

# Supporting Global Sustainable Development

Audit report mapping Cardiff Metropolitan University's 2021  
Research Excellence Framework (REF) submission to the United  
Nation's Sustainable Development Goals



CardiffMet | Global Academies  
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### *Contribution to this report*

Professors Crone and Walters developed the initial concept for the audit and suggested method, along with input from Leila Goran and Tara Cater. Dr Sumner oversaw the data analysis, constructed the format for the presentation of the findings, and led the writing of the report. Francesca Vuolo undertook initial data organisation, cleaning, and initial categorization. Mark Lester provided method and process expertise throughout the method implementation and advised on presentational aspects of the data for the final report.

### *For citation purposes*

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# Introduction

In 2015, the United Nations (UN) Member States adopted the Sustainable Development Goals (SDGs) to work as a framework for securing a peaceful and prosperous means of continuing the advancement of people and planet. Recognising the need to ensure that human development no longer comes with the heavy costs to the environment, the living world, and with more fair and equitable means for all. The SDGs are a set of 17 goals that concern and protect the best interests of people and planet, and are as such a blueprint that can be applied to all manner of human activities, including academic research. The goals are presented in the infographic in Figure 1.



Fig. 1. The 17 UN Sustainable Development Goals\*

There is an existing and accumulating climate within academic research to ensure that its outputs and applications are aligned with the SDGs, and that actions to promote and attain these goals are embedded throughout the research process (Elsevier, 2020). Higher education, both in its teaching and research activities, has an important contribution to make in the societal efforts of working towards the goals (Mori Jr. et al., 2019; Owens, 2017). Whilst the embedding of the SDG ethos within academia is not yet common practice, there have been several publications that outline and endorse a direction of travel towards this (Bautista-Puig et al., 2021; Leal Filho et al., 2019; Saito et al., 2017; Salvia et al., 2019). As a Welsh University, there is further impetus to understand the contribution our research makes to these goals in order to align with the Wellbeing of Future Generations (Wales) Act 2015. This act looks to create a more sustainable Wales by ensuring public bodies recognise their obligations to the quality of life for current and future generations. In 'Wales and the Sustainable Development Goals Supplementary Report to the UK Voluntary National Review 2019' the Welsh Government sets out how the Wellbeing of Future Generations (Wales) Act 2015 presents seven wellbeing goals that "...both translate the SDGs into the Welsh context and articulate our nation's contribution to the SDGs." [[https://www.futuregenerations.wales/wp-content/uploads/2019/07/Wales-\\_-SDGs-\\_-VNR-\\_-Supplementary-Report-for-Wales-\\_-Version-10.1-Final-w-cover-ENG.pdf](https://www.futuregenerations.wales/wp-content/uploads/2019/07/Wales-_-SDGs-_-VNR-_-Supplementary-Report-for-Wales-_-Version-10.1-Final-w-cover-ENG.pdf), pg.2]

This audit of research output with SDGs is in line with Cardiff Metropolitan University's 2030 Strategy. The strategy states, "We are committed to social, economic and environmental responsibility. Our education, research and innovation delivers positive impacts for equality, social inclusion and environmental sustainability, locally, nationally and internationally".

\* <https://sdgs.un.org/goals>

In line with Cardiff Met's commitment to sustainability, its continued contribution to the ambitions of the SDGs and the Wellbeing of Future Generations Act (Wales) 2014, an audit of research output was commissioned to establish a baseline for alignment with each of the SDGs. The research output used for this audit was Cardiff Metropolitan's recent submission to the Research Excellence Framework (REF) 2021, including research output from 2014 to 2021. The audit therefore does not include all research from that period; but does include all research outputs in the REF submission.

The purpose of this audit was:

- To understand the extent to which our research output aligns to the UN SDGs.
- To identify existing areas of strength in our research output, aligned to the UN SDGs.
- To identify any SDGs where research output is less closely aligned and consider appropriate action for improvement.
- To establish a baseline of research activity that aligns to SDGs, to improve the opportunities for research outputs to recognise alignment with SDGs, and to increase the numbers of outputs aligned to SDGs in the future.
- To position Cardiff Metropolitan more favourably to secure external funding linked to the SDG agenda.
- To use the findings within Cardiff Metropolitan to highlight and promote the scope of our research within the context of a global agenda.

