

# Global Warming and Climate Change: Reasons to Remain Hopeful

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It is really not out of place to describe our situation regarding global warming and climate change as a crisis. This crisis is not just of greenhouse gas levels or the environmental, social, and/or economic impacts thereof, but it is also of the human response — our ability to tune out. Given the scope and reach of the impacts of global warming and climate change, these are areas we cannot afford to stay tuned out from, which begs the question: What does it take to stay engaged when so much of what we are told is disheartening? Consider that it takes not just clear knowledge and communication of the facts, not just a good, solid, well-backed action plan, but also an equally good, solid dose of courage and hope.<sup>a</sup>

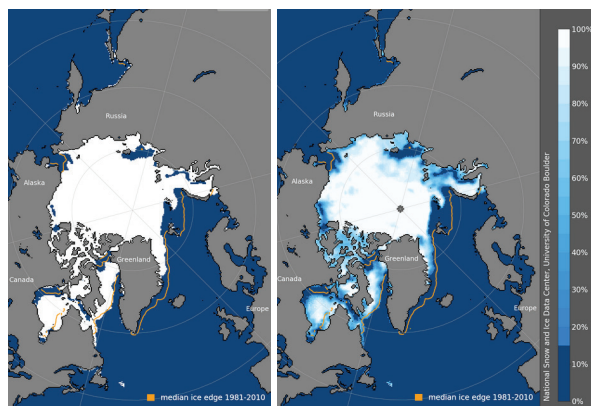
Fortunately, crises do not consist purely of danger. They also present opportunity — for ingenuity and creative practicality, and for bringing forth heroism and the best of the human spirit. With the science so clearly pointing toward humanity and our fossil fuel burning and deforestation activities as the villains in this crisis,<sup>b</sup> we have now the opportunity to be the heroes in bringing forth its resolution. Before then, however, we must first be accountable for the facts of the situation. As such, here is a quick snapshot of the current status of global warming and climate change.

As of April 2018, atmospheric CO<sub>2</sub> levels are currently at 407 ppm, having escalated from 275 ppm pre the Industrial Revolution (+47%) and in stark contrast with the previous 400,000 years when CO<sub>2</sub> levels never cycled higher than 300 ppm. Global temperatures are +0.9° C compared to the 1951–1980 average (+6° C in the Arctic), with 17 of the 18 warmest years in the last 136 years occurring since 2001. Arctic ice cover is reducing by 13.2% each decade, ice sheets of Antarctica and Greenland are diminishing by 127 GT and 286 GT respectively each year, and sea levels are increasing by 3.2 mm annually (up 88+/-4 mm since 1993) from both melting ice and sea expansion due to increased temperature.<sup>c</sup>

As alarming as these numbers are, the data rarely grabs and holds our attention, nor does it sustain a call to action. Rather, it is their consequences for the people, places, and

living things with which we share our environment and on which we are 100% dependent: the worsening of wildfires in Europe and the US; the water shortages facing the residents of Cape Town and across California; glacial melting, flooding and drought; salt-water inundation of low-lying coastal areas and islands in the Pacific, Caribbean, and Indian Oceans; the increasing rate and intensity of storms, heat waves, and extreme cold; food/water/environmental insecurity; and growing social unrest.<sup>d</sup> While relating to these consequences as reasons to be hopeful seems counterintuitive, what will give us the best opportunity to step through these dangers and grasp them as opportunities starts with courage to face the facts and their impact, and — with hopeful determination — get into action.

To be effective, our global suite of action plans will require a combination of mitigation (reducing CO<sub>2</sub> and other greenhouse gas emissions and enhancing carbon sinks) and adaptation (learning and developing capacities to live in the changed environment)<sup>e</sup> outcomes, in synergy with the UN’s Sustainable Development Goals (SDGs).<sup>f</sup> NASA’s



**Above:** Captured in these images are sea ice extent (left) and sea ice concentration levels (right) in the Arctic region as at 25 June 2018. The orange line indicates the average level for both factors as recorded for between 1981 and 2010 (Source: *National Snow and Ice Data Center*, June 2018)

### Sea Ice Levels in the Arctic



**Above:** Illustrated above is the Arctic sea ice extent as recorded in September each year since 1980 via satellite observations. In the last few years, sea ice levels in the region have been in constant decline, averaging a rate of 13.2% per decade, with the lowest extent to date recorded in 2012 (Source: NASA, June 2018)

