

# Adaptation to CLIMATE CHANGE



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6 - 7 November 2008, Lima, Peru

## Melena Ramos

*Shepherdess from the Ujuyo Farming Community*



"Today, it started snowing at sunup. That's how things are right now. Last year, all my lambs and baby alpacas died. I realized that the grass and water were running out and were not enough. My husband is rather lazy. The people in the community have told him he should build a shelter for the animals, but we barely have a roof over our own heads. This year, I am going to build the shelter. I worry that the animals cannot eat because of the snow. They do not even want to close their eyes, and so their eyes get burned. Sometimes, they do not go out for a couple of days because the reflection of the sun off the snow has blinded them."

IMATA, BETWEEN AREQUIPA AND PUNO  
(2008)

[www.minam.gob.pe](http://www.minam.gob.pe)



## CREDITS

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## BACKGROUND

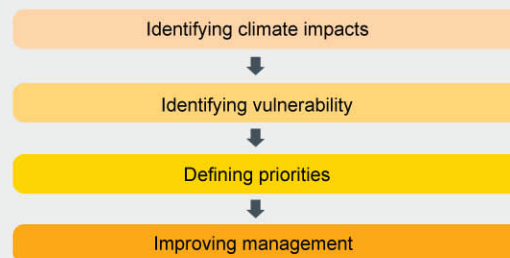
Peru is vulnerable because its capacity to prevent the adverse effects of climate change is developing. Therefore, the country's development agenda should seek to prioritise identifying sector vulnerability and adapting to current and future impacts.

Efforts are already underway to adapt to climate change at community and regional level and in the different sectors. MINAM (the Ministry of the Environment) decided to hold the first national workshop on climate change adaptation in order to help promote an exchange of information between current climate change adaptation projects and initiatives at national, regional and local level.

### Workshop objectives

- Consolidate and publicise the progress of local, regional and national level climate change adaptation projects and policies.
- Set a course for future action so that climate change is included in national and regional development strategies, plans and processes.
- Help strengthen the National Climate Change Strategy.

Workshop participants focused on four of the five main adaptation stages using the Adaptation Policy Framework for Climate Change (UNDP 2006) as a guide.



Two presentations were delivered as part of this process. SENAMHI (the national meteorological and hydrological service) presented progress on climate scenarios and MINAM presented a proposal for a Guide to producing regional climate change strategies.

It is hoped that the findings, conclusions and recommendations from the workshop will help to significantly update the national agenda and make a telling contribution to the different processes that are underway in the regions and will ultimately contribute to the process of adapting to climate change in Peru.

## I. THE WORKSHOP

### Day 1: 6 November 2008

The workshop was officially opened by Dr Antonio Brack Egg, the minister for the environment. The director of GTZ Peru, Dr Wilfried Liehr, then gave a few words of welcome. Both, Brack Egg and Liehr, stressed the importance of creating climate change adaptation mechanisms for the country and encouraged participants to work on a joint approach enabling development strategies, plans and processes to be implemented.

#### General framework and methodology

MINAM presented the impact and challenges of climate change and the conceptual framework. The ministry also presented national policy progress. The methodological aspects to be taken into consideration in the adaptation process at all levels, in accordance with the UN Adaptation Policy Framework for Climate Change, were also set out.

#### Regional climate change strategies

Progress on the regional climate change strategy guide was also presented and supplemented by the experiences of the mayor of Pampacolca (Arequipa) and representatives of the Callao and Cajamarca regional governments. It is vital that MINAM and the regional governments work together so that climate change strategies can be implemented throughout Peru as soon as possible.

#### Climate change adaptation projects

The different approaches and progress of four projects and initiatives currently

underway in Peru and the Andean Region were presented:

- Biological diversity in the Peruvian Amazonian region (Finnish Cooperation / Peruvian Amazon Research Institute).
- Andean region climate change adaptation project (Andean Community – CAN / World Bank).
- Climate change adaptation programme (MINAM / Swiss Agency for Development and Cooperation).
- Pilot climate change adaptation measures (MINAM / Piura and Arequipa regional governments / Sustainable Rural Development Programme – PDRS-GTZ).

#### Overall progress and challenges

The second part of the afternoon session was spent sharing and analysing information about projects and initiatives that are ongoing, completed or known to participants, using the methodological aspects presented for the adaptation process as a basis for the discussion.

#### Comments

- Agriculture and water are currently being prioritised as they have been identified as being the most vulnerable sectors. However, other issues, such as biodiversity and agrodiversity, and sectors, such as fishing and health, should also be addressed.
- There is a need for closer interinstitutional cooperation so that local and regional climate

impact scenarios can be used when taking decisions at national level.

