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CLIMATE, GREEN HOUSES GASES and the EMISSIONS TRADING SCHEME

1. INTRODUCTION

Soiltech was recently contacted by a fertiliser consultant/farmer expressing concerns about the impacts of the Emissions Trading Scheme on the primary sector.

The New Zealand government in association with "He Waka Eke Noa," a primary sector climate action partnership has produced two agriculture emissions pricing options as an alternative to pricing agriculture emissions as is currently set out in the NZ Emissions Trading Scheme (NZ ETS). Pricing greenhouse gas (GHG) emissions from agriculture is a stated priority of the government. Agriculture is currently the only sector excluded from the NZ ETS. In their exclusive summary, He Waka Eke Noa state that "*New Zealand will be world leading as the first country to price agricultural emissions. The Partnership is committed to designing a pricing system that ensures New Zealand's agricultural products remain internationally competitive while reducing national and global emissions.*"

In one sense the "horse has bolted" i.e. the government has already committed itself, and hence the primary sector, to pricing its agricultural emissions. The only outstanding point at issue is how this stated objective will be implemented. The He Waka Eke Noa options enable primary producers to play a part in the development of the operational pathway for the GHC emissions they will become liable for. However, it is a bit like "Hobsons choice" i.e. "here are two proposals, pick the one you like best." Or, to use a dentistry analogy, primary producers get to select which painkiller they would prefer but are prohibited from addressing the festering tooth infection which is causing their pain.

1.1 SOILTECH COMMENTS/FEEDBACK

Because the NZ ETS is a "done deal" and the He Waka Eke Noa options only concern one aspect of the scheme, our comments are most likely "too little, too late." We have no preference as to which of the two emissions options is better, but we do have some concerns about the NZ ETS.

No doubt the scheme may be subject to future amendments, so on that basis, we offer some comments.

We address two broad concerns: firstly, a few practical considerations about the scheme and secondly, from a high level perspective, we question the approach to problem solving that undergirds the scheme.

2. PRACTICAL CONSIDERATIONS

This author has already commented on climate change in a general way in a press release in a different context, and wearing a "different hat." This section discusses some practical considerations relating to the nature of the NZ ETS and its operation.

2.1 LIMITATION OF MODELS

NZ, like the rest of the world, is currently in the midst of the Covid-19 health pandemic. Recently some comments have been aired in the media about Covid-19 modelling. Models have generated predictions regarding both the numbers of infections likely within the NZ population and the severity of the impact of this disease. Some predictions have been good, but many have been wide of the mark.

Models are attempts to simplify the real world situation, often with a view to understanding it better so that plans can be formulated for some kind of future action. Models are typically constructed based on a number of underlying assumptions. These are usually stated by the modellers, but not always reported by the press - who often default to reporting "worst case scenarios." A modeller's intent can be distorted when model users focus on aspects of the model in isolation from the whole, or when they extrapolate the conclusions in a way that is not valid.

Covid-19 modelling, though no doubt complex, is a substantially simpler exercise than designing models that mimic the complex systems operative within the natural world. The degree of complexity in a single living cell is now known to be astonishing, let alone the systems operating in each of our physical bodies. But to be able to successfully mimic the enormous complexity of all the components that should be factored into a climate model seems "mind boggling." I recall many decades ago, when climate scientists were pioneering climate models, some of the necessary component parts of the "climate" could not be easily incorporated within the limitations of the modelling parameters that had been established. As a result, they were excluded. This was of course stated in the model assumptions. But, as is often the case, when the time came to report on the results of the modelling exercise, the focus was on the excitement of the predictions, with rather less attention being given to the model's

shortcomings. Like all things computing, the output generated is only as good as the information input and the integrity of the model i.e. “garbage in still leads to garbage out.”

