ONE HEALTH APPROACH: AN EFFICIENT WAY TO DEAL WITH CLIMATE CHANGE

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Abstract

One Health is an emerging strategy that answers the problems of public health from the animal-human-environment interface. It recognises that animal health, human health and environmental health are interdependent on each other. The root of all causes is climate change. If harms to public health are not direct result of climate change, their impact is amplified by climate change. This paper suggests utilisation of One Health Approach for mitigation and wherever possible reversal of climate change. To advance One Health, some essential methods have been discussed. Advocating interdisciplinary education, utilising indigenous knowledge and recognising the rights of the tribes, framing one Health legislations and creating a right-based and gender-based approach are some of the methods for implementing One Health. Several UN organisations such as WHO, FAO, OIE and UNEP have already recognised the usefulness of One Health. It needs to be implemented at grass-root level to facilitate sustainable development and so this Paper analyses the developments in India with respect to One Health and further steps to be taken. India has taken small steps towards One Health. Health sector has undertaken research and development amidst pandemic to identify possible causes and solutions to emerging diseases. Besides, environment sector tries to incorporate One Health is mitigating animal-human conflict. The umbrella legislation Environment Protection Act (EPA) 1986, other laws as well as the judiciary recognise the threats to public health posed by environmental damage. EPA can provide legal-backing to One Health while a One Health policy will provide a framework for all the stakeholders to advance and implement One Health to obtain sustainable solutions for climate change.

Keyword: One Health, Climate Change, Sustainable Development, animal-human conflict, food insecurity, disease, disaster.

INTRODUCTION

Climate change is taking a heavy toll on the lives of living beings and so the earth is witnessing an urgency to take immediate steps for mitigating its impact. Human's destructive interference with the nature has given rise to irreversible changes detrimental to the healthy sustenance of life on this planet. Humans conduct experiments with animals which bring changes in the food webs and food chains. These experiments also cause undesirable genetic mutations, creating ecological imbalance. A holistic approach is required for the preservation of the ecosystem.

One Health Approach is an integrated strategy which aims to nurture the public health collectively. The concept was first developed as 'One Medicine', changed into 'One Health, One World' and gradually evolved into 'One Health'.[1]WHO defines it as 'an approach to designing and

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[1] John S Mackenzie & Martyn Jeggo, *The One Health Approach-Why Is It So Important?* IV Trop Med Infect Dis 88 (2019).

implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes.'[2]

One Health Commission states, 'One Health is a collaborative, multisectoral, and transdisciplinary approach—working at the local, regional, national, and global levels—with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.'

This concept recognises the interdependence existing between the living organisms, that is, humans and animals. Therefore, it views the public health problem through the interface ofhuman, animal and environment.

The initial and prime objective of One Health is to address the spread of zoonotic diseases. One of the major issues ecology faces is that the microbes build resistance after prolonged exposure to medicines and extreme pressures. Disease-causing microorganisms undergo mutations which produce immunity against the disease. As a result, medicines stop affecting the microbes inside the human body. This immunity created within microbes is known as Antimicrobial Resistance. It poses a serious risk to the efficacy of available medicines or vaccines, rendering the entire scientific invention futile.

The root of the cause is that microbes, animals as well as humans sustain in the same ecosystem. Often, the same microbes carry the potential to target both animals and humans. That is why antimicrobial resistance is not only the problem of humans but also that of the animals and the environment they live in.

One Health strives to find an integrated solution that delivers protection to all the living beings and the environment as a whole. The reason being that no solution can be identified in isolation. It requires collective efforts to solve the ecological imbalance.

Environmental health encompasses every type of health and so is the greatest wealth which this world possesses. It is necessary to nurture and preserve this health. Scientifically-driven development, urbanisation and industrialization cause rapid changes in the climate, thereby, causing harm to the nature's health. The present times, in which climate change is expediting and disaster management is the need of the hour, essentially call for the utilisation of One Health approach.

SIGNIFICANCE OF ONE HEALTH FOR THE ENVIRONMENT

One health is a quid pro quo for the mitigation of climate change and disaster management. Environment has often been the neglected part of the one health interface.[3] This is because the

[2]World Health Organisation, *One Health* (Sept. 21, 2017) *available at*- https://www.who.int/news-room/questions-and-answers/item/one-health (last visited Apr. 10, 2022).

major focus is on strengthening the public health. The agencies which are implementing this strategy are the World Health Organisation (WHO), the Food and Agricultural Organisation (FAO) and the International Organisation for Animal Health (OIE). Such implementation of this strategy undermines the environmental factor, leaving its true potential untapped. Inclusion of One Health in solving environmental issues directly can augment the environmental programmes, giving headway to the international and national policies.

