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Lakhdar Boukerrou, Ph.D, lecturer at Florida Atlantic University (United States of America)

“Pollution has no borders!”

A graduate of the Institute of Agricultural Technology in Mostaganemen in 1974, Lakhdar Boukerrou moved to the United States in 1980, when he obtained his Ph.D from the University of Minnesota. Specializing in cereals, his research within its design office created ten years later focused on genetically modified organisms. He was also the creator of the international “Farm to Fork” training program launched in 1992 in the Midwest region. Starting from the principle that agriculture is the backbone of the economy and therefore depends on the three factors air, water and land, "environmental triptych", Lakhdar Boukerrou naturally turned to the environment and has been teaching since 2005, a module there pertaining to Florida Atlantic University where he lives. In this interview,

Freedom: The United States has always been recalcitrant on environmental issues by refusing to ratify conventions and protocols. What is it really on American soil?

Lakhdar Boukerrou: American capitalism is financial capitalism, it is Wall Street, it is profit that prevails. However, this is a political position. Because on the ground, the situation is different.

NGOs are very active in environmental protection. America is indeed the country that generates the most pollution.

However, the American environment is “clean”. However, the country can do better in the field on a global scale. I myself teach a course on global environmental management of air, water and land which focuses on the role of countries, international institutions and industries, especially in capitalist countries. The problem lies in the reconciliation between the approach (like the Kyoto Protocol) and the economic development of the country.

Often, we are faced with the problem of incompatibility. For example, when we say that we must limit greenhouse gas emissions, that implies that we will have to limit economic development. For the developing countries - which have not reached the same level of development - the problem does not arise.

These countries, on the contrary, suffer the pollution of others but for the United States, it is otherwise. It is therefore more a question of opting for the development of new technologies, opting for “carbon trading” (carbon is listed on the stock exchange), etc.

During his electoral campaign and even in his inauguration speech, Barak Obama seemed determined to finally work in favor of the environment but also ready to review the position of the United States of America on the eponymous questions?

Regarding specific measures, I cannot comment. I can tell you, however, that the change has started. There are new certifications in the building sector; last year it was decided to do away with incandescent lamps. But these actions will not generate results immediately. In the United States, we give people time to adapt. For solar energy, for example, in a state like Florida or Arizona, the technology is very expensive. So there is very little solar energy that is used. Solar development programs exist but they are timid. The government must invest in promoting such technologies.

The United States is also concerned with the problem of the availability of water resources. Cross-border rivers with Canada in particular could generate conflicts in the years to come ...

These conflicts even exist between states, as is the case between Georgia and Florida. But they are manageable. The solutions are there, you just need to develop long-term programs. The objective is to make water resources available to citizens. Water plays a major role whether it is surface or underground. In Florida, groundwater is very close to the surface, which accentuates all-round contamination problems. The objective is to capture as much water as possible, for that, when it rains, we do not immediately channel the rainwater to the river. We make sure to keep it as long as possible on the ground to allow it to infiltrate and therefore to recharge the water table. This is a very interesting technique. The water is kept at the level of ditches created for this purpose by the municipalities. This cleans up this water which could be loaded with hydrocarbons, oils and other pollutants. And since the evaporation is insignificant, it remains manageable. On the

other hand, water is channeled through reservoirs and wetlands to clean it before discharging it into rivers, which helps reduce pollution in rivers and lakes.

How is it possible to limit the pollution of groundwater when decantation alone is not enough?

I worked for three years in Florida on the identification of all the potential sources of pollution which are near the wells which are used for human food. We have identified more than 6,400 of them. This project was funded by the Florida Department of the Environment. We have worked in particular at the level of wells in the region on all sources and forms of pollution such as the presence of a gas station, a degreasing (dry cleaning) which uses a lot of chemicals. All the information collected was put on a website accessible to all citizens of each municipality, of each city in Florida, who thus inquire down to one detail on the "water" situation. This allows citizens to have an eye on these possible sources of contamination. The idea is not only to protect this water but also to maintain an adequate level of drinkability for the population. I also had to work for three years on the development of a protocol for determining the maximum level of daily pollution tolerable and authorized in any water reservoir (lake, river ...) without altering the use, even the function of the latter. Pollution is therefore limited thanks to the identification and strict control of sources (of pollution, note). river ...) without altering the use or even the function of the latter. Pollution is therefore limited thanks to the identification and strict control of sources (of pollution, note). river ...) without altering the use or even the function of the latter. Pollution is therefore limited thanks to the identification and strict control of sources (of pollution, note).

At Florida Atlantic University you are teaching a very important course called "Global Environmental Management" on Air, Water and Land, what exactly is it?

When it comes to the environment and pollution, things that happen have no borders.

As you said, the water that comes from Canada goes to the United States, the sand winds from Algeria reached Florida last year, and so on. All these sources know no borders and it is therefore difficult for states to admit any form of interference. In terms of managing these pollution problems, it is necessary to reconcile the sovereignty of a country and the needs of neighboring states and the international community.

however, it is essential to implement the existing conventions (of Kyoto, on desertification) very fluidly to encourage reluctant states to adhere to them and to act on the ground. In this wake, I come back to the course I teach and which therefore consists in giving MBA students an idea of the relationship that exists between these three components of the environment and the role that national and international institutions and the industry sector play or must play in the protection of the environment.

The emphasis is also on the importance and role of international conventions in the protection of the environment.

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