Every part of the natural environment is exceedingly complex - the atmosphere, the oceans, and the land; let alone the interaction between these huge component parts. It’s a gigantic jigsaw puzzle of amazing complexity. And that’s before we even consider the numerous subcomponent parts e.g. the land includes topography, vegetation, soil, precipitation, let alone the human impacts etc. Each of these can also in turn be subdivided even further into numerous other subcomponent parts. Irrespective of the power of modern computers, a model will always only be a simplification of the real thing. Weather forecasters use sophisticated models to predict tomorrow’s weather. When these predictions more or less come to fruition, those using such forecasts start to believe that the weather “forecast” really does equate with the “actual” weather. But then a weather event takes place that was not forecast and this unexpected eventuality acts as a reality check i.e. weather forecasting is a “best guess” prediction based on a model. A forecast predicts what may happen; it does not determine what will actually happen!

Closer at hand, primary producers regularly misconstrue soil test results. The Olsen P test is a popular soil test that predicts the amount of plant available phosphate in the soil. But, like a weather forecast, this test is basically just another model i.e. it is a “best guess” estimation rather than an absolute determination of plant available P in a soil. Like the weather forecast, the Olsen P test is a simplified point in time snapshot which cannot take into account everything that is happening in the soil environment. Like a weather forecast, Olsen P is a helpful tool most of the time, but sometimes the results the tool generates are just plain perplexing! Models are tools. They help us to better understand the real world. But as tools, they only partially mimic the real world situation.

What’s the point? All model results should be interpreted with an informed degree of scepticism. Climate modelling is only based on a couple of centuries of data. However old the earth might be, the current data set seems like a very small sample size to be making the kind of predictions typical of climate change models. There may be enough data points to anticipate what might happen in the real world this year, or even this decade but what of next century? Just recently a news item reported that a climate researcher had recalibrated the level of expected sea level rise (downwards slightly) based on a re-assessment of the amount of ice in the world’s polar areas and glaciers. That is the point! Model predictions depend completely on: the modelling assumptions; the nature of the model; and the quality of the input data fed into the model. We sometimes say that someone “can’t see the wood for the trees.” Every model has a context. If we focus on the modelling results, without giving due consideration to the overall big picture setting, we could easily become guilty of the same error.

And of course, this same word of caution also applies to the modelling undertaken by He Waka Eke Noa.

2.2 WILL THE COSTS OF ESTABLISHMENT/OPERATIONS/COMPLIANCE BE JUSTIFIED?

The two He Waka Eke Noa Partnership options are supported by cost estimates that examine: set up costs, operational/administration costs and compliance costs. These are estimated to be in the order of $250-300 million, depending on the option being considered. No doubt these estimates have been well researched and are the very best estimates available, but how accurate are they really? After all, they are the output of other models!

Consider the cost overruns on the delayed (and as yet uncompleted) Transmission Gully roadway out of Wellington. In fact, consider the cost overruns associated with any other large scale projects e.g. the new Christchurch sports stadium. It's hard to be convinced that the same will not be the case with the implementation/operation of the NZ ETS in terms of agricultural emissions. The same is also likely to be the case with the ongoing annual compliance costs, which will be borne by both the primary producers and those who will monitor compliance.

Cost is a major consideration in any scheme/proposal. One is therefore entitled to question the merits of embarking on an emissions trading scheme at significant cost if the same is not the case in other countries, and especially the larger GHG emitting countries? Our government is implementing the NZ ETS as New Zealand's contribution to reducing global GHG emissions, but, given NZ's minuscule contribution to the overall global problem, will all the cost and effort be justified?

As a country, in one sense, this might be the right thing to do. We should try to quantify the problem. We should aspire to be sustainable. We should want to do things better. But, if other countries end up doing less than their fair share, the exercise may become either a "smoke screen" that looks like climate action, but actually isn't, or an expensive "lemon." Whatever the result, it will of course still generate some "political capital" for the government, which will no doubt be leveraged/spun in various ways, but what of those like the primary producers of NZ who will bear the costs? Hopefully they will not end up just being pawns, or even guinea pigs, in someone's grand experiment?

