Team

1

PDItDT 21/22

'Who and what is next?'

Analysis using Social Listening and Foresight

A TEAM 1 REPORT

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| BU6008 | Date: 21/11/21

Introduction

Background

Team 1 completed their project looking at SDG 14 and investigated how UCC can effect change in relation to marine plastic pollution. Estimates of plastic litter entering Europe's oceans is still unknown because it is poorly monitored. However, the European Commission estimates that 150K to 500k ton of plastic enter the EU's oceans every year (European Commission 2018) and Cork's harbour is the most polluted harbour in Ireland (Brennan, 2019). Traditionally, single use plastics and micro plastics were the biggest concern where they accounted for about 50 % of all marine litter on beaches Addamo et al., (2017). In 2019, the European Parliament adopted the new European Directive on Single Use Plastics (European Commission, 2019) targeting these plastics and fishing gear alongside other plastic products but with poor monitoring it is hard to quantify the effect of these initiatives on the marine environment.

PESTLE Analysis

The Pestel Framework was used to highlight the key Political, Economical, Social, Technological, Environmental and Legal aspects affecting the area of marine plastic pollution in Ireland and locally in Cork.

Table 1: Pestel framework being used to highlight the key politica, economical, social, technological, environmental and legal issues affecting SDG14 in Ireland and locally in Cork

PESTEL	Points to note
Political	1. UN SDGs come into force in 2016 2.2018 China stops accepting foreign waste and recycling 3.2020 the EU publishes "Turning the tide on single-use plastics (SUP)", setting deadlines

	for all countries to ban SUP between 2021-2030
	4.2002 Ireland introduced the plastic bag levy but not much done since until the launch of the "Waste Action Plan for a Circular Economy" on 2020
	5.Shift in the national political mindset: drive for greener policies (European Greens, 2020)
Economy	1.The Paris agreement- penalties for not reaching targets by 2030. Growth in the understanding that circular economy is a viable business model
	2.Funding Horizon 2020, 2030 by EU, National funding schemes to fund DRS system and EI having specific calls for circular economy companies
	3.Taxes on plastic/ pollutants. Incoming DRS legislation where 20c is added to all plastic bottles.
	4.Energy ratings and water charges
	5.The triple PPP a value for others now and in the future such as conscientious purchasing and protecting the environment.
Social	1.Media -local (i.e. Sick of Plastic, Friends of Earth), Fly tipping as a response to increasing disposal charges
	2.stakeholders-UCC Navy, UN, Cork City Council Cork County Council

	3.Community activism e.g tidy towns, ucc societies 4.Protests e.g. local and global 5.Industry-Greenwashing Conservation of Habitats
Technological	1.Improved machines to sort different waste streams into a single source to increase their value for resale. 2.Robotics being used to capture wastes from the marine environment.
Environment	1.Fishing rights & Conservation of Habitat 2.Plastic as byproduct of oil 3.Pollution including oil and waste plastics 4.Sea levels are rising. CO2 footprints- sea acidification.
Legal	1.Ban on single plastics and microbeads in Europe. 2. Deposit-Return Scheme (DRS) being written into legislation

Marine pollution in the context of UCC

University College Cork is situated on the River Lee on the estuary where it enters Cork Harbour. In fact the Marine Research Institute, which is part of UCC is on the harbour. UCC take their links to the marine environment really seriously and are currently ranked 4th in relation to SDG 14 in the world global rankings (UCC, 2021). In the "observe" stage of the Capstone

Challenge, the student base had no idea of the SDGs and there was a real disconnect between what was happening on campus in relation to plastics vs the SDG aims of the university. For this reason, it is interesting to use social listening as a methodology to investigate what UCC and the wider community in Cork, Ireland and globally are actually saying in relation to SDG14 and marine plastic pollution.

Aims of the project

The aim of this project is to use Social Listening as a tool to identify what the main macro trends, micro trends and early weak signals are that will provide foresight for the future of plastics in the university and how these will affect UCC and society locally and globally in the future.

This is being accomplished by using social media channels to see what the key themes are being discussed, identifying whether they are a macro, micro or weak signal. There is also an insight into what is next for plastics and marine pollution in relation to how UCC and Cork interact with it.

Research Methodology

Netnography or social listening

Six main methods were used to identify and categorise our findings. The methods were designed to discover the extreme users on social media platforms, their conversations and to identify the key micro trends, macro trends and early signals.

These were:

a) Terms were searched "COP26", "Circular Economy", "Recycling", "Zero Waste", "SDG 14" and "Marine Plastic Pollution" on Good Trends (Google, 2021) to look at the prevalence of certain keywords to give direction in the social listening or netnography search.

b) Forums such as the SubReddit /r/Circular Economy naturally attract extreme users. 12 months of messages were searched on this site to identify extreme users. Extreme users were defined as those who had a lot of posts on the subreddit/r/Circular Economy site, had a large number of credits (I.e. their posts were looked at and responded to) and were followed by other users. From this observation some topics were identified within the Circular Economy Theme that people were interested in the most (Kozinets, 2002).

c) We used the trial or free online versions of the market research tools Twitonomy (2021), Buzzuomo (2019), Keyhole.co (2021) and Brand24 (2011) to search for the posts that were most popular in the last 6 months across Facebook, Twitter and Instagram and from those identified the different trends and themes.

d) We used observation to look at what society in Cork and the university are saying about Climate Change and SDG 14, by observing local sign advertising, practices happening and the media.

e) We monitored the posts on Twitter using the hashtag #CircularEconomy over the last 6 months to identify key themes across the macro, micro and early signal trends.

f) We used Youtube (2021) to identify key influencers that use video as their medium to get across their messages specifically around SDG 14 and marine pollution by searching using the keywords determined from the earlier methods .

Meta data from these analysis techniques were tabulated so comparisons could be made and quickly identify optimal examples to validate our findings. This table is available as Appendix 1.

Division of workload

A table highlighting the elements of the 5 objectives and who is responsible for each element with input for other team member is shown as Appendix 2

Objective 1: Identify main themes and macro trends relevant to the team's design challenge.

Based on the synthesis diagram (Fig. 1.1) on the parameters to track against SDG14 indicator 14.1.1b (UN Statistics Division, 2021), this report used a set of hashtags and keywords (table X) across several social platforms to identify relevant macro trends.
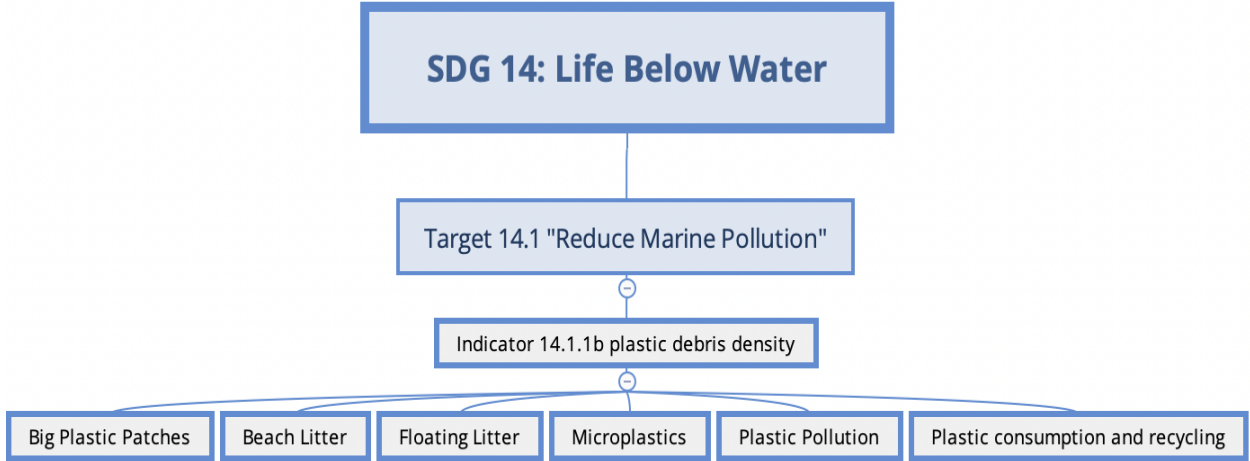
Figure 1.1 Diagram synthesising mechanism to the parameters to track against SDG14 indicator 14.1.1b