IMPACT OF CLIMATE CHANGE ON HEALTH

Climate Change implies alteration in the weather pattern, which further affects the pristine ecosystem, because of human interference. Changes in pressure and natural forces have resulted in shifting of natural cycle, extreme heat or cold, irregular rainfall and frequent occurrence of natural disasters. It creates not only food and water insecurity but also new vector-borne diseases.[4]Several species have gone extinct or become endangered, disrupting the ecosystem and threatening the sustenance of other species.

Transmission of infectious diseases is increasing rapidly and jumping from animal to human boundary and vice-versa. All this primarily because of rapid growth of population, lack of proper portable water and sanitation facilities, degradation of land, encroachment in animal habitats and rise in migration across national and international boundaries.[5] Consequently, enhanced industrial processes, scientific experiments, innovations for convenience in domestic lives and vehicular mobilisation have resulted in excessive emission of Greenhouse Gases (GHGs). These emissions are the real factors resulting in melting of ice and rise in sea-levels. Cyclones, floods, heat storms and wild fires are occurring at unprecedented rates.

Intergovernmental Panel on Climate Change Report 2022 has observed the adverse health outcomes of climate change. Besides increase in vector-borne and water-borne diseases and risks to respiratory tract infection, it has noted the increase in rate of mental illnesses in the populace that has been exposed to natural calamities.[6]

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[3]Sabiha Y Essack, *Environment: The Neglected Component of the One Health Triad*, 2(6) Lancet 238,239 (2018).

[4]WHO Compendium of WHO and other UN guidance on Health and Environment at 97 WHO/HEP/ECH/EHD/(22, Jan2022).

[5]Fiona Godlee & Adele Waters, *Healthy people, healthy animals, and a healthy environment: One Health*, BMJ (July 12, 2018) *available at*-https://doi.org/10.1136/bmj.k3020 (last visited Apr 11, 2022).

[6]Guéladio Cisséet. al., *Health, Wellbeing, and the Changing Structure of Communities* in CONTRIBUTION OF WORKING GROUP II TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 4 (Bettina Menne, et. al., eds. 2022).

Disasters not only impact public health by causing loss of lives and livelihoods but they also give rise to diseases, known or unknown. One such example is the Rift Valley Fever.[7] In 2006, torrential rainfall and flooding happened in parts of north-eastern Kenya and southern Somalia. After its cessation, the Garissa district of Kenya was smitten with an unknown illness in humans. At that time, deaths and abortion of livestock was also being reported in that area. The first human who died was showing symptoms of fever and bleeding manifestations. Serology and Polymerase Chain Reaction (PCR) confirmed presence of Rift Valley Fever (RVF) virus. Ministries of Health, Agriculture and Fisheries acted promptly with assistance of international organisations to build surveillance systems for monitoring diseases in humans as well as animals. Rapid response teams collected demographic and clinical data and studied risk factors leading to transmission. Participatory epidemiology approaches were used to gather information from pastoralists regarding health of livestock. Through diagnoses, it was confirmed that cattle, goats, sheep, camels, buffaloes and giraffes have been exposed to RVF infection. Entomological probing confirmed that circulation of virus in local mosquito population. Livestock slaughter was banned and livestock vaccination took place.

After the end of the epidemic, it was estimated that 12.5 million cattle, 11 million goats, 8 million sheep and 850,000 camels were directly or indirectly impacted by the outbreak.[8] With the above-mentioned example, it can be inferred that torrential rainfall increased the population of rainfall which resulted in transmission of RVF.

