainable-tourism/FINAL_Market_ops_from_environment_report.pdf	Broads	Recreation	6.1.2	
Local development framework	Broads Authority (2006): The Norfolk and Suffolk Broads Local Development Framework: Core Strategy Development Plan Document: Preferred Options Report, accessed at http://www.broads-authority.gov.uk/authority/consultations/core-strategy/submission-core-strategy-dpd-consultation.html	County (Norfolk, Suffolk)	Aesthetics	6.1.3	
Norfolk coast AONB	Norfolk Coast Partnership (2009): Norfolk Coast AONB Management Plan 2009-14, accessed at http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd001158.pdf	Norfolk	Aesthetics	6.1.3	
Aesthetics	Norfolk County Council: Environment, accessed at http://www.norfolk.gov.uk/view/NCC030262	Norfolk	Aesthetics	6.1.3	
Impact of renewable energy infrastructure on urban planning	Clarke, I (2011): Fears new pylons will scar Norfolk and Suffolk landscapes, EDP24, accessed at http://www.edp24.co.uk/news/politics/fears_new_pylons_will_scar_norfolk_and_suffolk_landscapes_1_787860	County (Norfolk, Suffolk)	Aesthetics	6.1.3	
Green infrastructure	Barton, H (2009): Land use planning and health and well-being. Land Use Policy, 26 (1) pp115-123	UK	Health	6.2	
land planning	Chris Blandford Associates (2007): Greater Norwich Development Partnership: Green infrastructure strategy: A proposed vision for connecting people, places and nature, accessed at http://www.gndp.org.uk/content/wp-content/uploads/downloads/2010/03/1.Executive%20Summary(1).pdf	Norwich	Health	6.2	
land management and planning	Croucher K et al (2008) The links between green space and health: A critical literature review, Stirling: Greenspace Scotland	UK	Health	6.2	
land management and planning	Defra (2000): Rights of way improvement plans; Statutory guidance to local highway authorities in England, accessed at: http://archive.defra.gov.uk/rural/documents/countryside/prov/rowip.pdf	England	Health	6.2	

land management and planning	Fuller, RA et al (2007): Psychological benefits of greenspace increase with biodiversity. <i>Biology Letters</i> , 3 (4) pp390-394	UK (study carried out in Sheffield)	Health	6.2	
health, environmental planning	UK NEA (2011) Chapter 23 Health Values from Ecosystems, UK National Ecosystem Assessment , accessed at http://uknea.unep.org/	UK	Health	6.2	
high level overview of the health and wellbeing in Suffolk	Suffolk County Council and NHS Suffolk (2011): State of Suffolk Report, available at: http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Your%20Council/Plans%20and%20Policies/2011-05-25%20The_State_of_Suffolk_Report_2011%5B1%5D.pdf	Regional	Health	6.2	
Greenspaces	Visit Norwich: Norwich gardens & green spaces, accessed at: http://www.visitnorwich.co.uk/parks.aspx	Norwich	Health	6.2	
Broads Plan	Broads Authority: Broads Plan, accessed at http://www.broads-authority.gov.uk/authority/strategy/broads-plan.html	Broads	Health	6.2	

Annex 3: Revised definitions of the ratings used in the workbook trial

Annex 3 Revised definitions of the ratings used in the workbook trial

Table Ax-1: Revised definitions for importance ratings		
Rating	Definition	Revised definition
4	This opportunity or threat could have a <i>very</i> significant impact on the whole of the LEP economy	Affects the whole economy (if it affects the whole economy, it's likely to be very significant anyway!).
3	This opportunity of threat could have a <i>very</i> significant impact on particular areas or sectors important to the LEP economy	Affects one or more of the key growth sectors, and could have knock-on impacts that are very significant to the key growth sectors. E.g. high speed broadband could affect many of the key growth sectors (see S3-material input worksheet)
2	This opportunity or threat could have a significant impact on the whole of the LEP economy	Affects one or more of the key growth sectors with some knock-on effects across the whole economy. E.g. planning permission for low carbon energy projects could affect the whole energy sector, with some knock-on effects on other sectors (e.g. manufacturing) (see Fuel-renewables worksheet)
1	This opportunity or threat could have a significant impact on particular areas or sectors within the LEP economy	Affects one key growth sector with limited knock-on effects outside that sector. E.g. outsourcing of food processing to other countries, would affect food sector but have limited knock-on effects wider than this (see Food-general worksheet)
0	This opportunity or threat appears insignificant on the basis of current evidence	Could have locally significant effects but these are unlikely to be significant at sectoral scale overall. E.g. growth in hobby farmers may be locally important but is unlikely to affect food sector as a whole (see Food-livestock worksheet)

Reasons for changes: there seems to be too big a gap between 2 and 3.

Table Ax-2: Revised definitions for urgency ratings		
Rating	Definition	Revised definition
4	Action on this opportunity and threat should have started already and either hasn't started or is underdeveloped	Action on this opportunity and threat should have started already and has, or has been identified as requiring urgent action in existing plan or strategy. E.g. action has started already in Lowestoft and Great Yarmouth Enterprise Zone (see Fuel-renewables worksheet)
3	This opportunity or threat should be considered within a three-year planning cycle	This opportunity or threat should be considered within a three-year planning cycle, and/or other plans and strategies include this opportunity and threat within a three-year planning cycle. E.g. plans are already in place for the roll-out of next generation fibre technology (see S3-material input worksheet)
2	This opportunity or threat should be considered within a ten-year planning cycle	This opportunity or threat should be considered within a ten-year planning cycle, and/or other plans and strategies include this opportunity and threat within a ten-year planning cycle. E.g. linked to Waste Strategy and lead-in time for decisions associated with inert void space, (see Section3-Waste treatment worksheet)
1	This opportunity of threat should be considered with a twenty-year plan	This opportunity or threat should be considered within a twenty-year planning cycle, and/or other plans and strategies include this opportunity and threat within a twenty-year planning cycle. E.g. adaptation to climate change for agriculture through construction of reservoirs is already being considered but more needs to be done to ensure this sector can grow (see Food-cropping worksheet)
0	This opportunity or threat does not need consideration with a twenty-year plan	This opportunity or threat does not need consideration with a twenty-year plan and/or has not been identified as requiring action in existing plans or strategies. E.g. growth in hobby farms does not need to be promoted (see Food-livestock worksheet)

Reasons for changes: there seemed to be little acknowledgement of other plans so that even when those plans have identified it as urgent and proposed action, you couldn't score it as four.

Annex 4: Workshop 2 report

Local Economic Development and the Environment (LEDE) Toolkit

Action Research and Demonstrator Phase 2

Workshop Report

for workshop attendees
and those unable to attend

17 April 2013



Local Economic Development and the Environment (LEDE) Toolkit

Action Research and Demonstrator Phase 2

Workshop Report

Prepared for

Workshop attendees and those unable to attend

17th April 2013

Quality Assurance	
Project reference / title	J813/NE LEDE toolkit
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Approved for issue by	Meg Postle, Director, RPA
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1 Introduction

1.1 Overview

This report summarises discussions at the Local Economic Development and Environment (LEDE) opportunities and threats workshop held on 14th March 2013 at Dragonfly House, Norwich.

A full list of workshop attendees is provided in Annex 1, with the workshop agenda included as Annex 2.

The workshop began with a brief introduction from Tim Sunderland of Natural England followed by a presentation by Teresa Fenn of Risk & Policy Analysts (RPA), which summarised the processes used thus far to gather data and fill in the workbook. The presentation, which can be found in Annex 3, also provided an overview of some of the outcomes and findings. Attendees were then invited to discuss and comment on the work produced thus far concerning opportunities and threats.

1.2 Brief summary of the study

The Local Economic Development and Environment (LEDE) toolkit, developed by the 'Defra network', is designed to assist Local Enterprise Partnerships (LEPs) and Local Authorities with their economic planning with the aim of meeting their goals. It is intended to help LEPs identify and use the relationships between the environment and the economy. Though its focus is to assist LEPs and Local Authorities, there is a key opportunity to develop closer working with Local Nature Partnerships (LNPs).

The toolkit is a workbook designed to help the LEPs and Local Authorities analyse relevant evidence and consider how the environment can contribute to growth while ensuring the environment is sustained and improved. It is structured around the Ecosystem Services Framework. The outputs are to provide a set of opportunities and threats which detail linkages identified between environment-economy and economy-environment relationships.

1.3 Objectives of the workshop

The aims of the workshop were to:

- provide an update of the work undertaken so far;
- highlight opportunities and threats that we have identified; and
- provide attendees with the opportunity to comment on and suggest changes to the initial lists of opportunities and threats identified for each relevant ecosystem service. The revised lists (with any justifications) will be carried forwards to the final toolkit/workbook.

2 Summary of Sector-specific Discussions

2.1 Introduction

The ecosystem services covered in the workbook were divided into the following categories to help make the discussions more manageable:

- services directly related to growth sectors identified by New Anglia, for example oil and gas;
- services which are location specific and relate to several or all growth sectors, for example water supply; and
- services which feed into all growth sectors, but are difficult to influence or modify at the local level because they are not attached to a location.

Services included within each of these categories can be found in the table below.

Services directly related to growth sectors	Services which are location specific and relate to activities	Services which feed into all sectors
Oil and gas Coal Renewable energy Food, agriculture, fisheries and game (including food processing) Tourism (including landscape, recreation and tourism)	Mineral resources Water supply Fibre/timber Flooding (inland, coastal) Land and soil quality Aesthetics (inward investment)	Genetic resources (incorporating biodiversity) Climate Water purification Pests and diseases Air quality Noise Pollination Health
Note: the toolkit/workbook does include other services (peat, ornamental resources and erosion) but these are not considered to be that significant for the New Anglia area as a whole, thus they have not been classified		

Attendees were then split into three groups and the top ten opportunities and threats for each group of services were discussed; the full lists are included in Annex 4. Each group had the chance to comment on each set of services.

2.2 Services directly related to growth sectors

2.2.1 Opportunities

2.2.1: Comments on original opportunities which are related to growth sectors		
Code	Name of Opportunity	Comments
FOG1 (fuel – oil and gas)	Potential to use existing infrastructure associated with gas terminal (Bacton), pipelines, etc. as basis for expanding into new technologies (Carbon Capture and Storage) as	Need to remove coal gasification from this opportunity

2.2.1: Comments on original opportunities which are related to growth sectors

Code	Name of Opportunity	Comments
	potentially greener energy, but also coal gasification (although this may not be in line with the Green manifesto)	
FC1 (fuel – coal)	Large coal reserves have been found in the Southern North Sea that could be the basis for coal gasification (note though that promotion of this industry may not be in line with the green manifesto)	Coal gasification is actually a threat; it is one of the worst technologies in terms of sustainability. This isn't something that the LEP wants to promote, so the urgency score should be reduced to 0
FFA1 (food – fishing and aquaculture)	Possible designation of Marine Protected Areas may impact sectors such as fisheries, tourism, etc.	MPAs need to be linked to a timeline, it is very important to get it right now (i.e. urgency score needs to be 4). The linkages need to be captured somehow, for example, protection of migratory species such as eel and trout
FCr8 (food cropping)	Diversification into other activities, e.g. farm tourism could help maintain traditional approaches and livestock farms, and potentially environmentally friendly approaches, such as encouraging wildlife	Farm diversification needs to take account of the potential for wetland agriculture, producing high value local food. Agriculture is the dominant land use in the LEP area, therefore, it dominates environmental quality. The importance score should increase to 2
FCr17 (Food cropping)	Investment of £250m from the Biotechnology and Biological Sciences Research Council	Biotech brings funding with it so the importance score should be higher as this is already in place
FCr16 (food cropping)	Opportunity to invest in and work with high performers who lead on progress because they are willing to develop their practices or exploit new technologies	Importance score of 1 taking account of the agriculture sector itself, but the opportunities could go much wider, therefore, the score should be increased
FCr11 (food cropping)	Winter storage reservoirs could also be an opportunity if they are designed with biodiversity benefits in mind (this could also help to reduce landscape impacts)	This point needs to be expanded. New wetlands could be created for potentially increased abstraction. These could be designed for harsh drawdown, so there could be significant environmental benefits alongside water availability benefits. In addition, they could provide other benefits, not just biodiversity but also flooding. This means that the importance score could be increased.

2.2.1: Comments on original opportunities which are related to growth sectors

Code	Name of Opportunity	Comments
		Water availability is the biggest issue for farmers. The importance score could easily be a 4. Storage reservoirs need to move away from featureless raised structures
FCr19 (Food cropping)	Combinable crop yield mapping already reveals pockets in many fields yielding double the national average where this best practice has been applied. Evidence also shows that there is correlation between improved efficiency (reflected in economic performance) and reduced environmental impact; for example reductions in nitrogen use efficiency without diminution in yield have been observed over a sustained period, though there is room for considerable further improvement	Precision farming needs to take account of wider catchment scale farming, with wider resource issues (benefits from reduced water use, fertiliser use, etc.)

Additional opportunities identified

- GM crops need to be identified as both a potential opportunity (reduced resources) but also a threat (unknown impacts but also the potential for development of crops that are resistant to herbicides and so use of these could increase);
- Local environmental accreditations could be promoted. There are examples of these already, such as sustainably produced cereals, but also issues such as engaging supermarkets in promoting local environmental accreditations;
- Potential to look at Protected Areas more generally;
- Links need to be made between agriculture and the food sector: growing interest in local food, emphasis on smaller-scale, higher value crops and undertaking of higher value added processes locally, such as production of local cheeses;
- The New Anglia area should have an aspiration to export water. That requires action to be taken at the whole water cycle;
- Flood risk could lead to an opportunity in terms of roll-back of habitats; and
- Flood risk and development: the opportunity lies in getting in early enough to deal with the threat of flood risk, so that buildings are designed to be more resilient.

2.2.2 Threats

2.2.2: Comments on original opportunities which are related to growth sectors		
Code	Name of Opportunity	Comments
FCr13 (food cropping)	Climate change and other changes encourage pests and diseases. This has been seen in previous years with threats such as Spanish slugs that could affect crop yields significantly and Schmallenberg and Bluetongue coming over from the continent affecting livestock	Invasive species are potentially significant as they could result in significant changes in the landscape (e.g. ash dieback)
		Pests and diseases could have a very significant impact on a whole range of sectors, and should score a 4
FR2 (fuel renewables)	Obtaining planning permission for low carbon energy projects, particularly onshore wind	The importance score is too high at 2
FFA5 (food – fishing and aquaculture)	Development of offshore energy or designation of MCZs	The importance score is too high at 3; this is not a significant sector

Additional threats identified

- Development generally needs to be included as a threat;
- Streamlined planning permission in Enterprise Zones is focused on making it easier for businesses to start-up (but also get-out, such as pop-up shops). The emphasis is on employing more people. The LEP has money to support business set-ups in Enterprise Zones;
- The political climate is a threat, this is increasingly focused just on economic growth;
- Needs to be better management of water, holding back water rather than draining it off as quickly as possible;
- There is an issue that money is the most important threat, but this needs to be linked to competitiveness. That is important at all levels; and
- Water quality: is this adequately covered (there seems to be a lot of coverage of water supply/resource issues).

