

Severe weather warning

Peru is one of the countries most at risk from climate change. Regions such as Cusco are already feeling the effects of extreme weather, providing great challenges for the Quechua people, writes **Catherine Spring**



Evidence of the damage caused by extreme weather at Huacarpay, which was destroyed by flooding in January. Below: Ignacia Yépes Ayma Photographs by Julio Aracil

Life after the floods

Grimanesa bounds into the classroom, her face beaming. At 11, she is happy to be at school among her friends. But on 25 January 2010, Grimanesa's life as she knew it was swept away.

That night severe floods destroyed many villages in the Cusco region of Peru including Huacarpay, Grimanesa's village. The schoolgirl's smiles quickly dissolve to tears with traumatic memories of the flood. "The water came up around me and took my blanket," she says, her voice shaking. "The house fell down beside us. The water took everything."

Cusco's regional president, Hugo González Sayán estimates 80,000 people were affected by the flood, most of whom lost everything. Many are still living in tents with no confirmation of when they will be rehoused. They do not have land to fall back on for their livelihoods and their future looks bleak.

Since the floods, which are one of the effects of global warming that glaciologist Lonnie Thompson predicted, Grimanesa and her family of eight have lived in a small tent with no electricity. It has been hard for the family to keep warm in the winter's freezing temperatures and respiratory diseases have haunted them.

For the children, the psychological trauma of the flood is still apparent in every aspect of school life according to Grimanesa's teacher, Yanet Honor Casaperalta, who says: "Concentration levels have gone down significantly, so we have changed how we teach and now use more interactive and dynamic methods." **CS**

Maura Flores Choque pulls the bundle in her arms closer. A mop of black hair is all that is visible of the baby beneath a sling of bright cloth. "Children are suffering from intense sun in the day and freezing cold at night," says Flores Choque as she suckles her baby. "I am worried about my family and our future. Our animals are dying. There's not going to be enough food for the whole year."

In the Sangarará district of Peru's Cusco region, the challenges of existing 3,700 metres above sea level have always been part of daily life. But over the past three years extreme weather has made that existence far tougher. Experts echo what is being experienced on the ground, with the Intergovernmental Panel on Climate Change (IPCC) rating Peru as the country third most vulnerable to climate change.

The key reason for this critical status is glacial retreat caused by global warming. Seventy-one per cent of the world's tropical glaciers are found in Peru, but according to Lonnie Thompson, a glaciologist from Ohio State University, they are melting at an alarming rate and have lost 22% of their mass in the last 35 years.

Thompson predicts all glaciers above 5,500 metres - almost all those in Peru - will be gone by 2015. Speaking at a 2009 climate change forum he explained the significance of this, stating: "Glaciers, especially tropical glaciers, are the canaries in the coal mine for our global climate system." Children in the poorest communities will be the ones most affected by the deteriorating situation. According to a 2008 Unicef UK climate change report, they face increased risk of malnutrition, disease, poverty, inequality and conflict.

For the indigenous Quechua people like Flores Choque, who have farmed Peru's highlands since the 15th century, the warning signs are already very real. Their farming calendar, dictated by the weather, has traditionally given their lives a steady rhythm. But in the last few years uncharacteristic and unpredictable weather - flooding, frosts, hail, intense heat and drought - has bombarded it. Crops have continually failed and Save the Children research reports production in some areas has fallen as much as 44% since 2007, with animal mortality rising from 20% to 48%. Water supply has diminished and the health and livelihoods of thousands been jeopardised.

Sangarará obstetrician and health centre manager, Sonia Apaza Maita, witnesses daily how living in an already harsh envi-

'Quechua traditions have been diluted over time... But now the weather is crazy and we see they're essential to our survival'

ronment on a tightrope of poverty has been compounded by the changing weather. Families, she says, are being forced to make choices for survival and "often animals and land take priority over children."

"The people are becoming poorer and malnutrition is increasing," Apaza Maita stresses. "Children don't have defences and their health is suffering. They've always had respiratory problems but now they're much worse. For the first time we have cases of bronchitis."

