Eleven Things Every Korean Must Know (and one question) About Climate Change

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In 2008, the Hawaii Research Center for Futures Studies wrote a report titled

10 Things Every Korean Leader Must Know About Climate Change in the 21st Century—plus Four Alternative Futures.
I was asked to prepare my talk today as an update of that report.
There is no greater challenge for governments, economic systems, and all of humanity everywhere in the coming decades than dealing with the causes and consequences of human-created climate change.
Among the vast amount of research and opinion on climate change and climate policy,

there are several fundamental points

that must be understood, internalized, and used as a guide for our individual and collective actions, especially in Korea.
I will present eleven points that I believe every leader--and citizen--in Korea must know about climate change.

I will then ask one question that I challenge you to consider and answer.
1. Climate change is real, it is here, and more is coming.
There is an overwhelming consensus among climate scientists that global change resulting from anthropogenic emission of greenhouse gases is happening and increasing.

97 out of 100 climate experts think humans are changing global temperature.
This is as certain in its general form and impact as anything in this world can be certain that is a combination of human, physical, and biological processes.

Climate Consensus?
How many US scientists disagree with human-induced climate change?

% publishing scientists who disagree
11%
any scientific field

% publishing climatologists who disagree
1%
50%+ of published papers on climate change

Source: Survey of 10,217 earth scientists, Nolan and Zimmerman 2009 (numbers rounded)

David McCandless and Helen Lawton Williams // v2.9 // Dec 09 // InformationIsBeautiful.net
Like any conclusion based on the best science, philosophy, and ethics available, it must be studied continuously, and revised as new information arises.
But to fail to act appropriately on the basis of the long-existing evidence now is irresponsible.
Moreover, it is far better to act, and then discover climate change is not a problem, than not to act and later discover that it is a problem.
As the Australian Commission on the Future said about climate change over thirty years ago:

“If we act as though it matters
and it doesn't matter,
then it doesn't matter.”
But if act as though it doesn't matter and it matters, then it matters.
We should act as though it matters and begin developing policies and actions in anticipation of further climate change.
2. Global warming leads to climate change leads to global change.
That is to say, the terms 
*global warming* or *climate change*
fail to capture the full scope of the challenge.

It is better to understand that we are in 
an accelerating era
of “global change”
of which climate change is one important part,
but not the whole story.
While by some measures and in some places climate change may cause warming, in others it may cause cooling.

While in some places there may be more rain, in others there may be prolonged drought; in others too much rain and too little may alternate confusingly.
The main point is that weather patterns from the past may no longer be good predictors of weather patterns in the future.

Climate, and weather, will generally be much more uncertain than ever before in recent human history.
3. Climate change is global, but its impacts are local.
Although climate change is a process of planetary scope, the effects of climate change will be felt in specific locations and environments by people today and especially by future generations.
Most research so far has been at the global level.

This is necessary and proper. But more and more attention needs to be, and is being devoted to models of local impact within the overall global system.
Every politician wants to know: “What will the weather be like in MY district?”

She is not much interested in what the globe is doing.
We need to be able to tell her what she needs to know.
4. It is too late
to prevent climate change,
but we can stop making it worse.
If government bodies, economic entities, and ordinary citizens had acted appropriately 40 years ago,

when the issue of climate change was first clearly raised,

then we could be well on the way to preventing or even reversing climate change.
Instead policy-makers fell under the spell of alluring economic beliefs that led and are still leading us to behave so that global change is becoming more extreme, and not less so.
As a consequence, the best we can do now is to prepare for climate change, while trying to ameliorate the most serious impacts by adopting economic and governing policies that do not make global warming more severe than it already will be.
5. Climate change is a critical issue for national security.
The potential environmental and social changes forecasted for the foreseeable future are profound.

The instabilities generated will challenge the maintenance of national security of all nations.
Global change may be a greater, more long-lasting, threat to peace and security than "terrorism" or war between nations.
All coastal areas will be threatened by rising oceans.