2.2.3 Other comments not related to specific opportunities and threats

- Need to cover health and flooding and the mental issues associated with that;
- Impacts of tourism on environment (and vice versa) go beyond water:
 - Also impacts on the transport network
 - Need to talk about visitor economy rather than tourism, to cover local trips, day trips, etc.
 - Local dog walkers, cause disturbance

- Local network for recreation: need for good quality recreational areas near to them
- Importance of Newmarket for visitor economy:
 - On race day it is difficult to get into town with significant impacts on infrastructure (brings in lots of revenue, but at an economic cost for local businesses due to the congestion)
 - Spain example: during holidays, there is change to the transport system with roads closed to cars to prevent/reduce overcrowding, buses are used to ferry people up the mountains instead, so it is more sustainable
- Coasthopper is an important local method of sustainable transport, linking up locations, but it is under threat of being withdrawn due to funding cuts;
- Transport impacts reduce the potential for trips, need to consider what new roads open up (opportunities that encourage more people to travel, need to consider roads strategy, what experiences are being opened up);
- Also need to consider how you deal with people once they are here, how can you enable them to move around more sustainably?
 - You want people to be able to explore, but this can mean that more investment is needed to control access (e.g. fencing, wardens)
 - Need to raise awareness, educate about why they shouldn't go into certain areas
 - Need partnership approaches. This could include enabling local communities to understand their role (and undertake their role) in educating visitors
- Need to keep the environment special, e.g. the potential impact of killer shrimp on the Broads environment. These could completely change the way that the water looks with knock-on effects to visitors;
- It is important for tourism to grow as it offers different types of jobs, better enabling jobs for all across all pay grades, these tend to be intergenerational jobs whereas others (such as construction on large projects like Sizewell C) are more short-term (significant at the time, but a much smaller, permanent workforce is required to run it);
- Additional development needs to consider the recreational needs of its residents. This requires decent recreational space near to the settlement; people don't want to have to get in a car to go for a walk. Green corridors are important (e.g. along the South Lowestoft relief road). Good development helps to enable this by combining a lot of things together;
- The LEP has a key role to play in explaining higher level opportunities and threats to Councils/LAs to encourage funding to be maintained (such as the CoastHopper);
- The ability of local councils to retain business rates is an opportunity; this could be used to encourage funding into services that could otherwise be cut, especially where these clearly benefit business and income to businesses;
- Water resources issues: where companies are at the limits of their abstraction rights need to look at efficiencies. There are business opportunities associated with manufacture of efficient technologies;
- Cropping and climate change: linked to land and opportunities, change in crops, etc. in response to climate change. Need to consider how climate change would affect land in the future, how will the map of agricultural land use change over time? This could be linked to water availability;

- Water issues need to be looked at within the whole water cycle (although water cycle studies haven't always delivered);
- Precision farming is an opportunity, but it could include changing crops as well;
- Opportunities arise from linking everything together: water cycle management and holding water back;
- Combined heat and power: also are opportunities with processing plant (e.g. Sugar plants) looking at how to use their excess heat. This includes heating glasshouses (already happening) and the potential for exporting heat for houses;
- Soil erosion is important – it is significant in the New Anglia area;
- Need to look at the bigger picture (not mentioning killing the goose that lays the golden egg). We have three 'eggs':
 - Environment
 - People (population)
 - Economy (financial situation)
- Need to look for benefits across all three, where there are benefits to just one or two, they are less likely to be acceptable;
- How can we get economic growth without affecting the environment?
- Impacts of extreme weather will be increasingly important, especially in terms of changing numbers of visitors;
- High speed broadband provides environmental benefits by reducing the need to travel, with reduced CO₂ emissions as a result. It can also be a huge attraction for businesses, and associated with a high quality environment provides a draw for businesses, which is a key opportunity for the New Anglia area. Home working associated with high speed broadband also tends to attract high value jobs, and these can have a significant impact on GVA, even if they tend to be small businesses or sole traders;
- Lack of high speed broadband is a real disincentive for businesses. Suffolk is rolling out high speed broadband based on fibre technology, with a lot of private sector funding (matching public sector funding). Norfolk is looking at high speed wifi, with devices on churches and chimneys;
- There are potential linkages between different types of offshore/renewable energy. For example, tidal energy devices located between wind farms. This enables the same cable runs to be used and use of the same onshore infrastructure, limiting the amount of additional infrastructure that needs to be developed;
- Agri-environment schemes: there are issues for diversification, especially arable that cannot perhaps utilise the same advantages as livestock. However, diversification goes beyond tourism opportunities, with other possibilities including biomass. Also an issue with food security and the definition of this (maintain ability to grow food when it is needed, in a crisis, not grow as much food as we can now). Need to focus on long-term needs, not a short-term increase now as that is associated with soil quality issues;
- There is an issue over the consistency of scoring; this needs to be checked;
- Future ownership of assets is a potential threat. Cash-rich overseas investors could come in and buy up assets including land. They are focused on delivering a long-term investment, and that could be at the expense of environmental quality; and
- The materials section of the workbook (S3) may have some of the highest opportunities and threats. The approach needs to be transformational and strategic,

rather than the year-by-year approach that is typically taken. Carbon targets are a good example, to meet the long-term targets will need major changes yet the focus is on year-by-year targets and trying to meet them.

2.2.4 Comments regarding the toolkit

- A new column is needed to pick up inter-relationships. A similar approach could be used as for sustainability appraisals, where each opportunity/threat could be compared against the others; and
- It is important to pick up higher level comments and make sure that there is consistency between the level of detail included under each opportunity and threat.

2.3 Services which are location specific and relate to activities

2.3.1 Opportunities

Table 2.3.1: Comments on original opportunities which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
WS4 (water supply) Technology will play an important role in diminishing water loss in leaks and pipe bursts. Efficient water use is also a key area	Change from 4 to 2 – work is already being carried out. However, there is a balance between leakage and economics. Efforts to deal with leakage would only go further if new technology was developed		
	The rating should stay at 4. The effort to be put in depends on who the business is, i.e. a large water company or a small business		
	Retain the score		This also relates to education and training. And strategic decision making.
WS6 (water supply) Water Recycling as opposed to return it to the flow can reduce water usage while creating strong linkages with engineering and advance manufacturing sector.	Change from 3 to 4 – water efficiency links to every sector		This needs to be broader so it refers to water efficiency in general. We need to be better at managing water demand through changing behaviour and developing technology (there needs to be a balance between the two)
	Change from 3 to 4 – this ties into many sectors. We already have high wastage and loss of		This also has a link to SUDS (sustainable urban drainage)

Table 2.3.1: Comments on original opportunities which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
	water. This links to manufacturing, development of housing, etc.		Where is the initial capture of water? Are we taking it from the river/rainwater, or the process? The definition needs to refer to water recycling and capture
			Efficiency is the key point
LSQ3 (land and soil quality) Promote agri env schemes which deliver resource protection, such as buffer strips etc. which have benefits for biodiversity and soil quality			This links to flood risk management (FRM), pollination, biodiversity benefits, soil and water quality, wet woodland (with economic value), green infrastructure, etc. Holding water in the catchment decreases the need for defences. Delivering WFD quality benefits adds value to this existing opportunity
			This relates to investing in infrastructure too. Maybe it should cover broader farm management rather than just agri-environment schemes. It needs to look at the optimal use of inputs in farming
WS5 (water supply) Waste Water is likely to increase in response to higher water use. Waste water needs	Change from 3 to 2 – expansion of waste water treatment is not that simple. We also want to look at water efficiency.	Change from 4 to 1 - Urgency rating decrease to fit with the water industry planning cycle	Technology is the issue. Downgrading this opportunity to expand water treatment also fits with the sensitivity of the area, the need for discharge consents, etc.

Table 2.3.1: Comments on original opportunities which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
to be treated to avoid pollution, enabling the expansion of the water treatment industry	Keep score at 3 because there could be benefits if reedbeds were used as part of expanding water treatment. This would bring links to biodiversity		
FTi3 (fibre – timber) Encouraging local farm businesses to increase appropriate-scale generation of heat, utilising woody biomass from forest waste for woodchip boilers where it is sustainable to do so, which could have benefits for habitat management	Change from 3 to 2 – it affects fewer sectors	Change from 3 to 4 – this is starting to happen	This could be expanded to include all fibre not just timber. We need to ensure use of the existing resource rather than just shipping in fibre
			This could be widened out to all businesses, not just farm businesses. There is also the potential for impacts on the water environment, i.e. if you are taking land out of agriculture and planting a woodland, you help prevent soil degradation and erosion. This opportunity could also be linked to FTi4, through encouraging farmers to supply local biomass and plant trees
FNC1 (flood non-coastal) Development of County wide Local Flood Risk Management Strategies give guidance on what is likely to be required which those discharging duties that may affect flood and coastal risk must have regard			The wording for this opportunity needs to be changed because the plan has already been developed. The opportunity needs to relate to the need to make sure that the plan is effective when it is implemented
			There are benefits for habitats too.

Table 2.3.1: Comments on original opportunities which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
for			This opportunity could be combined with coastal flooding ones, also with FNC2 related to the assets register
AES1 (aesthetics) Good quality of the natural environment (and appearance of the local landscape) could attract businesses	Change from 2 to 3 – this needs to be stronger than at current. Particularly when we are talking about sectors which are mobile and could move anywhere. This links to quality of life and sense of place		The wording needs to be changed. The opportunity is for management of a good quality natural environment and providing good access to it (e.g. a new business park with a good environment could attract business and investment)
FNC2 (flood non-coastal) Creation of assets register will provide useful information to help address assets having an effect on flood risk			This needs to be removed because it is part of the FRM plan mentioned in FNC1

Additional opportunities identified

- Opportunity to bring together water resources and flood risk management. Scores 4 for importance because water availability is minimal and affects all sectors. It also scores 4 for urgency because climate change means water supplies are less predictable. Flow needs to be evened out. We need to make better use of water. In some places, excess is being pumped out to sea. We need to store this water and use it elsewhere. Making better use of water will decrease the environmental impact (with knock-on impacts for flood defence, etc. through not pumping the water out to sea);
- Virtual water – there is the opportunity to grow more produce here if other areas are water stressed;
- Opportunity for the development of local sustainable supply chain for biomass (this fits under FTi3); and
- Opportunity to harvest the sea (for fuel, aquaculture, etc.). This links to energy as well as to agriculture. Importance rating = 2/3, urgency rating = 2/3. This also links to threats on land (and potentially also to health).

2.3.2 Threats

Table 2.3.2: Comments on original threats which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
WS1 (water supply) Population is expected to increase by 32% in the next 20 years and climate change is increasing rainfall seasonality patterns (wet winter- dry summer). It is predicted a water deficit in most water sources in some parts of the year		No change to score, but need to plan across several areas not just water. Includes working together and making best use of what we have	Change “being considered” in urgency justification to “being addressed”. Strategies are in place; it is being addressed
			Innovation is needed by big business
AES3 (aesthetics) Poorly managed growth of infrastructure and buildings could decrease environmental quality, thus decreasing the attractiveness of the area as a place to locate a business	No change – this is definitely a threat now because of changes to planning and the drive to ensure economic growth, i.e. it is difficult to resist short term economic gains in the current climate		
FCOA2 (flood – coastal) Reduction in availability of Government funding could result in increased flood risk for coastal communities, especially those where the community is less likely to be able to afford to contribute towards the cost. This could reduce inward			The wording of this threat needs to be changed. The government is not increasing the flood risk, rather the decreased availability of government funding makes it more difficult to get funding in some communities

Table 2.3.2: Comments on original threats which are location specific			
Code and name of opportunity	Comments on importance	Comments on urgency	Other comments
investment into these areas			
WS10 (water supply) Higher demand from the Energy Sector (Electrify supply)		Change from 2 to 3 – this is currently being considered	
LSQ1 (land and soil quality) A move to more intensive high value crops may result in the need for increased chemical fertilisers and herbicide/pesticide	Scoring is probably about right	Scoring is probably about right	Need to include water supply as well as fertilisers, herbicides and pesticides
	Change from 2 to 4 – this is important, in particular given the amount of agricultural land within the LEP	Change from 3 to 4 - we are struggling with chemical usage currently	We are struggling to deal with the amount of usage of pesticides and other chemicals already. We need to use less. This threat has impacts for biodiversity, public health, etc. We need to produce more with fewer inputs
WS2 (water supply) Virtual Water is currently an important source of water. As water exporting countries begin to take notice of virtual water flows, tax on food exports are increasing. Food prices are likely to increase	Change from 4 to 2 – this is a bit long term for consideration here. There is an unknown impact. It is possible that if crops could no longer be grown (and sourced from) one particular place, then they would simply be sourced from elsewhere		
WS7 (water supply) Future waterworks and strategies for coping with water scarcity can have a detrimental effect on the environment	Change from 2 to 0 – this just could not happen to the detriment of the environment	Change from 2 to 0 – very unlikely to occur	Anglian Water has no appetite for desalination; it is not economically viable or sustainable and has a huge footprint. Mass water transfer would be more likely

Additional threats identified

- Energy prices – these are a big threat (in particular, fossil fuel prices). There is a requirement for the growth of biofuel;
- WFD – there is the threat of infringement proceedings should measures not be taken to improve water quality;
- FTI4 (opportunity related to new woodland types) – this may actually be a threat, dependent on the species planted (i.e. non-native). Planting of alien species could also lead to tree diseases;
- There needs to be a threat specifying that coastal flooding could impact the whole economy (through impacts on tourism and recreation, energy infrastructure, etc.). This should score 4 for importance;
- Threat to aesthetics of increased wind turbines/solar generation on shore (also nuclear). Scores 2 for importance because energy is a major growth sector. There is the potential for impacts to other sectors too, e.g. biodiversity. Scores 3 for urgency because there are few people who are really taking action on this. Several councils have plans, but mainly it is being left to individuals. The threat relates to the concern that the building of many turbines or solar installations on land will have a detrimental impact on the appearance of the area;
- Threat that there could be increased importation of woody biomass to meet demand (i.e. for energy and heat). This is assumed not to be a major threat because of the lack of incentives for biomass plants (due to current energy policy); and
- Demand for timber/other biomass could use land otherwise used for food (links to AES2). Food distribution may be more the problem. Some areas might not be missed if they were used for energy generation. This is really a more general point about the use of land rather than energy versus food in particular. It also covers the increased use of land for solar generation (but note that this could be beneficial because some agricultural areas are so industrialised anyway. There could be ground cover around the solar farms, so their presence could even improve biodiversity.

Points to check

- Figure given for population growth (32%) – this seems very high. It probably relates to data from pre the financial crisis; and
- Use of water by the energy sector (second highest use by purpose). This also seems high.

2.3.3 Other comments not related to specific opportunities and threats

- Agri-environment schemes – these need to be more joined up to ensure that multiple objectives can be achieved, i.e. buffer strips could be put in alongside watercourses, thus enabling farmers to qualify with the buffer strips but also helping water quality through decreasing the amount of diffuse pollution going into the watercourse;
- Linking together water resources and flood risk management is important. This needs to bring in water storage as well; this could be linked to areas where it is currently being pumped out to sea (with knock-on impacts for flooding and erosion);

- Agriculture (incorporating use of water and chemicals) – this needs investment from the food processing industry. We cannot carry on with the sole focus being on prices;
- Virtual water is likely to be an issue;
- There is a potential imbalance with a bias towards opportunities and threats related to water. Some of the other opportunities and threats may also be important, but because of the sheer number of water related ones, they are becoming lost;
- Energy prices need to be considered as a big issue – both as a threat and in terms of the opportunities this presents;
- Housing growth and the impacts of this. Which comes first? The housing or the jobs? Housing is not one of the nine growth sectors in the LEP strategy, but it does need to be mentioned amongst the opportunities and threats; and
- Green infrastructure – this needs to be all encompassing and does not just refer to cycle ways. The term itself needs changing.

2.3.4 Comments regarding the toolkit

- There is a need for an additional step in the toolkit which brings together opportunities and threats which may be overlapping or linked. There could be “umbrella” opportunities or threats, which are the main overarching ones. Other more specific, more detailed ones could then fit under these. If you then take mitigation activities or implement solutions to deal with the one at the top, this should help to meet the ones at the bottom; and
- Opportunities and threats need to be at the same level to aid comparison. Some are very broad overviews, others are in much more detail. They could perhaps be presented under themes (e.g. water) to facilitate comparison and make them more meaningful for the audience. Alternatively, we could start from the threats and then work to identify the opportunities that these present.

2.4 Services which feed into all sectors

2.4.1 Opportunities

2.4.1: Comments on original opportunities which feed into all sectors		
Code	Name of Opportunity	Comments
WP1 (Water purification)	Projected growth	Expand the definition. This opportunity is also about increasing knowledge, not just about developers making enhancements as you can put in low flow shower heads, but when people move in they change them back. We have increased awareness for energy saving (turning off lights) now we need to do it for water conservation too. Opportunity should be in a circular economy way and not linear. Not just about water, covers all services
AQ6 (Air)	Advancements in clean energy sector may positively	Reduce importance score as air quality is not that big a problem in the region. There are air quality

2.4.1: Comments on original opportunities which feed into all sectors		
Code	Name of Opportunity	Comments
quality)	impact air quality	management areas which require action to be taken, but they are only in place for specific areas. Also this is not to do with energy generation. Reduce importance to 1 or 0
HEA1 (Health)	Increase connectivity and access to the countryside by improving non-motorised routes and public transport links (such as the Coast Hopper service)	Also important to include increased awareness raising and advertisement that these services exist as not everyone is familiar with the Coast Hopper service (also for new schemes that may arise). Change wording of access to countryside, as broader issue. Possibly include as a subset of GR1, more connected to space for people and wildlife
GCCM5 (Global Climate Change)	Creating networks of knowledge	Add more justification to where actions are being taken e.g. Green Economy Pathfinder. Reword – write more clear definition. Creating critical mass – efficiency and innovation, new technologies that enhance sustainable use of the environment. Products and services. Green growth - disentangle what is meant by this – low carbon and resilience growth. Link with GCCM4
DaP4 (Disease and pest regulation)	An LEP wide approach to establishing a defence system against the threat of invasive. This will ensure that detection and response is quick enough to prevent negative impacts to the economy, especially as there is no current specific body allocated to invasive species in Suffolk as there is for Norfolk	Change wording to biosecurity. Make clear that pre-emptive action is much cheaper option. Change example to mitten crab or could be non-specific
GR1 (Genetic resources)	Increase strategic design of biodiversity for new developments. For example, where there are several different developers in one area, plans could be considered in conjunction, which would aid in the	Also include reduce flood risk, climate change. Re-word to say that the LEP could be the leader in this – insist on excellence in development, as no reason why we can't do this. Act as the trend-setter and leader. Needs leadership to overcome politics between developers.

