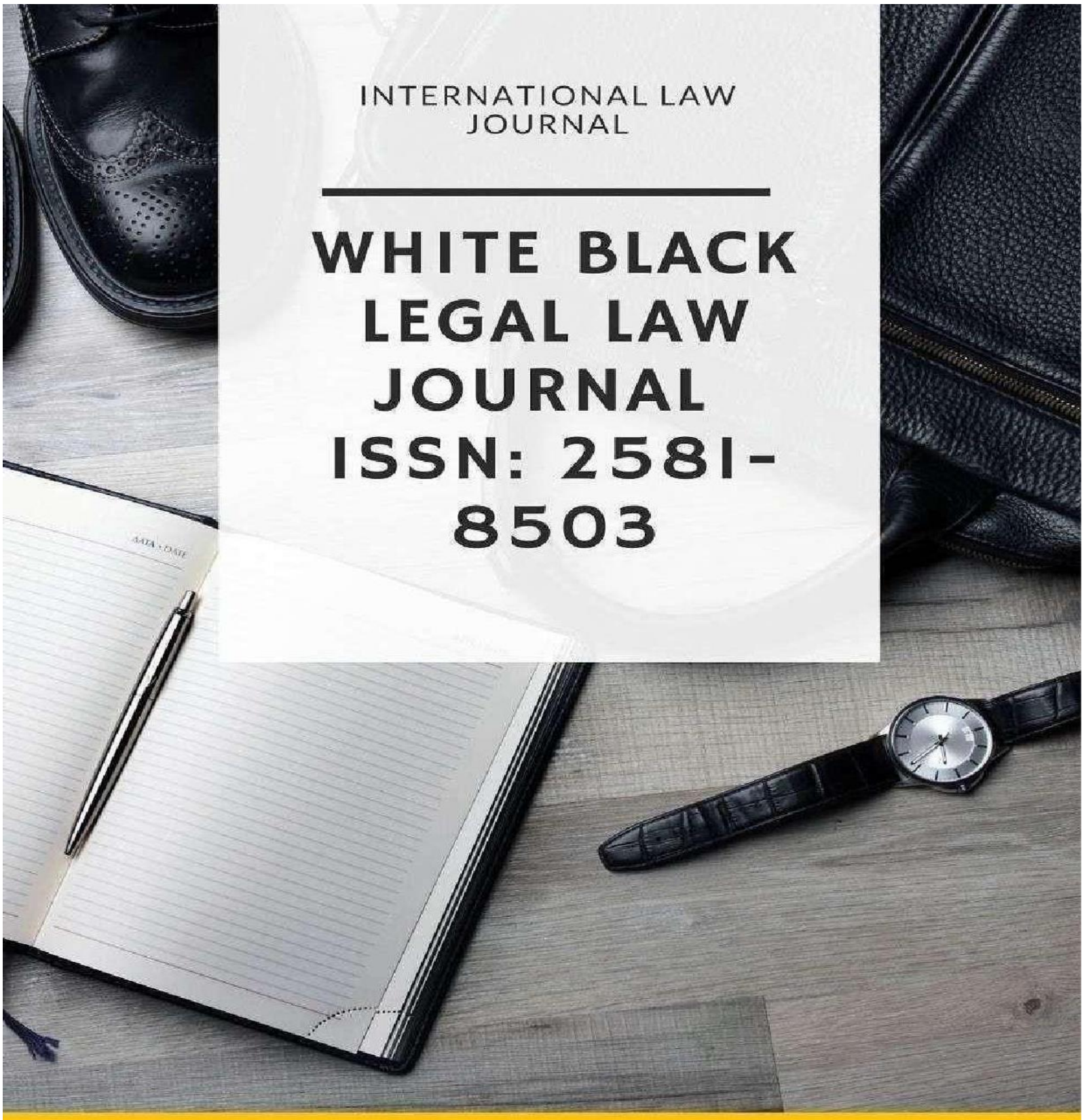

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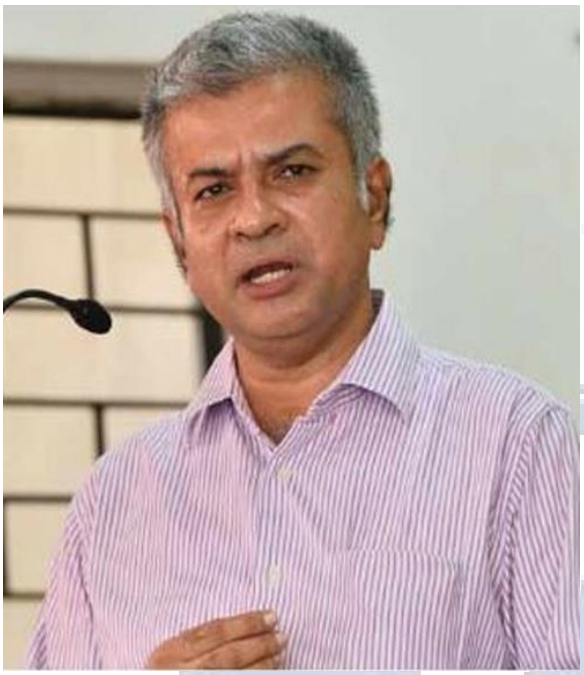

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WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal providededicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

SUSTAINABLE DEVELOPMENT GOAL 3- "HEALTH AND WELL-BEING"

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ABSTRACT

Recently, the United Nations adopted 17 sustainable development goals for the 2030 Agenda. The Sustainable Development Goal (SDG) 3 "Ensuring a healthy life and promoting well-being for all ages" is one of the most trans-versal goals, which is interconnected with the other SDGs. Health and well-being are the aim of this goal and also, they are the result of other goals that empower people to develop better in different social, economic, and productive areas. SDG 3 is a multiple and universal resource on which sustainable development policies can be based, in particular for the most needed countries, and can lead to the sustainable maintenance of well-being and health. However, SDG 3 faces a high sectorization, so there is a risk of not being able to achieve the stated objectives. Only a national and international reflection on the human population and animal health surveillance devices, environmental health, implementation of appropriate indicators, and specific research funding will ensure the balance between the legitimacy of society's demands and the needs of scientific and medical excellence. The health and well-being indicators that are needed to achieve the agenda goals are based on reliable and relevant quantitative data, which are currently rare or even non-existent in some regions. Therefore, it is now necessary to initiate a more integrative international animal and public health and research strategy to collect new data, particularly those relating to current emerging infectious diseases that affect public and animal health, especially in developing countries.

KEYWORDS: Sustainable Development Goals, Health, and well-being, human and animal, systemic approach, One Health, Eco Health.

INTRODUCTION

The Sustainable Development Goals (SDGs), part of Transforming our World: the 2030 Agenda for Sustainable Development, are a set of 17 global goals to end poverty, protect the

