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POPULAR ARTICLE

One health in a changing climate: Impacts, risks and simple solutions

N. Priyadarshini[1], N. Dalai[1], A.P.K. Mahapatra[1], J. Pamia[2], K. Shweta[3], B. Lenka[1], A. Mohanty[1], J. Meher[4]

1 Department of Veterinary Physiology, C.V.Sc. & A.H., O.U.A.T., Bhubaneswar–751 003, Odisha, India

2 Department of Veterinary Pathology, C.V.Sc. & A.H., O.U.A.T., Bhubaneswar–751 003, Odisha, India

3 Department of Veterinary and Animal Husbandry Extension Education, C.V.Sc & A.H., O.U.A.T, Bhubaneswar- 751 003, Odisha, India.

4 Department of Animal Reproduction, Gynaecology and Obstetrics, C.V.Sc & A.H., O.U.A.T, Bhubaneswar-751 003, Odisha, India

Corresponding authors email: niru.vets@gmail.com

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Intricacies of the subject

Climate change is affecting our lives in many ways. We are experiencing hotter summers, irregular rainfall, floods, droughts, heat waves and other extreme weather events. These changes do not affect humans alone. They also affect animals, birds, wildlife, crops, water resources and the natural environment. Human health, animal health and environmental health are closely connected. When the environment becomes unhealthy, people and animals can also suffer. This is why we need the One Health approach. One Health means working together to protect the health of people, animals and the environment.

Introduction

One Health is a simple idea: human health, animal health and environmental health are connected. Doctors, veterinarians, farmers, environmental scientists, researchers, wildlife experts and government agencies need to work together to solve health problems. Diseases do not always stay within one species. Some diseases can move between animals and humans, while environmental changes can make these diseases easier to spread. One Health is useful not only for controlling diseases but also for improving food safety, protecting wildlife, reducing pollution, controlling antimicrobial resistance and maintaining a healthy environment. Therefore, protecting animals and nature also helps protect people.

How does climate change affect one health?

Climate change can disturb the balance between humans, animals and the environment. Higher temperatures can affect animal health and productivity. Changes in rainfall can influence the availability of water and animal feed. Floods can spread diseases through contaminated water, while droughts

can reduce food and water supplies. Climate change can also affect insects such as mosquitoes and ticks. Changes in temperature and rainfall may allow some disease-carrying insects to survive in new areas. As a result, diseases may appear in places where they were previously uncommon. Wildlife can also be affected. Changes in forests, wetlands and other habitats may force wild animals to move into new areas. This can increase contact between wildlife, domestic animals and humans and may increase the risk of some diseases.

Major climate-related health problems

Heat and heat waves

One of the most visible effects of climate change is rising temperature. Long periods of extreme heat can be harmful to both humans and animals. People may suffer from dehydration, heat exhaustion and heat stroke. In dairy animals, heat stress can reduce milk production. In poultry, it can reduce growth, egg production and fertility.

Floods

Floods can cause serious problems for people, animals and farms. Floodwater may contaminate drinking water with harmful microorganisms, animal waste, chemicals and sewage. Floods can also destroy crops, damage livestock shelters and force animals to move from their normal locations. Diseases such as leptospirosis and other water-related infections may increase after flooding.

Drought and food shortage

Drought can reduce the availability of water, grass, crops and animal feed. When crops fail, food prices may increase and food may become difficult to obtain. Livestock may lose body weight and become more vulnerable to diseases. Poor nutrition can also reduce growth and reproduction.

Wildfires

Hot and dry conditions can increase the risk of wildfires. Fires can destroy forests, grasslands, farms and wildlife habitats. Smoke from fires contains harmful particles that can affect the breathing of people and animals. Wildfires also destroy vegetation and wildlife and release greenhouse gases into the atmosphere.

What can we do?

Climate-smart livestock farming

Farmers can take simple steps to protect animals from climate stress. Providing shade, clean water, proper ventilation and balanced feed can reduce heat stress. Farmers can also select animals that are better adapted to local climatic conditions. Good manure management, efficient feed use and proper grazing practices can reduce pollution and greenhouse gas emissions.

Better disease surveillance

Disease surveillance means regularly checking for diseases and identifying them early. Doctors, veterinarians, laboratories and environmental experts should share information about diseases in humans, animals and wildlife. Early detection allows authorities to take action before a disease spreads widely. Modern technologies such as PCR (Polymerase Chain Reaction), GPS (Global Positioning System), remote sensing, mobile applications, sensors and artificial intelligence can help scientists and farmers monitor diseases and environmental changes.

Protecting biodiversity

Forests, wetlands, grasslands and other natural habitats are important for maintaining healthy ecosystems. Cutting forests, destroying wildlife habitats and uncontrolled development can increase contact between wild animals, domestic animals and people. Protecting

natural habitats can therefore help reduce health risks as well as conserve wildlife. Planting trees, protecting wetlands, reducing pollution and using land responsibly are simple but important steps.

Public awareness

People need to understand the connection between climate change, health, animals and the environment. Farmers should receive training on heat-stress management, animal nutrition, water conservation, disease prevention and sustainable farming. Communities can learn about safe water, waste management, food safety and protection of local natural resources. Schools, colleges, veterinary hospitals, agricultural extension centres, social media, television and radio can all play an important role in spreading awareness.

Technology can help

New technologies are making it easier to monitor animals and the environment. Sensors can help farmers detect changes in animal body temperature, movement and activity. Weather information can help farmers prepare for heat waves, floods and droughts. Satellite images can be used to monitor forests, water bodies and changes in land use. Artificial intelligence and computer-based systems can also help researchers study large amounts of information and identify possible disease risks.

Working together for a healthier future

Climate change is a problem that cannot be solved by one person, one profession or one country. Doctors, veterinarians, farmers, researchers, environmental scientists, wildlife experts, policymakers and local communities all have important roles to play. Government agencies and international organizations also need to work together to improve disease surveillance, climate preparedness, environmental protection and food security. Most importantly, local communities should be involved because they are often the first to experience the effects of changing climate.

Conclusion

The One Health approach reminds us that people, animals and nature are closely connected. Protecting animals, conserving forests and water, producing food sustainably and controlling diseases can also protect human health. A healthy planet supports healthy animals, and healthy animals and ecosystems support healthy people. Working together through the One Health approach can help us build a safer, healthier and more climate-resilient future.

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