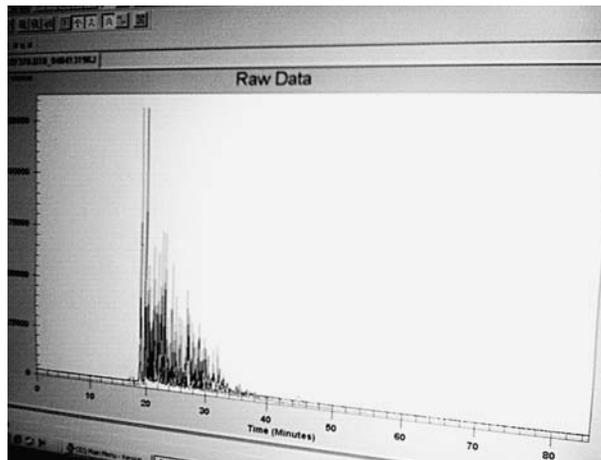


## Standardised, Packaged, Ready for Consumption

RAVI AGARWAL



Standards make everything 'normal'. They can make the 'ambient' air in New Delhi like the air in New York. The World Health Organization can measure it as proof. Irrespective of how either city functions, the attainment of a standard has become a universal goal. Standards are first defined, set, and then achieved, in that order. Actually, the air does become cleaner if the standard is achieved. The woman in the slum, though, is probably still dying of excessive indoor smoke in her shanty kitchen, from a fire made of twigs from the nearby tree. We cannot prescribe everything that she might need to ease her daily tasks. But we can say with certainty that the woman needs clean fuel and a smokeless *chulha* in a well-ventilated kitchen, to prevent exposure to high levels of pollutants. Improving something today needs a standard. As do car engines in order to lower emissions, generators in order to be less noisy, seat belts and air bags in order to provide driver/passenger safety, etc. The impulse to standardise is deeply intertwined with being 'safe', and 'normal'. What gets standardised is another question.

Standards have become central to our environmental imagination. They reside in the Air Act, the Water Act, the Environmental Protection Act, the Prevention of Food Adulteration

Act, the Insecticides Act. International organisations and environmental treaties make them. They are omnipresent, as a core apparatus in our public spaces. Regulating our compliance with them is the crux of our environmental strategies. Without them we would not know what to do.

The river Yamuna in Delhi is filthy. The Central Pollution Control Board (CPCB) has figures to prove it, and a mission to clean it to at least a minimal 'irrigation water quality', using the right technology. It is dirty because the city regurgitates its sewage into the river through 18 drains. No matter that once these drains were rainwater channels. Now they are just foetid streams of effluent. To achieve a desirable standard of water purity, the Japanese have given a massive aid package to ensure that toilets are built for the slum dwellers who live along the river, so that they do not defecate on its banks. The Supreme Court is bearing down on the Environmental Secretary, frowning because the proposed sewage treatment plants have not been constructed as yet. "They will cost hundreds of millions, and the Delhi Development Authority (DDA) does not give land!" they claim. "We direct them to do so immediately!" responds the Supreme Court.

So what if half the city has no sewers. The river must be cleaned and 'restored'. The 'Standard' must be achieved. That is the law.

The river extends beyond its historical channel, into the modern city. Unseen, but connected deeply to urban existence and ecological systems. Of course, it does not know that a number now defines it, and defines how dirty it is. It has watered this terrain much before even the first city was built here: from the time of Tughlaq through the Mughal dynasties, the British colonial administration, and until now. It even flowed through the Red Fort when it was diverted through a canal from the nearby city of Karnal by the Emperor Shahjahan. It then streamed through the romantic Chandni Chowk next to the Red Fort, and the emperor's royal *darbar*. Delhi was located in a hollow between the river and the Ridge Forest that is fifteen million years old. During the monsoon, rivulets of rainwater gushed down the hilly ridge into large lakes. It collected in cusps, like the recently levelled Najafgarh *jheel*. Canals (now drains) were dug to coax the water back into the ever-flowing river. Along the way it seeped into the soil and recharged the groundwater. Birds flew in and roosted on the banks. Animals drank even while being hunted as royal 'game'. Goods were ferried along the river, as were Delhi's citizens and the emperor in his ceremonial flotilla. Today, vegetables are grown on the riverbanks and on sections of the riverbed. Raggickers and priests, along with fishermen, labourers, sand dredgers and slum folk, also live there, servicing the city in one way or another. The river was (and unknown to the city, still is) central to Delhi's ecology and its life.