- Vulnerability studies and pilot projects have progressed the most but the inclusion of climate change in development policies at the different levels of government is still at an embryonic stage.
  - The two approaches used in Peru to assess vulnerability and adaptation are sectoral and regional. It is recommended that the processes and their stakeholders should be linked.
  - Most of the progress made is due to the support received from international cooperation. However, the private sector and other stakeholders, such as NGOs, have recently launched major climate change adaptation initiatives.
- #### Recommendations
- Continue to identify the hardest hit areas and sectors using different scaled scenarios.
  - Recover traditional and local experience and knowledge which can be used for adapting to climate change.
  - Comprehensively order and analyse progress in order to direct current and future work and promote the inclusion of climate change in development policies and processes.
  - Boost communications, awareness-raising and environmental education initiatives, as the

sustainability of the adaptation processes will depend on the priority given by stakeholders to the issue.

### Day 2: 7 November 2008

Day two of the workshop focused on highlighting the progress and approaches to climate change contained in some sectors' public policies and climate change adaptation progress and prospects in the fields of research, education and communication.

#### Vulnerability and climate scenarios

MINAM presented the results of the "Information and tools for orientating a national policy on reducing vulnerability and adapting to climate change" (CONAM / INRENA, 2008) study, conducted with the involvement of the key sectors, in order to determine the vulnerability of the country's regions to climate change and prioritise the most vulnerable regions. A presentation was also delivered on the potential impact of climate change on the water cycle and the Amazon basin. SENAMHI added to this topic presenting the methodology used to produce climate change scenarios for Peru's various river basins and the entire country and its results.

#### Public sector challenges

The importance of intersectoral and intrasectoral coordination between and with the regions was stressed in relation to the governance of climate change adaptation processes. It was clear that there is a need to have shared objectives but for stakeholders



to have different roles. The National Climate Change Commission is currently being brought up to date in order to catalyse the process.

As part of the presentation delivered by the agricultural sector, its representative highlighted the issue of food security and spoke about the potential effect of climate change on food availability and supply stability. The Ministry of Agriculture (MINAG) has consequently created a commission to address the issue of climate change in the sector. The ministry's representative spoke about the Agroprotege agricultural insurance scheme which is seeking to become an effective instrument for reducing the impact of climate events on low-income farmers by transferring the risk to insurance companies. While the measure is an attempt at addressing current problems, it is also one of a number of measures that can help significantly reduce the vulnerability of small farming communities.

The representative of the Ministry of Economy and Finance (MEF) said that a series of studies are being conducted on climate change in relation to the national system of public investment (SNIP), so that the issue can be included in the multi-annual macroeconomic framework and other instruments such as multi-annual strategic plans. SNIP project designers and assessors will be given training so that climate change is included in public investment projects. With regard to risk management, the workshop participants agreed that previously designed methodological instruments are an extremely useful basis for adaptation. However, they still need to be improved to ensure that public spending is checked. In

addition, MEF and MINAM will support regional initiatives incorporating climate change into ecological-economic zoning and regional planning processes.

The vice-minister of energy and mining (MINEM) summarised progress that Peru has made on reducing greenhouse gas emissions and highlighted the switch to gas and other incentives and programmes designed to encourage investment in hydropower, other renewable energy sources and energy efficiency.

During the discussions between the different public sector representatives it became clear that there was agreement about the need to have a joint approach to climate change adaptation. However, there is still a lack of versatile forums and instruments enabling information to be shared and joint action areas to be defined in accordance with the mandate of each of the relevant institutions.

#### Communications and environmental education

The need to raise awareness and build capacities was also highlighted so that climate change content, values and skills can be incorporated. These components should be included in communications plans and campaigns targeting the general public and in the school curriculum targeting young people. It was recommended that dialogue between scientific and traditional knowledge should be encouraged in all the processes and that concepts should be presented in a practical fashion so that the information can be delivered in the classroom and to the general public, taking into account different contexts.

#### Comments and recommendations

- Increase vulnerability assessments in the jungle, as it is the least studied region to date, and in the coastal areas, as fishing is a vitally important industry for the country's economy.
- Tailor vulnerability assessment tools to each sector and incorporate a regional approach ("comprehensive vulnerability").
- Raise awareness about the impact of climate change on agricultural products in order to protect the food chain and increase the income of farmers.
- Incorporate climate change into public investment projects.

