

Facing New Challenges: Environmental Policies and the Implementation of Solutions in Peru

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I. INTRODUCTION

As a developing and raw material producing country, Peru's environmental situation is constantly changing. During many years authorities and population have been working to solve the problems the country faces. These problems are consequence of wrong policies and the absence of a controlling system in environmental issues. The situation has changed in the past couple of years with the creation of a new institution, the Ministry of Environment, which is now the national authority in environmental issues. To understand the reason for the creation of a national authority first it is necessary to have a general idea of the problems related with environmental issues that Peru faces. This paper aims to show an idea of what is happening in Peru, the challenges it faces these days and the possible solutions that could be chosen.

II. ENVIROMENTAL SITUATION IN PERU

In order to understand the situation and figure out a solution it is important to have a general idea of the problems.

Five serious problems can be listed. The first one is water pollution, what comes next is bad solid wastes treatment. Air pollution caused by the automotive fleet growth is listed as third. The next problem is pollution caused by formal mining activities and the fifth problem is informal mining (Brack, 2008). In addition, a sixth problem could be listed: deforestation, this problem has grown in an uncontrolled way in the last few years.

Water pollution is mainly caused by the waste water discharge into the ocean and rivers, this waster does not receive a treatment before being discharged and it could be one reason for the expansion of contagious diseases into the population. Also, bad solid wastes management is related with this problem, as tons of rubbish is discharged into the oceans every day without any control. Another problem related with water pollution is the one related with environmental liabilities produced by mining activities, both formal and informal; this water contains a considerable amount of minerals that causes negative effects on animals, plants and as consequence on human health.

As second problem, bad solid waste treatment is listed. Lima, capital city of Peru, produces more than 6500 tons of rubbish (CONAM, 2005) every day, less than fifty percent of this amount goes to landfill. The rest of this amount has different destinies: a big part ends in the ocean and another in informal landfills where people work with it. This situation causes health problems, especially to poor people who work in rubbish dumps without any precaution.

Peruvian automotive fleet is old, most public transport cars are from the 1990's, which is a problem. These cars use petrol with high levels of sulfur. According to the National Institute of Statics (INEI) in 2004 respiratory infections were the main cause of illness in children.

Also, mining industry is a big problem, especially in the highlands. The biggest problems are not caused by the formal mining; they are caused by the informal ones, which don't have a proper environmental and health control. Some people think of mining as a way to obtain money, without considering how it may affect their lives and health quality.

All these problems are related to each other and the solution can not be agreed separately, it has to be the result of a joint cooperation among all the institutions, population and authorities that are related with these topics.

All this environmental problems have a cost of the 3.9 percent of the Gross National Product, approximately 2,800 million of dollars every year. The cost of environmental degradation is higher than in other countries that have similar income levels. (World Bank, 2006)

III. CREATION OF MINISTRY OF ENVIRONMENT AND APPLICATION OF ENVIRONMENTAL POLICIES.

All the problems related to environment were probably caused because of the non-existence of a main national authority and a poor environmental legislation. During many years, the National Environment Assembly (Consejo Nacional del Ambiente – CONAM) was the authority that regulated everything concerning environmental policies and issues. Opinions were divided: some people said that it was necessary to create a new ministry, others said that it was fine the way it was. Peru was one of the last countries in South America to create one. With or without a ministry, there are many challenges that must be faced. Before the creation of the ministry, every department of Peru had their own environmental issues office, so it is not wrong to say that there were 25 small ministries of environment; sadly, each of them worked independently. This is one of the reasons for the importance of creating a Ministry, one whose own objective is to promote sustainable development into policies and national programs. Another important objective is to promote the participation of the population in making decisions related to environmental issues (Ministry of Environment Creation Law, 2008).

The first step to the creation was taken back in 2007, when it was announced that even if it were a quick decision and it were criticized, that first step was done. In May 2008, the first minister of Environment was sworn and in June of the same year the Ministry of Environment creation law was released.

After making it official the real hard work started. Many institutions were combined to the new ministry. It has been a long process; including the creation and application of new policies. One of the most important change has been the creation of a new water-related law. Since 1969 it only suffered small modifications, the new one considers more important aspects and involves more the participation of the citizens to raise their awareness and see water as a precious resource.