Table X Research mechanism to carry out a social listening exercise to identify themes and macro trends around plastic waste and segregation connected to SCG 14

Hashtag	Keyword(s)	Platforms
#plasticpollution	"Plastic Pollution"	Instagram
#plasticfree	"Reduce Plastic"	LinkedIn
#reduceplastic	"Reduce, Reuse, Recycle"	Twitter (via Brand24)
#plasticrecycling	"Plastic Packaging"	Youtube (via Brand24)
#reducereuserecycle	"Plastic Recycling"	The Irish Times
#reuse	"Ocean pollution"	Google Trends
#oceanpollution	"Ocean cleanup"	
#endplasticpollution	"Microplastics"	
#circulareconomy	"Waste Segregation"	
#plasticpackaging	"Marine Plastic"	
#wastesegregation	"Circular Economy"	
#oceancleanup		
#microplastics		
#marineplastic		

Rising global activism around plastic and ocean pollution

Taking social listening as a semantic research approach (Hsu et al., 2015) across social and digital platforms, to understand the public's opinion on a topic (Stewart & Arnold, 2017), the graphs in figure 2.1 indicate the level of popularity of a variety of topics and search terms over the last five years. While these topics have existed for far too long to be considered trends as such, the data generated from this comparison revealed a significant rise in queries over this period.
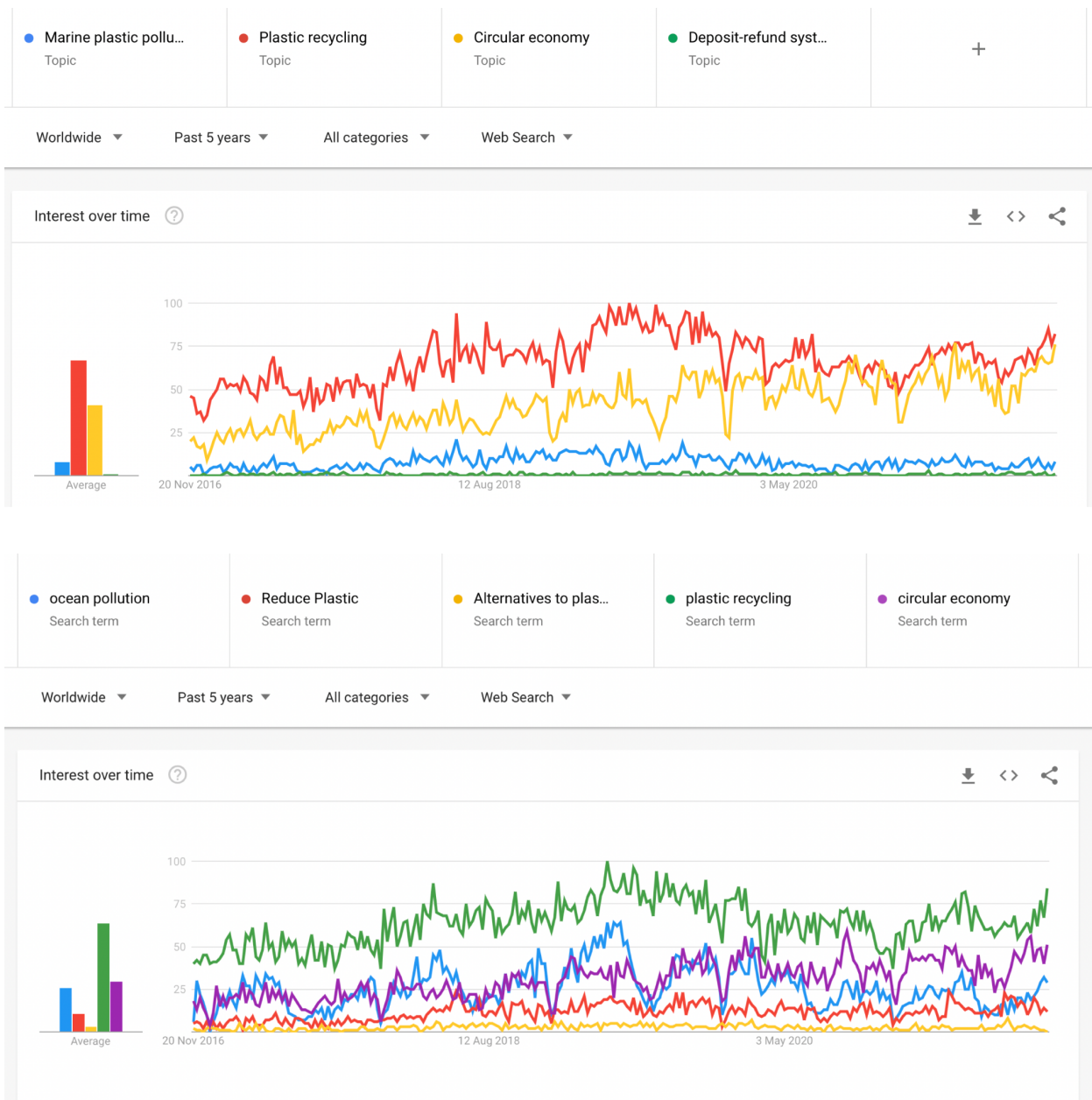
Figure 1.2 Comparison of "search term" and "topic" for plastic recycling and ocean pollution related terms over the past 5 years (Google, 2021)

The semantic and syntactic analysis of the recorded queries has been particularly relevant to understanding the evolution of the public interest and attitude around these themes. Table X shows some of the related queries stemming from "plastic recycling" and "reduce plastic" revealing that those searches containing personal pronouns that involved the individual, such as "soft plastic recycling near me", together with "how to reduce your plastic use", have risen by

+5000% (Google, 2021), compared to the impersonal examples "soft plastic recycling" and "how to reduce the use of plastic" with 250% and 120% accordingly. Similarly, Table X points out that "marine plastic pollution" queries disclosed that "stop ocean plastic pollution", with an inherent semantic sentiment, has risen +3,300% compared to "plastic pollution" at 250%. In contrast, "Circular Economy" showed that the queries with a breakout percentage were "world" and "EU circular economy action plan", while "explain the circular flow of economy" obtained 130%.