Of course NZ has a moral imperative, at one level, to do what we can, and to also help others to do what they can. Our primary sector can always improve the way it operates. But in the matter of climate change, it seems very clear that regardless of what we do or don't do, it will have very little impact on the global GHG problem.

It is perhaps appropriate at this point to make a comment as to whether there really is a climate problem at all? I am not a climate change denier. As a scientist, I am convinced we should gather evidence and then make decisions based on good evidence. But I do have concerns about the way that climate research operates. Climate change is a currently popular area in which to undertake research. This generally means it will end up being higher up the pecking order in terms of attracting research funding than less trendy but often equally beneficial but unfunded/underfunded research projects. Many researchers/research organisations need this funding to survive, and so, the entire process can get skewed i.e. climate change projects get "first dibs" on the limited funds available; researchers need funds to survive and thus, without them perhaps even realising it, their research projects begin to

have a bias towards affirming climate change, and so the circular research/funding merry-go-round keeps turning, resulting in the research organisations receiving additional funding and thus keeping themselves in employment.

2.3 CARBON SINKS - SOIL, PLANTS, OCEANS

Carbon sequestration is one of the buzz words associated with climate change. There is growing data about GHG accumulation in the atmosphere. But just how - and to what degree - do the other component parts function to reduce atmospheric GHG's? The soil-food-web (the organisms living in the soil/soil biota), living plants, and the world's oceans all remove carbon to some degree for certain periods of time. But the knowledge base required to make meaningful recommendations in these areas is still being quantified.

Interestingly, a recent report on research done on carbon sequestration in the world's oceans suggested that oceans may have greater capacity to remove carbon than was previously recognised. Research into shell fish showed that in the past, in times when the earth's climate was warmer than it is today, shellfish absorbed and sequestered greater amounts of carbon than is currently the case.

Trees are not the only legitimate carbon sink. Yet the NZ ETS has a bias towards trees, and certain types of tree species, but only if the woodlot concerned is greater than a specified size. Surely all trees, in all locales should be included: even one new tree planted in a domestic city garden is helping the cause! If GHG accumulation in the atmosphere is problematic, surely everything and every way to remove or minimise this problem should be considered! This includes technological intervention i.e. man-made machines to "suck" problem gases from the air.

Is the NZ ETS, as it currently stands, guilty of over simplifying the situation just to enable something to be implemented and operative? The government may receive some political kudos because "*New Zealand will be world leading as the first country to price agricultural emissions*" but wouldn't it be better to "do it right" rather than to "do it first!" If primary producers are going to be "taxed" for GHG emissions, then surely they, along with everyone else who creates a carbon sink, should obtain a credit for anything and everything that helps to minimise the problem.

A related concern here is the speed at which current agricultural land is being converted into carbon forests and in particular, the establishment of pine tree monocultures. Growing pine trees in areas less favoured to agriculture production is one thing, but if the pricing system encourages everyone to grow pine trees, what are we supposed to eat? Economic drivers should not be the only consideration taken into account when considering the establishment of a carbon forest.

2.4 IS ALL ENVIRONMENTAL DEGRADATION EXCLUSIVELY CAUSED BY HUMANS?

It is almost a mantra now that whenever there is a report about real or supposed environmental degradation, or some unusual weather or climate event, then climate change is

automatically presumed to be the culprit. Whether its hurricanes, or flash floods, or slips, or rises in sea level somewhere or practically anything, anywhere these days, apparently these are always the result of climate change! If the same message is repeated often enough, so it seems, people will quit thinking about what's really happening and simply acquiesce and conclude that "it must be so." In an age of information overload, people find it easier to passively accept what they are told, believing it is true, whether this is the case or not!

It is regularly reported and assumed that environmental degradation is the result of human activity. There is plenty of evidence to support such a conclusion, but is this always true? And to what degree is it true? Every day, in many places across the globe, volcanoes and other "natural" activities associated with the tectonic plate movement etc, emit huge quantities of gas into the atmosphere. Much of this cannot be accurately measured because of the practical difficulties and dangers associated with sampling/measuring in such situations. This includes vents along the ocean floor etc.

