Agenda

South Oxfordshire District Council

Listening Learning Leading

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Date: 20 January 2020
Website:

A MEETING OF THE

Climate Emergency Advisory Committee

WILL BE HELD ON TUESDAY 28 JANUARY 2020 AT 4.30 PM

MEETING ROOM 1, 135 EASTERN AVENUE, MILTON PARK, MILTON, OX14 4SB

Members of the Committee:

Sue Roberts (Chair)

Sam Casey-Rerhaye	Kate Gregory	David Rouane
Sue Cooper	Simon Hewerdine	Ian White
Stefan Gawrysiak	Lynn Lloyd	Celia Wilson
Sarah Gray	Caroline Newton	

Substitutes

Ken Arlett	*Kellie Hinton*	*Andrea Powell*
Robin Bennett	*Mocky Khan*	*Jo Robb*
Elizabeth Gillespie	*Axel Macdonald*	*Anne-Marie Simpson*
Lorraine Hillier	*Jane Murphy*	

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1 Chairman's announcements

To receive any announcements from the chairman and general housekeeping matters.

2 Apologies for absence

To record apologies for absence and the attendance of substitute members.

3 Minutes of previous meeting (Pages 4 - 9)

To adopt and sign as a correct record the Climate Emergency Advisory Committee minutes of the meeting held on 20 November 2019.

4 Declarations of interest

To receive any declarations of disclosable pecuniary interests in respect of items on the agenda for this meeting.

5 Urgent business

To receive notification of any matters which the chairman determines should be considered as urgent business and the special circumstances which have made the matters urgent.

6 'Deep Adaptation' article (Pages 10 - 45)

To note the 'Deep Adaptation' article, which explores, mainly at a community level, what societies can do differently on climate change and its implications of possible social collapse. It expands the mainstream environmental movement's focus on mitigation (e.g. lowering CO2 emissions) to one of considering how countries can adapt to a coming climate tragedy.

7 Oxfordshire Electric Vehicle Infrastructure Steering Group

Oxfordshire County Council (OCC) are proposing to develop an Oxfordshire Electric Vehicle (EV) Infrastructure Strategy to establish the principles and an action plan to deliver the charging infrastructure needed to support the transition to low emission vehicles in the county. To assist with the development of the strategy, OCC has invited the council to appoint a councillor to the Oxfordshire Electric Vehicle Infrastructure Steering Group.

As this is a joint committee, the appointment is one for full Council. However, officers propose that the representative should be a member of the Climate Emergency Advisory Committee.

The committee is therefore invited to make a recommendation to Council on the appointment which will be considered at its meeting on 13 February 2020.

RECOMMENDATION

To recommend to Council on the appointment of a representative to the Oxfordshire Electric Vehicle Infrastructure Steering Group.

8 Climate Emergency -Year One Work Programme (Pages 46 - 60)

To consider the Task and Finish Group's report on their work programme. Insight and Policy Manager to report.

9 Communications and Engagement update

Project Officer – Policy & Insight, to provide the committee with a verbal update.

10 Forward Programme for the Committee (Pages 61 - 62)

The Committee are asked to consider and review the Forward Programme, which is accompanied by a table containing future meeting dates. Democratic Services Officer to report.

11 Exclusion of the public

To consider whether to exclude members of the press and public from the meeting for the following item of business under Part 1 of Schedule 12A Section 100A(4) of the Local Government Act 1972 and as amended by the Local Government (Access to Information) (Variation) Order 2006 on the grounds that:

(i) it involves the likely disclosure of exempt information as defined in paragraphs 1-7 Part 1 of Schedule 12A of the Act, and

(ii) the public interest in maintaining the exemption outweighs the public interest in disclosing the information.

Exempt Information

12 Car Parking Fees and Charges (Pages 63 - 80)

To consider the report by Head of Housing and Environment, which seeks the committee's views on the Council's car parking fees and charges.

MARGARET REED

Head of Legal and Democratic

Minutes

South Oxfordshire District Council

Listening Learning Leading

OF A MEETING OF THE

Climate Emergency Advisory Committee

HELD AT 6.00 PM ON WEDNESDAY 20 NOVEMBER 2019

MEETING ROOM 1 – 135 EASTERN AVENUE, MILTON PARK OX14 4SB

Present

Sue Roberts (Chair)
Sam Casey-Rerhaye (Vice Chair), Sue Cooper, Stefan Gawrysiak, Kate Gregory, Simon Hewerdine, Caroline Newton, David Rouane and Celia Wilson

Officers

Paul Bateman, Chloe Bunting, Andrew Down, Emily Hamerton, Heather Saunders, Michelle Wells and Donna Worrall.

Also present:

Leigh Rawlins

13 Chair's announcements

Chair's Statement

The Chair made a statement to the committee, explaining that due to the General Election purdah period, the committee was unable to discuss its agenda item on "Climate Actions".

The Chair continued her statement:

"What we had hoped to talk about today was Deep Adaptation. I circulated a paper to you all on the near-future impacts that Global Heating shall have, and indeed already is having, on our lives. It is not hard to appreciate that the current floods in the Midlands and the North are having huge and tragic impacts on the lives of our people. What is harder to see is what scientists are describing as breakdowns in society within the next 10 years which will affect even affluent countries like ours.

We must consider a vision for the future. It is so easy to believe that a zero-carbon future will plunge us back into cave-man days, but there are huge financial gains to be made by living in a fairer sharing economy, within our means in the sense of resources and planetary boundaries, and living with, rather than battling against, the natural world, of which we are a part. We expect to run a workshop day early next year in which we can develop a council vision.

As for adaptation, personally, I have never given much thought to adapting to climate change as opposed to trying to prevent it, as I had not thought of the food and water shortages, and other deprivations that are already built into the system. This, I hope will be something that we will give serious attention to as soon as the election is over, in our leadership role in protecting the people of South Oxfordshire."

14 Apologies for absence

Apologies for absence were received from Lynn Lloyd, Ian White and Jane Murphy (the latter's substitute).

15 Minutes

RESOLVED: to approve the minutes of the meeting of the committee held on 19 September 2019 as a correct record and agree that the Chairman sign these as such, subject to showing David Rouane as Director of 10:10 Climate Action.

16 Declarations of interest

There were no declarations of interest.

17 Urgent business

There was no urgent business

18 Progress of Task and Finish Group

The Insight and Policy Manager reported on the progress which had been made by the task and finish group. The group had met on 8 October 2019 to progress the strategy and commission work. The committee recalled that at their first meeting they had agreed the seven themes and items to be considered as options for inclusion in a coherent work programme. The group had commenced scoping and evaluating the Themes and three external organisations had been consulted, who were advising the council on cost factors. Internal expertise was also being drawn upon, to evaluate options and provide evaluations on resources and delivery. The council's procurement team were also being consulted.

Important work is being undertaken to validate the council's carbon emissions baseline, to ensure that the data was accurate and reliable. The group will be organising a workshop where the Vision and targets would be scoped. There will also be a conference event to launch the Vision and Strategy. The group had agreed to next meet on 18 December 2019, following completion of the options evaluation work and their costing. The committee agreed that they required a meeting in January 2020, to receive the task and finish group's progress report and work programme recommendations, which would inform their recommendations to Cabinet and feed into the budget setting process in February 2020.

Liaison with outside organisations

The committee considered that engagement with the farming sector would be critical in helping to achieve its aims and objectives and to ensure resilience in local food production.

The Insight and Policy Manager also reported that the Council has been successful in securing student consultancy support, as part of a programme run by Oxford university. We will be engaging with a group of students to capture their creativity and fresh ideas on strategies and techniques to encourage behaviour change in order to achieve the challenging targets and use their skills to create a data pack of information to tell the compelling story around the urgency of climate change and adaptation. Once completed, this data pack will be hosted on 'Oxfordshire Insight'.

The Insight and Policy Manager and the Energy Strategy and Projects Officer had presented to a climate change conference on South Oxfordshire and Vale of White Horse district councils' responses to climate emergency. The presentation was well-received and confirmed that the approaches were aligned with other councils' priorities and was ahead of some others.

The council had just signed up to the Association of Public Sector Excellence (APSE) Energy Service, which provided access to information and events and guaranteed councillor places (for both South Oxfordshire and Vale of White Horse councils) at the APSE annual conference. The Energy Strategy and Projects Officer would be sending full details of the conference to the committee.

On 19 November 2019 an all-Oxfordshire (district councils and county council) collaboration meeting had been held. The aim was to foster stronger joint working, and discussions revealed some inevitable overlap in councils' working arrangements, particularly in work commissioning. The meeting had concurred that economies of scale opportunities could be realised and that further discussions were required on this issue. The baseline work seemed to be an appropriate topic for this treatment.

The Insight and Policy Manager also reported that the Oxford City Citizens' Assembly report would be publicly available within the next few days and was recommended reading for councillors. The council would be working with the City Council about the results of the Assembly process and it was likely that this council could enrich their data.

The work of the council on climate change had evoked a high level of interest from towns, villages and groups in South Oxfordshire. Insight and Policy Officers The task and finish group would be meeting each of the town councils of Didcot, Henley, Thame and Wallingford within the next few weeks, to understand what activity they may have been carrying out in this area, share the progress of the Council andexplain the work and offer advice and assistance, leading to collaboration on the topic .

The committee were keen to engage closely with environment – related groups, particularly those for younger people. It was confirmed that Insight and Policy had completed a research mapping exercise on climate action groups; the council already had contacts with the Youth Climate Network and Extinction Rebellion. The Insight and Policy Manager would share her spreadsheet of 58 groups with the committee with an ask that members advise if there were other suitable groups for inclusion in the spreadsheet. The committee agreed that an effective Communications Plan was of critical importance. The new council website would be launched in January 2020, greatly assisting with these issues. The committee were also keen to ensure that full opportunity was taken of the available social media to promote the work and ambition of the committee. The Committee requested a list of suggestions for individuals to take action on the website.

Following the election and the imposition of the purdah rules, the council would write to town and parish councils and community groups to understand what activity they may be

carrying out and update on the work of the committee, about its work and how those organisations could benefit from this. The committee queried whether the council could assist parishes with climate emergency auditing. It was noted that a web page would also be established.

Additionally, the council's scrutiny structures would be formally consulted as a critical friend. It was noted that the Task and Finish Group had been invited to attend the Scrutiny Committee meeting on 21 January 2020.

Next steps

The group planned to report its provisional standards to the Cabinet in December 2019. The committee hoped that it could receive a progress report from the group on this work.

The committee noted that Vale of White Horse's corresponding committee was proposing to undertake a two-stage approach to their climate emergency targets. The Acting Deputy Chief Executive confirmed that the differences in approach would not affect South Oxfordshire's pace, and that two sets of targets could be comfortably accommodated in this part of Oxfordshire.

The Group was exploring how higher standards could be met in the council's service areas. For example, the taxi licensing policy could be reviewed to offer incentives for electric vehicles, perhaps by exacting a lower fee, but ensuring that such changes would be reasonable and practical. Scoping was proceeding on related infrastructure issues, including charging points. The committee requested creation of a work programme for the Committee for future planning of agenda items.

Future meetings of the Advisory Committee

The committee expressed a wish to review the car parks fees and charges proposals being reviewed by Cabinet 30 January 2020. be consulted by Cabinet before the end of January 2020 in respect of car parks fees and charges. The committee would be interested in measures to encourage electric vehicles and discourage fossil fuel ones. Also, the committee would like to be consulted on the Community Infrastructure Levy (CIL) spending, where biodiversity issues would be of primary importance.

It was noted that the council's grounds maintenance contract would shortly be re-tendered and that may contain aspects of which the Committee could advise on. Due to governance timescales, briefings will be held in respect of this item with the relevant Portfolio Holders, Head of Service and the Committee Chair.

19 Terms of Reference

The committee discussed its terms of reference and a view was expressed that as the committee would be commissioning work in future, it would be preferable to have its own delegated budget. The Acting Deputy Chief Executive - Partnership and Planning reported that the Constitutional Review Working Group could review the terms of reference for the committee. The committee were reminded that the practice in the council is that budgets are delegated to officers who manage expenditure in accordance with the priorities set by councillors. Looking forward, the committee would need to aim for the budget cycle for the next financial year.

20 Future Homes Standard

The Cabinet member attended the committee for this item. The development manager and the senior building control officer introduced this item. The committee had received a full copy of the Ministry of Housing, Communities and Local Government's consultation on the Future Homes Standard. The consultation period was from 1 October 2019 to 10 January 2020.

The government had made a commitment to introduce a Future Homes Standard, by 2025 for 'new build homes to be future-proofed with low carbon heating and world leading levels of energy efficiency'. Energy efficiency requirements for new homes were set by Part L and Part 6 of the Building Regulations. The consultation of which this was the first of two parts, would also cover airtightness and improving the 'as built' performance of the constructed home.

The committee concurred that the focus on new build quality was to be supported, and a simpler compliance regime would assist designers and architects to fully understand the new standards, and work towards meeting them. A welcome innovation was the proposed requirement for the home occupier to complete a report certifying that the dwelling complied with the building regulations. Members questioned why the Future Homes proposals did not require the zero carbon homes that would be required to meet the council's climate emergency targets. The standards proposed in the Future Homes consultation were lower.

