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# The impact of COVID-19 in curbing the goals of ensuring sustainable development of life on land (SDG 15) and below water (SDG 14)

**Louis Anto Nirmal and Samuel Jacob**

Department of Biotechnology, School of Bioengineering, College of Engineering and Technology, Faculty of Engineering and Technology, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India



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## 1. Introduction

In 2015 all the United Nations (UN) participant countries adopted the 2030 Agenda for sustainable development, ensuring an urgent action on the need of the hour crisis of life. Significant efforts to improve health and its infrastructure, tackle climate change, poverty eradication, ensure equality, and create opportunities for proper economic growth have been emphasized by the UN. To ensure all these needs, 17 sustainable developmental goals (SDG) were agreed by the world leaders and it's been already 6 years as of 2021 since being implemented and the goal is to fulfill all these goals by 2030.<sup>1</sup> Most of the key targets were supposed to be implemented by 2020. Despite progress within the extension of sustainable wildlife supervision and endangered area coverage for land, marine, and highland ranges, and the implementation of legislative, administrative, and accounting principles by various nations to guard ecosystems and biodiversity, the conservation goal remains threatened.<sup>1</sup>

In December 2019, severe acute respiratory syndrome coronavirus (SARS-CoV-2), named as novel coronavirus disease (COVID-19), originated and transmitted to major parts of the world with respiratory droplets from sneeze and cough between humans as a very common mode of transmission.<sup>2</sup> Some studies suggest that the spread of SARS-CoV-2 can be transmitted through contact with the COVID-19-infected person via object or airborne transmission.<sup>3-5</sup> Initially, the virus started affecting elders and

immune-compromised individuals severely.<sup>6</sup> As a result of its severity, COVID-19 was declared as a global pandemic and health emergency by the World Health Organization (WHO). SARS-CoV-2 in humans causes symptoms ranging from mild to severe symptoms depending on the individual's immune system. These symptoms include fatigue, high fever, abnormal respiratory functioning, sore throat, abnormal gastrointestinal behavior, loss of taste and smell for less severe cases, and acute-to-severe respiratory distress syndrome (ARDS) for very severe cases which required medical attention.<sup>7</sup> The implementation of these sustainable goals was affected due to the global pandemic. The world came to a halt, and it's been almost a year, and still, we are yet to recover from it. The worldwide pandemic has caused the closure of borders, reduced migration, and remote finances.<sup>8,9</sup> This worldwide pandemic affected global health and economic security.<sup>10,11</sup> The prospects of the second wave and the future waves have raised concerns about achieving these goals by 2030.

The world has been progressing to ensure better health infrastructure even in remote areas with the main aim of tackling COVID-19. The complete priority focus now is to eradicate COVID-19 by improving and implementing advanced technologies in vaccine manufacturing and medications.<sup>12</sup> Most countries were under lockdown for almost 3/4th of the year, while some countries are still following the lockdown restriction with only priorities being functioned.<sup>13</sup> The economic downfall for the countries could play a vital role in restricting the implementation of these targets in both developed and developing nations. The focus right now is to ensure increased job opportunities, establish healthcare technologies and facilities, poverty eradication, etc.<sup>12</sup> At the same time, the sustainability of terrestrial plants, animals, and the aquatic ecosystem is not prioritized.

Wildlife trafficking led to the ecosystem's disruption and a causative reason for spreading infectious diseases to animals. The UN stated that only 38 out of 113 nations were on track to integrate biodiversity with the national planning.<sup>14</sup> The SDGs are nonbinding treaties, and governments are likely to line their importance and target values. Their execution will mainly happen at the federal level, following the general steps of the policy-planning series, from priority setting of targets and indicators to policy assessment, judgment, and execution.<sup>12,14</sup>