Similarly, just as the decay of organic material in a terrestrial setting generates methane, to what extent is methane being generated by the decay of organic material in the world's oceans?

Even environmental disasters that can clearly be attributed to human causes may not be as disastrous as is often assumed. I recall that after the Exxon Valdez oil spill in Alaska in 1989, there were dire predictions that this environmental catastrophe would devastate the affected environment for a very long period of time. Some even suggested it might never recover! But today, only three decades later, it is difficult to find even a trace of this "catastrophe." All the oil that spilled has now disappeared; either removed by initial human attempts to clean up the mess, or by natural processes - including being buried/sequestered beneath the coastal sediments.

What's the point? The natural ecosystems on this planet appear to have far greater buffering capacity to resist change and to repair damage than is typically accounted for! Could it be the case that the models/tools used to mimic these systems (cf Section 2.1), because they simplify the real world situation, have an inherent bias towards the downside? Not every reported "environmental or climate caused disaster" is actually a disaster.

2.5 MODIFYING RUMINANT DIGESTION

Ruminant animals produce methane as part of the way they digest food and convert energy from one form to another. Methane is a natural by-product of this digestion process. It may be possible genetically to select for animals and species which have a more efficient digestion process, and thus produce less methane. No doubt there are many other genetic interventions which could be considered, but at the end of the day, that is what ruminants do: they eat grass and produce methane as a digestion by-product. It's another natural process that has been taking place since the first ruminant animal walked the earth thousands of years ago.

That being the case, is it sensible to include ruminant animal digestion as part of an ETS? We human beings all produce carbon dioxide as part of our own respiration process. This is also a natural by-product. If ruminant GHG emissions are a legitimate target of an emissions trading scheme, if we are going to be consistent, should not humans also be taxed for the carbon dioxide we each produce?

Should we also be considering doing genetic work to modify the human population so that only people with more efficient respiration systems are permitted to perpetuate the species into the future?

2.6 EMISSIONS TRADING COST BENEFIT ANALYSIS

I touched on this earlier (cf Section 2.2). Every project generally has an "upside" and a "downside" when viewed from an economic perspective. Often what determines whether it gets the "green light" is whether the potential/real benefits will offset the costs and generate a profit/return.

Clearly, as discussed earlier, there are significant costs associated with establishing and operating an ETS. The obvious and hoped for benefit is a reduction in atmospheric GHG's. Will this actually happen or will the scheme simply end up becoming another way for financially savvy people to get rich? Buying carbon credits is not really the same thing as reducing carbon emissions. As part of the market economy, the scheme can motivate climate change, but it can also motivate people in other ways as well.

Presumably realistic and rigorous cost benefit analyses confirm that the objectives of the ETS are achievable. In New Zealand, we will hopefully never get to a situation where, despite the optimism of He Waka Eke Noa's aspiration statement that "*New Zealand's agricultural products remain internationally competitive while reducing national and global emissions,"* the opposite is true i.e. the costs of continuing to produce first class food and agricultural/horticultural products no longer make these industries viable.

Primary producers grow the food we all need if human beings are to continue to live on this planet. It will not be much of a future if escalating compliance costs and/or market forces cause producers to focus on just growing trees. While it will be wonderful to have much better air to breathe, how good will it be if we do not produce sufficient food for the world to eat! There are already a number of products that NZ growers used to supply to the domestic market which have become less appealing to growers, who naturally grow that which will give them higher returns!

3. WILL A SECULAR SOLUTION SOLVE THE CLIMATE CRISIS?

One of the problems with any attempt at universal collaboration - be it climate change or something else - is getting "buy in" from all the countries affected by the problem, and then ensuring that everyone does their fair share to fix it. No doubt most NZ primary producers

accept that they should offset their GHG emissions at some level; and that they should strive to operate in a sustainable way. But what if other countries think differently and/or are motivated by different priorities i.e. they may have a different take on: what constitutes a climate change problem, or seeking a solution, or implementing a solution?