2.4.1: Comments on original opportunities which feed into all sectors		
Code	Name of Opportunity	Comments
	preservation and enhancement of ecological networks	Increase importance rating to 4. Reword urgency justification to 'for people and biodiversity'. Possibly merge with HEA1 to get overall picture – reduce climate change etc.
LCR4 (Local climate regulation)	As big cities become crowded and their temperatures rise, business might chose the country side to work. Companies already established might chose to stay and expand in the region as well	Link with GCCM5 and GCCM4 – don't have on its own as not the driver. Remove and merge
GCCM3 (Global climate regulation)	Enhancing renewables	Increase importance to 4 as all new developments need to do this. Name needs expanding in terms of the definition to link with renewables and biodiversity
GCCM4 (Global climate regulation)	Competitive advantage	Increase rating to 4. Change definition to be broader – overarching issue to make the environment more important
WP4 (Water purification)	Green production and consumption as response to increasing GHG emissions	Merge with AQ6 or other Air Quality opportunity as need to tackle the source first – primary cause

Additional opportunities identified

- Potentially make GR1 into two opportunities – leader in green development;
- Biodiversity as a means of improving sense of place and attracting new inward investment (sort of have this in GR5);
- There is an opportunity to increase habitats alongside infrastructure – create hedgerows along new roads etc.; and
- There is an opportunity to ensure that the economy is more resilient to future impacts of global climate change, by improving local resilience and reducing reliance on the global market. As even if this region is not that affected by climate change, other places will be and that will have huge knock-on effects (importance 4, urgency 4).

2.4.2 Threats

Table 2.4.2: Comments on original threats which feed into all sectors		
Code	Name of Threat	Comments
LCR6 (Local climate regulation)	GHG emissions from projected growth	<p>Need opportunity to mitigate against this threat – as affects all sectors.</p> <p>We have the solutions, and they are manageable – need to implement. Needs re-wording.</p> <p>Plans are in place within the Green Pathfinder (for urgency justification)</p>
WP3 (Water purification)	Projected growth	Climate change is the bigger problem, locally water and air quality – consider under G.CC to tackle source of problem
WP2 (Water purification)		Define justifications so stands alone. Change wording so matches WP1 – water quality not environment
GCCM1 (Global climate change mitigation)	Natural and regulatory environment as a barrier for growth	This is not a threat in itself but the perception is – need to make this clear as in reality the opposite is true, it's more of an opportunity, just wrongly perceived. This is what the toolkit is trying to break down
HEA3 (Health)	The need for increased development to accommodate growth and economic development could lead to planning applications not being reviewed by councils in enough time to ensure that adequate green infrastructure is in place	<p>More of an opportunity than a threat. Need to ensure that Green Infrastructure is in place.</p> <p>Potentially combine with LCR1, as this is a wider issue than just health</p>
DaP2 (Disease and pest regulation)	Increasing the capacity and transfer of goods at the Port of Felixstowe could be a major source of pest and disease transfer	<p>Change example of Felixstowe to all ports.</p> <p>Also include that invasives can be brought in by unchartered boats and on recreational equipment/gear.</p> <p>Increase importance rating to 4 as has significant economic impacts – tourism, agriculture etc.</p>
NOI2 (Noise)	The mean distance travelled per person per year has increased annually and these trends are expected to continue. The Department of Transport (2004) predicts	Increase importance rating to 4 as impacts on tourism, mental and physical health and the perception of area for inward investment, etc.

	a 40% increase in road traffic in England by 2025 compared to 2000 levels	
POL3 (Pollination)	More intensive farming with non-flowering crops could cause declines in pollinators	It is not just intensive farming that is impacting pollinators, also pests and diseases. Change definition to be more general. Urgency should increase to 4
GR6 (Genetic resources)	The planned development in the tourism sector may lead to increased visitor pressure on particularly sensitive areas or species, due to them being located in tourist hotspots, such as stone curlew and little terns	Linked to invasive species transfer. Increase importance rating to 3

Additional threats identified

- For global climate change – there is the threat that what happens globally has a huge impact on our economy. Mirror of suggested new opportunity to make the economy more resilient to global issues.

2.4.3 Comments regarding the toolkit

- It would be useful to identify linkages between opportunities to give a better understanding and ensure that connections are being made. There was a suggestion that an extra column be added which takes into account the linkages between opportunities, for example, global climate change mitigation would impact several others, and thus would have a higher score.

3 Discussion Conclusions

The workshop ended with a brief summary of the key findings from the group discussions.

The sessions provided some useful insights and suggestions for improving some of the individual opportunities and threats. There were also some important observations for how the toolkit could be improved. These included a general feeling that there needs to be some method of capturing the linkages between the opportunities and threats in order to account for the differences in scale (and detail) which they cover. This may be applied with an additional scoring system, where the number of linkages between opportunities and threats are considered, or by developing some kind of over-arching opportunities and threats, which would cover the underlying issues.

3.1 Next steps

The next steps for the project are as follows:

1. There is an opportunity to comment on the workshop findings for those who attended and those who were unable to attend.
2. The findings and comments from the workshop will be incorporated into the opportunities and threats sections of the workbook.
3. The revised opportunities and threats will be presented to the senior Workshop attendees at the end of the study.

4 Comments Received After the Workshop

The workshop report was forwarded to all attendees and those unable to attend the workshop. Comments which we received on this document are given below.

Opportunity FTi3 comment: Agree with the 'other comments' made. Add 'and woodland' to the last sentence: This opportunity could also be linked to FTi4, through encouraging farmers to supply local biomass and plant trees

Location specific 'additional threats identified':

FTi4 (opportunity related to new woodland types) – this may actually be a threat, dependent on the species planted (i.e. non-native). Planting of alien species could also lead to tree diseases

Comment: New woodland in England is subject to UK Forestry Standard (UKFS) the Government's approach to sustainable forest management. This encompasses the philosophy of 'right tree right place' and of climate resilience. Diversity, provenance and species choice will need to be factored in while not compromising other sustainable management objectives. 'Threat' may be too strong. Risk might be better?

Unfortunately, 'alien' (non-native) species are not the only risk to plant health – nursery practice, the global nature of the plant trade and many other factors play a part.

Threat that there could be increased importation of woody biomass to meet demand (i.e. for energy and heat). This is assumed not to be a major threat because of the lack of incentives for biomass plants (due to current energy policy).

Comment: May be a threat for energy generation (due to volumes/ reliability of supply) but less so for heat which tends to be decentralised and local.

Opportunity DaP4 comment: not just about invasive species – agree should change to biosecurity.

Threat DaP2 comment: change pest and disease transfer to biosecurity risk. Not just about invasive species, should phrase as biosecurity.

Threat GR6 comment: change to biosecurity.

Comment: add sea level rise as a threat to the Broads.

Annex 1 List of Attendees

Cameron Adams, Environment Agency Sustainable Places
Will Akast, Environment Agency Catchment Delivery Manager
Haidee Bishop, Wild Anglia LNP Coordinator
Sue Bull, Anglian Water
Dominic Coath, Environment Agency Regional Habitat
Marie Finbow, New Anglia LEP Green Pathfinder Manager
Sue Hooton, Suffolk County Council Senior Ecologist
Matt Hullis, Suffolk County Council Head of Environmental Strategy
Keith Moore, Environment Agency Eastern Area Sustainable Communities
Jai Raithatha, Suffolk County Council Head of Economic Development
Huw Richards, Environment Agency Environmental Planning Officer
Stuart Rickards, Environment Agency Sustainable Places
Tim Sunderland, Natural England Principle Specialist Economist
Teresa Fenn, RPA
Elizabeth Daly, RPA
Lucy Garrett, RPA

Annex 2 Workshop Agenda

- 9.00 - 9.30 Arrival, tea and coffee
- 9.30 - 9.35 Brief introduction by Natural England (Tim Sunderland)
- 9.35 - 10.00 RPA Presentation
- Summary of work undertaken so far
 - Overview of findings to date
 - Overview of workshop
- 10.00 - 11.30 Workshop session 1: Discuss opportunities and threats identified so far across the ecosystem services (these have been divided into three broad groupings)
- The workshop session will be used to enable attendees to comment on the opportunities and threats identified so far, including their urgency and importance ratings and to make further suggestions where there seem to be gaps.
- 11.30 - 11.45 Short break, tea and coffee
- 11.45 - 12.15 Workshop session 2: Discuss opportunities and threats for a second group of ecosystem services (each group will move to a different set of services)
- The approach is the same for workshop session 1, this time attendees will be able to review and add to the comments provided by the first group.
- 12.15 - 12.45 Workshop session 3: Discuss opportunities and threats for the third group of ecosystem services (each group will move to a different set of services)
- The approach is the same for workshop sessions 1 and 2, this time attendees will be able to review and add to the comments provided by the first two groups.
- 12.45 - 13.00 Summary of results
- The facilitators for each group of services will summarise the comments made, suggested changes to importance and urgency scores, and any additional opportunities and threats that have been identified.
- 13.00 - 13.15 Questions
- 13.15 End of workshop

Annex 3 RPA Presentation

LEDE Toolkit Workshop

14 March 2013

Teresa Fenn, Elizabeth Daly & Lucy Garrett



Overview of the workshop

- Review of the aims and objectives of the LEDE Toolkit
- Summary and update of the work undertaken to date
- Overview of our findings so far
- Opportunity to discuss our findings
 - Feedback on the work we have undertaken
 - Adding your ideas and thoughts
 - Discussing as a group to ensure we are providing the information you expect and need

The LEDE Toolkit

- **Aim:** to extend traditional economic development planning to include relevant environmental information
- **Approach:**
 - Collection and analysis of data to inform the specific sections of the workbook:
 - Section 2: summary of the economy and how/why it is as it is, and the Plan/Vision for the future and what this might mean
 - Section 3: summary of current demands for resources and outputs (emissions, waste)
 - Section 4 to 6: consideration of the impact of the Plan/Vision on the environment, so impacts can be factored into planning

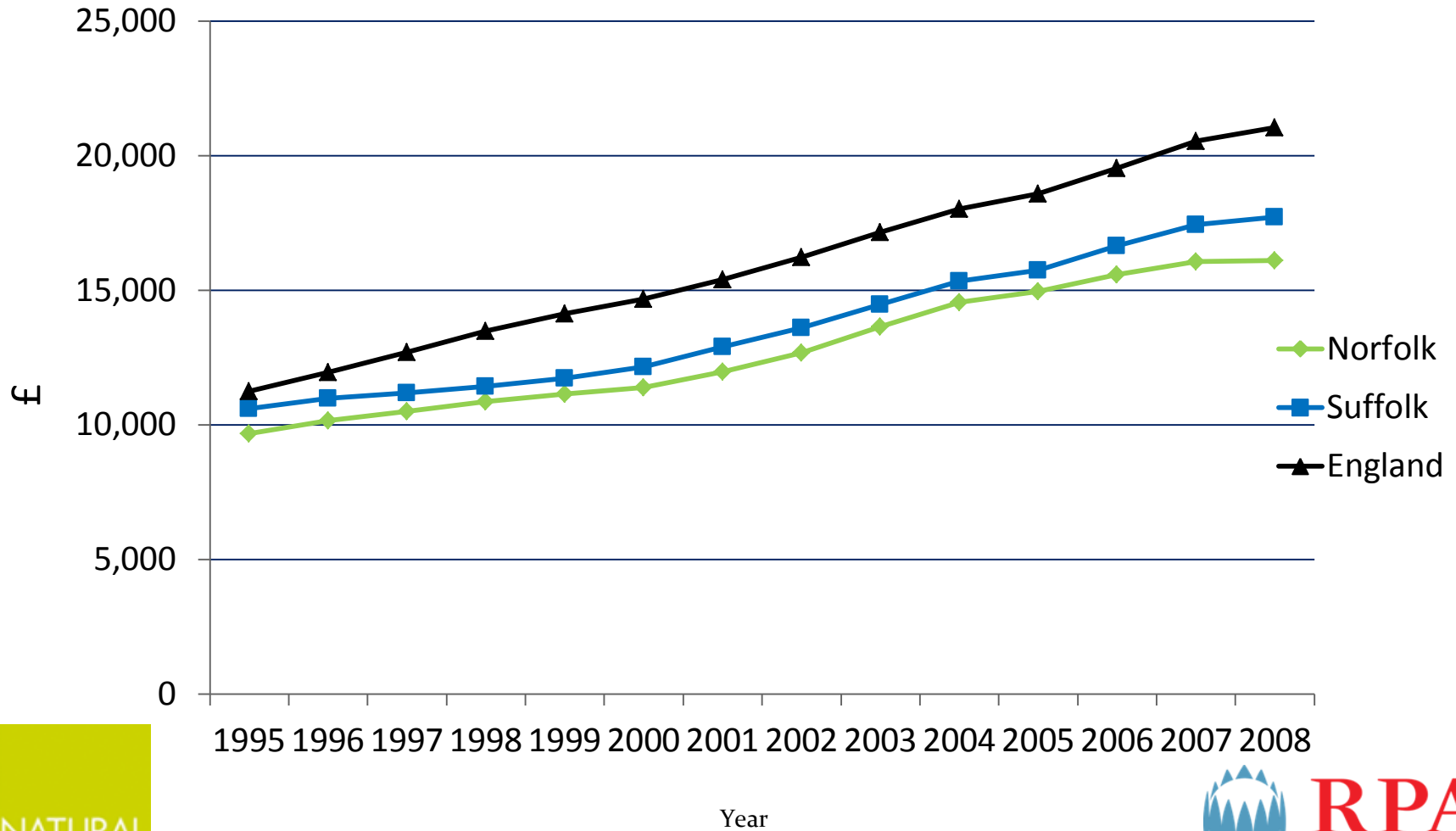
Our approach

- Trialling the workbook:
 - Following links in the workbook to primary data sources
 - Analysis of primary data and identification of trends
 - Investigation into reasons behind trends:
 - Review of existing plans and strategies, across Norfolk and Suffolk but also at District/Borough level where necessary
 - Discussions and meetings with various organisations
 - Identification of potential opportunities and threats
- Identification of ways to make it easier to use the workbook