SDG incorporation in curriculum nurtures students with contemporary education practices more than traditional methods of teaching instruction, research and undertaking more sustainable education methods is essential for helping scholars, and the larger community meet societal and environmental

challenges and overcome socioeconomic development challenges both within the country and globally. The SDG tactics are rapidly getting modified to support the role of education institutions by making them the cutting edge of sustainable development.<sup>15</sup> Hence, by doing this, it offers a competitive benefit to education institutions. The UN has announced 2020–30 as the “Decade of Action” in attaining these SDGs.<sup>16</sup> SDG 14 emphasizes the preservation and sustainable usage of oceans and other marine supplies, including aquatic living. While SDG 15 emphasizes protecting, restoring, and encouraging the sustainable practice of maintaining terrestrial ecosystems, managing forests, fighting against desertification, and bringing land degradation to a standstill and thereby restricting the biodiversity loss (Table 1).<sup>16</sup> After COVID-19, due to the absence of additional financial funding allocated to achieve these goals, developing countries find it challenging to propose cost-effectively innovative policy mechanisms.<sup>18</sup>

COVID-19 has created both negative as well as positive opportunities in achieving the SDG goals. This chapter will elaborate on the impact of COVID-19 in implementing the goals of life on land (SDG 15) and life

**Table 1** Agenda or targets of SDG 14 and SDG 15 between the years 2020 and 2030.<sup>14,16,17</sup>

SDG 14	SDG 15
Significantly reduce and prevent marine pollution from land-based activities and nutrient pollution	Conservation and sustainable use of terrestrial and inland freshwater ecosystems
Protect marine ecosystem and take actions on restoration for more productive oceans	Restore degraded forests and halt deforestation
Minimize ocean acidification	Battle desertification and restore degraded land which was due to drought and floods
Effectively regulate harvesting and prevent overfishing	Conservation of mountain ecosystem
Conserve 10% of coastal and marine ecosystem	Prevent the loss of biodiversity and extinction of threatened species
Eliminate fishery subsidies which are toward overfishing and unregulated methods	Sharing of the benefits from utilizing genetic resources and promote access to such resources
Increase economic benefits of developing countries through sustainable fishing and tourism	Take necessary actions to end wildlife trafficking and conserve the priority species

below water (SDG 14). Also, this chapter provides a clear understanding of how life on land and water influence each other in achieving the goals.

## 2. Key targets and impact of COVID-19 on SDG 14 (life below water)

Our oceans have a crucial role in making the earth habitable owing to the factors like the ocean’s temperature, pressure differences, cyclones, chemistry, and their ecosystem. The rainwater we receive and the climate, oxygen, and food are provided and regulated by these water bodies.<sup>19</sup> Thus careful management of these resources below the water, by not affecting their ecosystem, is essential in creating a sustainable future.<sup>19</sup> There are few targets proposed by the UN to achieve in different target years as illustrated in Fig. 1 to ensure sustainability.

### 2.1 Reduction of marine pollution

This is one of the significant targets severely affected by COVID-19. The goal is to prevent and reduce substantial levels of marine pollution by

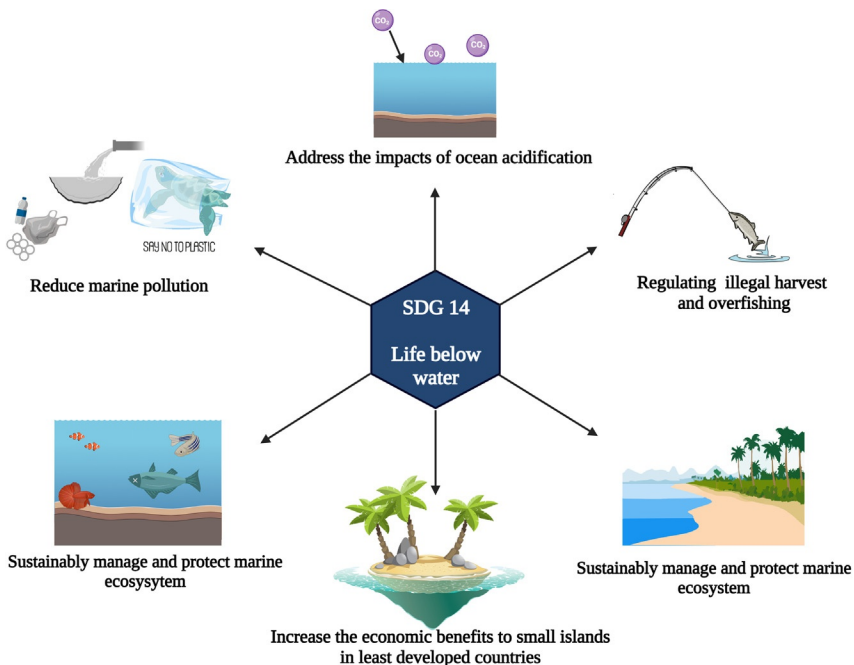


Fig 1 Key targets of SDG 14 (life below water) to be achieved by 2030.

