

Innovative environmental health initiatives in Brazil: case study of green and healthy environments programme (GHEP) in São Paulo

Abstract

The term “environmental health” (EH) refers to relevant aspects of human health that are shaped by physical, chemical, biological, socio-economic and demographic considerations surrounding the ecology and environment. *Importantly*, EH envisages “*quality of life*” indicators. According to the considered view of this evidence-based research work, the environment has the potential to impact, both directly and indirectly, human health and well-being. EH aims to examine the interaction between the “*environmental demography*”, on the one hand, and “*health outcomes of people*”, on the other. In today’s world situation, the conceptual framework of EH has gained increased significance for all nations, regions, and continents of the globe. All countries are confronted with outcomes resulting from damage to environment and surrounding ecology, Brazil (a country in South America) is no exception. It is for this reason that the several initiatives are underway in Brazil to address the issues connected with EH and resulting sustainable development (SD) concerns. The Green and Healthy Environments Programme (GHEP) in São Paulo, Brazil is one such innovative program. The prime objective of this research is to present discussion on projects and programs undertaken by GHEP in the area of EH. Secondary data (largely ‘*qualitative*’ in nature) have been used; and the methodology of data analysis is ‘*descriptive*’. This paper briefly concludes that the Municipal Green and Environment Secretariat (MGES), the Municipal Health Secretariat (MHS), and the Municipal Social Development Secretariat (SMADS) have designed and implemented the Green and Healthy Environments Programme (GHEP) in São Paulo, Brazil. The GHEP aims to (1) strengthen public policies, and (2) build environmental health management (in collaboration and active participation of the local community).

Keywords: environmental health (EH), initiatives, Brazil, São Paulo, green and healthy environments Programme (GHEP), municipal green and environment secretariat (MGES), municipal social development secretariat (MSDS), and innovations, environmental promotion agents (EPAs), and sustainable development (SD)

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Introductory comments:

In the context of EH, it is pertinent to note that the term ‘*environment*’ envisages everything that is external to human population. It, from this perspective, includes the environments are ‘*physical*’, ‘*natural*’, ‘*social*’, and ‘*behavioural*’ in nature. Connected with the conceptual framework is another (key) term ‘*health*’ which is reflection of “*the complete physical, mental and social well-being of people*” (both boys and girls, and males and females: all age-groups), and not merely “*the absence of disease*” (or illness). In terms of significant of environment in the context of health outcomes, the author of this research argues that there is need for safe, healthy, and supportive environments for the purpose of ensuring good (desired) health outcomes among people, now and for all times. Since the environment in which people live is one of the key determinants of health status (including well-being), the aspect of safe (and supportive) environment is of paramount significance. Also, many national governments and inter-governmental agencies, and other involved stakeholders are attaching increased priority to this consideration in view of the fact that human-beings depend (for survival and sustaining life) on the environment for the purpose of (1) clean air, (2), safe drinking water, (3) nutritious food, and (4) safe places to live in. *Further*, several aspects of the environment and ecology (comprising of both ‘*built*’ and ‘*natural*’ environment) have, thus, potential to impact human health. It is because of these consideration that environmental and climate change scientists interpret health issues in the wider context of environment people live in.¹

Furthermore, in the context of environment & health, the author of this research work argues that several aspects of the environment and ecology have been found to influence health indicators. Hazards of several types (inclining resulting air, water and marine pollution) resulting from environmental degradable can result in increased risks to several critical disease (for instance, cancer, respiratory and heart disease, asthma, including mental health disorders). In a broader perspective, the conceptual framework within which environment (and ecology) patterns and health outcomes are inter-linked (and operate), globally, is depicted in Figure 1 titled “*Determinants of health and well-being in our neighbourhoods*”.



