



## A New Vision for Sacred Life and Living Earth



### SAFCEI Policy Conference

5-7 November 2019

#### DISCUSSION PAPER: PLANETARY BOUNDARIES AND BIODIVERSITY LOSS

Our modern way of living is destroying the rich tapestry of creation. Ecosystems, and the plants, animals and micro-organisms that they support, are being devastated by human activity including deforestation, industrial agriculture, urban expansion, manufacturing processes, pollution and waste. In 2019, the United Nations warned that we risk losing almost 1 million species within decades<sup>1</sup> if we don't start to live in harmony with nature. Scientists warn that we need to stay within nine "ecological boundaries" to sustain the stability of the Earth system, but we have already crossed the biosphere integrity boundary (biodiversity health). Some are calling this the sixth extinction crisis.<sup>2</sup> Biodiversity loss has significant implications for our ability to survive on Earth, particularly for those who have contributed the least towards this destruction. Yet they will suffer disproportionately.

As people of faith, the breaching of this boundary demonstrates a disregard for the covenant we have with all living things, and for the Earth, our shared, sacred home.

>15% of assessed species extinct in southern Africa<sup>3</sup>

Crossed **4 planetary boundaries**, including climate change, land-system change,

**60%** of global vertebrate wildlife populations lost since 1970<sup>5</sup>

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<sup>1</sup> United Nations News. 2019. *World is 'on notice' as major UN report shows one million species face extinction.* [news.un.org/en/story/2019/05/1037941](https://news.un.org/en/story/2019/05/1037941).

<sup>2</sup> The Guardian. 2018. *Biodiversity extinction tipping point.* [www.theguardian.com/environment/radical-conservation/2018/jan/16/biodiversity-extinction-tipping-point-planetary-boundary](https://www.theguardian.com/environment/radical-conservation/2018/jan/16/biodiversity-extinction-tipping-point-planetary-boundary).

<sup>3</sup> Timeslive. 2019. *Extinction looms, but African can still be saved say scientists.* [www.timeslive.co.za/sunday-times/news/2019-05-12-extinction-looms-but-africa-can-still-be-saved-say-scientists/](https://www.timeslive.co.za/sunday-times/news/2019-05-12-extinction-looms-but-africa-can-still-be-saved-say-scientists/).

Extinction rate more than  
**100 times higher** than in  
past 10 million years

biosphere integrity and  
biogeochemical cycles<sup>4</sup>

**85%** of world's wetlands  
degraded<sup>6</sup>

### Faith perspectives on biodiversity loss

Major faiths have a moral responsibility to protect the health of the natural world that sustains all life now and in the future.<sup>7</sup> The first peoples of Africa, the San, believe in an interconnected relationship with the Earth and all living beings: "the land is not ours, we belong to the land".<sup>8</sup> Christianity calls on people to "treat nature with the same awe and wonder that we reserve for human beings."<sup>9</sup> In 2015, the Catholic Pope Francis said that due to human activity "thousands of species will no longer give glory to God by their very existence, nor convey their message to us. We have no such right."<sup>10</sup> Islam acknowledges that people are entrusted to preserve the unity of God's creation, and they must avoid excessive consumption of its resources.<sup>11</sup> Hinduism recognises that "for man, there cannot be an existence removed from nature."<sup>12</sup>

### Questions to consider from a faith perspective

- How does your faith value relationships with other living beings and the Earth?
- What could your faith community do, or do differently, that would halt biodiversity loss? (If this is not an appropriate objective, what are your reasons?)
- Are concerns about biodiversity and biodiversity loss discussed, preached, taught or prayed about and acted upon in your faith community?
- What might encourage and support people in your faith community to act on their faith-based values to stem biodiversity loss?

### **Background to planetary boundaries and biodiversity loss**

<sup>5</sup> Population Matters. n.d. *Biodiversity*. [populationmatters.org/the-facts/biodiversity/](http://populationmatters.org/the-facts/biodiversity/)

<sup>4</sup> Stockholm Resilience Centre. 2015. *Planetary boundaries: an update*. [www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html](http://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html).

<sup>6</sup> United Nations News. 2019. *World is 'on notice' as major UN report shows one million species face extinction*. [news.un.org/en/story/2019/05/1037941](http://news.un.org/en/story/2019/05/1037941).

<sup>7</sup> United Nations Environment Programme. n.d. *How religions are*. [www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are](http://www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are).

<sup>8</sup> Ouzman, S. 2008. *Cosmology of the African San People*. [www.researchgate.net/publication/304181119\\_Cosmology\\_of\\_the\\_African\\_San\\_People](http://www.researchgate.net/publication/304181119_Cosmology_of_the_African_San_People).

<sup>9</sup> United Nations Environment Programme. n.d. *How religions are*. [www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are](http://www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are).

<sup>10</sup> Monga Bay. 2015. *Pope calls for action on climate change*. [news.mongabay.com/2015/06/pope-calls-for-action-on-climate-change-biodiversity-loss/](http://news.mongabay.com/2015/06/pope-calls-for-action-on-climate-change-biodiversity-loss/).