2025. Studies have shown that tons of plastics that are used on land have made their way to the water bodies. It is estimated that an overall 4.8–12.7 million metric tons (MT) of plastic waste due to the waste disposal mismanagement of people on land entered the marine environment in a year.<sup>20</sup> Around half of these plastics are dumped into the oceans through rivers.<sup>21</sup> Eriksen et al.<sup>22</sup> stated that over 5 trillion plastics were floating in the oceans worldwide, leading to vast contamination of these water resources. The increased levels of plastic debris found in the oceans worldwide have created a major environmental and commercial crisis. Every year, a projected 5 to 12 million metric tonnes (MT) of plastic enters the ocean. As a result, the cleaning up cost and the financial loss in fisheries roughly cost about \$13 billion every year. In this case, about 89% of plastic clutter identified on the ocean bed are Single-Use Plastics (SUP), primarily plastic bags.<sup>23</sup>

COVID-19 has majorly influenced this marine pollution since its arrival. The usage of N95 masks and other surgical masks were advised to reduce the transmission of COVID-19. This led to the extensive use of these masks, which are primarily made up of polyethylene terephthalate (PET) and polypropylene (PP). Even the gloves and other protective equipment were made up of these polymers like polyethylene (PE), PET, and PP. All these used plastic wastes were dumped into the rivers, which eventually reached the oceans, contaminating them. These plastics entering the oceans might degrade into microplastics.<sup>24–26</sup> Over a year, the demand for SUP has increased due to the usage of this personal protective equipment (PPE). The PP density for the surgical mask was about 20–25 g/m<sup>2</sup> in the case of the surgical mask, while the N95 masked had a PP density of 25–50 g/m<sup>2</sup>. Those quantities of PP are very high for single use.<sup>27,28</sup> The degradation of these plastics into microplastics would be difficult to treat later due to their smaller size. Microplastics pose a severe threat to the marine ecosystem and also affects the food chain because of its longtime of decay.<sup>28,29</sup> It takes centuries to decay these plastics and will be a part of our environment for a more extended period. Studies have shown that these masks and plastics were already identified in major oceans, seas, shores, and other water bodies.<sup>30,31</sup> The fate of these microplastics is as follows: (i) plastics getting washed away onto beaches and shores, (ii) float on the oceans, (iii) deposit on the ocean bed, and (iv) ingested by living organisms like fishes and birds. The lockdowns, fewer workforce, and focus toward healthcare emergencies had led to this mismanagement and ultimately led to the disposal of these plastics without proper treatment into water bodies.<sup>32</sup> Though, the mismanagement of plastic disposal was understandable at the start of the pandemic due to the lack

of awareness. Even after a year of learning to manage this pandemic, still, these masks are disposed of into the oceans raises a concern.<sup>32</sup> The mitigation of this plastic released into the marine environment requires massive government funding in order to achieve the SDG target. This particular target is scheduled to be accomplished by 2025.<sup>17</sup>

Not only microplastics but the untreated sewage discharge with increased nutrient concentration without prior treatment were released into oceans that could cause increased eutrophication and affects the aquatic animals and plants under water.<sup>33</sup> As the world was on a halt, the wastewater treatment plants were not functioning to its limit. The challenges and impacts of COVID-19 on this target would require immediate action and focus on achieving this goal within the stipulated time.

