

Forum:	The Group of Twenty (G20)
Issue:	Addressing Global Health under a One Health Approach
Student Officer:	Dimitris Pachis
Position:	President

PERSONAL INTRODUCTION

Dear Delegates,

My name is Dimitris Pachis, and I am a IB 1 student of Platon School. This will be my first time main-chairing and I am very excited to be serving as President of this year's Group of 20 (G20).

Generally, G20 is concerned with a variety of topics combining notions such as sustainability, financial stability and inclusive growth. This study guide will focus on the third topic of the Agenda, namely Addressing Global Health under a One Health approach. As per the mandate of the committee, G20 delegates must propose and debate feasible solutions to this multifaceted issue which take into account the interests of the international community but also the interdependency of certain aspects.

In the following document, you will find a thorough investigation of the issue at hand, information on the entities involved, the intricacy and ways to solve it. Personally, I urge you to delve into the issue further via visiting the sources linked below or following your own plan. For any questions that may arise please do not hesitate to contact me at jimph400@gmail.com.

I look forward to meeting you all in person and having a fruitful and productive while also enjoyable conference.

Yours truly,

Dimitris Pachis

INTRODUCTION

In recent years, events such as the COVID-19 pandemic have brought about an understanding of and awareness of Global Health. That is to say that the health and safety of people on the other side of the world might affect ours. Though the devastating effects of such a health emergency were undeniable, they could have been prevented. That is to say, a more globalised healthcare system could have

prevented countless human deaths, the economic turmoil the international community experienced, and the closure of numerous small businesses due to the numerous laws and regulations put in place as a result of the health emergency.

One Health places special emphasis on the interplay between environmental factors and human and animal health, in addition to a more uniform global healthcare system. In general, a global, more standardised system of healthcare brings forth many

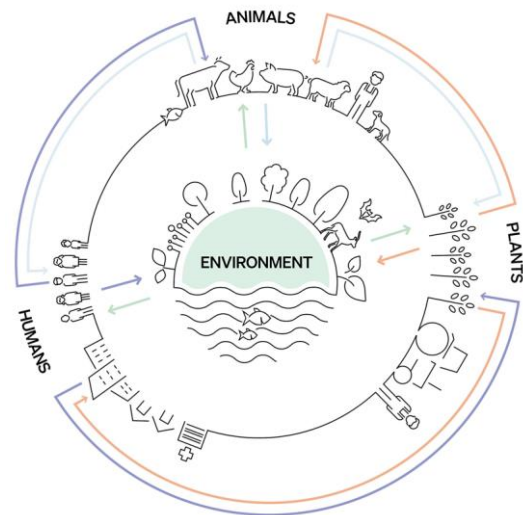


Diagram depicting relationship between

benefits. For instance, a standardisation of medication and medical attention accessibility and prices throughout countries and populations. This would result in the eradication of life-threatening diseases from LEDCs, like malaria, saving countless lives. Additionally, it would significantly boost individual country GDC, thus, boosting economic development and progress and leading governments to focus on progress like other MEDCs.

The UN idea of One Health has all the aims mentioned above and is characterised by its all-encompassing nature of human, animal, and environmental safety and health. This approach also has the benefit of removing issues harmful to the

environment and, subsequently, humans, such as ecosystem degeneration. The idea of One Health is not new, but it has received more attention in recent years. As the goal is wildly optimistic, it is natural that there will be many challenges.

DEFINITION OF KEY TERMS

One Health

One Health is a UN program defined as “an integrated, unifying approach to balance and optimise the health of people, animals, and the environment.”¹

Global Health

While there isn’t a concrete definition of Global Health, most nations and organisations agree with the definition of “an area for study, research, and practice

¹One Health. <https://www.who.int/news-room/questions-and-answers/item/one-health>. Accessed 3 Nov. 2023.

that places a priority on improving health and achieving health equity for all people worldwide.” given by JP Koplan². In the context of One Health, this means ensuring healthcare for all those involved as well as the systems, which all lead to One Health’s goals.

Public Health Emergency of International Concern (PHEIC)

“An extraordinary event which is determined to constitute a public health risk to other states through the international spread of disease and to potentially require a coordinated international response”³ Things like the COVID-19 pandemic qualify as a PHEIC.

Healthcare

“The field concerned with the maintenance or restoration of the health of the body or mind.”⁴. One Health encompasses the area of healthcare as well as animal health and environmental protection.

Zoonoses

“A zoonosis is any disease or infection that is naturally transmissible from vertebrate animals to humans.”⁵. Through the animal health aspect such diseases could become less of a problem.

Vector-Borne Diseases

“Vector-Borne Disease: Disease that results from an infection transmitted to humans and other animals by blood-feeding arthropods, such as mosquitoes, ticks, and fleas.”⁶

Urbanisation

“Urbanisation is the increase in the proportion of people living in towns and cities.”⁷

² *What Is Global Health?* - Researchgate, www.researchgate.net/profile/Ruth-Bonita/publication/43131729_What_is_global_health/links/0912f506529c4c9ad2000000/What-is-global-health.pdf?origin=publication_detail. Accessed 3 Nov. 2023.

