



NATIONAL COUNCIL FOR POPULATION AND DEVELOPMENT









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Acronyms and Abbreviations

COLD	Chronic Obstructive Lung Diseases
DD	Demographic Dividend
EAC	East Africa Community
GBM	Green Belt Movement
GoK	Government of Kenya
HIV	Human Immunodeficiency Virus
HOPE-LVB	Health of People & Environment in Lake Victoria Basin
ICDPs	Integrated Conservation and Development Projects
IPCC	Inter-governmental Panel on Climate Change
KDHS	Kenya Demographic and Health Survey
KIHBS	Kenya Integrated Household and Budget Survey
KMNR	Kiunga Marine National Reserve
KPHC	Kenya Population and Housing Census
LMICs	Low- and Middle-Income Countries
LVBC	Lake Victoria Basin Commission
MEL	Monitoring, Evaluation and Learning
MTP	Medium Term Plan
NACC	National AIDS Control Council
NCDs	Non-Communicable Diseases
NCPD	National Council for Population and Development
PHE	Population, Health and Environment
PMPS	PHE Minimum Package of Services
SDGs	Sustainable Development Goals
SODIS	Solar Water Disinfection
SRH	Sexual and Reproductive Health
SSA	Sub-Sahara Africa
USAID	United States Agency for International Development
WWF	World Wildlife Fund

Introduction

opulation dynamics, human health and well-being and environmental sustainability are inherently interlinked. The global population is projected to grow from an estimated 7.7 billion people (2019), to 9.7 billion by 2050¹. Most of this growth will take place in Low- and Middle-Income Countries (LMICs) specifically in Asia and sub-Saharan Africa (SSA), with the latter accounting for more than one billion extra people². The phenomenon of rapid population growth in Africa is probably at its most acute in East Africa. This region has one of the highest population growth rates in the world.

It is projected, for example, that Kenya's population will increase from 47.6 million in 2019 to about 80 million by 2050. The growing population in Kenya, like other countries in SSA, is influencing demand for critical natural resources and services alongside the considerable environmental pressures resulting from unsustainable consumption patterns. Human activity has resulted in unprecedented increasing loss of biodiversity, deforestation, pollution, unsustainable exploitation of natural resources, and introduction of invasive species. In addition, the country is confronting major public health challenges associated with an unusual triple burden of disease, escalating communicable and non-communicable diseases, high maternal mortality ratio and child mortality rates. These health and environmental challenges are interrelated and therefore require multi-sectoral integrated solutions.

Advancing the multisectoral integrated Population, Health and Environment (PHE) approach therefore offers an opportunity for sustainable development.

What is PHE?

Population, Health and Environment (PHE) approach are integrated development solutions that recognize the interconnectedness between people, their health, the environment and other development aspects. PHE can positively influence population growth, health and environmental conservation patterns by enhancing resilience of communities, helping balance environmental protection, natural resource use and human well-being. The approach can be applied to achieve a range of Sustainable Development Goals (SDGs) including family planning, food security and nutrition promotion, water safety, gender and youth empowerment, girl child education, clean energy, economic development and climate change adaptation among others.

Primarily, the PHE approach to development focuses on the close connection between the population, health and environment (PHE) sectors with emphasis on cross-sectoral collaboration and coordination for improved health and wellbeing of the population. Integration of population, health and environment activities has better impact in achieving development targets including universal health, food security, and poverty reduction.

Benefits of PHE

Where PHE programmes and projects have been implemented, the following benefits have been experienced:

i) Family Planning

PHE integration increases the availability of and access to services that promote healthy timing and spacing of pregnancies hence resulting in improved health of women and children and meaningful involvement of women in economic activities. Integration can also better engage men in reproductive health services and increase their support for the same.

ii) Environmental conservation and protection

Compared to single-sector projects, PHE projects show improved environmental indicators, such as: increased engagement of women in conservation and natural resource management activities; decreased population-driven pressures on the environment; and reduced unsustainable practices around natural resources.

iii) Livelihood improvement

Integrating health, livelihood, and micro-credit components with natural resource management activities increases buy-in from men, women and youth. Better health, education and awareness, as well as manageable families all contribute to economic stability, giving women and households more assets to draw on in the face of a crisis.

iv) Builds Resilient Communities

Integrating healthy timing and spacing, nutrition, and income generation can increase the resilience of communities in surviving and recovering from human and environmental shocks by diversifying sources of nutrition and income, and engaging women in agriculture and natural resource management.

v) Child and Youth Education

Integrating PHE with education can increase women and youth empowerment and foster increased youth leadership and development. Education has also led to better health outcomes for women and their families, and increased their ability to decide whether, when, and how many children to have.

vi) Food security and nutrition

PHE activities that incorporate food security and nutrition allow for better health outcomes, especially in infants and children. Additionally, incorporating nutrition education into agricultural and environmental health programs allows for advancements in nutrition-sensitive agriculture.

History of PHE

In the late 1980s conservation organizations and practitioners began to realize the benefits of improving the quality of life for people by managing biodiversity and natural resources. These projects were initially called Integrated Conservation and Development Projects (ICDPs) and addressed a wide variety of community development needs. At the end of the 1990s it was realized that ICDPs were not achieving conservation or development goals as successfully as anticipated. This was because the scope of ICDPs was often too broad. One of the lessons learned from ICDP attempts was that the success of the projects depended on the ability to focus on key interventions and avoid excessive complexity.

From the lessons learned from early ICDPs, the conservation sector gave birth to the Population, Health and Environment (PHE) approach with a new generation of projects integrating health and environment. Program designers began to realize that efforts to conserve biological diversity (biodiversity) in developing countries was most successful in long-term indicators when local people perceived their efforts as serving their economic and cultural interests and when population growth is well managed.

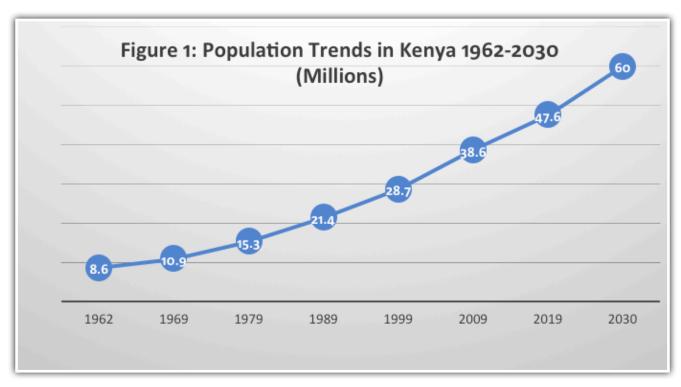
Kenya was one of the first East African countries to embrace the PHE approach in 2007. The Eastern Africa Community (EAC) Partner States and Ethiopia agreed to adopt the PHE approach as a strategy for attaining sustainable development. These countries established PHE Working Groups/Networks to spearhead PHE Policy and Programming in their respective countries. Consequently, several PHE Projects were established in Kenya. In 2013, Kenya embarked on strengthening and institutionalizing PHE.