The Chair requested that the council should respond to the consultation by stating that a universal national standard for zero carbon homes would be easier to manage than individual councils having to request and justify these zero carbon standards themselves. The committee agreed with officers that if the government were to set the standards proposed in the Future Homes Standard, these might not be high enough and they would wish to have the opportunity to set their own higher standards

The Part F (Ventilation) Regulations would benefit from a comprehensive update, as they were difficult to understand in their present form. The committee agreed with the development manager when she suggested that responding to the consultation by letter was the most effective way of providing considered views, as the Council could focus on local priorities, such as; concentrating on affordable homes, supporting housebuilders and encouraging the highest building standards. Under any new building regulation regime, an avoidance of self-certification would be a priority. Additionally, it was important for the new regulations to refer to extensions and loft conversions.

Caroline Newton left the meeting at this time and took no further part in the discussions.

The committee considered that the question posed by paragraph 2.28, about the re-wording of the Planning and Energy Act 2008 to deal with a new energy efficiency standard, required a carefully worded response, as it did not seem appropriate for the council to agree a lower standard in the regulations.

Stefan Gawrysiak left the meeting at this time and took no further part in the discussions.

The committee was concerned that private inspectors should be required to comply with South Oxfordshire District Council standards. In its ongoing work, the council should liaise with the town and parish councils and encourage them to undertake a baseline audit on energy usage.

The committee recognised that he consultation period had only a short time to run and it might be necessary to communicate views via the Cabinet or Cabinet member.

21 Exclusion of the public

RESOLVED: to exclude members of the press and public from the meeting for following item of business Part 1 of Schedule 12A 100A(4) of the Local Government Act 1972 and as amended by the Local Government (Access to Information) (Variation) Order 2006 on the grounds that:

(i) It involves the likely disclosure of exempt information as defined in paragraph 3 Part 1 of Schedule 12A of the Act, and (ii) the public interest in maintaining the exemption outweighed the public interest in disclosing this information;

Crowmarsh Council Offices Project – Sustainability Options

22 Minutes

RESOLVED: to approve the confidential minutes of the first meeting of the advisory committee held on 19 September 2019, relating to 'Crowmarsh Council Offices Project – Sustainability Options', as a correct record and agree that the Chairman sign these as such.

The meeting closed at 8.25 pm

Chairman Date

Deep Adaptation: A Map for Navigating ClimateTragedy

IFLAS Occasional Paper 2

www.iflas.info

July 27th 2018[1]

Professor Jem Bendell BA (Hons) PhD

Occasional Papers

Occasional Papers are released by the Institute of Leadership and Sustainability (IFLAS) at the University of Cumbria in the UK to promote discussion amongst scholars and practitioners on themes that matter to our staff and students. Typically, an Occasional Paper is released prior to submission to an academic journal, as a method for receiving feedback. For instance, the first Occasional Paper, by Professor Jem Bendell and Professor Richard Little, was subsequently published in the Journal of Corporate Citizenship. However, this paper was rejected for publication by reviewers of Sustainability Accounting, Management and Policy Journal (SAMPJ), as reviewers made requests for major changes which were considered by the author as either impossible or inappropriate to undertake. Impossible, as the request to build off existing scholarship on this topic would require there to be publications on the implications of ecologically-induced social collapse, globally, upon which to build. A literature review indicated that there is not such scholarship in management studies. Inappropriate, as a reviewer's request not to dishearten readers with the claim of "inevitable near-term social collapse" reflects a form of censure found amongst people working on sustainable business and discussed in the paper. The letter from the author to the Editor of the Journal, with some feedback for the anonymous reviewers, is appended at the end of this Occasional Paper.

Acknowledgments from the Author

To write this paper, I had to block out time to review climate science for the first time since I was at Cambridge University in 1994 and to analyse implications in a rigorous way. I would probably not have done that without the encouragement of the following people for me to prioritise the issue: Chris Erskine, Dougald Hine, Jonathan Gosling, Camm Webb and Katie Carr. I thank Dorian Cave for research assistance and Zori Tomova for helping me

[1]Updated version after copyediting, Dec 2018

to prioritise my truth. I also thank Professor Carol Adams for finding reviewers for this paper, and the two anonymous reviewers who provided some useable feedback despite requiring such major revisions that conflicted with the aim of the paper. I also thank Carol for involving me in the SAMPJ as a Guest Editor in the past. Some funding for my focus on deep adaptation during my sabbatical was provided by Seedbed. If you edit an open access peer-reviewed academic journal and would like this paper to be submitted, please contact the author.

Abstract

The purpose of this conceptual paper is to provide readers with an opportunity to reassess their work and life in the face of an inevitable near-term social collapse due to climate change.

The approach of the paper is to analyse recent studies on climate change and its implications for our ecosystems, economies and societies, as provided by academic journals and publications direct from research institutes.

That synthesis leads to a conclusion there will be a near-term collapse in society with serious ramifications for the lives of readers. The paper reviews some of the reasons why collapse-denial may exist, in particular, in the professions of sustainability research and practice, therefore leading to these arguments having been absent from these fields until now.

The paper offers a new meta-framing of the implications for research, organisational practice, personal development and public policy, called the Deep Adaptation Agenda. Its key aspects of resilience, relinquishment and restorations are explained. This agenda does not seek to build on existing scholarship on “climate adaptation” as it is premised on the view that social collapse is now inevitable.

The author believes this is one of the first papers in the sustainability management field to conclude that climate-induced societal collapse is now inevitable in the near term and therefore to invite scholars to explore the implications.

Reader Support

A list of readings, podcasts, videos and networks to support us in our emotional responses to the information contained in this paper is available at www.jembendell.com

Introduction

Can professionals in sustainability management, policy and research – myself included - continue to work with the assumption or hope that we can slow down climate change, or respond to it sufficiently to sustain our

civilisation? As disturbing information on climate change passed across my screen, this was the question I could no longer ignore, and therefore decided to take a couple of months to analyse the latest climate science. As I began to conclude that we can no longer work with that assumption or hope, I asked a second question. Have professionals in the sustainability field discussed the possibility that it is too late to avert an environmental catastrophe and the implications for their work? A quick literature review revealed that my fellow professionals have not been publishing work that explores, or starts from, that perspective. That led to a third question, on why sustainability professionals are not exploring this fundamentally important issue to our whole field as well as our personal lives. To explore that, I drew on psychological analyses, conversations with colleagues, reviews of debates amongst environmentalists in social media and self-reflection on my own reticence. Concluding that there is a need to promote discussion about the implications of a social collapse triggered by an environmental catastrophe, I asked my fourth question on what are the ways that people are talking about collapse on social media. I identified a variety of conceptualisations and from that asked myself what could provide a map for people to navigate this extremely difficult issue. For that, I drew on a range of reading and experiences over my 25 years in the sustainability field to outline an agenda for what I have termed “deep adaptation” to climate change.

The result of these five questions is an article that does not contribute to one specific set of literature or practice in the broad field of sustainability management and policy. Rather, it questions the basis for all the work in this field. It does not seek to add to the existing research, policy and practice on climate adaptation, as I found that to be framed by the view that we can manage the impacts of a changing climate on our physical, economic, social, political and psychological situations. Instead, this article may contribute to future work on sustainable management and policy as much by subtraction as by addition. By that I mean the implication is for you to take a time to step back, to consider "what if" the analysis in these pages is true, to allow yourself to grieve, and to overcome enough of the typical fears we all have, to find meaning in new ways of being and acting. That may be in the fields of academia or management - or could be in some other field that this realisation leads you to.

First, I briefly explain the paucity of research that considers or starts from social collapse due to environmental catastrophe and give acknowledgement to the existing work in this field that many readers may consider relevant. Second, I summarise what I consider to be the most important climate science of the last few years and how it is leading more people to conclude that we face disruptive changes in the near-term. Third, I explain how that perspective is marginalised within the professional environmental sector – and so invite you to consider the value of leaving mainstream views behind. Fourth, I outline the ways that people on relevant social networks are framing our situation as one of facing collapse, catastrophe or extinction and how these views trigger different emotions

and ideas. Fifth, I outline a “Deep Adaptation Agenda” to help guide discussions on what we might do once we recognise climate change is an unfolding tragedy. Finally, I make some suggestions for how this agenda could influence our future research and teaching in the sustainability field.

As researchers and reflective practitioners, we have an opportunity and obligation to not just do what is expected by our employers and the norms of our profession, but also to reflect on the relevance of our work within wider society. I am aware that some people consider statements from academics that we now face inevitable near-term social collapse to be irresponsible due to the potential impact that may have on the motivation or mental health of people reading such statements. My research and engagement in dialogue on this topic, some of which I will outline in this paper, leads me to conclude the exact opposite. It is a responsible act to communicate this analysis now and invite people to support each other, myself included, in exploring the implications, including the psychological and spiritual implications.

Locating this Study within Academia

When discussing negative outlooks on climate change and its implications for human society, the response is often to seek insight through placing this information in context. That context is often assumed to be found in balancing it with other information. As the information on our climate predicament is so negative, the balance is often found in highlighting more positive information about progress on the sustainability agenda. This process of seeking to “balance out” is a habit of the informed and reasoning mind. Yet that does not make it a logical means of deliberation if positive information being shared does not relate to the situation being described by the negative information. For instance, discussing progress in the health and safety policies of the White Star Line with the captain of the Titanic as it sank into the icy waters of the North Atlantic would not be a sensible use of time. Yet given that this balancing is often the way people respond to discussion of the scale and speed of our climate tragedy, let us first recognise the positive news from the broader sustainability agenda.

Certainly, there has been some progress on environmental issues in past decades, from reducing pollution, to habitat preservation, to waste management. Much valiant effort has been made to reduce carbon emissions over the last twenty years, one part of climate action officially termed “mitigation” (Aaron-Morrison et. al. 2017). There have been many steps forward on climate and carbon management – from awareness, to policies, to innovations (Flannery, 2015). Larger and quicker steps must be taken. That is helped by the agreement reached in December 2015 at the COP21 intergovernmental climate summit and now that there is significant Chinese engagement on the issue. To support the maintenance and scaling of these efforts is essential. In addition, increasing action is occurring on adaptation to climate change, such as flood defences, planning laws and irrigation systems (Singh et al, 2016). Whereas we can praise these efforts,

their existence does not matter to an analysis of our overall predicament with climate change.

Rather than building from existing theories on sustainable business, this paper is focusing on a phenomenon. That phenomenon is not climate change per se, but the state of climate change in 2018, which I will argue from a secondary review of research now indicates near term social collapse. The gap in the literature that this paper may begin to address is the lack of discussion within management studies and practice of the end of the idea that we can either solve or cope with climate change. In the Sustainability Accounting Management and Policy Journal (SAMPJ), which this paper was originally submitted to, there has been no discussion of this topic before, apart from my own co-authored paper (Bendell, et al, 2017). Three papers mention climate adaptation in passing, with just one focusing on it by considering how to improve irrigated agriculture (de Sousa Fragoso et al, 2018).[2]

Organisation and Environment is a leading journal for discussion of the implications of climate for organisations and vice versa, where since the 1980s both philosophical and theoretical positions on environment are discussed as well as organisational or management implications. However, the journal has not published any research papers exploring theories and implications of social collapse due to environmental catastrophe.[3] Three articles mention climate adaptation. Two of those have adaptation as a context, but explore other issues as their main focus, specifically social learning (Orsato, et al 2018) and network learning (Temby et al, 2016). Only one paper in that journal looks at climate adaptation as its main focus and the implications for organisation. While a helpful summary of how difficult the implications are for management, the paper does not explore the implications of a widespread social collapse (Clément and Rivera, 2016).

Away from management studies, the field of climate adaptation is wide (Lesnikowski, et al 2015). To illustrate, a search on Google Scholar returns over 40,000 hits for the term “climate adaptation.” In answering the questions I set for myself in this paper, I will not be reviewing that existing field and scholarship. One might ask “why not”? The answer is that the field of climate adaptation is oriented around ways to maintain our current societies as they face manageable climactic perturbations (ibid). The concept of "deep adaptation" resonates with that agenda where we accept that we will need to change, but breaks with it by taking as its starting point the inevitability of societal collapse (as I will explain below).

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[2] A full text search of the journal database shows that the following terms have never been included in articles in this journal: environmental collapse, economic collapse, social collapse, societal collapse, environmental catastrophe, human extinction. Catastrophe is mentioned in 3 papers, with two about Bangladesh factory fires and the other being Bendell et al (2017).

[3] A full text search of the journal database shows that the terms environmental collapse, social collapse and societal collapse have been mention in one different article each. Economic collapse has been mentioned in three articles. Human extinction is mentioned two articles. Environmental catastrophe is mentioned in twelve articles. A reading of these articles showed that they were not exploring collapse.

Our Non-Linear World

This paper is not the venue for a detailed examination of all the latest climate science. However, I reviewed the scientific literature from the past few years and where there was still large uncertainty then sought the latest data from research institutes. In this section I summarise the findings to establish the premise that it is time we consider the implications of it being too late to avert a global environmental catastrophe in the lifetimes of people alive today.

The simple evidence of global ambient temperature rise is undisputable. Seventeen of the 18 warmest years in the 136-year record all have occurred since 2001, and global temperatures have increased by 0.9°C since 1880 (NASA/GISS, 2018). The most surprising warming is in the Arctic, where the 2016 land surface temperature was 2.0°C above the 1981-2010 average, breaking the previous records of 2007, 2011, and 2015 by 0.8°C, representing a 3.5°C increase since the record began in 1900 (Aaron-Morrison et al, 2017).