Problem resolution is never easy, but how much more difficult will it be to resolve problems in the international arena with "many fingers in many pies." Trade is one obvious example. The playing field is rarely even i.e. many countries regularly impose tariffs and other protective mechanisms as a way of looking after their own interests i.e. they do what they see is best for them, rather than what might be best for everyone overall. Whether it is an individual, or a collective entity like a country, we all operate on the basis of what we perceive to be the "greatest apparent good for me!" It may be that the perceived threat of climate change galvanises nations into real collective climate change action, but there are no guarantees that all the "talk" will in fact translate into real "action."

In the following section, I am suggesting we consider taking a different approach to problem solving than the status quo which typically applies. Some might consider this approach "outside the box." However, I contend that if we are genuinely serious about solving what is consistently presented as a "global climate crisis," then we also need to be open to thinking differently and creating alternative paradigms.

3.1 A DIFFERENT PROBLEM SOLVING PARADIGM

There are two main high level ways of viewing reality, or the world in which each of us is but a small component part. One is in accordance with a biblical world and life view, and the other is in accord with the more common - and certainly more recent - world view(s) that originate exclusively from human thinking. Whether we recognise it or not, we each operate on the basis of a world view which is essentially our life foundation, and which has a major impact on how we each think, speak and act with regard to "what life throws at us." As a result, we exhibit differing responses and come to differing conclusions about most things.

A biblical world view looks at the world through the lens of the Bible, the dependable written word of the world's Designer and Creator, God. As such, the Bible provides God's definitive "workshop manual" for human life i.e. it is God's revelation to His human image-bearing creatures, outlining the important information or truth that we each need to know, so that we will respond rightly to the issues we each confront in life.

Few people in NZ today have much familiarity with a biblical world view because both the Bible, along with its comprehensive world view, is a "road less travelled." In our day, instead of viewing the world from the perspective of its Creator, most people default to one world view or another which is predominantly sourced from human thinking and wisdom. In our time in history, the world view that currently dominates in our culture is secularism. This is a world view based on the belief that there is no God, or that God plays no part - or is in fact irrelevant - in our everyday lives.

When considered from a biblical perspective, secularism is but the latest in a long line of "ism's" that arise as a result of mankind's perennial determination to live life in God's world independent from God. Human history can be viewed as mankind's aspiration to achieve this goal. The record speaks for itself!

At this point, you may be thinking that this is all just so much philosophical and esoteric nonsense. Not so! It is highly relevant, vitally important and foundational to any discussion of "climate change", let alone the other matters we deal with both individually and corporately on a daily basis.

Here's why. A biblical world view categorically affirms that:

- **God made the world/cosmos**
- **God is thus owner of the world and hence it's Lord/King/Master** (He is the "boss" of the world)
- **God continues to providentially sustain His creation/world**
- **God's plan for His creation will be realised.**

  "The earth is the LORD's, and everything in it. The world and all its people belong to him. [2] *For he laid the earth's foundation on the seas and built it on the ocean depths" (*Psalm 24:1-2 New Living Translation).

  '*The LORD of Heaven's Armies has sworn this oath: "It will all happen as I have planned. It will be as I have decided*'" (Isaiah 14:24 New Living Translation).

In a biblical world view, human beings are the apex creature that God made and who God commissioned to manage the resources of the earth for God's glory and the greater good of all. To properly discharge this delegated divine authority, it stands to reason that one needs to properly appreciate the nature of God's creation i.e. recognising that it incorporates two distinct but integrated realms: the spiritual realm and the physical realm. Or, to illustrate with a building analogy, the cosmos comprises an upper storey spiritual part, together with a ground storey physical part.