## 2.2 Rebuilding aquatic life

Intensive human activities have been reduced due to this pandemic. The water-based logistics haven't been in full swing as there are a lot of restrictions followed by each country. This has reduced the sound generated in these water bodies, which has benefited the aquatic organisms. It has been found that the organisms living under water moved toward the coast due to the lack of human and economic activities near the shore. Though these are few significant advantages, the land activities have had a significant impact on these species living below water. Plastic production has increased by 200 folds (2015) than it was in 1950.<sup>34</sup> The increased plastic production and the decreased recycling potential have affected the marine environment to an extent. Plastic litter reaching the marine bodies affected around 800 marine species in numerous ways like entanglement, ingestion, and harmful alteration of the environment.<sup>35</sup> Thus the main aim of the target (SDG 14.2) is to manage and protect all marine and coastal ecosystems in order to prevent adverse impacts, strengthen their resilience to fight, and conduct restoration plans to attain a health and more productive ecosystem.<sup>36</sup> The toxic chemicals released from land cause changes in the body and growth function of the aquatic organism. With 2020 being a crucial year for achieving this target, COVID-19 didn't help in attaining it. The research to develop a healthy aquatic environment has taken a hit as most of the research funding is prioritized for vaccines. It is difficult for developing nations to allocate funds for this research when all the funds are directed toward helping people getting back to their everyday life. In order to restore this marine system, proper research should be conducted in developing the scientific

knowledge about the ecosystem and advance in research potential and marine transfer technology (Target 14.A). Indicator 14.A.1 is the proportion of the research budget allocated for research in the field of marine technology.<sup>36</sup> It has been estimated that over 3 billion people around the world depend on marine biodiversity for their living. There were very limited fishing activities that happened during the global pandemic affecting the livelihood of the people dependent on this. Key events in fisheries or aquaculture are fishing, fish farming, processing, transport of inputs, supply and circulation, and retail and wholesale marketing. All the activities of this supply chain process are deemed to be vital for success. Every phase of the supply chain is prone to be interrupted or hindered by the impacts and restrictive measures of COVID-19.<sup>37</sup> So once when the restrictions are being lifted, it is important to ensure that there is no such occurrence of overfishing. So, it is extremely important for the government to ensure the regulation of these activities after pandemic to avoid the prospects of overfishing, destructive fishing activities which would affect the ecosystem as per the target (SDG 14.4).

### 2.3 Ocean acidification

The early stages of the pandemic and lockdown restrictions showed positive signs in the reduction of global warming. With gradual reversal of lockdown and improper management of biomedical wastes that include hospital PPE kits disposed from viral infected environment has prompted attention from environmentalists and government towards negative impact on the ecosystem. Open incineration eventually increase the CO<sub>2</sub> levels in the atmosphere which in turn lead to ocean acidification thereby affecting the fulfilment of SDG 14.3 target. Acidification of oceans occurs as a result of the atmospheric CO<sub>2</sub> dissolved in water causing increased pH, making the water acid and also warmer. As a result of acidification, the oxygen levels start to dip and thus it suffocates some marine species and ultimately leads to shrinking their habitats. Increased temperatures could result in the surge of the speed of organisms or species within their thermal tolerance window but could also result in the rapid deterioration of cellular processes and functions when the temperature reaches higher than the tolerance limit.<sup>38</sup> Envisaging the collective effects of warming and acidification is hard, as ocean warming could either offset the results of marine acidification or intensify it through building up of stress effects.<sup>39,40</sup> Water with high pH affects crustacean animals which have shells like oysters and corals. The increased acidification of



seawaters creates algal blooms, which make other marine animals sick. They will also prevent the sunlight from reaching the aquatic organisms. Thus it is essential to manage the disposal of wastes generated as a result of COVID-19, as the incineration of toxic substances from land can indirectly affect the marine water system and the organisms living in it.

### 3. Key targets and its impact of COVID-19 on life on land (SDG 15)

The priority aim of this goal is to protect and restore the resources on land and has vital targets to be accomplished in order to make this a success (Fig. 2). The aim of promoting sustainable use of land and ecosystem is not a cause, but it is essential for our survival on land. While its initial glance primarily focused on environmental matters, the goal is of much broader significance.