- Design a climate change scientific research agenda aimed at policy-making and allocate the resources needed to implement it and provide feedback.
- Further disseminate scientific information so as to "translate" and convey the impact of climate change based on the needs of different types of users.
- Supplement formal education with citizen education, basing content on the local context, in order to lay the foundations for the involvement of an informed civil society.
- Train leaders and citizens to be critical thinkers so that they trigger the required improvements and change generally accepted ideas.

Continues on page 8.

## First day: Thursday, 6 November 2008

Topic	Responsible
Opening	<b>Antonio Brack Egg</b> , Minister of Environment <b>Wilfried Liehr</b> , Director, German Technical Cooperation in Peru
Climate change: impacts and challenges	<b>Vanessa Verau Ladd</b> , Vice-Minister of Environment
Policy framework and methodical proceeding for adaptation to climate change	<b>Ingrid Prem</b> , German Technical Cooperation
Proposal for a methodical manual for regional strategies on climate change	<b>Luis Geng</b> , Project leader, Second National Communication on Climate Change – Ministry of Environment
Comments	<b>Vicente Cárcamo Huamani</b> , Mayor of Pampacolca, Arequipa <b>José Huamán Mantilla</b> , Department of Environment – Regional Government of Cajamarca <b>Raúl Zarate Rendón</b> , Department of Climate Change and Biodiversity – Regional Government of Callao
Progress and lessons learnt of adaptation projects and initiatives in the Andean region	
•Conservation and Sustainable Use of Biological Diversity of the Peruvian Amazon	<b>Luis Herrera</b> , Ministry for Foreign Affairs of Finland
•Adaptation to the Impact of Rapid Glacier Retreat in the Tropical Andes	<b>Ricardo Giesecke</b> , Worldbank / Andean Community
•Program on adaptation to climate change in Cuzco and Apurímac	<b>Philippe Zahner</b> , Director, Swiss Agency for Development and Cooperation in Peru
•Pilot project on adaptation to climate change in Piura and Arequipa	<b>Augusto Zegarra Peralta</b> , Department of Natural Resources and Environment – Regional Government of Piura
Comments	<b>Hernán Alfonso Carrasco</b> , Director, "Soluciones Prácticas" ITDG <b>Dilma Dávila</b> , OXFAM <b>Eduardo Durand</b> , Director, Unit Climate Change, Desertification and Water Resources – Ministry of Environment
Progress and challenges of projects and initiatives working on adaptation to climate change	Group work
Opening: "Market of opportunities" – climate change adaptation initiatives	<b>Kerstin Sieverdingbeck</b> , First Secretary, German Embassy of Lima <b>Pablo Cisneros</b> , Ministry of Foreign Affairs

## Second day: 7 November 2008

Topic	Responsible
Analyzing the vulnerability of prioritized sectors and regions	<b>Yuri Monge</b> , Project Second National Communication on Climate Change – Ministry of Environment
Climate change scenarios on national, regional and local level	<b>Amelia Díaz Pablo</b> , National Service of Meteorology and Hydrology
Scientific facts vs. traditional knowledge	<b>Jorge Alvarez</b> , Project Second National Communication on Climate Change – Ministry of Environment <b>Andrés Alencastre</b> , Program GSAAC Moderation: <b>Patricia Del Río</b> , Noticias RPP
Inter-institutional coordination and importance of governance aspects for combating climate change	<b>Eduardo Durand</b> , Director, Unit Climate Change, Desertification and Water Resources – Ministry of Environment
Progress and challenges on adaptation to climate change in the public sector	
•Progress in the agricultural sector on adaptation to climate change.	<b>Manuel Leiva</b> , Ministry of Agriculture
•Agricultural insurance	<b>Carlos Rivero</b> , Ministry of Agriculture
•Energy matrix and adaptation to climate change	<b>Pedro Gamio Aita</b> , Vice-Minister of Energy and Mines
•Public investment and adaptation to climate change	<b>Cristina Rodríguez</b> , Ministry of Economy and Finances
Challenges and progress of environmental communication and education on climate change	<b>Lupe Guinand</b> , University Antonio Ruiz de Montoya
Comments	<b>José Carlos Espinosa</b> <b>Ninfa Chávez Ramos</b> , Ministry of Education <b>Silvia Sanchez</b> , Peruvian Association of Conservation of Nature
Investigation priorities of adaptation to climate change	<b>Erik Cosío</b> , Catholic University Peru
Closing speech	<b>Eduardo Durand</b> , Director, Unit Climate Change, Desertification and Water Resources – Ministry of Environment



## II. WORKSHOP CONCLUSIONS AND RECOMENDATIONS

•Climate change is an issue that affects all areas (industry, politics and day-to-day life). Several scientific studies have proved that the costs of not adapting to climate change and doing nothing are much higher than the cost of suitable adaptation.

