93401

934010

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SUPERVISOR'S USE ONLY

OUTSTANDING SCHOLARSHIP EXEMPLAR

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Scholarship 2018
Geography

2.00 p.m. Wednesday 21 November 2018
Time allowed: Three hours
Total marks: 24

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

Pull out Resource Booklet 93401R from the centre of this booklet.

Carefully read the instructions on page 2 of this booklet.

Answer ALL three questions in this booklet. Each question is worth 8 marks.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–24 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Question	Mark
ONE	
TWO	
THREE	
TOTAL	/24

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INSTRUCTIONS

The materials in the resource booklet will enable you to become familiar with the theme and contexts of this examination: **Fresh water in a geographic context**.

Your answers to ALL three questions must incorporate a wide range of case studies from around the world, as well as information and ideas BOTH from the materials provided in the resource booklet and from your studies in geography.

Information to answer any question can be taken from any resource. Key ideas should not be repeated in your answers to different questions.

Space for planning has been provided to help you prepare your responses. The questions on page 3 are repeated on their respective planning pages.

QUESTION ONE

Critically evaluate the importance of different geographic processes that have led to issues related to quality of freshwater supplies.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication
- relevant original and/or effective visuals, such as maps, graphs, and diagrams.

Use page 4 to plan your ideas, and begin your answer on page 5.

QUESTION TWO

Perspectives are bodies of thought, theories, or world views that shape people's values.

Apply a range of perspectives to critically analyse the impacts of freshwater issues on people.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication
- relevant original and/or effective visuals, such as maps, graphs, and diagrams.

Use page 10 to plan your ideas, and begin your answer on page 11.

QUESTION THREE

Considering future global development, can we ensure fresh water sustainability? Discuss.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication.

Use page 16 to plan your ideas, and begin your answer on page 17.

QUESTION ONE

Critically evaluate the importance of different geographic processes that have led to issues related to quality of freshwater supplies.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication
- relevant original and/or effective visuals, such as maps, graphs, and diagrams.

PLANNING

- Growth ↑ 10 b
- Migration
- Pollution
- Climate Change

PROBLEM
↓
POPULATION GROWTH
↓
LVL

Begin your answer to **Question One** here:

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There are countless ways As with any great issue plaguing planet earth, the problems hindering the earth to do with freshwater supplies and its severe shortage around the globe do not have one, individual, specific root cause. Rather, it should be seen that there are a vast array of potential causes and geographic processes that have contributed to the overall makeup and significance of this issue. However, while it is true that there is no one, overwhelming geographic process, it should also be posited that the process of population growth appears to be the most significant of those which could be considered.

~~There are ultimately four geographic processes~~
~~The issue with freshwater~~
~~What makes population growth the most significant~~

Before deciding the geographic processes that have gone into the formation of the freshwater crisis, we first have to identify what, in fact, it is. The simple answer is that there are too many people on earth and not enough freshwater to go around. Despite 70% of the earth being made up of water, just 0.007% of that is both freshwater and accessible to humans. Because of this, in 2025, two-thirds of the world's population may face freshwater shortages. This of course is significant because of the prevalence and

importance ~~with~~ that water maintains within our society — we use it for everything: health, recreation, and hydration immediately come to mind.

~~With this in mind~~ With all of this in mind, it should be obvious as to why population growth is the most significant geographic process in regards to the freshwater crisis. ~~Since~~ Because of the aforementioned 0.007% figure, our supply of water as a society has stayed practically the same since the 1950s. Since the 1950s, however, our population has nearly doubled in size, representing a huge, drastic disparity between water supply and demand. This will only get worse into the future, as well, with population growth remaining constant whilst we search for alternative methods in acquiring freshwater. According to the resource, the world's population by 2050 will hit 10 billion. On top of this, the world's urban population, ~~which is~~ ~~currently~~ will nearly double to 6.3 billion. Meanwhile, because all humans require water simply to survive, the global ~~for~~ freshwater demand will rise by 55%. Should mankind not find any alternative water sources its obvious why population growth is a beyond significant geographic process ~~that~~ that will only get more significant into the longer-term as time rolls on forward and the population continues to rise.