Together with Goals 6, 13, and 14, it can be considered central in the architecture of the 2030 Agenda, as natural resources and their sustainable

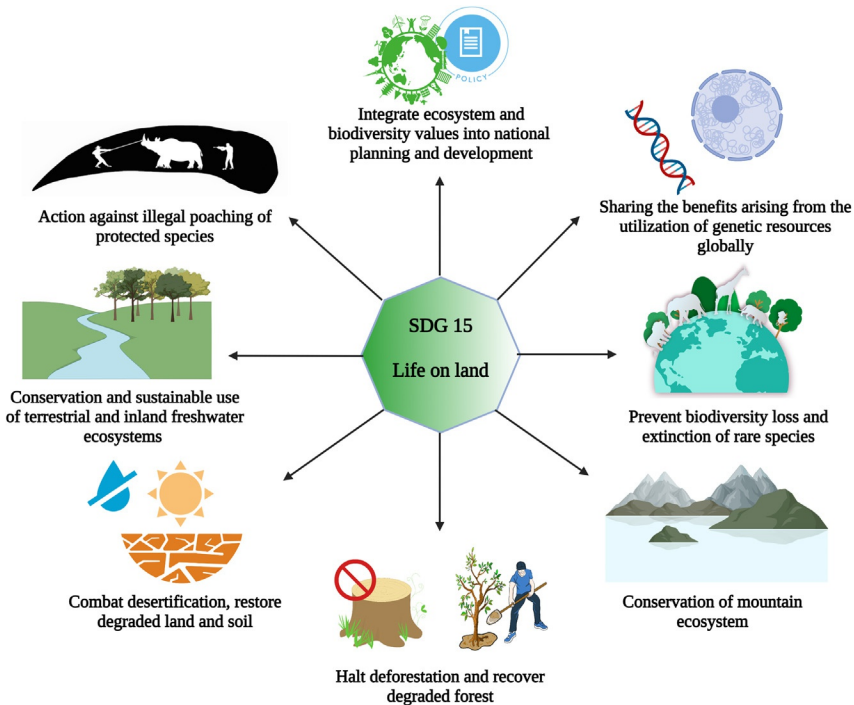


Fig 2 The proposed targets by the UN on SDG 15 (life on land).

management are relevant to achieving all SDGs and essential to avoid severe troubles to ecosystems, society, and economics.<sup>41</sup> It has been stated that almost 75% of the Earth surface has been altered by the humans. This leads to almost 1 million animal and plant species to the level of extinction.<sup>42</sup>

Forfeiture of biodiversity has the potential to have an effect on food security, economic and social welfare worldwide and particularly for people who heavily trust on local ecosystem which facilities their living.<sup>42</sup> In addition, global climate change and biodiversity are interrelated. Global climate change influences biodiversity. Biodiversity, through ecosystem services, can aid in climate change mitigation. Therefore ensuring sustainability, conservation, and restoration of biodiversity is a substantial tool to tackle global climate change. As we encroach and occupy fragile environments, this leads to the contact of humans with wildlife leading to the transmission of pathogens to humans, increasing and amplifying the risk of disease emergence. This emergence of zoonotic diseases, i.e., transmissible diseases between humans and animals, could affect the health of our planet in all major ways. Like SARS-CoV and MERS-CoV, SARS-CoV-2 is also an example of a zoonotic origin.<sup>5</sup>

The United Nations Environment Programme (UNEP) has provided four ways to support member countries to build back after COVID-19 pandemic. Its first aim is to help countries to manage COVID-19 waste followed by delivering a change of lifestyle for people and to conserve the nature. It also aims to guarantee economic recovery packages to fight the current pandemic and future crisis. It ensures revolutionizing worldwide environmental governance.

### **3.1 Factors causing zoonosis emergence**

The COVID-19 outbreak threw some light on the future impacts of these zoonotic diseases. Through the global pandemic, the Earth has received its strongest warning to date to start addressing these issues seriously. The UNEP, in 2016, highlighted the emergence of zoonotic diseases worldwide as a major concern and stated that 75% of all infectious diseases affecting humans were zoonotic diseases. Coronaviruses are zoonotic which means it is transmitted between humans and animals. Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) were identified to be communicated from animals to humans.<sup>43</sup> Better forest management and supervision could play a vital role to limit the transmission of future zoonotic diseases. As a result of deforestation and green cover

degrading, the buffer zones separating humans from animals decrease, thus increasing the probabilities of transmission of these zoonotic pathogens between the animal species as well as between animal species and humans.<sup>44,45</sup> The communication of these diseases to humans could be due to some animal attack, increased bushmeat hunting, killing animals, illegal wildlife trafficking—all these are related to wildlife fragmentation.<sup>46–48</sup>