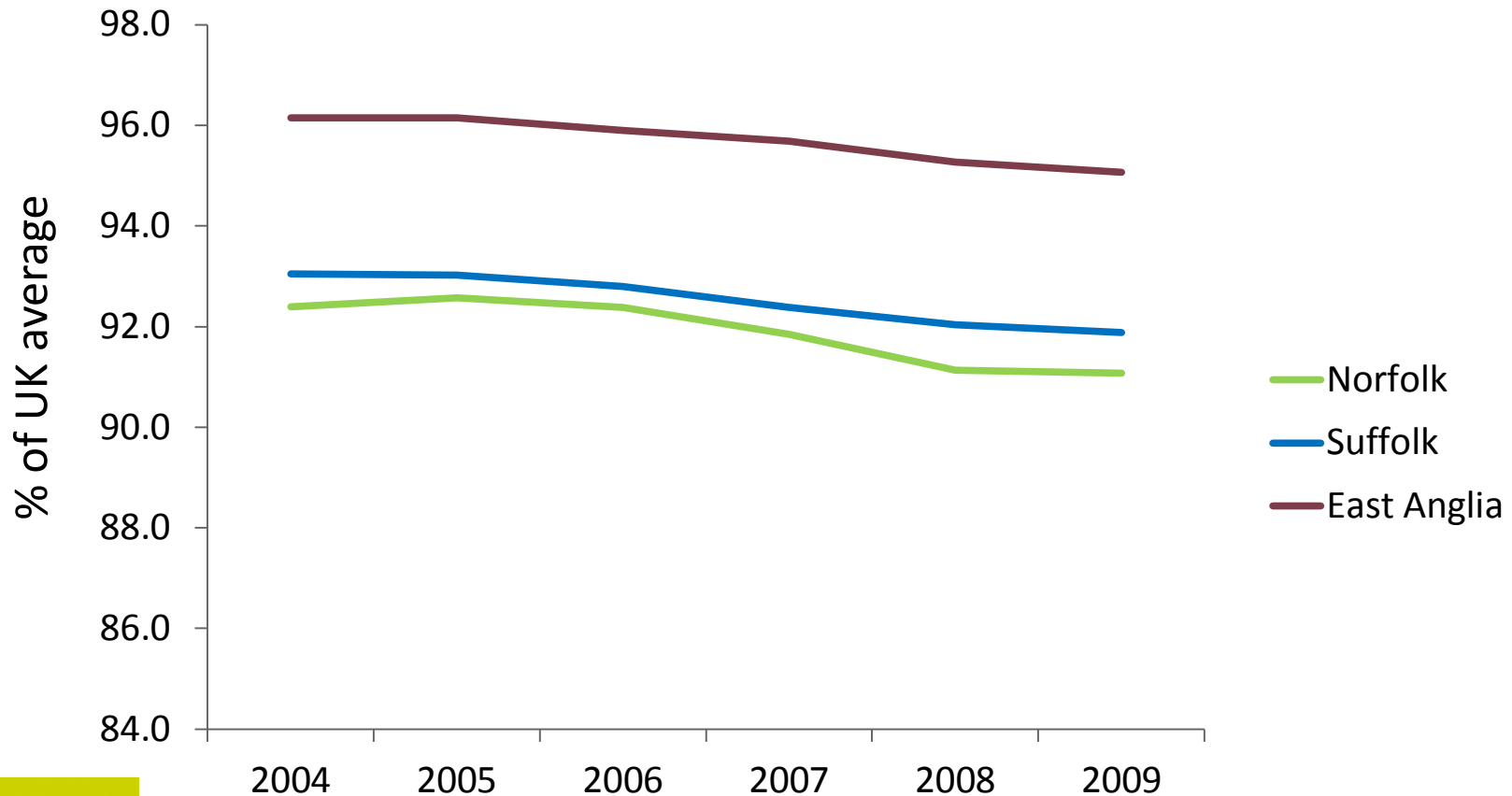
Summary of the economy



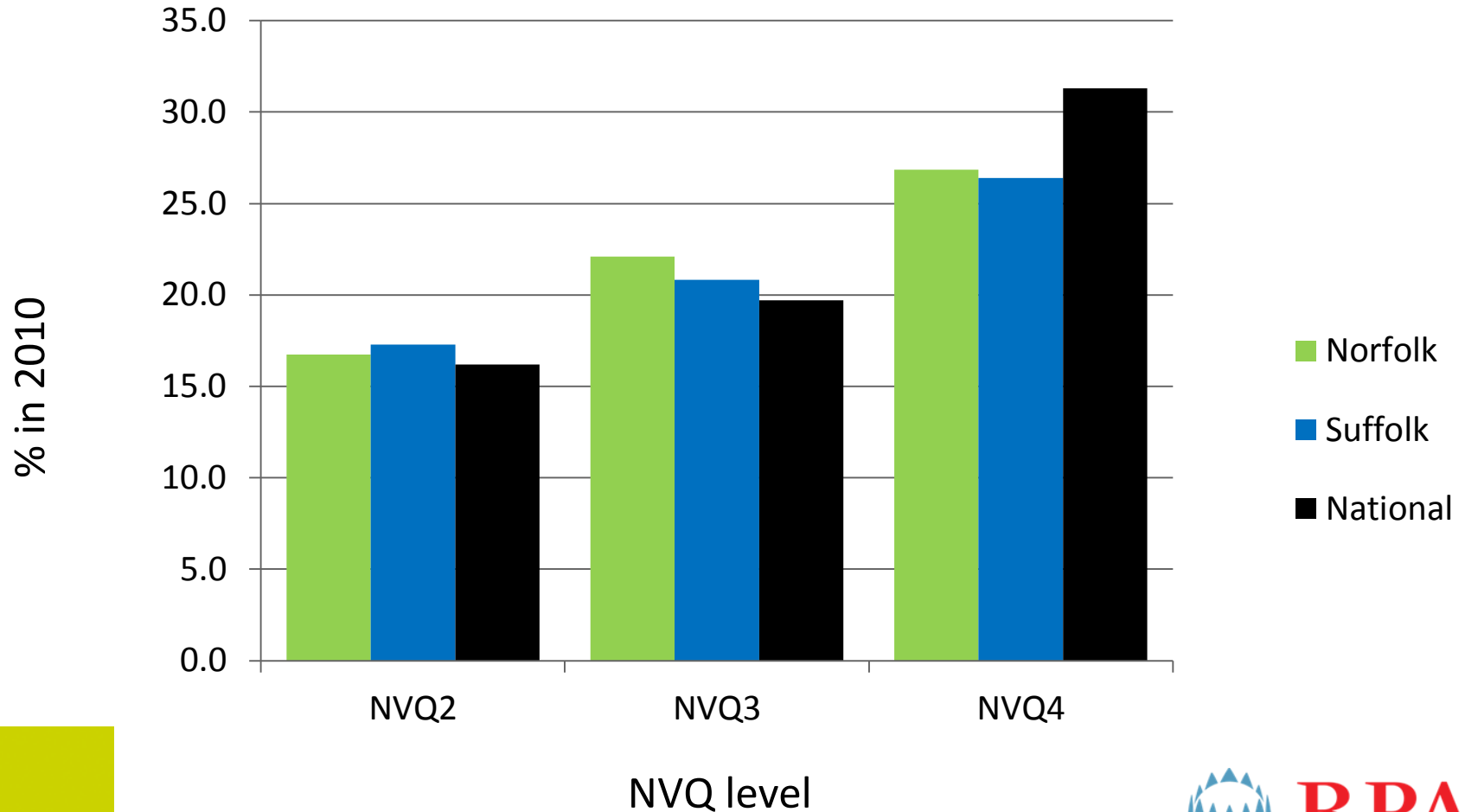
GVA per capita



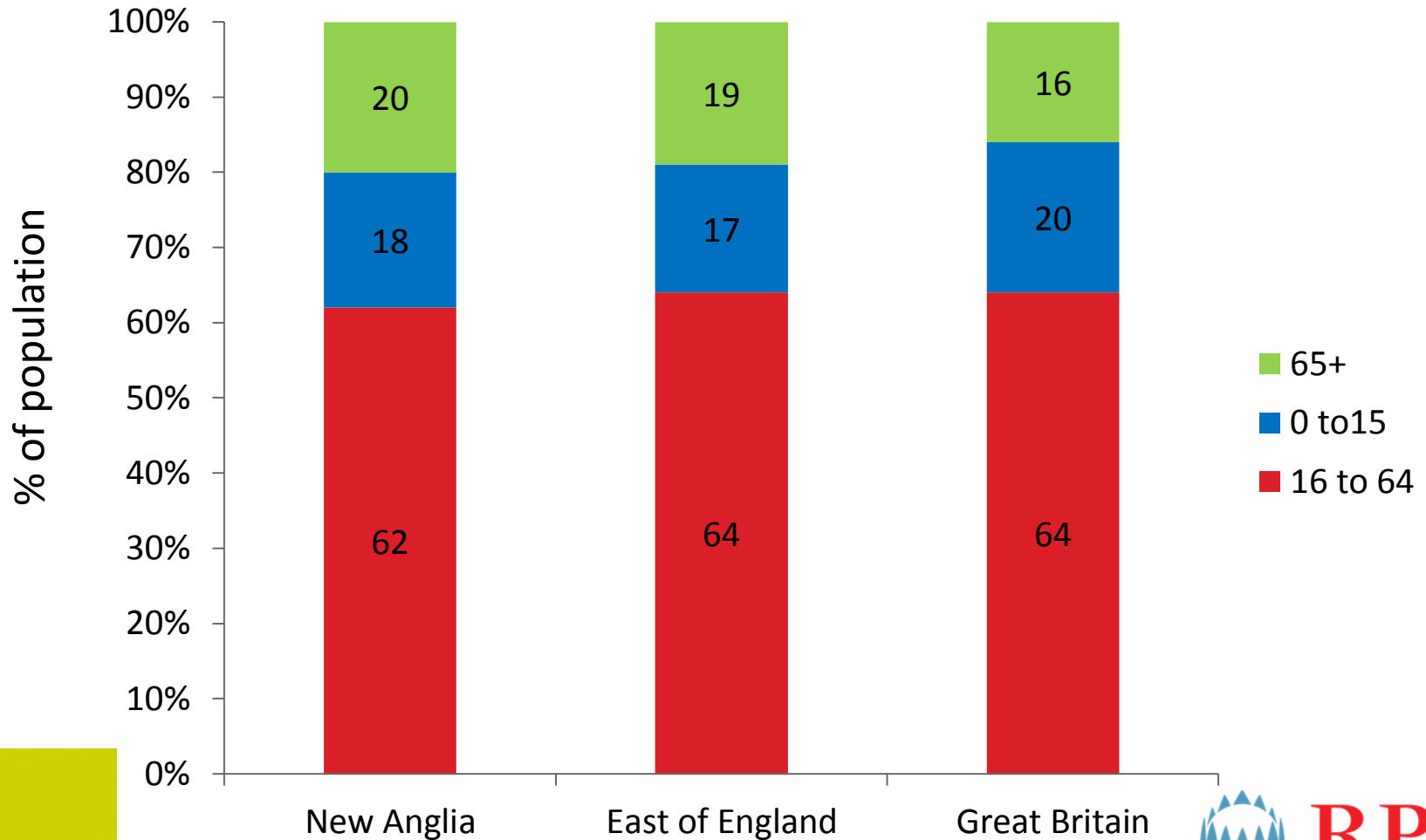
Productivity (GVA per hour worked)