→ that has helped to curse the freshwater shortage

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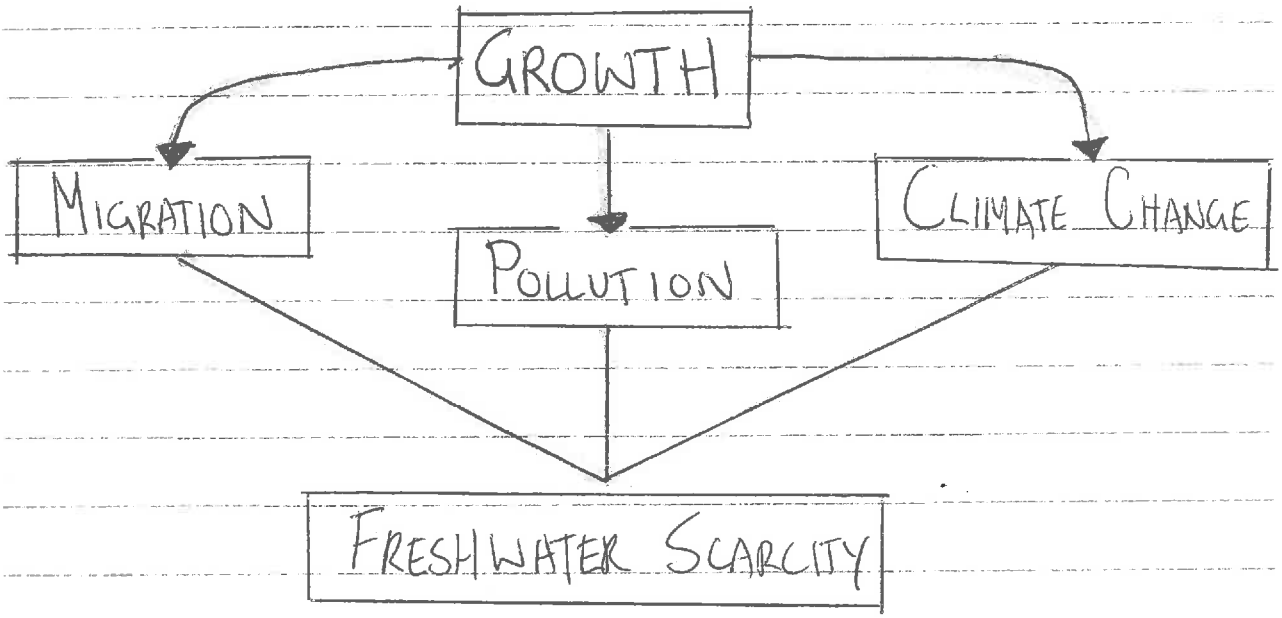
The reason why population growth is the most important of all influencing geographic processes however, doesn't necessarily lie in the simplicity of supply and demand. It's also because of population growth's influence over other potential contributing geographic processes. The flow diagram below helps to explain this:



While growth is a contributing geographic factor and process to freshwater scarcity by itself, it also acts as a catalyst for other main causal processes, such as migration, pollution, and climate change.

Take migration as the prim example of this phenomenon I am describing. Migration from rural areas to city areas has purportedly led to 40% of urban growth stemming from rural migration. This, in turn, necessitates the need for

urbanisation and thus intensifies the demand for fresh water. On top of this, with increasing urbanisation rates, the reclamation of swampy lands is ~~exacerbated~~ exacerbated, as is the paving of city streets, with both reduce the areas capable of naturally replenishing aquifers. ~~Unfortunately~~ Clearly, migration is a significant cause, but much of this rural to urban migration can be put down to the population growth of the ~~urban areas~~ rural areas, as the resource states "migration is spurred, in part, by rapid population growth in the countryside." So although migration is clearly a factor by itself, much of the geographic process can be put down to population growth. ✓

The same can be said for both pollution and climate change. The pollution of fresh-water supplies like the Ganges has led to the lowly figure of just 0.07% of water being both fresh and accessible. Although water in the Ganges is very much accessible, it is not drinkable to any degree, with the "bacteria found in the river now almost 3000 times more than the WHO deems as safe." On top of this, climate change is expected to dry up those valuable accessible freshwater sources, as the UN Intergovernmental Panel on Climate Change likely to cause a 20% reduction in renewable freshwater sources. ✓ Both of these are clearly long-term, significant processes.