In 2009, another important step was taken with the release of the National Environmental Policy. It is necessary for people and companies to commit themselves seriously to protecting the environment. As said before, one of the objectives of this Ministry is to promote sustainable development through the participation of everyone. Other important ideas are the conservation and sustainable use of natural resources and

biological variety, and to improve environmental management and international environmental opportunities (MINAM, 2008)

One of these international opportunities is the one related to Kyoto's protocol-Cleaning Development Mechanism.

IV. CLEANING DEVELOPMENT MECHANISM

Since a few years ago, Peru has an important focus on projects related to Cleaning Development Mechanism (CDM). Kyoto's Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Protocol to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tone of CO₂, which can be counted towards meeting Kyoto targets. The mechanism is seen by many as a trailblazer. It is the first global, environmental investment and credit scheme of its kind, providing a standardized emission offset instrument, CERs.

A CDM project activity might involve, for example, a rural electrification project using solar panels or the installation of more energy-efficient boilers. The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets. (UNFCCC, 1997)

In Peru, the actions related to climate change, particularly to CDM, have been managed by two institutions: the Ministry of Environment (Former CONAM) and the National Environmental Fund (FONAM- Fondo Nacional del Ambiente) as the promoter and financial support for environmental investments.



Picture (1) Geographic Distribution of Peruvian CDM Projects

Source: FONAM, 2006.

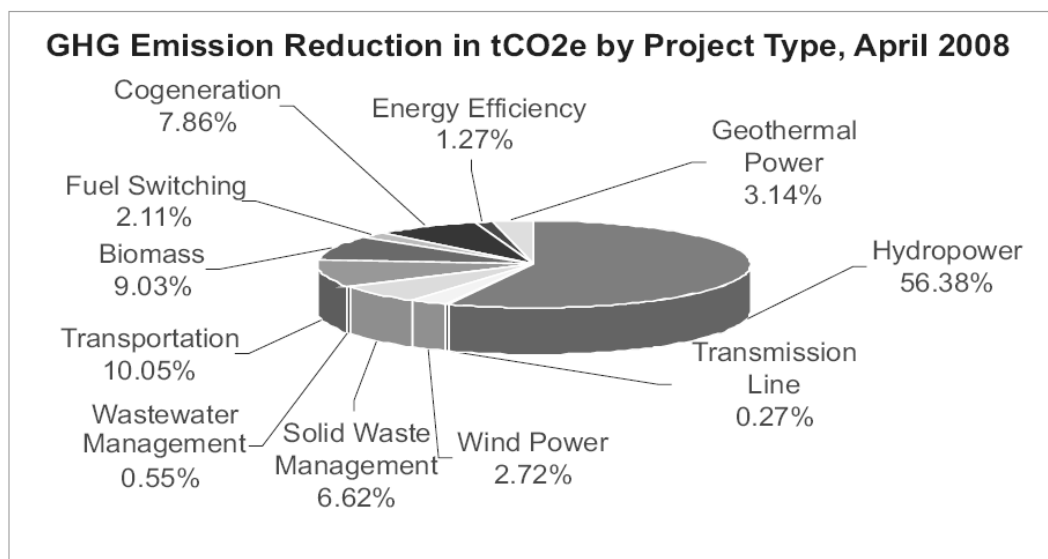
By February 2009, Peru was in the 6th place of countries with more CDM projects with a total amount of 106 projects , 83 of them in the Energy sector, 21 projects in forestation and deforestation and 2 in REDD (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries). All these projects represent an approximately amount of 500 millions of dollars in investments.

As we can see, most of them are in the Energy sector, which involves many areas that can be appreciated in chart (1) and in picture (2)

GHG Emission Reduction in tCO₂e, by Project Type, April 2008

Type of Project	Quantity	Investment (US\$ millions)	tCO ₂ e reduced per year
Hydropower	40	2 590	8 056 853
Transmission Line	4	37	38 330
Wind Power	3	416	388 128
Solid Waste Management	7	534	945 687
Wastewater Management	1	2	78 840
Transportation	4	1 006	1 435 434
Biomass	12	166	1 290 829
Fuel Switching	3	8	301 459
Cogeneration	4	732	1 123 551
Energy Efficiency	3	50.15	181 146
Geothermal Power	2	280	448 812
TOTAL	83	5 820	14 289 069

*Chart (1) CDM Projects in energy sector
Source: FONAM, 2008*



*Picture (2) CDM projects in Energy Sector in percentage
Source: FONAM, 2008*

4.1. Peru's achievements in the Cleaning Development Mechanism

- Peru is a member of the UNFCCC and has ratified the Kyoto Protocol.
- Peru has strong, agile and well-formed promotional institutions.