planet, and ensure prosperity and good health for all. SDGs suggest a new sustainable development agenda to be achieved over the next 15 years. Specifically, the goal of SDG 3, is good health and well-being. Recently, the United Nations Sustainable Development Goals Report 2017 reviewed the progress made towards these 17 goals, highlighting both the gains and challenges that still need to be accomplished to reach the agenda.[1] Concerning SDG 3, unparalleled successes have been achieved, particularly in terms of poverty reduction, access to safe drinking water for the more marginalized countries on the planet, and the fight against the HIV/AIDS pandemic, malaria, and tuberculosis. However, even though the results of the Millennium Development Goals (MDG) implementation are globally observable, progress must be accelerated, particularly in regions with the highest disease burdens, such as sub-Saharan Africa.[2] In addition to infectious diseases and maternal and child health, SDG 3 is also concerned with chronic diseases, the use of tobacco, alcohol, and narcotics, mental health, road safety, and pollution. To a greater extent, SDG 3 also includes aspects related to universal social coverage, health financing, and the development of health systems.[3] More generally, during this period, there were minimal improvements for non-MDG indicators, such as those for Hepatitis B incidence and worsening, e.g., childhood obesity. Specifically, this analysis calls for a substantial change in the present trajectory of major infectious diseases, such as HIV, malaria, and tuberculosis, to meet target 3.3., which calls for the end of these major epidemics by 2030. Furthermore, this synthesis not only highlights the importance of income, education, and fertility as drivers of health improvement but also emphasizes that investments in these areas alone will not be sufficient. It notably recognizes the better quantification and analysis of the roles of other potential drivers of health development, the interactions that may exist between different SDGs, and the possible indirect impacts on health from other SDGs to produce a more concise, cohesive, and actionable framework for the SDGs.[4] Arguably, adopting a One Health/EcoHealth perspective for the SDGs, by examining the way people interact with their natural and man-made environments and characterizing the fundamental drivers of environmental changes and their health consequences, will provide a promising approach to exploring and addressing these issues.