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For both of these geographic processes, howev population growth plays a significant role. Increasing populations means increasing rates of consumption, which obviously lead to increases in both pollution and increases in greenhouse gas emission as a result. This is just logic. Therefore, it is clear to see how population growth plays a role in both these geographic processes.]

While the fresh water shortage is caused by a number of hugely significant, long-term geographic processes, like migration, pollution, and climate change. However, there is one causal link between all three, which is clearly population growth. This makes it the most important of all potential geographic processes contributing to the water crisis.

7

QUESTION TWO

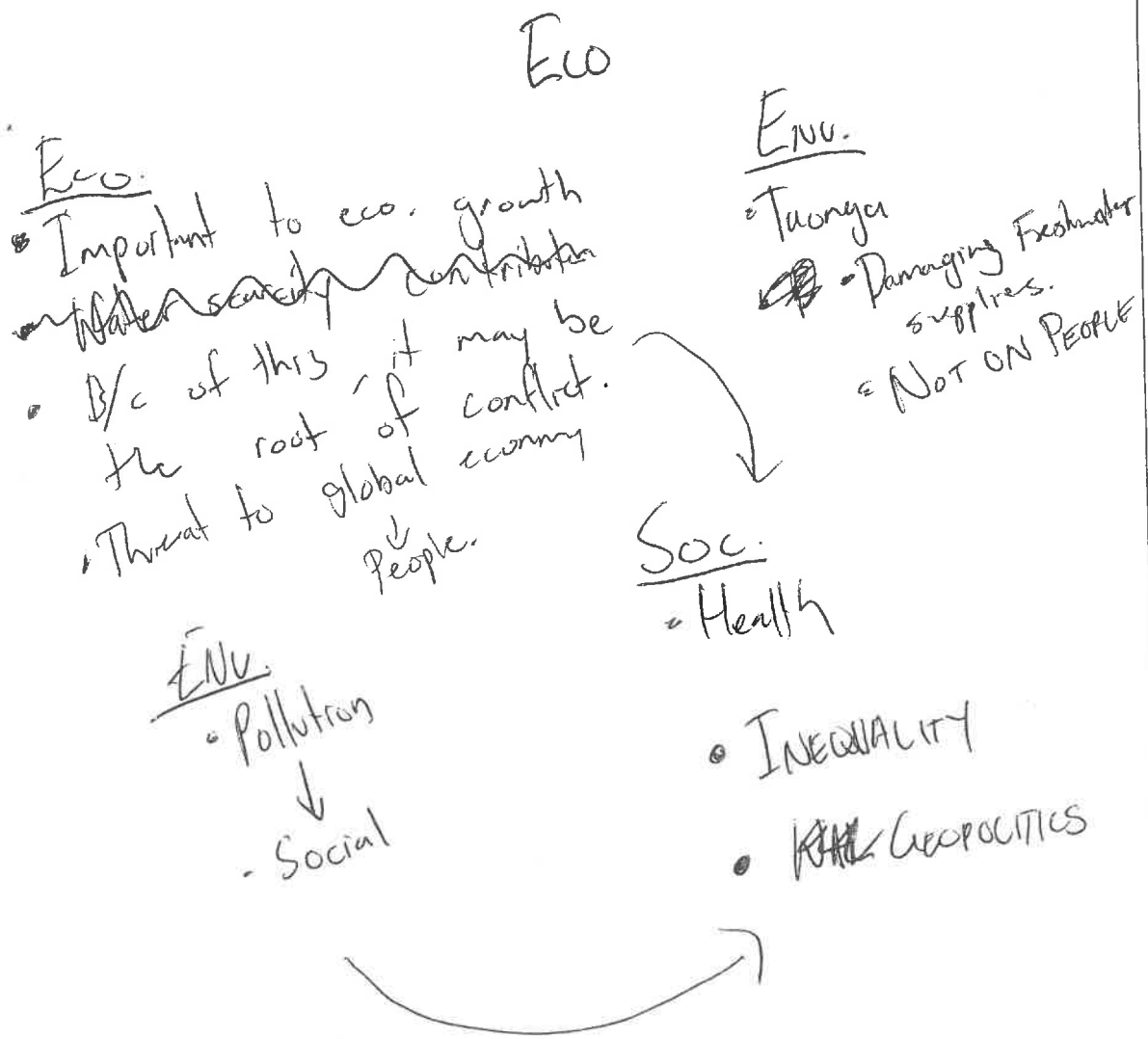
Perspectives are bodies of thought, theories, or world views that shape people's values.