By contrast, a secular world view, based on naturalistic thinking alone, contends that the world comprises just the physical realm. It rejects any notion of a supernatural realm. For several centuries science has been a driving force that has helped mankind to better understand the physical world, and so, as a result, we now know much more about how the physical world functions and operates. We have all greatly benefitted from numerous science-led technological advances. Science however, has a limited focus i.e. the natural physical world. It is of no help whatsoever when we turn to the supernatural world, the spiritual realm. Because science is such a marvellous tool that has greatly helped human beings to understand the natural world, it seems to most people that a secular world view must be correct i.e. the combined impact of science and secularism creates an impression, in fact a belief, that everything around us is explainable in natural, scientific terms.

Like any other belief system, secularism is a religion. It is a set of beliefs about the nature of the world and how it functions. Everyone is religious. The difference between religions is not whether one goes to church or not, but what is the object of one's belief system/world view. In this sense, depending on one's perspective, the religion of secularism is either a blessing or a curse. As a "godless" religious belief system, its perceived main benefit to mankind is that it has provided a mechanism to seemingly remove God from His world. This is of course extremely helpful for, if there is no God, then it logically follows that we creatures created by God have no accountability to God, our Creator, which then frees us up to "live as we please."

But - and it's an important "but"- if secularism, like all its failed world view predecessors, turns out to be yet another flawed human theory that fails to really do justice to reality, then that leaves its disciples and adherents with a huge problem in terms of the God. If the world is not as secularism describes it, but is instead as the Bible indicates, then those who have spent their lives ignoring and rejecting God, will discover - far too late, and to their cost - that they have boxed themselves into a spiritual blind alley!

I am a soil scientist by vocation. I am also committed to a biblical world and life view. I therefore consider issues such as "climate change" very differently than someone who approaches this view from a secular point of view. A person committed to secular thinking must by default take a "man centred" approach to problem solving i.e. "here is the problem - how should **we** fix it." But, from a biblical perspective, this is not the total story i.e. as owner, God remains sovereignly in control of His creation: nothing that is happening on His planet today is a surprise to Him. Rather, in a mysterious way that we finite human creatures will never understand, God overrules both the good and the bad that we humans do, using both to accomplish His greater intentions and good purposes. Despite all that is happening, God is still "large and in charge." Accordingly, when we human image-bearing creatures of God face a universal problem, we should look to **our Creator** to help us fix it.

That's not to say that those committed to a biblical world view "bury their head in the sand" and ignore or opt out of problems such as climate change. But it is to say, that we appreciate that we humans are not the only players in the game i.e. this is God's world, not ours. Recognising this basic truth, those committed to a biblical world view take a "**God centred**" rather than a "**man centred**" approach to problem solving.

Fundamental in this different approach is the realisation that we humans are actually the main problem i.e. the problem behind the perceived problem of climate change! In the Bible, God reveals why we make a mess of things; why the world is broken; and why it is not easy for us to fix things. The primary problem is that every human being begins their life physically alive, but spiritually dead. How so? Because there is a dominating/controlling force in our lives, that the Bible calls "sin." Because we are spiritually dead, our lives are naturally orientated towards the physical realm, rather than the spiritual realm, and as a result, secularism, with its focus on the natural, physical world, makes perfect sense to most of us.

Further, the Bible reveals, not only that we are broken people, living in a broken world, but that we all live under the curse that God has placed on this world as part of His judgment on human

sin. In the beginning, God modified the way His creation operates. As a result, instead of life being the paradise that God had initially planned, it is now often frustrating and characterised by futility! God has done this so that it might eventually dawn on us at some stage (if we actually stop and consider the big picture - the world beyond the boundaries of this physical world) that all our striving and endeavours, whether individual or cultural, does not really change much at the end of the day! The sooner we come to the realisation that God is Lord and that His will, and not ours, will be done, the sooner we will find the way to escape this predicament! Technology apart, human history is the record of each successive generation aspiring to do better than its forebears, but failing to do so e.g. practically every new government begins its tenure by making extravagant promises to improve the lot of its people. Sometime later, they're replaced by another government, making similar sounding promises, but the result is always the same! Why is this? Because the physical realm, the ground storey of life, where we and our governments typically operate, is not the totality of reality!