[1] United Nations. Progress of Goal 3 in 2017 New York (US)2017 [Available from: https://sustainabledevelopment.un.org/sdg3]
[2] http://www.iris-france.org/63492-que-faut-il-attendre-des-objectifs-du-developpement-durable/
[3] Guégan JF, Suzán G, Kati-Coulibaly S, Bonpamgue DN, Moatti JP. Sustainable development goal #3, or the need for integrative thinking in health. In: Caron P, Châtaigner JM, editors. Sustainable development goals. Marseille (FR): IRD Editions/Quae; 2017. p. 107-20
[4]GBD 2015 SDG Collaborators. Measuring the health-related Sustainable Development Goals in 188 countries: a baseline analysis from the Global Burden of Disease Study 2015. Lancet (London, England). 2016;388(10053):1813-50. doi: 10.1016/S0140-6736(16)31467-2

A HEALTH AND WELL-BEING SDG 3 THAT IS INTER-LINKED WITH MULTIPLE OTHER SDGS

Poverty reduction leads to improved health and well-being, while good health is a strong enabling factor for effective poverty reduction. "A healthy population is a prerequisite for development, constituting an engine for economic growth. Conversely, it is very difficult to ensure health without addressing poverty. At low-income levels, rising incomes lead to health gains as basic needs are fulfilled (such as nutrition, health care, health awareness, and shelter). Increased income is likely to enable positive interaction effects, yet beyond a certain threshold, further increases may not lead to further positive health effects. Similarly, poverty reduction will have a greater effect on health in the presence of diseases associated with poverty, including aids, tuberculosis, and malaria, as well as neglected tropical diseases, diarrheal and respiratory diseases, and the consequences of malnutrition. Where poverty reduction is most needed, governance structures are often ineffective, and great health challenges usually exist. Reducing poverty will generally result in immediate and long-term improvements in health. This relationship is highly bidirectional – ill health can constitute an inescapable poverty trap, where governmental redistribution is absent. Before conventional poverty reduction policies can be effective, the poorest of the poor often need special assistance to enable them to engage effectively with poverty reduction measures. Good governance, plus investment in health, skills, infrastructure and education, is crucial to reducing poverty.

Health and nutrition are inextricably linked. The relationship between food consumption and health is highly context-dependent. Undernutrition is generally associated with poverty, whereas overconsumption can accompany either poverty or wealth and may be associated with poor nutritional intake. The relationship between food and nutrition is bidirectional: In some cases, ill health can diminish the ability of households or individuals to farm and produce food, or to work and acquire food. Fundamentally, meeting caloric and micro/macronutrient needs is a primary requirement for health. Interruptions in food intake and quality, whether short- or long-term, can have lasting impacts on mental and physical development, impacts that begin during pre-natal growth and continue through childhood. Good health also depends on consumption of sufficient micronutrients over the life course. Reducing hunger will result in immediate improvements in health, and carries long-term implications for physical, psychological, and neurological development. Increasing agricultural production may improve food security and reduce hunger; however, it also impacts the environment, with potential

implications for infectious disease transmission, and can negatively affect health through contamination of local environments with arsenic, cadmium, and other pesticide residues. Technological elements of food and agricultural systems, including genetically modified organisms (GMOs), monocultural crop production, food processing, forest clearing, and irrigation, have the potential to increase production, but also to harm the environment and adversely affect future food security. There is much uncertainty about how to manage zoonotic diseases related to agricultural production. Food security will also be increasingly affected by climate-induced extreme weather events, as well as geopolitical and economic considerations.
Access to high-quality education is associated with better health, at both individual and community levels. Maternal and paternal education can each influence the health status of children – indeed, the favorable impact of maternal education is well-known in developing countries and has also been demonstrated in the developed world. Informal education and other sources of information can also play a strong role in good or ill health: for example, misinformation can lead to poor health decisions in both developing- and developed-world contexts (as in the case of anti-vaccine sentiment). Education can affect health immediately through changed behavior or the adoption of new technologies. It can also affect long-term health through increased income, opportunity, self-reliance, and empowerment. Health benefits from education are not limited to early schooling – lifelong learning offers important opportunities in contexts of rapid change. While these relationships are universal, greater gains are possible in developing-world contexts. New technologies (such as health promotion using information and communication technologies) may increase the efficiency of health interventions and spread knowledge to more people. The relationship between health and education can be bidirectional, as poor health limits school attendance and educational achievement.