Apply a range of perspectives to critically analyse the impacts of freshwater issues on people.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication
- relevant original and/or effective visuals, such as maps, graphs, and diagrams.

PLANNING



Begin your answer to **Question Two** here:

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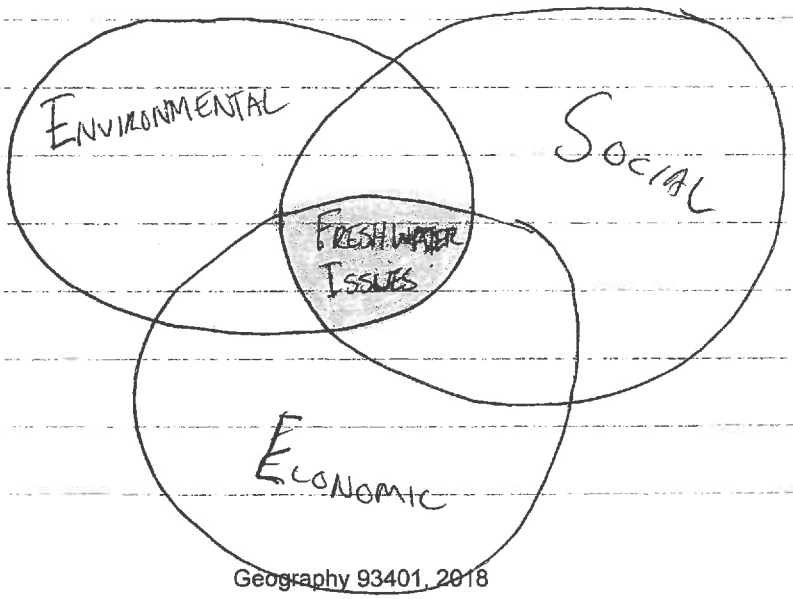
No matter what anyone says, freshwater issues are by no means a simple, one dimensional problem. Instead, freshwater issues are multifaceted and, in looking at these issues through the lenses of multiple different perspectives, it is clear that, while these perspectives are all influenced by different values, they are all interlinked. Because these perspectives are all linked, there is no perspective that is better than any other, but merely each perspective looks at the issues arising from freshwater from a different angle. A picture of the true, real problems surrounding freshwater is made up of all of these perspectives

When talking about the perspectives surrounding freshwater, there are three overarching perspectives that can be used as umbrella terms for each individual perspective. These are: social, environmental and economical. Although they may sound different, they all link together to make up the freshwater issues puzzle:



ASSES USE

Economic ~~ess~~ perspectives are perhaps the simplest, and easiest to understand. From an economic perspective, water is an incredibly valuable commodity, especially in the modern world, where rising populations are ~~equating~~ dwindling water supplies. With this in mind, water has been labelled "the next oil", which dominated economic conversations throughout the 20th and early part of the 21st century. When looking at freshwater and, particularly, its scarcity, someone who values the economic well being, of the world, their own country, and themself would be incredibly concerned with the issues surrounding freshwater. This is because freshwater scarcity has the potential to ruin many national economies. A prime example is found in the USA, China, India, and other countries heavily dependent on the agriculture industry. ~~With water coming under threat~~, Agriculture requires unsustainable fresh water use for its very existence as an industry in most countries, thus water scarcity could deplete these countries' ability to produce crops on farm, thus affecting their ability to both provide food and also their ability to provide sustainable income. Individually, people are impacted by this as well, as economically, prices for products such as soya beans are rising to a record highs due to the ~~depletion of supply~~ growing inability for the agriculture industry to meet demand. ~~Clearly, from our economic perspectives~~ With this not being the case in solely agriculture,

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these price hikes and national economy depletion are likely to continue to occur for the foreseeable future in a wide variety of industries.