- Peru is recognized at international level as one of the most attractive countries for the development of CDM projects.
- CDM is promoted in the country by FONAM, with a vision of "promotion of investments, source of job posts, use of renewable energies and contribution to the sustainable development"
- FONAM has developed capacities within the country. The enterprise groups of the private sector, as well as the public sector, are well informed about the potentialities of and how to accede to the CDM. Has also contributed to develop the capacities of the national financial system, aiming to financially assist the CDM projects, informing and training the national banks, like Credit Bank of Peru, BBVA Continental Bank, Wiese Bank, COFIDE, Banks of Peru Association, among others.
- FONAM promotes the participation in commercial missions and international events in which the Peruvian project portfolio is promoted, being recognized as one of the most important delegations, with the participation of the private and public sector. These events are promoted and/or organized by FONAM, and include:
 - Meetings of the signatory parts of the UNFCCC - COPs / MOPs
 - International Carbon Fairs
 - Other international events of the carbon market.
- Peru has signed cooperation agreements with: Canada, Austria, Japan-JBIC and Spain, and the agreements with France, Italy and Holland are in signature process. (FONAM, 2008)

V. HUAYCOLORO LANDFILL: A SUCCESSFUL EXPERIENCE

The first successful CDM project in Peru is Huaycoloro Landfill Gas Recovery. This project consists on capturing the methane that solid wastes produce and convert it into gas. The gases that are emitted are certificated and sold in the international carbon market. Every day approximately 3500 tons of rubbish are deposited in this landfill, which are later converted into methane. This project cost about 20 million dollars and initiated its work in 2007. Its mission is to destroy 2 million tons of CO₂ by 2013. The same year, Peru signed a contract with ICECAP Carbon Portfolio to sell them approximately 400 000 CERs of Green House gases.

Including this project, at the moment, six projects are receiving CERs by international and certificated institutions. Even as 2012's Kyoto Protocol Limit is not that far, it is necessary to approve more projects related to CDM. It is the only way to continue solving two important issues in the country: poverty and environmental problems.



*Picture (3) Huaycoloro landfill gas recovery facility
Source: Petramas, 2007*

VI. YOUTH PARTICIPATION IN NATIONAL ENVIRONMENTAL SITUATION

As young people we have an important role here, not only because we study to understand and protect our environment, but also because it is our future and our children's future. We can be part of the solution if we participate in an active way. In Peru there is an organization called Young Environmental Committee (CAJU- Comité Ambiental Juvenil) which works in collaboration with the Ministry of Environment. This group is mainly formed by students from many universities of the country and who do volunteer work in order to improve our quality of life. They are an example that authorities and population can work together for the greater good.

At Universidad Agraria La Molina, there are many groups which are dedicated to promote and teach about environment. These groups organize many kinds of activities like conferences, environmental education activities not only for students at the university, but also for primary school and high school students. It is important that students learn about the importance of environment. In fact, many schools encourage their students to participate in activities related to environment like recycling programs or organic farming at their own schools.

It is good to see how many rural communities are involved in environmental protection activities, especially since there are many young people participating. Most of the CDM projects are going to be developed in rural areas so it is really important that local people join the project. It is a great opportunity, especially for the youth, they will learn that there are many ways to do something in order to solve environmental problems.

Also, our participation in the development of CDM project is important, as students, we have the commitment to create new projects in order to solve the problems that we have. We count on our creativity and our knowledge to come up with our own solutions.

VII. CONCLUSIONS

Nowadays, the world faces great changes due to environmental problems, it is important to face them in an organized way. For a developing country as Peru, a key factor is having an organized environmental system and policies. Through the years, we have faced serious environmental problems due to the lack of efficient policies. This situation seems to be changing with the creation of the Ministry of Environment. It is not an overnight change; it will be slow but effective.

In order to achieve this change it is necessary to support the implementation of new technologies that could help us solve the challenge we face. One of these new technologies is the CDM project supported by Kyoto's Protocol. Peru has become an interesting and safe place to invest due to all these encouraging changes.

As students and young people, it is our duty to do something in order to help our countries to face the present and future problems. We have to make a commitment to protect and preserve our most value resource: our planet, our home.

VIII. REFERENCES

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