

Factors Encourage People to Ignore Environmental Health: A Study Qualitative of Climate Management, Common People's Perspective

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ABSTRACT

The flood disaster that hit Indonesia at the beginning of the year 2020 and the earlier haze and forest fires was very shocking and alarming not only Indonesian but also people of neighboring countries. Indonesian did not prepare for these disasters. These disasters are caused by people's ignorance of environmental safety. Indonesian are religious people, they obey religious laws and rules. They come to pray to the Almighty God regularly. Harm nature is forbidden by religion. The phenomena are, even though religions teach to conserve nature, many people still destroy them.

The focus of the study was the perceptions of common people concerning the environment. The research questions are what is the people's perception of nature and the environment? What is the situation that encourages people to ignore the environment? What is the level of environmental knowledge of the common people of Indonesia? What is the best way to wake people up and realize the importance of the preservation of nature and living environment?

This qualitative study which uses Phenomenological and Grounded Theory approach with in-depth interviews collecting data procedures found 5 main perspectives of people concerning their involvement of environment and climate change, 1) Environment is a Government responsibility, 2) Economics reason, 3) Lack of knowledge and skills of climate change, 4) No spirit of togetherness to conserve the environment, 5) Climate Changes has no instant and direct impact on oneself.

This study contributes to the environmental management to understand the resident's perception of saving the environment or green Earth and the factors of why people ignoring environmental health. Furthermore, the research findings will help the environmentalist can develop the models to awakening the awareness of people to the green environment and make the right action of conserving nature.

Keywords: flood disaster, forest fire, haze, ignorance, nature, preserve, religious

INTRODUCTION

Allah the Almighty Says in the Holy Al-Qur'an chapter Al-Hajj verses 5 (22:5):

“O mankind! If you are in doubt about Resurrection, then verily,

We have created you (i.e. Adam) from dust,

then from a Nutfah (mixed drop of male and female sexual discharge, i.e. the offspring of Adam),

then from a cloth (a piece of thick coagulated blood) then from a little lump of flesh

– some formed and some unformed (as in the case of marriage) –

that we may make (it) clear to you (i.e. to show you Our Power and Ability to do what We will).

and We cause whom We will to remain in the wombs for an appointed term,

then We bring you out as infants, then We give you growth that you may reach your age of full strength.

And among you, there is he who dies (young),
and among you, there is he who brought back to the miserable old age,
so that he knows nothing after having known.

And you see the earth barren, but when We send down water (rain) on it, it is stirred (to life),

and it swells and puts forth every lovely kind (of growth)". (Khan & Al-Hilali, 2011)

The flood disaster that hit Indonesia at the beginning of the year 2020 was very shocking and very alarming (Azhari, 2020). Indonesian did not prepare for these disasters. Earlier, the haze and forest fires shake the peaceful life of the community (Thoha, 2019), and this also felt by citizens of neighboring countries. According to Indonesia's National Disaster Agency, there are 325.784 hectares of land burnt in the year of 2019 from January to August alone (BBC News-Asia, 2019). This fire was caused by residents who will clear the land for Palm oil trees plantations and others.

These disasters are caused by people's ignorance of environmental safety. They hoped to gain profit by burning the forest to be farm field or plantations area, on the contrary, what happened was a great loss for the people, the nation, and the State. According to the World Bank, the total damage and economic loss from the forest fire in Indonesia in the Year of 2019 amounted to at least \$85.2bn (Al-Jazeera, 2019). The Unicef says Indonesia's forest fire putting 10 million children at risk (Agencies, 2019).

National Geographic.com presented the plastics problems and arise awareness about the global plastic trash crisis that endangered our environment (Parker, 2018).

Spiritual leaders at all levels are critical to the success of the global solidarity for an ethical, moral, and spiritual commitment to protect the environment and God's creation (Thoha, 2019) (Religions and Environmental Protection, 2018).

Indonesian are religious people, they obey religious laws and rules. They come to pray to the Almighty God and give the offerings in Masjid, Church, or Temple regularly. It is clear that according to the Islamic's (the religion which is embraced by more than 80% of Indonesian) teaching, that 'ruins the nature and environment' is against the Religious laws.