Economically speaking again, because of the freshwater shortage's impacts on the economy and on the average Joe's wallet, water has the potential to start ~~discovery~~ conflict. While it hasn't occured yet, because of water's perceived economic importance, it is likely that water will cause civil unrest, lighten geopolitical tensions, and influence regional stability. Those countries upstream, for instance, have the ability to control water supply, which could lead to land wars. Looking from an economic perspective, this could definitely occur, while looking from a social perspective, these effects ~~have the~~ again are hugely significant, showing off the aforementioned linked nature of these perspectives. Socially speaking, for those who value human life and their peers and family, the potential result of war is hugely troubling and significant to them. Lives could be lost, families could be separated, and generational shifts could occur, displaying these effects' importance from a social perspective.

Those coming from a social perspective don't find themselves limited to finding

significance in potential wars, either. Socially speaking, the freshwater crisis has unlocked extreme social tension. Inequality, for example, is a huge effect of freshwater. Figure 17 of the resource booklet displays this inequality between countries, as freshwater is not handed out to countries evenly, for obvious, logical reasons. However, there are other inequalities that exist that have been born out of the importance of freshwater, such as differences between the rich and the poor, (where the rich, especially in developing countries often receive the only protected water) and men and women (again, in developing countries, the burden for collecting freshwater falls disproportionately on women). These inequalities that exist may not be able to be solved, but regardless, have the potential to cause extreme social unrest.

The main impact of freshwater from a social perspective, however, lies in the health defects arising from unsafe drinking water. Those who value their social beliefs are of the belief that the lack of freshwater has the potential to harm humanity as we know it. Take the Havelock North campylobacter outbreak as evidence of this, where 5000 people became sick due to poor drinking water. The main cause of this, is of course pollution. This is where

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the environmental perspective of freshwater is linked in, of course. Those holding this perspective value our natural environment above all else. With this in mind, because of this, they believe the pollution of freshwater through things like nitrogen leaching, and agricultural intensification are the most important issues arising from the freshwater debate. These people value the well-being of the environment and the protection of our environment as taonga above their own interests socially and economically.

Although the differences in perspectives seen in the freshwater debate leads to different things being valued and prioritised and different impacts being viewed as more significant, a clear overlap exists. This overlap is obvious and can be seen to all, meaning that objectively, no perspective is more significant than another.

