Technical Note
CARICOM One Health Policy
Prepared by PAHO/WHO and FAO for COHSOD
September 9, 2014

1.0 Background

"One Health" refers to an interdisciplinary approach to minimizing harms and maximizing benefits from the co-management of human, animal and environmental health. This approach is aimed at developing more efficient and effective strategies to address health issues at the human - animal - environment interface.

On February 28th and March 1st, 2013, PAHO/WHO convened a Caribbean subregional workshop entitled *"One Health: From Ideas to Action"* in Port of Spain, Trinidad and Tobago. Senior decision makers participated from the Ministries of Health, Agriculture and the Environment from the Bahamas, Barbados, Grenada, Guyana, Jamaica, St. Lucia, Suriname and Trinidad and Tobago, as well as the Caribbean Public Health Agency, CABI Bioscience, FAO, IICA, PAHO/WHO, the World Organisation for Animal Health (OIE), USDA-APHIS as well as the University of the West Indies, St. Georges University and Ross University . The participants agreed to work together to promote One Health in the Caribbean, to develop a policy framework at CARICOM and national levels, and to design and implement specific One Health projects.

The CARICOM One Health policy was ratified by Ministers of Agriculture at COTED in October 2013. It was also endorsed by the CARICOM Chief Veterinary Officers in April 2013 and Chief Medical Officers in April 2014.

1.1 Situation Analysis

1.1.1 Food Security

Most Caribbean countries are considered middle income economies, but a substantial proportion of the population still live in poverty. Even though the proportion of undernourished people is low, the relatively large share of household budget spent on food (40-60%) suggests that more people are likely to become undernourished and impoverished as a result of global food price increases. Diets that are high in processed and fast foods have resulted in an increasing prevalence of non communicable diseases such as obesity, diabetes and hypertension. As net importers of food, Caribbean countries are vulnerable to trade disruptions and global inflation. Food security is also diminished by a reduction in traditional marine foods.

A One Health approach would emphasize regional food security in healthy foods, through sustainable agriculture and fisheries, including the production of affordable animal proteins.

1.1.2 Tourism

Most Caribbean countries' economies are heavily dependent on tourism. Tourism represents 25% of the GDP of the subregion and up to 70% of the GDP in some countries. In 2007, the Caribbean Tourism Organization estimated that approximately 20 million people visited the region. In addition to the warm sunny climate, key drivers of Caribbean tourism are the countries' natural beauty on land and sea, including the biodiversity of flora and fauna. The World Travel and Tourism Council in its 2007 Travel and Tourism Economic Research study ranked the Caribbean first out of thirteen regions in terms of the contribution of the tourist industry to the regional economy. The region was ranked first on a global scale for capital investment and government expenditure on tourism. In addition, the report indicated

that the industry accounted for approximately 806,000 jobs and a total of 2,447,000 industry related jobs. This high economic dependence on tourism results in a high level of vulnerability to global economic recession, public health threats, including outbreaks of infectious and food borne diseases as well as environmental threats and natural disasters such as hurricanes, earthquakes, volcanic eruptions and flooding. Any threat to the Caribbean countries' natural beauty and biodiversity presents a risk to tourist industry revenues.

1.1.3 Climate change

Global climate change (GCC) is one of the most serious threats to sustainable development facing CARICOM states. Although the contribution of CARICOM countries to global greenhouse gas emissions is negligible, according to a recent report of the Intergovernmental Panel on Climate Change (IPCC), the projected impacts of global climate change are expected to be devastating. These impacts would be reinforced due to the limited adaptive capacity of CARICOM small island and low-lying coastal states. Specifically, GCC is expected to result in more hostile regional climate change and rising sea levels. The rising sea levels with associated coastal erosion and salt water intrusion, an escalation in the frequency and intensity of tropical storms and hurricanes, and disruptions in rainfall and fresh-water supply threaten the very existence of the small island and low-lying coastal states of the Caribbean. Agricultural land and food security are expected to be affected by sea level rise, inundation, soil salinization, seawater intrusion into freshwater lenses and decline in freshwater supply. Fisheries and fishing incomes will be affected by increasing sea surface temperatures, rising sea level and damage from tropical storms, as well as degradation and bleaching of coral reefs. Forests affected by extreme weather events will be slow to regenerate. The habitability of some small islands may be threatened due to reduction in island size.

The vulnerability of CARICOM states to climate events is evidenced by the impact of hurricanes on the region. Intense hurricane activity in the region was significantly higher between 1995 and 2012, when the region experienced the highest recorded level of hurricane activity.

