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# THE ETHICS OF WATER AS A SCARCE RESOURCE IN CAPE TOWN

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A TRAGEDY OF THE COMMONS



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### **An Illustration:**

Let us picture the following scene: there is a small dam near a village. The dam (commons) has 12 fish in it (maximum capacity and finite resource). There are four fishermen in the village (consumers). The gender of the fish is irrelevant, and that the fish can potentially mate and have one baby that will grow to full size in one day. How many fish can each fisherman catch per day to sustainably harvest fish?

The answer is one. If each fisherman catches one fish per day, that evening, the eight-remaining fish will mate and have one baby so that there are 12 fish again the next day.

A tragedy of the commons arises when one of the fisherman decides to catch more than is sustainable. If one of the fishermen were to catch two fish, it would lead to 10, then 7, then 3 and eventually no fish in the following days.

### **The Definition:**

The tragedy of the commons - a term used in social science to describe a situation in a shared-resource-system, where individual users act independently and according to their own self-interest. Their actions are contrary to the common good of all users because of the depletion or spoiling of resources through the individuals action. (Wikipedia, 2018)

### **The Dilemma:**

Garret Hardin, in his article, “The tragedy of the commons” qualifies his subject of discussion (population growth and problems) as having no technical solution. Rather, he states that the solution requires a fundamental extension into morality. (Hardin, 1968)

Extension can be defined as, “a part that is added to something to enlarge or prolong it”.

Morality, or rather ethics, is seen as the outcome of reflecting on the meaning on the concepts of “good” and “bad” as well as on a range of ideas about what confers value or disvalue on human action. (Moodley, 2011)



## **The discussion:**

Is the water resource in Cape Town finite or limited? Is there evidence of mis-usage of the water resource in the Western Cape? Are there no technical solutions? What is the fundamental extension into morality that we need to solve the problem?

### Is water a finite resource?

When we look at planet earth, we have a fairly set amount of resources. The earth is, to a large extent, a closed ecosystem. Humanity has not been able to develop beyond this circuit - especially concerning water supply. We have not been able to create water out of a quantum vacuum, nor have we been able to harness water from other planets – it is also unlikely that it will happen within the next few years.

To add to a finite resource, we now have global warming. Global warming is the reason for shifting rain patterns in cities like Cape Town and Adelaide. Statisticians paint a lifeless picture - according to the South African Weather service, May 2017 was a turning point in the current water crises when the Cape only received 8% of the long-term average rainfall for the month. (Zille, 2018)

The earth can renew itself to a certain extent, but global warming is teaching us that we have long since passed the place where the earth can compensate for human ignorance. Understanding Cape Town as a system with resources within the global ecosystem helps one to understand why Cape Town is experiencing the current water crisis.

Cape Town is facing a decline of a finite resource (water), while an increasing population size (World Population Review, 2018) is demanding more water. We cannot satisfy an infinite need (growing population) with a finite resource. Ironically, our actions in water usage betrays a scary mindset in which water seem to last forever.

### Mismanagement of the water resource

Cape Town has a limited (or rather dwindling) water resource. Yet the city and its inhabitants seem to be mismanaging and abusing this precious life source.



If political claims are anything to go by, Western Cape Premier Helen Zille boldly stated on twitter that “Some of us are still using way too much water. Let's pull together as if our lives depend on it. Because they do.”

The statistics released by the Western Cape government tell a similar story. To use recent figures, when looking at the water usage of the last month of March, water usage by Capetonians hit 522 million litres for the week. This is 72 million litres more than the goal set by local authorities if the Cape is to avert a day zero. (Pitt, 2018)

To add fuel to the inferno, the South African Water Caucus released a damning report in November 2017, showing the dysfunction of the national Department of Water and Sanitation.

