

Invited Editorial

Environmental Forensics: A Scientific Service at the Service of Justice and Society

Economic theory suggests that firms that pollute or damage the environment will invest fewer resources in reducing contamination if they do not expect to be required to pay for damage due to their activities. Individuals or companies, who in their daily practice contaminate the environment, or more simply waste water, energy, or other basic natural resources, will not change their behavior if they do not have to pay for their environmentally negative actions or squandering. Environmental litigations send signals to firms to invest more in environmentally correct practices. Lawsuits also send information to citizens regarding the need for more environmentally sustainable attitudes.

If firms or individuals escape paying environmental compensation, the amount and extent of the damage and waste will increase. On the other hand, if firms and individuals are required to bear the cost of the damage they inflict, they will invest more in environmental issues. Thus, they will develop more protective attitudes toward the environment, reducing contamination and the misuses of basic resources. In a world of advanced environmental forensics, where information travels extremely rapidly and efficiently, the markets themselves might penalize firms and individuals that are known to damage Nature and the environment. Citizens would thus become increasingly sensitive to public environmental prosecutions. In consequence, customers would penalize firms that damage the environment by switching their purchases to products from manufacturers not suspected of unacceptable environmental practices. Also, firms that receive negative signals from the market about their incorrect environmental strategies would have to change their ways in order to gain reacceptance of their products on the market. Thus, environmental forensics potentially becomes a crucial correcting element of the market with respect to environmental behavior.

The final consequence of this environmental flagging would be a decrease in the incidence of environmental damage and an increase in general social and environmental welfare. In other words, public and private environmental law is a basic element in protecting or rehabilitating the environment. Consequently, it is our duty as environmental forensic experts to provide assistance to the court in such a crucial planetary task. If society, via its cit-

izens, commercial firms, and public institutions, is made aware of the existence of a large, efficient, and honest body of experts in environmental forensics; then all social strata will adopt better environmental behavior and the damage will be drastically reduced. In my understanding, it is paramount that environmental forensics provide this service to our modern society.

In my limited experience, I have observed two strategies in the office of public prosecutors in Spain. One places greater emphasis on imprisonment, and the other focuses on financial compensation for the damage inflicted on the environment. I do not know which of these strategies has been more successful in prevention. However, consistent environmental forensics may contribute substantially to the work of public prosecutors. Consequently, environmental specialists who act as expert witnesses in the courts must bear in mind that the primary reason for their presence in lawsuits is to provide assistance to the court that goes beyond their assumed role in aiding the attorneys in the case. The expert witness is called upon to assist the court in understanding and evaluating the environmental damages and risks that are the consequence of the facts being considered in the litigation. Expert witnesses at court are environmental experts who have become public servants of the justice system. This implies that we have to factor out all those data, views, and evaluations that cannot be used by the judges in understanding and evaluating the facts behind environmental litigation. The court is not the place for scientific debates or for scientific confrontation; nor is it the place for demonstrating how much we know about the environment. What the court requires is no more and no less than those scientific elements that have been fully proven and are at the same time transparent. Transparency in environmental forensics at court also entails the following:

1. That what is said may be understood by non-experts.
2. What is reported should be obtained from known, publicly available sources.
3. The reported evaluations are not to be used to cast shadows on or confuse the evidence provided by the different parties.
4. We should not abuse our scientific knowledge and terminology to confuse and confound the courts and the public.

Environmental forensics is not simply analysis (chemical, biological, or geological): it also includes the science and the art of deduction. Thus, by definition it is a complex process. The task of environmental forensics is to discern and decipher the source, fate, and associated risks of contamination, and, in some instances, to estimate the claims for damages to Nature and/or human health. The expert witness willingly testifies at the service of Justice. This is a key point for the progress and advance of environmental forensics in our modern society. By

publicly debating our views on these issues we will endeavor to ameliorate the current environmental situation and gain the acceptance and respect of the society in which we live.

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