

Humans as part of living systems

"I try to come once a month at least," said Tendai. "Do you know that this hill was once a sacred site? Mbuya and a few other in this area are trying to revive it as a sacred site." "What does a sacred site mean?" I asked Tendai.

"I'll tell you one day. I'm still learning myself. For now, it's a place where I can come and be with Nature and imagine how our ancestors lived for thousands of years. That nyimo you're eating is part of that history. It has nourished many generations of our ancestors. When you eat it you're eating out history. When you pick fruits from the indigenous trees like we did on the way up here, you're doing what people have been doing here for centuries."

We were high up and could see far into the distance. There were many small hills like ours, mixtures of boulders, smaller rocks, trees and many other plants. Ours was the highest. I looked admiringly at my cousin-brother, Tendai, a man now while I was still a boy. Above his head, I noticed a bird high in the sky, like it was floating. I pointed and asked Tendai, "What's that?" "That," said in a solemn voice, "is your great, great grandmother keeping an eye on us." My jaw fell open. "Really?" His face looked serious, and then he smiled. "Don't believe everything I tell you. It's a hawk looking for prey. But I like to think of it as our great, great grandmother keeping an eye on us. And perhaps it is, you never know."

One with the soil, one with water, one with air; one with creation.

A grain among multifarious many;

a drop in placid pools, rushing rivers, crashing waves;

a mere microcosm in the atmosphere.

Breathe deep, drink long, cup sand in hands with fingers splayed to sift the particles;

celebrate oneness.

From dust, to dust, of dust;

& dust we've become for the soil that shapes us has died;

played out and poisoned.

And I, one with the earth, suffer genocide.

Yet, sunrise melts frost and ice.

Hidden, spring smiles and waits.

"We are showered every day with the gifts of the Earth, gifts we have neither earned nor paid for. For the Earth to stay in balance, for the gifts to continue to flow, we must give back in equal measure for what we take." – Robin Wall Kimmerer

In the teachings of my Potawatomi ancestors, responsibilities and gifts are understood as two sides of the same coin. The possession of a gift is coupled with a duty to use it for the benefit of all. A thrush is given the gift of song—and so has a responsibility to greet the day with music. Salmon have the gift of travel, so they accept the duty of carrying food upriver. So when we ask ourselves, what is our responsibility to the Earth, we are also asking, "What is our gift? Among the most potent of these is gratitude."-- Robin Wall Kimmerer

Some questions put to various people from different contexts & their responses:

1. How does climate change affect you personally as a young person, a woman, a faith leader, a home-owner/householder, a family?
 - Members of a local church had the following to say: David McConnell, a young unmarried man: "It affects me as a temporary visitor to planet earth most the same way it will affect us all eventually, although as usual the most vulnerable will bear the brunt." Paul Roberts, a retired civil engineer who has worked throughout his lifetime in water resources management & development: "It doesn't affect me a great deal as it is difficult to quantify what is due to climate change, resource over-utilisation, inept management, etc. The effects of climate change are often exaggerated in the media. Some resource shortages, like water & electricity, may be influenced by climate change."
 - A young family member who is a high school teacher & her husband who is a fashion designer said: "It doesn't necessarily affect us as householders in a very direct way. It affects us in the same way it affects the world in terms of impending doom when it comes to whether or not the earth can sustain us."
 - A black woman who is a Minister in the Presbyterian Church said: "I'm a woman serving in a rural area where many church members are unemployed. They depend on their small gardens to provide food for their children. Droughts and water problems affect

our lives so badly. Some are cattle farmers. Climate change is a problem. They grow their crops seasonally. Due to climate change that confuses their schedule."

2. What do you feel you can do to mitigate or adapt to the effects of climate change?

- Members of a local church in Pretoria said the following: David McConnell (a young single male) "The key is that every little change makes a difference. I've reduced the amount of meat I consume, with production & feeding of livestock being the greatest contributor. Another key is for people not to get frozen into doing nothing, eg because giving up meat completely is too extreme ... to start with meat-free Mondays already makes a difference ... then move from there & be conscious of wherever else you can make an impact such as paying to offset the carbon for your travel; Bokashi kitchen scraps; use energy sparingly, etc." Neil Burgess (retired engineer) says: "My father said tarred roads, paving & house roofs where there was originally veld would change the climate. So home-owners should consider the colour of paint used on roofs. New houses could be built with solar roof tiles instead of concrete, with separate solar panels on top. A neighbour has whirly hot air extractors on his roof to help cool the house in summer, but they spin even in winter. Solar geysers are another option (See all the matchbox houses alongside Marlboro Gautrain station, each with a solar geyser). Electric power stations using concentrated solar heat with overnight storage would be good (There are a few small ones in SA). Cooking with a microwave oven uses less energy consumption due to the speed of heat transfer. We should use modern efficient low-wattage globes for lighting. It would be good to drive an electric car (Have you seen the recharging point provided in a corner of the Menlyn parkade?) I wish the mechanical & chemical engineers would organise a breakthrough for safe ammonia-free type cooling for fridges & air-conditioning (It could be solar-powered, but ammonia is poisonous). Brilliantly lit offices at night are unnecessary. Americans & Europeans light only the surfaces of their desks." Paul Roberts retired civil engineer who worked in water resource management & development says: "Mitigation measures that we implement at home as a couple include recycling, moderate use of resources, solar heating of water, purchase of local produce as far as possible." He adds the following: "Various remedial measures have been proposed (& partially accepted by many countries) to combat climate change. I am in full agreement that we need to contain emissions (pollution) of various kinds. What really concerns me is that the main driver for the increase usage of the world's resources has been almost totally ignore & this is one of the factors which should be examined! The main driving force for increased consumption of resources is population growth as well as rising living

standards which increase the per capita consumption. In the 1980's when I was in the Department of Water Affairs, I was asked to determine the maximum population that South Africa could sustain based on its available water resources. We determined a figure of 80-million - note that we now are around 60-million & I can see that our water systems are already highly developed & under stress. There is not a huge remaining potential for further development of water resources. Desalination of the sea is a possibility, but requires an enormous energy input plus is very costly.