“The Department of Water and Sanitation's financial management systems are in disarray with cases of double invoicing, inflated payments to consultants, abuse of procurement processes and irregular expenditure for the department and water boards of R4.5bn in the last financial year. This emerged during a briefing on Tuesday by the Auditor-General (AG) and the national Treasury to Parliament's Portfolio Committee on Water and Sanitation and the Standing Committee on Public Accounts.” (Gosling, 2018)

How bad was this dysfunction of this department? They received the worst audit report in government. The same department are responsible under to constitution to secure bulk water supply and augment it properly. (Zille, 2018)

The evidence is damning – both Capetonians and the government are responsible for the mismanagement of finite resources.

#### [Why maximization will not work](#)

If the problem is mismanagement of a finite resource, the obvious answer should be to better manage and steward the resource? Maybe we should invite premier Helen Zille to sit in on a lecture of antibiotic stewardship?

Maximization, simply put, is to get the greatest number of good for the greatest number of people. The solution seems simple – maximize our water usage. Rule out any corruption and stamp down on those using too much water. This logic however, has two flaws. One, it is unable



to account for all the different variables, and two, maximizing resources for people limits freedom.

The ocean is so big, we can de-salinate it for drinking water? Maximization is the easy answer! This common argument seems to be the opinion of the *vox populi*. In a recent article by Helen Zille, she describes how a task force assembled by the local authorities eavesdropped on Adelaide, Australia. Adelaide is also situated in a peninsula like Cape Town and, at a similar latitude, suffered a similar water crisis as result of global warming. With predictive modelling, the authorities planned for and implemented billions of dollars to build various desalination projects. It seemed almost unfair when the rains unexpectedly returned – resulting in the Australian government paying for water that they did not need. Unguided and uninformed multi-million investments in a situation with this many variables is not the answer to the current crises.

In Hardin's article in the Science Journal, he makes an interesting remark. He points out that as a species, humans need energy to function. The human body needs between 1500 to 2000 calories per day to maintain itself. Any extra usage of calories is defined as work calories. This includes actions like studying, designing, swimming, surfing and vacation. (Hardin, 1968)

If humans are to maximise calorie intake however, we would lead very minimalistic lives. No great invention would happen, no Olympics would be held, and no fun would be had. Equally, in a finite resource environment, our maximisation of the resource (water) will eventually (with increasing usage, mismanagement and population growth) lead to very low quality of life or freedom.

The water supply is dwindling, yet most of our answers are technical. Corporate companies all over the peninsula are drilling bore holes to access water and become independent of the municipal water supply. It almost seems as if these companies can escape the finite environment we find ourselves in.

The question is glaring - what will happen when the water table dries up in 10 or 50 or some 100 years? The technical answer of maximization is inadequate. In a finite resource environment, mathematics will only help us to describe the maximal usage of our resources in addressing the situation. One day it will also tell us that there is no water left.



Maximization only requires a change in water management, demanding little in the way of change in human values or ideas or morality. I am not disregarding the use of technical solutions. It does however seem that the technical solutions are only there to buy us a bit of time.

#### Finding a shared identity

According to Hardin, “The morality of an act is a function of the state of a system at the time it is performed.” The current misuse of the water resource reflects us, the people living in Cape Town. Emile Durkheim, who some refer to as the father of sociology wrote that a collective conscience is the moral beliefs held by a collective. It can almost be compared to a culture of the time.

Two questions arise: One, what does a Cape Town culture (collective conscience) look like that will sustainably use the water resource? And two, how do we create a culture or mindset in Capetonians that is able to triumph over crises like the one we find ourselves in?

Although Hardin, in his article, makes the argument that an appeal to human conscience is self-limiting and even pathogenic. I would argue however, that although this statement might be true for the population problem, it is not completely irrelevant to situations like the water crises in Cape Town.

Allow me to describe the events of 4 June 2015. There was a sudden crash, then a bang and a pop in central London. Startled passers-by looked up to see a 12-tonne double-decker bus resting on a unicyclist’s leg. As people started to rush to the scene, a peculiar situation unfolded...