³ *Emergencies: International Health Regulations and Emergency Committees*. <https://www.who.int/news-room/questions-and-answers/item/emergencies-international-health-regulations-and-emergency-committees>. Accessed 3 Nov. 2023.

⁴ ‘HEALTHCARE Definition & Usage Examples’. *Dictionary.Com*, <https://www.dictionary.com/browse/healthcare>. Accessed 3 Nov. 2023.

⁵ *Zoonoses*. <https://www.who.int/news-room/fact-sheets/detail/zoonoses>. Accessed 3 Nov. 2023.

⁶ *Department of Public Health - Acute Communicable Disease Control*. <http://publichealth.lacounty.gov/acd/vector.htm#:~:text=Vector%2DBorne%20Disease%3A%20Diseas e%20that,%2C%20Lyme%20disease%2C%20and%20malaria>. Accessed 3 Nov. 2023.

⁷ *Urbanisation — European Environment Agency*. <https://www.eea.europa.eu/help/glossary/eea-glossary/urbanisation#:~:text=in%20your%20browser.-,Term,a%20country%20is%20still%20developing>. Accessed 3 Nov. 2023.

Risk Assessment

“A specialised field of applied science that involves reviewing scientific data and studies in order to evaluate risks associated with certain hazards.”⁸

Ecosystem Services

“Ecosystem services are defined as the direct and indirect contributions of ecosystems to human well-being, and have an impact on our survival and quality of life.”⁹

Water Cycle

“Water cycle, also called hydrologic cycle, is a cycle that involves the continuous circulation of water in the Earth-atmosphere system.”¹⁰ From the oceans to the clouds and rain to the rivers and back to the ocean.

Nutrient Cycle

“The nutrient cycle is a system where energy and matter are transferred between living organisms and non-living parts of the environment.”¹¹

Climate Change

“Climate change refers to long-term shifts in temperatures and weather patterns.”¹²

Gross Domestic Product (GDP)

“Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country’s borders in a specific time period.”¹³

Sustainable Development Goals (SDGs)

“The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.”¹⁴ In the context of One Health, which is an all-encompassing programme, the SDGs mean achieving most of them, but more specifically 2, 3, 13, 14, 15, 17.

⁸Risk Assessment | EFSA. <https://www.efsa.europa.eu/en/glossary/risk-assessment>. Accessed 3 Nov. 2023.

⁹ Pearce, Reagan. ‘What Are Ecosystem Services?’ *Earth.Org*, 3 Jan. 2023, <https://earth.org/what-are-ecosystem-services/>.

¹⁰ *Water Cycle | Definition, Steps, Diagram, & Facts | Britannica*. 2 Nov. 2023, <https://www.britannica.com/science/water-cycle>.

¹¹ *Nutrient Cycling – Crandall Park Trees*. <https://mdocs.skidmore.edu/crandallparktrees/ecosystem/nutrient-cycling/>. Accessed 3 Nov. 2023.

¹² Nations, United. ‘What Is Climate Change?’ *United Nations*, <https://www.un.org/en/climatechange/what-is-climate-change>. Accessed 3 Nov. 2023.

¹³ ‘Gross Domestic Product (GDP): Formula and How to Use It’. *Investopedia*, <https://www.investopedia.com/terms/g/gdp.asp>. Accessed 3 Nov. 2023.

¹⁴ ‘Sustainable Development Goals | United Nations Development Programme’. *UNDP*, <https://www.undp.org/sustainable-development-goals>. Accessed 3 Nov. 2023.

Public Health Surveillance

“Public health surveillance is the ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice.”¹⁵

Risk Assessment

“Risk assessment is a general term used to determine the likelihood of loss on an asset, loan, or investment.”¹⁶

BACKGROUND INFORMATION

What One Health is

One Health describes a unified and interlinked approach between three principles that are usually thought to be separate: Public Health, Animal Health, and Ecosystem Health. This is achieved through international and intersectoral communication as well as planning, researching, and surveying different areas of human, animal, and environmental health. One Health’s primary goal is to achieve better, more sustainable health for humans, animals and the environment and achieve a relationship between the three that will be beneficial in the long term.

Historical Background

Although the core principle of One Health isn't relatively new, it has only in recent years got wide attention due to the recent worldwide health emergencies. The core principle can date back as far as the early 19th-20th century, when leading physician and pathologist Dr. Virchow¹⁷ coined the term zoonosis and understood the interlinked and interconnected relationship between human and animal diseases. Furthermore, he advocated for education on the One Health principles during his time in parliamentary positions. Further developments in epidemiology and other fields led to the conclusion that decent animal health is essential for good public health. In 1964, the term “One Medicine” was first introduced by Calvin Schwabe, who emphasised links between human and animal health. In the 21st century, the term One Health was introduced and undertaken by the World Health Organisation (WHO) in 2011, along with further conferences, research, and other such actions.¹⁸

¹⁵ *Introduction to Public Health Surveillance | Public Health 101 Series | CDC*. 3 Aug. 2022, <https://www.cdc.gov/training/publichealth101/surveillance.html>.