OceanPollution relatedQueries

Category: All categories	
ocean pollution: (20/11/2016 - 20/11/2021, Worldwide)	
RISING	
stop ocean plastic pollution	3,300%
plastic pollution facts	1,050%
slides	800%
what is plastic pollution	700%
facts about plastic pollution in the ocean	700%
facts about plastic pollution	700%
plastic pollution in the ocean facts	650%
ocean plastic pollution facts	650%
google slides	550%
how much plastic is in the ocean	550%
when did ocean pollution start	450%
how much trash is in the ocean	450%
ocean pollution essay	400%
plastic pollution in ocean	350%
plastic in the ocean	350%
plastic pollution in the ocean	350%
how ocean pollution affects humans	300%
google docs	300%
why is ocean pollution a problem	300%
plastic	300%
how much pollution is in the ocean	300%
how can we stop ocean pollution	250%
plastic ocean	250%
ocean pollution plastic	250%
plastic pollution	250%

Plastic recycling Related queries

Category: All categories	
plastic recycling: (20/11/2016 - 20/11/2021, Worldwide)	
RISING	
soft plastic recycling nz	Breakout
morrisons plastic bag recycling	Breakout
plastic bottle recycling machine near me	Breakout
plastic film recycling near me	Breakout
coop soft plastic recycling	Breakout
soft plastic recycling near me	Breakout
soft plastic recycling christchurch	Breakout
tesco soft plastic recycling	Breakout
woolworths plastic bag recycling	4,550%
recycling plastic bags near me	1,450%
plastic bag recycling near me	1,000%
woolworths soft plastic recycling	750%
recycling plastic near me	600%
recycling near me	500%
bottle recycling near me	500%
soft plastic recycling	250%
plastic recycling bin	100%

Tables X and X "Ocean Pollution" and "Plastic recycling" rising related queries (Google, 2021)

Ocean pollution is not yet a top priority in the public conversation

While there is a recorded growth around ocean pollution as a topic and search term, this report has found a gap between plastic and ocean pollution in social media. Using the social listening

tool *Brand24* (2011) to create two separate studies to visualise the activity and reach of plastic and ocean pollution related hashtags over the past 12 months, the summaries (Fig. 1.3 and Fig. 1.4) illustrated that while the latter has a higher social reach, the former has a significantly stronger online presence across the board, nearly doubling figures in terms of 'social media mentions' and over ten times higher 'likes' and 'interactions'.
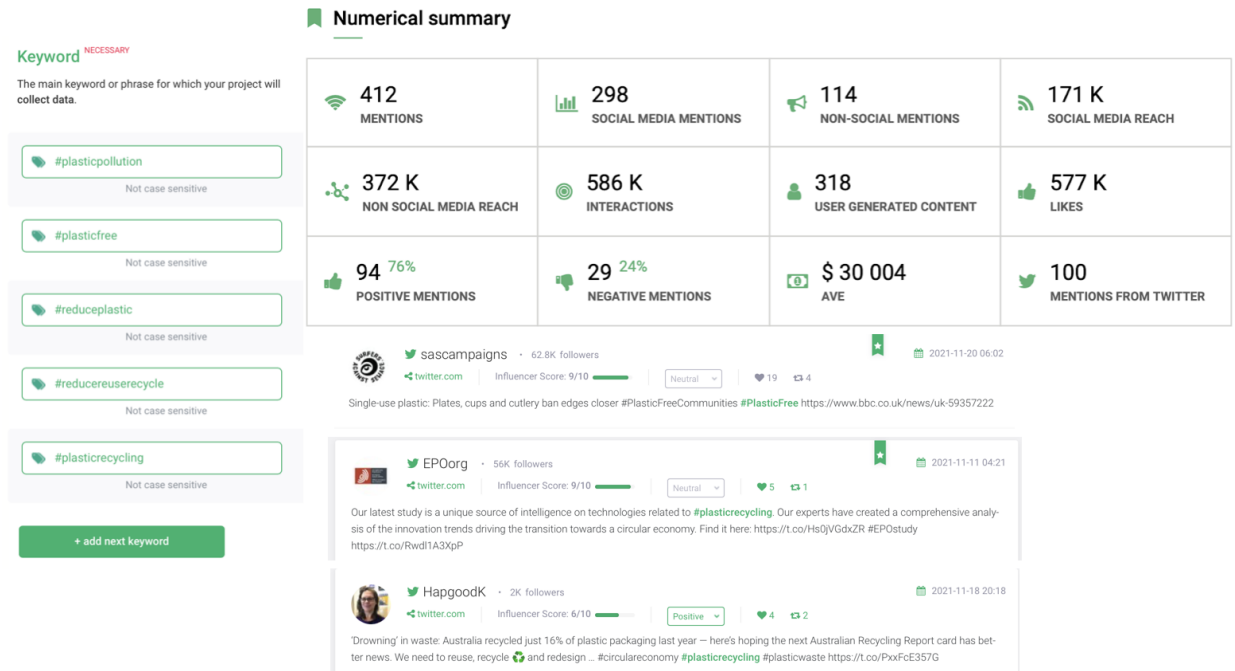
Figure 1.3 Numerical summary of plastic pollution and recycling hashtags activity over the past 12 months (Brand24, 2021)
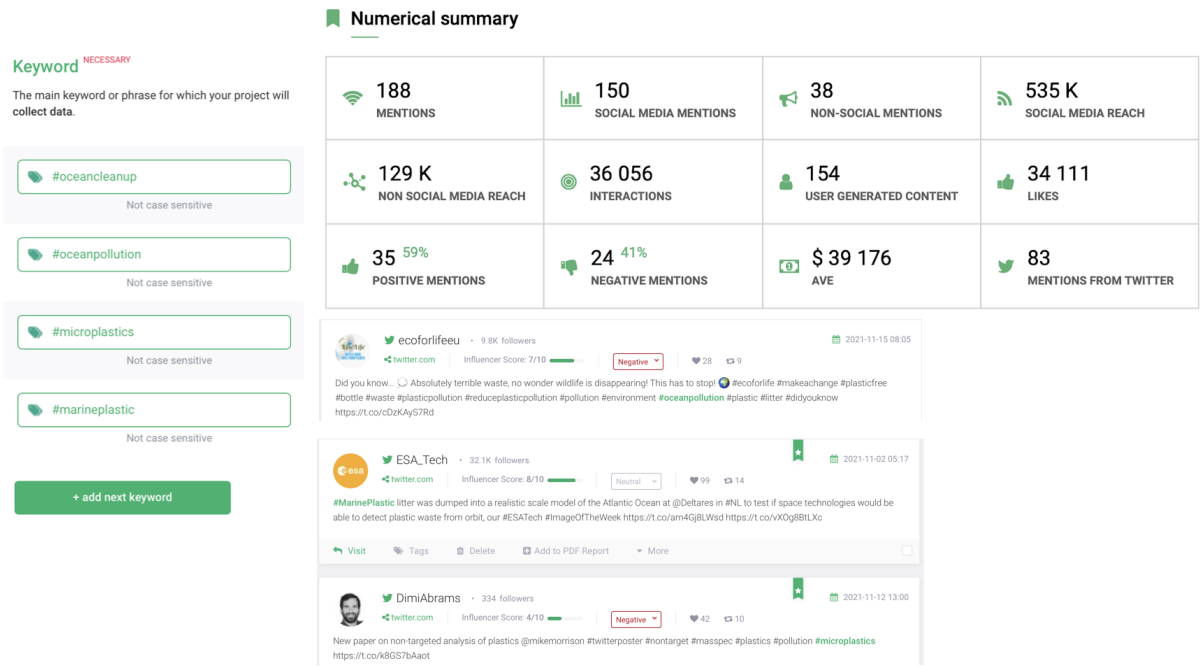
Figure 1.4 Numerical summary of ocean pollution related hashtags activity over the past 12 months (Brand24, 2021)

These findings aligned with the results from a related keyword search in *The Irish Times,* compiling results for the past five years (table X), and also resonated with the search done in *Instagram* and *LinkedIn* using the same set of hashtags (table X), as seen in some posts examples (Fig. 1.5).