Five or six strangers, stirred by the pain of the writhing victim, sprang to action and tried to lift the 12-tonne bus. What was more peculiar was that other bystanders started to join in. A few seconds later, around one hundred civilians from all walks of life pulled together to lift a 12-tonne double decker bus so that Anthony Shields could be dragged out from under the heavy wheels and survive the ordeal.

Similar examples of spontaneous teamwork amongst strangers are rare to find, yet the stories cannot be ignored. In August 2014, passengers combined their strength to tilt a train and free a



man who slipped on a subway. In April 2015, a similar event happened in Moscow, when a 70-year old man was freed from a train, also after slipping.

According to Dr Mark Levine, a professor of social psychology at Exeter University, the ‘bystander effect’ can stop you from helping others. It seems that the presence of others (as shown in the murder of Kitty Genovese) seems to be the inhibiting factor in one of the most reproduced findings of social psychology.

He also explains that the opposite is possible. If you can build a shared identity, it is possible to have positive group behaviour and intervention in times of crises. (Heyden, 2015)

Simon Sinek, author of New York Times best-seller, “Start with Why” seems to agree in his most recent book, *Leaders Eat Last*. He describes in detail how the main thing that makes marines so effective in warfare is what he dubs their; ‘Circle of Safety’. It is a shared identity where there is mutual trust within a group. He also writes that the opposite is true – a lack in this circle of safety leads to paranoia, cynicism and self-interest. (Sinek, 2014)

The following tale by Aesop, who lived in the sixth century B.C. showcases this circle of safety well. “A Lion used to prowl about a field in which Four Oxen used to dwell. Many a time he tried to attack them; but whenever he came near they turned their tails to one another, so that whichever way he approached them he was met by the horns of one of them. At last, however, they fell a-quarrelling among themselves, and each went off to a pasture alone in a separate corner of the field. Then the Lion attacked them one by one and soon made an end to all four.” We need to protect the circle of safety and build a shared sense of identity to overcome crises.

These stories show that, almost against expectation, humans have the capacity to work together to survive immense crises. When most of us look at a 12-tonne bus, few would think that it would be possible to lift it. Most of us would mock the idea. The events of 4 June 2015 tell a different story. Humanity might be able to face the goliath water problems of our age, problems that only in retrospect will seem mathematically of technically solvable.

A strong shared sense of identity is needed to face the looming crises. A shared identity can draw people from different walks of life together. The businessman, the lawyer, the doctor and



politician need to look each other in the eye, and together delve for the extension in morality needed to solve the current crises.

#### Introducing a steady state economy

A fundamental extension into morality will begin with the humility to acknowledge that we have almost completely exhausted the water resource we have, and that the time for drastic change is at our doorstep.

In his book, *Steady-State Economics: The economics of biophysical equilibrium and moral growth*, Herman E. Daly advocates that a steady state economy is both necessary and desirable.

A steady-state economy is an economy consisting of a constant stock of physical wealth (constant capital wealth with no economic growth) and a constant population size. Both stocks are to be maintained by a constant flow of resources through the system. This flow of resources refers to the durable management of resources that are available to the system – not too much and not too little.

Daly argues that an economy is a subsystem of the earth's finite and non-growing ecosystem. This implies that out of necessity, any subsystem of a fixed nongrowing system must also at some point become nongrowing. (Daly, 1977)

His first book on the topic is divided into two parts. In the first he looks at the benefits of a steady state economy in comparison to a growth economy (neoclassical economics). He argues for three fundamental economic changes: control of births through transferrable licensing procedures, depletion quotas on scarce resources and an income ceiling. In the second part he aims to refute arguments for maintaining a growth orientated economy. (Lackznjak, 1978)

#### Unsteading the steady-state economy

This paradigm seems completely opposite the western capitalistic worldview we find ourselves in. There are many who mock the idea of a economy with no growth, and common arguments used against a steady-state economy are the role of technology, resource decoupling and the rebound effect, declining state economy, capitalism without growth and ideas of asteroid mining.