¹⁶ “*Risk Assessment Definition, Methods, Qualitative Vs. Quantitative.*” *Investopedia*, <https://www.investopedia.com/terms/r/risk-assessment.asp>. Accessed 18 Jan. 2024.

¹⁷ *History | One Health | CDC*. 6 June 2022, <https://www.cdc.gov/onehealth/basics/history/index.html>.

¹⁸ *History | One Health | CDC*. 6 June 2022, <https://www.cdc.gov/onehealth/basics/history/index.html>.

How One Health would work

For a global health system under One Health to be effective in the long term, governments involved would need to agree and adjust their internal policies and systems according to the One Health plan of action. For instance, man-made environmental problems such as deforestation have to be greatly minimised so that animal and plant health can be secured and, subsequently, zoonoses and other such diseases can be controlled. To provide context, roughly 60%¹⁹ emerging diseases that affect humans come from animals. If the health of those animals were kept in check, those diseases would not have developed, at least not to such a degree. Said animals develop such diseases in an unsanitary and widely polluted environment, which is neglected by many entities in order to save costs.

Human Health

Achieving a good global health system under a One Health approach would require the restructuring of a lot of countries' healthcare systems as well as the way the veterinary and environmental sectors of countries would coexist and communicate. For instance, there would have to be policies and organisations set in place for controlling all aspects of the One Health approach and plan of action.

Understanding Zoonotic Diseases

Animals have, are, and probably always will be an essential part of the human experience. They provide us with the necessary nutrients and companionship and many people's livelihoods depend on them. However, when not treated properly, animals carry certain harmful germs that are harmful to humans. Those are called zoonotic diseases. Said diseases can be transmitted in more than one way. Direct contact can be as simple as petting or touching an animal afflicted with a particular disease or coming into contact with any of their bodily fluids. Indirect contact involves anything that an animal lives in or around. For instance, chicken coops, cages, or food bowls. Vector Borne, means being bitten by some sort of insect. Those cases, of course, carry over to the direct ingestion of an animal with such diseases or drinking water infected by it. By tackling pressing environmental issues such as deforestation or urbanisation, climate change, and habitat loss, all issues that put the lives and health of animals at severe risk could be mitigated.

Climate change & Human Health

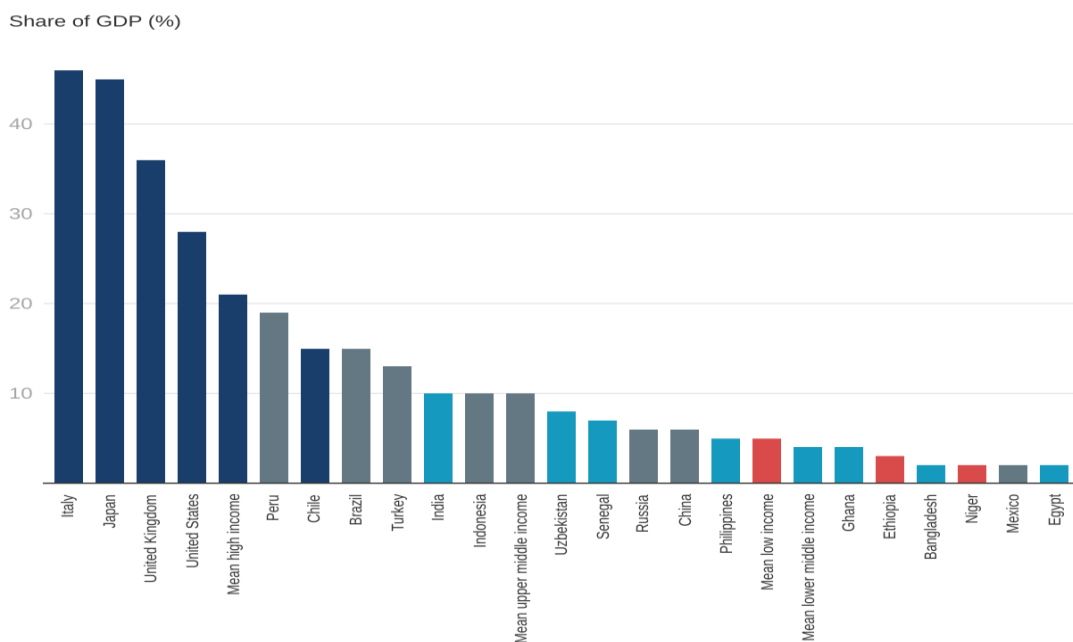
Climate change can have myriad effects on human health. For one, climate change can affect food and water safety. The ever-altering humidity levels, rainfall patterns, and temperature result in the insecurity of food production