The Al-Mighty Allah SWT Says in the Holy Al-Qur'an:

إِنَّمَا جَزَاءُ الَّذِينَ يُحَارِبُونَ اللَّهَ وَرَسُولَهُ وَيَسْعَوْنَ فِي الْأَرْضِ فَسَادًا أَنْ يُقَتَّلُوا أَوْ يُصَلَّبُوا أَوْ تُقَطَّعَ أَيْدِيهِمْ وَأَرْجُلُهُمْ مِنْ خَلْفٍ أَوْ يُنْفَوْا مِنَ الْأَرْضِ ذَلِكَ لَهُمْ جَزَاءُ فِي الدُّنْيَا وَ لَهُمْ فِي الْأُخْرَىٰ عَذَابٌ عَظِيمٌ

"The punishment for the people who (in a war) against Allah and His Messengers and make ruins on the Earth, is being killed and crucified, or cut their hands and foot in the cross, or be expelled from their own home. That would be a humiliation to them in the world, and in the afterworld, they will get very great torments." - QS. Al-Ma'idah 5: Ayat 33. (Khan & Al-Hilali, 2011).

It is forbidden to harm nature. But the phenomenon is, even though religions are teaching to conserve nature and the punishment is very hard, many people still destroy them.

There are so many articles concerning the environment, most of them are talking about the things or object or materials which caused the damage of the natural environment such as plastics (Parker, 2018), Aircraft emission (Xu, et al., 2020), sawmill wastes (Hajam, Plavan, Kandri, & Faggio, 2020), but few of them were talking environment from the knowledge and perspective of common people concerning their view to the

environment as their part of life. This study is to identify the factors which are making people ignore the health of the environment. The focus of the study was the perception of people concerning the environment. The research questions are what is the people's perception of nature? What is the situation that encourages people to ignore the environment? What is the level of environmental knowledge of the common people of Indonesia? What is the best way to wake people up and make them realize the importance of the preservation of nature and living environment? The environment is defined as the circumstances, objects, or condition by which one is surrounded (Definition of environment, 2020). According to the Encyclopedia Britannica, the environment, the complex of the physical, chemical, and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival (Encyclopedia, 2020). The environment is defined as The Natural Environment means all living and non-living things occurring naturally, meaning not because of humans. Natural Environment encompasses all living and non-living things occurring naturally, meaning in this case not artificial. The term is most often applied to the Earth or some part of the Earth (Natural Environment - Wikipedia, 2020). Ignore – According to the Cambridge Dictionary, ignore means to intentionally not listen or give attention to something or someone (Cambridge-Dictionary, 2020). Ignorance according to Wikipedia is a lack of knowledge and information. The word 'ignorant' is an adjective that describes a person in the state of being unaware, and can describe individuals who deliberately ignore or disregard important information or facts, or individuals who are unaware of important information or facts (Wikipedia - JzG, 2019).

RESEARCH METHOD

The study is using Qualitative research methods, this method is suitable since the study is concerning humanitarians and social science. The qualitative researcher adopts and uses one or more strategies of inquiry as a guide for the procedures in the qualitative study (Creswell, 2003). The study also uses the grounded theory and phenomenological approach. Grounded theory was based on its nature that everything will be grounded on data that will be collected, analyzed and interpreted (Cresswell, Hanson, Cark Plano, & Morales, 2007). In using grounded theory researchers used several stages in collecting, refining and categorizing the data as prescribed by the classical Grounded Theory (Ebona-Abamonga, 2019).

Setting

Qualitative research takes place in natural settings. This study takes a setting in Bekasi City, West Java province, Indonesia. A place where approximately 3 million people reside, and almost 85% of them are Moslem (Islamic religious believers). This gives ease for the researcher to conduct the study.

Researcher

The researcher in Qualitative research is primarily the main instrument (Creswell, 2003). The researcher is a lecturer at a Postgraduate Programs of Economics Higher education Institution in Jakarta, Indonesia. The researcher has conducted much research in the social and humanitarian fields. The researcher lived in the setting city for more than 20 years, so he knew many people and him also familiar with every aspect of the people's lives in that City.

Informants

In this study, informants were gathered by purposive sampling. Informants candidates were chosen by the criteria of 1) Educated (at least graduated from Junior High School/SLTP), 2) Leave long enough (at least more than 5 years) in the City, 3) Communicable, 4) Willing to share their knowledge, perspectives, and experiences voluntarily. From 20 candidates researcher selected 5 people to be informants of this study.