Megacities Carbon Project — aiming to measure the greenhouse gas emissions from cities such that decision-makers will have access to the data to best assess the efficiency of their plans, policies, and implementation for mitigation<sup>g</sup> — is one such project. Taking leadership in India is one of its largest business houses, the Mahendra group, signing up to the full Paris Agreement because “pursuing environmental stability is the only way forward”.<sup>h</sup>

Mid-ocean kelp farming provides a solution in the oceans, with kelp growing 30–60 times faster than land plants, sequestering carbon from the atmosphere, alleviating acidification of the oceans, and directly growing a food source while also enhancing fish production for human consumption.<sup>i</sup> On land, with over 17 million trees planted to date, are the triple-bottom-line-focused and SDG-grounded reforestation projects of WeForest. Leveraged through empowering women and their communities to reclaim degraded land, resulting in the growth of the influence of women together with men in their

communities, developing business opportunities where these are often scarce<sup>j</sup> and women’s lifting themselves out of poverty,<sup>k</sup> this organization provides mitigation and adaptation solutions and partnerships to local and global communities alike.

The healthily skeptical voice asks: “Are we really gaining ground in our efforts to deal with climate change and global warming? Do we really have reasons to be hopeful?” In short, yes. Businesses, governments, individuals, and communities worldwide are taking action. Live-tracking of progress towards the UN SDGs is available through Environment Live.<sup>l</sup> But widely acknowledged is that the level of action presently being taken is nowhere near enough.<sup>m, n</sup>

So, what do we do? It’s simple. Be a hero. Keep courageously facing and demanding the facts. Keep taking action. Plant and sustain a tree — it’s one of the cheapest, easiest, and most accessible actions that is both mitigative and adaptive.<sup>o</sup> Trees are the only organisms that grow and remove atmospheric CO<sub>2</sub> continually for life.<sup>p</sup>

But above all, remain hopeful. **R**

### References

- <sup>a</sup> B Liao *Forests: Reasons to Be Hopeful* (Ideos Publications 2013)
- <sup>b</sup> [climate.nasa.gov](http://climate.nasa.gov)
- <sup>c</sup> *Ibid.*
- <sup>d</sup> *Ibid.*
- <sup>e</sup> *Ibid.*
- <sup>f</sup> [un.org/sustainabledevelopment/sustainable-development-goals/](http://un.org/sustainabledevelopment/sustainable-development-goals/)
- <sup>g</sup> [megacities.jpl.nasa.gov](http://megacities.jpl.nasa.gov)
- <sup>h</sup> UNFCCC Global Climate Action Summit, 02 May 2018
- <sup>i</sup> T Flannery *Sunlight and Seaweed: An Argument for How To Feed, Power and Clean Up the World* (The Text Publishing Company 2017)
- <sup>j</sup> [unfccc.int/topics/gender/the-big-picture/introduction-to-gender-and-climate-change](http://unfccc.int/topics/gender/the-big-picture/introduction-to-gender-and-climate-change)
- <sup>k</sup> [weforest.org](http://weforest.org)
- <sup>l</sup> [unenvironment.org/news-and-stories/press-release/live-tracking-progress-towards-global-goals-now-possible-thanks](http://unenvironment.org/news-and-stories/press-release/live-tracking-progress-towards-global-goals-now-possible-thanks)
- <sup>m</sup> [unfccc.int/news/climate-action-plays-central-role-in-achieving-the-sustainable-development-goals](http://unfccc.int/news/climate-action-plays-central-role-in-achieving-the-sustainable-development-goals)
- <sup>n</sup> [news.un.org/en/story/2017/07/561632-un-report-urges-accelerated-efforts-achieve-sustainable-development-goals](http://news.un.org/en/story/2017/07/561632-un-report-urges-accelerated-efforts-achieve-sustainable-development-goals)
- <sup>o</sup> B Liao *Forests: Reasons to Be Hopeful* (Ideos Publications 2013)
- <sup>p</sup> [abc.net.au/science/articles/2014/01/16/3926055.htm](http://abc.net.au/science/articles/2014/01/16/3926055.htm)