Table X Numerical summary of a keyword search in *The Irish Times* for the period 2016-2021

Keyword(s) / Section	Irish Times	News	Environment	Opinion	Life & Style	Letter	Science	Business
"Plastic Pollution"	128	86	57	15	9	9	8	6
"Reduce Plastic"	38	25	17	2	4	2	1	3
"Reduce, Reuse, Recycle"	14	2		8	3	6		
"Plastic Packaging"	162	67	48	18	27	13	3	35
"Plastic Recycling"	61	34	19	3	7	2		9
"Ocean pollution"	8	4	4		3			
"Ocean cleanup"	3	2					1	
"Microplastics"	90	66	35	8	9		16	
"Waste Segregation"	9	8	4	1		1	3	
"Marine Plastic"	7	5	4		1			
"Circular Economy"	219	92	62	10	31		6	38

Table X Numerical summary of a hashtag search in Instagram and LinkedIn

Hashtag	LinkedIn Followers	Instagram Tags
#plasticpollution	3,198	1M
#plasticfree	5,341	4.2M
#reduceplastic	124	233k
#plasticrecycling	6,681	54.5k
#reducereuserecycle	306	1.9M
#reuse	2670	6.3M
#oceanpollution	87	99.6k
#endplasticpollution	140	247k
#circulareconomy	64,211	810k
#plasticpackaging	7,580	44.4k
#wastesegregation	13	5k+
#oceancleanup	307	110k
#microplastics	651	104k
#marineplastic	15	11.6k
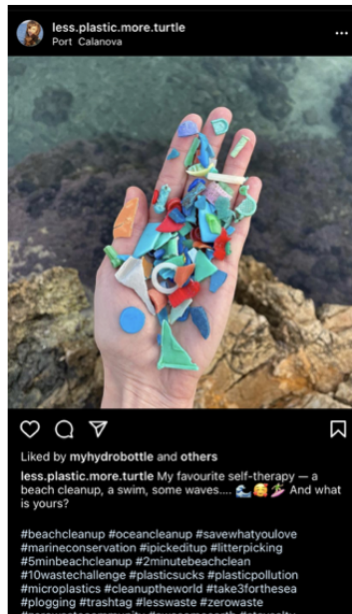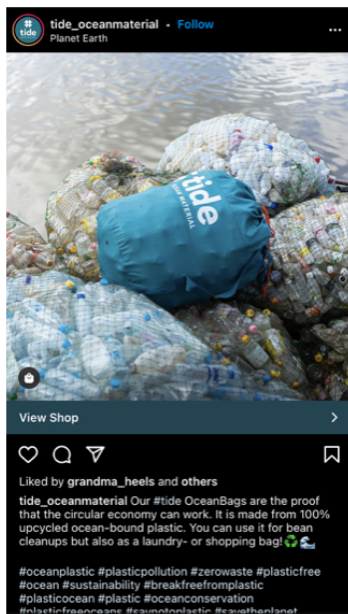
Figure 1.5 Examples retrieved from the hashtag research in Instagram (Tide Ocean Material, 2021; Wentworth, 2021) and LinkedIn (Plastic Soup Foundation, 2021)

So what and what is next?

- The macro trends identified in this report are:
    - Rising global activism around plastic and ocean pollution.
    - Ocean pollution is not yet a top priority in the conversation.
- There is a growing global awareness around "reduce, reuse and recycle" that indicates a positive impact and collective approach towards reducing plastic and consequently, ocean pollution.
- There is a global inclination to avoid unnecessary plastic packaging. The general public holds businesses accountable for their environmentally damaging practices and refuses to be responsible for them. Providing more environmentally-friendly products will be detrimental for businesses to restore their reputation and succeed in the future.
- The public frustration is clear and present and they are claiming for action from their leaders to build a more sustainable future ahead now. Governments are implementing greener measures towards a circular economy through legislation and results will need to be visible quickly to avoid further fractures in their relationship with society.

Objective 2: Identify the emerging trends and weak signals relevant to the team's design challenge

Emerging trends and weak signals: Feedback from the team show results of weak signals from Ireland and Cork in the area of social listening for people taking about Plastic waste segregation(Bio Plastics and Alternatives to Plastic, n.d.) and addressing plastics in our seas. There is some noise about redressing the situation globally(Aqutic Animal Life, n.d.; SWAN Ireland, n.d.) but Ireland ship its waste overseas or burn it in incinerators or concrete kilns. Meanwhile, we are in the wake of the Covid wave of disruption, mass poverty in places like India and migrants displaced from waring nations. Somewhere amongst the disfunction is an opportunity for Ireland to do better. Further to the recent COP 26 and the Taoiseach's address to the nation on the news which voiced Irelands commitment to reducing our carbon footprint. We

are delighted to see that Deposit Return System will be rolled out. Minister Ryan States;" The aim of the scheme is to reduce single-use plastics, help Ireland meet EU targets and promote a wider circular economy." (From the Journal.ie)

But what's next? Our team have highlighted a list of emerging trends as follows:

Number 1. Covid 19 has been a disruptor on the road to SDG 14- in the role of preventing Plastics from reaching our water ways. Mr. Horgan of IBAL said "Now that we have emerged from lockdown, we cannot use it as an excuse for high levels of litter." Irish Cities are experiencing the worst litter problem in 10 years. (Levels Not Seen in 10 Years, n.d.)

Number 2. The screaming silence in Ireland signals a lack of awareness of the misdirection of recyclable plastics going to landfill emergency. Other than more general climate action marches (Green News, n.d.)such as those by school children and their new secondary school curriculum which includes Climate Action as a subject, news of positive acts of climate change are few and far between. Figure 2.2 Image from GreenNews.ie

Number 3. Incentives and supports to positively build change such as bans and taxes to stop citizens buying plastics. For example, Rescuing the seas: Bord Iascaigh Mhara (BIM) Fishing for plastics incentives. While on land the consumer is tasked with not buying plastic or spend a fortune to dispose of it. And until now Lidl leads the Deposit Return Systems revolution whereas other supermarkets lag behind insisting food freshness (Irish Supermarkets Not Doing Enough, n.d.)and Covid isolation are valid excuses. Figure 2.3 (Image: JULIEN BEHAL PHOTOGRAPHY)

Number 4. Legislation for change to build resistance to the lobbyists for "shur it will be grand like and anyway it would be too expensive to do anything about it". More Greens are being voted into power and this trend is growing. Leadership (Mary Robinson and 6 Others, n.d.) at a local level at UCC need to look at the procurement of waste

management sources to ensure that waste returned to the circular economy whenever possible. Figure 2.4The Irish Times/Paul Scott, CDay

Number 5. Plastic reuse- keeping plastic in use for as long as possible as a way to manage our resources in the circular economy (Science Will Guide the Way If We Listen, n.d.) and some businesses are showing signs of responding.(FabLab BCN-Plastics, n.d.) Figure 2.5 https://irishrecycledproducts.ie/category/blog/

Café with appetite for change at UCC

Ellie O'Byrne has lunch at UCC's Bio Green Café, where there are no single-use plastic utensils or plastic packaging.