The researcher explained briefly and clearly about the purpose and procedures of the research to the informants, and the researcher also explained the status of informants in the research is free, meaning that the participant can stop his participation in the research anytime they want to. The researcher asked for the written statement from the participants stating that they give the right and permission to the researcher to use research materials and research interviews. To protect the right of participants, the researcher informed that the participant's identity is secured (Creswell, 2003).

Data Collections

The qualitative research emergent rather than tightly prefigured, several aspects emerge during a qualitative study (Creswell, 2003). The data collections process might alter during research.

This study uses in-depth interviews and observations to collect data. The researcher revisits setting several times to note the situation, events and important things that need to be noted. An In-Depth and open-ended Interviews with informants were conducted face to face for each informant in the place they choose to be comfortable, this is important to gain their trust to open the maximum of their perspective and experience to the topics. While conducting interviews, the researcher takes interview notes to record the gesture/body language of the interviewees. The interviews were recorded using the SONY Digital Recording device and notes were written on interview notes made by common HVS paper. The interview was conducted three times for each participant, this is to make sure that the data received is complete and details. The first interview was about the background of the informant, the second interview was about informant's perceptions concerning the topic study and experiences. The third interview was to complete the information needed for data and to fill in the gap which missed at the time of the first and second interviews.

Soon after interviews, the recorded interviews were transcribed, this transcription was done by other parties to maintain the truth value - trustworthiness (Newman & Benz, 1998). Peer debriefing also conducted with colleagues for dependability and conformability (Costa, 2019).

Data Analysis

Qualitative research is fundamentally interpretive. This means that the researcher interprets the data (Creswell, 2003). Basic content analysis was used to analyze the sentences of the interview transcriptions (Hsieh & Shannon, 2005). From the interviews, interview records were played and listened carefully, at the same time interview transcription and notes were matched many times to catch significant sentences. Appropriate to the coding, the main sentences or significant sentences were drawn from the informant's words directly or indirectly by the time of interviews. This delivery was done by stressing on the sentences they said or by body language or body gestures which noted by the interviewer. Furthermore, the significant sentences were processed to be themes. And themes were grouped in the main theme that will be interpreted and concluded as findings or study results.

Table. 2 illustrates how the significant sentences from interviews drawn to be the themes and then become the main theme. Member checking and triangulation were done one time for the data to be as perfect as possible and accountable.

TABLE.2 SIGNIFICANT SENTENCES, THEMES, MAJOR/MAIN THEME.

Interview Transcript	Significant Sentences	Themes	Main/Major Theme	
<p>I-1: I don't know the reason why we should treat each garbage differently.</p> <p>I-2: I never think that way, we collect garbages we threw them into the garbage disposal, but yes we didn't separate them first.</p> <p>I-3: if the plastic is dangerous, why they give away at the market? And not stop using it?</p> <p>I-4: No one ever told me about endangered nature, we planted the trees just for the beauty of them.</p> <p>I-5: We tell students to clean and put the trash in the trash bag, but little of us give some explanation.</p>	<p>I don't know the reason why</p> <p>we collect garbages we threw them into the garbage disposal, but yes we didn't separate them first</p> <p>why they give away at the market? And not stop using it?</p> <p>we planted the trees just for the beauty of them.</p> <p>but little of us give some explanation.</p>	<p>Do not know the reason</p> <p>No explanation</p> <p>No knowledge of oxygen and carbon dioxide in the air produced by trees.</p>	<p>Lack of Knowledge and skill for Environmental issues.</p>	
<p>I-1: Tyred, it's wasting our time.</p> <p>I-2: To separate them (wastes) we need men's power to do that.</p> <p>I-3: it is cheaper to just burn the garbage and plastics.</p> <p>I-4: when we gathered the used oil, we need more space in the garage, it is cheaper to dump it</p>	<p>it's wasting our time</p> <p>This means more wages, need extra cost.</p> <p>: it is cheaper to just burn the garbage.</p> <p>cheaper to dump it into the river or ...</p>	<p>Time is money</p> <p>need extra cost, extra money to spend.</p> <p>No money. Don't want to lose money</p>	<p>Economics Reasons</p>	