Children's education is also being significantly affected. "Children are sick or stay home to help their parents," says teacher Stana Flores Huilca, who works at José Carlos Mariátegui school, in Maracaonga. "During the winters, attendance has dropped 30%." Flores Huilca looks around the classroom, which is decorated with posters in the Quechua language. "We're trying to teach respect for the environment. Nature, community and mutual help (a concept known as *ayni*) are essential in the Quechua culture. It's important for the children to identify with that."

Local NGO Kallpa, Save the Children's partner in Peru, has responded by setting up programmes that aim to make people proud of their heritage and build children's immunity. One project designed to fight child malnutrition supports women in raising *cuyes*, a type of guinea pig whose meat is high in vitamins essential in early childhood and which is traditionally eaten by the Quechua.

Kallpa is also encouraging farmers to use natural fertilisers rather than chemicals. Hardy native potatoes are being planted again instead of the white potatoes previously grown for export, as well as crops such as *tarwi*, a bean that, though tasteless, bursts with nutrition.

According to Ignacia Yépes Ayma, president of women's organisation, Adimsa: "Quechua traditions have been diluted over time because of outside influences. Over the years we've been made to feel ashamed of our traditions. But now the weather is crazy and we see they're essential to our survival."

Last July, temperatures plummeted uncharacteristically to -24C (-11F). The World Meteorological Organization (WMO)



Fears for the future

Nicanor Cuadros seems a quiet man. But as community leader in Sangarará district he holds a role regarded with great respect, and climate change is an issue he takes very seriously.

"The sun is so intense and lack of water is becoming a problem," says Cuadros. "It's all connected with the weather and melting glaciers. Four years ago a small river near here ran at eight litres per second. This year it's four litres per second. Now there isn't enough water for the community."

Cuadros explains that Quechua people are reintroducing "water-eyes", an indigenous method of conserving water that involves building a well to capture water flowing from the glaciers.

Despite the action they are taking, the future - especially for the children of

his community - is playing on Cuadros's mind. Looking out across the arid mountains he says in his quiet manner, "We're fearful for our community and what will happen next."

Teresa Carpio, director of Save the Children in Peru, is also concerned. She says: "Ministry of Health figures show that more than 530 children are known to have died from respiratory diseases in the last year." Her worry is that figures are much higher and rising because child mortalities in isolated highland areas where disease is most widespread are unlikely to have been recorded. Carpio feels indigenous children are not getting enough governmental attention.

"The children," she says, "are last in the queue." **CS**

attributes this to the phenomenon of La Niña - extensive cooling of the central and eastern Pacific, which WMO also believes were the main cause of the Pakistan floods and China landslide that occurred in July 2010. The government of Peru called a state of emergency in 16 out of 25 regions indicating funds would be available for aid. In

the same month it announced that flourishing foreign investments have boosted Peru's economy by 6%.

However, for the children of the highlands there has been little evidence of aid or an economic boost. Miguel Paz, a risk management consultant, thinks lack of human resources is an issue. "Our govern-



Grimanesa outside school in Huacarpay

ment is desperately cutting costs. Consequently there aren't enough staff to monitor and implement policies concerning rural communities."

For the rural Quechua of Peru who, according to UN Refugee Agency (UNHCR) figures, account for one-third of the country's 29.5 million population, cultural marginalisation has long been a part of their history. Most of them live in poverty while an elite minority of Spanish descent control political power and wealth. Yet at a time when Quechua resilience is being severely tested by the environment, looking to their culture is the only thing they can do.

The Cusco regional government's health director, Oscar Niño de Guzman, also thinks that the relationship between regional and national government is flawed. "There's a delay in financial help," he insists. "It [the national government] is very slow to coordinate assistance."

But in Lima, vice-minister for children, women and social development, Norma Añaños Castilla is adamant funds for aid have been provided. However, she says "regional governments are not obligated to put these funds aside for emergencies."

Añaños Castilla's team is working on Peru's National Plan for 2011-2020. She says climate change policies will be included and adds, "local traditions in this context are important, but it's regional governments that hold the responsibility to respect indigenous traditions."

Back in Sangarará, Flores Chogue finishes feeding her baby and tightens the brightly coloured sling around her waist. She knows her community must rely on each other and NGOs to rise above discrimination, take action and adapt to the changes it is facing. "In the bible it says we must accept change," she declares as she begins to walk away. Then she adds: "But I think it's also important to plant more trees."