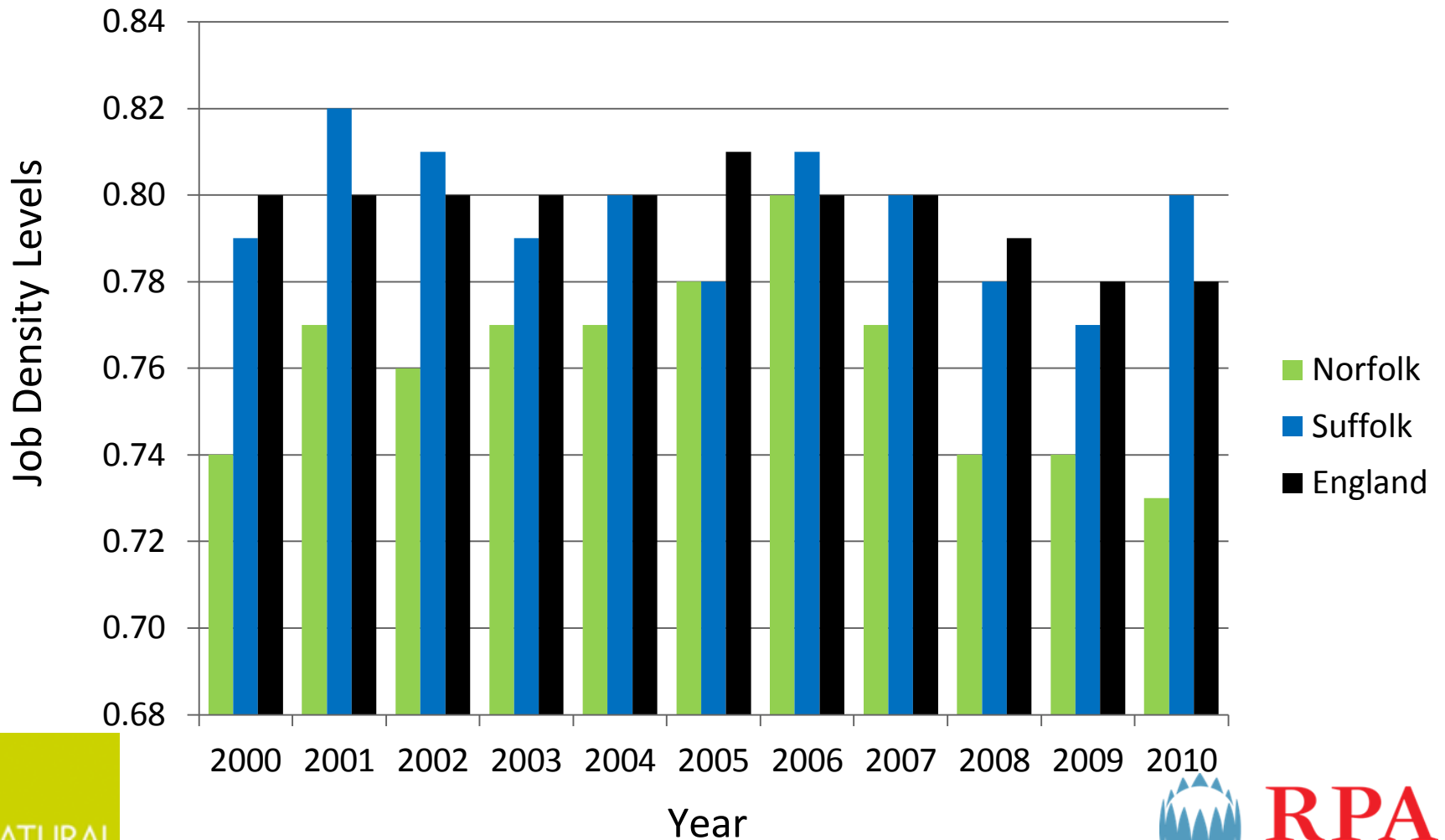
Skills and qualifications



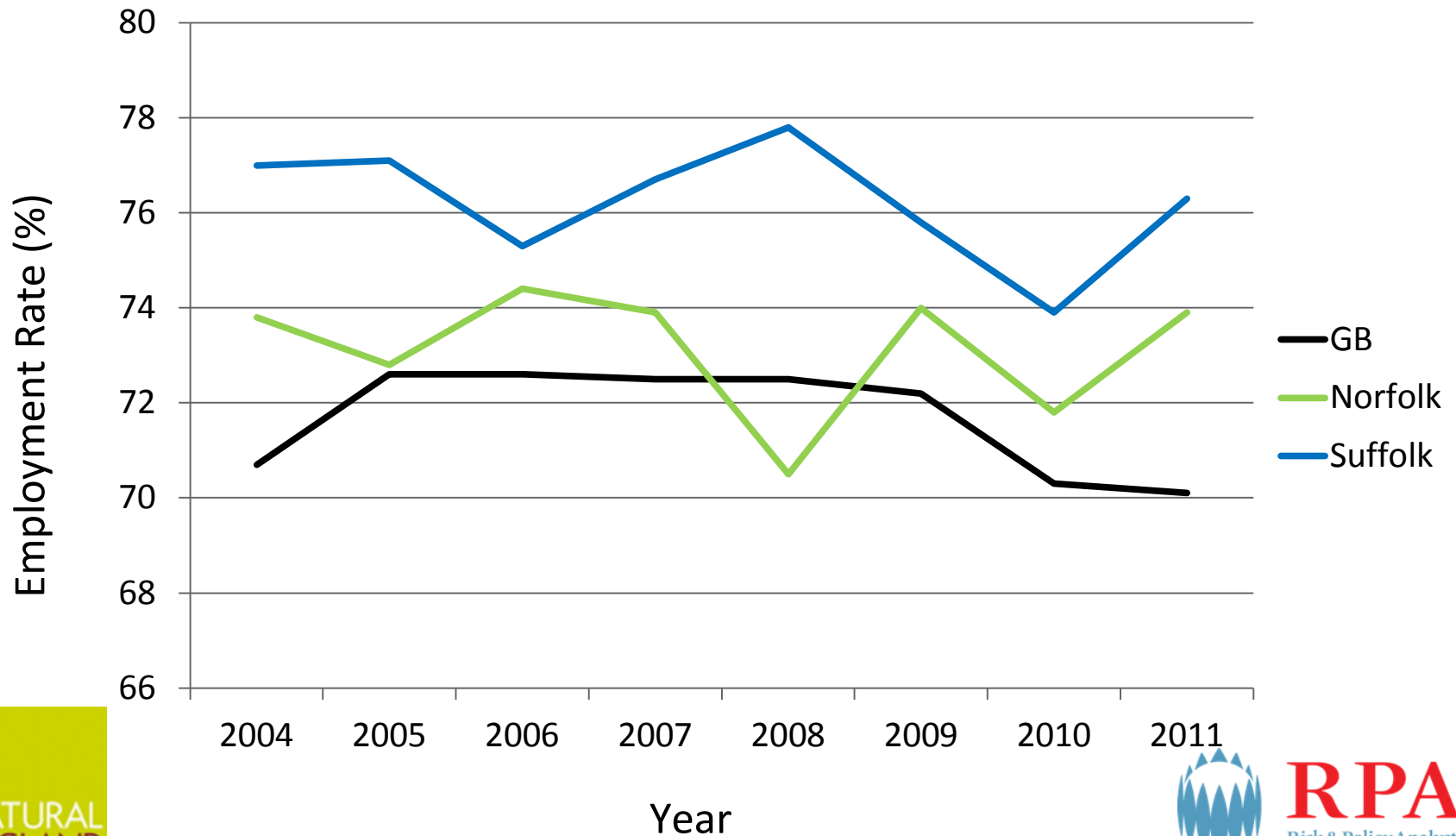
People of working age



Job density



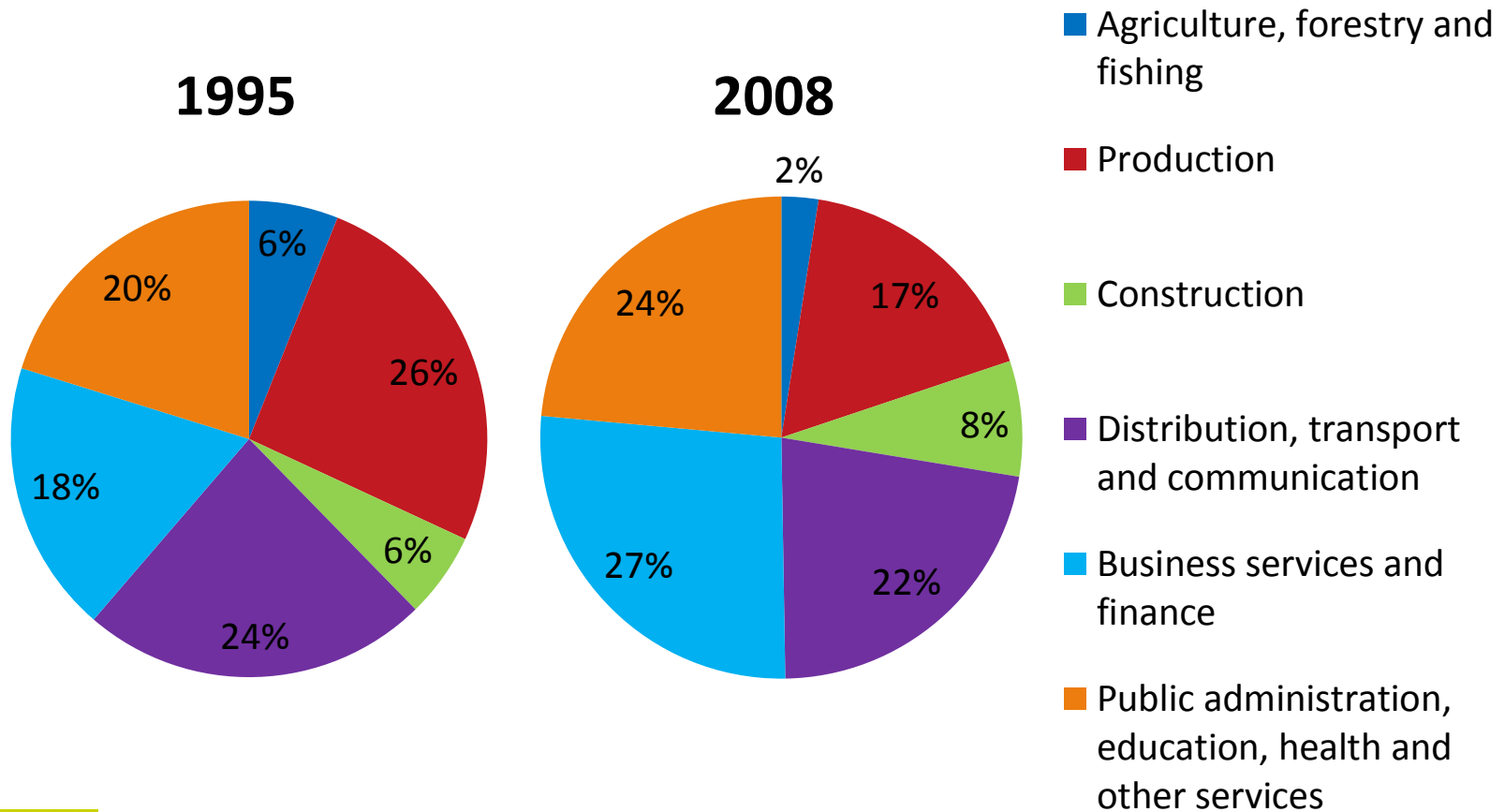
Employment rates



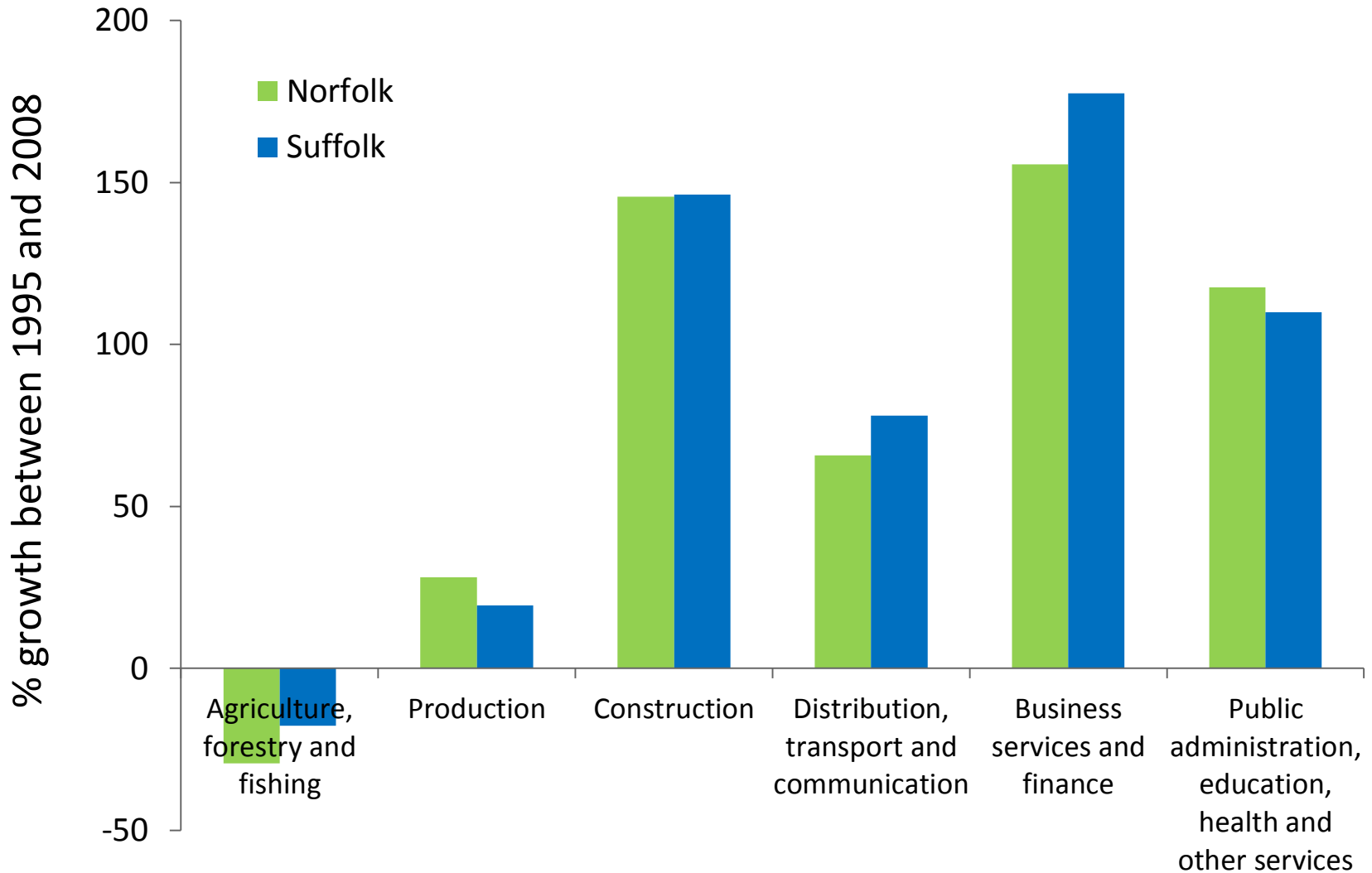
Deprivation

LA Name	Income rank	Employment rank	Average rank
Great Yarmouth District	126	127	54
Norwich District	98	96	70
Ipswich District	119	123	83
Waveney District	128	134	115
North Norfolk District	183	194	146
King's Lynn and West Norfolk District	120	121	123
Breckland District	157	165	187
Forest Heath District	306	312	227
St. Edmundsbury District	238	239	224
Babergh District	271	281	240
South Norfolk District	211	214	259
Suffolk Coastal District	213	238	258
Broadland District	219	210	279
Mid Suffolk District	282	287	283

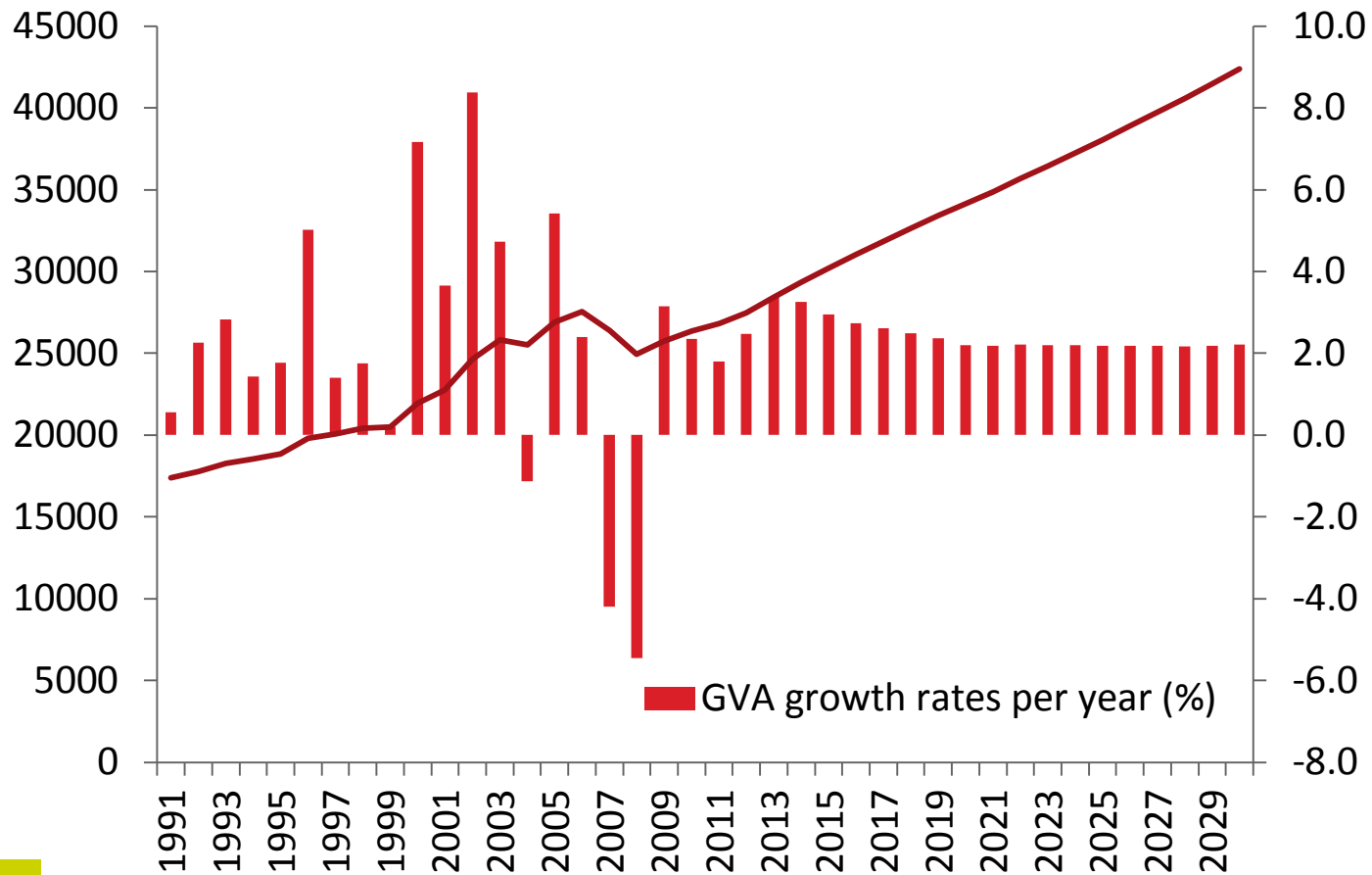
Change in importance of sectors to GVA



Fastest growing sectors



Forecast growth for New Anglia



Key sectors in the Sector Growth Strategy

Energy

Information and Communications Technology (ICT)

Life sciences and biotechnology

Advanced manufacturing

Digital creative and cultural creative

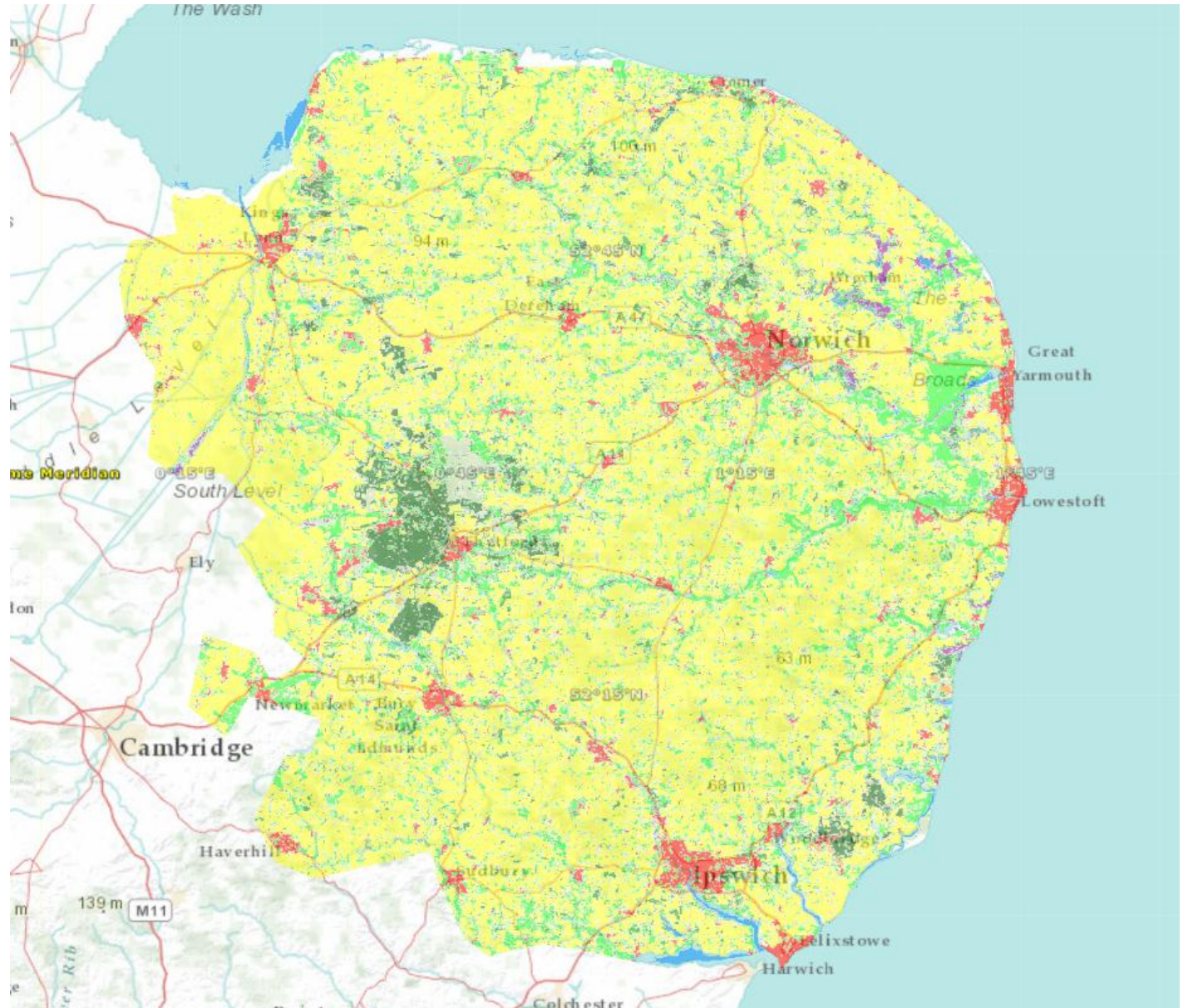
Food, drink and agriculture

Financial services

Ports and logistics

Tourism

Land use



Waste and emissions

- Percentage of waste sent for recycling (2011/12):
 - Norfolk: 45% (ranked 130 of 397 local authorities)
 - Suffolk: 57% (ranked 39 of 397 local authorities)
- CO₂ emissions (2010):
 - Norfolk: 7.9 tonnes per person
 - 27% from road transport A(roads and minor roads)
 - 19% from industry and commercial electricity
 - 14% from domestic electricity
 - Suffolk: 7.7 tonnes per person
 - 26% from road transport (A roads and minor roads)
 - 19% from industry and commercial electricity
 - 14% from domestic electricity

Ecosystem services

- Sections 4 to 6 of the workbook are structured around ecosystem services
- This ensures that the impact of economic growth on the environment is assessed in terms of:
 - Provisioning services: services that produce a good that generally has a market value (e.g. food, timber, energy)
 - Regulating services: services that provide a function for free that we would otherwise have to pay for (e.g. clean water, clean air, regulation of flood and erosion hazards)
 - Cultural services: services are available for us all and which improve our quality of life (e.g. recreation, health)

Opportunities and threats

- Collection of data on each of the ecosystem services provides the basis for identifying:
 - How economic growth could affect the environment (mainly threats...but could also be opportunities if action is taken early on, with potential for win-wins)
 - And how the environment could affect economic growth (mainly opportunities...but also threats where environmental constraints could affect future growth, for example, availability of water supplies)

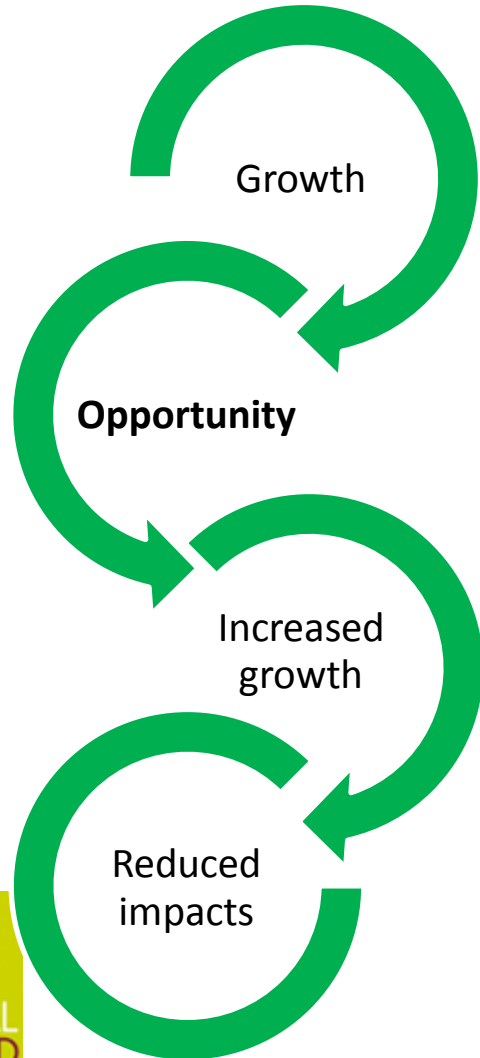
Importance ratings

Rating	Importance (significance)
4	Likely to affect the whole economy
3	Affects one or more of key growth sectors, with very significant knock-on impacts to whole economy
2	Affects one or more of key growth sectors, with some knock-on impacts to whole economy
1	Affects one mainly one key growth sectors, with limited knock-on impacts outside that sector
0	Could be locally significant but unlikely to be significant at sectoral scale overall

Urgency ratings

Rating	Urgency (timescale for action)
4	Action should have started already and hasn't or is underdeveloped, or is identified as requiring urgent action in plan or strategy
3	Opportunity or threat should be considered within a three-year planning cycle and/or other plans and strategies include this opportunity and threat within a three-year planning cycle
2	Opportunity or threat should be considered within a ten-year planning cycle and/or other plans and strategies include this opportunity and threat within a ten-year planning cycle
1	Opportunity or threat should be considered within a twenty-year planning cycle and/or other plans and strategies include this opportunity and threat within a twenty-year planning cycle
0	Opportunity or threat does not need consideration within a twenty-year planning cycle and/or has not been identified as requiring action in existing plans or strategies

Developing opportunities and threats



Need to exploit opportunities and reduce threats

Workbook helps you to identify them...