¹⁹“Zoonotic disease: emerging public health threats in the Region.” World Health Organization - Regional Office for the Eastern Mediterranean, <http://www.emro.who.int/fr/about-who/rc61/zoonotic-diseases.html>. Accessed 18 Jan. 2024.

in all metrics. Furthermore, the increasing temperature would result in already discernible, longer lasting heat waves, bringing forth countless more heat related deaths, both in MEDCs and, more particularly, in LEDCs with less developed infrastructure. Additionally, the climate could affect air quality, leading to cardiovascular and respiratory conditions such as asthma being more common amongst populations. Another point to consider is extreme weather events. Such events could halt the provision of healthcare and other necessary services to the public, lead to the loss of tender and human life, and result in devastating effects on water and food safety. Lastly, the increasing temperature as well as extreme weather events could bring about mental health concerns in many people, such as stress and anxiety.

Pandemics

A staggering 6,899,738 deaths were recorded worldwide in the Covid-19 pandemic (16 July 2023)²⁰ and the financial losses were even more detrimental. In many countries, more than 40% of their yearly GDP was spent in response to the virus, thus, halting progress in all fields.



Fiscal Response to the COVID-19 Crisis by Low Income (Red), Middle Income (Grey) and High Income (Blue) countries²¹

²⁰Coronavirus Graphs: Worldwide Cases and Deaths - Worldometer.
<https://www.worldometers.info/coronavirus/worldwide-graphs/#total-deaths>. Accessed 18 Jan. 2024.

²¹“WDR 2022 Chapter 1. Introduction.” *World Bank*,
<https://www.worldbank.org/en/publication/wdr2022/brief/chapter-1-introduction-the-economic-impacts-of-the-covid-19-crisis>. Accessed 18 Jan. 2024.

Through One Health, professionals from different fields can come together and identify potential threats, develop surveillance systems, and come up with means of response. For instance, in the case of COVID-19, the global response could have been greatly changed if experts from the veterinary field came together with other experts and instructed governments and states in regards to the specific regulations and mandates that were released to the public.

Animal Health

Animal health holds an important role within the One Health initiative as it constitutes the aspect that bridges humans and the environment in the most direct way, that is the animal products we consume and use daily.

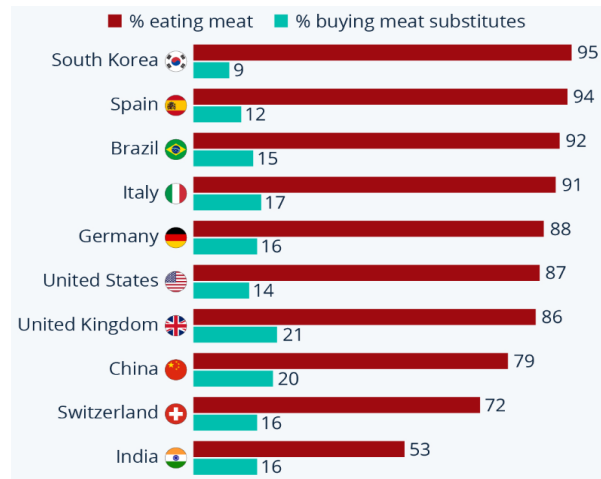
Link Between Humans & Animals

One Health aims to improve all aspects of human health by tackling the problem at its root. Animal health is vital to human health because most humans depend on animals for sustenance. In fact, approximately 75% of the human population consumes meat or meat products,²² and some estimations show that the amount of protein needed will increase by 70% by the year 2050²³. One Health aims to improve animal health in order for the healthy consumption of animal products to be more sustainable today as well as in the future. By improving animal health and the conditions in which animals are kept and raised, the international community could not only decrease the 2.2 million annual deaths by zoonotic diseases²⁴, but also increase food security and aid in the achievement of the UN's Sustainable Development Goals (SDG) numbers 1 and 2 which are No Poverty and Zero Hunger.

²² The donutwhole, . *What Percentage of the Human Population Eat Meat?* 20 Dec. 2022, <https://www.thedonutwhole.com/what-percentage-of-the-human-population-eat-meat/>.

²³ "One Health." WOAHA - World Organisation for Animal Health, <https://www.woah.org/en/what-we-do/global-initiatives/one-health/>. Accessed 18 Jan. 2024.

²⁴ "HealthforAnimalsGlobal Trends in the Animal Health Sector |." *HealthforAnimals*, 21 June 2022, <https://www.healthforanimals.org/reports/global-trends-in-the-animal-health-sector/>.



Share of respondents who eat meat and who eat meat substitutes²⁵

Animals as a means of nutrition aside, it is undeniable that a large part of the population has house animals. Nearly 70% of US citizens have some sort of pet, and those statistics show no signs of stopping due to economic growth. With the aid of veterinary science, it would be easier to come to an understanding of health challenges that concern multiple species.

