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IMPACT OF GLOBAL WARMING ON MOUNTAIN AREAS CONFIRMED BY UNEP-BACKED MOUNTAINEERS

Landscape around Original Everest Base Camp Would Be Unrecognizable to Hillary and Tenzing

GENEVA/NAIROBI, 5 June (UNEP)

An expedition, dispatched to the Himalayas to chronicle the environmental health of one of the world's most famous mountain ranges, has gathered startling evidence of the impacts of climate change.

The team, backed by the United Nations Environment Programme (UNEP), has learned that the glacier from where Sir Edmund Hillary and Tenzing Norgay set out to conquer Everest nearly 50 years ago, has retreated up the mountain by around five kilometres.

Roger Payne, Sports and Development Director at the International Mountaineering and Climbing Federation (UIAA), and one of the expedition's leaders, said: "It is clear that global warming is emerging as one, if not the, biggest threat to mountain areas.

The evidence of climate change was all around us, from huge scars gouged in the landscapes by sudden, glacial floods to the lakes swollen by melting glaciers. But it is the observations of some of the people we met, many of whom have lived in the area all their lives, that really hit home".

The seven-strong expedition, which set out from Kathmandu, on 16 May, returned on 1 June after climbing on Island Peak, which is 6,189 metres (20,305 feet) above sea level in the Khumbu Region of Nepal. The expedition, whose findings are being released on World Environment Day, visited the famous Thyangboche Monastery and talked to experts, including ones in the Sagarmatha (Everest) National Park.

It was in conversation with Tashi Janghu Sherpa, president of the Nepal Mountain Association, that the team first learned of rising concern among local people over the impacts of global warming.

Ian MacNaught-Davis, President of the UIAA and another of the expedition's leaders, said: "He told us that he had seen quite rapid and significant changes over the past 20 years in the ice fields and that these changes appeared to be accelerating. He told us that Hillary and Tenzing would now have to walk two hours to find the edge of the glacier which was close to their original base camp in 1953, which means that it has retreated by between four and six kilometres.

"He told us that around Island Peak, so called because it once resembled an island in a sea of ice, there was once a network of small ponds. Today they have merged into a big, several kilometre-long lake, as a result of the glaciers melting. Mr Janghu said he was worried, worried that glaciers would continue shrinking, and that the melt waters would trigger floods sending huge quantities of water, rubble and mud down the valley", said Mr MacNaught-Davis, a former businessman and television presenter of a popular science series on British television.

At the Thyangboche Monastery, home to 60 Buddhist monks, they met with Lama Rinpoche who has lived there for over 30 years and witnessed two big floods, the result of melting glaciers causing

local lakes to burst. One recent flood had washed away the old wooden bridges downstream. New, metal ones have been built higher and 100 metres longer, replacing the older 50-metre ones, to try and reduce the chances of similar damage from a future flood.

"It was the Lama's impression that such events were becoming more frequent and a rising phenomenon of the past eight to nine years", said Mr McMaught-Davis, whose team's findings come in the United Nations International Year of the Mountains and International Year of Ecotourism.

UNEP scientists, working with experts from the International Centre for Integrated Mountain Development based in Kathmandu, have used satellites and on the ground studies to pinpoint 44 glacial lakes in Nepal and Bhutan that are now so swollen they could burst their banks in as little as five years.

There has been concern that rising numbers of tourists and climate change might also be having impacts on the vegetation of the area. Alton Byers of the United States-based Mountain Institute told the World Ecotourism Summit in Quebec last month that an estimated 27,000 people a year visited the area, up from a handful in the early 1960s. Tourists now outnumber the local sherpa population, which totals 3,000 in the Khumbu region of Nepal's Solu Khumbu District.

Julia-Ann Clyma, another member of the expedition from New Zealand, said just below the village of Thyangboche people were developing a medicinal herb garden in an attempt to preserve local medicinal plants and knowledge.

"We saw a lot of impressive efforts by local people to make themselves less dependent on food imports, including the development of greenhouse crops and fruit orchards", she said.

The team were also impressed by the numerous reforestation schemes under way, aimed at balancing the fuel wood needs of local people and tourists with the need to maintain healthy forests.

This appears in line with the research of the Mountain Institute, which found that forest cover below the snow and ice line "remains essentially unchanged from the 1950s. Natural forest regeneration appears to be increasing in many areas, and tree growth in the vicinity of the Namche Bazaar and other villages has increased as a result of successful plantation efforts over the past 15 years".

The Institute however, concludes that above 4,000 metres over-harvesting of high altitude juniper shrubs and cushion plants for fuel, nearly all of which is tourist-related, is having a serious impact on the environment. These impacts include erosion and loss of wildlife.

However local community action groups are being developed to restore these degraded habitats. Plans include banning the harvesting of alpine shrubs and the development of subsidies to encourage the sustainable exploitation of trees, such as the plentiful supplies of birch and rhododendron from lower down.

Building shelters for porters at major trekking villages is also under discussion. At the moment many porters sleep outside and burn wood to keep warm.

Pemba Geljen Sherpa, the expedition's guide on the trip, who has lived in the area all his life, said he had witnessed dramatic changes in his lifetime. He said traditional dress and customs were fast disappearing. But he suggested this was an inevitable consequence of the modern world.

"It is all changing, you do not see the same traditional dancing or singing of my parents generation", he said.

But the Sherpa guide rejected suggestions that tourism should be curtailed: "We need more, not less tourism here to boost the economy and give people jobs, incomes and education. I think we can manage it so that it is the right kind of tourism that respects local people and local landscapes. What we cannot control is global warming, that is in the hands of others. We, here in Nepal, produce tiny amounts of the gases linked with global warming. It is up to the big, industrial countries of Europe, North America and Japan to act to

save our mountains and the environment upon which our livelihoods depend".