The Report of the Lancet Commission (2008)[1] identified climate change as the biggest global health threat of the 21st century. Current trends indicate a future where extreme climate variability and its consequences are likely to become the norm. The most vulnerable are impoverished people living in risk-prone 'hotspot' countries, such as small islands, where the risks from extreme climatic events overlap with human vulnerability. The nutritional, water, food safety and public health implications of the increasing frequency and intensity of extreme weather events are particularly significant in the Caribbean . The Lancet Commission also emphasized the need for new public health advocacy targeting the interconnections among varied social spheres, such as disease, food, water and sanitation, shelter and settlements.

1.1.4 Zoonotic diseases

Zoonosis refers to any disease or infection that is naturally transmissible from vertebrate animals to humans and vice-versa. They are caused by all types of agents: bacteria, parasites, fungi, viruses and unconventional agents such as prions. Since 1975, 75%of new emerging infectious diseases have been zoonotic in origin. Recent examples include pandemic H1N1 influenza, SARS, West Nile Virus, Ebola

[1] The Lancet, Volume 373, Issue 9676, Page 1659, 16 May 2009
http://www.lancet.com/journals/lancet/article/PIIS0140-6736(09)60922-3/fulltext

Virus Disease and Avian Influenza. Food borne zoonoses include E. coli, Salmonella, Campylobacter, Listeria and Cryptosporidia.

Zoonotic pathogens infect 2.4 billion people in developing countries every year, causing 2.2 million deaths. "This is a formidable development issue, where the poorest, who often live closest to livestock or hunt wildlife for food, are most at risk," says World Bank livestock advisor Francois Le Gall[2]. "Not only is animal disease costly to farmers, but it also affects nutrition, poverty, food security, and trade, and in the case of zoonoses, public health" he says. Adding to these costs, pandemic risk arises when infectious pathogens are not rapidly and effectively controlled at their animal source and adapt to transmit readily from person to person.

Zoonotic diseases present in the Caribbean include include leptospirosis, rabies, salmonellosis, listeriosis, bovine tuberculosis, and brucellosis. These endemic zoonoses have a significant public health cost and pose a risk to the tourist industry. Many factors lead to the emergence of zoonotic diseases. Environmental changes, human and animal demography, pathogen changes, antimicrobial resistance and changes in farming practice are a few of them. Social and cultural factors such as food habits, housing and animal husbandry practices also play a role.

1.1.5 Water supply and quality

Water scarcity, exacerbated by climate change, is an emerging issue in the Caribbean, causing resource competition and conflict between the agricultural and tourist industries and the domestic population. Water quality is also an important consideration, affecting both the tourist and local populations. Sources of water pollution in the Caribbean include inadequate sewage systems, industrial, agricultural and ship waste, oil spills, and poor handling of solid urban waste. There is a need for collaborative approaches to water use, to assess and mitigate the risks from decreasing water resources, pollution and inadequate regulation and management.

1.1.6 Intersectoral collaboration

Although the Caribbean has significant number of zoonotic diseases, as well as environmental health issues that affect animal and human health, inter-sectoral collaboration is extremely limited, both at policy and technical levels. There are currently very limited interactions between medical, environmental and agricultural professionals, to address issues of common interest. The Ministries of Health, Agriculture and the Environment work very separately, with few mechanisms to collaborate. Cooperation is usually initiated only because of the threat of serious disease epidemics, such as the recent outbreak of pandemic H1N1 influenza. Intersectoral response is usually short lived, thereby undermining the value and role of sustainable intersectoral partnership for effective and efficient disease surveillance and interventions. The FAO, OIE, WHO, UNICEF, and the World Bank, in their joint strategic framework for reducing risks of infectious diseases at the animal-human-ecosystems interface entitled "Contributing to One World, One Health", have emphasized the need for the adoption of a multidisciplinary, multinational and multisectoral approach; the integration of technical, social, political, policy and regulatory issues; and the establishment of broad-based partnerships across sectors and

[2] World Bank Feature Story, Flu Outbreaks Reminder of Pandemic Threat, March 5, 2013

along the research-to-delivery continuum, including wildlife and ecosystems interests, the human and veterinary communities and advanced research institutions.[3]

1.2 CARICOM Policy Framework

1.2.1 Regional Health Policy

The Caribbean Cooperation in Health's Regional Health Framework (2009 – 2015)[4] emphasizes the need to develop cross-cutting, inter-programmatic, trans-sectoral, holistic approaches to the challenges facing health in the Caribbean.