But for many, the Yamuna represents merely an unmet water standard; every other aspect of it is unimportant or even a hindrance. The river must be cleaned, and to achieve this, it will be partitioned. The cost of cleaning must be recovered by selling off its parts. Like amputating perfectly healthy arms and legs to save the body. Giving it a new transfusion of blood, but dismembering it alongside. Everyone's mission is defined. So the DDA is to reduce it to a 500 m canal and commercialise the priceless real estate land of the riverbed 'wasted' on either bank. The CPCB is to clean the river. The Municipality is to make walkways along its sides (like on the Thames!) and purge stubborn defecators from

its shores. The Public Works Department (PWD) is to ensure that the river does not hinder transportation and that people drive across it on modern bridges. The Delhi Jal Board is to ensure that drinking water would come from the Tehri Dam, so that the city need not be dependent on the Yamuna. The river will no longer be needed and can thus be showcased, as a 'cleaned' river. Its future is predicted and fixed.

But many local schoolchildren today do not even know where it is, or think of it as an organic phenomenon. Technology morphs the city and the river into each other. The Standard is the means to this end.

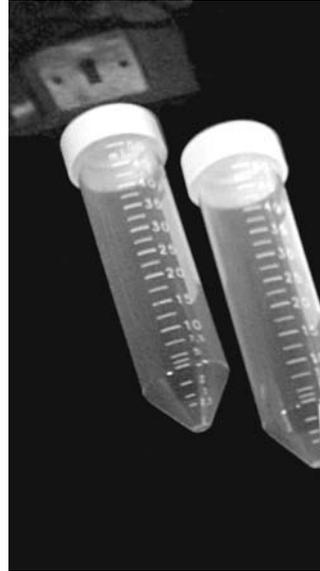
The struggle lies between two imaginations: the Standard on one side, ecology on the other. One represents technology, and the other an interwoven connection. The two seem irreconcilable, both implying different relationships and futures. Moving from one to the other seems impossible, and jettisoning one for the other is full of pitfalls. Unfortunately, even acknowledging the conflicted existence of these two paradigms is a problematic issue. Standards, and what they signify, are the dominant frame.

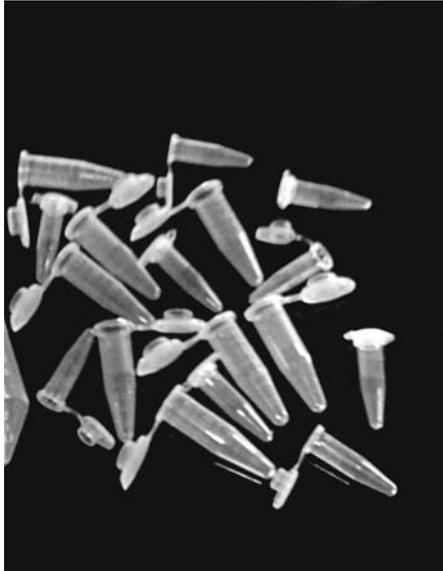
What are environmental standards? They are the interface between science and law. To exist, they involve bureaucracy, aim at efficiency, and need specialisation. An institutional, hegemonically structured governmental power to regulate the environment, in which the local person has little agency. Unmindful of everyday life, and its diverse and intimate interactions and exchanges with the environment. Or of its ability to play a role in keeping it unpolluted.

In theory, standards protect human health from environmental pollutants. But in practice, they struggle continuously with a far more complex reality.