<p>into the river or the dirt hole in the yard then provide the space and more container for that junks.</p> <p>I-5: People always try to find the way that cost nothing to them (in term of money), or they afraid to spend more money when they do good to nature.</p>	<p>they afraid to spend more money when they do good to nature.</p>			
<p>I-1: it won't affect me. Do not influence on me.</p> <p>I-2: I don't feel the bad things will happen to me, even though I don't plant a tree.</p> <p>I-3: it's okay, everybody dump plastics.</p> <p>I-4: I am a driver, it wasting my time if I have to stop to dump trash or looking for a trash bag first.</p> <p>I-5: people will take more attention when bad things happen directly to them.</p>	<p>it won't affect me</p> <p>I don't feel the bad things will happen to me</p> <p>it's okay</p> <p>it wasting my time</p> <p>people will take more attention when bad things happen directly to them.</p>	<p>The people think that climate change has no direct and instant impact on them</p>	<p>No instant and Direct Impact on Oneself</p>	
<p>I-1: Let the community make it green.</p> <p>I-2: Why should I think about it when others don't care.</p> <p>I-3: We should do it together, someone has to organize it.</p> <p>I-4: I don't know, let the boss think about it.</p>	<p>Let the community</p> <p>Why should I think about it when others don't care.</p> <p>We should do it together.</p> <p>let the boss think about it</p>	<p>Ignorance</p> <p>Don't bother</p> <p>Doesn't want to do it alone</p>	<p>No Environmental Awareness Spirit</p>	

I-5: if some people ask me to do it together, I will follow, but alone? Neeeahh...!	but alone? Neeeahh...!			
I-1: It's school duty to make it green. I-2: That is the responsibility of the government. I-3: We do the small part of it, but the big part of the environment should be done by the government or authorities. I-4: the duty of environmental authorities. I-5: since they have the environment authorities, the Government should take care of it.	: It's school duty is the responsibility of the government A big part of the environment should be done by the government or authorities. : the duty of environmental authorities , the Government should take care of it.	School is the authority of schoolyard Environmental authority's responsibility	The environment is the Government responsibility	

RESULTS AND DISCUSSIONS

The study found 5 main perspectives of people concerning the environment and climate change.

1. The environmental subject is a Government responsibility.

Most Common people think that the environment is the government's concern. Common people do not bother to take part in it. The following statement of the interviews stated that perception.

I-1: It's school duty to make it green.

I-2: That is the responsibility of the government.

I-3: We do the small part of it, but the big part of the environment should be done by the government or authorities.

I-4: the duty of environmental authorities.

I-5: since they have the environment authorities, the Government should take care of it. Kulin & Seva (2019) Argue that for the people who think that it to be the government's responsibility to protect the environment should be more likely to support government's spending on the environment, and it depends on the quality of the government, that is government institutions are fair, effective, and not corrupt (Kulin & Seva, 2019).

2. Economics Reasons.

The economy is one of the reasons common people ignore environmental preserve. The following interviews indicated that reasons.

I-1: Tyred, it's wasting our time.

I-2: To separate them (wastes) we need men's power to do that.

I-3: it is cheaper to just burn the garbage and plastics.

I-4: when we gathered the used oil, we need more space in the garage, it is cheaper to dump it into the river or the dirt hole in the yard then provide the space and more container for that junks.

I-5: People always try to find the way that cost nothing to them (in term of money), or they afraid to spend more money when they do good to nature.

Phimphanthavong (2013) examines the relationship between economic growth and environmental degradation. The findings indicate that trade openness also produces a negative impact on environmental quality (Phimphanthavong, 2013).

3. Lack of knowledge and skills of Environment.

Most common people, especially those who don't communicate with the environmental activist do not know the urgency of saving the green Earth. Because of their lack of knowledge of the preservation of the natural environment, they some times just do not care about it or in other words ignorance. Ignorance according to Wikipedia. Com is a lack of knowledge and information, ignorance describes a person is in the state of being 'unaware' (Wikipedia - JzG, 2019).

The following interviews indicated it.

I-1: I don't know the reason why we should treat each garbage differently.

I-2: I never think that way, we collect garbages we threw them into the garbage disposal, but yes we didn't separate them first.