•There is an imminent need to start planning climate change adaptation in Peru in order to avoid future losses, given that the country is highly vulnerable.

•Although there is some information available about the country's main vulnerabilities, Peru still lacks a clear approach and the necessary tools to comprehensively address the issue of adaptation as part of the development process.

•Climate change adaptation should be seen as an ongoing learning process that draws on the efforts made to implement it. It is important to realise that this process only started recently at international level.

•The sheer range of environments, climates and cultures and the socioeconomic differences in Peru increase the complexity of climate change adaptation processes and require different approaches at local level. This diversity needs to be taken

into account when designing adaptation instruments and tools. However, this complexity also constitutes an opportunity, as it means that the issue has to be addressed in a comprehensive and planned manner with a long-term vision.

•Different Peruvian stakeholders have made significant progress towards building climate change adaptation capacity and this progress should act as the basis for the adaptation planning process in the country. However, there is a capacity building bottleneck, particularly at regional and local level and in the education and energy sectors.

•It is crucial that society is informed and involved in the climate change adaptation process. New alliances should therefore be forged between the stakeholders. The private sector in particular ought to play a more important role.

•Peru is actually benefitting from climate change in some cases (for example, the soil becoming fertile in previously desert regions). Adapting to climate change also means knowing how to take advantage of these opportunities, which means that the population needs to be well trained.

Other more specific conclusions and recommendations have been grouped into themes and are presented in the following section.

### 1. Public policies and instruments

•Local adaptation does not necessarily involve new measures but does instead involve rethinking things and prioritising initiatives that have been deferred (covering basic needs, for example). The country requires structural changes at macro level. The current development model should be analysed to determine whether it is right for the country in the light of climate change and investment priorities should be reassessed.

•One of the requirements of adaptation is to develop new national, regional and local policies and instruments. However, the planning process should firstly be got underway, reviewing and adjusting current policies and instruments in order to make the best use of them. Some of the instruments that should include climate change are ecological-economic zoning and regional planning, sector strategic plans, consensus-based development plans, institutional budgets and participatory budgets.

•Special emphasis should be placed on the synergetic implementation of international environmental conventions, climate change conventions, the convention on biological diversity, the convention to combat desertification and drought, and the convention on wetlands.

•Policies and instruments should draw on successful experiences and should incorporate the primary needs of the population. These instruments and policies should complement each other at the different levels of government and in the different sectors in order to ensure that a measure applied to one sector does not affect another, for example.

### 2. Institutional and governance

•It is important that MINAM continues to boost its role as a coordinator and facilitator and it must be recognised that responsibility for climate change adaptation planning and implementation needs to be shared, with all the stakeholders in society having a role to play in the process. There is therefore a need to further build sector capacities.

•It is also important that key stakeholders are identified in the national climate change strategy and the regional strategies and that their roles are established in accordance with each institution's mandate.

•Another priority is building regional and local government capacity, as initially the greatest impact is being felt and will subsequently be felt in the regions and by the people who live there, affecting the ecosystem and therefore the population's livelihood. Building the capacity of regional and local environmental commissions is also a priority and must draw on existing institutional capacity.

•The implementation of effective and efficient coordination mechanisms will act as a catalyst and ensure that Peru successfully adapts to climate change. Synergies need to be boosted and there must be coordination between the different sectors, public and private sector stakeholders, academia and civil society at their

different levels of responsibility and in their spheres of activity. This will enable efforts to complement each other, resources to be optimised and a system of feedback between the planning and implementation processes to be set up. Management evaluation indicators also need to be designed.

- The coordination mechanisms should also link up initiatives. In this respect, existing successful projects and initiatives can be used as the basis for more comprehensive programmes with the emphasis being placed on knowledge management.

- Regional climate change strategies should take into account other environmental agreements and should be incorporated into regional and local development agendas and investment plans.

### 3. Funding, resources and priorities

- The national government should initially focus on the most vulnerable sectors and regions so as to stop climate change from widening the gulfs that already exist in Peru. There is a general idea of the country's vulnerabilities but this should not mean that strategic long-term planning is forgotten.

- The funds that are available for climate change adaptation are still insufficient. Adapting to climate change will require major funding around the world and especially in the most vulnerable countries such as Peru. MEF is working with MINAM and the Ministry of Foreign Affairs on a study to determine the costs avoided by adapting to climate change, using this as a basis for broadly estimating the amounts required.