Improving gender equality generally enables the achievement of better health. Women's health issues are in some contexts under-prioritised and underfunded, and promoting gender equality in these cases leads to easy health gains. Moreover, mothers make most health decisions for their children, so their empowerment leads to improved child health outcomes. Increasing participation of women in the paid workforce can lead to overall economic gains and hence improved health. Health gains may be immediate (when they directly improve resources or access for women) or long-term (mediated through childcare). The strength of the enabling interaction among these goals will be greatest where women face the greatest inequalities. In general, gender equality has a greater effect on health than health on gender equality, although

improved health of women or children can offer women more time and resources to participate in decision-making and economic activities.

In all contexts, improving water quality and access leads to improved health – without clean water and adequate sanitation it is difficult to achieve health gains. The latter is immediate in terms of decreased water-borne infections (e.g. acute diarrheal infections, viral hepatitis) and improved nutrition, improving water quality and sanitation also leads to long-term developmental gains. The interaction between these goals is strongest in parts of the developing world where water-borne infectious disease is still prevalent, but water quality and environmental pollution issues are also widespread in many high-income contexts. This relationship is essentially unidirectional, although where health is poor, it may be that water-borne pathogens themselves are adding to the poor management of water treatment systems.
Goal 3 plays a crucial role in influencing and being influenced by various other goals, either directly or indirectly. The impact of climate change, for instance, will have noticeable health effects, and maintaining good health can enhance the resilience of affected populations.[5] Massive urbanization worldwide contributes to health issues, especially due to air pollution and the urban heat island effect. Additionally, intensive agricultural and livestock production, while feeding the global population, may also harm natural habitats, biodiversity, water quality, and soil, affecting the health of farmers.

A case study on schistosomiasis in Africa illustrates how habitat changes through agriculture and irrigation can increase disease risks for both humans and animals.[6] Despite improvements in socio-economic conditions, human-made habitats have facilitated the development of snail species hosting schistosome larvae. The expansion of rice fields, dams, and aquaculture benefits snails, leading to increased schistosome transmission, and impacting human and animal health. While molluscicides can control snail populations, they pose threats to biodiversity and have serious health consequences for human populations.[7] Overall, DG 3 is intricately linked with various goals, reflecting the interconnectedness of health with broader global challenges.

[5] https://www.researchgate.net/publication/326044527_Sustainable_Development_Goal_3_health_and_well-being_and_the_need_for_more_integrative_thinking
[6] United Nations Statistics Division. SDG Indicators: Official list of SDG indicators. 2016. Available: http://unstats.un.org/sdgs/indicators/indicators-list/.
[7] United Nations Development Group. Mainstreaming the 2030 Agenda for Sustainable Development. 2015. Available: https://undg.org/wp-content/uploads/2015/10/Mainstreaming-the-2030-Agenda-UNDG-Interim-Reference-Guide-to-UNCTs-7-October-2015.pdf

The impact of habitat fragmentation and biodiversity loss extends beyond schistosomiasis to other infectious diseases like Hantavirus Pulmonary Syndrome, Lyme disease, Malaria, West Nile virus, Nipah and Hendra viruses, and coral diseases causing massive bleaching in marine ecosystems. These diseases not only affect ecologically significant native species but also pose threats to domestic animals and public health. An example is Vampire Bat Rabies (VBR), transmitted by *Desmodus rotundus*, affecting both humans and animals in Latin America.

Despite extensive national campaigns, vaccination programs, and bat control efforts, VBR persists and is on the rise in many Latin American regions, including Mexico.[8] This disease has significant economic impacts on the livestock industry and is a major public and animal health concern.[9] Land-use changes, habitat fragmentation, and increased livestock distribution have expanded the geographic range and population size of vampire bats, heightening the risk of VBR transmission to human communities and domestic animals. To effectively combat VBR, an integrative strategy considering all relevant factors is essential for informed prioritization and control measures.[10]

Analyzing the intersection of biodiversity, ecosystem services, agricultural yield, and human well-being in complex ecosystems is a rare but valuable approach. It enhances our understanding of how these elements interconnect. Studies that solely focus on species diversity and food production, neglecting other critical ecosystem processes, should broaden their scope to include disease dynamics in humans, domestic animals, and wildlife.