Figure 1 Determinants of health and well-being in our neighbourhoods.¹

It is in the context of environment-health linkages that the model (approach) of EH has gained increased significance the world over, including in São Paulo, Brazil which is focal point of this research paper (wherein the author has outlined the EH-connected initiatives of the GHEP, which is collaborative project). It has been found that environmental factors contributed, globally, to an estimated 23% of all deaths in the year 2002. *Further*, children (under 15 years of age) were particularly affected (with 36% of all deaths) accounted for by environmental risk factors. *Furthermore*, analysis of research data indicates that even in developed countries are confronted with health risks (including burden of disease) resulting from environmental factors. It has been discovered, for instance, that in the year 2002, 17% of all deaths were owing to environmental factors in developed countries in the Western Pacific (including New Zealand, Australia, Japan, Singapore, and Brunei Darussalam).¹

It is in view of the description presented above that several projects on EH have been undertaken in Brazil. In this context, it is important to note that the Ministry of Health of Brazil, from 1998 till date, has designed and implemented project named “Environmental Health Surveillance” (EHS). This project comes within the National Public Health System (NPHS). *Importantly*, the methodology for the development of EH indicators became one of the key issues for the implementation of the EHS. This research paper outlines innovations in projects and programs undertaken by GHEP in the area of EH in São Paulo location of Brazil.

The description presented above highlights the context and significance of this paper. In the following section, the author outlines objectives and research methodology. Relevant information on both general and specific objectives has been included, including sources and type of data (used in this work).

Objectives, research methodology, scope, significance, limitations, and description of key terms used:

In this section, an attempt has been used to present description on objectives, research methodology, scope, significance, limitations, and description of key terms used. Discussion follows below.

Objectives

The author has two types of objectives in this paper: (a) “*general objectives*”, and (b) “*specific objectives*”. Description on these two objectives is presented below.

General objectives

With regards to general objectives, this paper aims to outline modality of EH programs in Brazil. Need for EH initiatives in Brazil and networking and collaboration mechanism has also been looked into. It presents discussion on how the Ministry of Environment and Climate Change (MECC) has partnered with the United Nations Environment Programme (UNEP) in EH projects.

Specific objectives

In terms of specific objectives, this research work aims to present description on EH programs Green and Healthy Environments Programme (GHEP) in São Paulo, the most populous city of Brazil. It outlines, in details, how the Municipal Green and Environment Secretariat (MGES), the Municipal Health Secretariat (MHS) and the Municipal Social Development Secretariat (MSDS) have together developed the GHEP for the purpose of strengthening public policies and building EH management, with active participation of the

local community. Based on data analysis, this article also presents commentary on way forward (for the purpose of designing and implementing more effective EH programs in São Paulo and other regions of Brazil).

Type and sources of data

There are two types of research data: ‘*primary*’ and ‘*secondary*’. Data obtained from secondary sources have been used by the author in the present work. They (secondary data) have been collected from sources, such as books, book chapters, journals, and internet resources. However, data published from only reliable sources (such as government publications and research findings brought out by international agencies and publishing houses) have been used. Scoping review of literature was undertaken by the author for the purpose of collecting the required data. Data sources have presented under reference section. In terms of type, data used are mostly ‘*qualitative*’ in nature.

Methodology of data analysis

With regard to methodology of analysis employed in this work, nature of analysis is ‘*descriptive*’ that involves “*desk-based research*”. Qualitative data (collected from secondary sources, as outlined under above section on type and sources of data used) have been analysed in descriptive manner; data analysis method does not involve statistical (mathematical) methods and techniques. Examples of appropriate and relevant initiatives have been quoted in support of the research statements made in this paper. Since the author has attempted to study the GHEP initiative undertaken in São Paulo, Brazil (from EH perspective), this work involves “*case study method*”.

Scope

There are several EH-related initiatives in Brazil. This paper primarily aims to outline the EH initiatives of the GHEP. At this juncture, the author makes three specific points.