TUE, 13 NOV, 2018 - 00:00

Number 6. The heroes of change busily applying scientific research to alternatives to plastics- commitment to emerging packaging businesses that will give Smurfit a run for their money and locally University College Cork (Zero Percent Plastic UCC, n.d.) is the first in Ireland to have a plastics free café. Where plastic is not sold, wash facilities are provided for Single Use Plastics and packaging is bio degradable or reusable; some science suggest we will be eating our safe packaging; It's the future. Figure 2.6 Image from The Irish Examiner

Number 7. Community Activist Groups weather on line or in the streets as lone wolves or small-large scale organisations(FabLab BCN-Plastics, n.d.) are getting the word out. They are influencer and influencers stimulate behavioural change. We are finding that what is needed is constant reminding to make pro-action for Cleaner Seas habitual. Figure 2.7 Reddit- Paul Street Mural
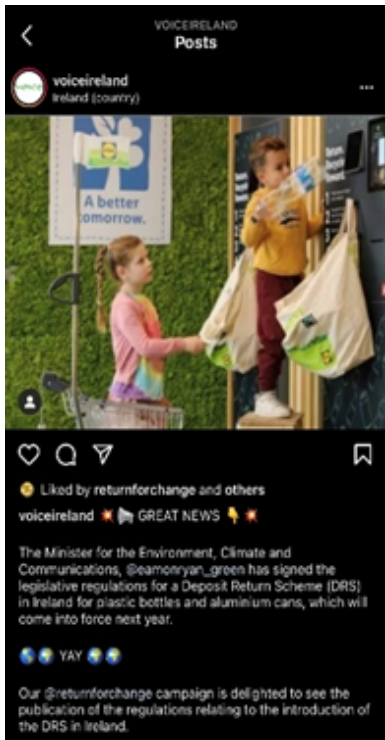
Number 8. Providing education around repack and the infrastructure to correctly dispose of our waste in the home, at an institutional level and in the street. (Bio Plastics and Alternatives to Plastic, n.d.) E.g. evidence shows that even with bio plastic/ other alternatives to plastic packaging are being put in the waste bin and going to landfill. Human beings don't like to talk about waste- changing the needle may not be the issue – singing a different song- one about natural resources and beyond oil and
 gas shine a new light on hope for zero wasteful plastics and an alternative future. Figure 2.8 Voice Ireland

Objective 3: Identify Key Influencers.

There are a number of people actively speaking on environmental issues on various social media platforms. Unfortunately, the topic of our design challenge "plastics" is not used directly as a search term or hashtag by environmentalists. Identifying key influencers in Ireland was challenging as results were lacking. There was a need to select (ideally recent) posts and read further to expand and find the relevant search term within the content of posts. While approaching social media as a passive user, the algorithmic nature of the digital tools worked against us. And a more outward facing search was required to identify international influencers beyond Ireland.

Local Community Groups

One of the more active but less visible local influencers on plastics and pollution came in the form of the various Tidy Towns groups across Ireland (Fig:3.1). As a volunteer organisation the Tidy Towns are a key presence for raising awareness for the need for litter picking and keeping the environment free of pollutants. Cobh Tidy Towns are one such example.

Figure 3.1: Various images detailing community involvement

Based in the seaside Town in Cork Harbour, the Tidy Town group regularly enlist the help of local school children to help clean the beaches by way of litter picking activity. The children delight in the opportunity to spend a day learning about their coastal environment hands-on. Activities are organised in collaboration with Clean Coasts, a national organisation whose aim is to engage communities in the protection of Ireland's beaches, seas, and marine life (Clean Coasts, 2021). Many other communities work in collaboration with the Clean Coasts initiative including Tramore and Annestown with their efforts frequently shared on Clean Coasts social media under the hashtag Marine Litter – the key search term "plastics" is absent but the SDG 14 intentions of protecting life below water remains.

National Organisations & Institutions

Other more formal initiatives and influencers are identified by way of our educational institutions. Universities such as UCC are leading the way in promoting a zero-plastic future, while actively encouraging the concept of a Green Campus (University College Cork, 2021).

The Bio Green Café is a much-celebrated project and part of the green campus initiative which leads by example (Ellie O'Byrne, 2018). The absence of plastics onsite promotes alternatives to all who visit the café. But it is not just the campus itself Universities across the country are taking part in ongoing research which includes local industry. The Native Oyster Network is a group of academics, conservationists, NGOs, and oystermen who are working to restore the native oysters across UK & Ireland. Pollution and clean seas are an important focus of the Networks goals, their work is ongoing, and research is regularly published (Native Oyster Network, 2021).

Individual Influencers

The individual plastic influencers were much more difficult to identify. In our digital dominant society, we would expect to find numerous individual voices discussing the plastic pollution problem. This unfortunately was not the case. Plastics were continually relegated and viewed as a minor piece of a larger problem.

More often than not plastics in conversations appeared as part of recycling campaigns such as the #RepakTeamGreen (Purcell & Repak, 2021) a paid promotional post by "influencer" Rozanna Purcell on behalf of Repak.ie (Fig 3.2), a prominent environmental non-profit organisation based in Ireland.

Figure 3.2: Rozanna Purcell paid instagram promotion for Repak

What is particularly disappointing is Rozanna's post was an advert and accompanied by the telling Instagram ad hashtag. Purcell was paid by Repak to speak about plastics. Can a paid for posting by a personality be classed as a legitimate influencer ?

International & Mainstream Media

On the topic of plastics, Ireland's individual influencers are few and far between but on an international level social media influencers are increasingly more philanthropic and pursue projects without payment.

The Team Seas initiative (Team Seas, 2021) set up by two YouTube content creators Mark Rober former NASA engineer & Jimmy Donaldson (aka Mr Beast). Neither are paid and their aim is to inform and motivate their millions of followers into action for oceans (Fig3.3).

There are however additional influencers found in more traditional media. British broadcaster David Attenborough is a long-time author, natural historian, environmentalist, and filmmaker.
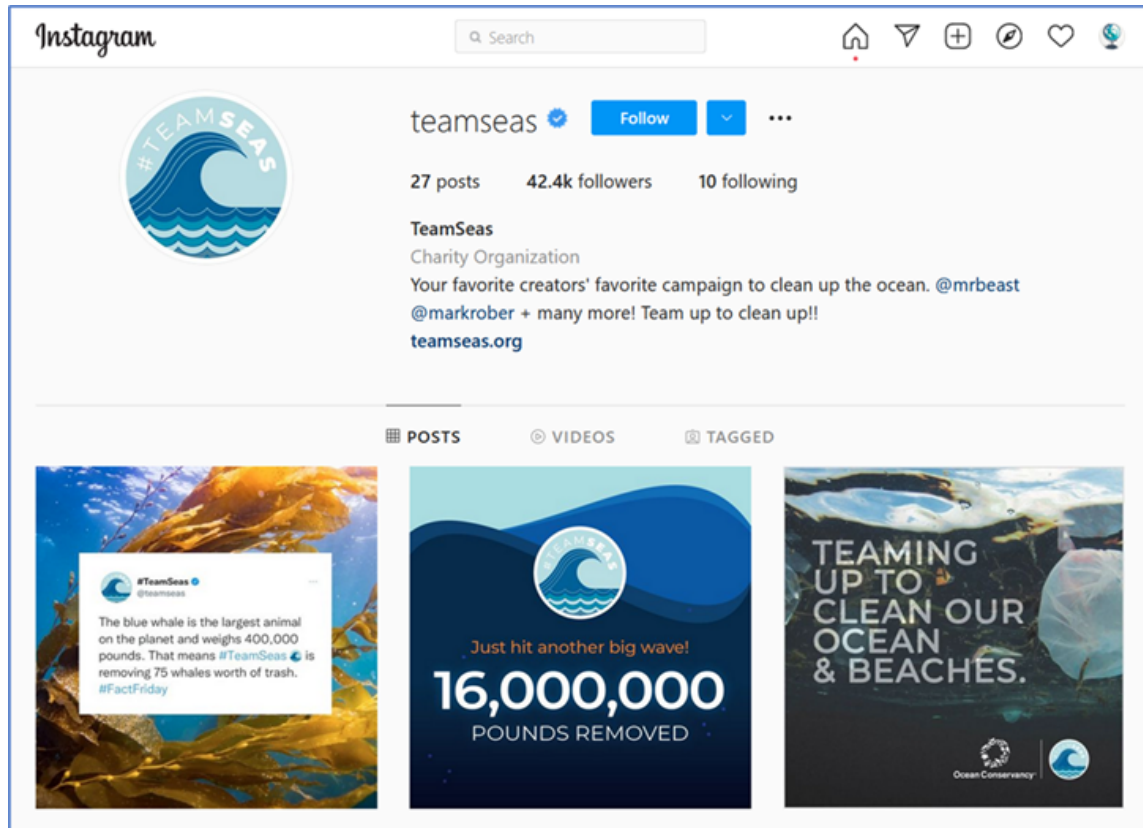
Figure 3.3: TeamSeas.org - New dedicated Instagram account