Entire island nations may vanish.
The resulting hordes of environmental refugees may not be welcomed elsewhere, since water, food, arable land, and energy will be increasingly scarce everywhere.
Violent internal and international conflict is a distinct possibility.
Many military leaders are aware of this—even if some of their political masters are not.
6. The poor are both the most vulnerable to climate change, and yet in many ways the best prepared to adapt to it.
Too much of the discussion of global change focuses on the impact on developed nations.

But in fact, it is those people who are already hungry, poor, and ill-housed who are likely to suffer first.
Policy for the welfare of the poor must be uppermost in our minds and actions.

Did you know?
262 million people were affected by climate disasters in 2004, more than 98 per cent of them in developing countries.
However, it is also the case that the poor may know through experience how better to adapt to global change than currently rich people do.
Many of the skills and attitudes that made people "rich" over the past 200 years seem ill-suited for surviving and thriving in climate-changed futures.
Instead of viewing the poor only as victims of the coming change, those of us now "better off" should look to the poor and those in the climate diaspora as guides and mentors for living well in a world of scarce resources and climate uncertainties.
7. Climate change can be good, and should be grasped as a wonderful opportunity.
One of the most important things we all must do is to recognize that the inevitability, though uncertainty, of global change presents us with unprecedented opportunities.
Global change must be understood as a good thing—a chance to do better things, and to do everything better than we are now.
Claiming that preparing for climate change is "bad for business" is plainly false. Whoever says that is ignorant, selfish, or lazy.
Climate change presents many excellent business opportunities.
"Green Growth" can be real.

A truly free market increasingly favors truly green activities.
Companies that do not substantially reduce their use of energy, water, and resources, while also eliminating waste and pollution, will not compete successfully without government subsidies and protection.
Unfortunately, many activities that are said to based on green growth are overwhelmingly focused on growth-as-usual with very little that is actually green.
This must end.
Calling things “green” that are mainly just “growth” misleads the public into believing that progress towards environmental sustainability is being made, when it is not.
Continued economic growth can no longer be the primary aim of government policy and individual actions.
Prosperity without economic growth is possible and necessary everywhere, especially where population is declining.
8. Climate change must be governed.
We cannot solve the climate challenge until we understand that the world has been re-made by our actions.
Some scientists are saying that humans have left the Holocene Epoch in which *homo sapiens, sapiens* emerged about 12,000 years ago.
We now live in a human-made
*Anthropocene Epoch*
that humans must learn to govern.
It was our collective ignorance and irresponsibility that led us to this point,

and it will be our collective wisdom and responsibility that might save us.
We must learn to govern the Earth’s climate, the Earth’s myriad lifeforms, and even evolution itself.
A new systemic, integrative, comprehensive "sustainability science" is being developed to replace our old reductionist, positivistic, “objective” science.
Once upon a time, "natural processes" operated on their own, free from human interference.

Scientists could then strive to understand those processes objectively, separately, on their own terms alone.
Now all once-"natural" processes are influenced, often massively, by human activities.
Once-"natural" processes now are changing faster than ever before.

In a sense, what were once the "laws of nature" have been altered, unconsciously, by human action.
Humans must therefore envision preferred futures for themselves and all of life, using their evolving understanding of rapidly-changing biological and physical processes to try to achieve preferred futures.
This is both a great opportunity and a great challenge for policy makers, scientists, engineers, and all citizens.
9. We have the technology to do the job.
Stopping, ameliorating, or adapting to climate change has never been a technological issue.
We have had not only the technology to \textit{cause} climate change,

we also have had the technology to \textit{prevent it} and to stop it.
We were warned what would happen more than 150 years ago!
Forty years ago many scientists warned of what might lie ahead if we did not change our behavior.
For a few years, the warnings were heeded, to some extent, and important policies were in fact adopted.
However, more powerful voices spoke in opposition.

Corrective policies were cancelled.