6

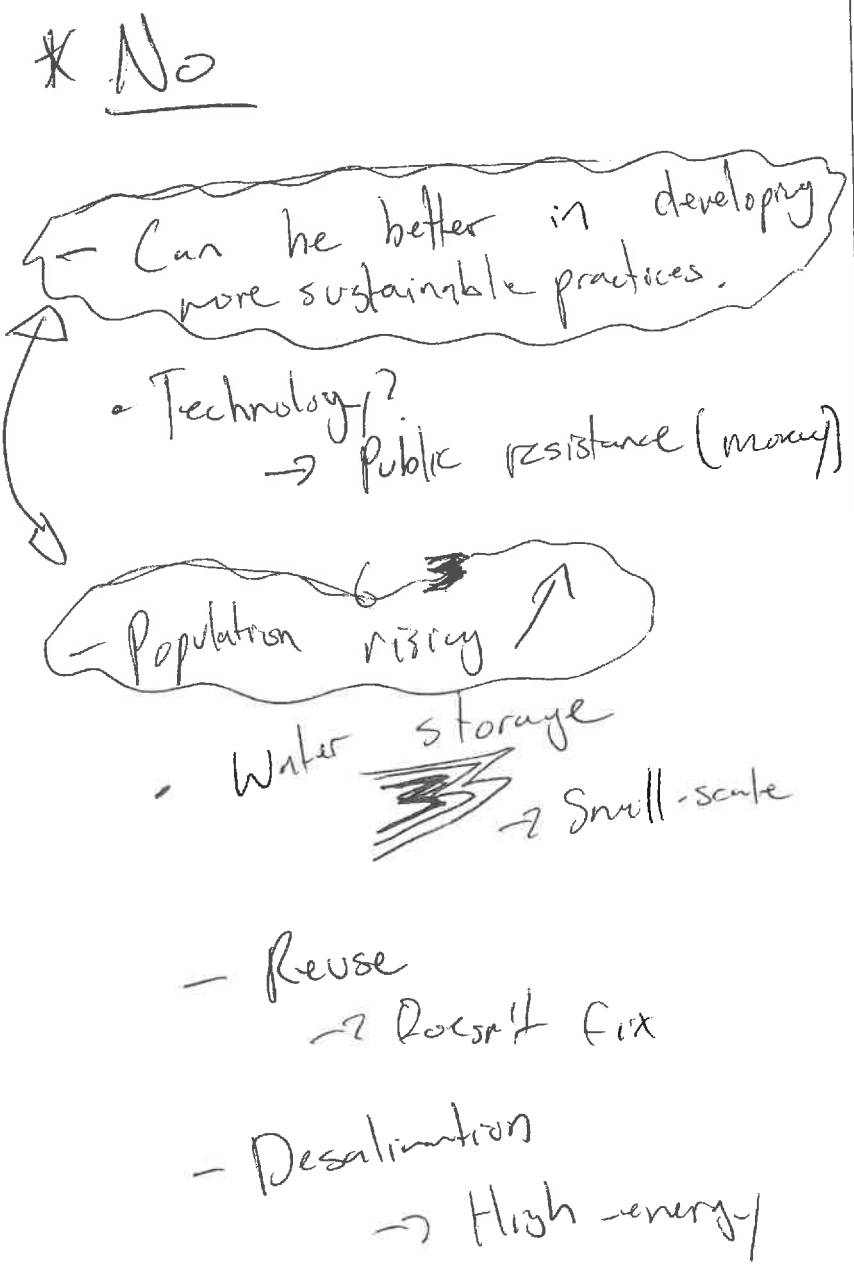
QUESTION THREE

Considering future global development, can we ensure fresh water sustainability? Discuss.

Your answer must include:

- specific information from the resource booklet
- knowledge and insight you have gained from your studies in Geography
- convincing communication.

PLANNING



Begin your answer to **Question Three** here:

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At the risk of sounding overly morbid, the ultimate answer to whether or not we can ensure fresh water sustainability is a hard no. While there are multiple processes such as technological solutions, water storage, waste water reuse, and desalination that offer plausible methods of ensuring water stability, they all have individual pit falls. The only way that we as a society can help to ensure water stability, truly, is to be better and smarter in developing more sustainable practices, whilst continuing to search for other solutions.

As alluded to, all four of the main proposed sustainability solutions have significant pitfalls. Taking technological developments as an example, there are clear benefits to technologically pro-active solutions. In barren, desert laden areas like Arizona and Peru, as an example, technology has been developed to extract water from humid air. Technology has the ability "to end the plight of two billion people," who live in water scarce areas according to the UN. However, despite these huge positives, the ultimate downside is that significant investment is required to afford these technological advancements. In a world dominated by nationalistic identities and political manouvering, this investment is unlikely to occur. Thus, despite technology's ability to

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ensure fresh water sustainability, we cannot ensure this - someone has to pay for it.

Another popular solution is water storage. Again, this has obvious benefits. According to the resource, 1 cm of rain can yield up to 850 litres of water. On top of this, water storage, unlike technology, has incredibly low costs associated with it that can be applied all over planet earth. However, this method obviously requires rain - something many countries short on freshwater do not receive a lot of. This makes this solution, once again, unable to ensure fresh water sustainability for the globe.