"I attended the 2nd World Water Forum in 2000 in The Hague & noted that absolutely no mention was made of population pressures in the resulting Ministerial Declaration. I have undertaken numerous water demand studies in SA & the main drive is population. Many people argue that the rich use a greater per capita share of resources, but fail to consider that poorer communities also aspire to higher living standards, hence greater resource consumption. A good example of this issue is the question of sanitation. From 1994 the Dept of Water Affairs instituted a Basic Water Supply & Sanitation initiative. Initially the parameters were: Water supplied in community taps not more than 500 m apart; & Basic sanitation was via VIP toilets (Ventilated Improved Pit latrines). Currently because of various problems, rising expectations & community perceptions, the drive is towards: Water delivered to individual houses; & Flush toilets (which require more water plus other resources). Such changes demand on the level of services must always be anticipated in resource planning.

"Population limitation: I have yet to ascertain why the issue of population limitation has not fully entered the climate change debate. It is probably because it is politically & socially very sensitive. Lester R Brown in his book 'Plan B: Rescuing a Planet under Stress & a Civilization in Trouble' 2003 pays a lot of attention to this issue & considered that the world population should be stabilised at about 7.5 billion people using various economic & social incentives & measures. In 2020 the world population was 7.8 billion & there are projections that it will exceed 10 billion by 2050. It is clear that current efforts to contain population growth have not succeeded & the issue needs to become part of the international debate on climate change."

- Young female family member (teacher) & her husband (fashion designer) say, "Because we don't really directly feel the effects (or at least, it's not something we focus on), there's not much we do to adapt to the effects. We're also not the greatest at being aware of it, but we do eat a lot less meat because that has a massive impact on the environment. We also try to conserve resources in terms of electricity and water as much as we can."

- Black woman who is a Presbyterian Minister in a rural community says, "When they experience problems with their farming, it also affects the income of the church. So those who are in the townships need to provide food parcels to the needy. Even our church garden doesn't produce as much. We used to get some vegetables from it for the needy & to sell some with aim of generating income."

3. What do you personally feel about it?

- Members of a local church in Pretoria: David McConnell (Young single male) says, "I'm hugely concerned. It needs an economic resolution to a problem created by the current model; that along with plastic pollution being my chief areas of focus when trying to make a difference in my own space." Neil Burgess (retired engineer) says, "Humans are reckless in their pursuit & exploitation of technology for profits. How long did it take to lessen the smoke output from factory chimneys spawned by the first industrial revolution? Using electric power in the workplace & in homes first needed many deaths before safety earthing & "earth leakage" protection was introduced. Millions of cars were sold with primitive inefficient polluting internal combustion engines before we got the better engines of today & the eventual appearance of electrically powered cars, buses & trucks." Paul Roberts (retired civil engineer who worked in water resources management & development) says, "I feel ambivalent about the magnitude & impact of climate change. The impact of population size needs to be a major issue in the climate change debate & the determination of mitigation options. Population limitation should not be enforced but encouraged by incentives & economic disincentives."

"Is climate change real? We know that over the ages there have been a number of major climate changes that were certainly not influenced by human activities. We have limited recordings of the various climatic variables. In SA river flow records go back for about 100 years while rainfall records are several hundred years long. In some places such as the Nile River we have flood peak level records which go back several thousand years. Some records can be extended by other means such as tree rings, sediment deposits, ice in the polar regions, etc.

"What does concern me is that currently every extreme event such as a flood or a wildfire is ascribed to climate change. In many cases, such events still fall into the general pattern of probabilities of extreme events such as floods. It is to be expected that as the monitoring time gets longer so we will experience further extreme events. This is similar to athletics records where as time goes on world records keep getting broken!

"An analysis of SA hydrology does not show any major deviation from expected patterns. On a global scale experts have used other parameters such as glacial reduction, increase in cyclone activity, global temperature increase, etc as indicators of climate change & ascribed these all to the cause of the activities of humankind. It is very difficult to separate natural causes & anthropogenic ones. It is fashionable to ascribe most extreme events as being caused by climate change as it is also a popular route to generate project funding!"

- Young female family member (teacher) & her husband (fashion designer) say: "We both acknowledge it's a very real crisis, but I don't think it's one that we worry about (or at least talk about) that much. If we're brutally honest, we're probably not as actively concerned & focused on it as we should be."

It's clear to me from these responses & general conversations with people over the past six weeks or so, that the younger adults are showing far more concern about climate change, but only some are actively taking steps to mitigate it. The retired engineering shows a typical resistance to the realities of climate change & standard means of justifying this resistance. The lady minister in a rural congregation expressed concerns about the reality of the impact on the local community within which she serves. These are all issues that might need to shape the work in preparing guidelines on climate change.

- Neil

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