Policies that hastened and intensified global change were implemented instead.
Our failure to prevent global change has always been a political matter and not a technical one.
We had, and we have, the technology we need, even if we do not yet fully understand the sustainability science required to guide our use of the technology.
The more we continue to stall, obstruct, and wait, the more we will have to shift from technologies of amelioration and stabilization to technologies of adaptation and survival.
10. We may not have the energy needed to do the job.
Energy is often ignored when contemplating policy for climate change.
However, in addition to climate change, the world faces the likelihood of the end of cheap and abundant energy, especially liquid fuel.
More than anything else, it was the discovery and rapid use of coal and then especially of oil that enabled millennial-long agricultural societies quickly to transform into industrial societies, and then even more quickly into information societies.
It will take enormous supplies of energy to address the effects of climate change.
But cheap and abundant supplies of oil are dwindling while there is no energy source or combination of sources currently available that can replace oil as cheaply, quickly, and efficiently as necessary.
Here, too, we have known for 40 years that we needed to move from fossil fuels to renewable energy sources,

not only to reduce the release of gasses and particulates that cause global change and overall pollution (a sufficient reason!),
but also because
the supply of oil is finite
and nearing the effective end.
Many people concerned about climate change seem to believe there is plenty of cheap energy available to address the problems.

They seem oblivious to energy challenges.
At the same time, some people who are concerned about future supplies of cheap energy are climate change deniers.
Concerns about energy supplies and costs, as well as about climate change, are real, and related. They must be addressed together.
11. Climate change is a complex, interconnected, systemic phenomenon
Trying to address climate change may be successful only if we do so in frameworks that inter-relate governance, economics, resource shortages (especially of energy, water, and food), culture, mega-urbanization, demographic changes, new technologies, and more.
A timely and coordinated efforts, ranging from the individual through the national, corporate and global, are necessary for effective responses.
So:
I have presented to you eleven things that every Korean must know about climate change.

*Now here is my question to you.*
Given the eleven facts:

Can Korea become the world’s first Conserver Society?
For the past several decades, since the end of the Korean War, Korea has become the most successful Consumer Society in the world.
From the utter ashes of colonization and war, Korea carefully and resolutely surveyed the options, determined its preferred future, and set a clear course towards it.
Never wavering, and enduring hardship and failures, as well as successes,

Korea has become one of the major economic marvels of the planet--the envy of all who want also to achieve economic growth.
Now, Korea must consider changing its course.
What meant “success” in the past may not mean success in the future.

Indeed, what was good and proper in the past, may be dangerously wrong for Korea in the future.
The lessons from climate change strongly indicate that Korea should change from being the Number One Consumer Society to becoming the planet’s first Conserver Society.
Korea can and should lead the world by becoming the standard for success in a very different future.
There are many ways in which a Conserver Society can be envisioned.

And there are many paths towards it.
Many of the paths can provide meaning, identity, and fulfilled lives for everyone.
Future lives in a Conserver Society can be even more rewarding and equitable than they are in Korea today.
But it is necessary to look hard at things that were thought not to matter before,

and to adopt policies and practices that seemed unimportant before.
If Korea can turn the talent and determination it brought to economic growth to the attainment of a Conserver Society, there may be renewed reason for hope for a bright future for all.
Conclusion

Leaders in Korea and around the world are faced with the most profound, self-inflicted, challenge we as a species have ever faced.
This is a challenge created by our great ingenuity and technological prowess on the one hand,

and our limitless hubris and willful ignorance on the other.
It is a challenge that we must confront and solve with our great ingenuity and technology, combined with new-found foresight, humility, and resolve.
Global change and climate chaos may provoke humans to respond in many different ways, some more peaceful and satisfactory than others.
It is very much up to us to determine what our future will be.

We—you and I—together with the political and economic institutions we permit, are responsible for whatever future comes to pass.
We should ask ourselves:

“How will we be remembered?”
“What will future generations say about what we did or did not do on their behalf?”
Once it was enough
that we worship our ancestors
and thank them for all they had given us.
Now it is necessary also that we revere our descendants,

and strive to leave them a world that is better, and not worse, than the world we have created now.
Korea should lead the world in meeting this vital challenge.

Let’s start here and now.
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