Scientists believe that degraded wildlife habitats may boost quicker evolutionary processes as pathogens transmit easily to humans and other livestock. The factors causing zoonosis emergence were identified as follows: (i) increased deforestation, desertification, and other land alterations; (ii) increased agricultural cultivation and livestock production; (iii) poor monitoring and regulation laws for wildlife trade; (iv) the ineffectiveness of antibiotics due to its acquired antimicrobial resistance; (v) climate change.<sup>49</sup> Human intervention and wildlife trafficking could transmit infections from humans to animals too. Recent forest fragmentations are known as landscape processes which are interceded by human behaviors, and this enables direct transmission of zoonotic infections.<sup>50,51</sup> Especially, the spread of diseased bodily fluids from Nonhuman Primates (NHP) through direct contact has created the emergence of latest infections witnessed by human population, most particularly the origin of HIV almost 100 years before.<sup>52</sup> Numerous novel zoonotic disease-causing pathogens are the viruses that arise as humans and animals acquire increased interaction with wildlife animals which are the hosts of zoonotic pathogens. The danger for the exposure of latest zoonotic agents from wildlife depends mainly on three factors: (1) the range of microbes in a wildlife region, (2) the consequences of environmental modification on the occurrence of pathogens in wild populations, (3) the frequency of human and animal interaction of potential zoonoses within the wildlife regions.<sup>53</sup>

### **3.2 Emerging challenges in achieving SDG 15 due to COVID-19**

One of the noticeable and immediate effects of COVID-19 was normally seen with the changes in policy as a response to the global epidemic like restricted budget sanction, allocation of environmental funds related to SDG to other pandemic relief sectors, forest restoration programs were on hold because of travel limitations, and simplification of environmental regulations, affecting forest protection and maintenance operations to a larger extent. For instance, countries like Ecuador and Mexico in Latin America have declared budget cuts that could directly impact organizations

which enforce environmental guidelines and regulation in the aim of fighting global climate change.<sup>54</sup> Another consequence of the COVID-19 pandemic is the limited human resources availability.<sup>55</sup> Therefore several activities related to forest monitoring, management, and afforestation were affected, and these dangers are going to be soon seen in the aspect of unnoticed forest fires, agricultural farming or plantation extension, overgrazing, excessive plant growth, pest attack, and prohibited deforestation.<sup>56,57</sup> The highly increased infection and mortality rates, health issues, and other health concerns increase the limitations to the present labor scarcity. Recent on-field conservation surveys have been brought to halt as the experts and workers were either affected by COVID-19 or asked to return back to their home countries as a precautionary measure. This has brought a slowdown in conservation activities being conducted worldwide.<sup>58</sup> Protection and maintenance of the environment aided by the ecotourism sector have caused a major consequence owing to the fact that income source from the tourism will not be available due to COVID-19-related travel restrictions.<sup>59,60</sup> The idea of ecotourism, with the vision of sustainable development, started in the 1980s, to generate tourism revenues to be used in conservation and development plans.<sup>61</sup> As a result of COVID-19, the ecotourism, which is completely intertwined with nature, countries like Costa Rica and India faced complete shutdown for almost a year, and this could create negative effects on the same ecosystem and environmental-related benefits in the future.<sup>61</sup> Studies have revealed that the return of migrant workers back to their natives also created an excessive burden on the exploitation of the forest lands and caused uncontrolled forest alteration.<sup>62</sup> With migrant workers coming back to their natives, there is no doubt in observing a fall in their income levels and an increased need of agricultural supplies, which could increase the dangers of illegal deforestation.<sup>62,63</sup> Furthermore, rural families are expected to deal with income shortages by using additional forest resources, thereby being reliant and increased burden on wildlife forests.<sup>64</sup> COVID-19 emphasizes the need for careful observation of the changing ecological aspects of fragmented forests due to their potential to create hotspots displaying increased human-wildlife interaction.<sup>65</sup> The interaction with wildlife could create an opportunity for zoonotic transmission, leading to endless pandemics. Desertification, land degradation, and drought are associated with the loss of animal habitat and the transmission of diseases including COVID-19.<sup>66</sup> The rate of the next zoonotic disease emergence in the future will be very closely linked

to the progression of the relationship shared between humans and the environment, predominantly in the growth of the agricultural frontier.<sup>67</sup>