The present Covid-19 pandemic has exposed the vulnerability of the life-supporting systems. Beginning by the end of 2019, the world has yet not been able to come out of its grip. Several co-morbidities enhanced the degree of exposure to SARS-Cov-2. Besides, there exist several chronic, non-communicable diseases which react to small changes in weather such as heat, cold, dust, small particulates, ozone, fire smoke, and allergens.[9]

Another impact of climate change is food insecurity. Non-communicable diseases also consist of overweight, obesity, malnutrition and undernutrition. Because of marketing of processed, energy-condensed foods, the prevalence of such diseases has become common due to deterioration in quality. Despite production of sufficient food, it remains unavailable or unaffordable especially to

[7]Siobhan M. Mor et. al., ONE HEALTH SURVEILLANCE: MONITORING HEALTH RISKS AT THE HUMAN–ANIMAL–ENVIRONMENT INTERFACE , 180 (2019) available at https://doi.org/10.2307/j.ctvggx2kn.13 (last visited 03/10/2022).
[8]*Id.*
[9]*Supra* Note 6.

poor.[10] As a result, the food systems have made the health systems quite unsustainable. With change in weather patterns due to climate change, the circulation of vectors, pathogens and microbes will increase. Subsequently, public health will become more vulnerable than before. Therefore, the relation between health and climate change becomes alarmingly evident, calling for urgent steps to be taken.

FACTORS RESPONSIBLE FOR CLIMATE CHANGE

Although it has already been briefed in the above mentioned lines the repercussions of climate change, this section comprehensively discusses the factors that need to be addressed through One Health.

Excessive exploitation of resource, overconsumption of renewable natural resources and unnecessary production has made the world unsustainable. Useful land is scarcely available. Water tables are depleting, pollution levels are rising and occurrence of communicable as well as non-communicable diseases is surging. Land utilisation for agricultural purposes is umpteen benefits but it is relatively the major factor responsible for degradation of ecosystem. For instance, Green Revolution in Punjab during 1970s and 80s earned it the tag of 'Food Bowl of India'. Tube wells were erected, power was supplied freely, and huge subsidies for urea were provided along with High Yielding Variety of rice, paddy and wheat which are water-intensive in nature. Undoubtedly it raised the yield of paddy and wheat in Punjab. Because of the remuneration farmers received from production and supply of these crops, they solely produced paddy and rice in rotation.

Data collected by India Water Resources Information System conveys that over 2000-2019, the groundwater level in Punjab has depleted by 9.2 meters, highest in any state of India, with 78% of the assessment units being categorised as 'over-exploited', 4% as 'critical', 6.7% as 'semi-critical' and 11.3% as 'safe'.[11] Consequently, not only the quality of groundwater degraded but also the groundwater levels are under enormous stress. Besides, there is high concentration of uranium in groundwater due to anthropogenic factors that has cancerous implications for health.[12]

Conversion of forests into cropping and grazing fields has resulted in depletion of World's temperate and tropical forests which are home to 80% of terrestrial biodiversity.[13] It leads to

[10] Robyn G Alders *et. al*., *A planetary health approach to secure, safe, sustainable food systems: workshop report* 489,493 Food Sec (2018), *available at-* https://doi.org/10.1007/s12571-018-0780-9(last visited Apr. 19, 2022).

[11] Ashok Gulati *et. al*., *Blueprint for a prosperous Punjab*, THE INDIAN EXPRESS (Apr. 11, 2022, Lucknow) 7.

[12] *Id.*

[13] Julie Garnier*et. al*., *Helping to heal nature and ourselves through human-rights-based and gender-responsive One Health*, One Health Outlook (Nov. 16, 2020) *available at-*

dislocation of not only animals but also indigenous tribes. Migration of indigenous tribes leaves the forests unchecked, accelerating the occurrence of wildfires. Fish populations have been reduced due to damming of rivers for production of energy and for irrigation facilities.

Moreover, plastic and garbage pollution in oceans have caused deoxygenation of our oceans, making the marine food chains unsustainable. When humans consume the sick fishes that have been exposed to pollutants, they also consume the toxins present in their food.

Between 1974 and 2014, the world has witnessed 60% decline in the population of land vertebrates and a thousand fold increase in the extinction rates in comparison of pre-human times.[14] As the initiation of 6th mass extinction threatens the existence of approximately one million animals and plants species, the nations need to frame and enact policies that collectively address the hazards to human, animal and ecosystem.[15]

ADOPTION AND IMPLEMENTATION OF ONE HEALTH

Through a joint initiative by the One Health Commission, the One Health Platform Foundation and the One Health Initiative, November 3 is annually celebrated as "One Health Day" since 2016. Its aim is to spread awareness regarding OH interdisciplinary approach and encourage scientists and advocates to extend the ambit of their research by entering different fields for finding solutions for global health and environmental challenges. The campaign organises events for students at school and varsity levels, incentivizing them to participate by way of cash prizes. In this way, students not only get to learn about OH but also contribute to advance the benefits of OH.