- A. *First*, a point that in order to make the things easier, some key names of programs and initiatives (including offices) have been abbreviated differently than they appear in original source. For instance, in the original source, abbreviations are the Municipal Green and Environment Secretariat (SVMA), the Municipal Health Secretariat (SMS) and the Municipal Social Development Secretariat (SMADS), and Green and Healthy Environments Programme (PAVS). As against this, the author has abbreviated, as per standard research practices, these as the Municipal Green and Environment Secretariat (MGES), the Municipal Health Secretariat (MHS), the Municipal Social Development Secretariat (MSDS), and the Green and Healthy Environments Programme (GHEP).
- B. *Secondly*, the author has used these terms interchangeably: work, paper, research, research work, article, study, evidence-based review paper, and review paper. They carry the same meaning.
- C. *Thirdly*, these three terms have been used interchangeably: program, project, and initiative(s). These terms carry the same meaning.

Significance

In terms of significance, the findings of this research paper will provide significant insight into EH initiatives in Brazil. It outlines need for and significance of EH programs, in general, and in the context of Brazil, in particular. Also, the policy makers and other involved stakeholders can draw inferences from the conclusions of this paper

for designing and implementing more effective EH programs at national, sub-national, regional, and community levels.

Limitations

At this section of the review paper, the author makes three specific points:

- a) *First*, since there is not much scientifically published work on the subject under study, the author has not presented description on review of literature (as expected in research papers).
- b) *Second*, apart from analysis of data (collected from secondary sources), this work has also benefitted from interaction of the author with various experts, policy makers, and other stakeholders: both from India and abroad. The author (He/His) had extensive consultation on CC and epidemic diseases when he travelled to various countries (like Australia, Turkey, Sweden, Vietnam, Pakistan, Poland Ireland, Canada, UAE, Egypt, USA, South Africa, Tanzania, etc.) in the past in connection with presenting research papers at international academic and research conferences, seminars, and workshops.
- c) *Third*, the author, in very transparent manner, states that plagiarism, to some extent, may be detected in this work. This has happened because of the fact that changing the style of writing the sentences and text pertaining to scientific and key data (including research conclusions) beyond a certain limit, sometimes, results in loss of the intended meaning. With full respect to plagiarism ethics in academic and research work, the author is making this ('honest' and 'unbiased') statement.

Description of key terms used:

Presented below is description of key terms used in this evidence-based review paper. This information will enable to understand the scope and the context in which this work has been authored. Discussion on this aspect follows below.

Environment: The term '*environment*', in broader context, is reflection of "totality of all the living and non-living elements and their effects which influence human life on the planet". It generally refers to surroundings. If things around are conducive and favourable for the environment, it is beneficial to the complex system of plant and animal life. The global community is, today, facing unprecedented, interconnected environmental challenges in areas including, (1) "climate change", (2) "clean water", (3) "marine and ocean health".²

Ecology: Ecology implies the study of the relationships between living organisms (including humans, and their physical environment). It aims to understand the vital connections between (1) "plants and animals", and (2) "the world around them". It offers provides information about (1) "potential benefits of ecosystems", and (2) "how human population can use the earth's resources in ways that leave the environment healthy for future generations".³

Environmental health: The term "*environmental health*" (EH) focuses on the relationships between people and their environment. In situations wherein, people are exposed to environmental hazards (e. g., air and water pollution), they are likely to be confronted with serious health outcomes (e. g., asthma, heart disease, cancer, etc). This field (EH) aims at making further advancements in policies and programs that are designed and implemented for the purpose of reducing chemical and other environmental exposures in air, water, soil and food.⁴

Sustainable development: The term "sustainable development" implies "development that meets the needs of the present, without compromising the ability of future generations to meet their own needs". The conceptual framework of sustainable development can be interpreted in many different ways. However, at its core is an approach to development that looks to balance different (and often competing) needs against an awareness of the environmental, social and economic limitations the society, as a whole, faces.⁵

Sustainable development goals: Sustainable Development Goals [SDGs (also termed as "*Global Goals*")], adopted by the United Nations in the year 2015, refers as a universal call to action to (1) "end poverty"; (2) "protect environment, ecology, and planet from further degradation"; and (3) "ensure that all people enjoy peace and prosperity by 2030". In total, there are 17 SDGs, and they are integrated. They (SDGs) recognize two significant considerations. They are: (1) "action in one area will affect outcomes in others", and (2) "developmental initiatives should ensure balancing act in social, economic and environmental sustainability". In this context, it is pertinent to note that all nations have made commitment for the purpose of prioritizing progress for those who are furthest behind.⁶