Emerging Infectious Diseases in Animals

Diseases in animals are unfortunately common. For that reason, it is near impossible to develop a single, standardised protocol when dealing with outbreaks. Some happen due to the congestion of animals, while others are only recognised after long term impacts on animal health. For this reason, the use of risk assessment when dealing with animals is vital in order to understand the situation and develop a plan of action to be set into motion with the aim of containing an outbreak.

Environmental Health

The environmental aspect of the One Health approach recognizes the role ecosystems and the environment play in animal and, subsequently, human health.

Ecosystems & Human Health

The relationship between the environment and human health can be summed up with the term ecosystem services, and there are four types: provision, regulating, cultural, and supporting services. Provision services are the ones that allow humans to obtain necessary products such as food and water or resources such as wood, oil, natural medicines, etc. Regulating Services are characterised by the benefits that natural ecosystem processes offer. Climate and flood regulation, oxygen purification, and pollination are examples of this

²⁵"Infographic: Eating Meat Is the Norm Almost Everywhere." Statista Daily Data, 30 Mar. 2023, <https://www.statista.com/chart/24899/meat-consumption-by-country>.

category. Cultural Services include non-material benefits such as spiritual enrichment or intellectual development. This is important for the mental aspect of human health, as studies have shown that in the case of illness, contact with nature proves to boost recovery time. Lastly, supporting services are those that concern habitat function and, therefore, survival. Such services include water and nutrient cycling. The effect environmental degradation can have on human health is looked at through the lens of environmental services. For example, deforestation would tamper with all four types of services. Provisional, because we could not acquire the resources from that forest, regulating, because the oxygen purification of the area would be diminished along with pollination and destruction of natural habitat, cultural and supporting because a large element of the ecosystems in the area is now vacant. Interfering with the environment through something as simple as fertilisers can have such effects as reduction in water quality and habitat destruction. Habitat destruction and pollution are the two most important problems concerning the environment today and through One Health and its subsequent research, cooperation of sectors, and policies that might follow it, they could be greatly minimised.

Climate Change & Environmental effects

Although the issue of climate change is known to most people, the overwhelming effects it can have are less known. Extreme weather events will become a lot more common. Storms, floods, and droughts will be among those that have the potential to destroy not only people's homes or livelihoods but also agriculture, water, and food security. Rising ocean temperatures are quickly becoming a problem for marine life and coral reefs, as well as coastal areas, as the threat of these areas being absorbed by the ocean increases. All these issues that concern scientists, politicians and experts alike are all anthropogenic and interconnected. For instance, an increase in CO₂ emissions could, through different processes and phenomena, lead to rising sea levels, more floods and other such events. One Health, through research, legislation, and education programmes, has the potential to seriously minimise this issue and, therefore, ensure a more sustainable way of living not only for humans but also for animals and the natural world around us.

Interdisciplinary Approaches

Collaboration

Collaboration is one of the key ideologies in place when integrating a One Health approach. The idea of intersectoral collaboration is not entirely new; however, it has, yet, to be implemented in many low and middle-income countries. Such cooperation, communication, and other practices, such as information sharing, could revolutionise the way we look at the problem of Global Health as well as other issues. Certain research shows that by providing means of intersectoral cooperation, issues not particularly pertaining to One

Health's goals (homelessness, housing, etc.) could be solved by proxy. Intersectoral collaboration aside, collaboration between nations is also extremely important. For example, in the case of pandemics, a cohesive and easy to use communications platform between different national departments would result in better handling of such emergencies.

Surveillance Systems & Risk Assessment

Although Public Health Surveillance is already an established concept, it is important to see how it ties into the One Health idea. In order for One Health to work, governments and organisations would have to implement clear risk assessment and surveillance operations in order to minimise the threat, share information faster, foster efficient cooperation, and reduce threats at the root. In order to have such concrete risk assessment measures, governments will need to cater to, but also conform to, the mandates of the international community and the specifics of the respective area and country. Systems like the Joint Risk Assessment Operational Tool (JRA OP)²⁶ are already provided by UN organisations. Therefore, the issue lies in initiating and implementing them.

Case Studies

One Health Approach to Rabies in Indonesia

In Spring of 2023, Indonesia experienced a rabies endemic in 26 of the 38 provinces. Through the One Health approach, different sectors worked together to stockpile vaccines and serums in more than 100 rabies centers. Additionally, similar to the One Health ideology, they tackled the problem at its core by monitoring dog populations, providing vaccines for them, and funding medical operations. The Director of Communicable Diseases Control remarks that cooperation and the measures taken above were absolutely necessary for the swift and effective termination of the issue.