This data is fairly easy to collate and not widely challenged, so swiftly finds its way into academic publications. However, to obtain a sense of the implications of this warming on environment and society, one needs real-time data on the current situation and the trends that it may infer. Climate change and its associated impacts have, as we will see, been significant in the last few years. Therefore, to appreciate the situation we need to look directly to the research institutes, researchers and their websites, for the most recent information. That means using, but not relying solely on, academic journal articles and the slowly produced reports of the Intergovernmental Panel on Climate Change (IPCC). This international institution has done useful work but has a track record of significantly underestimating the pace of change, which has been more accurately predicted over past decades by eminent climate scientists. Therefore, in this review, I will draw upon a range of sources, with a focus on data since 2014. That is because, unfortunately, data collected since then is often consistent with non-linear changes to our environment. Non-linear changes are of central importance to understanding climate change, as they suggest both that impacts will be far more rapid and severe than predictions based on linear projections and that the changes no longer correlate with the rate of anthropogenic carbon emissions. In other words - ‘runaway climate change.’

The warming of the Arctic reached wider public awareness as it has begun destabilizing winds in the higher atmosphere, specifically the jet stream and the northern polar vortex, leading to extreme movements of warmer air north in to the Arctic and cold air to the south. At one point in early 2018, temperature recordings from the Arctic were 20 degrees Celsius above the average for that date (Watts, 2018). The warming Arctic has led to dramatic loss in sea ice, the average September extent of which has been decreasing

at a rate of 13.2% per decade since 1980, so that over two thirds of the ice cover has gone (NSIDC/NASA, 2018). This data is made more concerning by changes in sea ice volume, which is an indicator of resilience of the ice sheet to future warming and storms. It was at the lowest it has ever been in 2017, continuing a consistent downward trend (Kahn, 2017).

Given a reduction in the reflection of the Sun's rays from the surface of white ice, an ice-free Arctic is predicted to increase warming globally by a substantial degree. Writing in 2014, scientists calculated this change is already equivalent to 25% of the direct forcing of temperature increase from CO2 during the past 30 years (Pistone et al, 2014). That means we could remove a quarter of the cumulative CO2 emissions of the last three decades and it would already be outweighed by the loss of the reflective power of Arctic sea ice. One of the most eminent climate scientists in the world, Peter Wadhams, believes an ice-free Arctic will occur one summer in the next few years and that it will likely increase by 50% the warming caused by the CO2 produced by human activity (Wadhams, 2016).[4] In itself, that renders the calculations of the IPCC redundant, along with the targets and proposals of the UNFCCC.

Between 2002 and 2016, Greenland shed approximately 280 gigatons of ice per year, and the island's lower-elevation and coastal areas experienced up to 13.1 feet (4 meters) of ice mass loss (expressed in equivalent-water-height) over a 14-year period (NASA, 2018). Along with other melting of land ice, and the thermal expansion of water, this has contributed to a global mean sea level rise of about 3.2 mm/year, representing a total increase of over 80 mm, since 1993 (JPL/PO.DAAC, 2018). Stating a figure per year implies a linear increase, which is what has been assumed by IPCC and others in making their predictions. However, recent data shows that the upward trend is non-linear (Malmquist, 2018). That means sea level is rising due to non-linear increases in the melting of land-based ice.

The observed phenomena, of actual temperatures and sea levels, are greater than what the climate models over the past decades were predicting for our current time. They are consistent with non-linear changes in our environment that then trigger uncontrollable impacts on human habitat and agriculture, with subsequent complex impacts on social, economic and political systems. I will return to the implications of these trends after listing some more of the impacts that are already being reported as occurring today.

Already we see impacts on storm, drought and flood frequency and strength due to increased volatility from more energy in the atmosphere (Herring et al, 2018). We are witnessing negative impacts on agriculture. Climate change has reduced growth in crop yields by 1–2 percent per decade over the past century (Wiebe et al, 2015). The UN Food and Agriculture Organisation (FAO) reports that weather abnormalities related to climate change are costing billions of dollars a year, and growing exponentially. For

[4] This was corrected from "double" in an earlier version.

now, the impact is calculated in money, but the nutritional implications are key (FAO, 2018). We are also seeing impacts on marine ecosystems. About half of the world's coral reefs have died in the last 30 years, due a mixture of reasons though higher water temperatures and acidification due to higher CO2 concentrations in ocean water being key (Phys.org, 2018). In ten years prior to 2016 the Atlantic Ocean soaked up 50 percent more carbon dioxide than it did the previous decade, measurably speeding up the acidification of the ocean (Woosley et al, 2016). This study is indicative of oceans worldwide, and the consequent acidification degrades the base of the marine food web, thereby reducing the ability of fish populations to reproduce themselves across the globe (Britten et al, 2015). Meanwhile, warming oceans are already reducing the population size of some fish species (Aaron-Morrison et al, 2017). Compounding these threats to human nutrition, in some regions we are witnessing an exponential rise in the spread of mosquito and tick-borne viruses as temperatures become more conducive to them (ECJCR, 2018).

Looking Ahead

The impacts I just summarised are already upon us and even without increasing their severity they will nevertheless increase their impacts on our ecosystems, soils, seas and our societies over time. It is difficult to predict future impacts. But it is more difficult not to predict them. Because the reported impacts today are at the very worst end of predictions being made in the early 1990s - back when I first studied climate change and model-based climate predictions as an undergraduate at Cambridge University. The models today suggest an increase in storm number and strength (Herring et al, 2018). They predict a decline of normal agriculture, including the compromising of mass production of grains in the northern hemisphere and intermittent disruption to rice production in the tropics. That includes predicted declines in the yields of rice, wheat, and corn in China by 36.25%, 18.26%, and 45.10%, respectively, by the end of this century (Zhang et al, 2016). Naresh Kumar et al. (2014) project a 6–23 and 15–25% reduction in the wheat yield in India during the 2050s and 2080s, respectively, under the mainstream projected climate change scenarios. The loss of coral and the acidification of the seas is predicted to reduce fisheries productivity by over half (Rogers et al, 2017). The rates of sea level rise suggest they may be soon become exponential (Malmquist, 2018), which will pose significant problems for billions of people living in coastal zones (Neumann et al, 2015). Environmental scientists are now describing our current era as the sixth mass extinction event in the history of planet Earth, with this one caused by us. About half of all plants and animal species in the world's most biodiverse places are at risk of extinction due to climate change (WWF, 2018). The World Bank reported in 2018 that countries needed to prepare for over 100 million internally displaced people due to the effects of climate change (Rigaud et al, 2018), in addition to millions of international refugees.

Despite you, me, and most people we know in this field, already hearing data on this global situation, it is useful to recap simply to invite a sober

acceptance of our current predicament. It has led some commentators to describe our time as a new geological era shaped by humans - the Anthropocene (Hamilton, et al, 2015). It has led others to conclude that we should be exploring how to live in an unstable post-Sustainability situation (Benson and Craig, 2014; Foster, 2015). This context is worth being reminded of, as it provides the basis upon which to assess the significance, or otherwise, of all the praiseworthy efforts that have been underway and reported in some detail in this and other journals over the past decade. I will now offer an attempt at a summary of that broader context insofar as it might frame our future work on sustainability.

The politically permissible scientific consensus is that we need to stay beneath 2 degrees warming of global ambient temperatures, to avoid dangerous and uncontrollable levels of climate change, with impacts such as mass starvation, disease, flooding, storm destruction, forced migration and war. That figure was agreed by governments that were dealing with many domestic and international pressures from vested interests, particularly corporations. It is therefore not a figure that many scientists would advise, given that many ecosystems will be lost and many risks created if we approach 2 degrees global ambient warming (Wadhams, 2018). The IPCC agreed in 2013 that if the world does not keep further anthropogenic emissions below a total of 800 billion tonnes of carbon we are not likely to keep average temperatures below 2 degrees of global averaged warming. That left about 270 billion tonnes of carbon to burn (Pidcock, 2013). Total global emissions remain at around 11 billion tonnes of carbon per year (which is 37 billion tonnes of CO2). Those calculations appear worrying but give the impression we have at least a decade to change. It takes significant time to change economic systems so if we are not already on the path to dramatic reductions it is unlikely we will keep within the carbon limit. With an increase of carbon emissions of 2% in 2017, the decoupling of economic activity from emissions is not yet making a net dent in global emissions (Canadell et al, 2017). So, we are not on the path to prevent going over 2 degrees warming through emissions reductions. In any case the IPCC estimate of a carbon budget was controversial with many scientists who estimated that existing CO2 in the atmosphere should already produce global ambient temperature rises over 5°C and so there is no carbon budget – it has already been overspent (Wasdell, 2015).

That situation is why some experts have argued for more work on removing carbon from the atmosphere with machines. Unfortunately, the current technology needs to be scaled by a factor of 2 million within 2 years, all powered by renewables, alongside massive emission cuts, to reduce the amount of heating already locked into the system (Wadhams, 2018). Biological approaches to carbon capture appear far more promising (Hawken and Wilkinson, 2017). These include planting trees, restoring soils used in agriculture, and growing seagrass and kelp, amongst other approaches. They also offer wider beneficial environmental and social side effects. Studies on seagrass (Greiner et al, 2013) and seaweed (Flannery, 2015) indicate we could be taking millions of tonnes of carbon from the

atmosphere immediately and continually if we had a massive effort to restore seagrass meadows and to farm seaweed. The net sequestration effect is still being assessed but in certain environments will be significant (Howard et al, 2017). Research into “management-intensive rotational grazing” practices (MIRG), also known as holistic grazing, show how a healthy grassland can store carbon. A 2014 study measured annual per-hectare increases in soil carbon at 8 tons per year on farms converted to these practices (Machmuller et al, 2015). The world uses about 3.5 billion hectares of land for pasture and fodder crops. Using the 8 tons figure above, converting a tenth of that land to MIRG practices would sequester a quarter of present emissions. In addition, no-till methods of horticulture can sequester as much as two tons of carbon per hectare per year, so could also make significant contributions. It is clear, therefore, that our assessment of carbon budgets must focus as much on these agricultural systems as we do on emissions reductions.

Clearly a massive campaign and policy agenda to transform agriculture and restore ecosystems globally is needed right now. It will be a huge undertaking, undoing 60 years of developments in world agriculture. In addition, it means the conservation of our existing wetlands and forests must suddenly become successful, after decades of failure across lands outside of geographically limited nature reserves. Even if such will emerges immediately, the heating and instability already locked into the climate will cause damage to ecosystems, so it will be difficult for such approaches to curb the global atmospheric carbon level. The reality that we have progressed too far already to avert disruptions to ecosystems is highlighted by the finding that if CO2 removal from the atmosphere could work at scale, it would not prevent massive damage to marine life, which is locked in for many years due to acidification from the dissolving of CO2 in the oceans (Mathesius et al, 2015).

Despite the limitations of what humans can do to work with nature to encourage its carbon sequestration processes, the planet has been helping us out anyway. A global “greening” of the planet has significantly slowed the rise of carbon dioxide in the atmosphere since the start of the century. Plants have been growing faster and larger due to higher CO2 levels in the air and warming temperatures that reduce the CO2 emitted by plants via respiration. The effects led the proportion of annual carbon emissions remaining in the air to fall from about 50% to 40% in the last decade. However, this process only offers a limited effect, as the absolute level of CO2 in the atmosphere is continuing to rise, breaking the milestone of 400 parts per million (ppm) in 2015. Given that changes in seasons, temperatures extremes, flood and drought are beginning to negatively affect ecosystems, the risk exists that this global greening effect may be reduced in time (Keenan et al, 2016)

These potential reductions in atmospheric carbon from natural and assisted biological processes is a flickering ray of hope in our dark situation. However, the uncertainty about their impact needs to be contrasted with

the uncertain yet significant impact of increasing methane release in the atmosphere. It is a gas that enables far more trapping of heat from the sun's rays than CO2 but was ignored in most of the climate models over the past decades. The authors of the 2016 Global Methane Budget report found that in the early years of this century, concentrations of methane rose by only about 0.5ppb each year, compared with 10ppb in 2014 and 2015. Various sources were identified, from fossil fuels - to agriculture to melting permafrost (Saunois et al, 2016).

Given the contentiousness of this topic in the scientific community, it may even be contentious for me to say that there is no scientific consensus on the sources of current methane emissions or the potential risk and timing of significant methane releases from either surface and subsea permafrost. A recent attempt at consensus on methane risk from melting surface permafrost concluded methane release would happen over centuries or millennia, not this decade (Schuur et al. 2015). Yet within three years that consensus was broken by one of the most detailed experiments which found that if the melting permafrost remains waterlogged, which is likely, then it produces significant amounts of methane within just a few years (Knoblauch et al, 2018). The debate is now likely to be about whether other microorganisms might thrive in that environment to eat up the methane – and whether or not in time to reduce the climate impact.

The debate about methane release from clathrate forms, or frozen methane hydrates, on the Arctic sea floor is even more contentious. In 2010 a group of scientists published a study that warned how the warming of the Arctic could lead to a speed and scale of methane release that would be catastrophic to life on earth through atmospheric heating of over 5 degrees within just a few years of such a release (Shakhova et al, 2010). The study triggered a fierce debate, much of which was ill considered, perhaps understandable given the shocking implications of this information (Ahmed, 2013). Since then, key questions at the heart of this scientific debate (about what would amount to the probable extinction of the human race) include the amount of time it will take for ocean warming to destabilise hydrates on the sea floor, and how much methane will be consumed by aerobic and anaerobic microbes before it reaches the surface and escapes to the atmosphere. In a global review of this contentious topic, scientists concluded that there is not the evidence to predict a sudden release of catastrophic levels of methane in the near-term (Ruppel and Kessler, 2017). However, a key reason for their conclusion was the lack of data showing actual increases in atmospheric methane at the surface of the Arctic, which is partly the result of a lack of sensors collecting such information. Most ground-level methane measuring systems are on land. Could that be why the unusual increases in atmospheric methane concentrations cannot be fully explained by existing data sets from around the world (Saunois et al, 2016)? One way of calculating how much methane is probably coming from our oceans is to compare data from ground-level measurements, which are mostly but not entirely on land, with upper atmosphere measurements, which indicate an averaging out of total sources. Data published by

scientists from the Arctic News (2018) website indicates that in March 2018 at mid altitudes, methane was around 1865 parts per billion (ppb), which represents a 1.8 percent increase of 35 ppb from the same time in 2017, while surface measurements of methane increased by about 15 ppb in that time. Both figures are consistent with a non-linear increase - potentially exponential - in atmospheric levels since 2007. That is worrying data in itself, but the more significant matter is the difference between the increase measured at ground and mid altitudes. That is consistent with this added methane coming from our oceans, which could in turn be from methane hydrates.