2. Situation Analysis

enya's growing population is influencing demand for critical natural resources and services largely due to unsustainable production and consumption patterns. In addition to this, depletion of natural resources is impacting negatively on the health of vulnerable communities as demonstrated by poor health indicators and high levels of poverty exacerbated by high dependency ratios in the country. The resulting environmental stresses, poverty and poor health are further aggravated by the effects of climatic change.

Population Size, Growth and Policies

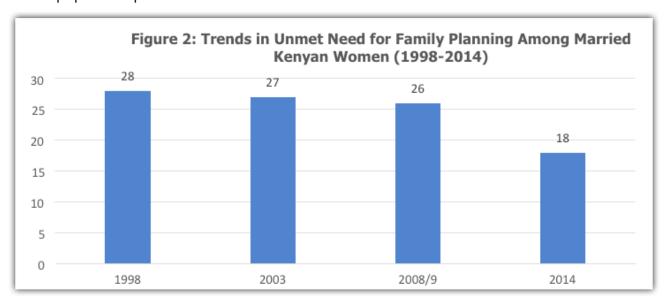
At independence in 1963, Kenya had a population of about 9 million as indicated in Figure 1. This population grew at a rate of over 3 percent between 1963 and 1999. In 1999 the population of Kenya was enumerated at 28.7 million after which it increased to 47.6 million in 2019 with an estimated growth rate of 2.3 percent. The import of this is that the population of Kenya quadrupled in less than 50 years after independence thereby increasing the pressure on available resources including land, water, and forests. If this rate of population growth is maintained, the country's population will reach 60 million by 2030.



Source: Kenya Population and Housing Censuses 1962-2019 and National Council for Population and Development (NCPD) Estimates

Kenya's fertility levels reached a peak of 8 children per women in 1978 according to the Kenya Demographic and Health Survey reports. This fertility level was considered unsustainable and therefore the Government spearheaded efforts to reduce it. In 1998, the country's fertility levels had declined to 5 children per women. This declined further to 4 children per woman in 2014. The decline in fertility has been coupled with an increase in contraceptive use among married women in the country. Between 2003 and 2014, the use of contraceptive methods by married women in Kenya increased from 39 percent to 58 percent. Over the coming decades, the population growth rate is expected to decline if the declining trend in fertility is sustained.

Unmet need for family planning among married women in Kenya reduced from 28 percent in 1998 to 18 percent in 2014 as shown in Figure 2. Teenage pregnancies, though declining, are still unacceptably high. In 2014, the proportion of teenagers aged 15-19 years who had begun motherhood was 18 percent down from 23 percent in 2003. Further reductions in both the unmet need for family planning and the proportion of teenagers who have begun motherhood will ease the population growth rate and the resultant population pressure on resources.



Source: Kenya Demographic and Health Surveys (KDHS) 1998-2014

Kenya's achievements in managing population growth have been guided by various population policies implemented by the Government. On the African continent, Kenya was the first country to implement an explicit population policy through the National Family Planning Programme that commenced in 1967 and focused on provision of family planning services. This policy was succeeded by Sessional Paper No. 4 of 1984 on National Population Policy Guidelines which was later succeeded by Sessional Paper No. 1 of 2000 on National Population Policy for Sustainable Development. From 2012, the country's population programme has been guided by Sessional Paper No. 3 of 2012 on Population Policy for National Development. The goal of the latter policy is to match the population growth to the available resources for the wellbeing of the population.

The fertility levels over the past decades have contributed to Kenya's youthful population. From the 2019 population census, children below the age of 15 years accounted for about 39 percent of the total population while the elderly (60 years and above) accounted for about 6 percent of the total population. The national dependency ratio was estimated at 75 dependents for every 100 population in the working ages. The implication of this is that a substantial amount of the country's resources is spent on social services and the number of young persons expected to join the labour force in future will continue to increase significantly. If the needs of this population segment are not adequately addressed, then the challenges facing the youth will worsen. These challenges include unemployment, poverty, drug and substance abuse, sexual and reproductive health rights. In an effort to address the above demographic opportunities and challenges, Kenya is implementing a National Demographic Dividend (DD) Roadmap that seeks to harness the youth potential for socio-economic transformation of the country.

Health Trends and Policies

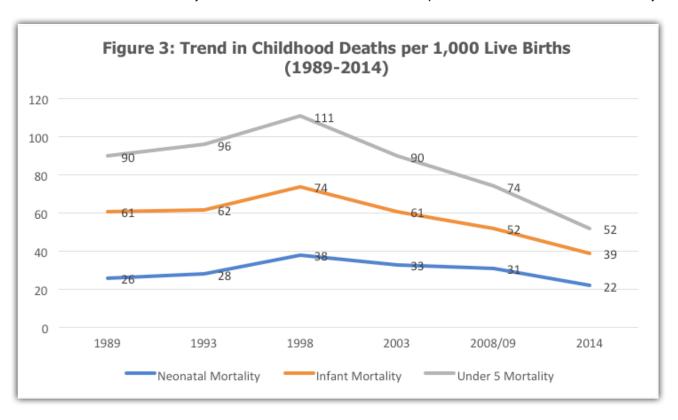
Kenya has made commendable progress in improving health indicators. The country's average life expectancy at birth is 67 years with 69 years for females and 64 years for males (KPHC, 2019). The Kenya Health Policy (2014-2030) gives direction to ensure significant improvement in overall status of health

in Kenya in line with the Constitution of Kenya 2010, Kenya Vision 2030 and global commitments. However, Tuberculosis and water-borne diseases like malaria, typhoid and bilharzias are widespread while malnutrition continues to manifest among children. Access to health care services is inadequate and health facilities are commonly inefficient or difficult to reach especially in the arid and semi-arid areas.

Kenya's Maternal Mortality Ratio was estimated at 362 per 100,000 live births in 2014. Most of maternal deaths are largely due to preventable causes such as, haemorrhage, infections, high blood pressure, unsafe abortions and obstructed labour for which high-impact-low-cost interventions exist. There is urgent need to increase the coverage and quality of care during pregnancy, childbirth and postnatal care to address these causes of death as well as their complications.

Kenya is one of four HIV 'high burden' countries in Africa – about 1.4 million people were living with HIV infection by the end of 2020. Women in Kenya are more vulnerable to HIV infections compared to Kenyan men, with the national prevalence at 5.5% for women and 2.9% for men according to Kenya HIV Estimates report - 2021. The epidemic is geographically diverse, ranging from a high prevalence of 17 percent in Homabay County to a low of less than one percent in Wajir County (NACC, 2020).

As shown in Figure 3, between 1989 and 2014 Kenya recoded a significant decline in childhood deaths especially among the infants and those under 5 years of age. The leading causes of child deaths in Kenya are: sepsis, birth asphyxia and complications of preterm birth; pneumonia, malaria, diarrhoea and malnutrition. Cumulatively, these causes account for over 75 percent of child deaths in the Kenya.