Bird Flu Control in New Zealand

Although New Zealand has not historically been afflicted by bouts of bird flu, the government believed it important to take a One Health approach. In this case that means monitoring bird populations and their water and food sources, as well as conducting research on the actual disease. Due to the fact that the disease is classified as zoonotic, according to law, multiple sectors will have to come together in the event of an outbreak in hopes of minimising the damage.

²⁶Joint Risk Assessment Operational Tool (JRA OT). <https://www.who.int/initiatives/tripartite-zoonosis-guide/joint-risk-assessment-operational-tool>. Accessed 18 Jan. 2024.

Challenges Faced in Integration

Lack Of Political Discussion

Despite some countries taking initiative and conducting research or being proponents of the idea, many are still apprehensive due to its relatively recent development as well as other issues discussed below. This lack of initiative and support by governments is why the average citizen may not want to support this movement.

Lack of Leadership and Difficulty in Management

As One Health is supposed to be a multinational program, there is no doubt that there will be some disagreement between different nations concerning management and other details. Furthermore, since most countries will have to completely or at least partially restructure a lot of sectors, including healthcare, there will be some worry among potential organisations due to the immense difficulty of re-establishing and reforming the public sector. For instance, Australia has separate sectors for healthcare, animal health, and environmental protection with no means of communicating with each other. Additionally, since the systems already in place will be reformed, countries participating will struggle internally with human, financial, and scientific resource allocation.

Absence of standardisation

The idea and movement of One Health are relatively new to the public eye. Because of this, there is not yet a standardised, concrete system in place that countries and governments could rely on in order to base their One Health approach. Systems like the JRA OT are only suggestions and do not constitute legislation. Additionally, it is important to note that most countries do not have any system in place to deal with PHEIC which leave experts and citizens alike in fear of the next PHEIC. Furthermore, the lack of vision and clear definition of One Health discourages the average citizen from supporting the idea.²⁷

Corruption

Corruption constitutes a major problem in the integration of the One Health program. Corruption in any sector is detrimental to its future. Most commonly, it discourages investment, limits growth, and alters government spending, often to the detriment of the sector. In healthcare, corruption could be much worse. Due to its asymmetric, often fragmented nature, paired with large numbers of people involved, it is very prone to characters aiding in the corruption in the sector. For instance, the health sector in America is famously corrupt, being able to take millions from patients for no particular reason. With

²⁷ Johnson, I., et al. "The Challenges of Implementing an Integrated One Health Surveillance System in Australia." *Zoonoses and Public Health*, vol. 65, no. 1, Feb. 2018, pp. e229–36. *PubMed Central*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7165821/>

new changes involved, there is no doubt that proponents of corruption in current systems will continue to commit acts of malfeasance.

Future Opportunities

Data Sharing & Scientific Innovation

With the One Health approach becoming more and more mainstream and understood, many experts are working on ways where data sharing and communications between sectors could, in the future, become second nature. Furthermore, the problems One Health aims to tackle, like animal health and environmental conservation, are becoming more pressing, it is undeniable that further research on these topics will be conducted.

Education & Advocacy

With the recent COVID-19 pandemic achieving global scale and having such detrimental effects, many people are hoping to find ways to prevent something similar from happening again. Since it is within the ideology of One Health to prevent global health emergencies, many people are advocating for its integration on a wider scale.

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

USA

The USA has been on board with the idea of One Health since the beginning of the COVID-19 pandemic but in the 2021 House Appropriations Committee Report and 2023 Consolidated Appropriations Act, Congress directed organisations to create a “National One Health framework to address zoonotic diseases and advance public health preparedness”²⁸. The USA despite its efforts has a highly corrupt healthcare system and infrastructure and boasts one of the most powerful economies on the planet.

New Zealand

One Health Aotearoa is an organisation dedicated to improving the health and safety of the New Zealand public. It implements principles of One Health such as the link between environmental, animal and human health and heavily focuses on a wide range of research topics.

India

Due to India’s population, it is imperative for them to have a robust system of animal and human health as well as pandemic preparedness. There are already numerous ministries attempting research and a One Health system, and are partly successful in

²⁸*Federal One Health Coordination | One Health | CDC. 13 Mar. 2023, <https://www.cdc.gov/onehealth/what-we-do/federal-coordination.html>.*

some parts of India. However, a true approach cannot be completed until all those attempts accumulate into a more national system.

European Union (EU)

The EU has been a clear proponent and supporter of the One Health Approach since its conception. It was one of the first organisations to release action plans on the matter, with the most notable being the 2017 European One Health Action Plan against Antimicrobial Resistance released by the European Commission.

World Health Organization (WHO)

Being a UN organisation and the originator of the idea, WHO has tirelessly since the conception of the notion of One Health provided information, education and research to the public regarding One Health as well as encouraged nations and the public to promote One Health. WHO is one of the key and leading organisations to the concept.