And, because we all begin life, spiritually dead, there is nothing we can do to change our predicament i.e. just as those who are physically dead cannot better their lot - they have entered a state of physical "deadness"- so also the spiritually dead can do nothing to change their state of spiritual "deadness." But God can, and He has provided the way that dead human beings can be restored to spiritual life, which, says the Bible, is true life! But that important story is, as they say, another story.

3.1 WORLD VIEW CONSEQUENCES

As just indicated, a person with a Bible based world view takes a "God centred" approach to problem solving. By contrast, someone with a secular world view can only take a "man centred" approach, which is focussed exclusively on the physical realm.

At the end of the day, at the lower ground storey level where most of us operate, the mechanics of problem resolution might be similar irrespective of whatever world view one holds. However, because the starting point and operating framework is so different, the rationale and reasoning guiding the decision making process is also completely different.

In a biblical world view, God - along with the truth He has revealed to mankind - is the major consideration and most significant factor bearing on each and every decision. Because God is ultimate and supreme, those committed to a Bible based world view acknowledge this, and seek to put Him first by aligning their thinking to His guidelines i.e. decisions and problem resolution do not take place in isolation in a vacuum, but against this overarching backdrop. Those who operate in accord with a biblical world and life view do so with a dual motivation: to do what is right, and to do so in a way that is pleasing to God.

For a secularist, God is not even a consideration, and so, by default, some other substitute must take the authoritative place that God holds within the biblical world view. In western culture, the "rule of law" is typically the backstop de facto replacement ultimate authority in most societies i.e. people commit themselves to abide by, and be governed by, the rule of law. However, once God is removed from the picture, there are no longer any absolutes to give stability and security in this way of operating i.e. there is no higher authority that any party can

appeal to, either for redress or to reinforce the status quo. Law is a helpful substitute, particularly in societies or countries like NZ with a biblical heritage, but cannot completely ever replace God and the role that God has in a society viewed from a biblical world view. Eventually, because we are operating exclusively in the lower storey physical realm, and therefore limited to just a "man-centred" mode of operation, and with no absolutes, everything quickly descends to a sea of relativity - numerous factional interests reflecting differing points of view, none of which is ultimate. Who then determines what is important or what is the right thing to do? In a democratic country like NZ, the mechanism used to implement the rule of law is the voting process. A majority or consensus is established and those who hold the majority position are empowered to progress their aspirations and policy etc.

Now let's consider all this with respect to "climate change" and in particular, GHG emissions. How does a secular person respond to climate change? Answer: by striving to reach some kind of consensus or majority position, both in terms of problem recognition and problem resolution. The rationale goes something like this: our survival on planet earth is threatened; we all need to recognise this; we all need to agree to work collaboratively to do something to fix the problem! However, lacking a true higher authority, and being essentially selfish beings, it is difficult to reach agreement about any of these matters. Even if everyone agrees theoretically to do something, that doesn't mean that they actually will! Democratic based sister nations may be able to find some common ground, but what happens when such a country - or a cohort of countries - seek to enter into an agreement with a country - or countries - characterised by a non-democratic totalitarian form of government, or with a country - or countries - who doesn't want to participate at all?

At the present point in time, many countries have reached a broad consensus/accord re GHG emissions and climate change. Signatories to several climate accords have agreed in principle that there is a problem and that something needs to be done. An emission's trading scheme is touted as part of the solution. But will this rhetoric translate into meaningful action, and will the current "unified stance" continue to be the case going forward? Will each and every country be willing to submit its rights/interests to the greater good of mankind/others, or as is often the case, will things begin to fracture as time marches on and peoples/nations revert to putting their own interests first?

A dumbed down climate agreement, united by the lowest common denominators, hardly evokes optimism, and certainly does not equate to decisive climate change action. And how will an international climate accord really operate? How will policy be implemented and/or enforced upon non-participating or dissenting countries? Politicians from one country may commit themselves and their stakeholders to definitive action today, but what is to stop the next administration from reversing or ignoring their work?