This closer look at the latest data on methane is worthwhile given the critical risks to which it relates. It suggests that the recent attempt at a consensus that it is highly unlikely we will see near-term massive release of methane from the Arctic Ocean is sadly inconclusive. In 2017 scientists working on the Eastern Siberian sea shelf, reported that the permafrost layer has thinned enough to risk destabilising hydrates (The Arctic, 2017). That report of subsea permafrost destabilisation in the East Siberian Arctic sea shelf, the latest unprecedented temperatures in the Arctic, and the data in non-linear rises in high-atmosphere methane levels, combine to make it feel like we are about to play Russian Roulette with the entire human race, with already two bullets loaded. Nothing is certain. But it is sobering that humanity has arrived at a situation of our own making where we now debate the strength of analyses of our near-term extinction.

Apocalypse Uncertain

The truly shocking information on the trends in climate change and its impacts on ecology and society are leading some to call for us to experiment with geoengineering the climate, from fertilizing the oceans so they photosynthesize more CO2, to releasing chemicals in the upper atmosphere so the Sun’s rays are reflected. The unpredictability of geoengineering the climate through the latter method, in particular the dangers of disturbances to seasonal rains that billions of people rely on, make it unlikely to be used (Keller et al, 2014). The potential natural geoengineering from increased sulphur releases from volcanoes due to isostatic rebound as weight on the Earth’s crust is redistributed is not likely to make a significant contribution to earth temperatures for decades or centuries.

It is a truism that we do not know what the future will be. But we can see trends. We do not know if the power of human ingenuity will help sufficiently to change the environmental trajectory we are on. Unfortunately, the recent years of innovation, investment and patenting indicate how human ingenuity has increasingly been channelled into consumerism and financial engineering. We might pray for time. But the evidence before us suggests that we are set for disruptive and uncontrollable levels of climate change, bringing starvation, destruction, migration, disease and war.

We do not know for certain how disruptive the impacts of climate change will be or where will be most affected, especially as economic and social systems will respond in complex ways. But the evidence is mounting that the impacts will be catastrophic to our livelihoods and the societies that we live within. Our norms of behaviour, that we call our "civilisation," may also degrade. When we contemplate this possibility, it can seem abstract. The words I ended the previous paragraph with may seem, subconsciously at least, to be describing a situation to feel sorry about as we witness scenes on TV or online. But when I say starvation, destruction, migration, disease and war, I mean in your own life. With the power down, soon you wouldn't have water coming out of your tap. You will depend on your neighbours for food and some warmth. You will become malnourished. You won't know whether to stay or go. You will fear being violently killed before starving to death.

These descriptions may seem overly dramatic. Some readers might consider them an unacademic form of writing. Which would be an interesting comment on why we even write at all. I chose the words above as an attempt to cut through the sense that this topic is purely theoretical. As we are considering here a situation where the publishers of this journal would no longer exist, the electricity to read its outputs won't exist, and a profession to educate won't exist, I think it time we break some of the conventions of this format. However, some of us may take pride in upholding the norms of the current society, even amidst collapse. Even though some of us might believe in the importance of maintaining norms of behaviour, as indicators of shared values, others will consider that the probability of collapse means that effort at reforming our current system is no longer the pragmatic choice. My conclusion to this situation has been that we need to expand our work on "sustainability" to consider how communities, countries and humanity can adapt to the coming troubles. I have dubbed this the "Deep Adaptation Agenda," to contrast it with the limited scope of current climate adaptation activities. My experience is that a lot of people are resistant to the conclusions I have just shared. So before explaining the implications, let us consider some of the emotional and psychological responses to the information I have just summarised.

Systems of Denial

It would not be unusual to feel a bit affronted, disturbed, or saddened by the information and arguments I have just shared. In the past few years, many people have said to me that "it can't be too late to stop climate change, because if it was, how would we find the energy to keep on striving for change?" With such views, a possible reality is denied because people want to continue their striving. What does that tell us? The "striving" is based in a rationale of maintaining self-identities related to espoused values. It is understandable why that happens. If one has always thought of oneself as having self-worth through promoting the public good, then

information that initially appears to take away that self-image is difficult to assimilate.

That process of strategic denial to maintain striving and identity is easily seen in online debates about the latest climate science. One particular case is illustrative. In 2017 the New York Magazine published an article that drew together the latest data and analysis of what the implications of rapid climatic warming would be on ecosystems and humanity. Unlike the many dry academic articles on these subjects, this popular article sought to describe these processes in visceral ways (Wallace-Wells, 2017). The reaction of some environmentalists to this article did not focus on the accuracy of the descriptions or what might be done to reduce some of the worst effects that were identified in the article. Instead, they focused on whether such ideas should be communicated to the general public. Climate scientist Michael Mann warned against presenting “the problem as unsolvable, and feed[ing] a sense of doom, inevitability and hopelessness” (in Becker, 2017). Environmental journalist Alex Steffen (2017) tweeted that "Dropping the dire truth... on unsupported readers does not produce action, but fear." In a blog post, Daniel Aldana Cohen (2017) an assistant sociology professor working on climate politics, called the piece “climate disaster porn.” Their reactions reflect what some people have said to me in professional environmental circles. The argument made is that to discuss the likelihood and nature of social collapse due to climate change is irresponsible because it might trigger hopelessness amongst the general public. I always thought it odd to restrict our own exploration of reality and censor our own sensemaking due to our ideas about how our conclusions might come across to others. Given that this attempt at censoring was so widely shared in the environmental field in 2017, it deserves some closer attention.

I see four particular insights about what is happening when people argue we should not communicate to the public the likelihood and nature of the catastrophe we face. First, it is not untypical for people to respond to data in terms of what perspectives we wish for ourselves and others to have, rather than what the data may suggest is happening. That reflects an approach to reality and society that may be tolerable in times of plenty but counterproductive when facing major risks. Second, bad news and extreme scenarios impact on human psychology. We sometimes overlook that the question of how they impact is a matter for informed discussion that can draw upon psychology and communications theories. Indeed, there are journals dedicated to environmental psychology. There is some evidence from social psychology to suggest that by focusing on impacts now, it makes climate change more proximate, which increases support for mitigation (McDonald et al, 2015). That is not conclusive, and this field is one for further exploration. That serious scholars or activists would make a claim about impacts of communication without specific theory or evidence suggests that they are not actually motivated to know the effect on the public but are attracted to a certain argument that explains their view.

A third insight from the debates about whether to publish information on the probable collapse of our societies is that sometimes people can express a paternalistic relationship between themselves as environmental experts and other people whom they categorise as “the public”. That is related to the non-populist anti-politics technocratic attitude that has pervaded contemporary environmentalism. It is a perspective that frames the challenges as one of encouraging people to try harder to be nicer and better rather than coming together in solidarity to either undermine or overthrow a system that demands we participate in environmental degradation.

A fourth insight is that “hopelessness” and its related emotions of dismay and despair are understandably feared but wrongly assumed to be entirely negative and to be avoided whatever the situation. Alex Steffen warned that “Despair is never helpful” (2017). However, the range of ancient wisdom traditions see a significant place for hopelessness and despair. Contemporary reflections on people’s emotional and even spiritual growth as a result of their hopelessness and despair align with these ancient ideas. The loss of a capability, a loved one or a way of life, or the receipt of a terminal diagnosis have all been reported, or personally experienced, as a trigger for a new way of perceiving self and world, with hopelessness and despair being a necessary step in the process (Matousek, 2008). In such contexts “hope” is not a good thing to maintain, as it depends on what one is hoping for. When the debate raged about the value of the New York Magazine article, some commentators picked up on this theme. “In abandoning hope that one way of life will continue, we open up a space for alternative hopes,” wrote Tommy Lynch (2017).

This question of valid and useful hope is something that we must explore much further. Leadership theorist Jonathan Gosling has raised the question of whether we need a more “radical hope” in the context of climate change and a growing sense of “things falling apart” (Gosling, 2016). He invites us to explore what we could learn from other cultures that have faced catastrophe. Examining the way Native American Indians coped with being moved on to reservations, Lear (2008) looked at what he calls the “blind spot” of any culture: the inability to conceive of its own destruction and possible extinction. He explored the role of forms of hope that involved neither denial or blind optimism. “What makes this hope radical, is that it is directed toward a future goodness that transcends the current ability to understand what it is” (ibid). He explains how some of the Native American chiefs had a form of “imaginative excellence” by trying to imagine what ethical values would be needed in their new lifestyle on the reservation. He suggests that besides the standard alternatives of freedom or death (in service of one’s culture) there is another way, less grand yet demanding just as much courage: the way of “creative adaptation.” This form of creatively constructed hope may be relevant to our Western civilisation as we confront disruptive climate change (Gosling and Case, 2013).

Such deliberations are few and far between in either the fields of environmental studies or management studies. It is to help break this semi-censorship of our own community of inquiry on sustainability that motivated me to write this article. Some scholarship has looked at the process of denial more closely. Drawing on sociologist Stanley Cohen, Foster (2015) identifies two subtle forms of denial – interpretative and implicative. If we accept certain facts but interpret them in a way that makes them “safer” to our personal psychology, it is a form of “interpretative denial”. If we recognise the troubling implications of these facts but respond by busying ourselves on activities that do not arise from a full assessment of the situation, then that is “implicative denial”. Foster argues that implicative denial is rife within the environmental movement, from dipping into a local Transition Towns initiative, signing online petitions, or renouncing flying, there are endless ways for people to be “doing something” without seriously confronting the reality of climate change.

There are three main factors that could be encouraging professional environmentalists in their denial that our societies will collapse in the near-term. The first is the way the natural scientific community operates. Eminent climate scientist James Hansen has always been ahead of the conservative consensus in his analyses and predictions. Using the case study of sea level rise, he threw light on processes that lead to “scientific reticence” to conclude and communicate scenarios that would be disturbing to employers, funders, governments and the public (Hansen, 2007). A more detailed study of this process across issues and institutions found that climate-change scientists routinely underestimate impacts “by erring on the side of least drama” - (Brysse et al, 2013). Combined with the norms of scientific analysis and reporting to be cautious and avoid bombast, and the time it takes to fund, research, produce and publish peer-reviewed scientific studies, this means that the information available to environmental professionals about the state of the climate is not as frightening as it could be. In this paper I have had to mix information from peer-reviewed articles with recent data from individual scientists and their research institutions to provide the evidence which suggests we are now in a non-linear situation of climactic changes and effects.

A second set of factors influencing denial may be personal. George Marshall summarised the insights from psychology on climate denial, including the interpretive and implicative denial of those of who are aware but have not prioritised it. In particular, we are social beings and our assessment of what to do about information is influenced by our culture. Therefore, people often avoid voicing certain thoughts when they go against the social norm around them and/or their social identity. Especially in situations of shared powerlessness, it can be perceived as safer to hide one's views and do nothing if it goes against the status quo. Marshall also explains how our typical fear of death means that we do not give our full attention to information that reminds us of that. According to anthropologist Ernest Becker (1973): “A fear of death lies at the centre of all human belief.” Marshall explains: “The denial of death is a ‘vital lie’ that leads us to invest

our efforts into our cultures and social groups to obtain a sense of permanence and survival beyond our death. Thus, [Becker] argued, when we receive reminders of our death – what he calls death salience – we respond by defending those values and cultures." This view was recently expounded as part of the "terror management theory" proposed by Jeff Greenberg, Sheldon Solomon, and Tom Pyszczynski (2015). Although Marshall does not consider it directly, these processes would apply more so to "collapse denial" than to climate denial, as the death involves not only oneself but all of what one could contribute to.

These personal processes are likely made worse for sustainability experts than the general public, given the typical allegiance of professionals to incumbent social structures. Research has revealed that people who have a higher level of formal education are more supportive of the existing social and economic systems that those that have less education (Schmidt, 2000). The argument is that people who have invested time and money in progressing to a higher status within existing social structures are more naturally inclined to imagine reform of those systems than their upending. This situation is accentuated if we assume our livelihood, identity and self-worth is dependent on the perspective that progress on sustainability is possible and that we are part of that progressive process.

The third factor influencing denial is institutional. I have worked for over 20 years within or with organisations working on the sustainability agenda, in non-profit, private and governmental sectors. In none of these sectors is there an obvious institutional self-interest in articulating the probability or inevitability of social collapse. Not to members of your charity, not to consumers of your product, not to voters for your party. There are a few niche companies that benefit from a collapse discourse leading some people to seek to prepare by buying their products. This field may expand in future, at various scales of preparedness, which I return to below. But the internal culture of environmental groups remains strongly in favour of appearing effective, even when decades of investment and campaigning have not produced a net positive outcome on climate, ecosystems or many specific species.