Source: Kenya Demographic and Health Surveys (KDHS) 1998-2014

Access to safe drinking water is a great risk factor for child morbidity and mortality. In Kenya, the majority of households (59%) do not use any method to make water safe for drinking (KIBHS, 2015/16). The nutritional status of children under 5 years is still poor. The prevalence of low birth weight, a leading cause of neonatal mortality, is as high as eight percent in Kenya. About 26 percent of children under the age of five are stunted, four percent are wasted and 11 percent are underweight.

The Ministry of Health in the maternal and child health programme is supporting several child survival interventions to improve the health of children in Kenya. These include the Expanded Programme on Immunization, the Integrated Management of Childhood Illnesses Initiative, the Community-Based Newborn Care Programme, the Infant and Young Child Feeding Programme, a micronutrient supplementation programme and a vitamin A and deworming campaign. Biannual child-mother health and nutrition weeks, called 'Malezi Bora' to deliver a specific package of health interventions targeting mothers and children under age 5. The ultimate goal of the 'Malezi Bora' strategy is to improve delivery of routine health and nutrition services targeting children, expectant women and lactating mothers.

In addition to communicable causes of morbidity and mortality, Kenya is now increasingly facing the scourge of non-communicable diseases (NCDs) due to changes in the environment and lifestyles. These include diabetes, cardiovascular diseases, cancers, Chronic Obstructive Lung Diseases (COLD), disabilities from road traffic accidents and biohazards.

Kenya has had national health policies and strategies that have been geared to address the various health challenges. However, these policies and strategies have largely been implemented in silos leading to loss of synergies and value for money. Going forward, there is a need for multi-sectoral approach in the implementation of health policies and strategies.

Environment and Climate Change Trends and Policies

Environment Conservation and Protection

Kenya covers an area of about 582,646 km² of which 97.8 per cent is land mass and 2.2 percent is surface water. Forest coverage is approximately 8.83 percent (which is below the ideal forest cover of 10 percent recommended by the United Nations), while the national tree cover stands at 12.13 percent. The country is endowed with diverse vegetation types including riverine, savannah grass land, coastal, mangroves, equatorial rain forests, and montane forests that are home to unique and diverse flora and fauna. Increase in human population and changing climatic patterns is exerting pressure on the limited natural resources leading to over-exploitation and contributing to land degradation.

Land degradation continues to be witnessed despite various Government efforts to address this challenge. The degradation exasperated by climate change has resulted in increasing water levels in Lakes, low water quality in rivers and increasing presence of invasive plant species. In addition, water pollution, air and waste management are still a major challenge in most of our urban centres.

Water coverage increased from 60 percent in 2018 to 65.5 percent in 2021 while sewerage coverage in urban areas increased from 25 percent in 2018 to 27.7 percent in 2021. National sanitation coverage increased from 74.8 percent in 2018 to 82.5 percent in 2021. Under food security, the land area under irrigation increased from 504,880 acres in 2019 to 599,856 acres in 2021.

The increasing human population in Kenya, coupled with the quest for social and economic development is putting considerable pressure on the country's environment. As a consequence of human activity, the environment and its natural resources is threatened by climate change, soil erosion, deforestation, and over-cultivation, overgrazing, overfishing, pollution from herbicides and pesticides, and pollution from chemical, biological; industrial and human waste, as well as siltation and encroachment on aquatic ecosystems.

In Kenya, majority of the population is rural and largely agrarian in nature. This implies that their socioeconomic activities lead to many challenges related to overuse and pollution of land as well as aquatic ecosystems. In addition, majority of the rural and peri-urban populations largely depend on solid fuels for power which worsens deforestation and causes air pollution, and particularly indoor air pollution, placing women and children at particular risk.

Outdoor pollution is a challenge in Kenya's rapidly growing urban centres. The transport sector is a major contributor to outdoor air pollution in large cities such as Nairobi. The rapidly growing number of second-hand vehicles and poor road infrastructure lead to traffic congestion and air pollution. Forest fires and dust, especially during desert dust storms, are also important sources of outdoor air pollution. Photo 1 of Kibra informal settlement in Nairobi city shows how unplanned urbanization and informal settlements can quickly become a health and environmental hazard.



Photo 1: Kibra informal settlement in Nairobi, Kenya's capital, showing the inter-linkages between human, animal and environment pollution, land degradation, hygiene and sanitation

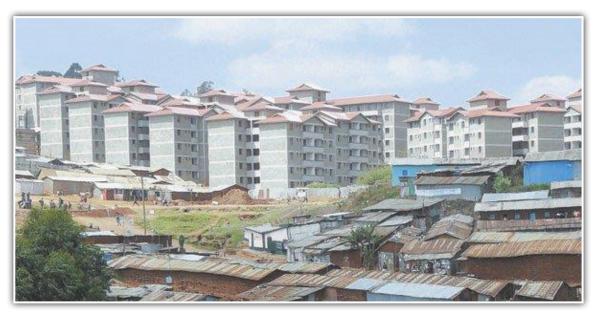


Photo 2: Kibra after slum upgrading efforts by the government of Kenya to address population, health and environment related concerns

There is inadequate synergy on the enforcement of laws and policies concerning agriculture, land, water, forests, trade and industry which have significant, if not dire, implications on the environment. An integrated and ecosystem approach to planning and development is therefore required for environmental challenges to be effectively addressed.

Climate Change

Sessional Paper No. 5 of 2016 on National Climate Change Framework Policy was developed to facilitate a coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change. This Policy aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting a low carbon development pathway.

The effects of climate change are already being felt by people across Kenya. Evidence shows that the change in temperature and rainfall patterns combined with rapid population growth has affected the health, livelihoods, food productivity, water availability, and overall security of the Kenyan people. Observable effects of climate change on water resources in Kenya include: flooding, drought, change in distribution of rainfall, drying- up of rivers, melting of glaciers in Mt. Kenya and the receding of water bodies. The glaciers act as a water tower and several rivers are now drying up (GoK, 2016).

Severe flooding and intense droughts have led to the destruction of many homes, shelters and villages in Kenya. Conflicts over resources also exacerbate these impacts and, in turn, contribute to the ongoing migration as pastoralists seek for pastures for their animals. Women, children and the elderly are more vulnerable to climate change impacts. Water scarcity places an additional burden on women, who walk for many hours and long distances to fetch it (Intergovernmental Panel on Climate Change (IPCC), 2014). Children and the elderly face graver risks due to susceptibility to infectious diseases, such as Malaria, limited mobility and reduced intake of food. The elderly face physical danger and even death, due to droughts, heat stress and wildfires. Children often die from starvation, malnutrition, diarrhoea diseases and flooding (IPCC, 2014).

Both climate change and environmental degradation both involve a complex range of interdependent factors, requiring multi-stakeholder and multi-sectoral responses to effectively address them. Addressing population growth and climate change together should be a top development priority if Kenya is to achieve sustainable development. In order to enhance integrated responses, there is need to harmonize roles of various climate change coordination entities, integrate population dynamics in all climate change policies and strategies (and vice versa), secure financial and other resources for climate change and population responses and enhance technical capacity in multidisciplinary programme design and research.