Any number of agreements, accords, and contracts can be signed but so what! In a secular world, seeking to resolve a global problem without recognising God or seeking to collaborate with this planet's owner, seems like a definition of stupidity. In such a case, the only constraining checks and balances that might provide some measure of stability are whatever

common standards of morality the parties bind themselves to! But this isn't much help either: with no commitment to live under God's authority and with no absolutes, morality also becomes something relative, and therefore equally open to hijack or change! Whenever a situation changes, those in power at the time, can simply change things to better suit their current moral interests, which is the way our laws become increasingly liberal!

As I write this article, some Covid-19 vaccine mandate protestors are occupying the grounds of our Parliament. This is a "thin edge of the wedge" illustration of what can happen when a society operates without absolutes, and without any recognition that God is sovereign over us all. The rule of law seems to work as a surrogate absolute authority, until others come along, who are committed to a different position, and who do not accept that law. At the moment there is still a large consensus that is committed to the rule of our existing law(s), but what will happen if more and more opt for something different? Factionalism will increase, and eventually a situation of tyranny will develop in which "everyone does their own thing."

Just like the parliamentary protestors, some countries may, or more likely, will "jump rank" and opt to live/do as they please with regard to climate change, particularly if it suits them better! How helpful will the climate accord be then? I'm reminded of English Prime Minister Neville Chamberlains "peace in our time" agreement with Adolf Hitler prior to World War 2. Chamberlain trumpeted a "game changing" peace document he had negotiated with Germany's Hitler. But in reality, the agreement proved to be just a worthless bit of paper. Hitler promptly ignored it, turned around and invaded Poland, thus beginning WW2. A similar situation is currently playing out with Russia, despite repeated denials to the contrary, invading Ukraine. When there is no recognition that there is a higher authority to whom we will all one day have to give account, pretty much anything goes.

When individuals and nations refuse to acknowledge God, the world is bereft of a higher authority that is essential to enable stability in the individual and international affairs of human beings. We are then left to "hope" for the best. No wonder so many become fearful about the future! Personally, I am grateful that this world is not confined to just the physical realm: that there is a real God, who really is working out His purposes, and in whom anyone can place real hope!

4. CONCLUSION

NZ may become the first country to price agricultural emissions. But pricing GHG emissions may end up having about as much meaningful impact as prohibiting the use of plastic bags to carry grocery items home from the supermarket: we may feel a little bit better emotionally, but in reality, all we've actually achieved is a little "feel-good-tokenism."

It will be good if the world is able to reach a meaningful resolution to the issue of climate change. I will be happy if my comments and conclusions prove to be pessimistic and real progress and climate action result. I am happy to be proved wrong. But I've got a few years behind me now. I've seen countless examples of shallow secular hopes and aspirations which crash and burn in the inevitable broken promises. This is the way of human beings when we try to live in God's world, independent of God, motivated by sin inspired selfishness.

How good it would be if both individually and collectively, we were willing to be radical and think and operate in a different way. World views sourced exclusively with man simply “do not cut the mustard.” We need to hear and to heed our Creator. At the end of the day - or the world - God may ultimately use the global climate change problem to show us that we will only be able to properly solve it when we get right with God and return to Him, humbly acknowledging our pride and arrogance, and seeking His guidance to direct our paths to a good solution.

Alternatively, if things continue in much the same way as now, climate change may be our “Achilles heel,” the issue that God uses as a catalyst to bring this world to the final destination He promised long ago, bringing disaster to those who reject Him, while at the same time, ushering in a new heavens and earth as the eternal homeland of the new spiritual humanity that God is gathering to Himself from out of our sin broken human race.

Those who know God confidently place their security in His care. Those who don’t can only trust in themselves, their resources and those of other broken people. The good news of the Bible is that any who wish to can be restored into a right relationship with their Creator, end the futility, and discover the true life God has promised, and with it, peace, real meaning/purpose/significance in life and ultimate security.

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25 February 2022