Let us look at the largest environmental charity, WWF, as an example of this process of organisational drivers of implicative denial. I worked for them when we were striving towards all UK wood product imports being from sustainable forests by 1995. Then it became "well-managed" forests by 2000. Then targets were quietly forgotten while the potensiphonic language[5] of solving deforestation through innovative partnerships remained. If the employees of the world's leading environmental groups were on performance related pay, they would probably owe their members and donors money by now. The fact that some readers may find such a comment to be rude and unhelpful highlights how our interests in civility, praise and belonging within a professional community can censor those of

[5] language that emphasizes power and supremacy

us who seek to communicate uncomfortable truths in memorable ways (like that journalist in the New York Magazine).

These personal and institutional factors mean that environmental professionals may be some of the slowest to process the implications of the latest climate information. In 2017, a survey of more than 8,000 people across 8 different countries – Australia, Brazil, China, Germany, India, South Africa, the UK, and the US – asked respondents to gauge their perceived level of security as compared to two years ago in regards to global risks. A total of 61% said they felt more insecure, while only 18% said they felt more secure. On climate change, 48% of respondents strongly agreed that it is a global catastrophic risk, with an additional 36% of people tending to agree with that. Only 14% of respondents disagreed to some degree with the idea that climate change presented a catastrophic risk (Hill, 2017). This perspective on climate may help explain other survey data that suggests remarkable changes in how people view technology, progress, their society, and the future prospects for their children. A 2017 global survey found that only 13% of the public think the world is getting better, which is major change from the ten years before (Ipsos MORI, 2017). In the USA, polls indicate that belief in technology as a good force has been fading (Asay, 2013). This information may reflect a wider questioning of the idea that progress is always good and possible. Such as shift in perspective is indicated by opinion polls showing that far fewer people today than the last decade believe their children will have a better future than themselves (Stokes, 2017). Another indicator of whether people believe in their future is if they believe in the basis of their society. Studies have consistently found that more people are losing faith in electoral democracy and in the economic system (Bendell and Lopatin, 2017). The questioning of mainstream life and of progress is also reflected in the shift away from secular-rational values to traditional values that has been occurring worldwide since 2010 (World Values Survey, 2016). How do children feel about their futures? I have not found a large or longitudinal study on children’s views of the future, but one journalist who asked children from 6 to 12 years old to paint what they expect the world in 50 years to be like generated mostly apocalyptic images (Banos Ruiz, 2017). This evidence suggests that the idea we “experts” need to be careful about what to tell “them” the “unsupported public” may be a narcissistic delusion in need of immediate remedy.

Emotional difficulties with realising the tragedy that is coming, and that is in many ways upon us already, are understandable. Yet these difficulties need to be overcome so we can explore what the implications may be for our work, lives and communities.

Framing After Denial

As a sense of calamity grows within the environmental movement, some argue against a focus on "carbon reductionism" for how it may limit our appreciation of why we face this tragedy and what to do about it

(Eisenstein, 2018). I agree that climate change is not just a pollution problem, but an indicator of how our human psyche and culture became divorced from our natural habitat. However, that does not mean we should deprioritise the climate situation for a broader environmental agenda.

If we allow ourselves to accept that a climate-induced form of economic and social collapse is now likely, then we can begin to explore the nature and likelihood of that collapse. That is when we discover a range of different views. Some frame the future as involving a collapse of this economic and social system, which does not necessarily mean a complete collapse of law, order, identity and values. Some regard that kind of collapse as offering a potential upside in bringing humanity to a post-consumerist way of life that would be more conscious of relationships between people and nature (Eisenstein, 2013). Some even argue that this reconnection with nature will generate hitherto unimaginable solutions to our predicament. Sometimes that view comes with a belief in the power of spiritual practices to influence the material world according to human intent. The perspective that natural or spiritual reconnection might save us from catastrophe is, however, a psychological response one could analyse as a form of denial.

Some analysts emphasise the unpredictable and catastrophic nature of this collapse, so that it will not be possible to plan a way to transition at either collective or small-scale levels to a new way of life that we might imagine as tolerable, let alone beautiful. Then others go further still and argue that the data can be interpreted as indicating climate change is now in a runaway pattern, with inevitable methane release from the seafloor leading to a rapid collapse of societies that will trigger multiple meltdowns of some of the world’s 400 nuclear power-stations, leading to the extinction of the human race (McPherson, 2016). This assessment that we face near-term human extinction can draw on the conclusions by geologists that the last mass extinction of life on earth, where 95% of species disappeared, was due to methane-induced rapid warming of the atmosphere (Lee, 2014; Brand et al, 2016).

With each of these framings – collapse, catastrophe, extinction – people describe different degrees of certainty. Different people speak of a scenario being possible, probable or inevitable. In my conversations with both professionals in sustainability or climate, and others not directly involved, I have found that people choose a scenario and a probability depending not on what the data and its analysis might suggest, but what they are choosing to live with as a story about this topic. That parallels findings in psychology that none of us are purely logic machines but relate information into stories about how things relate and why (Marshall, 2014). None of us are immune to that process. Currently, I have chosen to interpret the information as indicating inevitable collapse, probable catastrophe and possible extinction. There is a growing community of people who conclude we face inevitable human extinction and treat that view as a prerequisite for meaningful discussions about the implications for our lives right now. For instance, there are thousands of people on Facebook groups who believe

human extinction is near. In such groups I have witnessed how people who doubt extinction is either inevitable or coming soon are disparaged by some participants for being weak and deluded. This could reflect how some of us may find it easier to believe in a certain than an uncertain story, especially when the uncertain future would be so different to today that it is difficult to comprehend. Reflection on the end of times, or eschatology, is a major dimension of the human experience, and the total sense of loss of everything one could ever contribute to is an extremely powerful experience for many people. How they emerge from that experience depends on many factors, with loving kindness, creativity, transcendence, anger, depression, nihilism and apathy all being potential responses. Given the potential spiritual experience triggered by sensing the imminent extinction of the human race, we can appreciate why a belief in the inevitability of extinction could be a basis for some people to come together.

In my work with mature students, I have found that inviting them to consider collapse as inevitable, catastrophe as probable and extinction as possible, has not led to apathy or depression. Instead, in a supportive environment, where we have enjoyed community with each other, celebrating ancestors and enjoying nature before then looking at this information and possible framings for it, something positive happens. I have witnessed a shedding of concern for conforming to the status quo, and a new creativity about what to focus on going forward. Despite that, a certain discombobulation occurs and remains over time as one tries to find a way forward in a society where such perspectives are uncommon. Continued sharing about the implications as we transition our work and lives is valuable.

One further factor in the framing of our situation concerns timing. Which also concerns geography. Where and when will the collapse or catastrophe begin? When will it affect my livelihood and society? Has it already begun? Although it is difficult to forecast and impossible to predict with certainty, that does not mean we should not try. The current data on temperature rise at the poles and impacts on weather patterns around the world suggests we are already in the midst of dramatic changes that will impact massively and negatively on agriculture within the next twenty years. Impacts have already begun. That sense of near-term disruption to our ability to feed ourselves and our families, and the implications for crime and conflict, adds another level to the discombobulation I mentioned. Should you drop everything now and move somewhere more suitable for self-sufficiency? Should you be spending time reading the rest of this article? Should I even finish writing it? Some of the people who believe that we face inevitable extinction believe that no one will read this article because we will see a collapse of civilisation in the next twelve months when the harvests fail across the northern hemisphere. They see social collapse leading to immediate meltdowns of nuclear power stations and thus human extinction being a near-term phenomenon. Certainly not more than five years from now. The clarity and drama of their message is why Inevitable Near Term

Human Extinction (INTHE) has become a widely used phrase online for discussions about climate-collapse.

Writing about that perspective makes me sad. Even four years after I first let myself consider near-term extinction properly, not as something to dismiss, it still makes my jaw drop, eyes moisten, and air escape my lungs. I have seen how the idea of INTHE can lead me to focus on truth, love and joy in the now, which is wonderful, but how it can also make me lose interest in planning for the future. And yet I always come around to the same conclusion – we do not know. Ignoring the future because it is unlikely to matter might backfire. “Running for the hills” – to create our own eco-community – might backfire. But we definitely know that continuing to work in the ways we have done until now is not just backfiring – it is holding the gun to our own heads. With this in mind, we can choose to explore how to evolve what we do, without any simple answers. In my post-denial state, shared by increasing numbers of my students and colleagues, I realised that we would benefit from conceptual maps for how to address these questions. I therefore set about synthesising the main things people talked about doing differently in light of a view of inevitable collapse and probable catastrophe. That is what I offer now as the “deep adaptation agenda.”

The Deep Adaptation Agenda

For many years, discussions and initiatives on adaptation to climate change were seen by environmental activists and policymakers as unhelpful to the necessary focus on carbon emissions reductions. That view finally changed in 2010 when the IPCC gave more attention to how societies and economies could be helped to adapt to climate change, and the United Nations Global Adaptation Network was founded to promote knowledge sharing and collaboration. Five years later the Paris Accord between member states produced a “Global Goal on Adaptation” (GGA) with the aim of “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the global temperature goal” (cited in Singh, Harmeling and Rai, 2016). Countries committed to develop National Adaptation Plans (NAPs) and report on their creation to the UN.

Since then the funding being made available to climate adaptation has grown, with all the international development institutions active on adaptation finance. In 2018 the International Fund for Agricultural Development (IFAD), African Development Bank (AfDB), Asian Development Bank (ADB), Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank each agreed major financing for governments to increase resilience of their communities. Some of their projects include the Green Climate Fund, which was created to provide lower income countries with assistance. Typical projects include improving the ability of small-scale farmers to cope with weather variability through the introduction of irrigation and the ability of urban planners to respond to rising sea levels

and extreme rainfall events through reengineering drainage systems (Climate Action Programme, 2018). These initiatives are falling short of the commitments made by governments over the past 8 years, and so more is being done to promote private bonds to finance adaptation (Bernhardt, 2018) as well as stimulate private philanthropy on this agenda (Williams, 2018).

These efforts are paralleled by an increased range of activities under the umbrella of “Disaster Risk Reduction” which has its own international agency – the United Nations International Strategy for Disaster Reduction (UNISDR). The aim of their work is to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through reducing sensitivity to these hazards as well as increasing the capacity to respond when disasters hit. That focus means significant engagement with urban planners and local governments. In the business sector, this disaster risk reduction agenda meets the private sector through the well-established fields of risk management and business continuity management. Companies ask themselves what the points of failure might be in their value chains and seek to reduce those vulnerabilities or the significance of something failing.

Given the climate science we discussed earlier, some people may think this action is too little too late. Yet, if such action reduces some harm temporarily, that will help people, just like you and me, and therefore such action should not be disregarded. Nevertheless, we can look more critically at how people and organisations are framing the situation and the limitations that such a framing may impose. The initiatives are typically described as promoting “resilience”, rather than sustainability. Some definitions of resilience within the environmental sector are surprisingly upbeat. For instance, the Stockholm Resilience Centre (2015) explains that “resilience is the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking.” In offering that definition, they are drawing on concepts in biology, where ecosystems are observed to overcome disturbances and increase their complexity (Brand and Jax, 2007).

Two issues require attention at this point. First, the upbeat allegiance to “development” and “progress” in certain discourses about resilience may not be helpful as we enter a period when material “progress” may not be possible and so aiming for it might become counter-productive. Second, apart from some limited soft skills development, the initiatives under the resilience banner are nearly all focused on physical adaptation to climate change, rather than considering a wider perspective on psychological resilience. In psychology, “resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and relationship problems, serious health problems or workplace and financial stressors. It means ‘bouncing back’ from difficult

experiences" (American Psychology Association, 2018). How a person "bounces back" after difficulties or loss, may be through a creative reinterpretation of identity and priorities. The concept of resilience in psychology does not, therefore, assume that people return to how they were before. Given the climate reality we now face, this less progressivist framing of resilience is more useful for a deeper adaptation agenda.

In pursuit of a conceptual map of "deep adaptation," we can conceive of resilience of human societies as the capacity to adapt to changing circumstances so as to survive with valued norms and behaviours. Given that analysts are concluding that a social collapse is inevitable, the question becomes: What are the valued norms and behaviours that human societies will wish to maintain as they seek to survive? That highlights how deep adaptation will involve more than "resilience." It brings us to a second area of this agenda, which I have named "relinquishment." It involves people and communities letting go of certain assets, behaviours and beliefs where retaining them could make matters worse. Examples include withdrawing from coastlines, shutting down vulnerable industrial facilities, or giving up expectations for certain types of consumption. The third area can be called "restoration." It involves people and communities rediscovering attitudes and approaches to life and organisation that our hydrocarbon-fuelled civilisation eroded. Examples include re-wilding landscapes, so they provide more ecological benefits and require less management, changing diets back to match the seasons, rediscovering non-electronically powered forms of play, and increased community-level productivity and support.

It is not my intention in this paper to map out more specific implications of a deep adaptation agenda. Indeed, it is impossible to do so, and to attempt it would assume we are in a situation for calculated attempts at management, when what we face is a complex predicament beyond our control. Rather, I hope the deep adaptation agenda of resilience, relinquishment and restoration can be a useful framework for community dialogue in the face of climate change. Resilience asks us "how do we keep what we really want to keep?" Relinquishment asks us "what do we need to let go of in order to not make matters worse?" Restoration asks us "what can we bring back to help us with the coming difficulties and tragedies?" In 2017, this deep adaptation agenda was used to frame a festival of alternatives organised by Peterborough Environment City Trust. It included a whole day devoted to exploring what relinquishment could involve. As such, it allowed more open conversation and imagination than a narrower focus on resilience. Further events are planned across the UK. Whether it will be useful framing for a broader-level policy agenda is yet to be seen.

