Towards an approach to educate and communicate about climate change and adaptation in Morocco

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The challenges of climate change education and communication

The study of climate change is now a productive science that is in full expansion. Researchers in this field study local and international realities, create scenarios, forecast impacts, invent concepts to designate their discoveries (vulnerability, risk management, carbon sequestration, and so on), and think about solutions. Many researchers recognize the importance of communicating their results to citizens to help them become aware of the urgency to act, and to enable them to carry out mitigation and adaptation actions. However, this is one of the trickiest or most sensitive educational projects the fields of education and communication have ever faced. The population that must be educated includes people of all ages, with varying levels of scientific literacy, and interacting in multiple social, economic, and political spheres. The educational objectives are equally as ambitious: help citizens understand complex environmental and meteorological concepts, change their daily lifestyles, and adapt to a phenomenon that harbors several yet unpredictable impacts.

Since the beginning of the 21st century, several researchers have interviewed citizens in order to identify their ideas or concepts regarding climate change. Citizens are generally aware of the presence of changes in the climate. They know that this problem could eventually worsen and they are interested in it in a non alarmist fashion. This problem is not part of their everyday priorities, to the contrary of personal difficulties and problems linked to the economy, health, abortion, etc. Since the last decade, people have built conceptions that allow them to understand and to talk about climate change in their own way. However, several conceptions that are widespread throughout the population distance themselves from scientific explanations and are not very efficient in promoting taking charge of the global problem. People's difficulty to perceive small or gradual environmental changes, the fact that consuming behaviors bring people pleasure and recognition from others, people's weak connection to nature, rapid and emotional decisions made on the subject, complexity of the meteorological concepts, people's ideas that climate change impacts will be observed only after their death are other factors that hinder people's motivation to look for and implement mitigation and adaptation actions.

Some solutions

However, environmental education strategies such as future education, a sociocontructivist approach (involving stakeholders like scientists in the study and prevention of climate change related problems), affective and reflective strategies (reconnecting people with their natural surrounding), participatory techniques (community mapping, visual representations of the causes and impacts of a problem…),

visualization of concepts (greenhouse effect, links between electricity consumption and climate change…), scenario planning and success stories have been successfully experimented by researchers. These strategies that enhance motivation to learn and act, could be used to reinforce stakeholders' environmental skills such as problem posing, problem solving, decision making, risk management, analysis of vulnerability, sustainable planning and mathematical and technical techniques.

In research on communication, some results could be turned to account for designing climate change messages for TV, newspapers, posters, websites… These messages should address the targeted group's needs, values and concerns, and should direct people's attention on local problems which could worsen with climate change and have direct impact on their life. The messages should focus on possible solutions, reinforce hope, empowerment, and communicate the idea that people are already involved in mitigation or adaptation actions. Fear as a motivation factor should be used with caution. The messages could enhance people's desire to protect themselves and show easy mitigation or adaptation actions that could be taken.

The Moroccan project and its educational approach

In order to build a successful approach for involving Berkane's and Nador's Moroccan citizens in proposing and implementing adaptations to climate change, a preliminary survey was conducted with diverse social groups in the region. The results indicate that the participants in the survey are aware that climate change is happening in Nador and Berkane and that it already materializes in many local impacts: drought, deterioration of agriculture, human diseases. The participants show preoccupations, mostly centered on the economy and on the possible disasters. They are interested but not alarmed. However, they have some misconceptions on the nature of climate change and its causes. They are not familiar with the concept of adaptations and very few have started to implement adaptation actions.

A capacity building approach was designed to help Nador's and Berkane's citizens propose and implement adaptation strategies. The approach is participatory (using participatory activities: World Café, Appreciative Inquiry, Participatory Action Learning, Visioning, Scenario Planning), unilateral and multilateral (a mix of top down and bottom up approaches) and centered on dialogue. Scientists and stakeholders will work together in the present, describing the actual situation of the environment in their area, choosing a specific problem for which they have concerns, analyzing the problem and discussing the actual consequences on their life. They will work in the past, looking at the behaviors, actions, policies that have worsened the problem. They will work on the future, writing scenarios of what could happen and sharing these scenarios with the community. They finally will build the future deciding what they want in relation with the studied problem and listing possible active or proactive adaptation actions.

Several pedagogical strategies that help stakeholders to better pose the problems and find more efficient solutions will be experimented. Visual representation strategies (3D maps, Mindmapping…) and collaborative sharing activities will help in improving the stakeholders' ways of posing environmental problems while the use of creativity

strategies will result in the proposition of more original adaptations. Facilitators will also train the stakeholders to state their goals, list many alternatives, predict the consequences of each alternative and think about the future of ecosystems during their decision making process. Many community groups will be invited to propose efficient adaptation actions: farmers, tourism organizations, fishermen…