His documentary series *Blue Planet* (Attenborough, 2017) is a captivating way to learn of the life of sea creatures. While other UK organisations such as the Ellen MacArthur Foundation speak actively on the emerging trends for tackling plastic pollution such as circular economies (Ellen MacArthur Foundation, 2021).

Objective 3: Findings

Individual influencers are a weak signal for the wider discussion of plastics as a marine pollutant and "plastic" is an underutilised term for promoting awareness. However, there are active projects happening on a continual basis throughout Ireland by way of our educational institutions and community projects acting as local group influencers. There is also an emerging trend relating to the circular economy which is gaining traction and being discussed more frequently.

Social media may not be an ideal platform to gauge an accurate overall view regarding the lack of "plastic" chatter which is surprising given the monumental shift to online activities in the last year. But the positive outcome of this experiment is that Ireland's younger generations are being informed by current institutions who are influential, and lead by example.

Objective 4: Pinpoint how the information from objectives (1), (2) and [3] has changed or is likely to change how your team addresses its design challenge.

As the world wakes up to the fact that there is more to be done to keep our planet safe and to save life below the water. Globally, governments are taking steps to ensure life below the surface of the water is safe through policies and synergies

There are few influencers in Ireland at the moment, and they do not use social media much compared to other countries. In general, Ireland does not talk enough about plastic recycling compared to other countries

As a society, we need to start engaging in more discussion that will create a culture that promotes keeping the planet safe by eliminating plastic from life below the ocean's surface

It is our challenge to create a social conversation among students at University College Cork and in society at large. It is necessary to create awareness on campus to encourage students to properly manage plastic waste.

To create this awareness, we will introduce the DRS system and BRUS (app and website). It is important to us that BRÚS (bottle recovery university system) becomes a talking point in UCC to educate both students and staff about plastic pollution

Visibility is crucial. UCC staff and students should be aware of everything UCC management is doing on sustainable development goals in order to be able to make informed decisions

Conclusion

From our analysis of SDG14 and the issue around how UCC can affect marine pollution it is evident that there are many interlinking weak signals, microtrends, macro trends that ultimately lead to the growing megatrend around the circular economy. These are represented in Figure 6.1.
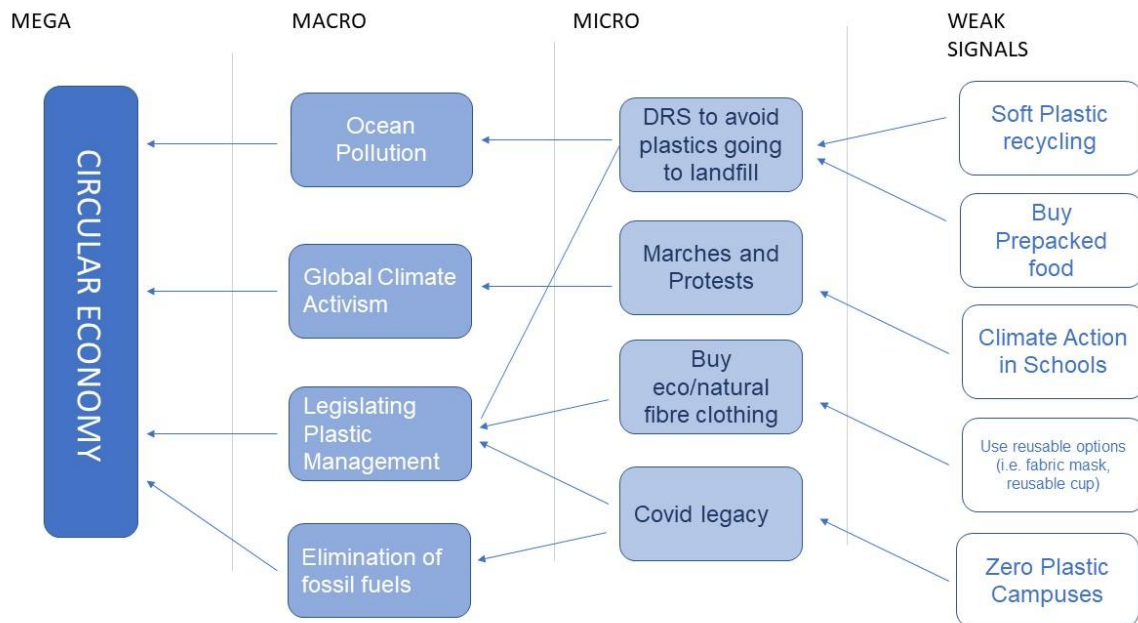
Figure 6.1: Process flow diagram showing the relationship between some of the weak signals, microtrends, macrotrends that have an effect on the megatrend Circular Economy.

From our Capstone challenge it is evident that there is little conversation around plastics pollution with the student base not understanding the Sustainable Development Goals and how

their activities have an effect on the issue globally. Our social listening also confirmed that there is little talk around SDG 14 and marine pollution in UCC but also nationally. We believe this may be due the issue not being visible on a daily basis as it is far out to sea.

We believe there is an opportunity to build awareness around the subject through our solution for the capstone challenge by educating students that their non segregation of plastics on land can result in significant pollution out at sea.

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Appendices

Appendix 1: Detailed Analysis done by team members

Appendix 2: Division of Workload in Team

Appendix 1: Meta data from social listening exercise.

DEVICE Used - Tablet, PC, Phone, Other	PLATFORM TYPE - Browser, App, Social Media, Website	SEARCH TERMS - Keywords & Hashtags	WHO - Name of organisation Account Username Personality	CONNECTIONS & ASSOCIATIONS	WHAT are they talking about ?	Is the conversation POSITIVE, NEGATIVE or NEUTRAL ?	WHERE can we find them? Link to URL	ENGAGEMENT - Events - Articles - Research	REACH & AUDIENCE	LOGO - link to images
PC	Google Trends	Cop26				Less than 100 searchers. not a term till Oct 21 and dying off after.				
PC	Google Trends	Circular economy				Consistently rising but still less than 100 searchers				
PC	Google Trends	Recycling				Consistently around 50 searches per day				
PC	Google Trends	Plastic Pollution				less than 50 searches per day. No pattern				
PC	Google Trends	Zero waste				No pattern. averaging around 25 searches per day.				
PC	Youtube	Circular Economy	ECOEYE RTE Programme		A new circular economy	positive	https://youtu.be/iE18A0CCWwM		587	
PC	Youtube	Circular Economy	European Parliment		Directive to address waste through circular economy	Positive	https://youtu.be/-W		1717	
PC	Website	Macro Trends	Bord Bia	Discussing Responsibile Living as a key trend in Food Industry	Identify key macro trends in the Food Industry	Positive	https://www.bordbia.ie/industry/insights/consumer-lifestyle-trends/			
PC	Website	Deposit Return Scheme	EPA	Funding opportunity for the DRS service providers	DRS	Neutral	https://www.epa.ie/publications/corporate/submissions--position-papers/epa-response-to-the-deposit-return-scheme-consultation-document-on-potential-models-for-ireland.php			
PC	Website	effect of covid on our attitudes	We forum	How covid has made us realise the importance of equality and poorer countries having to clean up our wastes	Covid	Positive	https://www.weforum.org/agenda/2020/09/sustainable			
PC	wEBSITE	Sustainable packaging on our minds	McKinsey							