How does this "deep adaptation agenda" relate to the broad conceptual framework of sustainable development? It is related to other perspectives that despite the attention of international institutions to "sustainable development goals," the era of "sustainable development" as unifying concept and goal is now ending. It is an explicitly post-sustainability

framing, and part of the Restoration Approach to engaging with social and environmental dilemmas, as I outlined elsewhere (Bendell, et al 2017).

Research Futures in the Face of Climate Tragedy

I was only partly joking earlier when I questioned why I was even writing this paper. If all the data and analysis turn out to be misleading, and this society continues nicely for the coming decades, then this article will not have helped my career. If the predicted collapse comes within the next decade, then I won't have a career. It is the perfect lose-lose. I mention this to highlight how it will not be easy to identify ways forward as academic researchers and educators in the field of organisational sustainability. For the academics reading this paper, most of you will have increasing teaching loads, in areas where you are expected to cover certain content. I know you may have little time and space for reinventing your expertise and focus. Those of you who have a mandate to research might discover that the deep adaptation agenda is not an easy topic for finding research partners and funders. This restrictive situation was not always the reality faced by academics. It is the result of changes in higher education, that are one expression of an ideology that has made the human race so poor at addressing a threat to its wellbeing and even existence. It is an ideology that many of us have been complicit in promoting, if we have been working in business schools. It is important to recognise that complicity, before considering how to evolve our research in the face of the climate tragedy.

The West's response to environmental issues has been restricted by the dominance of neoliberal economics since the 1970s. That led to hyper-individualist, market fundamentalist, incremental and atomistic approaches. By hyper-individualist, I mean a focus on individual action as consumers, switching light bulbs or buying sustainable furniture, rather than promoting political action as engaged citizens. By market fundamentalist, I mean a focus on market mechanisms like the complex, costly and largely useless carbon cap and trade systems, rather than exploring what more government intervention could achieve. By incremental, I mean a focus on celebrating small steps forward such as a company publishing a sustainability report, rather than strategies designed for a speed and scale of change suggested by the science. By atomistic, I mean a focus on seeing climate action as a separate issue from the governance of markets, finance and banking, rather than exploring what kind of economic system could permit or enable sustainability.

This ideology has now influenced the workloads and priorities of academics in most universities, which restricts how we can respond to the climate tragedy. In my own case, I took an unpaid sabbatical, and writing this paper is one of the outcomes of that decision. We no longer have time for the career games of aiming to publish in top-ranked journals to impress our line managers or improve our CV for if we enter the job market. Nor do we have a need for the narrow specialisms that are required to publish in such journals. So, yes, I am suggesting that in order to let oneself evolve in

response to the climate tragedy one may have to quit a job – and even a career. However, if one is prepared to do that, then one can engage with an employer and professional community from a new place of confidence.

If staying in academia, I recommend you begin to ask some questions of all that you research and teach. When reading others' research, I recommend asking: "How might these findings inform efforts for a more massive and urgent pursuit of resilience, relinquishment and restoration in the face of social collapse?" You may find that most of what you read offers little on that question, and, therefore, you no longer wish to engage with it. On one's own research, I recommend asking: "If I didn't believe in incremental incorporation of climate concerns into current organisations and systems, what might I want to know more about?" In answering that question, I recommend talking to non-specialists as much as people in your own field, so that you are able to talk more freely and consider all options.

In my own work, I stopped researching corporate sustainability. I learned about leadership and communications and began to research, teach and advise on these matters, in the political arena. I began to work on systems to enable re-localisation of economies and support for community development, particular those systems using local currencies. I sought to share that knowledge more widely, and therefore launched a free online course (The Money and Society Mass Open Online Course). I began to spend more time reading and talking about the climate tragedy and what I might do, or stop doing, with that in mind. This rethinking and repositioning is ongoing, but I can no longer work on subjects that do not have some relevance to deep adaptation. Looking ahead, I see the need and opportunity for more work at multiple levels. People will need more support to access information and networks for how to attempt a shift in their livelihoods and lifestyles. Existing approaches to living off-grid in intentional communities are useful to learn from, but this agenda needs to go further in asking questions like how small-scale production of drugs like aspirin is possible. Free online and in-person courses as well as support networks on self-sufficiency need to be scaled. Local governments will need similar support on how to develop the capabilities today that will help their local communities to collaborate, not fracture, during a collapse. For instance, they will need to roll out systems for productive cooperation between neighbours, such as product and service exchange platforms enabled by locally issued currency. At the international level, there is the need to work on how to responsibly address the wider fallout from collapsing societies (Harrington, 2016). These will be many, but obviously include the challenges of refugee support and the securing of dangerous industrial and nuclear sites at the moment of a societal collapse.

Other intellectual disciplines and traditions may be of interest going forward. Human extinction and the topic of eschatology, or the end of the world, is something that has been discussed in various academic disciplines, as you might expect. In theology it has been widely discussed, while it also appears in literary theory as an interesting element to creative

writing and in psychology during the 1980s as a phenomenon related to the threat of nuclear war. The field of psychology seems to be particularly relevant going forward.

Whatever we choose to work on in future will not be a simple calculation. It will be shaped by the emotional or psychological implications of this new awareness of a societal collapse being likely in our own lifetimes. I have explored some of these emotional issues and how they have been affecting my work choices, in a reflective essay on the spiritual implications of climate despair (Bendell, 2018). I recommend giving yourself time for such reflection and evolution, rather than rushing in to a new agenda of research or teaching. If you are a student, then I recommend sending your lecturers this paper and inviting a class discussion about these ideas. It is likely that those who are not embedded within the existing system will be the ones more able to lead this agenda.

I think it may be our vanity as academics to think that any one but academics and students read academic papers. Therefore, I have chosen to leave my recommendations for managers, policy makers and lay persons for another outlet.

Conclusions

Since records began in 1850, seventeen of the eighteen hottest years have occurred since 2000. Important steps on climate mitigation and adaptation have been taken over the past decade. However, these steps could now be regarded as equivalent to walking up a landslide. If the landslide had not already begun, then quicker and bigger steps would get us to the top of where we want to be. Sadly, the latest climate data, emissions data and data on the spread of carbon-intensive lifestyles show that the landslide has already begun. As the point of no return can’t be fully known until after the event, ambitious work on reducing carbon emissions and extracting more from the air (naturally and synthetically) is more critical than ever. That must involve a new front of action on methane.

Disruptive impacts from climate change are now inevitable. Geoengineering is likely to be ineffective or counter-productive. Therefore, the mainstream climate policy community now recognises the need to work much more on adaptation to the effects of climate change. That must now rapidly permeate the broader field of people engaged in sustainable development as practitioners, researchers and educators. In assessing how our approaches could evolve, we need to appreciate what kind of adaptation is possible. Recent research suggests that human societies will experience disruptions to their basic functioning within less than ten years due to climate stress. Such disruptions include increased levels of malnutrition, starvation, disease, civil conflict and war – and will not avoid affluent nations. This situation makes redundant the reformist approach to sustainable development and related fields of corporate sustainability that

has underpinned the approach of many professionals (Bendell et al, 2017). Instead, a new approach which explores how to reduce harm and not make matters worse is important to develop. In support of that challenging, and ultimately personal process, understanding a deep adaptation agenda may be useful.

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Letter to the Editor of SAMPJ, Professor Carol Adams, from Professor Jem Bendell, 27th July 2018.

Dear Professor Adams,

It is an odd situation to be in as a writer, but I feel compassion for anyone reading my Deep Adaptation article on the inevitability of near-term social collapse due to climate chaos! I am especially grateful for anyone taking the time to analyse it in depth and provide feedback. So, I am grateful to you arranging that and the reviewers for providing their feedback. Some of the feedback, particularly recommendations for a better introduction, were helpful. However, I am unable to work with their main requests for revisions, as they are, I believe, either impossible or inappropriate, as I will seek to explain.

I agree with Professor Rob Gray that “The journal's constant exploration of new and challenging perspectives on how accountability and sustainability might play out in organisations ensures a stimulating source of articles, experiences and ideas.” It is why I was pleased to guest edit an issue last year and bring critical perspectives on leadership to its readership. However, the topic of inevitable collapse from climate change is so challenging it is not surprising it didn’t find support from the anonymous peer reviewers.

I would have had difficulty finding motivation for undertaking a complete re-write given the conclusion of the paper – that the premise of the “sustainable business” field that the journal is part of is no longer valid. Indeed, the assumptions about progress and stability that lead us to stay in academia in the field of management studies are also now under question.

The first referee questioned “to which literature(s) does this article actually contribute” and stated that “the research question or gap that you intend to address must be drawn from the literature,” continuing that “to join the conversation, you need to be aware of the current conversation in the field, which can be identified by reviewing relevant and recent articles published in these journals.” That is the standard guidance I use with my students and it was both amusing and annoying to read that feedback after having dozens of peer-reviewed articles published over the last 20 years. The problem with that guidance is when the article is challenging the basis of the field and where there are not any other articles exploring or accepting the same premise. For instance, there are no articles in either SAMPJ or Organisation and Environment that explore implications for business practice or policy of a near-term inevitable collapse due to environmental catastrophe (including those that mention or address climate

adaptation). That isn't surprising, because the data hasn't been so conclusive on that until the last couple of years.

It is surprising therefore that the first reviewer says "the paper does not contain any new or significant information. The paper reiterates what has already been told by many studies." The reviewer implies therefore that the paper is about climate change being a big problem. But the article doesn't say that. It says that we face an unsolvable predicament and great tragedy. When the reviewer says "There are not clear contributions that can be derived from the article" then I wonder whether that is wilful blindness, as the article is saying that the basis of the field is now untenable.

At a couple of points, I attempted to cut through the unemotional way that research is presented. For instance, when I directly address the reader about the implications of the analysis for their own likely hunger and safety, it is to elicit an emotional response. I say in the text why I express myself in that way and that although it is not typical in some journals the situation we face suggests to me that we do try to communicate emotively. The reviewer comments "the language used is not appropriate for a scholarly article."

The second reviewer summarises the paper as "the introduction of deep adaptation as an effective response to climate change" which suggests to me a fundamental misunderstanding despite it being made clear throughout the paper. There is no "effective" response. The reviewer also writes "I am not sure that the extensive presentation of climate data supports the core argument of the paper in a meaningful way." Yet the summary of science is the core of the paper as everything then flows from the conclusion of that analysis. Note that the science I summarise is about what is happening right now, rather than models or theories of complex adaptive systems which the reviewer would have preferred.

One piece of feedback from the 2nd reviewer is worth quoting verbatim:

"The authors stress repeatedly that "climate-induced societal collapse is now inevitable" as if that was a factual statement... I was left wondering about the social implications of presenting a scenario for the future as inevitable reality, and about the responsibility of research in communicating climate change scenarios and strategies for adaptation. As the authors pointed out, denial is a common emotional response to situations that are perceived as threatening and inescapable, leading to a sense of helplessness, inadequacy, and hopelessness and ultimately disengagement from the issue..."

This perspective is one I discuss in some detail in the paper, as one that enables denial. It reflects the self-defeating hierarchical attitude towards society that many of us have in both academia and sustainability, where we censure our own exploration of a topic due to what we consider should or should not be communicated. There is both scholarship and experience on the impact of communicating about disaster, and I discuss that in the paper.

The trauma from assessing our situation with climate change has led me to become aware of and drop some of my past preoccupations and tactics. I realise it is time to fully accept my truth as I see it, even if partially formed and not polished yet for wider articulation. I know that academia involves as much a process of wrapping up truth as unfolding it. We wrap truth in disciplines, discrete

methodologies, away from the body, away from intuition, away from the collective, away from the everyday. So as that is my truth then I wish to act on it as well, and not keep this analysis hidden in the pursuit of academic respect. Instead, I want to share it now as a tool for shifting the quality of conversations that I need to have. Therefore, I have decided to publish it simply as an IFLAS Occasional Paper.

The process has helped me realise that I need to relinquish activities that I no longer have passion for, in what I am experiencing as a dramatically new context. Therefore, I must step back from the Editorial team of the journal. Thank you for having involved me and congratulations on it now being in the top ten journals in business, management and accounting.

Please pass on my thanks to the reviewers. On my website www.jembendell.com I will be listing some links to articles, podcasts, videos and social networks that are helping people explore and come to terms with a realisation of near-term collapse (and even extinction), which they may be interested in.

Yours sincerely,

Jem Bendell

Climate Emergency Advisory Committee

South Oxfordshire District Council
Listening Learning Leading

Report of Head of Partnership and Insight

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To: Climate Emergency Advisory Committee

DATE: 28 January 2020

Climate Emergency Year One Work Programme:

Recommendation(s)

(a) Committee to note the progress and process to date, including the activity commissioned within the existing 2019/20 budget, in respect of providing a strategic response to the Council's climate emergency declaration and adopted carbon neutrality targets for the Council and the District.

(b) Committee to review the proposed year one climate emergency work programme, which will provide a base for a future proposed South Oxfordshire District Council Climate Change Strategy.

(c) Committee to approve the submission of the proposed year one climate emergency work programme to Cabinet, to recommend for their implementation and adoption, including proposed additional measures in the budget for 2020/21.

Purpose of Report

1. This report outlines a proposed climate emergency year one work programme the Climate Emergency Advisory Committee (CEAC) could recommend to Cabinet as a strategic response to the climate emergency declaration and adopted carbon neutrality targets for the Council and the District.

2. The items put forward for inclusion in a climate emergency work programme were originally outlined in an initial paper to the CEAC on 19 September 2019; the items have now been considered and evaluated by either external consultants or, where it was felt there was internal expertise on the subject/item, by service area

representatives. This report sets out the journey to selection for items put forward and prioritised within the subsequent proposed year one climate emergency work programme included in this report.