...you can then identify how to best address them



Example 1

- Sector: tourism and recreation
- Plan/Vision: aim to increase visitors by evening out seasonality
- Opportunity: to improve visitor experience through better signage, interpretation
- Threat: increased numbers of visitors likely to add pressure onto environment, especially if this occurs at peak times (overcrowding causing direct impacts, car parking issues, pressure on water supplies)

Example 2

- Sector: agriculture
- Plan/Vision: more sustainable production of food
- Opportunity: investment in and working with high performers within the sector to help others develop practices and exploit new technologies
- Threat: reduced availability of water for irrigation affecting yields and quality (and potentially access to supermarket contracts)

Example 3

- Sector: all (flood risk)
- Plan/Vision: sustainable growth in long-term
- Opportunity: potential for local business to contribute towards local defences could enable wider objectives to be delivered at the same time delivering much wider benefits
- Threat: lack of Government funding for defences could mean that flood risk increases, especially in those communities that are less able to afford to invest themselves

Example 4

- Sector: all (water quality)
- Plan/Vision: sustainable growth in long-term
- Opportunity: voluntary agreements (such as Federation House Commitment) of businesses to reduce water use in the food processing industry (risk of reduced water availability already high on agenda for many businesses)
- Threat: emissions and discharges from existing activities affecting water quality (including nitrate levels in groundwater that already affect groundwater abstractions)

Workshop discussions

- We have identified a number of opportunities and threats so far
- We would like to discuss these with you to make sure that:
 - There isn't anything obvious to you that we have missed
 - There isn't anything surprising to you that cannot be explained
 - You agree with the importance and urgency scores assigned and the justifications used for those scores

Division of services

- To make the discussions more manageable we have:
 - Divided the ecosystem services into three types:
 - Services directly related to growth sectors
 - Services which are location specific and relate to activities
 - Services which feed into all sectors
 - identified the top 10 opportunities and top 10 threats for each group, based on the importance and urgency ratings we have assigned
 - copies of all the opportunities and threats identified to date for discussion alongside new ideas or comments on the ratings

The three types of service

Services directly related to growth sectors	Services which are location specific and relate to activities	Services which feed into all sectors
Oil and gas Coal Renewable energy Food, agriculture, fisheries and game Tourism (including recreation)	Mineral resources Water supply Fibre/timber Flooding Land and soil quality Aesthetics (inward investment)	Genetic resources Climate Water purification Pests and diseases Air quality Noise Pollination Health

Annex 4 Top 10 Opportunities and Threats for each set of services

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FR1	Opportunity	Potential total capital value to Norfolk and Suffolk for offshore wind of £23 billion and onshore wind of £74 billion. Also power transmission (£585 million and transport infrastructure £1.2 billion)	3	Potential for significant benefits to specific sectors of the economy linked to energy and infrastructure if investment can be brought to Norfolk and Suffolk. This investment could benefit up to 1,700 businesses in Norfolk and Suffolk or 19% of the total number of businesses	4	Action has started already with projects already coming to Norfolk and Suffolk	12
FOG1	Opportunity	Potential to use existing infrastructure associated with gas terminal (Bacton), pipelines, etc. as basis for expanding into new technologies (Carbon Capture and Storage) as potentially greener energy, but also coal gasification (although this may not be in line with the Green manifesto)	3	Potential for very significant benefits on energy sector	3	Plans need to be put into place in short-term to promote existing infrastructure	9
FC1	Opportunity	Large coal reserves have been found in the Southern North Sea that could be the basis for coal gasification (note though that promotion of this industry may not be in line with the green manifesto)	3	Potential for very significant impacts on parts of economy, but also in areas that are more deprived - could sustain existing businesses even if gas reserves are exhausted	3	Three-year cycle probably required to ensure this opportunity is explored fully, and to look for opportunities to begin to fill reduction in gas production and volumes coming through Bacton	9

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FFA1	Opportunity	Possible designation of Marine Protected Areas may impact sectors such as fisheries, tourism, etc.	2	Designation of protected areas such as Marine Conservation Zones (MCZs) (e.g. Alde Ore Estuary, Stour and Orwell, Cromer Shoal chalk beds, etc.) may affect multiple growth sectors such as fisheries, tourism, ports and logistics and offshore energy	3	Consultation is currently in progress on the designation of MCZs. This possibility as well as other possible protected areas should be considered within a three-year planning cycle.	6
FCr8	Opportunity	Diversification into other activities, e.g. farm tourism could help maintain traditional approaches and livestock farms, and potentially environmentally friendly approaches, such as encouraging wildlife	1	Likely to be related to farms with appropriate opportunities for diversification	4	Opportunity is already being developed in other areas, should be promoted in New Anglia	4
FCr17	Opportunity	Investment of £250m from the Biotechnology and Biological Sciences Research Council	1	Significant benefit for biotech industry with possible knock-on benefits for food sector	4	Action on this opportunity already underway, but could be exploited to help deliver greater benefits to agriculture sector to help growth in this area. Research needs to begin now as it can take 30-40 years for these advances to be seen at the field level	4
FCr16	Opportunity	Opportunity to invest in and work with high performers who lead on progress because they are willing to develop their practices or exploit new technologies.	1	Could have benefits for agricultural sector, and biotech sector, linking the high performers from both to improve economic growth while reducing environmental impacts	4	This opportunity should be being exploited already given the importance of agriculture and biotech to the New Anglia area; need to facilitate discussions between the two sectors if required to encourage two-way flows of knowledge, ideas and	4

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
						innovation from lab to field and back to lab. This could link to work of the Technology Strategy Board Sustainable Agriculture and Food Innovation Platform	
FCr11	Opportunity	Winter storage reservoirs could also be an opportunity if they are designed with biodiversity benefits in mind (this could also help to reduce landscape impacts)	1	Enabling biodiversity benefits to be delivered alongside water benefits could help environment as well as agriculture	4	Planning issues need to be addressed to enable reservoirs to be built to enhance the environment.	4
FCr19	Opportunity	Combinable crop yield mapping already reveals pockets in many fields yielding double the national average where this best practice has been applied. Evidence also shows that there is correlation between improved efficiency (reflected in economic performance) and reduced environmental impact; for example reductions in nitrogen use efficiency without diminution in yield have been observed over a sustained period, though there is room for considerable further improvement	1	Potentially significant benefits for agriculture	4	This opportunity could be being exploited now	4
FCr18	Opportunity	British Retail Consortium work on retail and farming - investing in our futures	1	Need to build on work being done by retailers with farmers to further boost returns and benefits through direct linkages to customers' needs	4	Action is already underway, but could be expanded to the whole agricultural and food processing sectors	4

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
Rec1	Threat	Strong growth in the tourism sector (Norfolk County Council anticipates growth of 38% between 2010 and 2020) could increase pressure on already stressed resources such as water, infrastructure, etc.	3	Water is a resource used by all sectors to some extent; increased demand from the tourism sector (i.e. due to increased visitors) will put further pressure on resources	4	The Environment Agency already produce Catchment Abstraction Management Strategies, with the aim of restoring sustainable abstraction	12
FCr10	Threat	Reducing water availability in the summer for irrigation could lead to building of storage reservoirs. These are likely to be built on poorer quality land in terms of crop yields so could be built over areas that are providing the greatest biodiversity value	3	Lack of water could result in loss of supermarket contracts (due to quality of crop issues) or significant reductions in yield	4	Planning issues need to be addressed to enable reservoirs to be built to reduce impacts of abstraction on the environment. This is already a priority for some Water Abstraction Groups	12
FCr13 and Fli8	Threat	Climate change and other changes encourage pests and diseases. This has been seen in previous years with threats such as Spanish slugs that could affect crop yields significantly and Schmallenberg and Bluetongue coming over from the continent affecting livestock	3	Recent media attention suggests that pests and diseases could have a significant effect on the economy of agriculture, with knock-on impacts for other parts of the economy (especially food processing)	4	Action, including research is already underway, but this issue is likely to remain of high priority for agriculture and food	12
FR2	Threat	Obtaining planning permission for low carbon energy projects, particularly onshore wind	3	Could affect the whole energy sector (although the Enterprise Zone in Lowestoft and Great Yarmouth provides a streamlined planning process)	4	Action has already started, e.g. in Lowestoft and Great Yarmouth Enterprise Zone, but this does not include energy installations or planning across wider Norfolk and Suffolk	12

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FR3	Threat	Lack of necessary infrastructure is likely to deter investors. This includes grid capacity for large scale renewable development, transport connections and coastal infrastructure	3	Significant impact on energy sector, especially with the difficulties of raising public money to provide major infrastructure which is in the public good (where private investors cannot individually fund such major projects)	4	There is an identified need for an upgrade of the electricity grid distribution and transmission in some areas, and this is seen as being one of the key threats to future energy development in the area	12
FFA5	Threat	Development of offshore energy or designation of MCZs	3	Perception from fishermen of significant negative impacts on their livelihoods from increased costs (increased steaming time), reduction in fishing opportunities (have to find new grounds, greater competition for grounds, need to find new grounds but perception that most profitable grounds have already been identified and insufficient fish elsewhere to be profitable)	4	This is a major concern for fishermen, especially in terms of designation of MCZs and needs to be addressed urgently	12
FR4	Threat	High speed broadband infrastructure is increasingly becoming a major concern for businesses with new technology and communication requirements	3	Could be significant impacts on growth sectors	4	Plans are already in place for the roll-out of next-generation fibre technology to enhance overall broadband capacity. Until this is installed it is likely to remain a high priority issue	12
FOG2	Threat	Reduction in available remaining resources, or point at which resources are becoming exploited could affect future viability of area for gas and associated support industries	3	Potential for very significant impacts on local area and supporting ports, including Great Yarmouth and Lowestoft	3	Plans need to be put into place to explore how new, greener energy investment can be attracted to build on the existing skills and infrastructure	9

Table A4.1: Top 10 opportunities and threats related to growth sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FFA3	Threat	Growth and development in the offshore energy sector may negatively affect fisheries	2	There are major centres of advanced manufacturing in off shore energy and marine engineering in the New Anglia area, as well as development plans for the offshore energy sector which could impact on fisheries	4	The East of England coastline has been selected as the first area to benefit from marine planning; a new system to help manage the huge demands on space in and around our sea. According to SeaFish (2006) the offshore wind industry has been rapidly expanding in the UK and will occupy major amount of coastal offshore space when zoning plans are developed	8
FFA2	Threat	Increased port activity and shipping may negatively impact fisheries	2	Growth in the ports and logistics sector may reduce fishing area which could impact commercial fisheries, as well as recreational fishing	4	The East of England coastline has been selected as the first area to benefit from marine planning; a new system to help manage the huge demands on space in and around our sea	8

Table A4.2: Top 10 opportunities and threats which are location specific							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
WS4	Opportunity	Technology will play an important role in diminishing water loss in leaks and pipe bursts. Efficient water use is also a key area.	4	Advance manufacturing is a key growth area and the region hosts several companies within the water sector leading the technological field. Supporting these companies might increase competitiveness and innovation. Efficient water use such as water harvesting, grey water recycling systems and anaerobic digester for waste water veers can significantly reduce water use (e.g. Adnams Brewery in Suffolk). it would reduce costs for consumers as well	4	This should be included in the upcoming strategy paper as the industry is moving fast and water is becoming increasingly scarce in the region	16
WS6	Opportunity	Water Recycling as opposed to return it to the flow can reduce water usage while creating strong linkages with engineering and advance manufacturing sector.	3	This is interrelated to point WS4. It differs in the time-scale because water recycling is not directly subjected to future growth.	4	This is already being done in some areas (Thames Water and Essex Water). However it should be considered as soon as possible in New Anglia as it would significantly increase value per litre of water while reducing overall use	12
LSQ3	Opportunity	Promote agri env schemes which deliver resource protection, such as buffer strips etc. which have benefits for biodiversity and soil quality	3	This could have wide ranging impacts for both agriculture from improved soil fertility and the improvements to the wider landscape and environmental functioning. It may also lead to increases in bird populations which are important for tourism (birding tourism occurs year	4	Agri-environment schemes have the potential to deliver benefits across a wide range of sectors and ecosystem services, increasing uptake should be a priority	12

Table A4.2: Top 10 opportunities and threats which are location specific							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
				round, and is important for sustaining the industry out of the peak season)			
WS5	Opportunity	Waste Water is likely to increase in response to higher water use. Waste water needs to be treated to avoid pollution, enabling the expansion of the water treatment industry	3	Water treatment plants are likely to increase activity responding to the forecast water demand in the next 20 years, creating more revenue and jobs.	4	Waste water treatment plants are costly and take long to commission. The sooner the issue is planned the quicker the industry can respond to future demand	12
FTi3	Opportunity	Encouraging local farm businesses to increase appropriate-scale generation of heat, utilising woody biomass from forest waste for woodchip boilers where it is sustainable to do so, which could have benefits for habitat management	3	This will have knock on impacts for the energy production sector, wildlife and tourism if uptake is widespread	3	This is being considered in woodland management plans, but uptake of woodchip boilers in schools etc. could be promoted further	9
FTi4	Opportunity	Exploring the potential for new woodland types, including species more resilient to potential challenges of climate change and new tree diseases.	3	This would potentially influence the landscape structure for recreational use as well as for timber production for the construction industry	3	This needs to be considered quickly due to the continued threat of diseases and pests, especially considering the recent outbreak of Ash dieback	9
FNC1	Opportunity	Development of County wide Local Flood Risk Management Strategies give guidance on what is likely to be required which those discharging duties that may affect flood and coastal risk must have regard for	2	Flooding can affect the whole economy, although mainly for those properties directly at risk or where infrastructure is affected that could affect other properties	4	The impact on flood risk must be taken into account to be in compliance with the Local Flood Risk Management Strategies	8

Table A4.2: Top 10 opportunities and threats which are location specific

Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FCoa1	Opportunity	With the cuts of Government funding for coastal flood defences, there is an opportunity to create new wetland habitats to act as natural flood defences, initiated by local communities. This is supported by Government funding being potentially available for creation of intertidal habitat, and potential to extend this to payment for ecosystem services (e.g. Environment Agency project along Suffolk coast)	2	Climate change increases the threat of sea level rise and restoring and creating new wetland habitats would have benefits for the environment and local economy	3	Needs to be considered early in order for habitats to become established and effective in the long-term	6
Aes1	Opportunity	Good quality of the natural environment (and appearance of the local landscape) could attract businesses	2	Having a good quality environment could attract more mobile companies to the area; there is the potential for companies in sectors such as financial services and health and life sciences (both expected to grow) to locate in Norfolk and Suffolk	3	Opportunity needs to be developed alongside the growth plan	6
FNC2	Opportunity	Creation of assets register will provide useful information to help address assets having an effect on flood risk	2	Flooding can affect the whole economy, although the impacts from assets on the register is likely to be reasonably localised	3	The assets registers are still being developed, so will become more useful over time as they are completed	6
WS1	Threat	Population is expected to increase by 32% in the next 20 years and climate change is increasing rainfall seasonality patterns (wet winter-dry summer). It is predicted a water deficit in most water sources	4	Water deficit is likely to impose limitations to sustained economic growth. Water Scarcity directly impacts food prices and threatens food security. It also increases food miles and overall	4	The issue needs to be addressed now because as the area is already suffering from water shortages. There are however some strategies being considered	16

Table A4.2: Top 10 opportunities and threats which are location specific							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
		in some parts of the year.		supply chain GHG emissions.			
Aes3	Threat	Poorly managed growth of infrastructure and buildings could decrease environmental quality, thus decreasing the attractiveness of the area as a place to locate a business	3	Negative impacts on the appearance of the area could have detrimental impacts on the tourism industry, as well as decreasing the attractiveness of the area to businesses in other key growth sectors (e.g. health and life sciences, financial services) who may otherwise have located themselves within Norfolk and Suffolk	3	Threat needs to be dealt with alongside the growth plan	9
FCoa2	Threat	Reduction in availability of Government funding could result in increased flood risk for coastal communities, especially those where the community is less likely to be able to afford to contribute towards the cost. This could reduce inward investment into these areas	2	Lack of inward investment could affect the whole economy for the affected areas, reducing opportunities for the local population	4	Will depend on when the coastal defences will need refurbishment and/or maintenance, so will vary around the coast. Some areas may require immediate consideration (e.g. Hunstanton-Snettisham, North Norfolk, Suffolk)	8