- A variety of sources will have to provide adaptation funds: the international community and national funds, the public and private sectors and civil society. The challenge will be to determine what each stakeholder should contribute and which programmes and initiatives should be prioritised.

- Mechanisms, incentives and instruments that can be catalysts for funding and investment in climate change adaptation should also be identified. The following instruments – some of which may need to be modified – could promote investment in adaptation from grassroots level: SNIP, the multiannual macroeconomic framework, public private partnerships (PPP) and climate screening as a new instrument in order to ensure that investment is sustainable.

- Synergy is absolutely vital due to scarce resources and structural problems. Synergy between climate change mitigation and adaptation, preserving biodiversity, combating desertification and integrated water resource management should be promoted wherever possible.

- However, as climate change is above all a development and not an exclusively environmental issue, it is absolutely vital that climate change adaptation is part of broad-based programmes such as combating poverty, rural development and competitiveness, not just so limited resources are effectively used but also to guarantee sustainable medium and long-term investment.

### 4. Research and information systems

- A scientific research agenda prioritising issues at national and regional level needs to be created and resources need to be found in order to implement it. The agenda should act as a link between academia, the government and the private sector and should be the basis for decision-making.

- Ancestral knowledge and traditional practices should be considered valid and useful for scientific research instead of being seen as second-rate information.

- Bioindicators should also be taken into account and research on them should be increased, as they are cost-efficient to use.

- Cost-benefit analyses of the level of detail of information required for launching planning and implementation initiatives need to be carried out.

- Climate change is a long-term phenomenon. Its impact is acute (extreme events) and tends to be chronic (gradual changes to ecosystems). Peru's scientific research agenda should therefore prioritise long-term research on strategic issues, such as the impact of climate change on Amazonia and water resources.

- Information should be made available to the various stakeholders so that it can be used in decision-making processes at different levels. Information on the climate and climate change is especially important. Although there is a need to bolster the national climate observation system (as it provides basic information), making existing information accessible to the general public is a greater priority.

### 5. Education, capacity building and knowledge management

- Education should accept the major challenge of giving the population the hard facts about climate change and tell them that as citizens they have a responsibility to act. It should also encourage people to change their habits and behaviour so that society can face up and adapt to climate change. Environmental education should therefore go beyond school and university curricula and centre on the concept of sustainability.

- It is important to bolster climate change knowledge management using a range of resources (the internet, meetings, publications, panel discussions and workshops). It is expected that the geographic information systems being set up by each regional government will be important resources. The systems will record information generated by the ecological and economic zoning and regional planning processes.

- The various stakeholders should pursue and broaden the exchange and involvement process in accordance with their remit, as well as ensuring that suitable feedback is provided and that the efforts of the different levels and disciplines complement each other.



- The stakeholders should promote the creation and strengthening of networks, platforms and working groups of various types (sectoral, regional, themed and discipline-based) as a range of perspectives and specialisms are required.

- The UN Adaptation Policy Framework for Climate Change has been recommended as a system for ordering and evaluating progress: 1) Identifying the impact of climate change 2) Identifying vulnerability 3) Setting priorities and 4) Improved management.

#### 6. Public participation and awareness-raising mechanisms

- Civil society and community participation is vital when seeking to identify vulnerabilities, independent responses and adaptation processes. It is therefore important to set up a knowledge exchange process and participation mechanisms.

- The sustainability of the initiatives is dependent upon the emphasis placed on the issue by the social stakeholders. Public awareness-raising should be a central component of all adaptation strategies. Promoting a culture of prevention and planning in civil society is also key to the process.

- The priority must be to "translate" technical language into everyday terms that people can understand to make them aware about the issue and the ensuing opportunities and get them to identify their own tailor-made solutions.

- The media, including the mass media, should be used to disseminate information. However, this will only be successful if different objectives are set for each target audience. The different roles to be played by the stakeholders in the adaptation process must be considered and included.

#### 7. International negotiations and knowledge exchange

- Peru should take advantage of the importance of Amazonia as a "global good", the country's immense biodiversity, extreme vulnerability to climate change and the economy's low carbon emissions level when seeking to position the country.

- The international community will decide on the future international climate protocol at the end of 2009 in Copenhagen. Peru needs to have a definite influence on this forum as decisions made there could potentially affect the capacity and resources the country will have at its disposal for development.

- Peru should bolster its negotiating teams for international meetings in order to ensure that the country and its interests are reflected based on a previously agreed position.

- It would also be advisable for the entire Andean region to agree on a joint climate change position, for example via the CAN, where individual country positions could be discussed until a consensus is reached on a regional position.