Past and Present PHE Initiatives and Projects in Kenya

A number of innovative and successful PHE initiatives and projects have been implemented in Kenya. These have generated critical evidence to warrant scale up of the PHE approach. Some examples include:

Health of People & Environment in Lake Victoria Basin (HoPE-LVB) Project

This is a trans-boundary project covering Kenya and Uganda and is funded by USAID, the John D. and Catherine T. MacArthur Foundation, the David and Lucile Packard Foundation, the Barr Foundation, the Margaret A. Cargill Foundation, and the Winslow Foundation. The project is implemented by Pathfinder International and partners in Kenya and Uganda using a PHE integrated, rights-based approach. The project's goal is to reduce threats to biodiversity conservation and ecosystem degradation in the Lake Victoria Basin while simultaneously increasing access to contraception and sexual and reproductive health (SRH) services to improve maternal and child health (MCH) within project communities.

LVBC Population, Health and Environment (PHE) Programme

In 2012, the Lake Victoria Basin Commission (LVBC), an institution of the EAC started implementing an integrated PHE Programme with support from USAID-EA. This was in recognition that health and environmental challenges in the Lake Victoria basin are interlinked and any attempt to address such interrelated challenges requires integrated solutions. The PHE Program is a cross-cutting initiative that aims to add value to the environmental conservation programmes of the Lake Victoria Basin and improving access to and utilization of population and health services in the Basin.

Afya Uzazi project

This is a five-year project funded by USAID through FHI 360 and implemented by a consortium of partners using the PHE approach. The main aim of the project is to demonstrate how PHE interventions catalyze the uptake of FP/RMNCAH services, improve environment outcomes and enhance the general wellbeing of communities. Specifically, the project sought to respond to the challenges that affect people's lives through integrated activities that touch on different but related sectors such as reproductive health, primary health, and natural resources management. The project was implemented in Kuresoi South and Kuresoi North in Nakuru County. Some of the project's achievements are completion of a PHE baseline study and the development of a robust M&E plan to help demonstrate value addition of PHE.

Il'Ngwesi Group Ranch Project

A group of about 6,000 people in Laikipia County established an ecotourism project to conserve wildlife and local culture, create employment, and reduce over-dependency on livestock by generating alternative livelihood options. Through this project the community has benefited from new schools, better health services, improved water supply, distribution of mosquito bed nets, and an intensive AIDS awareness campaign. The project has enhanced livelihoods through controlled grazing, watershed protection, and reforestation. This has reduced environmental degradation and slowed the loss of wildlife species with significant payoffs for the local community. The project has proved to be self-sustaining after the initial donor investments.

Kenya Water for Health Organization (KWAHO)

This project is implemented by Kibera Water and Sanitation Project in Nairobi's largest informal settlement. The project has helped the community construct ventilated pit latrines, educate community members on health and hygiene, and establish a garbage collection point, among other activities. Solar Water Disinfection (SODIS) was introduced as a simple and cheap technology to purify drinking water for household consumption using radiation from sunlight. The project demonstrated that impoverished communities are willing and able to adopt modern, environmentally friendly technologies to improve their quality of life, and that community-based organizations are critical for mobilizing people to engage in such PHE projects.

Kiunga Marine National Reserve Project

World Wildlife Fund (WWF) integrated a comprehensive health component into the Kiunga Marine National Reserve (KMNR) Conservation and Development Project in Lamu County. WWF, the Ministry of Health, and local partners provide reproductive health and child immunization services; basic hygiene, malaria, and HIV/AIDS prevention awareness; and have opened a staffed dispensary. Conservation measures, which are implemented by WWF and the Kenya Wildlife Service, have included exchanging illegal fishing gear for legal, sustainable gear and cooperating with WWF to demarcate no-go zones for fishing so that marine life can regenerate.

Sauri Millennium Village Project

The Millennium Villages Project was a United Nations initiative aimed at empowering impoverished rural communities in 12 African countries to achieve the Millennium Development Goals within 10 years. Sauri Millennium Village, located in Siaya County is a conglomerate of 11 villages and one town of about 5,000 people. When the project began in July 2004, 85 percent of the population was experiencing food insecurity. Notable improvements in agricultural production helped reduce food insecurity to 18% by 2007. The Project also helped to provide safe drinking water, improve sanitation facilities, reduce malaria cases, and enhance the natural environment through planting of indigenous tree species in the villages.

SRHR, Environmental Sustainability and Climate Change project

This three-year project (2018 – 2021) located in Watamu area of Lamu County was implemented by FHOK in conjunction with WWF and sought to enhance the integration of SRHR in environment sustainability and climate change activities. Some of the project activities were; awareness raising on linkages and lobby for integration of SRHR in relevant policies and plans; provision of services (SRHR and conservation) through community outreaches and in reaches; sensitization of CSOs and relevant networks and alliances on the integration of SRHR, climate change and sustainable development; and orientation of local administration on SRHR, Environmental sustainability and Climate Change. DANIDA provided both technical and financial support to the project.

SRHR and Sustainable Development Project (Pambazuko)

Pambazuko project was implemented in Siaya and Kisumu counties between 2015 and 2018. It was implemented by FHOK with technical and financial support from DANIDA. The project sought to improve the resilience of vulnerable communities in the two counties through integration of SRHR into sustainable development programming. Some of the key achievements of the project were; Uptake of family planning and reproductive health services increased; food security was improved through establishment of kitchen gardens and use of improved cereal seeds (maize, millet and sorghum); environmental protection was adopted through planting of trees, energy saving jikos and use of solar energy for lighting in homes; more households owned poultry, goats, fruit farms, trees and tree nurseries which they viewed as assets gained from knowledge provided by the project; the community gained skills and knowledge to support sustainable development; and there was evidence of adoption of new agricultural and health practices by the communities reached.

Green Belt Movement PHE Project

The Green Belt Movement (GBM), FHI 360 and USAID teamed up between 2010 and 2013 to tackle the dilemma of population pressure on both natural and social resources in various communities. Through the project, the two organizations set out to promote family planning initiatives that helped curb rapid population growth so that the demand for natural resources and social services could be sustained in the long run. By promoting shared principles of the environment and health sectors, GBM and its partners were able to address challenges of population growth by promoting positive attitudes towards family planning.

NCPD PHE Engage

"Integrating Population, Health, and Environment for Sustainable Development in Kenya" is an ENGAGE presentation that serves as an advocacy tool to promote integrated PHE approaches, and the value of family planning/reproductive health (FP/RH) investments by decision makers in health and non-health sectors, such as natural resource management and conservation. This tool has been used at both national and county levels to advocate for PHE and contributed to development of the Kenya PHE Strategic Plan (2018-2022).

1. Purpose of the Guidelines

The purpose of this Policy guidelines is to contribute to the operationalization of the Population Policy for National Development (Sessional Paper No. 3 of 2012), the Kenya Health Policy (2014-2030) and the National Environment Policy (2013) for the attainment of sustainable development in Kenya through the integrated PHE approach.