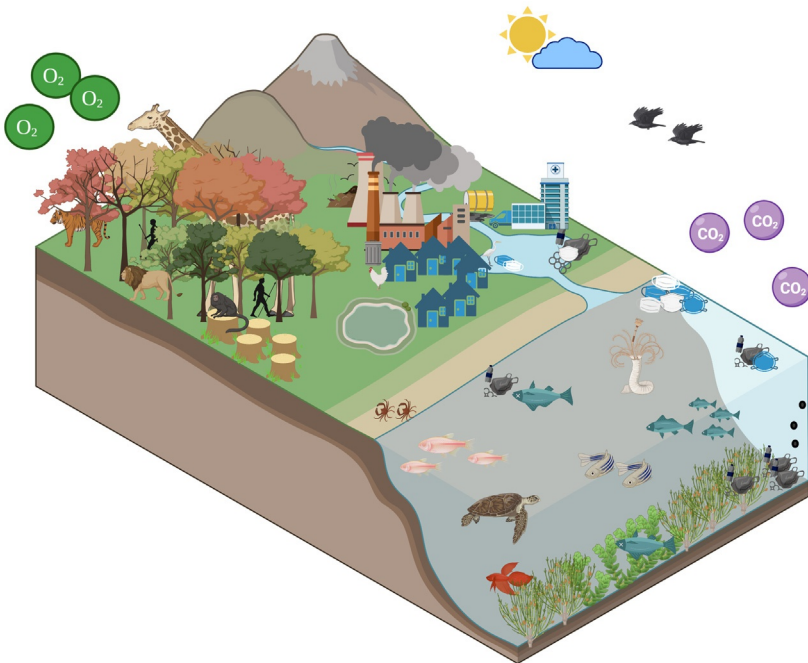
The lockdown restrictions and the quarantine rules which were followed in most countries have caused an increase in consumers to buy things and food online. As a result, the organic wastes generated by each household increased drastically. Along with that, the food and things purchased is shipped packed, leading to inorganic waste generation.<sup>67</sup> The medical wastes are also on the increasing trend. Hospitals in Wuhan generated a mean of 247 metric tonnes (MT) of medical waste every day during the early pandemic, while their previous average before the pandemic was less than 50 tons.<sup>68</sup> In countries like the USA, India, and Brazil, where the population is comparatively higher, there has been a rise in garbage from PPE like masks and gloves.<sup>69</sup> The collection of the household wastes was not possible during the lockdown phases. Thus the disposal of wastes at that time was difficult to manage and was found to be disposed locally, causing contamination of the inland water bodies.

The World Health Organization (WHO) has announced that COVID-19, just like MERS, SARS, Ebola, and Bird Flu, originated from an animal. Scientists claim that the trafficking of pangolins in South East Asia could be a crisis, as these trafficked animals carry viruses very closely related to the current coronavirus. The unending COVID-19 crisis has brought attention to the wildlife trafficking of conserved species and other species (SDG Target 15.7) worldwide.<sup>70</sup> In general, pangolins were often illegally trafficked in South East Asia, as they are consumed as food and in traditional medicine. It is also said that the trade of wildlife and products has increased by shifting to online platforms as traffickers have initiated new methods to connect with interested buyers.<sup>70</sup> The lack of people monitoring due to COVID-19, health reasons, social distancing, time restrictions, and other precautions has made the process of wildlife trafficking and illegal export of conserved species easier.