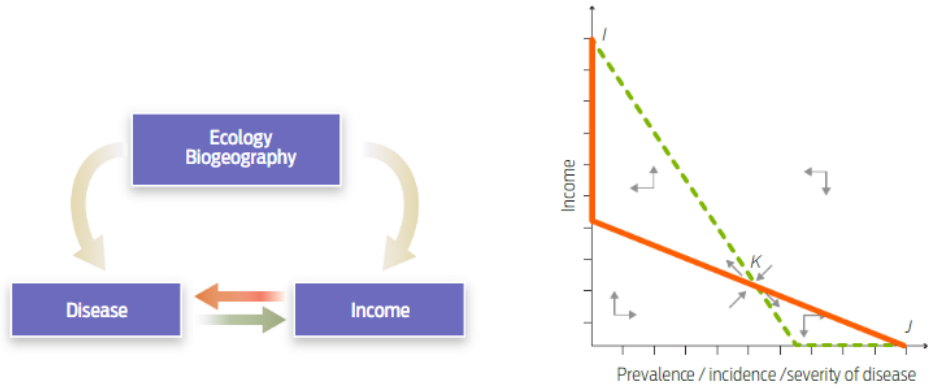
While integrated approaches pose challenges, the obtained results suggest that comprehensive analyses spanning environmental, sociological, and economic domains offer new insights into the causes and consequences of human health and well-being. This inclusive approach has the potential to better integrate Sustainable Development Goal 3 (SDG 3) with other goals, reflecting the interconnected nature of environmental, social, and economic factors in shaping global health outcomes.

HEALTH AND WELL-BEING, A MULTIPLE AND UNIVERSAL LEVEL

[8] Bhattacharya D, Ali MA. The SDGs - What are the "Means of Implementation"? 2014. Available: http://www.futureun.org/media/archive1/briefings/FUNDS-Briefing21-SDGsMoI.pdf.
[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5441444/
[10] https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2448-67602018000200003

Poor health and poverty often go together because an infected person becomes less productive and therefore has a lower capacity to generate income. In this way, the poverty trap could be caused by infections, particularly since many endemic tropical diseases develop all or part of their transmission cycle in the environment; therefore, they are not eradicable per se. One Health/Eco Health approach adopting a broad ecological perspective may help to anticipate and proactively mitigate these kinds of risks by considering interactions with ecosystems.[11] Additionally, some countries or regional territories may have managed to overcome certain infectious diseases by proximity effects.

The relationships between infectious diseases and poverty are not linear or homogeneous, and they depend on income level to a large extent. In poor countries, a higher income allows better protection against infectious disease risks (e.g., purchase of drugs and bed nets) and has more complex effects on household members. However, the high incidence and prevalence of such diseases can affect individual or collective life conditions. The relationships between health and income also involve other variables, such as education. In general, many of the poorest regions of the world face situations that are vicious circles, that is, where complex dynamics prevail to maintain poverty, especially vulnerability, exposure to certain types of risks (infectious or parasitic), and other contextual variables that increase the risk of some individuals falling or staying in poverty.[12]



SDG3 A

Buruli u ınt

disabling ent

Figure 1. (a) Simplified representation of the relationships between the environment and its different ecological and biogeographic components, depending on the distribution and abundance of infectious diseases and their hosts (vectors and/or reservoirs), and to the individual and family income. The form and severity of infections interact with the income by introducing a complex dynamic between these two parameters. (b) Simplified forms of statistical relationships between income and infectious transmission (here, the prevalence of an infectious disease). In theory, the prevalence, incidence or severity of the infection decreases as a function of increased income (in red); and inversely, the income declines when the prevalence, incidence, or severity increases (in blue). See text for further explanation. The functions are in stable equilibrium in *I* and *J*; and in unstable equilibrium in *K*. The functions delimit two attraction basins, one located in the right part of the diagram around *J*, named as "poverty trap". Adapted from Bonds et al. (2010).

