Himalayan farmers give early pointers on climate change

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Nepalese farmers carry hay as they walk through a paddy field in 2009. Himalayan villagers have won the backing of climate science for their suspicions that snow cover, water resources and the ecosystem are changing in their region, a study published Wednesday said.

Himalayan villagers have won the backing of climate science for their suspicions that snow cover, water resources and the ecosystem are changing in their region, a study published Wednesday said.

The authors of the research carried out by Britain's Royal Society say this is the first time that subjective perceptions about climate change have been put to a wide scientific test.

And, they argue, it shows that local knowledge, far from being snubbed or sidelined, can be a useful tool for combatting the climate threat.

Researchers interviewed 250 people living in 10 villages in Singalila National Park, in the Darjeeling Hills of India's West Bengal state, and in eight villages in Ilam district of Nepal.

They asked them about 18 possible indicators of climate change in the past decade.

These interviews were then followed up with a looser-structured questionnaire in meetings at 10 other villages in the same area, the aim being to cross-check the results.

Three-quarters of the interviewees said they believed the weather had been getting warmer over the past 10 years, while two-thirds said the onset of summer and the monsoon had advanced.

Nearly half the respondents thought there was less snow on the mountains than before and 70 percent said water was less plentiful.

Roughly half said they believed that some plant species were budding earlier than before and that mosquitoes had appeared in villages where none had been seen before. At least a third said new crop pests or new weeds had emerged in places where they farmed.

These observations tally with scientific studies on temperature, rainfall and species carried out in the Himalayas or other regions, although there is no confirmation that the onset of monsoons has advanced, said the paper.

Those who lived at high altitude (between 2,000-3,000 metres, 6,500-9,750 feet) were far likelier to say they had seen changes compared with those who lived at low altitude, considered to be below 2,000 metres (6,500 feet).

This, too, chimes with scientific predictions that mountainous and snow-covered areas are likelier to experience climate impacts before lowland areas.

The paper, published in the journal Biology Letters, marks the biggest attempt yet to dissect local knowledge on climate change and compare it with scientific evidence.

Local knowledge usually has poor standing in climate science because it is often sketchy, short-term or skewed by personal experience.

For instance, if a farmer suffers two or three bad harvests, he may wrongly blame climate change, which is a long-term phenomenon, rather than poor farming techniques or a run of bad luck with the weather, which is short term.

But the paper says that intimate knowledge of the local environment can be a useful resource for testing theories and policies on such problems as flood, drought and invasive species.

The Himalayas are exposed to climate change because changes to monsoon patterns and higher temperatures affect snow cover, which in turn affects water resources for humans.

Its 15,000 glaciers feed Asia's eight largest rivers, five of which -- the Indus, Ganges, Brahmaputra, Yangtze and Yellow rivers -- are likely to be hit by worsening water stress in coming decades, with consequences for more than 1.4 billion people.

"Despite the immense likely environmental, economic and social costs, reliable information about the extent and magnitude of climate change and its consequences in the Himalayas are not well known," said the paper.

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