# Design, Methods, and Procedure

## Design

The audit was conducted with academic peer-reviewed outputs from the Cardiff Metropolitan University's REF 2021 submission (N=353). Outputs were from 1 January, 2014 to 31 December, 2020. A number of resources were reviewed to assist in the undertaking of this audit and to guide the design of the audit, including Swelieh (2020), Mistry et al., (2020), and Korfgan et al., (2018). The overall aim of the scoping exercise was to identify where each of the outputs that could be brought forward for mapping (N=336) from the submission may align to one or more of the UN SDGs. The remaining outputs (N=17) were not brought into this exercise as they were either made up of multiple formats, which made it difficult to place within relevant SDGs, or were not being publicly published. The study design focused on searching for the keywords associated with the United Nation SDGs (in the titles, keywords and abstracts of the N=353 outputs from the REF submission). The SDG keywords are provided in Elsevier Scopus queries resource and detailed in the SDG mapping guidance paper (Jayabalasingham et al., 2019).

## Methods and Procedure

The process undertaken included the following four stages.

### *Stage 1: Preparation*

All outputs from the Cardiff Metropolitan University's REF 2021 submission (N=336) were organised into the Unit of Assessments (UoAs) (N=5) to which the University submitted a REF 2021 return. The five UoAs included:

- 3: Allied Health Professions, Dentistry, Nursing, and Pharmacy.
- 17: Business and Management Studies.
- 23: Education.
- 24: Sports and Exercise Science; Leisure and Tourism.
- 32: Art and Design; History, Practice and Theory.

### *Stage 2: Keyword search*

To homogenise the data, the output metadata were uploaded onto the reference management software, Zotero\* included title, authors, type of publication (for example, journal article, monograph), publication year, output keywords, and abstract. The advanced search feature function was then used to search each UoA folder against the N=16 SDG keywords (Jayabalasingham et al., 2019). Sixteen of the 17 SDGs have specific keywords related to their objectives. The 17th SDG is discounted from the exercise, because it is an overarching aim of the others. The mapping process allowed for exploration of title, abstract and keywords in each research item. When a paper appeared to match an SDG, it was organised into the relevant SDG folder on Zotero.

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\* Retrieved from [www.zotero.org/download](http://www.zotero.org/download)

### *Stage 3: Development of the SDG map using Litmaps*

Once output SDG allocation was completed, each individual SDG folder was then imported to LitMaps\* mapping software to create a visual map for each SDG. Litmaps presented data on each paper in relevance to year of publication and author. Similarities between papers were also highlighted by the interactive map function.

### *Stage 4: Presentation and categorization of data into SDGs and UoAs*

The findings of the audit were developed by analysing the alignment overall for SDGs in outputs, examining SDG alignment by UoA, establishing patterns for SDG combinations, and reviewing which SDG-related keywords were most and least likely to produce return.

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\* <https://www.litmaps.com/>



# Results

The results are presented firstly as a description of the findings overall, followed by findings per UoA, findings per SDG, and finally a collation of findings by SDG and UoA.

## Overall description of the findings

Of the 336 outputs audited, these were located in the following UoA areas:

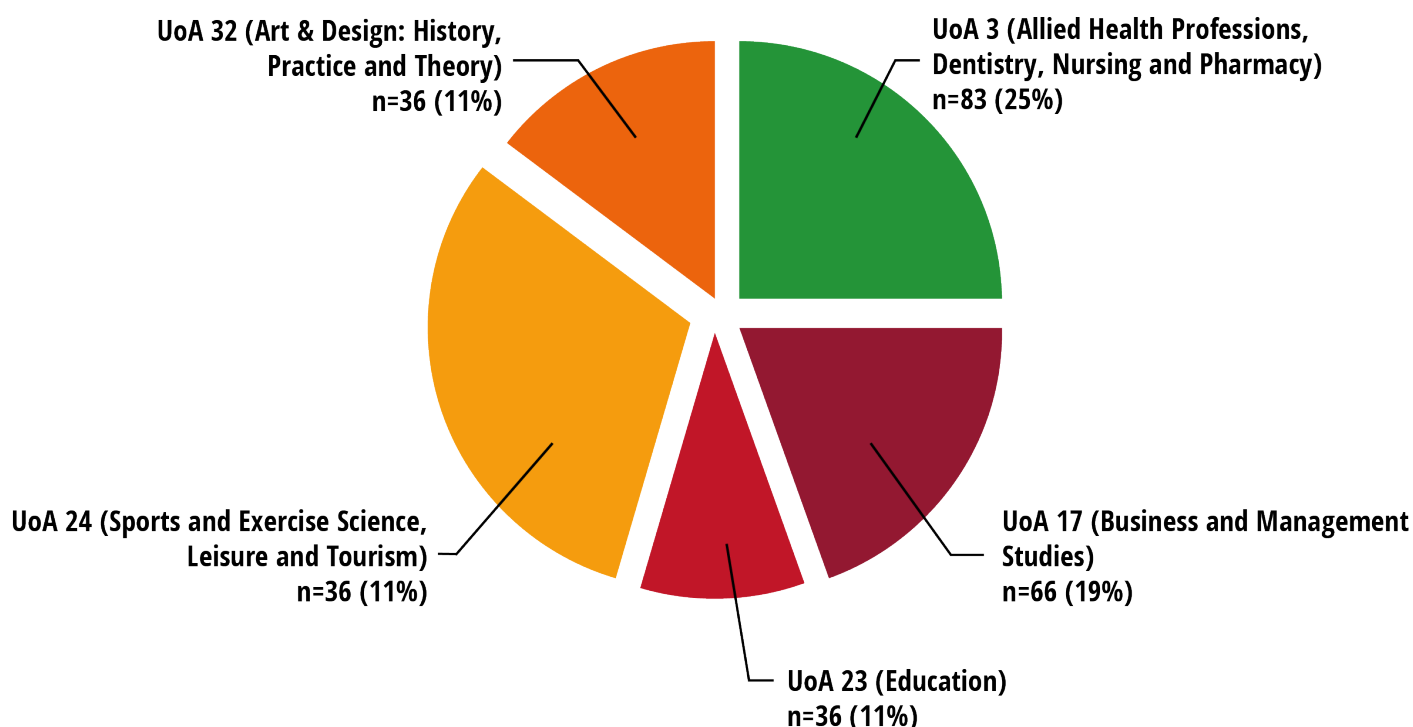


Fig 2. Overview of UoA designations for REF2021 outputs

Of the total outputs, N=321 (95.5%) were identified as including one or more of the required terms to be identified with an SDG. Both UoA 3 and UoA 17 had 100% of their outputs mappable to at least one SDG. For UoA 23, UoA 24, and UoA 32, each had five outputs that could not be mapped to an SDG. Figure 2 illustrates the overall number of outputs able to be aligned to one or more SDG per UoA.

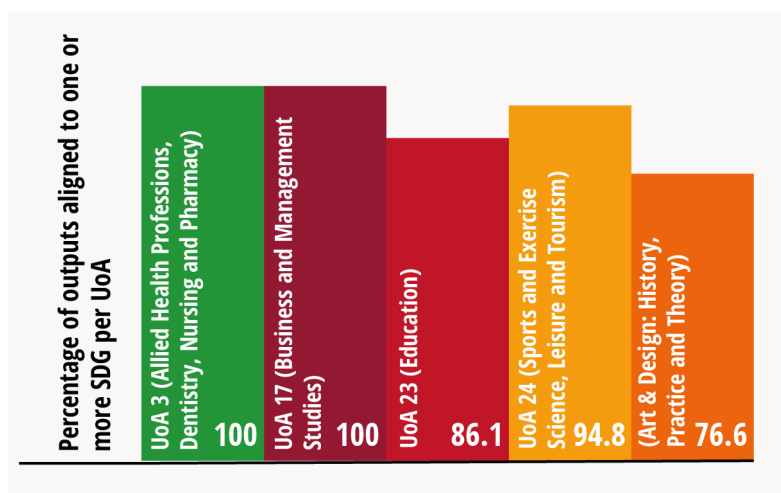


Fig. 3. Percentage of outputs aligned to one or more SDG per UoA



## Findings by SDG

We were able to evidence alignment of research outputs to 10 SDGs. Cumulatively, the N=321 mappable outputs equated to 415 successful mappings to one or more SDGs. For these cumulative outputs, the majority were mapped to 'SDG 3: Good Health and Wellbeing' (N=174, 41.9%), 'SDG 9: Industry, Innovation, and Infrastructure' (N=92, 22.2%), and 'SDG 4: Quality Education' (N=49, 11.8%). Figure 4 outlines the alignment of outputs to SDGs.



Fig. 4. SDG alignment of outputs

## Multiple SDG alignment

Of the N=336 total outputs, N=72 (21.4%) could be mapped to multiple SDGs. The frequency of outputs being aligned to multiple SDGs varied by UoA, with the highest level occurring in UoA 23: Education (N=17, 47.2% of outputs). Both UoA 17: Business and Management Studies and UoA 32: Art & Design: History, Practice, and Theory had nearly a third of all outputs aligning to multiple SDGs (N=20, 30.3%; N=16, 29.6%, respectively). UoA 3: Allied Health Professions, Dentistry, Nursing, and Pharmacy and UoA 24: Sports and Exercise Science; Leisure and Tourism had around a tenth of their outputs with multiple alignments (N=11, 13.3%; N=10, 10.3%, respectively). The majority of multiple alignments were across two SDGs (N=54, 75%), with nearly a quarter mapping to three (N=17, 23.6%) and one output mapping to four SDGs. Figure 5 illustrates the degree of multi-alignment per UoA.