3. The work programme proposal is categorised into seven themes; council business, partnership, housing, infrastructure, transport, biodiversity and behaviour change, emphasising the holistic response required in order to achieve the adopted targets.

4. In addition to proposing new activity for the Council, this report outlines the significant ongoing projects in regard to this agenda which the Council is already involved in, items considered business as usual for council officers and items which have already been commissioned within the existing 2019/20 budget to support meeting the climate emergency targets that have been adopted.

Strategic Objectives

5. This work is supported by the current South Oxfordshire Corporate Plan 2016-2020 through the commitment to 'Build Thriving Communities' through aspects such as improving air quality, recycling rates and increasing the provision of cycle routes within the district.

6. Work is currently being undertaken to develop the Corporate Plan 2020-2024 and update priorities, which provides an opportunity to embed climate emergency related goals. It is envisaged that the draft of the future corporate plan 2020-2024 for South Oxfordshire District Council will be reviewed by the CEAC and there will be an opportunity for recommendations to Cabinet on its contents.

Background

7. A climate emergency was declared by the South Oxfordshire District Council administration at Full Council on 11 April 2019. The motion outlined the intention for the Council to consider adopting an early carbon neutral target.

8. To support a response to the climate emergency, the Council established the CEAC to develop and recommend mitigating actions and advise Cabinet on matters relating to climate change.

9. The CEAC reviewed a report from officers named 'Climate Emergency: Options and Next Steps' and subsequent recommendations, at its first meeting 19 September 2019. At this meeting, the CEAC opted to select target option one (a Carbon Neutral Council) and three (a Carbon Neutral District) to recommend to Cabinet as overarching goals for the Council in respect of adopting an early carbon neutral target.

10. The CEAC opted to recommend to Cabinet that the Council becomes carbon neutral in its operations by 2025 and becomes a carbon neutral district by 2030. A motion detailing the full targets was put forward by the Chair of the CEAC to Cabinet on 8 Oct 19 and Full Council on 10 Oct 19, which was carried.

11. The CEAC report 'Climate Emergency: Options and Next Steps' included the options of items for inclusion in a programme of work to address the climate emergency, of which Committee members reviewed and contributed to at the meeting. This amounted to a final list of items for further exploration, full evaluation

and costing, before these items were to be prioritised and selected for inclusion in the proposed year one work programme detailed in this report.

The Journey to Selection

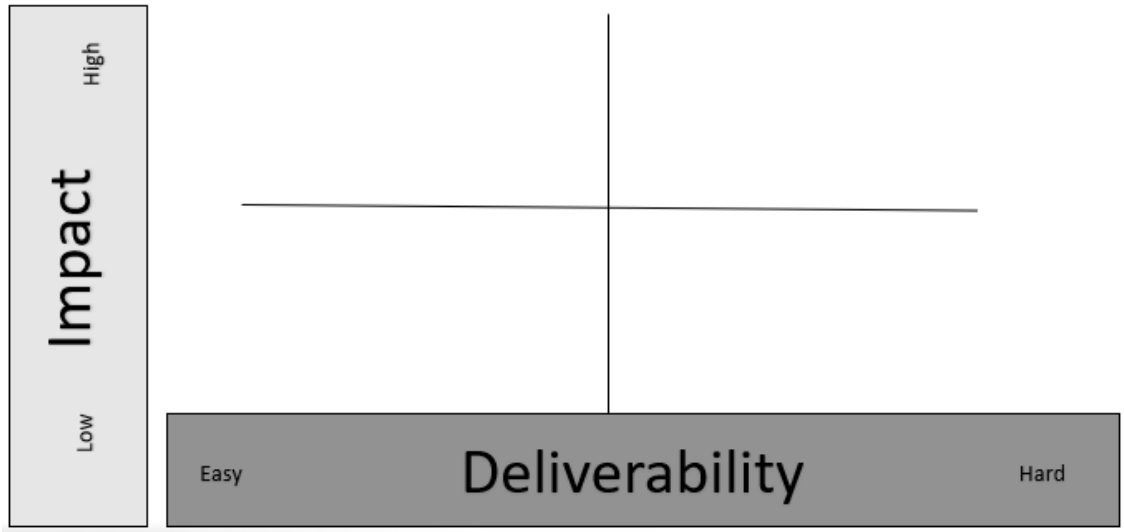
12. At the CEAC meeting on 19 Sept 2019, the Committee established a task and finish group consisting of self-nominated committee members, to work with officers on developing work programme proposals, including assisting with building the programme proposals into a coherent strategic response and presenting options back to the CEAC.

13. The task and finish group have met twice. Once on 8 October 2019, to review the work programme item options to be fully scoped, evaluated and costed and for the second time, on 18 December 2019. On 18 December, the group then reviewed all the information received from the scoping exercise and based on this information, selected and prioritised items to include in a climate emergency work programme to support the development of a future strategy, to subsequently recommend to Cabinet their implementation following full committee review.

14. The prioritisation exercise on 18 December 2019 was conducted with officers as facilitators, guiding members through the process and offering information as scoped by consultants and internal officers, to support member discussion.

15. The purpose of the exercise was to prioritise the merits of alternative options/items in an interactive way, quickly generating and gaining consensus amongst the task and finish group. The aim of the exercise was to shortlist the best options to recommend to Cabinet, as part of a climate emergency work programme to provide a strategic response to the climate emergency.

16. During the exercise, each option/item was reviewed and placed on a matrix, considering impact (range low to high) and deliverability (range easy to hard), as per the illustration below:



17. The criteria for impact were defined as giving consideration to what favourable impact the item would have on fulfilling the Council's climate emergency objectives, for example, measures such as carbon savings and reputational benefit.

18. The criteria for deliverability were defined as the ease of an item to implement, including factors such as cost, risk, implementation time, amount of influence and resource.

19. It was noted at the beginning of the exercise that the criteria could additionally be made up of many other components, however for the purpose of achieving the desired exercise output, the criteria were not broken down any further in order to achieve a basic qualitative assessment of impact Vs deliverability.

Prioritisation Exercise – Output

20. The output of the prioritisation exercise, and therefore the items it is proposed the CEAC recommend to Cabinet for implementation as part of a coherent, strategic response to the climate emergency targets, can be viewed in the tables below (paragraph 27 and 28). These are listed under theme, and within this, in cost order. All costs stated below are provided on a one-off basis for the year one work programme, unless explicitly specified as a recurring annual fee. It is also highlighted whether these are items are to be delivered internally or externally. Officers recommend the items included within the climate emergency work programme are formed of priority one items (easy deliverability, high impact) and priority two items (hard deliverability, high impact).

21. Items placed in priority three (easy deliverability, low impact) and priority four (hard deliverability, low impact) quadrants, as well as items the task and finish group members felt could be reviewed in two years, or did not want to consider any further at this time, are available to review in appendix A.

22. Additionally, included in separate tables below, are the items of which officers consider business as usual, items already commissioned within existing 19/20 budget and ongoing projects the Council is involved in, in respect of this agenda. These will be included within the scope of any future climate change strategy but are not additional activities being put forward by the CEAC.

23. Alongside the proposed year one work programme response as detailed below, some additional gains are available through the the committee in its advisory capacity; fulfilling its role and reviewing policies and strategies as they naturally evolve and enter the governance cycle, for example car parking fees and charges, the Corporate Plan 2020-24 and the taxi licensing policy. A forward programme for the CEAC is being discussed as agenda item 11.

24. For the purposes of this exercise, options in respect of planning policy were not included or discussed, due to the temporary direction issued by the Secretary of State, meaning that progression of the emerging Local Plan is currently on hold and therefore any items in respect of this cannot currently be implemented.

25. The predominant theme prioritised and put forward by task and finish group members within priority one items, is ‘council business’. This includes items which will be significant in contributing towards becoming a carbon neutral council. It is important to note that an ongoing project outside of the new proposed items below, is the project to build the new South Oxfordshire District Council Crowmarsh Offices. The design and sustainability specification of this building will be crucial in achieving the adopted target of a carbon neutral

council by 2025. The committee have already had early input into the design and sustainability specification at their meeting on the 19 September 2019 Moreover, a prioritised focus on council business allows the Council to get its 'own house in order' which will be reputationally positive for the Council, if it is to then fulfil its role as an influencer, in respect of the aspirations for South Oxfordshire to become a carbon neutral district by 2030.

26. Committee are asked to note that Oxfordshire wide items detailed in the table below are dependent on effective partnership working; they are firstly contingent on a shared South and Vale approach and following this, the buy in of other Oxfordshire councils, in order to progress and implement them effectively. These options are predominantly under theme: biodiversity. However, officers are encouraged by the level and commitment to partnership working already in place in respect of this agenda.

27. **PRIORITY ONE ITEMS** (easy deliverability, high impact):

Action	**Cost**
Theme: Council Business	
Council reporting and decision-making templates to include climate impacts section	Within existing resources
Review existing Council polices and strategies to embed the climate emergency	Within existing resources: Policy review An additional option (CEAC preferred option): £1200 for consultant co-facilitation of this exercise, developing criteria of review and delivery of a workshop to consider review conclusions
Internal staff intranet (Jarvis) page on the subject of the climate emergency	£375 (external)
'Single-use plastic free' pledge and action plan	£2250 (external)
Promotion of low carbon (plant based) diets within council facilities and buildings, and action plan	£2250 (external)
Implement electric pool vehicles for staff business travel – Initial three vehicles for testing and evaluating	Initial upfront cost for leases: £5000 (external) *Expected to be cost neutral or revenue saving over five years* *(upfront costs recurring should additional vehicles be added in future)*
Identify energy saving opportunities in council buildings	Site energy reviews: (Leisure centres) £5280 Plus (Other sites) £2600 (external) *Feasibility studies only - If projects identified are implemented, costs of*
Identify opportunities for solar energy on council buildings	
Identify opportunities for heat pumps in council buildings	
Strategy for the refurbishment of buildings to match zero carbon objective	
Review use of building management systems to increase energy efficiency	

Exploration of battery storage on council sites	*these will be high and subject to the council's financial procedures and there could be opportunities for investment potential*
Estimation of future district-wide carbon emissions under different carbon reduction scenarios, and development of a model for future use	£12,500 (external)
Implement a green travel plan for officers and members	*Cost not available at time of prioritisation, further scoping required. This will be subject to the council's financial procedures*
Theme: Housing	
Home retrofit service for private households	Within existing resources: Promote and refer to Cosy Homes Oxfordshire retrofitting scheme (internal)
Theme: Behaviour Change	
Residents and Communities	
Refocus of the grants programme to solely support community led initiatives which address climate change	Within existing resources (internal)
Residents' survey on climate change	Within existing resources: Scoping of survey (internal)
Information on the climate emergency for the public, to include; website information and communication tools and campaign opportunities	£1000 (external)
Businesses	
Support and inspire local businesses to act (e.g. case studies, business events and resources)	Within existing resources: Compilation of case studies, guides and tools Additional (internal) £2000 business event, such as business breakfast
Join Oxfordshire Greentech (network for low carbon and cleantech companies) as a 'founder member'	£2500 per year for three-year membership (external recurring annual cost)
Theme: Biodiversity	
Feasibility study into setting up a Habitat Bank to deliver biodiversity offsetting requirements and facilitate planting of trees	Initial study: Within existing resources (Internal)
Council reporting and decision-making templates to include biodiversity impacts section	Within existing resources (internal)
Tree planting	High cost, with potential to be provided/funded by CIL contributions (internal)
Develop a Biodiversity Net Gain Targeting Strategy	Oxfordshire wide strategy: £6000 (CEAC preferred option) (external)

	An additional option: Create a stand-alone South Oxfordshire strategy, within existing resources (internal)
Develop a Nature Recovery Network and Strategy for Oxfordshire	£6000 (Internal)
Work collaboratively with the aim of re-establishing a local nature partnership with Oxfordshire partners	£8000-£10,000 (internal) (annual recurring cost)
Total cost	**£57,755**

28. **PRIORITY TWO ITEMS** (hard deliverability, high impact):

Action	**Cost**
Theme: Council Business	
Identify opportunities to invest in solar energy off site	Review/report: £2,500 (external) *If projects identified are implemented, costs of these will be high and subject to the council's financial procedures*
Provision of summary data on energy use for towns in the district, including maps	£3,340 (external) *There is the potential to explore match funding basis with town councils*
Theme: Housing	
Enforcement of minimum energy standards for private rented homes (ratings F&G are unlawful)	Enforcement officer resource: £30,000 (internal)
Theme: Transport	
Initial feasibility study to an electric vehicle hire facility for residents	*Cost not available at time of prioritisation, further scoping required. This will be subject to the council's financial procedures*
Electric vehicles for council fleet	*Cost not available at time of prioritisation, further scoping required. This will be subject to the council's financial procedures*
Total cost	**£35,840**

29. **ITEMS ALREADY COMMISSIONED** (existing 19/20 budget):

Item	**Cost**
Theme: Council Business	
A baseline review of council energy consumption and CO_2e emissions	£250
Creation of a 'glidepath' tool to assess the contribution from identified initiatives and other variables, with the facility to consider different timelines in order to arrive at the optimum sequence of actions to achieve the adopted targets and track progress towards zero	£750

emissions, noting milestones and any necessary adjustments on the journey.	
Define the scope of carbon emissions across the District to be included in the target	£1965
A baseline review of district wide energy consumption and CO_2e emissions	£1650
Theme: Behaviour Change	
Implement training for officers on South Oxfordshire' target and work to address the climate emergency	£600
Full day conference for officers and members on the subject of climate change	£900
Crafting of a vision for a future low carbon South Oxfordshire	£2300
Creation of a subsequent action plan with gap analysis and recommendations. Additional creation of a public facing action plan	
Work with town councils across the district and facilitate a workshop to understand theirs and their parishes' local needs in respect of the climate emergency. Seek to connect with the District approach and create actions plans that complement and link to an overarching vision for the South Oxfordshire district.	£2000
Total cost	**£11,015**

