



Contemporary Global Issues & Planning For Environmental Management after COVID-19

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Introduction

The global Covid 19 pandemic showed us what a health crisis, economic crisis, education crisis, inequality crisis, etc. looks like in reality. The pandemic surely pushed back human development internationally, by around 20 years. As a result, several companies are placing sustainability as the core of their business models or initiatives. Covid 19 as well as the social responsibility towards the disease have drawn a range of behavioural and societal transformation that is supposed to stay for quite a long- even after the deadly disease. The environmental and health impacts are being discussed globally, and recovery plans are proposed and implemented.

An essential part of the supply chain is undoubtedly Waste Management. Unsuitable and insufficient management of healthcare waste has serious public health and environmental outcome which can make a considerably harmful impact on the health of people and the planet. The unexpected increase in the quantity of health care waste, as a result of the global pandemic, has certainly disclosed the prevalent cracks in the waste management systems worldwide. Therefore, for protecting the communities, the people, and the planet-currently, viable health care waste management is the most significant factor, than it had ever been.

The universal disturbance due to the COVID-19 pandemic brought about numerous effects on the climate as well as the environment. Due to various restrictions and a considerable slowdown of social and economic behaviour, there have been a few positive impacts of the pandemic too; which may aid in the restoration of the ecological system. For instance, besides the augmented use of PPE kits, the face mask, hand gloves, etc. and the generation of a massive quantity of hospital waste the pandemic has globally improved air quality, reduced water pollution, diminished carbon emission, etc. The thousands of extra tons of medical waste, as an aftermath of the COVID-19 pandemic, have put incredible tension on health care waste management systems globally. The ultimate consequence of which is a threatening human and environmental health along with revealing a terrible need to improve waste management practices.

Dr. Michael Ryan, (E D, WHO Health Emergencies Programme) quoted-

“It is vital to provide health workers with the right PPE, but it is also vital to ensure that it can be used safely without impacting on the surrounding environment.”

The paper widely talks about a set of proposals for assimilating better, safer, and more environmentally conscious waste practices for present COVID-19 response as well as future pandemic attentiveness, in the vigor of “building back a better world”.

Challenges

As mentioned above, in addition to the positive environmental impacts, there are also some unconstructive and harmful impacts of COVID-19. Undoubtedly, there has been a direct impact on the quality of natural resources like air, water, soil due to the increased rate of municipal waste (both organic and inorganic). Furthermore, the lockdown implied by different countries have adversely affected and risked the flora, fauna as well as a natural ecosystem. Various human preserved areas, like natural parks, marine conservation zones, wildlife, sanctuaries, etc., were abandoned and unmonitored as the caretakers of these areas were stuck at their residences which, therefore, increased wildlife hunting, illegal deforestation, and unreasonable fishing issues.

Moreover, since ecotourism contributes as the foremost source of an economic mainstream, the sudden closure of tourist activities augmented the unemployment rate. During the pandemic, various photos were shared on different social media portals like Facebook, Twitter, and Instagram where the pictures showed reduced smog in China, wild animals roaming on the streets of New York and London, and unpolluted canals in Italy. These images surely contributed to the misinterpretation of the environmental hazards and disseminated an inappropriate description of the environment, brushing off the detrimental impacts that have emerged. The massive burden of continuous untreated medical waste is a menace to the environment. As far as the economic activities are concerned, it is likely to pick up its pace eventually and the situation will strengthen gradually. However, proper implementation of effective strategies should be imperative to help environmental sustainability globally.

As a consequence, of the pandemic, the healthcare facilities have started to yield more waste that could be infected with the virus than usual. There has been a considerable increase in the number of single-use plastics too. If the infected medical waste is not treated appropriately, it can lead to major public health issues as well as uncontrolled incineration that could result in releasing toxins into the environment. Another area of concern for the waste is its reach to the water sources and lead to riverine or marine contamination

The UNEP (**United Nations Environment Programme**) advises to diminish the adverse impacts of the Covid 19 pandemic on the global environment and suggests various effective ways to safely manage the increased waste production. The authority also suggests numerous ways to manage the release of hazardous chemicals in the atmosphere, land, and water on a worldwide basis.

Capacity assessment of the medical waste

Even during normal times, environmentally sound medical waste management was vital. The prioritization of waste management in such thought-provoking times is critical not just in terms of human health but also, to the planet universally. It is imperative for countries worldwide, to assess the quantity of infected waste that is produced, and the suitable as well as available technologies that could be used to treat the waste.

Policy and legislation linked with the pandemic

Proper and monitored guidance on policies and their regulation shall help the nations to acquire a stable legal and institutional basis for responding to future waste emergencies in an improvised way.

Air quality and the pandemic- interlinked

One of the only few positive impacts of the deadly pandemic was the improved air quality due to reduced emissions of various harmful gases. However, the inappropriate handling of the waste management methods, unsound practices, or open burning of the disposable medical waste has negatively impacted the air quality. Therefore, following environmentally thorough practices for waste management (especially medical waste) along with sustaining high environmental standards and implementation is indispensable.