The IPCC Report 2022 recognises the potential of One Health as a comprehensive framework that aims to resolve global issues of environment and public health through interdisciplinary approach. The estimates of mortality have increased after its association with climate change has now been included in the social costs of carbon estimates.[16] Besides, the report also mentions the application of OH in understanding the relation between the health of indigenous people and climate change, although it does not delve deep into the topic.

Several organisations such as WHO, OIE, FAO, One Health Commission, One Health Platform, One Health Initiative, Centre for Disease Control and Prevention and many more are working to promote OH at local, regional and international level. In US, One Health Act directly performs the functions required at human-animal-environment interface.

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https://onehealthoutlook.biomedcentral.com/articles/10.1186/s42522-020-00029-0(last visited Apr. 19, 2022).

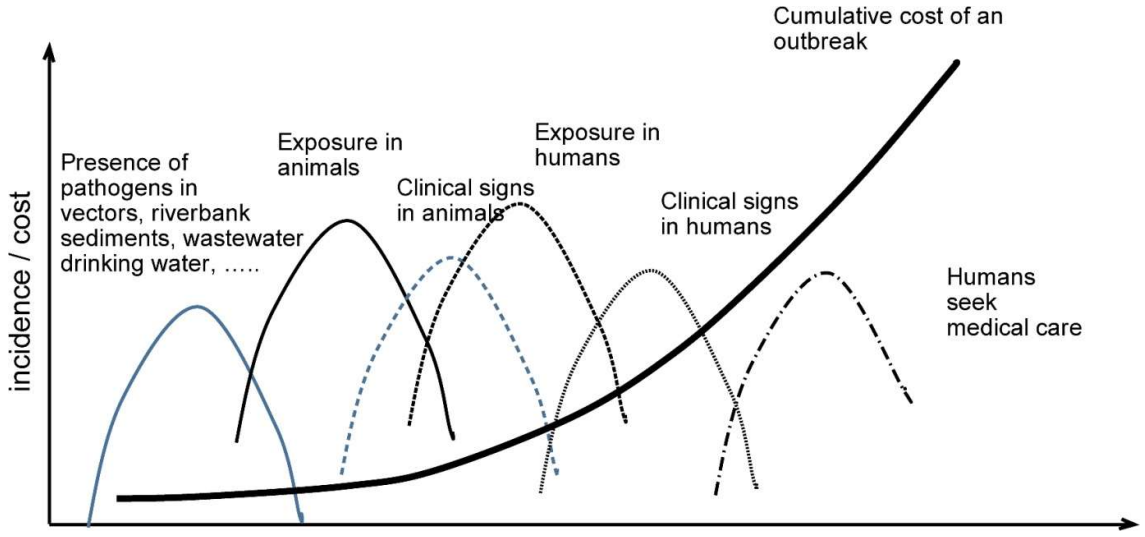
[14] *Id.*

[15] *Id.*

[16] *Supra* Note 6 at 11.

World Bank has also assessed the outcomes of One Health. The figure provided below shows that when animals get exposed to vectors, they exhibit symptoms. Slowly, humans get exposed to the pathogens either directly via vectors or through animals already exposed and in turn, humans exhibit symptoms. Once infection start spreading among humans, significant amount of loss to health has already been done which is further burdened with financial costs incurred for treatment. However, if the disease is detected at the stage of exposure to animals before it gets transmitted to humans, damages can significantly be prevented.

Figure 1[17]



Scholars and scientific community conveys multiple strategies to implement One Health at all levels.

ONE HEALTH LAWS

One Health Framework would materialise when there are laws for its implementation. Laws will convert the objectives of OH into "concrete, sustainable and enforceable rights, obligations and responsibilities."[18]Legislation will facilitate inter-departmental coordination aimed at developing policies and schemes that address inter- and cross-linked issues. For instance, ecological perspective can be mainstreamed into food and agriculture laws, incentivizing protection of flora from alien attacks. Emergency situations can be tackled effectively through combined efforts. Legislation would not only ensure enforcement of its objectives but also make the state, citizens and persons accountable for their unintentional and intentional acts or omissions detrimental to public health and ecosystem.

[17] World Bank,PEOPLE, PATHOGENS AND OUR PLANET: THE ECONOMICS OF ONE HEALTH Vol. II, 11 Report No. 69145-GLB (2012).