Generally speaking, there are two types of environmental standards: Source and Ambient. Source standards deal with the type and extent of pollutants released from any one particular source. They are focused on specific technologies. Hence cars will have different source standards from thermal power plants, or waste incinerators. Emissions will vary depending on the technology employed and the fuel used. These emissions can be all types of discharges into air, water, and land. Ambient Standards, on the other hand, calibrate the load of a pollutant in these mediums. For instance, the amount of nitrogen oxide, sulphur dioxide or particulate matter in the air around a traffic intersection would constitute an ambient load, and must meet the ambient standard. Placed all around the city, devices to measure air pollution measure ambient air, or the air we breathe. Obviously, ambient and source standards are related, since source loads add up to ambient loads. But the relationships are complex, requiring mathematical modelling, and scientific expertise.

How are such standards set? Risk assessment is the answer. Here, scientific logic becomes murky and contested. The scientists of 'industry' argue against the scientists of





'environment'. For the former, stricter standards imply greater financial investment, while for the latter, stricter standards imply better public health and conservation efforts. It is a battle of interests, with science as the deciding weapon. What is the acceptable risk to human health if the air has 0.1 nanograms of dioxin (a deadly toxin) per meter cube? Such a question should be asked when setting a standard. That question itself should make evident the difficulties involved in such assessment. What is acceptable risk? Should the standard be set so that the risk is of one person in a thousand contracting cancer, or should that figure be one person in one million? If it is the former, many more variants of the toxin, in varying amounts, could be allowed emission from a

source. In addition, how does one know which level will cause cancer? One popular method is to calculate the dose-response. What is the dose required to kill 50% of a population exposed to a certain pollutant? Guinea pigs and hamsters are pumped with chemicals in laboratory tests. These results are then multiplied by a factor of safety to determine acceptable levels for human beings.

The question has become more complex as technology has become more sensitive, allowing the measurement of very low levels of emissions. Low dose and 'no safe dose' health effects can be seen and tracked. There is no threshold for safe exposure. Tobacco is a risk to health regardless of how many cigarettes are smoked. The effects manifest differently in each smoker, and may appear much later. This further complicates matters, since a dose earlier accepted as 'safe' is now unacceptable. The perception and articulation of what constitutes risk is undergoing change. Standards become stricter through the application of new parameters and more sensitive measurements.

Scientific institutions all over the world invest in this kind of research. Activists pounce on research 'findings', and then force environmental bureaucracies to recommend 'stricter standards'. These new findings are what international establishments such as the WHO and the International Agency of Research of Cancer (IARC) debate, in order to set new norms of what is 'acceptable'. This is what Industry fights. All this in the hope and belief that we are making an attempt to ensure that our lives become safer and healthier. Except that no one really knows for sure how safe we really are. For example, 'cleaner' may not mean 'safer'. Compressed Natural Gas (CNG) as a fuel produces less soot particles than petrol did, but more cancer-causing benzene. So now the benzene level has to be measured and the problem addressed. Who knows which pollutant will be next?

To this way of thinking, what is not measured does not exist. We have not systematically measured benzene in the air, or ground-level ozone, or cadmium or, till recently, even lead, though these have pervaded our environment for a long time. Today we have put these on our list. But then a new opponent emerges. Nano particles! These are less than 0.1 microns. The cleaner the engine, the more these are produced. So, is cleaner actually less clean? It seems so! We have barely started measuring the big ones, 10, 5 or 2.5 microns, and now we have to attend to the miniscule members of the family. More machines, more measurements, more parliamentary committees, more environmental activists, literally, climbing walls. Who knows what will come next? Like a cannibalistic monster, technology's hunger is never sated: it devours its contexts and yet continually creates its own obsolescence.

Standards are also set through political mechanisms. So the standard for dioxin in food has reduced from 4 to 0.75 ppt (parts per trillion) in the course of 20 years. The WHO still propagates 4 ppt while the European Commission has lowered it to 0.75 ppt. One institution is more affected by its political constituency than the other. This is not science. Often, those who set standards have little relationship to the problem they are called upon to fix. This is not an accident. This is the realm of 'experts'.

The terrain of standards is one of science. Scientists constitute the bulk of the 'expert' committees; many have acquired this position because of their professional reputations, built through publications in peer-reviewed journals. The scientific establishment has great legitimacy with those involved in the regulation of standards.