Table A4.2: Top 10 opportunities and threats which are location specific							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
FNC3	Threat	Risk that requirements placed on businesses and residents in terms of managing their own flood risk could be seen as costly (although this would encourage a more sustainable approach, ensuring that development is appropriate)	2	This could affect any sectors of the economy looking to develop. Some sectors may need to be located in the floodplain and requirements for resilience measures could provide an opportunity to develop while minimising the risks from flooding or increasing resilience so that recovery post-flood is much quicker	4	This responsibilities must be taken into account immediately, not least so development is in line with the strategy	8
WS10	Threat	Higher water demand from the Energy Sector (Electrify supply)	4	it is the second largest purpose for water abstraction and expected to increase by at least 15 % (lowest bound) in the next 20 years. This is likely to have a knock-on effect on other inter-linked sectors such as ports and logistics and advance manufacturing, expected to growth above the average forecast of 3.07% per year. Demand for water from these sectors will increase	2	The issues of energy is not yet well defined. There are data gaps that need filling before action can be taken. There is a growing understanding that much of the energy needed in the future might be produced by alternative sources	8
Aes2	Threat	Potential for increased growth of crops for bio-fuel	2	Increased use of land for fuel crops could lead to detrimental impacts on appearance, with negative impacts for tourism and other agricultural land uses (as well as biodiversity)	3	This issue needs to be considered in the near future as energy policy is changing rapidly	6

Table A4.2: Top 10 opportunities and threats which are location specific							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
LSQ1	Threat	A move to more intensive high value crops may result in the need for increased chemical fertilisers and herbicide/pesticide	2	This will affect certain areas of the LEP, as not all farming practices are expected to change.	3	Intensification is likely to be linked with greater demand from the growing population, and thus will need to be considered in long term planning	6
WS2	Threat	Virtual Water is currently an important source of water. As water exporting countries begin to take notice of virtual water flows, tax on food exports are increasing. Food prices are likely to increase.	4	Increasing food prices will put more pressure in the economy. Depending on the degree of control, food imports might become limited putting more pressure on local resources to substitute imports	1	This s likely to affect the region in the long term rather than in the short term. Food exporting countries might not enforce high taxes due to need to export revenue	4
WS7	Threat	Future waterworks and strategies for coping with water scarcity can have a detrimental effect on the environment.	2	Resectioning and realigning of water links might have a detrimental impact on biodiversity, especially in delicate ecosystems, affecting the tourism and recreational industries. A possible desalination plant will be expensive to set up and will have a heavy use of electrify and other resources	2	It would be important to have future strategies set up soon so actions can be planned properly. The WRMP identifies a desalination plant as the only large scale project to ameliorate the issue of water scarcity in north Norfolk although it recognizes the risks involved	4
WS9	Threat	Higher demand from the Agriculture, Food and Drink Industry	2	This is a double threat. Population growth both nationally and in the region will increase demand for the agriculture, food and drink sector, increasing demand for water accordingly. Water scarcity in turn will hinder the development of the industry	2	This point is linked to WS 1,2 and 4. It would be important to encourage more efficient technologies, creating strong linkages with advance manufacturing while reducing water use costs	4

Table A4.3: Top 10 opportunities and threats which feed into all sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
WP1	Opportunity	Projected growth	4	Linked more to environment than economy, but reduction in water quality could have very significant effect on whole economy. Opportunity is improving water environment alongside growth	4	Thought is being given to this now - in existing plans and strategies	16
AQ6	Opportunity	Advancements in Clean energy sector may positively impact on air quality	4	This sector has the potential for reducing air pollution for multiple sectors of the economy and on a broader scale than just the New Anglia region	4	Work is currently being carried out in this regard. The LEP commits to working with relevant organisations to drive investment in, and national lobbying on, micro-generation and renewables. The aim is to help the New Anglia region become a net exporter of renewable energy	16
Hea1	Opportunity	Increase connectivity and access to the countryside by improving non-motorised routes and public transport links (such as the coast hopper)	4	This has been shown to increase tourism and the health and wellbeing of communities which can access the environment easily in a sustainable way by reduce energy consumption. It is likely to lead to knock on benefits for the whole of the LEP economy, encouraging new business start-ups, etc.	4	The issue of connectivity underlies the functioning of the whole LEP and needs to be considered as a priority. There are some existing plans such as Natural England's Coastal Access connecting Cromer to Great Yarmouth, as well as several other cycle and trail routes, but this is a much larger issue which needs consideration and planning for the whole LEP area, with proper linkages in place for new developments as a standard	16

Table A4.3: Top 10 opportunities and threats which feed into all sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
GCCM 5	Opportunity	Creating Networks of knowledge	4	Expertise across green growth across different industries can be linked with cross-sectoral networks to create a hub of innovation between leading sectors. Enhancing the competitive advantage of the region in green products	4	Actions are being taken	16
DaP4	Opportunity	An LEP wide approach to establishing a defence system against the threat of invasive species. This will ensure that detection and response is quick enough to prevent negative impacts to the economy, especially as there is no current specific body allocated to invasive species in Suffolk as there is for Norfolk	4	Considering the ramifications of the recent Ash die back implications this opportunity could benefit the whole economy and have implication for areas outside of the LEP. This is especially the case due to the areas close proximity to Europe and the extensive stretch of coast line	4	Allocation of resources should be put in place immediately, considering the extent of the costs of no defence. Proposals are underway to form an LEP wide	16
GR1	Opportunity	Increase strategic design of biodiversity for new developments. For example, where there are several different developers in one area, plans could be considered in conjunction, which would aid in the preservation and enhancement of ecological networks	3	Population increase is expected to be around 32% over the next 20 years for the LEP area, with the provision of new homes to accommodate this increase	4	Implementing strategic design at this early stage of development will have important benefits for biodiversity in the long term	12
LCR4	Opportunity	As big cities become crowded and their temperature raise (heat island effect), business might chose the country side to work. Companies already established might chose to stay and expand in the region as well	3	This is happening already but there is a lack of coordination in what efforts need to be made to attract new businesses to the area. Key sector that are likely to affect are business support, advanced manufacturing, life	4	Measures are being considered and taken	12

Table A4.3: Top 10 opportunities and threats which feed into all sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
				science and biotech, and the energy sector. This could have a significant impact in productivity and knock-on effect on the whole economy			
GCCM 3	Opportunity	Enhancing Renewables	3	The region has expertise in most renewable energies, including Solar, Wind, Bio-mass, tidal, low carbon combustion, nuclear and UCG, that can be exploited to achieve targets	4	Actions are being taken	12
GCCM 4	Opportunity	Competitive advantage	3	The region has a competitive advantage in the green sector, with the potential to nurse the development of world leading companies	4	Actions are being taken	12
WP4	Opportunity	Green Production and consumption as response to increasing GHG emissions.	3	increasing support to green industries and technology might bring new revenue streams while reducing the processes described above The region is pioneer in green industries and has the expertise. It might produce a knock-on effect to other sectors	3	Thought is being given to this now - in existing plans and strategies	9
LCR6	Threat	Decreasing rainfall and increasing temperatures will put pressure on water resources leading to droughts.	4	This is affecting all sectors of the economy already	4	It should be dealt with now	16

Table A4.3: Top 10 opportunities and threats which feed into all sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
WP3	Threat	GHG emissions from projected growth	4	Released chemicals into atmosphere come back to the water system as acid rain (in the water cycle), decreasing water quality by changing the chemical balance of rivers and lakes; increasing treatment costs. Cost is often passed on to consumers	4	Thought is being given to this now - in existing plans and strategies	16
WP2	Threat	Projected growth	4	Reverse of above. Threat is where growth does not take account of needs of water environment, with knock-on consequences	4	Thought is being given to this now - in existing plans and strategies	16
GCCM 1	Threat	Natural and Regulatory environment as a barrier for growth.	4	On-going changes in natural environment triggered changes in regulatory framework that could be detrimental to economic growth	4	The Climate Change Act (2008) requires a reduction of carbon emission of 80% by 2050. to achieve this target measures are being taken but not enough. This can be a detriment for economic growth	16
Hea3	Threat	The need for increased development to accommodate growth and economic development could lead to planning applications not being reviewed by councils in enough time to ensure that adequate green infrastructure is in place	3	Connectivity has been shown to increase health and wellbeing whilst boosting the economy	4	Planning applications should include adequate linkages and connectivity both via public transport and off-road cycle trails as a standard. Some uptake is occurring, but this is patchy	12

Table A4.3: Top 10 opportunities and threats which feed into all sectors							
Code	Opportunity or Threat	Name of opportunity or threat	Importance rating	Justification	Urgency rating	Justification	Combined Score
LCR1	Threat	Expected economic and population growth as a detriment for green infrastructure	3	Increasing demand for green infrastructure to cater for population and economic growth might reduce the capacity of such infrastructure to cope with changes in local climate. This will be detrimental for the whole economy	4	Measures should be taken in a per-project basis	12
DaP2	Threat	Increasing the capacity and transfer of goods at the Port of Felixstowe could be a major source of pest and disease transfer	3	The impacts of pests and diseases could affect several sectors, such as agriculture, timber, tourism and have detrimental effects on the environment within the whole LEP area	4	Increasing biosecurity measures are urgently needed in order to prevent the potential ramifications to the rest of the economy	12
Noi2	Threat	The mean distance travelled per person per year has increased annually and these trends are expected to continue. The Department of Transport (2004) predicts a 40% increase in road traffic in England by 2025 compared to 2000 levels.	3	Decreasing road traffic and encouraging public transport can have a positive effect on noise levels but is also an important step with regards to carbon emissions. This should be considered in the short term	3	This threat should be dealt with in the near future. The trend of increasing road traffic should be halted not only for the affect it has on noise but also on the environment and CO2 emissions	9
Pol3	Threat	More intensive farming with non-flowering crops could cause declines in pollinators	3	This will have implications for the whole economy of the LEP with significant impacts on the agricultural sector	3	Needs to be considered urgently as this could affect other areas of agriculture - orchards etc. and areas outside of the LEP	9
GR6	Threat	The planned development in the tourism sector may lead to increased visitor pressure on particularly sensitive areas or species, due to them being located in tourist hotspots, such as stone curlew and little terns	2	This will impact the tourism sector with knock-on impacts for other areas of the economy	3	Adequate planning is needed before increased pressures have a severe impact on biodiversity. Methods of spreading increased recreation to areas which have a lesser impact on the environment should be developed	6

Annex 5: Linkages between the top opportunities and threats

Annex 5 Linkages between the top opportunities and threats

Table A5-1: Linkages between the opportunities which had a combined score of 12 or 16 to establish the top 10 strategic opportunities (shown in bold)		
Code	Name of opportunity	Links identified
FR1	Potential total capital value to Norfolk and Suffolk for offshore wind of £23 billion and onshore wind of £74 billion. Also power transmission (£585 million and transport infrastructure £1.2 billion)	Links to FR7
FR7	The awarding of Enterprise Zones to six areas within Norfolk and Suffolk and CORE status to Great Yarmouth and Lowestoft will encourage investors in renewable energy through financial and planning incentives	Links with GCCM2 and FR1. Identified as strategic as this opportunity underlies the related opportunities
WS12	Address water efficiency together with flood risk management so that flows are evened out	Links to WS6 and WS4
FFA1	Possible designation of Marine Protected Areas may impact sectors such as fisheries, tourism, etc.	Stand alone, but ranks too low to be included in top 10
GCCM6	Increase in Green Infrastructure	Has wide spreading implications – stand alone
ER2	Encourage sustainable crop production by minimising bare ground, planting green cover crops, and using low pressure ground vehicles to reduce erosion	Links with LSQ3
LSQ3	Promote agri-env schemes and broader scale sustainable farm management which deliver resource protection, such as buffer strips etc. which have benefits for biodiversity and soil quality	Links with ER2, but deals with the mechanism for delivery of the issue
Rec11	Increasing non-motorised infrastructure such as coastal paths has the potential to increase access to the countryside more sustainably and increase tourism	Links with Hea1
FCr9	Winter storage reservoirs could be an opportunity if they are designed with biodiversity benefits in mind (this could also help to reduce landscape impacts). These could also benefit water abstraction and designed for harsh drawdown.	Links with LSQ3
WS4	Technology will play an important role in diminishing water loss in leaks and pipe bursts, together with improving water efficiency technologies	Links with WS6 and WS12
WS6	Increasing water efficiency, recycling, management and awareness so as to cope with future increasing demand	Links with WS4, WS12 and WP1
Foo5	Opportunity to increase local resilience in terms of food security and reduce our reliance on the global market for food production	Bigger issue – stand alone
GR1	Increase strategic design of biodiversity for new developments. For example, where there are several different developers in one area, plans could be considered in conjunction, which would aid in the preservation and enhancement of ecological networks	Tackles wider issues - stand alone
LCR8	Increasing broadband speed has the potential to reduce local carbon emissions by enabling more people to work from home	Has wide ranging implications -stand alone
GCCM2	Create new technologies that enhance the sustainable use of the environment increasing resilient growth,	As discussing sustainable energy generation links to FR7

Table A5-1: Linkages between the opportunities which had a combined score of 12 or 16 to establish the top 10 strategic opportunities (shown in bold)		
Code	Name of opportunity	Links identified
	and making the environment more important	
FNC4	Introducing strict planning regulations, promoting green infrastructure such as SUDS will help at improving the capability of the environment to withstand possible flooding events	Links with WS12
WP1	Growing population size and external pressures present the opportunity to improve water quality alongside growth	Links with WS6, but is dealing with quality and not supply
DaP4	An LEP wide approach to establishing a biosecurity defence system. This will ensure that detection and response is quick enough to prevent negative impacts to the economy, especially as there is no current specific body allocated to invasive non-native species in Suffolk as there is for Norfolk	Stand alone
Hea1	Increase connectivity and access by improving non-motorised routes and public transport links. Awareness raising of these services should also be carried out	Links with Rec11. Identified as strategic as incorporates non-motorised infrastructure as well as public transport and promotion of these

Table A5-2: Linkages between the threats which had a combined score of 12 or 16 to establish the top 10 strategic threats (shown in bold)		
Code	Name of threat	Links identified
LU1	Coastal areas are not well connected to the rest of the UK through the transport infrastructure. In addition, some port infrastructure may need upgrading	Links with FR3
FR3	Lack of necessary infrastructure is likely to deter investors. This includes grid capacity for large scale renewable development, transport connections and coastal infrastructure	Links with FR10, FR8 and LU1
FR8	Frequently changing Feed-in Tariff scheme for renewables and government policy reduces popularity of renewable energy	Links with FR3, as although slightly separate issue deals with investment in renewable energy
FR10	Failure to meet the Government's 2020 target for 15% of energy demand from renewable sources	Links with FR8, FR3 and LU1. Identified as strategic as is the driving force behind other threats
WS10	Higher demand from the energy sector (electricity supply) for water supply	Links with WS1
FCr8	Reducing water availability in the summer for irrigation could lead to building of storage reservoirs. These are likely to be built on poorer quality land in terms of crop yields so could be built over areas that are providing the greatest biodiversity value	Links with LCR6
GR12	The increasing need for water abstraction may reduce the availability of water for sensitive habitats	Links with Rec1
LCR1	Expected economic and population growth as a detriment for green infrastructure	Links with Hea3
FCoa2	Reduction in availability of Government funding for flood defences could result in increased flood risk for coastal communities, especially those where the community is less likely to be able to afford to contribute towards the cost. This could reduce inward investment into these areas	Links with FNC3
LSQ1	A move to more intensive high value crops may result in the need for increased chemical fertilisers and	Links with Pol3

Table A5-2: Linkages between the threats which had a combined score of 12 or 16 to establish the top 10 strategic threats (shown in bold)

Code	Name of threat	Links identified
	herbicide/pesticide and water	
Noi2	The mean distance travelled per person per year has increased annually and these trends are expected to continue. The Department of Transport (2004) predicts a 40% increase in road traffic in England by 2025 compared to 2000 levels	Links with Rec1
Pol3	More intensive farming with non-flowering crops could cause declines in pollinators	Links with LSQ1
Hea3	The need for increased development to accommodate growth and economic development could lead to planning applications not being reviewed by councils in enough time to ensure that adequate green infrastructure is in place	Links with LCR1
MI4	High speed broadband infrastructure is increasingly becoming a major concern for businesses with new technology and communication requirements	Stand alone
WS1	Population is expected to increase by 17% in the next 20 years and climate change is increasing rainfall seasonality patterns (wet winter- dry summer). It is predicted a water deficit in most water sources in some parts of the year	Links with WS10 and LCR6
LCR6	Decreasing rainfall and increasing temperatures will put pressure on water resources leading to droughts	Links with FCr8
FNC3	Increasing pressure of new developments, Climate Change and ageing infrastructure are likely to increase severity of floods and the unpredictability of weather events	Links with FCoa2
WP2	Growing population size and demands for resources could result in declining water quality	Stand alone, as dealing with water quality and not supply
DaP2	Increasing the capacity and transfer of goods at ports could be a major source of pest and disease transfer as well as unchartered boats and recreational equipment/gear	Links with Foo6
Rec1	Strong growth in the tourism sector (Norfolk County Council anticipates growth of 38% between 2010 and 2020) could increase pressure on already stressed resources such as water, infrastructure, etc.	Links with GR12
Foo6	Climate change and other changes encourage pests and diseases. This has been seen in previous years with threats such as Spanish slugs, Schmallenburgh and Bluetongue coming over from the continent	Links with DaP2, but broader issue