DEVICE Used - Tablet, PC, Phone, Other	PLATFORM TYPE - Browser, App, Social Media, Website	SEARCH TERMS - Keywords & Hashtags	WHO – Name of organisation Account Username Personality	CONNECTIONS & ASSOCIATIONS	WHAT are they talking about ?	Is the conversation POSITIVE, NEGATIVE or NEUTRAL ?	WHERE can we find them? Link to URL	ENGAGEMENT - Events - Articles - Research	REACH & AUDIENCE	LOGO - link to images
pc	twitter	Zero waste	zero waste festival	Zero wate becoming a topic of conversation in society			https://www.derryjournal.com/news/environment/derry-becomes-first-zero-waste-city-irel			
pc	youtube	marine plastic pollution	Chris Jordan	Discussing the Pacific Garbage patch and the effects on wildlife	Addressing the micro plastic issues in the marine environment	Negative	https://youtu.be/pGI62LuQask			
pc	youtube	marine plastic pollution	Natalie Fee	Discussing the Pacific Garbage patch and the effects on wildlife and the environment	Addressing the micro plastic issues in the marine environment	Negative	https://youtu.be/zJiQt9ASSNg			
pc	youtube	Circular Economy	Ellen Mc Arthur	Not owning technolgy but renting so that at the end of life it goes back to the manufacturer	Looking at the Circular Economy	Negative	https://youtu.be/zCRKvDyyHmI		1.3M	
pc	Linkedin	Circular Economy	BBC News	IKEA buying back old furniture	Circular economy of furniture	positive	https://www.linkedin.com/search/results/content/?keywords=IKEA%20buying%20old%20furniture&sid=n%3Bd&update=urn%3Ali%3Afs_updateV2%3A(urn%3Ali%3Aactivity%3A6796144516719087616%2CBLENDED_SEARCH_FEED%2CEMPTY%2CDEFAULT%2Cfalse)			
Laptop	Browser and Website	Ireland; Plastic Waste	Newspaper: Irish Examiner		Sept 2021: Almost 70% of plastic in Ireland is burned instead of recycled	Negative	https://www.irishexaminer.com/news/arid-40694714.html	Report on this publication by EPA	General Public	
Laptop	Browser and Website	Ireland; Plastic Waste	Newspaper: Irish Times		Sept 2020: Ireland's throwaway culture generating increasing levels of waste, EPA finds	Negative	https://www.irishtimes.com/news/environment/ireland-s-throwaway-culture-generating-increasing-levels-of-waste-epa-finds-1.4356548		General Public	
Laptop	Browser and Website	Ireland; Plastic Waste	Newspaper: Irish Times		Sept 2021: The Irish Times view on plastics recycling: a sign of progress	Neutral-Positive	https://www.irishtimes.com/opinion/editorial/the-irish-times-view-on-plastics-recycling-a-sign-of-progress-1.4667458		General Public	
Laptop	Browser and Website	Ireland; Plastic Waste	Newspaper: Irish Times	Ireland does not have enough	Sept 2021: Plastic revolution	Positive	https://www.irishtimes.co		General Public	
Laptop	Browser and Website	Plastic; Tax	EY Ireland	It provides an overview of the	July 2021: sustainability	Neutral-Negative	https://www.ey.com/en_ie		General Public	
Laptop	Browser and Website	Plastic; Tax		Report on companies adapting	August 2021: Global Plastic	Neutral	https://www.gidorenewswir		General Public	
Laptop	Browser and Website	Plastic alternatives trends	EcoEnclose	to the growing demand for	Sustainability Trends That Will Shape the 2020's	Neutral - informative	https://www.ecoenclose.com/blog/sustainability		General Public	