Standards are 'official'. They are made by official peer-review expert committees, which look 'upwards' into the world of science and institutions. They do not turn their gaze 'downwards'. Community 'expertise' is not their realm. Knowledge is 'defined'. Every form of knowledge other than the 'scientific' is relegated to a lower level of expertise, including social science too. The 'scientific' mode and the quantitative world of statistics have little regard for how communities live. People may have 'ground experience', but not 'expertise'. 'Cause and effect' is demanded as proof. If DDT has not been proven to kill human beings, or known to be directly carcinogenic, it cannot be dangerous. No matter if this compound has wiped out entire species of birds. After all, science cannot operate without proof!

The idea of the 'precautionary principle' is highly contested ground. It recommends that if there is reason to believe that something will cause harm, then it should be avoided. 'Avoiding' the problem is, however, not the normal way to proceed, while 'managing' the problem is. The 'managing' approach is to make pesticide use on food 'safer', through 'acceptable' application practices and limits. Precaution would imply moving away from chemicals and into more organic ways of growing food. Two different paradigms, with different sets of practices, assumptions and understandings.



Once the standard is set, it is non-negotiable, and cannot be imagined in any other way. The number has to be upheld. Regulatory bureaucracies ensure this, even as environmentalists monitor them, and the legal regimes watch. This is now a battle, fought in boardrooms, in courtrooms and on the streets.

Standards are thus about both technology and law. They are created by both of these factors, and they also drive both. They need even more technology to determine if they are being complied with, and to correct what is going wrong. The recognition that all internal combustion engines create pollutants, on a scale and of types that natural fires do not, led to the development of vehicular norms. To satisfy that, technology had to be pushed to measure and then to amend what was being developed. So we have BAT – Best Available Technology. Better than what is prevalent. Push the limit – but only to another limit. Do not push in the direction of creating parallel possibilities.

Even the promised alternate *technological* possibilities remain unfulfilled. If ‘cleaner’ cars become very expensive, will people not take to bicycles? The suggestion that standards will drive the costs of technology so high that people will be forced to explore viable alternatives remains hypothetical. Costs are never allowed to rise so high so as to destroy what is standardised. Those who have a stake in the matter ensure that renewable energy is still a chimera, unable to compete in costs with conventional energy. The supposedly higher costs of making superior quality fossil fuels, such as low sulphur diesel, have not driven conventional energy modes out of the market. The public awareness of pesticide residue in foods has not led to the support of organic agriculture.

The measurements of pollutants themselves may not represent real life situations. How do these chemicals or particles influence health when they act together, in mixtures or brews? If PAHs (polyaromatic hydrocarbons, a class of toxic chemicals) and heavy metals are present together in the environment, how will our body react? In actuality, pollutants do not take turns to attack; they do so simultaneously. It is a gang war. They have to be fought with all four limbs, in the manner of a martial artist. Yet after years of ‘scientific’ assessment we are still in the laboratory, uncertain, finding out.



And what about non-human health, the state of animals, fish, plants, and all the myriad forms of life, down to the microscopic level which we are not even aware of? Those who set environmental standards are indifferent to creatural needs. At best, if plants wither in a certain type of air pollution, they become an ‘indicator species’, indicating to us that the ecology is polluted, without us having to verify this ‘scientifically’. Or if fish die in a toxic spill, they function as evidence of toxicity. In most cases, such data is ignored. The population of the *Sarus* crane has declined dramatically because the crops they feed on are laced with pesticide. This fact has not provoked the revision of any standard. Often we fail to see that all life is linked in a complex web. The food we eat is contaminated from air pollution and the use of polluted water for irrigation. However, we insist on relocating polluting urban factories to distant areas,

amongst paddy, wheat and vegetable fields. Toxic effluents and dumped waste spread over the plants. Yet established standards do not account for this. What the standards are meant to control, returns, accumulated in our food. The products are toxic, but the Standard has been faithfully complied with.