Certainly, the health sector is under immense pressure to diminish its carbon footprint and reduce the quantity of waste being sent to landfills due to the already existing abundance of plastic waste and its impacts on air, water, food systems, human, and ecosystem health in various parts of the world.

Solution

There has been a rapid identification of gaps amidst the health sector and healthcare facility management. The installation of 76 autoclaves was a substantial, climate-related intervention, which uses less energy than incinerators without emitting hazardous pollutants (dioxins and furans, etc.). Along with these a few types of equipment for safely segregating, storing, supervising, and monitoring the necessary waste management for long-term sustainability are also introduced. A plethora of developing countries face difficulties to administer the various types of plastic waste, masks, PPEs, vaccination waste, and laboratory wastes too. Another major contributor to the medical waste was quarantine and isolation places, which increased the volume of waste by tonnes.

It is expected if not treated efficiently, the planet would be creaking under a mountain of waste and a head-start towards this intervention - what would rapidly balloon into a global massive highland of medical waste as a response to the Covid 19 pandemic. A conventional indication of this mountain can be grounded on the UN's initiative to provide the lifesaving PPE kits during the pandemic, further down which 1.5 billion units of single-use PPE, which weighs around 87,000 tonnes (presumed to become waste). However, this indication does not

include the “reusables”, (such as face shields and gowns, PPE’s, etc.) procured privately or externally of the initiative along with the additional masks used by the general public.

Another key contributing area is- over 140 million test kits dispatched under the initiative, which certainly has the potential to produce non-infectious waste (majorly plastic) of 2,600 tonnes, chemical waste of 731,000 liters, and the 8 billion vaccine doses that have been supervised worldwide, which contributes wastes like glass vials, syringes, needles as well as disposal safety boxes. The rush to meet the needs for these medical kits was understandable in the initial stage of this deadly pandemic where the infection rate of the front-line workers was four times higher compared to the general public. However, very little attention was paid towards resources to support safe waste management, essential infection prevention & control, and the adverse environmental impacts of this eventually rising crisis.

Where the majority of the world health care facilities were unequipped to manage their existing waste streams, rapid growth in medical waste did put the lives of the healthcare workers and others involved in processing waste at risk. The masses of informal waste workers, the communities residing nearby the waste facilities, threats of needle stick injuries, infections, and the pollution stemming from open burning of the biowaste (the majority COVID-19 test kits) posed a danger to the environment universally. Many countries reprocessed their prevailing resources and processes or innovated their ways to deal with this critical situation.

A plethora of solutions that could contribute towards helping mankind through their way out include- reducing PPE through safe and balanced use, packaging and shipping which is eco-friendly, developing and using harmless and reusable PPE i.e., gloves & medical masks. Furthermore, using recyclable or biodegradable materials, investing in technologies that are based on non-burn waste treatment, more local production in regions, and prompt shipments to avoid add-on packaging and logistic waste. There has been a considerable inclusion of environmental and climatic impacts among the growing health investment, which has resulted in truly constructive action.

Even before Covid 19 arrived, the longstanding problem of the overuse of gloves existed resulting in low hand hygiene, needless additional financial costs, and detrimental environmental impacts. The gloves contributed the largest proportion among all the items of PPE waste, in the whole global system.

The pandemic has globally forced humankind to consider the gaps and abandoned aspects of waste management along with addressing how to produce, use and discard our health care resources. The basic requirement of climate-smart health care systems is to manage the health care waste, a strong recovery from the effects of COVID-19, and awareness for other future health emergencies.

Environmentally Sustainable Potential Strategies

The global pandemic has extracted a universal response and makes the world united to triumph against this deadly virus. Therefore, a few imperative and possible strategies are proposed for worldwide environmental sustainability.

- **Sustainable industrialization:** A sustainable strategy for industrialization is to be promoted. Shifting to less energy-intensive industries, using cleaner fuels and technologies, and strong energy-efficient policies are to be implemented. Industrial zone division is crucial for utilizing the waste of one industry as the raw material in the other. Also, industries, where a large number of people work together, should maintain distance and hygiene.
- **Use of green and public transport:** Introduction and encouragement towards reducing emissions are necessary by promoting public transport. Using bicycles is also beneficial for individuals' health as well as and public bike-sharing or carpooling should be promoted on a mass level.
- **Use of renewable energy:** The demand for fossil fuels can be reduced by using renewable energy. The pandemic has reduced the global energy demand, thereby reducing emissions along with resulting in better air quality in various areas. However, it is difficult to cut-off energy demand like it was done in the pandemic situation. Therefore, using renewable energies can meet the energy demand and reduce harmful emissions.
- **Wastewater treatment and reuse:** A proper treatment of both industrial and municipal wastewater should be done before discharge. Furthermore, reusing the treated wastewater in non-production processes like toilet flushing and road cleaning will be able to reduce the excess water withdrawal burden.
- **Waste recycling and reuse:** Recycling and reusing industrial and municipal wastes, reduce waste and environmental pollution. It is of utmost importance, that hazardous and contagious medical waste should be appropriately managed by following specific guidelines provided by the authorities. There is absolutely a lack of knowledge concerning waste segregation and disposal problems, especially in developing countries. The government authorities should implement wide-ranging awareness campaigns, for the same.
- **Ecological restoration and ecotourism:** The pandemic situation has considerably reduced the pressure on tourist destinations, which is surely a boon for the restoration of our ecological system universally. Furthermore, to maintain the same, tourist spots should occasionally be shut down after a certain period. Also, the strengthening of ecotourism practices would surely aid in promoting sustainable livelihoods, cultural preservation, and biodiversity conservation.
- **International cooperation:** The protection of environmental resources and satisfactory sustainable environmental goals requires a collective international effort is vital.
- The international authorities should prepare time-oriented policies, organize global conventions, and coordinate with the global leaders for the appropriate execution of the regulations.