For those outputs that were aligned to multiple SDGs, the most common combinations to arise were between SDG3: Good Health and Wellbeing and SDG4: Quality Education (N=11, 15.3%), and SDG3: Good Health and Wellbeing and SDG10: Reduced Inequalities (N=9, 12.5%). For those aligned to three or more SDGs, this was most common between SDG3: Good Health and Wellbeing, SDG9: Industry, Innovation, and Infrastructure, and SDG10: Reduced Inequalities (N=7, 9.7%).

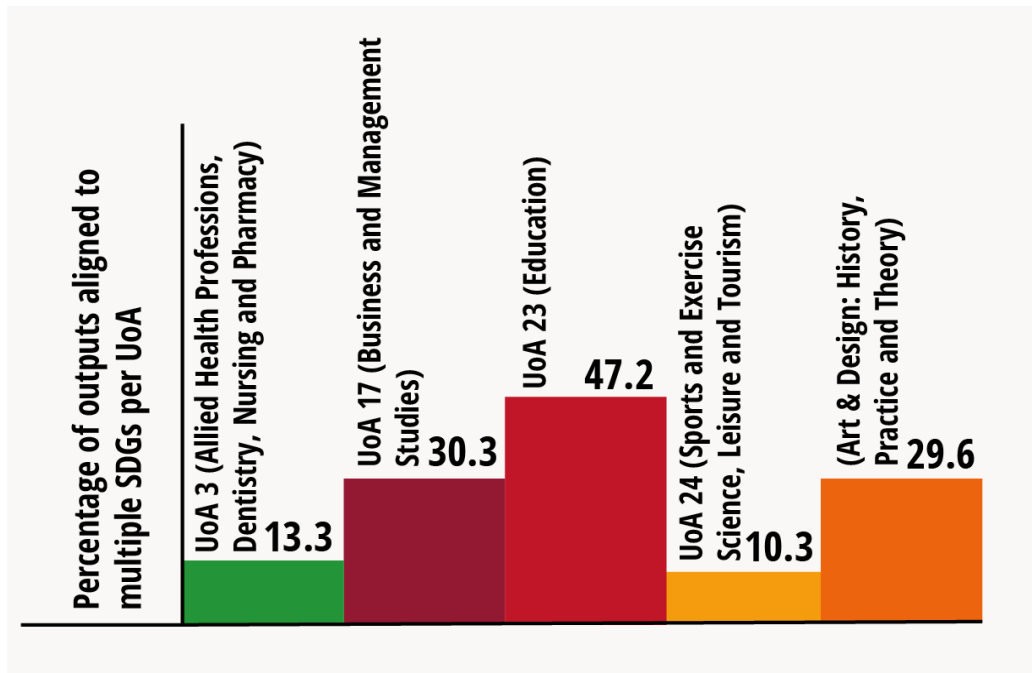


Fig. 5. Percentage of outputs aligned to multiple SDGs per UoA

# Conclusion

- 95% of the REF 2021 written outputs have been successfully mapped and aligned to 10 of the 16 goals. Only N=15 outputs could not be mapped.
- Highest proportion of Cardiff Metropolitan's outputs (ca. 42%) are aligned to SDG 3: Good Health & Wellbeing. Given that the biggest REF returns were from UoA3 and UoA24, this is not unexpected.
- Two of the 5 UoAs (UoA 3: Allied Health Professionals, Dentistry and Pharmacy and UoA 17: Business and Management Studies) had 100% of outputs mappable.
- A large majority of the outputs map to three SDGs (SDG3: Good Health and Wellbeing, SDG4: Quality Education, and SDG10: Industry, Innovation, and Infrastructure); this is unsurprising, as these particular SDGs align closely to the discipline areas of the University (Sport and Health, Education, Management, Technology, Art and Design/PDR). However, this is perhaps indicative that outputs are not highlighting where the impact (other than the discipline area) responds to the SDGs. It might be expected that some of these research outputs are having further impacts in regard to Poverty, Hunger, Clean Energy, Sustainability. However, without the use of specific key words in the outputs, it is not possible to evidence this with the method of mapping used in this report.
- There are 4 SDGs where Cardiff Metropolitan have, to date, limited research - No Poverty (1), Zero Hunger (2), Clean Water and Sanitation (6) and Affordable and Clean Energy (7). This may want to be reviewed in light of Welsh Government priorities and the global challenges in these SDG areas.

# Recommendations

- Resources and training should be provided to enable staff to understand more about SDGs, and why they are important in terms of funding potential, citation frequency, the development of impact case studies, and deepen participation in local and international academic communities.
- Consider the use of keywords to highlight the alignment to SDGs, and broader political agenda, rather than subject specific and disciplinary keywords.
- Enable staff when uploading publications to Figshare-internal system, to enable a function to identify which SDG the output aligns, to as part of the repository upload process.
- Authors should consider reviewing the SDG key words when deciding on their key words for their publications.
- Consider how the SDG 17: Partnerships for the Goals can be evidenced by collaborations across the institution for a future audit.