The reuse of waste water and desallination have both been offered as solutions, too. Reusing waste water offers the ability to retain and conserve freshwater supplies in a greater manner, while desallination provides the ability to turn salt water into drinkable, fresh water. The trend here though, is once again evident, as they show obvious downsides. Reusing waste water should be considered a small-scale solution, as it doesn't create fresh water, but merely reuses waste water as energy, not creating a new water supply. Meanwhile desallination is a very high energy process that may not be

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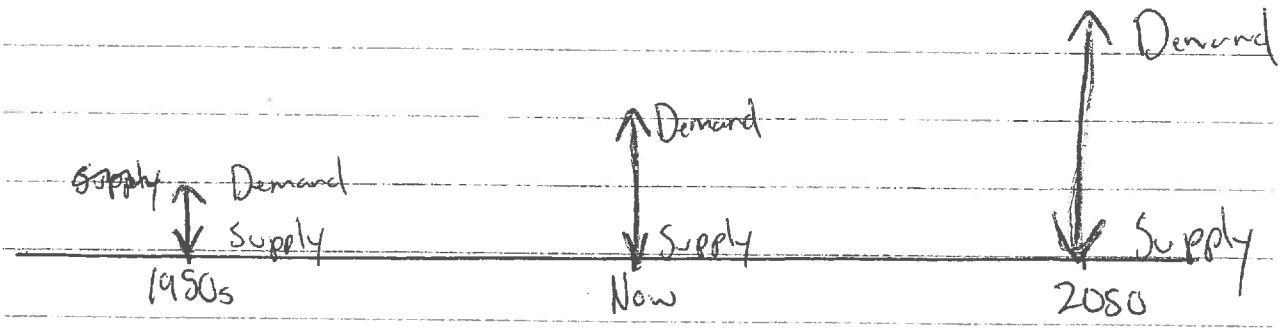
feasible to achieve & in the long-run, especially with our current lack of renewable energy resources. Once again, while these solutions offer positive outcomes for society in regards to freshwater, neither can ensure water sustainability into the long-run without any reasonable doubt.

Because of these flaws, there remains serious, lingering doubt in regards to the future of water sustainability. Not only is there no clear, obvious, fool-proof, failure-ridden solution & that will magically solve this epidemic, the population will only increase from here on out. Because of this, the margin between our required water supply and our current supply will only increase, as shown by this visual:

DISPARITY BETWEEN WATER SUPPLY & DEMAND



The growing rate of the population further into the future of our world will only increase the need for sustainable water practices.

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While none of the solutions analysed quote unquote 'solve' water sustainability, a mixture of the four may. In reducing the frequency and prevalency of the four alternative solutions, we may be able to decrease the downsides like the high investment costs, ~~synthesize~~ high-energy costs, and lack of rain in some areas that come with these aforementioned solutions.

~~Alternatively~~ In using a combination of these flawed solutions, on top of changing our attitudes toward unsustainable water use, we could buy our world enough time. In being smarter about how we use water and doing things individually, like monitoring our own personal freshwater use, we can reduce the gap between the demand and supply that seemingly is destined to increase endlessly into the future.

If we do the small things and use a combination of solutions, we can decrease our shortage in the short-term, whilst simultaneously ~~pro~~ enabling us to delay the inevitable water crisis, giving us time to find the glorious, magical solution to these freshwater issues.