[18]FAO of UN, *One Health legislation: Contributing to Pandemic Prevention through Law* (2020)*availableat*-https://reliefweb.int/sites/reliefweb.int/files/resources/CA9729EN.pdf (last visited Apr. 19, 2022).

Many observed and expected threats to human health and welfare, health systems, and migration and conflict can be decreased or avoided with strategic, prompt, and successful adaptation.[19] One Health legislation imbibing the following elements will have fructuous outcomes.

1. **Gender Equality**

The impacts of climate change, insecure food systems and lack of proper health services is more severe on women than men since they majorly contribute in delivering important services. Their involvement at work, especially informal, exposes them to vulnerabilities. Food systems are particularly operational due to their services. Similarly, women workforce is actively involved in health care services. Societal pressures on women have further added to their vulnerability. In a climatic disaster, essentials are unequally distributed between men and women. Even violence against women and vulnerable groups has links to climatic impacts.[20] A gendered-based One Health could remedy the socio-economic inequities augmented by ecological imbalances.

2. **Education**

Owing to the advantages of One Health, there is a dire need for its inclusion in educational sector by establishing interconnectivity amongst different disciplines, especially between human and veterinary.[21] Allowing trans-disciplinary study opens up opportunity for students and professionals to discover links between multiple disciplines. Research would facilitate invention of a slew of OH strategies that may not only prevent future disasters but also preserve the environmental health. Canada is the only nation which has successfully integrated the human and veterinary diagnostic services at all levels.[22] However, integration of human and veterinary curriculum is a single step taken with regards to OH. Further inclusion of environmental education would bridge the gaps between solving health and environmental issues simultaneously.

3. **Linkage of SDG Goals**

Most of the Sustainable Development Goals are interconnected and interdependent on each other. Goal 2 (Zero Hunger), Goal 3 (Good Health and Well-being) and Goal 6 (Clean Water and Sanitation) cannot be achieved independently. The reason being well developed food systems depend upon availability clean and fresh water while both lead to a balanced diet, that is, good health. Similarly, Climate Action (Goal 13) can only be achieved when Life below Water (goal 14)

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[19] *Supra* Note 6 at 81.
[20] Huong Thu Nguyen, *Gendered Vulnerabilities in Times of Natural Disasters: Male-to-Female Violence in the Philippines in the Aftermath of Super Typhoon Haiyan*. XXV VAW 421, 421-440 (2019).
[21] Jakob Zinsstag*et. al*., *Climate Change and One Health*,CCCLXV FEMS Microbiol. Lett., 1, 6 (2018) *available at*-https://academic.oup.com/femsle/article/365/11/fny085/4961133 (last visited Apr. 14 2022).
[22] *Supra* Note 17 at 18.

and Life on Land (Goal 15) remain preserved. Interconnectivity renders the exclusive schemes and policies framed to achieve a particular goal partially successful or effective for a short term.

In order to achieve the Goals, OH-based paradigm shift in the existing policies is required. Health, Environment and other related ministries can collaborate to perform research on prevention of emerging diseases and mitigation of climate change. Besides practicing interdisciplinary education, political support is necessary. Capacity-building measures have to be created in order to operationalize OH. International, regional as well as national institutions can adopt subsidiary integrated goals to provide momentum to the 2030 Agenda for Sustainable Development.

4. **Empowerment of Indigenous people**

Tribal people are the caretakers of the forests. They have abundant knowledge about the risks and benefits of the jungle in which they reside. Without damaging the ecosystem of the jungle, they utilise its resources. Moreover, they use the forest products judiciously so that the coming generations have ample resources left for their purposes. It is the tribes who actually employ sustainable means to live peacefully with the environment. Their values may provide essential information about the sufficient knowledge about how to distance themselves from the existing and emerging diseases, and how to prevent forests and its resources from getting exhausted.

OH outcomes can hardly be achieved without the help indigenous tribes. They can essentially contribute to implement the strategies under OH. By providing them official facilities to take care of the forests and right to live there, the forests will thrive and become sustainable. They could prevent occurrence of forest fires by clearing small patches at necessary times. Further, they can be instrumental in afforestation as well as restoration of patches of forest land which have earlier been lost.

RESPONSE IN INDIA: LEGISLATIVE, JUDICIAL AND ADMINISTRATIVE

Being the second most populous country and agriculture-oriented nation, a significant amount of Indian population remains in contact with livestock, poultry, cattle and other animals. Consequently, the nation becomes vulnerable to emerging diseases. Scientists deem it necessary to establish animal surveillance systems in order to predict origin of any disease.