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# Appendix

Table 1: Outputs labelled against UoA and SDG alignment

UoA		UoA					Total Papers per SDG
SDG	UoA 3	UoA 17	UoA 23	UoA 24	UoA 32		
1 NO POVERTY							
2 ZERO HUNGER							
3 GOOD HEALTH AND WELL-BEING	HS453 - Lan et al., 2021 HS452 - Precious et al., 2020 HS378 - Heymans et al., 2020 HS367 - Chimen et al., 2020 HS383 - Butler et al., 2019 HS397 - Sumner et al., 2019 HS417 - Melendez-Torres et al., 2019 HS380 - Charney et al., 2019 HS311 - Remero et al., 2019 HS283 - Noakes et al., 2019 HS287 - Cai et al., 2018 HS276 - Connolly et al., 2018 HS014 - Prior et al., 2018 HS351 - Livingstone et al., 2018 HS044 - Alves et al., 2018 HS385 - Phillips et al., 2018 HS061 - Gwynne & Curran, 2018 HS340 - Beaney et al., 2018 HS198 - Weekes et al., 2014 HS305 - Pinsino et al., 2019 HS197 - Straccia et al., 2015 HS028 - Evans & Redmond, 2018 HS416 - Beaney et al., 2019 HS170 - Connolly et al., 2014 HS125 - Liang et al., 2014 HS019 - Evered et al., 2014 HS217 - Beeton et al., 2014 HS062 - Sharman et al., 2017 HS017 - McDonnell et al., 2017 HS403 - Green et al., 2017 HS182 - Castagna et al., 2017 HS180 - Burnley-Hall et al., 2017 HS230 - Steptoe et al., 2016 HS222 - Davies et al., 2016 HS405 - McGregor et al., 2016 HS080 - Lawrence et al., 2016 HS020 - Evered et al., 2016 HS401 - Song et al., 2016 HS138 - Precious et al., 2016 HS245 - Whatley et al., 2016 HS001 - Webb et al., 2016 HS124 - Alhusein et al., 2016 HS381 - Green et al., 2016 HS150 - Shewry et al., 2016 HS140 - Mulley et al., 2015 HS088 - Cai et al., 2015 HS193 - Musoke et al., 2015 HS047 - Roberts et al., 2015 HS100 - Connolly et al., 2015 HS065 - Lawrence et al., 2015 HS346 - Owens et al., 2014 HS379 - Stallard et al., 2014 HS242 - Fielding et al., 2014 HS207 - Zalli et al., 2014 HS233 - McRae et al., 2016 HS221 - Zhao et al., 2014 HS449 - Gidlow et al., 2020 HS299 - Evans & Redmond, 2019 HS181 - Lewis et al., 2016 HS295 - Crone et al., 2020 HS284 - Butcher et al., 2019 HS145 - Stanton et al., 2014 HS404 - Hallingberg et al., 2019 HS139 - Davies et al., 2015 HS382 - Anderson et al., 2014 HS066 - Anderson et al., 2014 HS010 - Ripley et al., 2014 HS454 - Mayr et al., 2020 HS104 - Fielding et al., 2017 HS033 - Burnley-Hall et al., 2018 HS451 - Page et al., 2020 HS384 - Alves et al., 2019 HS074 - Arber et al., 2015	CSS160 - Bolton et al., 2018 CST020 - Stephens et al., 2018 CSM159 - Sedgley et al., 2017 CSM161 - Morgan et al., 2015 CST041 - Jayal et al., 2017 CSM115 - Williams-Burnett & Kearns, 2018	CSS421 - Keegan et al., 2019 ED013 - Hodgkin 2018 CSS206 - Edwards et al., 2018 ED059 - Hodgkin et al., 2020 CSS590 - Aldous & Brown, 2021 ENG018 - Hurt et al., 2019 CSS443 - Milton et al., 2018	CSS589 - Alessandri et al., 2020 CSS574 - Williams et al., 2020 CSS582 - Irwin et al., 2020 CSS556 - Oliver et al., 2020 CSS579 - Barker et al., 2020 CSS563 - Tyler et al., 2020 CSS568 - Hoiland et al., 2020 CSS564 - Logan et al., 2020 CSS573 - Williams et al., 2020 CSS511 - Howells et al., 2020 CSS459 - Byrne et al., 2020 CSS526 - Simpson et al., 2020 CSS530 - Gibbons et al., 2020 CSS534 - Moore et al., 2019 CSS557 - Bezodis et al., 2019 CSS414 - Wadley et al., 2019 CSS089 - Hemmestad & Jones, 2019 CSS492 - Willis et al., 2019 CSS543 - Mulloy et al., 2019 CSS403 - Moore et al., 2019 CSS340 - Stemberge et al., 2019 CSS493 - Rocchi et al., 2018 CSS504 - Laudani et al., 2018 CSS505 - Stiles et al., 2018 CSS332 - Nevin et al., 2018 CSS219 - Labanca et al., 2018 CSS320 - Kirkham et al., 2018 CSS195 - Vicinanza et al., 2018 CSS306 - Farana et al., 2017 CSS226 - Bruton et al., 2014 CSS581 - Pitt et al., 2020 CSS521 - Hanton & Miles, 2020 CSS096 - Carter et al., 2014 CSS164 - Stemberge et al., 2017 CSS386 - Williams et al., 2017 CSS254 - Kirkham et al., 2017 CSS287 - Cullen et al., 2017 CSS010 - Roy-Davis et al., 2017 CSS063 - Bain et al., 2016 CSS031 - Lord et al., 2016 CSS262 - Moore et al., 2016 CSS005 - Furley et al., 2015 CSS098 - Jones, 2015 CSS161 - Stöhr et al., 2015 CSS316 - Davies et al., 2015 CSS082 - Lewis et al., 2014 CSS352 - Moore et al., 2014 CSS374 - Allen-Collinson et al., 2019 CSS372 - Stemberge et al., 2014 CSS500 - Wakeham et al., 2019 CSS491 - Stemberget et al., 2019 CSS565 - Nio et al., 2020 CSS588 - Radnor et al., 2020 CSS569 - Lord et al., 2020 CSS312 - Freeman et al., 2014 CSS302 - Thijssen et al., 2014 CSS571 - Dawkins et al., 2020 CSS294 - Bezodis et al., 2018 CSS546 - Shave et al., 2019 CSS245 - Labanca et al., 2018 CSS228 - Rafferty et al., 2019 CSS450 - Williams et al., 2019 CSS189 - Stöhr et al., 2014 CSS159 - Stemberge et al., 2015 CSS138 - Williams et al., 2016 CSS133 - Allen-Collinson et al., 2018 CSS126 - Pugh et al., 2014 CSS123 - Weiner et al., 2015 CSS113 - Attwood et al., 2018 CSS104 - Cuthbertson et al., 2014 CSS095 - Cuthbertson et al., 2016 CSS058 - Pedlar et al., 2018 CSS057 - Stemberge et al., 2016 CSS583 - Fisher et al., 2020 CSS580 - Laudani et al., 2021 CSS585 - Honkins et al., 2020	PD034 - Kopanoglu et al., 2019 AD140 - Treadaway et al., 2019 AD138 - Treadaway et al., 2019 AD139 - Treadaway et al., 2016 AD030 - Treadaway et al., 2018 AD032 - Kenning & Treadaway, 2017 AD031 - Hansen et al., 2017 AD128 - Loudon et al., 2017 AD096 - Treadaway & Kenning, 2016 AD137 - Kenning & Treadaway, 2018 AD142 - Porayska-Pomsta et al., 2018 PD024 - Peel et al., 2018	174	