[11] https://data.unicef.org/sdgs/goal-3-good-health-wellbeing/

[12] https://www.undp.org/sites/g/files/zskgke326/files/publications/SDG-3%20Health.pdf

in places like Cameroon, contributes to economic hardships by hindering job and education access for affected individuals. Garchitorena and colleagues used data and models to reveal that even low-incidence diseases can disproportionately affect vulnerable socio-economic groups. Buruli ulcer exacerbates inequalities within disadvantaged families and communities, leading to economic struggles. Often co-occurring with other infections, the disease creates a complex web of health challenges, hindering normal development in affected areas.

In addition, the multiple infections caused by neglected infectious or parasitic diseases, such as those not considered by international funding (almost exclusively HIV/AIDS, malaria, and tuberculosis) can generate additive or synergistic effects, which increase the attraction surface or strength of the "poverty trap" phenomenon, as represented by J in Figure1. Rural poor populations, residing far from medical centers, face a pronounced impact of neglected tropical diseases like Buruli ulcer. Timely diagnosis and treatment, crucial in preventing severe consequences, are hindered by the distance from medical facilities. Previous global health priorities, especially those focused on major infectious diseases under the Millennium Development Goals (MDGs), may have unintentionally neglected certain infections and parasites, now categorized as "neglected." This oversight has contributed to the multiplication of these neglected diseases, exacerbating contextual inequalities and subtly perpetuating cycles of poverty.

DISCUSSION AND IMPLICATIONS FOR RESEARCH AND POST-2015 HEALTH DEVICE

Buse and Hawkes (2015) highlight five key challenges in the scientific and medical communities[13]. They emphasize the need for a significant and necessary shift in approach, noting that the full scope of this required change hasn't been fully grasped. Aside from addressing issues related to dominant mercantilism, which involves political decisions at national and international levels, four other major challenges need attention.

P. Producing change that focuses on preventative actions through the involvement of local communities.

L. Leadership development aims at a higher coherence and coordination among the goals to integrate different health determinants.

I. Integration of individual and peoples' rights.

[13] https://unric.org/en/sdg-3/

E. Enlistment of civilian populations and their guaranteed participation.

The "L" challenge involves enhancing governance and adopting more integrative approaches in scientific and medical research, spanning both public and animal health. On the other hand, the "I" challenge necessitates increased involvement of specialized lawyers in health law, biomedical and environmental fields, as well as national and international governance, including intellectual property. Addressing the latter challenge may require improved representation of these legal specialties through enhanced university training. The "E" challenge involves not only incorporating the perspectives and guidance of civil society but also influencing the research and decision-making processes. Human and social sciences, specifically anthropology, sociology, and communication sciences, are crucial in addressing this challenge. These disciplines help in comprehending intellectual and collective challenges linked to conducting field studies and analyzing the reluctance of experts to engage in dialogue with civil society.

Dealing with the four challenges means moving towards preventing health issues, which is what epidemiologists and public health experts prefer. This is different from the usual emphasis on treating problems in the biomedical field, where studies focus on fixing existing health concerns. While vaccines and medical research are important, it's also essential to prioritize improving factors that greatly affect overall population health. This highlights the importance of promoting health. This approach is especially crucial when looking at the bigger picture that includes environmental, ecological, and evolutionary sciences in combination with epidemiology and public health. Recent studies use modeling scenarios to analyze effective approaches by considering regional or national contexts and socio-economic conditions. The proposed scientific method involves utilizing mathematical and computer science inputs. On the second idea, understanding structural and internal biomedical factors typically specialized knowledge, contrasts with a holistic approach. This holistic approach rejects isolating determinants from each other, as seen in the exposome concept. Recognizing the impact of life conditions, environmental pollution, and changes encourages the belief that individuals can influence health determinants for a better life[14].

[14] https://d-nb.info/1218222727/34

MULTIDIMENSIONALITY OF SUSTAINABLE DEVELOPMENT ISSUES

All Sustainable Development Goals (SDGs) share common traits, including interconnectedness, systemic aspects, the requirement for interdisciplinary skills, the emergence of new phenomena with potential dangers or risks, and varying degrees of uncertainty that decision-makers need to navigate. Concerning SDG 3, which focuses on global health, the intricacies arise from environmental changes, dynamic natural resource management, lifespans, environmental factors, and economic and social crises. This complexity suggests approaching SDG 3 within the realms of biomedical research and the broader scope of global animal and public health.