One Health Quadripartite

The One Health Quadripartite, which consists of the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), the United Nations Environment Programme (UNEP) and the World Health Organization (WHO), has collaborated and come up with the One Health Joint Plan of Action, which aims to leverage technologies and international cooperation in order to face the human-animal-plant-environment challenges and promote health sustainability. All organisations involved have taken commitments to advocate and support the aforementioned plan of action and have made advertisement campaigns in order to advocate for the induction and implementation of such systems.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
1821-1902	Link between animal and human health is first discovered.
1947	Understanding of how zoonotic disease can be controlled.
1927-2006	“One Medicine” is conceptualised.
2006-2008	Means, guidelines and organisations are created and implemented in order to further push the One Health ideal.
2009	Key recommendations are developed.

August 2010	The EU reaffirms and commits to operating under a One Health approach.
February 14-16th 2011	First international One Health conference held in Melbourne, Australia.
February 19-22th 2012	First One Health summit in Davos, Switzerland which resulted in the “Davos One Health Action Plan”.
October 17th 2022	One Health Plan of Action released.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Davos One Health Action Plan

The Davos One Health Action Plan came as a result of the 2012 One Health Summit in Switzerland and had as a goal the exploration and advance of the One Health initiative as well as recognizing the need for international cooperation. Furthermore, it was a way to pinpoint ways to achieve multi sectoral cooperation, an issue that still exists today. In the end the conference was successful in identifying the problems but did not offer any solutions.

One Health Joint Plan of Action

The One Health Joint Plan of Action was launched by the quadripartite and aimed to create a clear framework and help create solutions for problems such as lack of multisectoral communication while keeping the One Health initiative in mind. This framework was not held together by any sort of legislative measure and in the end merely served as a suggestion to member states that did consider it.

Education

One of the ways that international communities have and continue to help is through education. Specifically, Sweden has pioneered when it comes to One Health Awareness by implementing its ideas in universities and high schools across the nation. Mainly focusing on high schools, courses have the goal of achieving understanding of the main ideas of One Health, such as pathogens and the importance of health in all sectors. These actions, in addition to numerous seminars, provide future generations with knowledge vital to campaigns such as the One Health campaign. These measures seem to have worked as Sweden ranks well within the top 10 in environmental safety and is on track to reduce CO₂ emissions further.

POSSIBLE SOLUTIONS

Robust rule and regulations catered to specific nations

One problem that is faced by the integration of One Health is the fact that every country's sector's management and organisation are vastly different from the next. This simple fact could pose great difficulty for successful and efficient integration. This, however, could be solved by establishing and creating clear guidelines catered to each nation with their respective goals in mind (lowering carbon emissions, furthering biodiversity, protecting already existing ecosystems, etc.). This could be achieved by states taking initiative in the research sector and communicating their plans with other nations as well as the UN in order to make the One Health approach work coherently with the global community. In this way, the One Health approach would not only benefit nations long term but also accomplish all the goals the One Health initiative was intended to accomplish.

System Restructuring

In order for the One Health approach to reach full capability, many systems need to be restructured. Restructuring medical, veterinarian, and ecological systems in order to maximise a simple goal will include cooperation and collaboration of many different nations and organisations. In order for this to be achieved, the system needs to be looked at through a holistic approach rather than building up systems individually. This is because of the need for intersectoral cooperation and information sharing that One Health requires. Systems like these are difficult to operate and integrate, so this restructuring would have to come with a thorough examination of said systems for those running them. Finally, it would not be a bad idea to introduce some sort of regulation into each and every nation in order to ensure that, if not the One Health approach be integrated, at the very least there are steps in the right direction for the health and safety of communities everywhere.

Funding Education

Following Sweden's plan for educating the youth, it would be vital that future generations are aware of the research that constitutes the basis of One Health and are, therefore, guided towards professions and activities that will aid in its efforts. For young people in university and in primary education, it is important that the average citizen be educated on such topics as well. Considering the busy everyday lives that most people have, it would be unwise to assume that they would take the time to educate themselves; rather, it would be better to infuse pieces of such learning into parts of their everyday lives, such as but not limited to TV, radio, news networks, etc.

Evaluating & Monitoring

Evaluating & monitoring would play critical components of implementing such a program. In order for One Health to be successful on such a massive scale, it is vital that corrections are made according to a particular area's needs. Specifically, evaluating would be gathering data and identifying problems and what needs to be

improved as well as taking time to control resources. Monitoring would be the ongoing process of tracking human, animal and ecosystem health and looking for early warning signals as well as taking action and consulting international communities. Carrying out these processes and actions effectively would mean a very standardised and controlled metric and protocol in the case of emergency as well as being able to predict and prevent such emergencies.

BIBLIOGRAPHY

'About Us'. One Health Aotearoa, <https://onehealth.org.nz/about-us/>.

'GRF One Health Summit 2012'. One Health Global Network, 13 Feb. 2012, <http://www.onehealthglobal.net/meetings/grf-one-health-summit-2012/>.

'Health Sector Corruption'. U4 Anti-Corruption Resource Centre, <https://www.u4.no/publications/health-sector-corruption>.