I-3: if the plastic is dangerous, why they give away at the market? And not stop using it?

I-4: No one ever told me about endangered nature, we planted the trees just for the beauty of them.

I-5: We tell students to clean and put the trash in the trash bag, but little of us give some explanation.

4. No Environmental Awareness Spirit.

Maybe it is because of the lack of environmental knowledge, the common people do not have the awareness spirit of the environment. The absence of the awareness spirit of the environment can be seen from these interviews.

I-1: Let the community make it green.

I-2: Why should I think about it when others don't care.

I-3: We should do it together, someone has to organize it.

I-4: I don't know, let the boss think about it.

I-5: if some people ask me to do it together, I will follow, but alone? Neeeahh...!

The lack of environmental knowledge leads people to ignore environmental health. The need for environmental education can be fulfilled through formal education. Environmental education can be imparted at the primary school level. in this level, the emphasis should be made mostly in building up awareness (Bhatia & Bhatia, 2013).

5. No Instant and Direct Impact on oneself.

It is natural for people to realize something when it breaks them. And they will ignore when it does not hit them hard. Some studies have found that greater objective knowledge is associated with more risk behavior and lower risk perception (Burrati & Allwood, 2019). The common people tend to underestimate something that does not bother them or give them troubles, but they will take serious attention when bad things happen and cause a lot of damages or financial losses. These are indicated by the following statements from the interviews.

I-1: it won't affect me. Do not influence on me.

I-2: I don't feel the bad things will happen to me, even though I don't plant a tree.

I-3: it's okay, everybody dump plastics.

I-4: I am a driver, it wasting my time if I have to stop to dump trash or looking for a trash bag first.

I-5: people will take more attention when bad things happen directly to them.

CONCLUSIONS

From the study results, can be concluded that common people have not fully understood the importance of preserving the natural environment and saving the green Earth. This lack of understanding may be triggered by the lack of knowledge of the environment. The ignorance behavior might also come from the lack of knowledge of the importance of the environment.

The minimum of government information also could drive the ignorance behavior of common people, this doesn't mean that government does not spread the information but maybe the information they announce was only for educated people not to the lower level people or to under-educated people since in Indonesia there are still many people who could not enjoy the luxury of higher educations especially those who live in the rural area.

FUTURE RESEARCH

This study contributes to the environmental management to understand the resident's perception of saving the environment or green Earth and the factors of why people ignoring environmental health. Furthermore, the research findings will help the environmentalist develop the models to 'awakening' the awareness of people to the green environment and make the right action of conserving nature. The environmental awakening must happen at the very early stage of life, therefor the environmental education must start at the school level, in the very early brain development stages of an individual, so it remains as a fundamental learning and aspect that comes into every step of that individual.

Future research is very encouraged to uncover the bottom line of people's behavior of damaging natural environments. Future research of people's behavior concerning the environment should take a broader setting and more participants from the various background to get more global and general results.

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REFERENCES

Religions and Environmental Protection. (2018). Retrieved 03 27, 2020, from UN-Environment Programme: <https://www.unenvironment.org>
Definition of environment. (2020, 02 24). Retrieved from [william-webster.com: https://www.merriam-webster.com](https://www.merriam-webster.com)

