

Natural Disasters Intensity Analysis and Classification using Artificial Intelligence

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PROBLEM STATEMENT

The purpose of the problem statement is to identify the issue that is a concern and focus it in a way that allows it to be studied in a systematic way. It defines the problem and proposes a way to research a solution, or demonstrates why further information is needed in order for a solution to become possible.

Problem Statement is inclusive of below answers:

- **Who** does it affect/does not affect.
- **What** does it affect/does not affect.
- **How** does it affect/does not affect.
- **When** is it a problem/is not a problem.
- **Where** is it a problem/is not a problem.

Natural disasters not only disturb the human ecological system but also destroy the properties and critical infrastructures of human societies and even lead to permanent change in the ecosystem. Disaster can be caused by naturally occurring events such as earthquakes, cyclones, floods, and wildfires. Many deep learning techniques have been applied by various researchers to detect and classify natural disasters to overcome losses in ecosystems, but detection of natural disasters still faces issues due to the complex and imbalanced structures of images.

The natural disasters disturbs the ecosystem, both humans and animals. **(WHO)**

In a disaster, **you face the danger of death or physical injury**. You may also lose your home, possessions, and community. Such stressors place you at risk for emotional and physical health problems. Stress reactions after a disaster look very much like the common reactions seen after any type of trauma. **(WHAT)**

Wildlife can be killed by the force of the disaster or impacted indirectly through changes in habitat and food availability. Endangered species are especially vulnerable when habitat is destroyed. Water quality is impacted when sewage treatment facilities flood or debris enters reservoirs and waterways. (HOW)

Natural disasters generally constitute an emergency since **they require immediate intervention due to their high impact on human health and safety**; they affect the normal functioning of working infrastructure, interrupting normal day activities and representing a risk for residents and workers in affected areas. (WHEN)

An area is defined as hazard prone area **if the mortality risk is higher than a certain threshold**. A cyclone is defined as a wind storm with maximum speed of more than 64 knots per hour. The definition includes typhoons and hurricanes. (WHERE)