Ecosystem: The term '*ecosystem*' implies ecological systems. Importantly, ecology is the study of ecosystems. An ecosystem, in broader perspective, includes all the living things (including plants, animals and organisms) in a given area, interacting with each other, and with their non-living environments (e. g., weather, earth, sun, soil, climate, atmosphere). In an ecosystem, each organism has its own role to play.⁷

Climate change: The term "*climate change*" implies to long-term shifts in temperatures and weather patterns. It is pertinent to note that such shifts can be natural (owing to changes in the sun's activity). Burning fossil fuels generates greenhouse gas emissions (GHEs) that act like a blanket wrapped around the earth, thereby trapping (1) "sun's heat", and (2) "raising temperatures".⁸

Environment-health linkages: The term environment-health linkages adverse environmental impacts on human health.⁹ In this context, it is important to note that environmental factors are a root cause of a significant burden of death, disease and disability, globally (particularly in developing countries, with poor infrastructure). They range from poor water quality and access, vector-borne disease and air pollution to (1) "toxic chemical exposures", (2) "climate change", and (3) "degraded urban environments" (especially in cities with large population-base).¹⁰

Quality of life: The term "quality of life" as an individual's perception of their position in life in (1) "the context of culture and value systems in which they live"; and (2) "relation to their goals, expectations, standards and concerns".¹¹ It is a highly subjective measure of happiness that is an important component of many financial decisions.

Collaboration: It is a working practice whereby individuals work together for a common purpose to achieve benefits. Collaboration enables individuals to work together to achieve a defined and common purposes.¹² Stated differently, collaboration is (1) "the partnership", (2) "a union (common platform)", and (3) "the act of producing or making something together".

Networking: It is the process of (1) "making connections", and (2) "building relationships". These connections provide (involved) stakeholders with advice and contacts, which, in turn, help them make informed decisions. Networking can even help them improve program

outcomes. *Importantly*, it can take place in a group or one-on-one setting.¹³

Discussion

Need for EH initiatives in Brazil:

In this section of the work, the author briefly outlines the need for EH initiatives in Brazil, the country under study. Analysis of data in this paper indicates that in Brazil, EH issues envisage broad areas connected with environment and ecology, e. g. deforestation, illegal wildlife trade, air pollution, land degradation, and water pollution (resulting from unsustainable mining activities), etc.

The driving force, pressure, state/situation, exposure, effects, action (DPSEEA) model approach has been applied to develop appropriate indicators of EH in Brazil. This matrix model (as indicated in Figure 2, titled “DPSEEA Model”) takes into consideration the relationship cycle process among economic and social dynamics, environmental response, and human health. An example of the use of EH indicators for decision making in Brazil is that the Ministry of Health has developed database system that allows local-level data entry accessible on line at ‘municipal’, ‘state’, and ‘federal’ levels.¹⁴

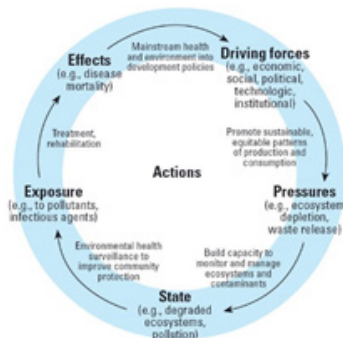


Figure 2 DPSEEA model.¹⁴

In the context of need for EH programs in Brazil, it is relevant to note that the growing concern for protecting environment and ecology has significantly impacted behaviours of citizens of Brazil. Findings of the study report authored by Steve French in 2014 suggest that half of the Brazil population indicated, in the year 2013, that they personally changed their behaviour for the purpose of minimizing effect on global warming (up from 37% in 2010). However, despite the involvement of people of Brazil in EH programs, they still striving to acquire more knowledge about how they can help protect the environment and ecology. In addition, relevant EH messages are tied directly to health of families and their children.¹⁵