In as early as 2007, a National Standing Committee on Zoonoses was created. Besides, the Food Safety and Standard Authority lay down limitations on the levels of contaminants, naturally occurring toxic materials, antibiotic residues, pesticides, heavy metals, veterinary drug residues, etc. government operate programmes keeping a check on zoonotic and communicable diseases. There is also a Centre of Zoonoses under National Centre for Disease Control.

India acknowledged the significance of One Health amidst the crisis created by Covid-19 pandemic. In 2021, Department of Biotechnology under Ministry of Science and Technology launched its First

"One Health Project" to survey zoonoses in different parts of the country, utilise diagnostic tests and develop new methodologies for analysing the emergence and spread of new diseases.

In the same year Department of Animal Husbandry and Dairying commenced celebrating November 3 as "International One Health Day". The aforementioned developments in India imply thatthe nation has recognised threat posed by animal-human contact, causing transmission of diseases such as avian flu, rabies, bovine tuberculosis etc.[23] Increase in number of cases of a particular disease in an animal increases the risk of disease affecting other species or humans, transcending physical barriers. The rising risks have attracted the attention of stakeholders from the medical field and so the collaboration between human health and animal health experts has advanced. Diagnosis and treatment facilities for human are operative while the coordination is facilitating establishment animal-health risks diagnostic centre and pathological labs. However, the participation of environmental experts also needs to be enhanced in order to gain over-all sustainable benefits.

The Ministry of Environment, Forest and Climate Change in its Annual Report 2021-22 mentions that under the National Human-Wildlife Conflict Mitigation Strategy and Action Plan, One Health is being integrated into it by developing the curriculum and providing training to the response teams. This step of the government reflects its realisation of environment as an important factor in mitigation of transmission of diseases across animal-human interface. The plan is a part of Indo-German Technical Cooperation Project on 'Human Wildlife Conflict Mitigation in India'. It engages experts from multiple fields and organisations such as agriculture, police, Disaster response force, Ministries of Home Affairs and Rural Development. With inclusion of One Health, there is a scope for engagement of stakeholders from medical field with other involved experts also.

PM Council on Climate Change, established by former PM of India, Dr. Manmohan Singh in 2008 brought governmental and non-governmental representatives together to chalk out national action plans for assessment, adaptation and mitigation of climate change, to advise government on efficient measures that can be taken by India and to conduct inter-ministerial discussions for formulation of guided policies in required areas.[24] However, the Council has not met since 2015. With India's national determined goals being officially declared, the time is ripe to reconvene the Council with renewed and integrated efforts. Experts from multiple disciplines can be brought together to provide diverse but goal-oriented ideas to holistically address health and environmental issues. This move will be in line with OH approach.

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[23]Divya Aggarwal &Anandhi Ramachandran, *One Health Approach to Address Zoonotic Diseases*, XLV Indian J Community Med. S6, S8 (2020).

[24]Gurdip Singh, ENVIRONMENTAL LAW, 17 (2016) (E-book).

India has ratified and signatory to international conventions and protocols to prevent climate change and advance sustainable development. Accommodation of One Health protocol with all health and environmental related initiatives by all stakeholders at governmental and non-governmental levels would provide leverage to the public efforts. For instance, food insecurity is a major problem of entire India. Policies effecting agricultural practices that are aligned with international standards already exist to practice stringent quality measures. OH based efforts will bring ground-level reformations.Sustainable agricultural practices such as crop rotation with growing all types of crops will not only maintain the supply but also improve the quality of soil and groundwater table. Food systems will get strengthened qualitatively.

DEVELOPMENT IN ENVIRONMENTAL LAW

Environmental laws are based on right to healthy environment for all. The Environment Protection Act (EPA) 1986upholds the principles of Stockholm Conference 1972. It is an umbrella law providing rules and regulations to the state and the public for protecting the environment. It abridges the gaps between specific legislations and existing uncovered environmental hazards. In its objects and reasons the act recognises threats to the vegetal cover, biological diversity, food chains and life support systems. It acts as a deterrent to the threats endangering the environment. The act provides for punishmentfor hazardous activities, coordinates the functioning of various regulatory agencies and regulates discharge of environmental pollutants.

EPA already provides holistic coverage to for environmental safety. However, its ambit can be enhanced to give legal backing to One Health for Sustainable Development and Mitigation of Climate Change.