However, right now we do not have

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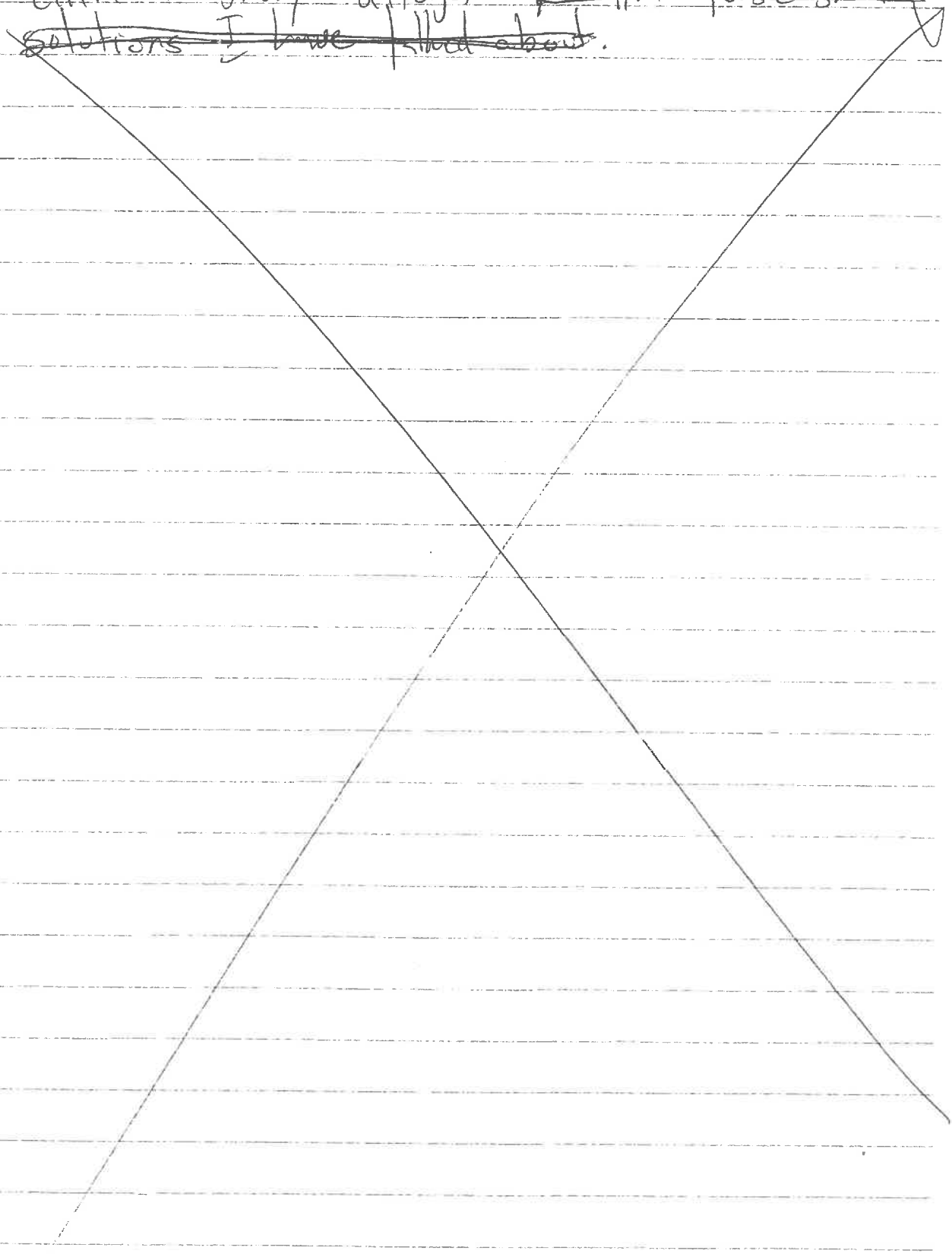
that solution. We cannot ensure fresh water sustainability in the present. However in the longer term, we may see a different story altogether, ~~with those smaller solutions I have talked about~~.



7

Outstanding Scholarship Exemplar 2018

Subject	Geography	Standard	93401	Total score	20

Q	Score	Annotation
1	7	A strong introduction that sets up the argument. The answer is concise. An excellent geographic understanding and use of terminology are demonstrated throughout the answer. There is clear critical evaluation and justification throughout. Although arguably too simplistic, the visuals are referenced and strengthen the answer.
2	6	Perspectives are clearly understood and effectively used to critically analyse the impacts on people. This answer was limited by its ability to state the degree of impacts on people. The visual, although supporting the answer, was very simplistic. An effective plan helped set up this perspectives essay.
3	7	From the outset a stance was taken, helping to set up the argument. The ideas are well-considered as both strengths and weakness were discussed. Sophistication terminology was used throughout. The use of extra evidence outside of the resource booklet would further strengthen the response.