2. Justification of the PHE Policy Guidelines

United Nations Conference on Environment and Development (UNCED) - "Earth Summit" held in Rio de Janeiro in 1992 recognized the synergy between population, health and environment as a key driver for achieving sustainable development. In addition, the International Conference on Population and Development (ICPD) Programme of Action adopted in 1994 and the 2030 Agenda for Sustainable Development adopted in 2015 underscore the need for initiating environment and development programs that take into account demographic and health trends.

Kenya is one of the member states of the United Nations that adopted the aspirational Sustainable Development Goals (SDGs) in 2015. These goals need to be incorporated into national planning processes, policies and strategies in recognition of the link between sustainable development and other relevant ongoing processes in the economic, social and environmental fields.

Population, Health and Environment (PHE) integrated approach to development planning is grounded on the fact that addressing human needs and environmental issues through multi-sectoral approaches is more effective than pursuing these aims in isolation. Further, the PHE approach provides opportunities for projects to integrate human and environmental conservation and protection necessities critical for the attainment of sustainable development and the improvement in quality of human life.

Kenya, through the coordination of the National Council for Population and Development (NCPD), commenced the promotion of the implementation of the Population Health and Environment (PHE) integrated approach in 2007. Since then, a number of projects using Population, Health and Environment integrated approach have been implemented in Nakuru, Homa Bay, Siaya, Kisumu, Trans-Nzoia, Lamu and Kilifi Counties resulting in improved environmental conservation and protection, health outcomes and quality of life of the communities living in the project areas.

Kenya is currently facing development challenges because of the vertical nature in the implementation of development programmes as opposed to an integrated approach. This Policy guidelines supports utilization of an integrated approach in the implementation of Population, Health and Environment interventions geared towards the realization of the SDGs (See Annex 1). Besides the SDGs, which Kenya has committed to implement, integrated PHE approach is one of the programmes prioritized under Kenya's Vision 2030 Medium Term Plans (MTPs).

3. Guiding Principles, Vision and Goal

Principles

Implementation of PHE programmes and projects by stakeholders will adhere to the following principles;

- i. Respect for human rights and fundamental freedoms including the right to life, to a clean and healthy environment and highest quality of health.
- i. Sustainable Production and Consumption: Environmental resources will be utilized in a manner

that does not compromise the quality and value of the resource or decrease the carrying capacity of supporting ecosystems.

- ii. Equity: Population, health and environment interventions will ensure equitable access to resources for present and future generations.
- iii. Precautionary Principle: Where there are credible threats of serious or irreversible damage to key environmental resources, lack of full scientific certainty will not be used as a reason for postponing cost-effective measures to prevent environmental degradation, livelihood improvements and access to health services.
- iv. Public Participation: A coordinated and participatory approach to population, health and environmental protection and management will be enhanced to ensure that the relevant government agencies, County governments, private sector, civil society and communities are involved in planning, implementation and decision-making processes.
- v. Partnership and multi-sectoral collaboration: There shall be mutual cooperation between the state and non-state actors.
- vi. Technology and Innovation: There shall be application of appropriate technology for example: energy saving stoves, biogas generation, use of Tippy Taps etc. There shall also be utilizations of social media, smart phones to enhance information generation, accessibility and dissemination

Vision



A nation with sustainably managed natural resources,

improved health outcomes and quality of life.



Contribute towards sustainable development through mainstreaming of integrated Population, Health and Environmental (PHE) approach in development planning.

4. Policy Actions

Implementation of PHE Programmes and Projects in Kenya, which will be actualized through periodic strategic plans, will be anchored on the following policy actions;

i. Relevant Legal and Policy Frameworks Reviewed

Designing and implementation of PHE integrated programmes at national, county and community level require a conducive legal and policy environment that promotes collaboration among sectors and actors. Some of the legal and policy frameworks that advance the implementation of PHE integrated approach are; Constitution of Kenya (2010), Kenya Vision 2030-Medium Term Plans, EAC PHE Strategic Plan (2016-2021), Population Policy for National Development (2012), Kenya Health Sector Policy (2014-2030), National Environment Policy (2013). However,

the implementation of these frameworks has not been done to the desired level. It is therefore important that the existing legal and policy frameworks that touch on the implementation of PHE integrated approach be reviewed with the aim of identifying existing gaps, enhancing their implementation, strengthening collaboration among actors, and scaling up implementation of PHE initiatives.

ii. Capacity of Relevant Actors Enhanced

Implementation of PHE integrated programmes and projects is undertaken by state actors, non-state actors and communities. These actors need to have a clear understanding of the spectrum of PHE integrated approach as well as the inter-linkages between population, health and environment including their effect on livelihoods and development. This will lead to better design and implementation of PHE programmes and projects. It is therefore imperative that the capacity of all actors be enhanced in various aspects of PHE programming.

iii. PHE Knowledge Products Generated and Shared

The implementation of various PHE integrated programmes and projects is generating a lot of lessons and experiences that need to be captured, stored, shared and effectively managed for the benefit of the actors involved in implementation. This will enhance adoption of PHE approach by various stakeholders in the country.

iv. Gender and Youth Issues Mainstreamed

Population, health and environment concerns have many dimensions that touch on gender and youth issues. These issues include sexual and reproductive health, domestic workload, food and nutrition, childcare, education and skills training, and income generation opportunities. This therefore calls for the incorporation of gender and youth issues in the implementation of PHE integrated approach with the aim of enhancing gender equity and the wellbeing of young persons.

v. Partnerships and Stakeholder Engagement Enhanced

Partnerships, by their very nature, represent a sustained commitment to move forward together to reach a higher common objective. Government, private sector, civil society actors, and communities play a central role in attainment of SDGs. This policy guidelines will therefore promote an inclusive partnership and stakeholder involvement in decision making and implementation.

vi. Communication and Advocacy Enhanced

Communication and advocacy will be employed as means to influence decisions within political, economic, and social institutions. Various communication and advocacy strategies will be applied to reach decision makers with evidence and information about the benefits of multi-sectoral approach of integrating population, health and environment into development plans, programs and budgets.

vii. Resource Mobilization enhanced

Actors will endeavor to mobilize financial and other resources internally and externally to support the implementation of PHE programmes and projects in the country. Financial resources will be mobilized by individual actors or through consortia. Emphasis will be laid on domestic financing of PHE programmes and projects for sustainability.

5. Policy Context

This section highlights the policy context and frameworks that provide the support systems within which the integrated PHE approach can be implemented. Some of the policies and frameworks do not make specific references to PHE. However, the enabling environments that they provide for multi-sector collaboration and partnership development make it possible to incorporate PHE issues, elements and components that impact on development.

"The right to clean and healthy environment", which includes the right to have the environment protected for the benefit of present and future generations, is one of the clauses enshrined in the Constitution of Kenya (2010) in Chapter 42. Regarding health of the people, the Constitution of Kenya (2010) in Chapter 43 (1) states that "Every person has the right to the highest attainable standard of health, which includes the right to health care services, including reproductive health care".