Biological Diversity Act 2002 reference to genetic material regulates the use of genetically modified micro organisms and also protects traditional indigenous knowledge, making it specific for implementation of One Health Strategy. Besides, Disaster Management Act covers pandemics, epidemics and other outbreaks in its ambit along with natural calamities.

A One Health Policy working as the integrated interface can respond to the key challenges to public health of all. It can contain mandatory guidelines to be followed by the state and non-state actors while conducting scientific experiments on animals without threatening their existence or channelling any transmission of diseases. To ensure food safety, checks and balances can be created to promote sustainable practices in agriculture. The policy will incentivize collaboration of trans-disciplinary stakeholders to discover solutions for mitigation of climate change. An action-plan can be charted out for quick and effective response at ground level with the help of trained manpower. Legal liabilities, civil or criminal, can be invoked to prevent facilitation of climate change.

Time and again, the courts in India have reiterated importance of healthy environment as a right of third generation. The judiciary has emphasised on the protection of environment for future generation.

Habit of environmental protection needs to be inculcated in all. People have to be made aware of bio-diversity which cannot be built over night. At all costs we must ensure that our children inherit a planet which is clean, healthy and sustainable.[25]

The Karnataka High Court pronounced that it has 'innovative powers within its epistolary jurisdiction to enforce and safeguard the right to life to promote public interest.'[26] That it can use when there is grave threat to health due to violation of statutory provisions regarding environment.The court interpreted that article 21 conveys that a qualitative environment is behind qualitative life.[27]

In *M C Mehta* ***v.*** *Union of India,*[28] the apex court held state government and municipalities to improve man-made and natural environment, recognising that the two environments are linked and right to life can only be protected when the artificial and natural ecosystem are preserved simultaneously.

In *Anirudh Kumar v MCD*,[29]the court ordered closure of a pathological lab was run in a residential building without any valid initial permission or valid regularisation certificate. The labposed harm to public health, public safety and public peace. The apex court declared the lab to be dealing with chemical substances which would be obnoxious, non-compatible and polluting, coming under the ambit of hazardous substances, thereby causing environmental damage. Lab was also causing sound and sir related pollution, disturbing public health and peace.

Supreme Court has declared it loud and clear that it can freely exercise its powers under article 32 and 142 to prevent environmental degradation and it cannot be restrained by relevant statutes. One can infer that in times of need, the apex court would utilise its powers to preserve the environmental health.[30]

With judiciary standing as the sentinel on the qui vive, the onus is upon the legislature to frame a proper One Health policy and legislations working for mitigation of Climate Change.

CONCLUSION

One Health can bring revolution for the betterment of this planet. Rising temperatures have expedited the rate with which ice melts, weather changes and disasters occur. Besides, rate of

[25] *SanyuktVyapar Mandal And Another v. State Of H P And Others*, AIR 2013 Hp 576
[26] *V. Laksmipathy v. State of Karnataka*,A.I.R. 1992 Karn 57.
[27] *Id.*
[28] *M C Mehta v. Union of India*, 1987 SCR (1) 819.
[29] *Anirudh Kumar v MCD*, (2015) 7 SCC 779.
[30] *Samaj Parivartan Samudaya v. State of Karnataka*, (2013) 8 SCC 154.

emerging diseases has also increased. Consequently, the risks of climate change have amplified. With increase in animal-human conflict and meddling with the environment, necessity for the implementation of integrated strategies that can holistically repair damages caused to the environment and health has also increased. One Health acknowledges the relation between animal, human and environment. It aims to secure the food systems and fight anti-microbial resistance and emerging diseases. It carries the potential to mitigate the risks of natural calamities. Hence, it provides a sustainable solution to fight climate change.

One health approach can be effectively implemented through policies and legislations facilitating interdisciplinary research and development. Health, environment as well as socio-economic experts are all stakeholders whose collaboration would create the required policy. Indigenous tribes are also important stakeholders of the environment. Their knowledge will essentially preserve the forests in their pristine form, thereby regulating the changes happening in the ecosystem. However, it is necessary to recognise their roles and responsibilities towards preservation of this earth and provide them with adequate powers for implementing One Health. In addition, a gender-based approach will keep the offences resulting from climate change at bay.

In India, One Health is in an embryonic stage. Government is striving to mitigate climate change with the help of legislations and policies. A One Health policy or even legal-backing to One Health would catalyse the governmental efforts, increasing the possibility for reaching the targets early.