- Natural Environment - Wikipedia. (2020, February 15). Retrieved from wikipedia.org: <https://en.m.wikipedia.org>
- Agencies. (2019, September 24). Indonesia's Forest Fire Putting 10 Million Children at Risk. *The Guardian*, p. 1. Retrieved March 26, 2020, from <https://www.theguardian.com>
- Al-Jazeera. (2019, December 11). Forest Fire. *Al-Jazeera.com*, p. 1. Retrieved 03 26, 2020, from <https://www.aljazeera.com>
- Azhari, J. R. (2020, January 02). Kado Tahun Baru 2020 (2020 New Years Gift - Author). (F. Assifa, Ed.) *KOMPAS.com*, p. 1. Retrieved February 22, 2020, from <https://megapolitan.kompas.com>
- BBC News-Asia. (2019, September 16). Indonesia Haze: Why do forest Keep Burning? *BB News - Asia*, p. 1. Retrieved 03 26, 2020, from <https://www.bbc.com>
- Bhatia, G., & Bhatia, M. (2013). A Study of Environmental Awareness among Post-Graduate Students of Distt Yamuna Nagar, Haryana. *IOSR Journal Of Humanities And Social Sciences*, 11(5), 43-46. Retrieved 03 26, 2020, from [HTTPS://WWW.IOSRJOURNALS.ORG](https://www.iosrjournals.org)
- Burrati, S., & Allwood, C. M. (2019). The Effect of Knowledge and ignorance Assessment on perceived Risk. *Journal of Risk Research*, 22(6), 735-748. doi:<https://doi.org/10.1080/13669877.2018.1459795>
- Cambridge-Dictionary. (2020, 03 26). Ignore Definition. Retrieved from dictionary.cambridge.com: <https://www.dictionary.cambridge.com>
- Costa, K. (2019). *Systematic Guide to Qualitative Data Analysis*. Costa Qualitative Data Analysis. Akasia, Pretoria, South Africa: Global Center For Academic Research. Retrieved 10 28, 2019, from <https://www.researchglobal.net>
- Cresswell, J. W., Hanson, W. E., Cark Plano, V. L., & Morales, A. (2007). Qualitative Research Design. *The Counselling Psychologist*, 35(2), 236-264. doi:10.1177/0011000006287390
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Secon Editions ed.). (C. D. Laughton, Ed.) Thousand Oaks: SAGE Publications.
- Ebona-Abamonga, E. (2019, March). Grounded Theory Approach: Its Steps And Procedures in A Scientific Study. *International Multidisciplinary Research Journal*, 1(1), 96-105. Retrieved November 25, 1999, from <https://www.ioer-imrj.com>
- Encyclopedia, E. B. (2020, February 24). Environment - Biology. Retrieved from britanica.com: <https://www.brittanica.com>science>
- Hajam, M. E., Plavan, G., Kandri, N. I., & Faggio, C. (2020, January). Evaluation of softwood and hardwood sawmill wastes impact on the common carp "Cyprinus carpio" and its aquatic environment: An oxidative stress study. *Environmental Toxicology and Pharmacology*, 75, 103327. doi:10.1016/j.etap.2020.103327
- Hsieh, H.-F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *QUALITATIVE HEALTH RESEARCH*, 15(9), 1277-1288. doi:10.1177/1049732305276687
- Khan, M. M., & Al-Hilali, M. T.-u.-d. (2011). *Interpretation of The Meaning of The Noble Qur'an In The English Language* (Revised Edition ed.). Riyadh, Kingdom of Saudi Arabia: Darussalam Publisher and Distributors.
- Kulin, J., & Seva, I. J. (2019, May 02). The Role of Government in Protecting the Environment: Quality of Government and the Translation of Normative Views about Government Responsibility into Spending Preferences. *International Journal of Sociology*, 49, 110-129. doi:10.1080/00207659.2019.1582964
- Newman, I., & Benz, C. R. (1998). *Qualitative Quantitative Research Methodology: Exploring the Interactive Continuum*. Carbondale & Edwardsville, Illinois, USA: Southern Illinois Press.

Parker, L. (2018, June 20). We made Plastic. We depend on It. Now We're Drowning In It. National Geographic Magazine, p. 1. Retrieved February 20, 2020, from <https://www.nationalgeographic.com>

Phimphanthavong, H. (2013). The Impact of Economic Growth on Environment Condition in Laos. International Journal Business Management Economic Research (ijbmer), 14(5), 766-774. Retrieved 03 26, 2020, from <https://www.ijbmer.com>

Thoha, A. S. (2019, September 12). Melacak Kabut Asap di Indonesia. kompasiana. Retrieved February 22, 2020, from <https://www.kompasiana.com>

Wikipedia - JzG. (2019, February 07). Ignorance - Wikipedia. Retrieved from [wikipedia.org: https://en.m.wikipedia.org](https://en.m.wikipedia.org)

Xu, H., Fu, Q., Yu, Y., Liu, Q., Pan, J., Cheng, J., . . . Liu, L. (2020, February 31). QuNTIFYING aircraft Emissions of Shanghai Pudong International Airport with Aircraft Ground Operational data. Environmental Pollution Science Direct, 261(February), 114-115. doi:10.1016/j.envpol.2020.114115