30. **ITEMS CONSIDERED BUSINESS AS USUAL:**

a. For the Council to meet the adopted targets, we need to ensure that there is a deep understanding of the subject and its importance as well as an assured commitment of staff across the organisation. It is envisaged that the climate emergency will be embedded at the heart of the organisation by ensuring that we have formalised and embedded it in within our internal governance – e.g. climate implication section on all reports.

b. The Council will need a robust strategy and policy framework, that could include a climate change strategy. More broadly, it should be ensured that when other policies are developed or reviewed, they are done so understanding any climate considerations. A policy and strategy guidance document has already been created, as part of the council's Corporate Delivery Framework, which will provide staff with the tools they need to develop robust fully rounded policy. In addition, we have also undertaken a 'light touch' policy audit to identify existing policies that could have high climate impacts, in order for us to target our interventions effectively and allow the CEAC the opportunity to review them at future meetings.

c. Moreover, it is also important that the climate emergency is considered as a key factor in other business as usual activity such as procurement, especially major contract renewal. In particular this will include early preparation for the specification of the new leisure facilities and waste management contracts in 2024, ongoing leisure centre maintenance and refurbishment and grounds maintenance.

d. In addition, the table below highlights the items originally outlined in the CEAC report 'Options and Next Steps' which are considered business as usual for officers:

Item
Theme: Council Business
Embed partnership collaboration to develop external funding bits in order to deliver agreed targets and commitments
Theme: Partnership
Identify public and private partners that have similar goals and compatible interests to work with, allowing the Council to leverage their resources. The most obvious way to leverage resources is to combine the response for South and Vale and create a working partnership with other districts and Oxfordshire County Council, as well as established charitable and community organisations with missions that line up with climate emergency.
Influence policy by agency partners. Central government have a very large role to play in reducing carbon emissions with regulatory control of building, large scale public education campaigns and public transit infrastructure, for example.
Actively monitor or participate in projects by trusted partners as resources allow. There may be specific projects that directly contribute to the target that is set which could be funded by South Oxfordshire and delivered by outside partners who have an established track record and expertise with the work.
Monitor Oxfordshire councils' positions and action plans in response to their climate emergency declarations
Work with Oxfordshire County Council to respond to the Local Transport Part 5 consultation

31. **ONGOING PROJECTS:**

Project	**Description/Status**
South Oxfordshire District Council Crowmarsh Offices	A consultant company are currently undertaking work to prepare a draft building design and specification, for consultation with staff and other stakeholders. The CEAC considered a report on sustainability options for the project, at its meeting 19 September 2019
Oxfordshire Electric Vehicle Infrastructure Strategy	This is a county-wide collaboration to set common standards for electric vehicle infrastructure, and an action plan to deliver the charging points needed to support the transition to low emission vehicles
Park and Charge Project	Innovate UK funding has been received for an estimated 120 electric vehicle charge points in council car parks, including smart technology allowing overnight use by residents who do not have off street parking
Oxfordshire County Wide Climate Change Collaboration Group	All district and county councils in Oxfordshire have created a collaboration group at Director and Chief Executive level

	hosted by Oxford City Council to ensure action in this area is maximised, complimentary where possible and has strong senior leadership
Energy Procurement	Energy procurement options are currently being explored by the council's property team in preparation for the expiry of the current LASER contract in 2020. This will include consideration of the procurement of renewable electricity
Planning Design Guide	Initial initiation of a project to produce a new Design Guide to act both as a guide and as an assessment tool. It is intended to assist landowners, developers, applicants, agents, designers and planners in the process of developing high quality development and in assessing its design quality. One of the aims of this project is ensure alignment with the climate emergency.
Didcot Garden Town – Delivery Plan Project 11: Smart travel and new technology	DGT are participating in MultiCAV consortium to pilot autonomous vehicles to transport between Milton Park and Didcot Parkway railway station.
Didcot Garden Town – Delivery Plan Project 38: Feasibility study for sustainable fuels for council fleet and local private fleet operators	Capacity funding (revenue) awarded from Homes England, subject to cabinet budget approval. Delivery plan identifies this as a near-term project, to be coordinated through the DGT team
Didcot Garden Town – Delivery Plan Project 62: Third party development for housing projects to review outcomes of zero carbon showcase homes to support future policy development	Capacity funding (revenue) bid/request made to Homes England July 2019. Awaiting notification from Homes England. Delivery plan identifies this as a medium-term project, to be coordinated through the DGT team
Didcot Garden Town – Delivery Plan Project 48: Strategy for promotion of growing local food	Included within DGT delivery plan; estimated cost £45,000 (funding not currently sourced). Further funding to support implementation by third parties may be required. Delivery plan identifies this as a near-term project, to be coordinated through the DGT team

Financial Implications

32. Any decision that has financial implications must be made with the knowledge of the council's overarching financial position. This is as reflected in the council's medium-term financial plan (MTFP) as reported to Full Council each February as part of the budget setting report. The February 2019 MTFP and the budget report

showed that the council was due to receive £3.3 million less in revenue funding than it planned to spend in 2019/20 (with the balance coming from reserves and accumulated New Homes Bonus). This funding gap is predicted to increase to over £6 million per annum by 2023/24. Every decision should be made in cognisance of the need to substantially reduce this funding gap over the medium term and to eliminate it after five years.

33. Many of the projects and items within the proposed year one programme will have financial implications for the Council. Within the 2019/20 Corporate Climate Budget there is currently £5,500 unallocated.

34. It is clear that we cannot fund and undertake all of the work that is required to tackle the Climate Emergency. Additional sources of funding will be needed in addition to any new budget allocation. This could include government grants, investment by businesses, households, town and parish councils and resource support from community action groups. We believe that Oxfordshire is well positioned to secure the increased funding for responding to climate change that has already been alluded to by central government.

35. The base budget for 2020/21 is £22,990, therefore it is recommended the committee puts forward to Cabinet the request for an additional investment as outlined in the table below, in order to implement priority one and two items as part of the year one work programme that could provide a base for a future strategy to address the climate emergency in South Oxfordshire.

    In summary,

Total cost - priority one items, climate emergency work programme	£93,595
10% overall contingency	£9,359.50
2019/20 Corporate Climate Budget - unallocated	-£5,500
2020/21 Corporate Climate Budget – base budget	-£22,990
2020/21 Climate Change Lead – 1 FTC 12 months (including 25 per cent on-costs)	£31,798.13
Total additional budget request 2020/21	**£106,262.63**

36. Moreover, officers recommend in order to support implementation of the climate emergency year one programme of work, a resource of one additional officer on a twelve-month fixed term basis with a cost of **£31,798.13** This cost shown is a fifty per cent share of a total cost of **£63,596.25** as officers recommend that any additional resource will be shared with Vale of White Horse District Council on a fifty: fifty basis subject to both councils choosing to proceed in this way.

37. It should also be noted that many items included within the proposed year one programme of work are feasibility studies and therefore there will be significant resource implications and additional budget required beyond year one of the programme, if the recommended projects are implemented following the studies, they will be subject to the council's financial procedures. The additional resource requested will provide capacity to move forward, review and evaluate the year one programme and draw findings and activities from the year one programme into a coherent strategy to address the Climate Emergency over a longer term.

38. As this area of work develops it is also likely that existing resources will need to be redirected and refocused to these outcomes.

39. Some of the items prioritised by the task and finish group have been costed at a fifty: fifty cost to South Oxfordshire District Council with Vale of White Horse District Council, due to benefits of scale from our shared resources. As a result, if some of the items prioritised by the task and finish group are not approved for submission to Cabinet by the CEAC, or if Cabinet amend or do not adopt some of the items within the proposed programme of work, there is the potential for an increased financial cost for Vale of White Horse District Council.

Legal Implications

40. Carbon Neutrality itself is not a legal requirement and consequently there is no legal duty for the Council to undertake actions and activities to achieve this.

41. There are no specific legal implications arising from this report. Legal implications may arise in respect of individual projects included within the subsequent work programme as they are scoped, approved by Cabinet and implemented. These will be subject to identification and appropriate action as required.

Risks

42. This agenda is not currently a statutory function for district councils; many of the projects/activities detailed within this report require a funding stream and have resource implications, including implications arising from redirecting current resource from areas across the Council to this agenda if this is the approach the Cabinet decide to take.

43. Moreover, due to the current financial position, it may not be possible to deliver on the full climate emergency aspirations declared by the Council.

44. South Oxfordshire District Council is in partnership with the Vale of White Horse District Council and any items implemented in relation to council operations could lead to complexities, due to shared resources and offices at 135 Milton Park.

Conclusion

45. In conclusion, this report outlined the process by which a proposed work programme to address the climate emergency declared by the Council was formulated and presented this year one proposed work programme.

46. Moreover, this report re-emphasised the targets set by the Council to achieve carbon neutrality for council operations (carbon neutral by 2025), and for South

Oxfordshire district (carbon neutral by 2030) and the subsequent strategic steps required to work toward these targets, particularly in the area of 'council business'.

47. In addition to proposing new activity for the Council, this report outlined ongoing projects the Council is already involved in to address the climate emergency, and detailed items considered business as usual for council officers as well as items which have already been commissioned within the existing 2019/20 budget to support meeting the climate emergency targets.

Background Papers

- **Appendix One** Full Prioritisation Exercise Output

Climate Emergency Advisory Committee

South Oxfordshire District Council
Listening Learning Leading

Appendix A

Climate Emergency Work Programme: Full Prioritisation Exercise Output

1. **PRIORITY THREE ITEMS** (easy deliverability, low impact):

Action	Cost
Theme: Council Business	
Provide eco-driver training for council employees	Within existing resources
Climate Emergency Advisory Committee to be a paperless committee	Within existing resources
Theme: Transport	
Explore resident monitoring schemes which target taxi idling	Changes to taxi policy: within existing resources Scheme costs: *Cost not available at time of prioritisation, further scoping would be required.*
Continue to promote anti-idling campaign	*Cost not available at time of prioritisation, further scoping would be required.*

2. **PRIORITY FOUR ITEMS** (hard deliverability, low impact):

Action	Cost
Theme: Infrastructure	
Explore the need for implementing electric vehicle charging infrastructure at taxi ranks	*Cost not available at time of prioritisation, further scoping would be required.*

3. **ITEMS TO REVIEW IN TWO YEARS:**

Action	Cost
Theme: Transport	
Explore the possibility of punitive parking fees for new high emitting vehicles	*Change of car parking payment technology: Cost not available at time of prioritisation, further scoping would be required*.

4. ELIMINATED ITEMS:

Item	Cost
Theme: Transport	
Explore dock-less bike schemes for the district, including in AQMA towns	*Cost not available at time of prioritisation, further scoping would be required.*
Theme: Behaviour Change – Businesses	
Encourage new, low carbon enterprise business into the area	Consultancy fees: £360 per day Cluster management and promotion: £70,000 Additional officer resource: £28,000
Develop skills in the local workforce, for the low carbon sector	*Full cost options not available at time of prioritisation, further scoping would be required.* Local detail/intensive programme would be in the region of: £25,000+

Potential policies/strategies/items for South CEAC review

Item	Date	Details
Car parking fees and charges	January 2020 meeting: Cabinet Decision due 30 Jan 2020	Purpose: to review the fees and charges Lead member: David Rouane, Cabinet member for housing and environment Contact: John Backley
Community Infrastructure Levy (CIL) Spending – Biodiversity and Green Infrastructure Provision	January 2020	Purpose: options for the spending of the South CIL allocation for green infrastructure Contact: Mark Hewer/Dominic Lamb
A review of electric vehicle charging points'	January 2020 meeting: Cabinet Decision due 30 Jan 2020	Lead member: David Rouane, Cabinet member for housing and environment Contact: John Backley
Air Quality Update Report	January 2020 meeting: Due to Scrutiny 21 January 2020	Contact: Liz Hayden/Simon Hill
Corporate Plan	February 2020 meeting: Cabinet briefing full draft due 13 March 2020	Purpose: to develop Corporate Plan 2020-24 Lead member: Andrea Powell, Cabinet member for community services Contact: Insight & Policy
Corporate Delivery Framework – Policy	February 2020 meeting	Contact: Insight & Policy
Oxfordshire Pension Fund Consultation	February/March 2020 meeting	Contact: Insight & Policy
Community Engagement and Outreach – Plan	Mid 2020	Contact: Insight & Policy
Oxford City Citizens' Assembly Findings Report	September 2020	Contact: Insight & Policy
Didcot Garden Town Project	September 2020	Consider topics aligned to environmental/ climate issues. Contact: Insight & Policy

Climate Emergency Advisory Committee

Calendar of Meetings 20/21

South Oxfordshire	Vale of White Horse
2020	
Thursday 21 May 2020	Wednesday 27 May 2020
Tuesday 14 July 2020	Thursday 9 July 2020
Thursday 24 September 2020	Thursday 17 September 2020
Thursday 12 November 2020	Tuesday 3 November 2020
2021	
Tuesday 12 January 2021	Thursday 14 January 2021
Thursday 18 March 2021	Wednesday 24 March 2021
Thursday 20 May 2021	Wednesday 26 May 2021

By virtue of paragraph(s) 3 of Part 1 of Schedule 12A
of the Local Government Act 1972.

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