

Scientists strive to pinpoint warming forecasts

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OSLO (Reuters) November 11, 2007- Moving on from the risk of global warming, scientists are now looking for ways to pinpoint the areas set to be affected by climate change, to help countries plan everything from new crops to hydropower dams.

Billion-dollar investments, ranging from irrigation and flood defenses to the site of wind farms or ski resorts, could hinge on assessments about how much drier, wetter, windier or warmer a particular area will become.

But scientists warn precision may never be possible. Climate is so chaotic and the variables so difficult to compute that even the best model will be far from perfect in estimating what the future holds.

"We need to give indications which are at the scale countries can use to make decisions," said Michel Jarraud, head of the World Meteorological Organization (WMO) which oversees the U.N.'s climate panel.

"We need to come to a scale which is smaller than countries like Spain or France or the UK. You really need to come to smaller scales -- 100, 200 kms (60-120 miles).

"We are not yet there."

The U.N. climate panel meets in Valencia, Spain, on November 12-17 to issue a final report summing up more than 3,000 pages of findings this year that blamed humans for climate change and outlined solutions.

It will also look at what a next report, perhaps in 2013 if governments agree on spending, might contain. The Intergovernmental Panel on Climate Change (IPCC) shared the 2007 Nobel Peace Prize with former U.S. Vice President Al Gore.

An IPCC report in April gave regional projections for a warmer climate such as a melting of the Himalayan glaciers or better growing conditions for Nordic forests, but the scale is often too vague to be of great use.

DAMS, SKI SLOPES

Farmers from Africa to Australia would like to know which areas are threatened by desertification. Ski operators from the Alps to the Rocky Mountains wonder how high the snow line will be before investing in new hotels or ski lifts.

But forecasts may never be precise enough to estimate which of two neighboring valleys in the Andes, for instance, might get wetter and be better suited to a hydroelectric dam.

"To get down to the site-level would be a huge step," said Martin Parry, a British scientist who co-chairs the IPCC section devoted to regional impacts of climate change.

The impact of global warming depends largely on how many people keep burning fossil fuels, a main source of greenhouse gases, or develop cleaner energies such as wind or solar power.

"I don't think that an assessment in 2013 would deliver that much more detail needed for planners on water issues," said Johan Kuylenstierna of the Stockholm International Water Institute. "The uncertainties will still be quite high."

Planners already know enough to act in many cases. The smallest grids used for climate projections are 50x50 km (31x31 miles).

FIRST-FLOOR KITCHENS

London is looking into ways to confront projected regional risks such as more floods from North Sea surges up the Thames, more heatwaves and a drier climate.

Painting houses white to protect against heatwaves makes sense, Parry said. Homeowners in areas at greater risk of floods could raise electrical goods such as fridges or washing machines off the ground floor.

Parry said some farmers in eastern England were considering selling and moving north to Scotland because they reckoned they could soon grow the same crops on land that costs less now.

A rise in sea-levels is already factored in as a threat to all coasts. The IPCC projects that sea-levels will rise by 7-23 inches this century.

"It would be pretty unwise to build a nuclear power station at sea-level," Parry said.

WATER

Kuylenstierna said there may well be stronger evidence by 2013 that climate change is under way, such as melting Arctic ice or a drier Mediterranean region. That would in turn give pointers to future change.

"But to break that down to information to a level relevant to a city or a hydroelectric dam base is a different question. I think nature is much more complex," he said.

"Even so, we can start making a lot of investments today."

Glaciers are already melting in mountain ranges from the Andes to the Himalayas, so countries should invest in flood protection along vulnerable rivers and consider new irrigation needs if glaciers, a source of water in dry seasons, vanish.

In Florida, the population has soared to about 18 million from below 1 million in 1920, with ever more people living near the coast. New construction codes should aim to help protect against hurricane damage and rising seas.