The Kenya Vision 2030 is the long-term development blueprint for the country, aiming to transform Kenya into a "globally competitive, prosperous and newly industrialized middle-income country providing a high quality of life to all its citizens in a clean and secure environment by 2030".

The Population Policy for National Development (2012) recognizes the need to integrate population and environmental variables into development planning in order to improve human settlements. This Policy also acknowledges the importance of enhancing access to services geared towards healthy timing and spacing of pregnancies as a way of improving women and children's health hence lowering maternal and child morbidity and mortality. The policy covers the following broad areas: population structures and vulnerable groups; population and socio-economic Development, Planning and Environmental sustainability; Reproductive Health and Reproductive Rights; Education, Science and Technology; Gender equity, Equality and women empowerment, and Morbidity and Mortality. It therefore cuts across all the sectors and provides a framework that guides national population programmes and activities.

The Kenya Health Policy (2014-2030) comprehensively focuses on the two key obligations of health: realization of fundamental human rights including the right to health as enshrined in the Constitution of Kenya 2010 and; contribution to economic development as envisioned in Kenya Vision 2030. One of the principles envisioned in the policy is Multisectoral approach to realizing health goals. A multisectoral approach is based on the recognition of the importance of the social determinants of health in attaining the overall health goals. Therefore, the policy adopted a 'Health in all Policies' approach in attaining the objectives of this policy. The relevant sectors include, among others, agriculture including food security; education - secondary level female education; roads focusing on improving access among hard-to-reach populations; housing - decent housing conditions, especially in high-density urban areas; and environmental factors focusing on a clean, healthy, unpolluted and safe environment. The policy also acknowledges that many people in Kenya are exposed to a heavy and wide-ranging disease burden, partly because of the country's unique geographical and climatic conditions. The difficult, disaster-prone environment in the arid and semi-arid regions of the country, and the lush but malaria-prone regions in other parts of the country, all have unique health risks associated with them.

The National Environment Policy (2013) recognizes that people's health depends on a clean and healthy environment. This interwoven life systems are often threatened by the atmospheric presence of harmful substances as well as ionizing agents. Air pollution, waste, radiation and noise require special attention and the most pressing problems are those associated with air and water pollution, water supply and sanitation, waste management, chemical and food safety. These directly cause diseases such as malaria, cholera, typhoid and a host of other diseases. The policy therefore proposes a broad range of measures and actions in responding to key environmental issues and challenges. It seeks to provide the framework for an integrated approach to planning and sustainable management of natural resources

in the country. This policy recognizes the various vulnerable ecosystems and proposes various policy measures not only to mainstream sound environmental management practices in all sectors of society throughout the country but also recommends strong institutional and governance measures to support the achievement of the desired objectives and goal.

Sessional Paper No. 2 of 2019 on National Policy on Gender and Development provides a legitimate point of reference for addressing gender equalities at all levels of government and by all stakeholders. It further provides an avenue for gender mainstreaming across all sectors, including PHE, in order to generate efficient and equitable development outcomes.

Article 112 (2k) of the East African Community (EAC) Treaty of 1999 calls upon Partner States to adopt measures and policies to address the existing demographic profiles such as high growth and fertility rates, high dependency ratio, poor social conditions and poverty in order to mitigate their adverse impact on the environment and development.

The 6th EAC Development Agenda (2021/22– 2025/26) recognizes that a vibrant EAC economy will need to focus on and prioritize its people's health, get them work and optimize their productivity while paying special attention to food security. The strategy further indicates that effective natural resource and climate change management with enhanced value addition will be given high priority alongside human capital development aimed at creating well-educated and healthy human resources in the region.

The African Union (AU) Agenda 2063 envisions a prosperous continent where the citizens have a high standard of living, are well educated with a skilled labour force, transformed economies, productive agriculture and healthy ecosystems, with well-preserved environment and a continent resilient to climate change.

These PHE Policy guidelines are also in line with the following global recognitions:

- i. United Nations Framework Convention on Climate Change (UNFCCC) Paris COP 21 Agreement: Article 7 clause 5 of the agreement reads "Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate"
- ii. UN Political Declaration of the High-level Meeting on Universal Health Coverage "Universal health coverage: moving together to build a healthier world": This declaration seeks to ensure universal access to sexual and reproductive health and reproductive rights in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action, including universal access to sexual and reproductive health-care services, including for family planning (healthy timing and spacing of pregnancies).
- iii. Nairobi Summit on ICPD25: This Summit sought to intensify efforts for the full, effective and accelerated implementation and funding of the 1994 ICPD Programme of Action. During the Summit, Kenya made 17 Commitments which include Commitment No. 7 that seeks to "Integrate population issues into the formulation, implementation, monitoring and evaluation of all policies and programme relating to sustainable development at national, county and sub-county level by 2030."
- iv. Sustainable Development Goals: Especially Goal 3: good health and wellbeing; Goal 4: quality education; Goal 5: gender equality; Goal 6: Clean water and sanitation; Goal 12: responsible

consumption and production and; Goal 13: climate action.

v. The Ouagadougou Partnership initiative: This initiative targets to "double the number of users of modern contraception to 13 million by 2030"

In addition to the above, there is a PHE Minimum Package of Services (PMPS) which is an innovative tool for guiding implementers of integrated PHE services in the EAC. It is built on the conceptual framework described by the three core sectors of Population, Health and Environment and the basic services that communities require under each of the sectors in order to enhance their livelihoods. The services cover the entire spectrum from Population management and livelihood enhancement through health service delivery to environmental and natural resources conservation.

6. Implementation Arrangements and PHE Actors in Kenya

Implementation of PHE policies, programmes are projects will be coordinated at the national and county levels through the following multisectoral structures;

i. National Level

- a. National PHE Policy Steering Committee
- b. National PHE Technical Working Group
- c. National PHE Network

ii. County Level

- a. County PHE Policy Steering Committee
- b. County PHE Technical Working Committee

The following are the key actors in PHE;

- i. National Government Ministries and State Departments:
 - a. The National Treasury and Planning
 - b. Ministry of Health
 - c. State Department for Devolution
 - d. Ministry of Environment and Forestry
 - e. State Department for East African Community Affairs
 - f. Ministry of Water and Sanitation
 - g. Ministry of Education
 - h. Ministry of Tourism and Wildlife
 - i. Ministry of Lands
 - j. State Department for Youth and Gender Affairs
 - k. Ministry of Agriculture and Irrigation
- *ii. National Government Agencies:*
 - a. National council for population and development
 - b. Kenya Forest service
 - c. National Environmental Management Authority

- d. Kenya wildlife service
- e. National Drought management authority
- f. Kenya meteorological department
- g. National Gender and Equality Commission
- iii. County Governments (Relevant Departments)
- iv. Civil society Organizations:
 - a. FHI 360
 - b. DSW Kenya
 - c. FHOK
 - d. Pathfinder International
 - e. AFIDEP
 - f. Pan African Climate Justice Alliance (PACJA)
 - g. WWF
 - h. Dandelion
- v. Unites Nations Agencies:
 - a. UNFPA
 - b. WHO
 - c. UNICEF
 - d. UNEP
 - e. FAO
- vi. Development partners:
 - a. UKAID
 - b. USAID
 - c. DANIDA
 - d. JICA
 - e. FCDO
 - f. WORLD BANK
 - g. AfDB
- vii. Private sector
- viii. Philanthropist and high net worth individuals
- ix. Mass media
- x. Research and Academia

7. Monitoring, Evaluation and Learning

Monitoring, Evaluation and Learning (MEL) will be crucial for ensuring the effective management and execution of Integrated PHE programmes and projects. MEL will provide information for measuring success and informing decision making on the implementation of integrated PHE programmes and projects. This will in turn contribute to the continuous improvement in the quality of PHE programmes and projects.