Green and healthy environments programme (GHEP), São Paulo, Brazil

In this section, the author outlines modality (including management aspect) of the GHEP initiative (which is focal point of this research work) undertaken in São Paulo, Brazil. Based on data analysis, it has been found that São Paulo (the largest city in Brazil, with approximately 12 million population base) is confronted with serious socio-environmental concerns and issues. It is in view of this consideration that in the year 2005, the Municipal Green and Environment Secretariat (MGES), the Municipal Health Secretariat (MHS) and the Municipal Social Development Secretariat (MSDS) developed an initiative (project) termed as the Green and Healthy Environments Programme (GHEP). The GHEP primarily aims to strengthen public policies and build EH management. In this context,

it is pertinent to note that this project is undertaken with the active participation of the local community.¹⁶ Also, external collaborating partners are involved. One such developmental partners is the United Nations Environment Programme (UNEP). Detailed description on this aspect of partnership, collaboration and cooperation has been presented by the author in subsequent part of this work (under section: Collaborating Developmental Partners in EH Programs in Brazil).

The MHS incorporated, in the year 2008, the GHEP as a programme in the Family Health Strategy (FHS). This was done within the scope of primary care, with the objective of incorporating (and including) EH issues in health promotion actions. Also, due consideration was placed to “*more comprehensive conception of health and the environment*” (with special emphasis on the social determinants of the health-disease process). The author of this work makes a point that the GHEP also aims to foster and further strengthen new health practices that have potential to translate practices into values of citizen responsibility (in the area of health and the environment). Other objectives of the GHEP are to:

- 1) “*strengthen inter-sectorality*”,
- 2) “*fostering empowerment*”,
- 3) “*enhance effective community participation*”, and
- 4) “*contribute to integrated public policies*” (in the Municipality of São Paulo, Brazil)¹⁶

In addition, priority and emphasis is placed on EH surrounding the health of the population of Brazil. In terms of program management strategy, the GHEP develops its actions and projects with a focus on six guiding axes.¹⁶ These six guiding axes are:

- i. Interrelate solid waste management (SWM),
- ii. Biodiversity and afforestation,
- iii. Vegetable gardens and healthy eating,
- iv. Revitalisation of public spaces;
- v. Water, air and soil, and
- vi. EH agenda in public administration.¹⁶

Further, need was a felt, in the year 2020, for a diagnosis management system that has potential to figure out the real needs of the territory, based on (a) environmental risks, and (b) their linkages with the epidemiological profile of the areas covered by the Basic Health Units (BHUs). In order to address this aspect, the GHEP developed the Manual to Elaborate the Socio-Environmental Diagnosis. From research perspective, it is relevant to note that this Manual consists of a local management tool (with enhanced priority and emphasis on recognising the territory in Brazil.¹⁶ Furthermore, this document (Manual) has twin objectives (in terms of expected outcomes). The Manual:

- A. “*enables participatory planning of local and intersectoral actions*”, and
- B. “*provides guiding principles for the purpose of promoting conducive health practices*”.¹⁶

The development of Manual is significant, as it works towards interventions focused on the health needs and problems of people in the broader context of threats resulting from EH degradation. Also, it (1) “*identifies and classifies the socio-environmental risks and potentialities of the region (territory) on digital maps*”, and

(2) “systematises the presentation of the collected data” (using specific graphics). Functioning mechanism of this type results in (a) advancement of the identification of priority problems, (b) coming out with possibilities for interventions by the Basic Health Unit (BH) teams. In this context, the author makes a specific point that in the year 2023, there was evidence of (1) the expanded use of the diagnosis as a planning tool for the Surveillance Centres of the Basic Health Units, as well as (2) the partnership established with the Municipal Department of Urban Planning and Licensing (MDUPL). *Most importantly*, this aspect ensured data availability on a digital public platform for the city of São Paulo.¹⁶