Although There are various counter-arguments and debates on these topics, I found an article by Elke Pirgmaier (Postgraduate Researcher in economics at Leeds business school's applied Institute of Research in Economics) most interesting.

In the article, Pirgmaier critiques Daly's arguments and reasoning. She dismisses his arguments for steady-state economies as "an attempt to squeeze neoclassical economics into a biophysical and ethical corset."

She concludes that steady-state economics does not lead to a radical departure or improvement on neoclassical theory (the theory that Daly attempted to depart from). She states that newer and more progressive ecological economic thinking is needed. Although these statements are almost like being fired from the business that you started, it speaks multitudes when Pirgmaier concludes that a new theory is needed to understand and act upon the imminent social and ecological crises. (Pirgmaier, 2017)

#### Ecological Economics

Ecological economics is a field of research that aims to address the interdependence and coevolution human economics and natural ecosystems. According to ecological economist Malte Faber, ecological economics is defined by its focus on nature, justice, and time.

This theory might be part of the extension in morality that the situation demands. There seems to be balance between a capitalistic profit driven economy with too little regard for natural resources and Marxism which believes that based on technological optimism, the human race would be able to overcome any resource scarcity it encounters.

#### Application by law

If we are willing to think outside the box, we should also be able to legislate outside the box. I agree with Hardin when he says that it is necessary to legislate temperance.

I recently had a conversation with a lecturer at the university regarding this topic. He mentioned that when he travelled in Taiwan, there was a sign on the subway that ordered non-pregnant passengers to stand and give up their seats for pregnant counterparts.



This seems to be a good moral choice - one that most people will uphold. It is a good idea to stand up and allow a pregnant lady to sit on your seat. The Taiwan administration went a step further when they legislated this act of morality through administrative law.

Giving up a seat for a pregnant lady has always seemed like a good idea. Although some people might still have been indifferent to this act of generosity, now that is a rule, the are repercussions for not upholding the moral standard of the day. The chances of a person not relinquishing their seat grows smaller, as the morality of the society might even grow deeper.

There are quotas regarding the amount of fish we catch, and few people will argue that it is a good idea to do away with the idea and allow overfishing. The time has passed to discuss whether it is a good idea to legislate good water usage – it is time to discuss to which extent it needs to be legislated.

It might even have a positive effect on water users. A decreased or “quota” amount of available water will create a sense of scarcity. This sense of scarcity is likely to motivate people to be more creative to overcome the problems we face. (Ravi Mehta, 2012) The difference is that now we are not merely trying to survive a drought, we are approaching the realm of managing the resources we have responsibly.

Capetonians need to think broadly and collectively. We need to realise that a pursuit of individualistic wealth seeking is ruining the commons, and if coupled with ongoing maximization our freedom of the commons will follow suit. It is a necessity to move to a place where we can legislate temperance and secure free the commons from exploitation.

#### In Summary

There is no problem until we acknowledge that there is a problem. If Capetonians can realise the finiteness of the water resource and that maximization is a temporary solution, we would have made progress.

If society can pull together against a common enemy in this time of trouble and create a shared sense of identity, our collective action and focus might lead us to consider theories like those of



Herman Daly. We might even find the courage to welcome the concept of ecological economics in our meeting places.

In the name of temperance, authorities might consider passing legislature governing the usage of a limited water resource – even with civil support.

The extension into morality needed to solve the common crises is immense. A re-evaluation of social, economical and political policies needs to take place if we are to avert a tragedy of the commons.

The impossible however, is many times only mathematically solvable after it has been achieved. If a community moved by empathy can lift a 12-tonne bus to free Anthony Shields, the impending water crises might push us far enough to free our minds to find the answers that will save the commons.



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