The Integrated PHE Minimum Package of Services (see Annex 2) and the list of Integrated PHE indicators derived from a Guide for Monitoring and Evaluating Population-Health-Environment Programmes (see Annex 3) will guide implementers and stakeholders in the development of M&E systems and selection of appropriate indicators that addresses their concerns and inform decision making in the course of implementing integrated PHE programme and projects.

Implementation of these guidelines will be monitored and evaluated using the following general parameters;

- i. Extent to which the guidelines have been disseminated
- ii. Level of utilization of the PHE guidelines in various sectors
- iii. Capacity building on PHE undertaken for stakeholders
- iv. Impact/effect of the guidelines in terms of projects started and resources availed for PHE

Specific indicators for MEL will be developed to measure the above parameters. Results from MEL will be used to improve these guidelines in future.

Annex

Annex 1: PHE Related Sustainable Development Goals

- Goal 1: End poverty in all its forms everywhere
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3: Ensure healthy lives and promote well-being for all at all ages
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 6: Ensure availability and sustainable management of water and sanitation for all
- Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10: Reduce inequality within and among countries
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12: Ensure sustainable consumption and production patterns
- Goal 13: Take urgent action to combat climate change and its impacts
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

These guidelines will provide the necessary guidance on the implementation of the PHE integrated projects and programmes for the improvement of household food security, health and livelihoods while enhancing environment protection and conservation efforts by state and non-state actors in Kenya.

Annex 2: PHE Minimum Package of Services

Population Activities	Health Care Activities	Environmental Conservation activities	Gender Empowerment and Livelihood Improvement activities
Offer full choice and access to short term methods, Long-Acting Reversible Contraception (LARC) and permanent methods Community distribution and promotion of family planning and referrals for clinical methods Promotion of family planning at health facility, outreach and community levels through community health workers and other groups Promoting participation of men in family planning and reproductive health activities	& HIV management The goal of integration is to provide more comprehensive convenience acceptable, and cost-effective reproductive health and HIV services within the same setting. • Counselling and testing (CT) services • Treatment of opportunistic infections (OI) • Referral services • Training of peer educators • Promotion of dual method use for family planning through condom distribution • Promote voluntary medical male circumcision (VMMC)	Rain water harvesting in schools and homesteads Spring protection Climate resilient interventions including prevention of land degradation Control of air and water pollution Integrated Water Resource Management practices Setting up of Natural Resource Management committees Household water treatment and safe storage technologies Promotion of good WASH practices	 Gender Based Violence Education against Gender Based Violence (GBV) Promotion of equality between boys and girls in gender roles. Addressing gender norms in the community that promote positive images of masculinity Promotion of Health Rights/Reproductive Rights e.g. children's rights, sexual offences legislation etc.
	Maternal Health/Safe Motherhood Services (facility-based and outreach) • Planning for pregnancy/contraception • Four Focused Antenatal Care (FANC) visits • Skilled birth attendance • Focused Post-natal care (PNC) services • Screening for and management for Reproductive Tract Cancers (including breast/cervical cancer) • Malaria screening and treatment in pregnancy • Referral services	Sustainable Land Use Practice • Zero-Grazing • Promotion of drought resistant crops • Agro-forestry • Fruit trees planting • Promotion of medicinal plants • Organic farming • Soil fertility management • Soil and water conservation e.g. terraces Planting of drought and disease resistant crops	Promoting and supporting Girl Child Empowerment Supporting and promoting economic capacity of women and youth Training of women and youth on leadership and decision-making skills · Increasing credit access to women and youth Establishment and sustenance of women led/focused Community Based Organizations, SACCOs/Village banks Promoting participation of women in conservation of the environment and natural resources through by-laws Promotion of youths' income generation activities

Population Activities	Health Care Activities	Environmental Conservation activities	Gender Empowerment and Liveli- hood Improvement activities
	Neonatal Health (0-28 days) Neonatal resuscitation Baby warmth/Kangaroo care for pre-term infants Early initiation of breast feeding Cord care Management of Neonatal Sepsis/Infection Immunizations	Conservation of the Environment and Natural Resources • Tree planting/Reforestation • Promotion of payment for environmental services • Species protection and conservation • Protection of fish breeding habitats • Wetland protection and conservation	Improve livelihoods and Sustainable Development - Apiculture/Bee keeping - Poultry keeping - Dairy farming - Value addition to all agricultural and fisheries products - Bamboo commercialization - Promotion of non-timber products - Micro-business enterprises - Tree nurseries - Community pharmacies - Community pharmacies - Community pharmacies - Savings and Credit Cooperatives Organizations (SACCOs) - Commercial farming while using sustainable agricultural practices - Sustainable fisheries e.g. through fish ponds or protection of fish breeding sites - Soap making - Baking/pastry - Weaving/crafts
	Child Health (< 5 years) Immunizations Growth monitoring Nutrition – exclusive breast feeding for 6 months, appropriate complimentary feeding; screening and management of malnutrition Integrated Management of Childhood Illnesses (IMCI) Treatment of minor ailments including deworming Follow-up and referral services Healthy timing and spacing of pregnancy through family planning	Biotechnology and Innovation • Energy saving stoves • Biogas generation • Solar energy	

Population Activities	Health Care Activities	Environmental Conservation activities	Gender Empowerment and Livelihood Improvement activities
	Family and Adolescent Reproductive Health - Youth friendly reproductive health service centres - Prioritization of Youth Friendly Reproductive Health Services (YFS)2 at appropriate sites to increase youth access to YFS - Creation of demand for YFS at national and sub-national levels; - Public-Private Partnerships (PPP)/collaboration to provide YFS - Support for provision of age appropriate, comprehensive sexuality education (CSE) for young people in line with existing policies - Training of youth, adolescents and men, as SRH champions/ peer educators - Enhance public education on SRH, including management of infertility · Innovations that engage men as champions and promoters of FP3	Use of Organic Technologies for water treatment · Household water and safe storage tech- nologies · Promotion of natural mosquito replants	Promoting establishment and multiplication of model PHE homes that are practicing positive behaviour All under-fives immunized fully Kitchen garden Dish rack Clean latrine with a structure and cover, hand washing facilities Use of energy saving stove Treating/boiling drinking water Improved housing ventilation Controlled tobacco and alcohol consumption Household practices FP/expresses positive attitude towards FP/birth spacing Sustainable agriculture practices Sustainable fishery practices Environmental hygiene at household level e.g. a soak pit/garbage pit Practicing WASH – Hygiene & sanitation practices Alternative livelihoods engagement
	Control of Malaria Indoor Residual Spraying Clearing bushes Distribution and use of insecticide treated nets Management of malaria in pregnancy	conservation of Protected Areas (where applicable) Conservation of Game Parks Conservation of National and transboundary forests Prevention and management of forest fires Community anti-poaching strategies	