UoA	UoA 3	UoA 17	UoA 23	UoA 24	UoA 32	Total Papers per SDG
<b>4 QUALITY EDUCATION</b>	HS417 - Melendez-Torres et al., 2019 HS346 - Owens et al., 2014 HS379 - Stallard et al., 2014 HS455 - Jankowiak et al., 2020 HS382 - Anderson et al., 2014 HS027 - Mayr et al., 2015	CSM047 - Waring, 2017 CSM038 - Thomas et al., 2017 CSM001 - Thomas et al., 2015	ED027 - Hulme et al., 2020 ENG021 - English, 2020 ED057 - Kneen et al., 2020 ED062 - Attfield, 2020 ED060 - Adams & Beauchamp, 2019 ED034 - Beauchamp et al., 2019 CST025 - Ding & Chew, 2019 CSS421 - Keegan et al., 2019 CST016 - Hiew et al., 2018 ED021 - Davies et al., 2018 ED013 - Hodgkin, 2018 CSS206 - Edwards et al., 2018 HMO3 - Mousa et al., 2019 ED014 - Beauchamp et al., 2014 ED061 - Beauchamp et al., 2020 ED059 - Hodgkin et al., 2020 ED063 - Packer et al., 2021 CSS590 - Aldous & Brown, 2021 ED020 - Connolly & Haughton, 2017 ED007 - McNaughton et al., 2017 CSS362 - Aldous et al., 2016 ED019 - Beauchamp et al., 2015 ED017 - Beauchamp et al., 2015 ENG018 - Hurt et al., 2019 ED065 - Adams & Beauchamp, 2021 ED011 - Adams & Beauchamp, 2018 CSS443 - Milton et al., 2018 CSS135 - Lamb & Aldous, 2016	CSS589 - Alessandri et al., 2020 CSS560 - Cropley et al., 2020 CSS503 - Bruton et al., 2019 CSS375 - Jones & Ronglan, 2018 CSS060 - Jones, 2017 CSS021 - Jones et al., 2016 CSS368 - De Martin-Silva et al., 2015 CSS009 - Jones & Corsby, 2015 CSS075 - Jones & Thomas, 2015 CSS519 - Corsby & Jones, 2020	AD141 - Wismayer et al., 2019 AD142 - Porayska-Pomsta et al., 2018	49
<b>5 GENDER EQUALITY</b>	HS014: Prior et al 2018 HS455: Jankowiak et al 2020	CSM023: Clifton & Macaulay 2015	ED062 - Attfield, 2020 ENG052 - Taylor-Collins, 2020 CST016 - Hiew et al., 2018 ED005 - Tyrie & Beauchamp, 2018 ENG007 - English, 2014 CSS362 - Aldous et al., 2016 ENG018 - Hurt et al., 2019	CSS537 - Pedrini et al., 2020 CSS089 - Hemmestad & Jones, 2019 CSS446 - Jones, 2019 CSS177 - Davis & Edwards, 2017 CSS065 - Edwards et al., 2015 CSS349 - Davis & Edwards, 2014 CSS146 - Jennings, 2018	PD005 - Dorrington et al., 2016 PD006 - Wilkinson et al., 2016	20
<b>6 CLEAN WATER AND SANITATION</b>						
<b>7 AFFORDABLE AND CLEAN ENERGY</b>						
<b>8 DECENT WORK AND ECONOMIC GROWTH</b>		CSM023 - Clifton & Macaulay, 2015 CSM040 - Murphy et al., 2018 CSM059 - Huggins et al., 2015 CSM063 - Murphy et al., 2016 CSM079 - De Vita & Kyaw, 2016 CSM080 - De Vita & Kyaw CSM087 - Ren & Caudle, 2016 CSM090 - Foster & Ren, 2015 CSM097 - White et al., 2018 CSM103 - Rajesh et al., 2019 CSM104 - Prikshat et al., 2019 CSM166 - Thomas et al., 2016 CST110 - Shahaab, 2020		CSS352: Moore et al 2014	PD013: Whicher et al 2018	15
<b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b>	HS115 - Marsh et al., 2015 HS087 - Imbert et al., 2014	CSM104 - Prikshat et al., 2019 CSM071 - Huggins et al., 2014 CSM102 - Thomas et al., 2018 CSM061 - Worsfold et al., 2016 CSM059 - Huggins et al., 2015 CSM058 - Thomas et al., 2015 CSM038 - Thomas et al., 2017 CST045 - Yasakethu and Hewage, 2018 CST005 - Calderon et al., 2020 CST109 - Mallikarachchi et al., 2020 CSM001 - Thomas et al., 2015 CSM098 - Budler et al., 2020 CST110 - Shahaab, 2020 CSM148 - Davies and Jaimangal-Jones, 2020 CST085 - Liu et al., 2020 CSM145 - Rowe, 2020 CST008 - Sun et al., 2019 CST029 - Tang et al., 2019 CST086 - Tang et al., 2019 CSM040 - Murphy et al., 2018 CSM028 - Aminu, 2018 CST032 - Mallikarachchi et al., 2018 CSM077 - Aminu et al., 2018 CST036 - Mallikarachchi et al., 2018 CSM073 - Hill et al., 2018 CSM160 - Rydzik et al., 2017 CSM166 - Thomas et al., 2016 CSM069 - Darlington et al., 2016	ED034 - Beauchamp et al., 2019 ED007 - McNaughton et al., 2017		AD096 - Treadaway & Kenning, 2016 AD049 - Pepperrell, 2015 AD044 - Pepperrell & Haertel, 2014 AD137 - Kenning & Treadaway, 2018 AD029 - Baldwin et al., 2014 PD024 - Peel et al., 2018 PD015 - Peel & Eggbeer, 2016 AD144 - Pigot, 2017 PD023 - Daniel & Eggbeer, 2016 AD147 - Leonard et al., 2020 AD145 - Connor-Crabb and Rigby, 2019 PD034 - Kopanoglu et al., 2019 AD140 - Treadaway et al., 2019 PD033 - Whicher and Crick, 2019 AD138 - Treadaway et al., 2019 AD074 - Woodward, 2019 AD078 - Burleigh et al., 2018 AD067 - Eardley et al., 2018 PD013 - Whicher et al., 2018 PD001 - Green et al., 2018 AD032 - Kenning and Treadaway, 2017 AD127 - Eardley et al., 2017 AD054 - Burleigh et al., 2017 AD025 - Guldberg et al., 2017 AD118 - Loudon & Deininger, 2017 PD006 - Wilkinson et al., 2016 PD022 - O'Malley et al., 2016 AD117 - Loudon & Deininger, 2016 AD019 - Pepperrell, 2015	90