<sup>11</sup> United Nations Environment Programme. n.d. *How religions are*. [www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are](http://www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are).

<sup>12</sup> United Nations Environment Programme. n.d. *How religions are*. [www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are](http://www.unenvironment.org/about-un-environment/faith-earth-initiative/why-faith-and-environment-matters/how-religions-are).

The term “planetary boundaries” was first used by a group of scientists in 2009. The boundaries indicate levels of use in nine specified areas that we should not exceed. We have already crossed four: climate change, biogeochemical cycles, land-system change and biosphere integrity (biodiversity health).<sup>13</sup> Scientists do not know how the crossing of one boundary will affect conditions within the other areas, or how the Earth system will react. “If too much biodiversity is lost, we risk triggering a tipping point in our climate or oceans, which, in turn, could risk pushing the planet into a new state.”<sup>14</sup>

Biodiversity refers to the variety found within a closely related group of plants or animals (species); the diversity between different species (we have recorded only about 1.7 million out of an estimated 8 million species in the world); and diversity between ecosystems, such as forests, wetlands, oceans, deserts and grasslands. We need all three levels of biodiversity because they support all life on Earth. They build the health of the soil in which we grow food; they remove pollutants from water and the air; they regulate the climate; and they provide food, water, fibre, shelter and medicinal plants,<sup>15</sup> as well as supporting livelihoods for millions of rural and coastal people in Africa. Biodiversity in its multifaceted beauty also provides creative and spiritual inspiration, healing and sanctuary to Earth’s human inhabitants.

Africa is home to more than a quarter of the world’s mammals, a fifth of all bird species and at least a sixth of the world’s plant species.<sup>16</sup> We have some of the largest lakes and wetlands in the world and more than 20% of landmass is forest or woodland.<sup>17</sup> This rich diversity is accompanied by a wealth of indigenous and local knowledge,<sup>18</sup> which forms the basis of our food systems and the health of our communities. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services 2019 assessment of biodiversity in Africa highlights an alarming rate of biodiversity loss. More than 15% of species assessed in southern Africa are already extinct.<sup>19</sup> In South Africa, more than 2 500 plants are threatened with

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<sup>13</sup> Stockholm Resilience Centre. 2015. *Planetary boundaries: an update*. [www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html](http://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html).

<sup>14</sup> The Guardian. 2018. *Biodiversity extinction tipping point*. [www.theguardian.com/environment/radical-conservation/2018/jan/16/biodiversity-extinction-tipping-point-planetary-boundary](http://www.theguardian.com/environment/radical-conservation/2018/jan/16/biodiversity-extinction-tipping-point-planetary-boundary).

<sup>15</sup> Future Earth. 2015. *A planetary boundary for biodiversity*. [futureearth.org/2015/02/06/a-planetary-boundary-for-biodiversity/](http://futureearth.org/2015/02/06/a-planetary-boundary-for-biodiversity/).

<sup>16</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).

<sup>17</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).

<sup>18</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).

<sup>19</sup> Timeslive. 2019. *Extinction looms, but African can still be saved say scientists*. [www.timeslive.co.za/sunday-times/news/2019-05-12-extinction-looms-but-africa-can-still-be-saved-say-scientists/](http://www.timeslive.co.za/sunday-times/news/2019-05-12-extinction-looms-but-africa-can-still-be-saved-say-scientists/).

extinction<sup>20</sup> and its Western Cape province has the second highest plant extinction rate in the world, following Hawaii.

A growing and rapidly urbanising population is putting pressure on land for housing and increased agricultural production.<sup>21</sup> Industrial farming focused on one crop, often involving hybrid or genetically modified seed, grown using synthetic fertilisers, pesticides and insecticides, as well as large-scale mechanisation is a significant driver of biodiversity loss. In addition, the over-harvesting of natural resources; poaching and the illegal wildlife trade; pollution of the air, water and soil; and the spread of invasive alien species threaten biodiversity.<sup>22</sup>

We are losing biodiversity in a time of climate change when we will most need resilient natural systems. Average temperatures in Africa are rising faster than the global average, droughts are becoming more frequent and more severe and growing levels of rainfall variability are affecting the ability of our smallholder farmers to produce food.<sup>23</sup> We will need healthy ecosystems and high levels of biodiversity to adapt to a changing climate.

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<sup>20</sup> South African National Biodiversity Institute. n.d. *Target 7: Threatened plant conservation strategy*. [biodiversityadvisor.sanbi.org/planning-and-assessment/plant-conservation-strategy/target-7/](http://biodiversityadvisor.sanbi.org/planning-and-assessment/plant-conservation-strategy/target-7/).

<sup>21</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).

<sup>22</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).

<sup>23</sup> Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. *The regional assessment report on biodiversity and ecosystem services for Africa*. [www.ipbes.net/system/tdf/spm\\_africa\\_2018\\_digital.pdf?file=1&type=node&id=28397](http://www.ipbes.net/system/tdf/spm_africa_2018_digital.pdf?file=1&type=node&id=28397).