The GHEP team currently has 330 Environmental Promotion Agents (EPAs). The EPAs work together with more than 9,000 community health agents.¹⁶ Also, they work closely with other various sectors and actors in the area, such as:

- 1) *The sub-city councils,*
- 2) *The community,*
- 3) *Local businesses houses,*
- 4) *Religious and faith institutions (churches), and*
- 5) *Schools.*¹⁶

The EPAs work and collaborate with various actors (including the local communities) with the objective of influencing (altering) their actions (responses) with a focus on EH. As such the EPAs are instrumental in awareness generation on relevant aspects of EH among people. Analysis of data in this work indicates that as of 2023, all projects and actions of the GHEP are related to the sustainable development goals (SDGs). The programs incorporate the concept of “One Health” (in its “inter-dependence” and “inter-connection”, in line with the 2030 Agenda and the EH priorities)¹⁶

Collaborating developmental partners in EH programs in Brazil

In this section of the paper, the author outlines the modality within the framework of which EH programs are undertaken in Brazil. It is important to note that Government of Brazil has partnership with the United Nations Environment Programme (UNEP) in EH projects. Analysis of data in this work indicates that as a part of measures aimed at renewing and fostering collaboration on the propriety issues of climate change (and other allied issues), the UNEP and the Ministry of Environment and Climate Change (MECC) of the Brazil Government has signed a Memorandum of Understanding (MOU). The MOU indicates significant advancements in EH policies and actions across the country. This institutional mechanism ensures benefits of EH programs for the society at large in Brazil. Networking and cooperation mechanism with the concerned departments and ministries of the Government of Brazil also reinforces reducing social inequalities, while ensuring safe and healthy environmental for thriving livelihoods. The author of this research argues that this memorandum is a testament to the shared commitment of the UNEP and the Government of Brazil for the purpose of forging a sustainable future through robust environmental stewardship.¹⁷

The MOU outlines resource and infrastructure support of the UNEPs support in four key areas:

- 1) “*climate action*”,
- 2) “*action for nature*”,
- 3) “*action against chemicals and pollution*”

- 4) “*strengthening environmental governance*”.

Description in modality of collaboration and cooperation with the UNEP in these four areas is presented below.

Climate action: Under climate action, the collaboration, as per the provisions laid down in the MOU (as outlined above) is aimed at supporting the development National Climate Plan (NCP) of Brazil. The trust area is formulating a National Mitigation Strategy (NMS), with emphasis on (a) “*integration of nature-based solutions in sub-national climate action plans, governance strategies, and instruments for coastal, marine and oceanic zones*”; and (b) “*efforts to combat (prevent) plastic pollution*”.¹⁷

Action for Nature: Under this category of intervention area, significant initiatives and action envisage (a) “*implementing the new Global Biodiversity Framework*”, (b) “*developing the National Bio-economy Strategy*”, and (c) “*enhancing financing mechanisms for the purpose of nature conservation*”. In addition, provisions of the MOU agreement give pathway for the purpose of (a) “*supporting the regulation of the National System of Conservation Units*” (NSCU), and (b) “*promoting effective area-based conservation measures*”, throughout the country (Brazil).¹⁷

Action against chemicals and pollution: This is another important aspect of EH programs in Brazil with Cooperation and networking with the UNEP. Under action against chemicals and pollution, the segment of the memorandum (MOU) aims to facilitate (a) cooperation in developing studies (including projects) that are in line with the Minamata Convention commitments; (b) crafting a national circular economy strategy; and (c) fostering programs aimed at improving air quality (including more effective management of short-lived climate pollutants).¹⁷