Annex 6: Tactical and strategic responses to the top 10 opportunities and threats

Annex 6 Tactical and strategic responses to the top 10 opportunities and threats

Table A6-1: Top opportunities with actions to avoid or mitigate them								
Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
FR1, FR7, GCCM2 Enabling investment in renewable energy and new technologies	Identifying and promoting the benefits of the area (financial and planning incentives assisted by award of Enterprise Zones, activities that are taking place, technologies being developed, infrastructure in place and planned, how the area is investing in itself to improve attractiveness to incentives)	Identification of existing infrastructure and planned development, supply chain, skills, etc.		Crossover benefits for other sectors	Medium	Utilises resources that could be targeted to other actions	Development needs to take account of impact on ecosystem services	
		Promotion of what the area offers (from above), e.g. trade fairs		Crossover benefits for other sectors	Medium	Utilises resources that could be targeted to other actions	Risk of over-subscription potentially affecting environment (drive to develop becomes stronger)	
		Sell area as a 'package' (covering assets and quality of life), backing up specific promotion	Link to quality of environment (aesthetics, landscape, recreation)	Potential to attract higher skills that could be transferred to local population	Medium	Benefit as could capture lots of sectors at once	Risk of over-subscription or conflicts between sectors for land/water, etc.	Risk that just import people with high skills, with no benefit for local population
GCCM6 Improving and developing existing Green Infrastructure and increasing its consideration in development	Supporting and spearheading the importance of high quality Green Infrastructure for improving quality of life and the	Ensure that high quality Green Infrastructure is included in development planning	Link to quality of environment (aesthetics, landscape, recreation)	Benefits for all sectors by improving quality of life and environment	Low-Medium	Utilises resources that could be targeted to other actions	A balance is needed between community GI and GI with environmental benefits	Possibility that GI inclusion will have high short term costs for the developers, reducing uptake of above average requirements

Table A6-1: Top opportunities with actions to avoid or mitigate them

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
planning	environment. Ensuring its inclusion in development planning, with the region acting as a leader with above average uptake and quality	Support for an LEP wide coordinator of GI to ensure a joined-up approach to the design and inclusion of GI in new developments which aims at a more strategic approach (working with local Councils and Wild Anglia LNP)	Link to quality of environment (aesthetics, landscape, recreation, biodiversity)	Benefits for all sectors by a more joined up approach	Medium	Benefit as could benefit other projects at the same time		
LSQ3, ER2, FCr9 Promote agri-environment schemes and broader scale sustainable farm management which deliver resource protection, benefiting	Promotion of sustainable farm management which may include diversification into other practices such as farm tourism and other environmentally	Support for farmers wishing to embark on business ventures which improve environmental quality and biodiversity, such as farm tourism, or wetland agriculture	Possible benefits to erosion regulation, land and soil quality, biodiversity, recreation, aesthetics, pollination, water quality	Possible benefits to tourism, and the agricultural sector through increasing yields/quality	Med-high	Benefit as could benefit other projects/sectors at the same time	Diversification into other areas must be sustainable	May not be as profitable as intensive farming practices, but has longer-term benefits

Table A6-1: Top opportunities with actions to avoid or mitigate them								
Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
biodiversity and other environmental processes	friendly practices. Promotion of uptake of agri-environment schemes	Promotion of agri-environment schemes and other management such as the use of natural systems for water storage	Water supply, water quality, biodiversity, soil quality, soil erosion, aesthetics, recreation, pollination, landscape	Benefits to public water supply and quality by improving water capacity. This will also increase yields	Med	Utilises resources that could be targeted to other actions	Must be considered with biodiversity in mind, so that inclusion has multiple benefits for the environment and the aesthetics of the area	Reduces intensification which may affect profits in the short-term
WS6, WS4, WS12, WP1 Increase water efficiency, recycling, management and awareness by supporting water efficiency technologies and flood risk management	Support the uptake of water saving measures into new developments (including the use of natural systems). Increase the uptake of SUDs and support the development of water efficiency technologies	Increase support for the uptake of water saving devices in new developments (natural reed beds as water filtering devices, SUDS etc.)			Med	Benefit as could benefit other projects/sectors at the same time	Where possible this should be developed in line with the delivery of multiple benefits for the environment	May have higher short-term costs
		Increase awareness of the sustainable use of water by working with water companies and others to increase awareness raising	Water supply, quality with knock-on benefits to others	Reduces demand and lowers the costs of alternative option such as water imports	Med	Benefit as could benefit other projects/sectors at the same time		
		Support the development of water efficiency technologies	Water quality, food production, energy, biodiversity, land	Potential to benefit the economy by leading	Med	Utilises resources that could be targeted to other actions	The water saving technologies may have knock-on detrimental	

Table A6-1: Top opportunities with actions to avoid or mitigate them

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
			and soil quality	technological advancement in the area and encouraging further investment			effects to the environment (such as desalination), and sustainability should be stated as a pre-requisite	
Foo5 Increase food security and reduce reliance on the global food market	Promotion of locally grown produce to increase local food security and reduce reliance on the global market. This will also provide security in terms of global climate change impacts, and lowering food miles, thus reducing emissions	Support suppliers and producers of local produce by facilitating links with supermarkets and other retailers	Global and local climate change mitigation	Potential to benefit the economy by increasing the value and ease of selling local produce	Med	Utilises resources that could be targeted to other actions		
		Support sustainable food producers wishing to start up new businesses with a view to supplying the local market	Global and local climate change mitigation	Potential to make farming/food production more attractive and profitable to those wishing to start up new businesses	Med-high	Utilises resources that could be targeted to other actions	May increase intensive production at a detriment to the environment. Demand may outstrip available land for growing food, and put pressure on land for biodiversity	
		Promotion of food festivals which offer opportunities to sell out of season produce	Health and wellbeing, recreation and tourism, food supply	Potential to increase tourism and recreation and develop a sense of place and community	Med			
LCR8 Improving broadband speed	Increasing broadband speed has the potential	Support the roll out of improved broadband speed	Local climate change mitigation	Potential to have large benefits to the economy and	Med			

Table A6-1: Top opportunities with actions to avoid or mitigate them

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
has the potential to reduce carbon emissions	to reduce local carbon emissions by enabling more people to work from home and encouraging new businesses to the area	Promote the area as a quality place to live with improving broadband speed	Link to quality of environment (aesthetics, landscape, recreation, biodiversity)	May increase investment in the region through business start-ups	if	Med	Utilises resources that could be targeted to other actions	Encouraging more people to relocate to the countryside may put added pressure on the environment
WP1 Improving water quality alongside growth will have knock on benefits for the whole economy and the environment	Improving water quality alongside growth will have knock on benefits for the whole economy and the environment	Promote practices which improve water quality through awareness raising, both in the public (e.g. reducing urban storm water run-off) and private sectors (e.g. reducing agricultural nutrient leaching), by working with water companies	All	Benefits the whole economy	Med	Med	Utilises resources that could be targeted to other actions	
DaP4 An LEP wide approach to establishing a biosecurity defence system	An LEP wide approach to establishing a biosecurity defence system. This will ensure that detection and response is quick enough to prevent negative impacts to the	Support for a joint Norfolk and Suffolk Non-Native Species Initiative programme	All	Prevention of larger costs to the economy should an invasive species not be detected early enough	Med-high	Med-high	Benefit as could benefit other projects/sectors at the same time	

Table A6-1: Top opportunities with actions to avoid or mitigate them

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
	economy, especially as there is no current specific body allocated to invasive non-native species in Suffolk as there is for Norfolk							
Hea1, Rec11 Increase non-motorised infrastructure and public transport links	Increase connectivity and access by improving non-motorised routes and public transport links. Awareness raising of these services should also be carried out	Improve connectivity linkages which enable environmentally friendly access to the environment	Likely to have knock-on impacts to all services	Improvements to the tourism industry together with quality of life for residents, may also encourage inward investment	Med-high	Benefit as could benefit other projects/sectors at the same time		
		Ensure that all new developments incorporate the inclusion of improved connectivity links, by both non-motorised routes and public transport connections, as standard practice	Link to quality of environment (aesthetics, landscape, recreation, biodiversity) Local climate change mitigation	Improved quality of life and may encourage inward investment	Med	Utilises resources that could be targeted to other actions		May increase short-term costs for developers, but should be a standard practice
		Promotion of non-motorised and public transport services	Link to quality of environment (aesthetics, landscape,	Increase access to areas will benefit local economies	Low-med	Utilises resources that could be targeted to other actions		Demand may outstrip the current capacity of public

Table A6-1: Top opportunities with actions to avoid or mitigate them								
Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
			recreation, biodiversity) Local climate change mitigation					transport, but this open opportunities to improve services
Key: Low: £1,000 to £10,000 Medium: £10,000 to £100,000 High: >£100,000								

Table A6-2: Top opportunity with actions to avoid or mitigate

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
GR1 Increase strategic design of biodiversity for new developments and infrastructure	Increase strategic design of biodiversity for new developments and infrastructure. For example, where there are several different developers in one area, plans could be considered in conjunction, which would aid in the preservation and enhancement of ecological networks. New infrastructure such as roads and cycle ways, should incorporate biodiversity, such as the	Support a coordinator to act as an interface between developers working alongside Wild Anglia to ensure that a wider more joined-up landscape approach is taken in development planning	Benefits to all services by reconnecting our landscape through sustainable development	Benefits to all sectors through improving quality of life and encouraging inward investment	Med-high	Benefit as could benefit other projects/sectors at the same time		May increase short-term costs for developers, but these should be offset by increased benefits and sales
		Promote the region as leading the way in sustainable development and design with biodiversity at its core	Knock-on benefits to all services	May encourage inward investment to the area, improving quality of the environment and uptake of sustainable design	Med	Utilises resources that could be targeted to other actions	Promotion should not supersede the action of strategic design in development planning	
		Ensure the incorporation of biodiversity	Link to quality of environment (aesthetics,	May encourage inward investment	Low-med	Utilises resources that could be targeted to other		

Table A6-2: Top opportunity with actions to avoid or mitigate

Name of opportunity	Description of the opportunity	Actions to seize the opportunity	Benefits with other ecosystem services	Indirect positive economic and social effects	Cost to pursue the opportunity			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
	insertion of hedgerows	alongside infrastructure at the outset of planning design	landscape, recreation, biodiversity) Local climate change mitigation	through improvements to environment quality		actions		
<p>Key: Low: £1,000 to £10,000 Medium: £10,000 to £100,000 High: >£100,000</p>								

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
WS1, LCR6, WS10, FCR8 (water resources deficits)	Increased demand for freshwater resources, which are already stressed, and impacts of climate change potentially leading to a deficit at some times of the year (potential loss of biodiversity if deficit is dealt with purely by building storage reservoirs, since these may be targeted towards least productive areas)	Promote more integrated approach to managing water through planning			Medium	Utilises resources that could be targeted to other actions		
		Promote best practice in member organisations			Low-Medium (could be done alongside other activities)	Time needed for organisations to implement	Short-term costs might affect uptake (even if longer-term they would save)	
		Targeting funds (e.g. CIL) towards activities that help to retain water (e.g. wetlands, lakes)		Could redirect funds from other activities (e.g. communities)	Low-Medium (depending on level of LEP involvement)	Funds would not be available for other uses		
FR10, FR3, LU1, FR8 (Failure to meet Government	Investors are likely to be deterred by the lack of	Promote a more integrated approach to infrastructure			Med	Utilises resources that could be targeted to		

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
targets for energy supply from renewable sources by 2020)	infrastructure. This includes transport connections (particularly in relation to coastal areas), grid capacity for large scale renewable development. A linked issue is changes to the feed-in-tariff for renewables which create uncertainty and could limit investment in infrastructure. The skills deficit also limits new technologies and workforce	development when looking at plans for individual roads and energy related developments, etc.				other actions		
		Support investment into new technologies			Med	Utilises resources that could be targeted to other actions		Increasing renewable energy generation should be sustainable, and not impact on biodiversity, such as land take or nutrient loading from biofuel generation
		Facilitate apprentice schemes and promote the renewables industry in education centres to increase the skill			Med	Benefits as increases the skills base with higher earning potential		Risk that other industries/sectors may suffer from a skill deficit

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
		base						
LCR1, HEA3 (green infrastructure)	Increases in the population along with economic growth could negatively affect green infrastructure, e.g. the need for rapid development may mean that insufficient time is given to consideration of green infrastructure when assessing planning applications	Help ensure that people making decisions about planning have a clear understanding of what green infrastructure is and why it is needed			Medium	Utilises resources that could be targeted to other actions		
		Promote the need for green infrastructure to property developers and planners			Medium	Utilises resources that could be targeted to other actions		
FCOA2 (flood defence funding in coastal areas)	Changes in availability of funding for flood defences for coastal areas could increase the severity of the	Promote flood resilience measures amongst businesses and households at risk		Could lead to those outside the area seeing it as a high risk place to be; thus there could be knock-on impacts in	Medium	Utilises resources that could be targeted to other actions		

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
	impacts of flooding as well as decrease inwards investment in high risk areas			terms of further decreases in inwards investment as firms look to move to areas with lower risk				
		Encourage discussions in at risk areas about the way in which flood risk can be managed (such discussions may involve talking about contributions and awareness raising about the benefits of soft defences)			Medium	Utilises resources that could be targeted to other actions		
		Promote the uptake of flood resilience measures by member organisations where appropriate			Low	Time spent promoting such measures		

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
FNC3 (increased severity of flood events)	Climate change, ageing infrastructure and greater pressure from development are likely to increase the severity of flood events	Promote flood resilience measures amongst businesses and households at risk		Could lead to those outside the area seeing it as a high risk place to be; this could limit inwards investment	Medium	Utilises resources that could be targeted to other actions		
LSQ1, POL3 (impacts from intensive farming)	Movement towards more intensive high value crops could lead to greater use of chemical fertilisers, herbicides, pesticides and water with knock on impacts for pollinators (through both use of chemicals and growth of different crops)	Promote agricultural research into ways of farming without the use of large quantities of chemicals			Medium	Utilises resources that could be targeted to other actions		
		Encourage the uptake of agri-environment schemes where appropriate to minimise the impacts on water (e.g. through using buffer strips) and pollinators			Medium	Utilises resources that could be targeted to other actions		Potential for decrease in food production and loss of competitiveness in the short term relative to other areas of the country if the focus is on the environment

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
		(through provision of field margins)						alone (but bearing in mind the potential long term negative impacts of intensive farming)
MI4 (high speed broadband)	High speed broadband infrastructure is increasingly becoming a concern for businesses with new technology and communication requirements	Promote local schemes providing better broadband for villages			Low (if LEP members undertake this where they are based)	Time spent promoting these schemes		
		Encourage consideration of communications infrastructure during the planning process for new developments			Medium	Utilises resources that could be targeted to other actions		
WP2 (water quality)	Growing population and size could increase demand for resources resulting in declining water quality	Promote water efficiency to limit the increased demand for water, thus helping to retain quality of			Medium	Utilises resources that could be targeted to other actions		

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
		resources						
		Support the inclusion of natural systems in new developments which increase water quality			Medium			
REC1, GR12, NOI1 (tourism and resource use)	Growth in tourism could put pressure on already stressed resources (e.g. water) and transport infrastructure	Encourage tourism businesses to promote wise use of resources (e.g. in accommodation) and use of public transport (e.g. Coasthopper) when visiting the area			Medium	Utilises resources that could be targeted to other actions		Risk that the area may be portrayed as somewhere that restricts tourists
		Promote cooperation between tourism businesses to minimise impacts without limiting tourism		Negative impacts through having more large vehicles on small lanes (potential for increased disruption for	Medium	Utilises resources that could be targeted to other actions		

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
		(e.g. a coach firm could have an arrangement with a rural tourism attraction to take visitors from a set point (in a town) to the attraction to avoid large numbers of cars)		locals)				
FOO6, DAP2 (threat of introduced pests and diseases)	Climate change in combination with greater capacity at ports in the LEP could increase the risk that pests and diseases are brought into and/or transferred within the LEP. Increases in tourism and recreation could also increase	Raise awareness of pest and disease transfer routes at appropriate forums, for example, during discussions about port expansion and maintenance, etc.			Medium	Utilises resources that could be targeted to other actions		
		Promote the uptake of measures to combat the spread of pests			Medium	Utilises resources that could be targeted to other actions		Some may see measures to combat transfer of pests and diseases as

Table 6-3: Top 10 threats with actions to avoid or mitigate them

Name of threat	Description of the threat	Actions to avoid or mitigate the threat	Negative interactions with other ecosystem services	Indirect negative economic and social effects	Cost to remove or mitigate the threat			Negative economic and social effects or risks
					Financial cost	Opportunity cost	Negative impacts on ecosystem services	
	the spread of invasive species	and diseases throughout the LEP (i.e. in agricultural businesses as well as at ports)						restricting economic growth and development
Key: Low: £1,000 to £10,000 Medium: £10,000 to £100,000 High: >£100,000								