1.2.2 Regional Food Security Policy

The CARICOM Regional Policy for Food and Nutrition Security, approved in October 2010, aims to ensure that the regional food production, processing, distribution, marketing, trade, and food safety and agricultural public health system is capable of providing safe, adequate, nutritious and affordable food for the Region's inhabitants at all times, thereby achieving food and nutrition security. The COTED acknowledged that regional food security is not the exclusive remit of the agriculture sector and that the resolution of particular problems requires complementary inputs and coordination among different sectors (agriculture, education, health, trade industry and infrastructure,) and at different levels (household, community, national and regional). The COTED also agreed that the policy should be adopted as the sole, comprehensive and integrated framework for actions to achieve the objectives of adequate availability, access, utilisation and stability of food supplies throughout the Region. This regional policy is now serving as a guide to several countries as they formulate their corresponding national policy and action plan.

1.2.3 Regional Environmental Policy

CARICOM does not currently have a regional environmental policy. The Caribbean Community Climate Change Centre (CCCCC) has prepared a Regional Framework for Achieving Development Resilient to Climate Change, that has been ratified by the CARICOM Heads of Government. Approved in July 2009, the Regional Framework defines CARICOM's strategic approach for coping with climate change and is guided by five strategic elements and some twenty goals designed to significantly increase the resilience of the CARICOM Member States' social, economic and environmental systems. One of the strategic elements is to encourage action to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate.

There is also a Caribbean Strategy and Action Plan for Invasive Alien Species in the Caribbean (2011 to 2016) that creates an enabling environment for the effective management of Invasive Alien Species in the Caribbean[5] in order to protect biodiversity and agriculture.

1.2 One Health

[3] FAO, OIE, WHO, UN, UNICEF, The World Bank, Contributing to One World, One Health, A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface, 14 October 2008. http://www.fao.org/docrep/011/aj137e/aj137e00.htm

[4] http://www.caricom.org/jsp/community_organs/health/cch_iii_summary.pdf

[5] http://www.ciasnet.org

The American Veterinary Medical Association (2008) has defined the One Health principle as "the collaborative efforts of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and the environment". One Health is dedicated to improving the health of humans, animals and the environment through the integration of human medicine, veterinary medicine and environmental science.

The World Health Organisation (WHO), the Food and Agriculture Organisation of the United Nations (FAO) and the World Organisation for Animal Health (OIE) endorse the One Health approach to address animal, environmental and public health as a new fundamental paradigm at the national and international levels. These three organisations have prepared a tripartite concept note on the subject that can be found at http://www.oie.int/fileadmin/Home/eng/Current_Scientific_Issues/docs/pdf/FINAL_CONCEPT_NOTE_Hanoi.pdf. In areas related to the animal-human-ecosystem interface, collaboration and cooperation among the various sectors is critical to effective and efficient response.

Recent international outbreaks of zoonotic diseases, such as Ebola Virus Disease and Chikungunya Virus, Highly Pathogenic Avian Influenza, Pandemic H1N1 Influenza and SARS, have created a compelling justification for the development of multisectoral approaches in the detection, prevention and response to emerging health threats. As many of these threats originate from the environment, including wildlife, the One Health approach is now recognized to span the health, agricultural and environmental sectors, including stray animals and wildlife. The concept has been expanded beyond zoonotic diseases to include food security, wild life and ecosystem health, anti-microbial resistance as well as cultural and socio-economic determinants of public health.

The interconnection between human, animal and environmental health is at the heart of the One Health approach. An important implication of the One Health approach is the need to consider and develop integrated policy interventions that simultaneously and holistically address the interacting causes of poor human, agricultural and environmental health. Some of the contributing factors to consider include scarce or contaminated water, lack of sanitation, food insecurity, wildlife reservoirs of disease, vectors of disease and close proximity between animals and humans.

The One Health approach to identifying the root causes of intersectoral issues requires input and intervention by multidisciplinary teams. The complexity of the issue necessitates a collaborative approach among professionals from multiple disciplines for the design of effective interventions.

The Situation Analysis above demonstrates the inter-sectoral nature of emerging public health threats in the Caribbean, and provides a compelling argument to adopting a multi-sectoral approach to designing sustainable solutions. The One Health concept offers a holistic approach to problem solving that incorporates the health, agricultural and environmental dimensions, including stray animals and wildlife.