Strengthening environmental governance: Under this thrust area, the MOU agreement makes provision for collaborative efforts for the purpose of further strengthening environmental governance. The relevant and significant element, under this cooperation is development of the (Global Environmental Outlook) GEO Brazil. This mechanism is aimed at (a) “*assessing Brazil’s environmental conditions*”, (b) “*evaluating the effectiveness of current policies*”, and (c) “*more forecasting future environmental trends*”.¹⁷ Stakeholders have realised that innovative solutions to EH problems are required in view of complex challenges. Analysis of data in this work indicates that one of the main responses of the UNEP has been in the form of support to the GEO Brazil model. The GEO Brazil is an integrated approach of (a) collecting, (b) documenting, (c) analysing, and (d) assessing environmental conditions. This is done in view of the consideration that EH issues relate to a defined geographic space or theme, thereby permitting operations to be carried out on different levels (from the municipal level to the global level).¹⁸

Way forward

Description presented in previous sections indicate that Lile many countries (from across the regions and continents of the globe), Brazil is confronted with risks resulting from climate change (CC) and other environmental hazards. Such CC-induced risks (and threats) have exposed millions of its citizens of the country to dire consequences. It has been found that essential ecosystems and ecosystem services (key for survival) are under threat in Brazil. Undesirable consequences resulting from human-induced CC activities (including climate variability) have also been evidenced. Unusual weather patterns have resulted in prolonged drought and flooding in parts of Brazil, accompanied by other drivers (contributing factors) such as

deforestation. All these together have (negatively) altered the existing ecosystems.¹⁹ The author does not wish to elaborate further on reasons for CC-linked threats, as it is not within the scope and objectives of this research work.

The Government of Brazil has undertaken several innovative measures (including the GHEP project) to bring the situation resulting from environmental threats under control. In terms of way forward, this section of the work provides a summary on way forward (including key renewed strategies) for ensuring better outcomes from EH programs in Brazil. The author of this work says that Brazil has potential opportunity for the purpose of building a prosperous future by espousing “low-carbon” and “climate-resilient” growth pathway. *More specifically*, with (more) effective institutional mechanism of building on “green energy mix” and “natural resource wealth”, the country under study can expect desired outcomes from EH programs.²⁰ Brazil has potential to benefit from these (significant) EH-linked interventions:

- 1) Global decarbonization trend, and
- 2) Reducing exposure to CC risks,
- 3) Favouring a productivity-driven and diversified growth model,
- 4) Scaling up the use of renewable energy,
- 5) Favouring energy efficiency, and
- 6) Resilient development, and
- 7) Curbing deforestation.²⁰

Concluding comments

This work presented description on need for significance of EH programs in the global context, in general, and in the context of Brazil, in particular. Also, as part of specific objectives, the paper outlined the modality and management of initiatives and community level programs of the GHEP in São Paulo, Brazil. In concluding part, the author says that EH projects are integral part of projects of the Government of Brazil for adequately addressing relevant EH concerns. It has been institutionalized through various government departments. For instance, from 1998 onwards, the Ministry of Health of the Brazil Government has designed and implemented the EH surveillance (EHS), this was done within the National Public Health System (NPH). The methodology for the development of EH indicators became one of the key issues for the implementation of the EHS. The EH programs in Brazil also implement measures for the purpose of (1) saving electricity, and (2) restoring and upgrading operational water and sanitation facilities.²¹

In São Paulo, Brazil, although the GHEP initiative is facing program implementation-liked constraints, it is striving to strengthen advocacy efforts and redesigning policies for the purpose of building more effective environmental management strategy (with active community participation). The initiatives that are underway primarily aim to empower environmental managers who work for achieving desired outcomes from EH programs. They (environmental managers) enable people (1) identify needs, and (2) develop projects in emerging and need-based areas. In the context of Brazil, the EH-linked areas that need to be addressed by the involved stakeholders include (1) tree planting, (2) water, (3) solid waste, (4) healthy food, and (5) revitalization of public spaces. There are many more intervention areas. The GHEP initiative in São Paulo is an example of “inter-sectoral strength” and “community participation”.²²

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Declarations by the Author:

- a) I am sole author of this review paper.
- b) I, herewith, declare that the present research work has not been sent elsewhere for consideration for publication (including for presentation in conferences).
- c) No funding was received for preparing this research work.
- d) There are no conflicts of interest in this research work.

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