TOP OF FORM

➢ DATA AND INDICATORS FOR SDGS

The main problem related to the research data here is capital, and the studies must be redesigned for a large number of goals. Regarding SDG 3, the data scope suffers from a lack of epidemiological, socio-economic, demographic, environmental, and long-term data, particularly on tropical and southern countries. The connection between long-term environmental changes, such as global warming and its health impacts, ongoing economic development, and immediate political decisions, especially those related to public health choices, necessitates the collection of new data. In many tropical and southern countries, public statistical institutes may be absent, and existing data might be incomplete, inaccessible, or inadequate for addressing emerging scientific inquiries, such as chronic diseases linked to pollution and pesticides in various African nations[15]. Highlighting the significance of chronological data sets is crucial for monitoring and preventing risks, as well as enhancing early warning systems for potential epidemic threats.

➢ SDG-3 AND THE INDIAN STORY

SDG 3 is particularly important for India, given the challenges faced by its large and diverse population. Despite significant economic progress, India has faced challenges of equity and lack of access to quality health services, particularly in rural areas. With a rise in noncommunicable diseases such as heart disease, cancer, and diabetes, the need to address health as a determinant of progress was strongly felt. Due to an archaic patriarchal society,

[15] https://link.springer.com/referenceworkentry/10.1007/978-3-319-95681-7_64

maternal and child health was also often neglected. Thus, it was important for policymakers to look at reducing maternal and neonatal mortality, and improve nutrition and nutritional deficiencies among children and women.

India has come a long way in achieving SDG 3. Some of the path-breaking initiatives taken by the government in this regard: -

1. **National Health Mission (NHM)**[16] - The NHM aims to improve availability and access to affordable and quality healthcare, particularly for those residing in rural areas, the poor, women, and children; providing public health services in the areas of women's health, child health, water, sanitation and hygiene, immunization; and nutrition. The NHM created a set of specific targets based on indicators as an important step toward achieving SDG 3.

2. **Ayushman Bharat Health Insurance Scheme -** This flagship health insurance scheme was launched to provide free healthcare services to the poor and underprivileged sections of society. The ultimate result will be coverage of medical treatment for serious illnesses for about 500 million people.

3. **National Programme for Health Care for the Elderly (NPHCE)-** The objective of NPHCE is to provide separate, specialized, and comprehensive healthcare to the elderly including outreach services.

4. **Immunization-** India has made considerable progress in immunizing its population against various diseases, including measles, polio, and tetanus. The COVID-19 immunization program was the largest in the world and covered more than 90 percent of the population in a very short time. Undoubtedly, India has made significant progress in this area as part of its efforts to achieve SDG 3.

5. **Malaria Eradication-** India accounted for almost 3 percent of the global malaria burden according to the World Malaria Report in 2019. India has made major progress in recent years in reducing malaria incidence and deaths. There has been a steady

[16] The Sustainable Development Goals Report 2020 (PDF).

decline in the estimated malaria cases with a registered reduction of 24 percent in 2017 compared to 2016, and 28 percent in 2018 compared to 2017.

6. **Tobacco Abuse-** Tobacco use is one of the biggest public health threats in India. It leads to lost lives and has major social and economic costs. The Indian Government has taken several measures to control the use of tobacco Such as the National Tobacco Control Program (NTCP), which aims at reducing tobacco use in India, using measures such as higher taxation, advertising restrictions, health warnings, and cessation services.

CONCLUSION

The implementation of SDG 3, focusing on "good health and well-being," extends beyond the biomedical field to encompass health-related research, emphasizing not only topics and practices but also relationships with civil society. SDG 3 challenges and transforms disciplinary knowledge, necessitating increased interdisciplinary collaboration, particularly through the One Health/EcoHealth approach. This approach, prevalent in ecology and evolutionary biology, is essential to address the new directions in scientific research and practices. Achieving SDG 3 is hindered by a lack of adequate data, especially from tropical and southern countries, necessitating a comprehensive reorganization of monitoring, surveillance, and tracing systems for animal health, public health, and welfare statistics. While certain aspects like new health technologies and education related to sustainable development are not fully discussed, there is a call for implementing pilot schools under the United Nations in various countries, particularly in the South. This concept aims to sensitize younger generations, future decision-makers, to current problems affecting their future and encourage their active participation in action plans. The evolving approach in scientific and medical methodologies needs to align with the goals of sustainable development, prompting a re-evaluation of how we position ourselves in the context of national and international research policies.