Due to the increased consumption of plastics worldwide, an excess of SUPs would be expected to get accumulate as a result of mismanaged plastic wastes disposal. So, stress and strict laws should be in practice to reduce of intentional disposal of plastics before proper management. This could radically cut the countless PPEs which might have been littered into sewers, thus preventing the running waters from being blocked and overflowing of these waters into the streets of urban zones and supports reducing the spread of infectious diseases. Proper recycling of these PPE kits is essential

in order to save the environment from plastics. Thus preserving various sorts of life on the terrestrial land requires meticulous planning of the targeted efforts to safeguard, reestablish, restore, and promote the preservation and sustainable use of terrestrial and other related ecosystems. Due to the overlaps between the goals, the crisis of SDG 15 has a cascading influence on other goals, particularly SDG 3 (Good Health and Well-being) and SDG 13 (Climate Action). Similarly, as shown in Fig. 3, the impacts of COVID-19 faced on land indirectly affect the life below water affecting SDG 14. Loss of biodiversity leans toward increasing pathogen spread and disease occurrence. Since forests hold 80% of the Earth's terrestrial species and contribute upto 1/3rd of carbon sequestration, it is essential to mitigate the global warming and curb the temperature-rise below 2°C. Immediate action on SDG 15 over the next 10 years should be mandatory despite arguments in certain quarters that developing nations are better off following economic and social policies in the short run.<sup>71</sup>

SDG 15 emphasizes precisely on managing forests sustainably, reversing and stopping land and natural habitation degradation, effectively avoiding



**Fig 3** The impact of COVID-19 on land indirectly affecting life below water.

desertification, and ending biodiversity loss. Overall, all these efforts' collective purpose is to make sure that the rewards of terrestrial ecosystems, plus sustainable livelihoods, are going to be relished by future generations.



#### **4. Efforts undertaken by the countries after COVID-19 crisis**

Deforestation, degradation of forests, sustained biodiversity loss, and the continuing degradation of ecosystems have reflective consequences for human welfare and existence. The world countries fell short on the targets fixed for 2020 to stop biodiversity loss.<sup>58</sup> The decline in biodiversity is a factor in species extinction, leading to more delicate ecosystems and not affected disruptions. The risk of species extinction has increased by about 10% over the last 25 years globally.<sup>36</sup> The global pandemic COVID-19 has confirmed that by menacing biodiversity, humankind threatened its own survival. In spite of the losses that occurred in forest area, the forest biomass per hectare, the percentage of forest cover in conserved zones, and the certified forest area were increased significantly, indicating worldwide progress toward ensuring sustainable forest management. Till February 2021, 127 countries had pledged to fix their voluntary targets in order to achieve land degradation neutrality. While in 68 countries, the governments have authorized the targets officially.<sup>36</sup> The coronavirus pandemic and its consequent effects on humans and their economic welfare have blatantly shown the potential and threatening impact of zoonotic diseases. The cause for these diseases to spread has a major part to do with wildlife trade, no matter if it is legal or illegal, as it is a possible vector. While the illegal wildlife products are declining, for instance, there has been a 3.5-fold decrease in ivory products produced since 2013. Some species are under increasing threat, like Pangolins with a 10-fold increase in their products which is concerning.<sup>36,72</sup>

Efforts have been taken to reduce the pH of marine environments. Though the discharge of nutrient wastewater has been limited globally, eutrophication could not be substantially reduced yet. But observations in open oceans have shown a significant reduction in the overall pH in the last 20 years.<sup>73</sup> The UN, on the other hand, helps developing countries in mobilizing grants to support them to attain these goals. The organization has also introduced a new scheme for 2021–30 as “Decade on Ecosystem restoration,” which is a globally coordinated program to reduce the degradation of habitat and improve the relationship between humans and nature.<sup>74,75</sup>



## 5. Conclusion

It is acknowledged that the threats and opportunities created in relation to the SDGs since the COVID-19 pandemic can only suggest an initial impression. It is important to assess the long-term impacts of the COVID-19 for every year of the SDG after the pandemic. As of now, both positives and negatives have been observed through this pandemic in relation to achieving these goals. Sufficient grants should be allocated to these goals after the crisis and fast-track the process in achieving this as these goals provide a sustainable future. Extensive research should be performed in maintaining and developing the ecosystem and not affect them nevertheless by the use of technology. SDG 14 and SDG 15 are interconnected, as the effect that happens on land will be reflected on the marine environment and vice versa. Thus it is important to create a balanced ecosystem which does not affect each other for any benefit. The accomplishment of these SDGs could prevent us from facing another global pandemic.

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