1.3 Caribbean One Health Policy Framework

Vision : To create and sustain collaboration between key players in the health, agricultural and environmental sectors to identify, investigate and develop sustainable solutions for issues that affect two or more sectors.

Mission: To build partnerships and promote trust-based relationships among multiple sectors and disciplines, to address problems that arise at the convergence of human, animal and environmental health.

Strategy *:* To involve key players from the health, agricultural and environmental sectors in identifying issues and developing sustainable solutions for problems that overlap the health, agricultural and environmental sectors.

What: The issues can include, but are not limited to:

- Food security
- Emerging and re-emerging infectious diseases
- Non communicable diseases
- Endemic zoonoses and neglected tropical diseases
- Climate change adaptation
- Environmental pollution
- Marine ecosystem health
- Control of invasive alien species
- Sustainable land and water use

Who: Depending on the issue being investigated, the multidisciplinary teams may include agricultural scientists, anthropologists, economists, educators, engineers, entomologists, environmental scientists, epidemiologists, food and environmental health inspectors, hydrologists, microbiologists, nutritionists, physicians, public health professionals, sociologists and veterinarians working collaboratively to improve human, agricultural and/or environmental health. These professionals can be derived from the governmental, non- governmental , academic and private sectors, depending on the nature and location of the problem. There is a need to create regional and national coordinating groups populated with professionals who are experienced in multi-disciplinary collaboration.

How: Intersectoral collaboration will be enhanced through:

- Building mutually beneficial relationships at institutional and individual levels to foster cross sectoral knowledge, enhance familiarity with other sectors' priorities and establish trustworthy working relationships.

- The formation or strengthening of intersectoral working groups and committees to address general and specific issues. Some countries already have such committees, to address public health, food safety, zoonoses, International Health Regulations or chemical threats. These committees will be used as a platform to introduce One Health strategies.

- Provide appropriate institutional mechanisms for collaboration, such as MOUs, coordinating authorities at executive level of government, or special One Health teams.

- Consultation in setting priorities between human health, animal health, environmental health services, based on risk and threat assessment.

- Joint work planning and budgeting on issues of common concern between human health, animal health, environment services.

- Performance measurement of intersectoral activities.

- Joint emergency response planning – animal health, human health, environmental services, communications, finance etc, including joint simulation exercises. Emergencies include natural disasters, man- made disasters and disease incursions.

- Coordinated surveillance services on zoonotic and food borne diseases between human, animal, environmental health. This can include community based surveillance.

- Development of One Health technical and leadership capacity in public, private, non-governmental and academic sectors.

- Strengthening education through interdisciplinary training of veterinary and human medical staff
- Incentive frameworks to promote collaboration and resource sharing e.g. shared budget lines.

- Communicating consistent messages (e.g. 'swine flu' vs 'pandemic H1N1 influenza')

2.0 Conclusion:

Chikungunya and Ebola Virus Disease are examples of zoonotic diseases, which humans can contract from animals. Chikungunya is a mosquito-borne virus, with animal reservoirs between epidemics, that can include monkeys, rodents and birds. The current epidemic in the Caribbean involves mosquito transmission between humans. There is the potential for transmission to monkeys, rodents and perhaps birds.

Ebola Virus Disease is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest. Ebola then spreads in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environments contaminated with such fluids.

Salmonella and Campylobacter are examples of food borne illnesses that people can contract from animals by eating undercooked contaminated foods of animal origin.

For zoonotic and food borne diseases, national surveillance, preparedness and response should involve collaboration between the public health, agriculture and wildlife/ environment sectors. This is what is meant by the "One Health approach". This would mean joint surveillance with sharing of information, joint outbreak investigation, and joint emergency planning and response to emerging issues such as outbreaks of zoonotic or food borne diseases.

3.0 Request:

The COHSOD is being asked to sanction the adoption of the “One Health” concept and implementation of multidisciplinary teams to potentially include agricultural scientists, anthropologists, economists, educators, engineers, entomologists, environmental scientists, epidemiologists, food and environmental health inspectors, hydrologists, microbiologists, nutritionists, physicians, public health professionals, sociologists and veterinarians working collaboratively to improve human, agricultural and environmental health. These professionals can be derived from the governmental, non- governmental, academic and private sectors, depending on the nature and location of the problem.

There is a need to create regional and national coordinating groups populated with professionals who are experienced in multi-disciplinary collaboration.