Standards can create barriers and exclusions from new markets, especially for those who cannot participate in the arena of modern technology and of new commerce. Standards change the way things are done. Resisting standards is like saying “No!” to an entire system that has conceptualised a particular way of achieving its profit-oriented goals. Small organic farmers do not wish to follow the regime of international standards set by global food corporations. It is impossible, materially and financially, including the cost of certification. But consumers consider foods organic only if they are labelled as such. No standards – no markets!

This conflict becomes sharper in international trade. Developing countries fight global standards viciously, but for reasons other than the urgently needed re-imagining of ecology. For these nations, standards mean the creation and imposition of a non-tariff trade barrier. The developed world says, “We will not trade with you, since you do not follow our standards of limited chemical usage during production. If the tea has too much pesticide, we will not buy it from you”. Such an approach puts every farmer who cannot comply with the ‘German’ standard out of the export business. To produce at German standards would need German technology, German air, German water, and a German certifying agency. No problem for corporate farmers, but a death knell for smaller ones. However, the strident ‘inequity rhetoric’ utilised by developed countries is not about protecting ecology in itself, but about protecting the right to be economically more powerful. What is at stake is ‘trade’. The state uses the ‘small farmer’ argument in international for a to fight WTO-types of laws, while in practice, small farmers are not protected by national policy, and are used as fodder for making the case.

In other cases, such differentials lead to international dumping of technological waste. Scrap metal, toxic shipments, old computers, incinerators, all find their way across international borders to be dismantled and cheaply reused. They are welcomed as ‘recyclables’. It is good business for some, even as it can prove to be a fatal agent for workers who actually break the material down. Standards protect. And kill.

Standards have also become a means of opting out from taking real action. We have created standards for almost everything, even the amount of silica dust that a stone crusher is allowed to generate in a distant quarry. Yet the worker is still exposed; this is an ‘implementation’ problem, a ‘governance issue...a common malaise in our system’. The worker still dies of silicosis. Standards set. Job done.

Even with established standards, few check compliance, as it is expensive to do so. The US spends 2% of its GDP on it. India does not even come close. The industry loves this argument: “We told you so; standards and regulations are a bad idea, they are just not worth it; throw them out”. This rhetoric is not for purposes of doing things differently; it is so that industry can do whatever it wants.

Imagining the river to be more than its water quality is to refute statistics (without negating them) and acknowledge the existential. Do standards reduce that possibility and

become the dominant operative principle to the exclusion of all else? Do they encapsulate ecology and package it neatly, to be consumed? The environment is framed today through laws, regulations and the standard. In popular understanding, little exists beyond that. There is little receptivity to the fact of a forest dweller's relationship with nature, a devotee's link to the river, or a schoolchild's possibility of understanding that water has a source other than the municipal tap.

Standards are essential for the project of achieving modernity through technology. They legitimise the violence that is inflicted upon existing ways of being. The environment has become an entity mainly mediated through technological 'advances'. Technology needs standards. It cannot perpetuate itself without them. There is somewhere to go, to 'progress' to 'develop'; and standards set the goals. They set the rules of engagement. If you do not fit in, you are out. Delegitimised. Backward. Resisting 'scientific' standards is not an option.

Humans are now put outside 'nature'. Nature needs to be preserved, conserved, controlled and used, not necessarily in that order, but outside the 'human', and not as part of it. There is a silent but eloquent separation between the two. Is the river dirty because we have stopped connecting to it, or because we have not installed proper sewage treatment plants? The word 'developed' works well in a society where the technical interface with nature is all that is left, since other linkages have long since faded away. Water comes from the municipal tap, and food from the supermarket. In India, it is a dramatically different context. Issues of environment cannot be separated from issues of poverty and conflicts about resource use, mediated by various types of social power. Institutions are more concerned about development than democracy, and there are conflicting interests, which deeply affect people's daily lives.

Escape from the struggle seems impossible. There is no exit, except perhaps by reclaiming our ecological connections, uncovering another way of being, reworking the ecology of the self in relation to our environment. This would also mean altering the 'development' paradigm; it would involve downscaling the 'god' of technology, and its associated, standard-driven religion.