'HealthforAnimalsGlobal Trends in the Animal Health Sector |'. HealthforAnimals, 21 June 2022, <https://www.healthforanimals.org/reports/global-trends-in-the-animal-health-sector/>.

'US Healthcare System Overview-Background'. Ispor.Org, <https://www.ispor.org/heor-resources/more-heor-resources/us-healthcare-system-overview/us-healthcare-system-overview-background-page-1>.

"Economic Issues No. 6 -- Why Worry about Corruption?" International Monetary Fund, www.imf.org/EXTERNAL/PUBS/FT/ISSUES6/INDEX.HTM. Accessed 13 Sept. 2023.

3 Reasons Why Ecosystem Services Are Important to You. <https://www.silvacom.com/news/3-reasons-ecosystem-services-are-important>.

Amri, Michelle, et al. 'Intersectoral and Multisectoral Approaches to Health Policy: An Umbrella Review Protocol'. Health Research Policy and Systems, vol. 20, no. 1, Feb. 2022, p. 21. BioMed Central, <https://doi.org/10.1186/s12961-022-00826-1>.

Bird Flu Control in New Zealand – the One Health Approach. <https://www.thepoultrysite.com/articles/bird-flu-control-in-new-zealand-the-one-health-approach>.

Can Display More up-to-Date Data Than Referenced in the Text. 'Topic: Pet Ownership in the United States'. Statista, <https://www.statista.com/topics/1258/pets/>.

Climate Change and Food Safety | EFSA. 17 May 2023, <https://www.efsa.europa.eu/en/topics/topic/climate-change-and-food-safety>.

Commentary One Health Education Meets Science - Taylor & Francis Online, www.tandfonline.com/doi/pdf/10.3402/iee.v5.30264.

Crimmins, A., et al. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. U.S. Global Change Research Program, 2016. DOI.org (Crossref), <https://doi.org/10.7930/JOR49NQX>.

Emerging Animal Disease Preparedness and Response Plan - USDA, www.aphis.usda.gov/animal_health/downloads/emerging-dis-framework-plan.pdf.

Enhancing Multisectoral Collaboration to Combat Rabies in One Health Approach in Bali. <https://www.who.int/indonesia/news/detail/16-07-2023-enhancing-multisectoral-collaboration-to-combat-rabies-in-one-health-approach-in-bali>.

Environment, U. N. 'One Health Joint Plan of Action (2022 - 2026)'. UNEP - UN Environment Programme, 17 Oct. 2022, <http://www.unep.org/resources/publication/one-health-joint-plan-action-2022-2026>

Federal One Health Coordination | One Health | CDC. 13 Mar. 2023, <https://www.cdc.gov/onehealth/what-we-do/federal-coordination.html>.

Haxton, Eva, et al. 'One Health Education Meets Science'. Infection Ecology & Epidemiology, vol. 5, no. 1, Jan. 2015, p. 30264. DOI.org (Crossref),

Health.Ec - This Website Is for Sale! - Health Resources and Information. https://health.ec/system/files/2020-01/amr_2017_action-plan_0.pdf.

History | One Health | CDC. 6 June 2022, <https://www.cdc.gov/onehealth/basics/history/index.html>.

Intelligence, Insider. 'US Healthcare Industry in 2023: Analysis of the Health Sector, Healthcare Trends, & Future of Digital Health'. Insider Intelligence, <https://www.insiderintelligence.com/insights/healthcare-industry/>.

Johnson, I., et al. 'The Challenges of Implementing an Integrated One Health Surveillance System in Australia'. Zoonoses and Public Health, vol. 65, no. 1, Feb. 2018, pp. e229–36. PubMed Central, <https://doi.org/10.1111/zph.12433>.

Nations, United. 'Causes and Effects of Climate Change'. United Nations, <https://www.un.org/en/climatechange/science/causes-effects-climate-change>.

One Health | Principal Scientific Adviser. <https://www.psa.gov.in/innerPage/psa-initiatives-covid/one-health-mission/4053>.

Pearce, Reagan. 'What Are Ecosystem Services?' Earth.Org, 3 Jan. 2023, <https://earth.org/what-are-ecosystem-services/>.

THE 17 GOALS | Sustainable Development. <https://sdgs.un.org/goals>. Accessed 13 Sept. 2023

Wagle, Kusum. "One Health'- A Multi-Dimensional Approach to Health !" Public Health Notes, 23 Nov. 2019, <https://www.publichealthnotes.com/1332-2/>.

Why Is Biodiversity Important? | Royal Society. <https://royalsociety.org/topics-policy/projects/biodiversity/why-is-biodiversity-important/>.

MULTIMEDIA RESOURCES

‘One Health’. WOAHA - World Organisation for Animal Health, <https://www.woah.org/en/what-we-do/global-initiatives/one-health/>. Accessed 13 Sept. 2023.