As it is said- “the fortune favours the prepared”. A proper solid system that safely and sustainably diminishes & manages the biowaste is required for this; upcoming waste challenge as well as the increasing seriousness of the global environmental, climatic changes. Not only the formulation of stern policies but also the implementations and regulations at all levels along with consistent monitoring and reporting is imperative.

The pandemic has surely acted as a catalyst to scale up prevailing attempts by directing the political leadership along with competent countrywide partner coordination on the financing of sustainable waste solutions for the Covid 19 pandemic. The past two years in the pandemic have shown how closely different directives are linked and how life-threatening catastrophes could be handled in the future. In the decisive time of the race towards the GLOBAL GOALS of 2030, this deadly pandemic has revealed the major cracks in the existing system. As it is quite clear, there is an absolute need for more fundamental and instantaneous actions to focus on climate change.

Recently at the UN Climate Change Conference, several countries have committed to climate-smart health care systems which includes important modifications at all stages from global to the hospital floor. The way health care waste is managed and treated, a hearty recovery from the pandemic along attentive conduct to deal with other anticipated health emergencies in near future are also some of the focal points of the conference. Covid 19 successfully built a new world, which offers an overview of the businesses and societies developing over a couple of years; very different from what they would have been.

Conclusion

Several countries, especially the less developed ones lack a globally safe waste management system for dealing with healthcare waste. As one of the many detrimental side effects of the Covid 19 pandemic, there is a huge surge in healthcare waste and worsening environmental impressions from solid waste. There should be strategies and policies targeting the international & national levels to promote a scenario that is an accomplishment for the pandemic PPE use, testing, and vaccinations as well as are safe and back the environment sustainability.

This can certainly be achieved through strong policies & even stronger implementations, regular inspection, documenting, increased accountability, behaviour change support & workforce development, and increased budgets & financing. A better, greater, and systematic procurement and disposal practice need to be implemented for an organized change of healthcare waste management, worldwide.

It is imperative to understand the comprehensive relationship between human beings and the environment and the deadly Covid 19 is a reminder of the same to the whole human race. Therefore, the prevention from any such future outbreak requires mankind to focus on the threats to ecosystems and wildlife, along with habitat loss, illegal trade, pollution, and climate change.

Various impacts of the pandemic that have been observed or maybe anticipated, on the environment are as follows:

- The CO₂ concentrations in the atmosphere are still on the growing side in various areas, because of the use of plastics, notably in packaging.
- Increased poverty due to the loss of people's livelihood as a result of Covid 19 leads to further unsustainable harvesting of natural resources.

- A plethora of vital negotiations on the global issues of environmental governance, which were supposed to take place has been postponed
- The pressure on the environment is likely to resume, if, the proper allocation for management industries of specific concerning areas and finance management for green investment is not done appropriately.

Thus, governments on a worldwide level needs to build back improved economies, generate jobs and encourage businesses with a clear vision of better air quality, water and sanitation, waste management, and biodiversity protection. The reduction in greenhouse gas emissions is also a key factor, to be kept in mind for reducing vulnerability including the rise in flexibility and sustainability. The reduction in employment resulted in the reduction of recycling efforts which eventually contributed to a further massive challenge i.e., collection and disposal of the general waste. Several government policies were introduced to limit the recycling of waste as a response to reducing the risk of infection. The after-effects of Covid 19 are such, direct as well as indirect, which will be understood in the months and even years to come. However, there is an urgency of short-term, globally to stand up and find a way out to protect and rehabilitate the planet's biodiversity.

Recognizing the appropriate opportunity for a better future is of utmost importance. Covid 19 is undoubtedly has set a benchmark for countries globally, to come together in this crisis for helping each other as well as in efforts to achieve the Sustainable Development Goals. Long-term sustainable strategies to focus on various environmental and social areas are the need of the hour, with a strong motive to tackle climate change and environmental degradation. Ensuring a better, healthy, safe, secure, less polluted, and “new normal” world to our upcoming generation could be an eternal gift.

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