DEVICE Used - Tablet, PC, Phone, Other	PLATFORM TYPE - Browser, App, Social Media, Website	SEARCH TERMS - Keywords & Hashtags	WHO - Name of organisation Account Username Personality	CONNECTIONS & ASSOCIATIONS	WHAT are they talking about?	Is the conversation POSITIVE, NEGATIVE or NEUTRAL?	WHERE can we find them? Link to URL	ENGAGEMENT - Events - Articles - Research	REACH & AUDIENCE	LOGO - link to images
Laptop	Browser and Website	Plastic alternatives trends	Forbes	Survey results detailing the	Based on some recent surveys,	Neutral- Negative	https://www.forbes.com/si		General Public	
Laptop	Browser and Website	Plastic alternatives trends					https://www.brandwatch.co		General Public	
Laptop	Browser and Website	Plastic Ocean Pollution	BrandWatch	Survey results showing an	April 2018: Data/evidence with	Neutral- Positive	https://www.brandwatch.c		General Public	
Laptop	Browser and Website	Plastic Ocean Pollution	BrandWatch	Survey results showing an		Neutral- Positive	https://www.pewtrusts.org		General Public	
Laptop	Browser and Website	Plastic Ocean Pollution	PewTrust	Nov 2020: confronting Ocean	News surveys reveal heightened	Neutral	https://oce.an.economist.c		General Public	
Laptop	Browser and Website	what are people saying about	Economist Impact	Survey results regarding public		Neutral	https://www.merkley.sena		General Public	
Laptop	Browser and Website	what are people saying about	Merkley Senate			Neutral	https://t.co/o.InZJpsqlOr		General Public	
Windows 10 PC	Twitter Web App	#recycle #ireland	Clean Ireland - A Green Waste	Community Recycling	The State of our Marines 2021	Neutral - Information	https://nativeoystemetwor	Award Ceremony	Operational	twitter@CleanIrRec
Windows 10 PC	Twitter Web App	#life below water ire land	Marine Oyster network-Cork			Positive Research Paper or		Awareness Publication		twitter@NativeOyst
Windows 10 PC	Twitter Web App	#depositretursystems	Zero Waste Europe	Zero Waste Europe is part of	circular economy - deposit	MIXED - conversation covers	https://zerowasteeurope.e	COP 26 - Plastic fuels	Global reach but	twitter
Windows 10 PC	Twitter Web App	#greencampus	UCC Green Campus	university college cork		positive	https://www.ucc.ie/en/gre	advertising future	2.3k followers	twitter@greenCamo
Android phone	Twitter app	#circulareconomy	Ellen MacArthur Foundation	nasa & apple engineer? you	Removing Plastics from our	Positive - future	https://ellen.macarthurfoun	biodiversity, plastics,	76.1K Followers	twitter
Android phone	Twitter app	#TeamSeas	Mark Rober	Active initiative & fundraising		Positive - ongoing fundraising	https://www.youtube.co	Video Plastic eating	20 million	Instagram
Android Phone	instagram	#TeamSeas	Mr Beast & Mark Rober		Cleaning Beaches	Positive - ongoing fundraising	https://www.instagram.co	Video Plastic eating	42.6k followers	Instagram
Android Phone	instagram	#RepakTeamGreen	Rozanna Purcell	Part funded by Irish	recycling & plastics	neutral - paid for promotion	http://repak.ie	Video - Recycling	535k followers	twitter
Windows 10 PC	Firefox browser	#RepakTeamGreen	Repak.ie	Local Community volunteer	#RepakTeamGreen	Positive & informative ongoing	https://www.tidytowns.ie/	Company Website	4,977 followers	twitter
Windows 10 PC	Twitter Web App	#TidyTowns	https://www.tidytowns.ie/		Tidy Towns Awards	Positive ongoing initiatives	https://cleancoasts.org/	volunteer organisation	2,100 Followers	@cobhtidytowns
Windows 10 PC	Twitter Web App	#cleancoasts	https://cleancoasts.org/	National Initiative	Cleaning Beaches & Tidy Town	Positive ongoing initiatives	https://www.youtube.com/watch?v=UBS8YeqsSk	part Gov funded	8,760 Followers	@CleanCoasts
Laptop	Google, Youtube,	Plastic pollution	The Irish Times	Repac, Panda recycling, the		informative but negative	https://www.youtube.com/watch?v=UBS8YeqsSk			
Laptop	Google, Television	Plastic Pollution in Ireland	EcoEye on line (RTE)	Reference to Repac.	The true cost of Irelands waste	informative but negative	https://www.youtube.com/watch?v=Dgo49CqW31Q			
Laptop	Google, News papers	Plastics and the circular	The Irish Times	Reuse, upcycle and the circular	The Circular economy	Informative and positive	https://www.irishtimes.com/news/environment/plastic-is-a-beautiful-thing-if-you-can-take-ca			
Laptop	Google,	Another link in the head or a	The Irish Times	The default comment is that	Are supermarkets doing	informative but negative	https://www.irishtimes.com/news/environment/are-irish-supermarkets-doing-enough-to-redu			
Laptop	Google, website	Smile resourse	Smile resource	The circular economy reuse	Facilities in content how to	Positive	https://www.leanbusinessireland.ie/reuse-republic-smile-resource-exchange-comes-cork-coun			
Laptop	Google, Television; eco eye	John Lynch one co eye	Down to earth materials	Avoid buying, Rediscovery	Calling for legislation and DRS	Positive and proactive	https://www.cylex.ie/cork/plastic+recycling.html			
Laptop	Google, website	Plastics Industry Cork	CYLEX	Beautiful plastic products	Not much about recycling	marketing the business side of				
Laptop	Google +	Slogan on the quays of the	Citisens for Climate Action	SDGs	Climate action	positive	https://a4sounds.org/we-only-want-the-earth/			
Laptop	Google, website	Greening our city	Eventbrite	SDGs Community partnership	Climate action	Positive	https://www.creativityandchange.ie/cop26-day-of-action-for-climate-i			
Laptop	Google, website	Cork development Plan and	Website	SDGs but without reference,	Asking for public engagement	An absolute discrase	https://www.corkcoco.ie/en/search&content?keys=plastic+recycling			
Laptop	Google, feed from	Smart Water Network	Webpage	Sustainable water network	PPN/Public Participation	Positive but limited	https://link.springer.com/article/10.1007/s11269-017-1699-1			
	Google, another feed from	Marine Area Planning	irishtimes.com	Coastwatch	Legislation and surveying	Positive	https://www.irishtimes.com/news/environment/coastwatch-welcomes-planned-improvement-			
	deeper into development	Irelands seafood sector and	gov.ie	Keeping plastics out of our	Climate action is RIS, Reference,	Positive, not far enough	https://www.gov.ie/en/press-release/80584-mcconalogue-announces-that-over-600-tonnes-o			
	deeper into development	Food and Plastic	gov.ie	SUP	Management of a natural	informative but negative	https://www.gov.ie/en/publication/ef24a-single-use-plastics/			
	deeper into development	Managing our marine life	webpage	Swan Ireland- consultation			https://www.swanireland.ie/a-new-way-of-managing-our-water/marine-policy-consultation-g			
	Google, UCC, Research n	UCC Research Plastic	webpage	SDG 14			https://www.ucc.ie/en/research/the-aquatic-animal-health-group/			
	Google, UCC, Research n	UCC Research Plastic	webpage	SDG 14	ERI Beaufort Building, Lir National Ocean Test Facilit		https://www.ucc.ie/en/eri/research/			
	Google, UCC, Research n	UCC Research Plastic	webpage	SDG 14	Bio Plastics and alternatives to		https://scholar.google.com/scholar?q=ucc+bioplastics+research&hl=en&as_sdt=0&as_vis=1&o			
	Google, UCC, Research n	UCC Research Plastic	Webpage	The system Pros and cons to	Plastic Free UCC	Positive and negitive	https://cora.ucc.ie/handle/10468/11852			
	Google, UCC, Research n	UCC Research Plastic	Webpage	Mentioning the brown bin, The	TIPA BIO Plastic and other	Positive and negitive	https://cora.ucc.ie/bitstream/handle/10468/7189/Byrne_et_al_Single_Use_Plastics_Mancheste			
	Google Plastics industry	Plastics industry Cork	Website	Other target groups for	The Plastics industry is alive	Arragnsure it will asta life	https://freefoam.ie/professional			
	Google Plastics industry	Plastics industry Cork	Website	Other target groups for	The Plastics industry is alive	Arragnsure it will asta life	http://www.corkplastics.ie/home			
	Google Plastics industry	Plastics industry Cork	Website	Other target groups for	The Plastics industry is alive	Arragnsure it will asta life	https://www.pipelife.ie/			
	Google Plastics industry	Plastics industry Cork	Website	Other target groups for	The Plastics industry is alive	Arragnsure it will asta life	http://polyfabplastics.ie/			
	Google fablab BCN	Emerging ideas a would	Podcast	emerging ideas like the	EU funded project - bottom up	Positive	https://fablabbcn.org/podcast/the-future-of-plastic			
	Google UL Plastic	New products from waste	Website	emerging ideas	turning research into products	Positive	https://www.idaireland.com/newsroom/ul-breakthrough-turns-scourge-of-plastic-waste-int			
	Google The circular	SFI removing plastics the	Website	emerging ideas	Science will guide the way in	Positive	https://www.sfi.ie/challenges/plastics/			
	Google, Youtube, RTE	Saving irelands seagrass	Wedpage	Carbon sink	Irelands echo Heros	Positive	https://www.youtube.com/watch?v=S-Lr1ielAil			
	Google,	Blue plannet 2017 and now	irishtimes.com	Plastics now	David Attenborough	Positive	https://www.irishtimes.com/special-reports/footprint-2020/sorting-out-our-plastic-problem-1.			
	Google following the tread	climate change influencers	irish times.com	SDGs, Plastics	Mary Robinson and six others	Positive	https://www.irishtimes.com/special-reports/footprint-2020/climate-change-influencers-1.4205			
	Google	The Hemp and Ford car story	Hemp and Ford Car	vested interest and corruption	Henry Ford	Positive and negitive	https://www.financialexpress.com/auto/car-news/forget-electric-cars-henry-fords-cannabis-ca			

Appendix 2: Division of Workload in Team

Tasks	People				
	Aoife	**Emmanuel**	**John**	**Rose**	**Sara**
Research	25		25	25	25
Objective 1 Writing					100
Objective 2 Writing	100				
Objective 3 Writing				100	
Objective 4 Writing		100			
Objective 5 Writing Including Intro & Conclusion			100		