Population Activities Health	Health Care Activities	Environmental Conservation activities	Gender Empowerment and Livelihood Improvement activities
		Sustainable Fishery Management Protection of breeding and fish nursery grounds/habitats Restriction on use of illegal fishing gears and fishing methods Registration of boats to control entry into the lake and, hence, checking over fishing Monitoring control and surveillance (MCS) to ensure that fisheries regulations are enforce and followed Promoting closed season or fishing Development of alternative sources of livelihood for income to reduce pressure on fisheries	

Annex 3: List of Integrated PHE Indicators

Here below is the list of Integrated PHE indicators derived from a Guide for Monitoring and Evaluating Population-Health-Environment Programmes;

i. Population Indicators

Family Planning and Reproductive Health

- a. Percentage of program staff trained to work with or provide reproductive health services to adolescents
- b. Percentage of men and women who know where to access modern family planning services
- c. Percentage of men who support use of modern contraception for themselves or their partners
- d. Number of adults who have been referred for family planning services by PHE staff
- e. Percentage of women of reproductive age (15–49 years) who were clients of a community-based distributor in the past year
- f. Couple-years of protection (CYP)
- g. Percentage of skilled health personnel knowledgeable in obstetric warning signs
- h. Number of acceptors new to modern contraception
- i. Contraceptive prevalence rate
- j. Percentage of deliveries occurring in a health facility
- k. Percentage of births attended by skilled health personnel
- I. Percentage of women attended to at least once during pregnancy for reasons related to pregnancy
- m. Percentage of women who attended at least four antenatal care visits during pregnancy Sexual Health
- a. Percentage of youth who used a condom at last high-risk sex in the previous year
- b. Percentage of adults who used a condom at last high-risk sex in the previous year

ii. Health indicators

Maternal and Child Health

- a. Number of doses of tetanus vaccine distributed
- b. Number of insecticide-treated bed nets (ITNs) distributed
- c. Number of packets of oral rehydration salts (ORS) distributed
- d. Number of safe water storage vessels distributed
- e. Percentage of pregnant women receiving at least two doses of tetanus toxoid (TT) vaccine
- f. Percentage of children ages 12–23 months fully immunized before 12 months
- g. Average household distance/time to the nearest health center
- h. Oral rehydration therapy (ORT) use rate
- i. Percentage of children under five who are underweight
- j. Percentage of children who show improvement on a growth chart

- k. Number of children under five presenting at a health facility with diarrhea, fever, or acute respiratory illness (ARI) in the past month
- I. Percentage of health facilities that have all essential medicines and commodities in stock on the day of visit

Water, Sanitation, Hygiene, and Environmental Health

- a. Percentage of households with access to an improved source of drinking water
- b. Average time spent by household members to collect water
- c. Percentage of households using an improved water source
- d. Percentage of households with an improved toilet facility
- e. Percentage of households with soap or basic handwashing facilities
- f. Percentage of households storing drinking water safely
- g. Percentage of children under five who slept under an ITN the previous night
- h. Percentage of households with ventilation in cooking areas

iii. Environment Indicators

Natural Resource Management and Law Enforcement

- a. Percentage of communities in target area that have developed a community-based NRM plan
- b. Number of officers trained on laws and enforcement procedures and posted to a permanent enforcement position
- c. Percentage of communities with functioning community-based NRM committees
- d. Percentage of youth participating on community-based NRM committees
- e. Percentage of leadership positions held by women on community-based NRM committees
- f. Percentage of community-based NRM plans that are approved by a government authority
- g. Number of validated infractions reported in deputy logs
- h. Hours of enforcement patrols logged
- i. Number of fish breeding sites demarcated and protected
- j. Area of legally protected habitat

Reforestation

- a. Number of trees planted
- b. Tree/seedling survival rate after first growing season
- c. Number of households using a fuel-efficient stove
- d. Average household consumption of firewood in target areas
- e. Area of secondary forest regenerated

Agri-Environment

- a. Number of educational sessions on improved agricultural/marine practices
- b. Percentage of farmers/fishers who adopt improved agricultural/marine practices
- c. Number of small farms using soil and water conservation technologies
- d. Number of crop species in agricultural use in project/program area
- e. Percentage of farming households practicing monoculture cropping

- f. Number of farming households utilizing cover crops
- g. Number of farming households practicing agroforestry
- h. Area of land that has changed status from natural to agricultural land

Biodiversity

- a. Area of habitat under improved management
- b. Population structure of species
- c. Species richness
- d. Species abundance and distribution

Climate Change

- a. Number of people trained in climate change adaptation
- b. Number of institutions with improved capacity to assess or address climate change risks
- c. Amount of investment mobilized/budgeted for climate change adaptation by national, regional, local, or international organizations
- d. Greenhouse gas emissions reduced, sequestered, or avoided through clean energy activities

iv. Livelihoods Indicators

- a. Number of households with home gardens/live fences/home orchards
- b. Number of trainings/workshops held on alternative livelihoods and income-generating activities
- c. Number of farmers aware of sustainable crop production practices, technologies, and inputs
- d. Yield per area per year/cropping cycle/fishing effort/season
- e. Number of households with access to financial services
- f. Number of women who have attended an alternative livelihoods workshop or training
- g. Number of sustainable micro- or small businesses created as a result of a PHE-sponsored workshop or training
- h. Months of inadequate household food provisioning
- i. Household income
- j. Household dietary diversity
- k. Number of households with at least one secondary source of income
- I. Number of households engaged in alternative livelihoods activities
- m. Percentage of households with increased income due to alternative livelihoods activities
- n. Number of farming households that are members of farming cooperatives or producer organizations

v. Integration Indicators

- a. Number of linked messages/materials created
- b. Number of model households in project areas
- c. Number of instances of population, health, or environmental organizations addressing nontraditional audiences
- d. Number and frequency of PHE educational sessions provided in the target community

- e. Number of new PHE partnerships created that make linkages among organizations or institutions from different sectors
- f. Number of instances of organizations facilitating access to services outside of their traditional sectors
- g. Number of policymakers, media, and scholars knowledgeable about or aware of a specific PHE issue
- h. Percentage of households knowledgeable about or aware of a specific PHE issue
- i. Number of enabling local ordinances/policies supporting PHE
- j. Number of placements of linked PHE messages in print and electronic media by independent sources

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NATIONAL COUNCIL FOR POPULATION AND DEVELOPMENT

- **Q** The Chancery Building, 4th Floor, Valley Road
- ☑ P.O. Box 48994-00100, Nairobi, Kenya
- **2020 2711600/1**
- www.ncpd.go.ke