SDG	UoA		UoA 17		UoA 23		UoA 24		UoA 32		Total Papers per SDG
	UoA 3										
<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 			CST033 - Lewis & Carroll, 2016 CST054 - Navarro-Newball et al., 2016 CSM026 - Copeland & Lu, 2016 CST058 - Mostafa et al., 2016 CSM022 - Thomas et al., 2015 CSM055 - Tang & El Sayed, 2015 CSM075 - Francis et al., 2014 CSM099 - McLoughlin et al., 2018 CSM153 - Baldwin et al., 2021 CSM025 - Darlington et al., 2015 CSM132 - Xu et al., 2018 CSM033 - Jaimangal-Jones et al., 2018 CSM029 - Mozumder et al., 2015 CST112 - Garcia-Lucas et al., 2020 CST105 - Izquierdo et al., 2020 CST020 - Stephens et al., 2018 CST014 - Liu et al., 2019 CSM086 - Mozumder et al., 2015						PD007 - Kess et al., 2015 AD043 - Younan & Treadaway, 2015 AD116 - Baldwin et al., 2016 AD150 - Murphy, 2014 AD153 - Watkins, 2015 AD151 - Murphy, 2017 AD139 - Treadaway et al., 2016 AD030 - Treadaway et al., 2018 AD020 - Hughes et al., 2015 AD146 - Kontogeorgakopoulos et al., 2020 AD011 - Hare et al., 2014		
<b>10</b> REDUCED INEQUALITIES 	HS385 - Phillips et al., 2018 HS088 - Cai et al., 2015 HS193 - Musoke et al., 2015 HS455 - Jankowiak et al., 2020		CSS160 - Bolton et al., 2018 CSM040 - Murphy et al., 2018 CSM159 - Sedgley et al., 2017 CSM160 - Rydzik et al., 2017 CSM079 - De Vita & Kyaw, 2016 CSM023 - Clifton & Macauley, 2015 CSM090 - Foster & Ren, 2015 CSM022 - Thomas et al., 2015 CSM161 - Morgan et al., 2015 CSM164 - Hopkins et al., 2020 CSM121 - Ren & Caudle, 2020		ED062 - Attfield, 2020 ED005 - Tyrie & Beauchamp, 2018 ENG007 - English, 2014 ED016 - Sagar et al., 2016		CSS564 - Logan et al., 2020 CSS394 - Bowley et al., 2018 CSS065 - Edwards et al., 2015 CSS349 - Davis & Edwards, 2014 CSS113 - Attwood et al., 2018		AD140 - Treadaway et al., 2019 AD138 - Treadaway et al., 2019 PD013 - Whicher et al., 2018 AD153 - Watkins, 2015 AD139 - Treadaway et al., 2016 AD030 - Treadaway et al., 2018 PD001 - Green et al., 2018 AD032 - Kenning & Treadaway, 2017 AD096 - Treadaway & Kenning, 2016 AD137 - Kenning & Treadaway, 2018 AD142 - Porayska-Pomsta et al., 2018		35
<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 			CSM092 - Clifton & Usai, 2019 CSM064 - Sedgley et al., 2018 CSM099 - McLoughlin et al., 2018 CSM045 - Espeso-Moliner et al., 2016 CSM066 - Carlisle et al., 2016 CSM022 - Thomas et al., 2015 CSM080 - De Vita & Kyaw, 2017 CSM063 - Murphy et al., 2016 CSM059 - Huggins et al., 2015		ED060 - Adams & Beauchamp, 2019 ED011 - Adams & Beauchamp, 2018		CSS001 - Beaumont & Brown, 2018		PD033 - Whicher & Crick, 2019 AD074 - Woodward, 2019 AD152 - Stitt, 2015 AD135 - Cazeaux, 2017 AD141 - Wismayer et al., 2019		17
<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 			CSM081: Clifton 2014 CSM086: Mozumder et al 2015 CSM132: Xu et al 2018								3
<b>13</b> CLIMATE ACTION 									AD062 - Littlewood & Smallwood, 2017 AD141 - Wismayer et al., 2019		2
<b>14</b> LIFE BELOW WATER 											
<b>15</b> LIFE ON LAND 											
<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS 			CSM092 - Clifton & Usai, 2019 CSM135 - Loiacono et al., 2018 CSM023 - Clifton & Macauley		ED005 - Tyrie & Beauchamp, 2018 CSS362 - Aldous et al., 2016		CSS537 - Pedrini et al., 2020 CSS315 - Iorweth & Hardman, 2015 CSS349 - Davis & Edwards, 2014				8
<b>17</b> PARTNERSHIPS FOR THE GOALS 