Critical to focus on green jobs, entrepreneurship while teaching Environmental Studies

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Environment

Necessary that teachers go beyond textbook to tackle challenges students will face in the world

By Pratik Phadkule

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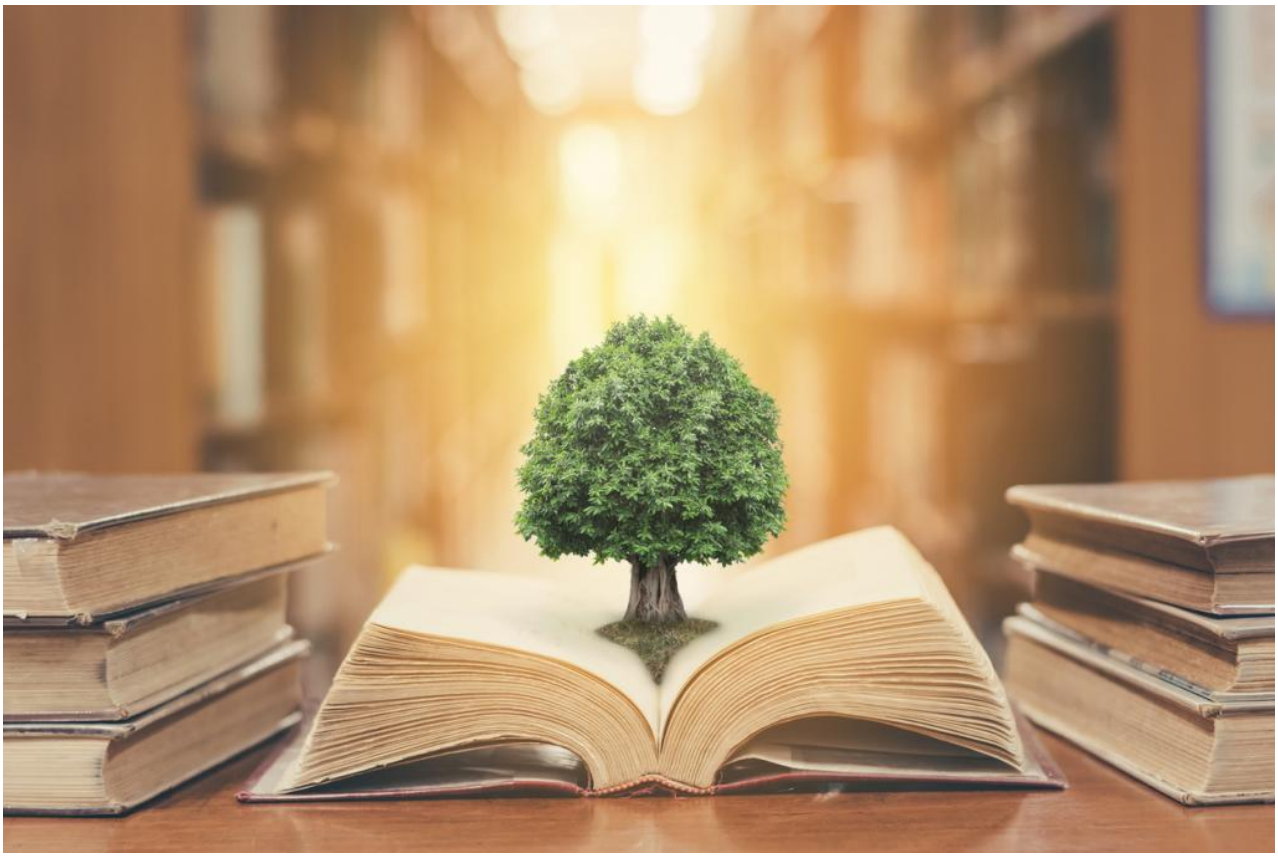

Photo: iStock

Focusing on 'green' job opportunities and climate entrepreneurship is critical while educating young people about environmental issues. It is important to make them aware of the imminent existential danger that we, as humanity, are facing.

Environmental education and education for sustainable development are some ways to educate school, high school, and college students in different countries worldwide.

The statutory body that regulates higher education in India — the University Grants Commission (UGC) — has taken an important step in this direction by introducing a compulsory Environmental Studies course after the Supreme Court of India's directions.

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The UGC designed a curriculum and a textbook was also prepared to teach the subject at the undergraduate level at all universities in India. This was, indeed, a very promising and progressive step in the right direction, although it faced difficulties in its implementation.

The textbook of environmental studies covers topics such as natural resources, ecosystems, biodiversity, pollution, population impact, environmental health, partially environmental law, sustainable development and ethics.

All these topics are important and form the basis of the multidisciplinary Environmental Studies course. But it is required that the teachers go beyond the textbook and include some additional relevant topics to tackle the challenges that students will face in the world.

Also, modifying the teaching methods of the course will be beneficial. It is also pertinent because many students have already studied these concepts in their high school curriculum and would, therefore, see this as a repetition.

These are some modifications needed in Environmental Studies course to make it more interesting and relevant.

Discussing the 'green job' opportunities

In June 2022, Prime Minister Narendra Modi commented that the Indian government is generating a large number of green job opportunities to implement decisions taken in the interest of the environment. However, these green job opportunities are rarely discussed.

There will be three million jobs in the renewable energy sector in the country, according to estimations of United Nations agency International Labor Organization. Not just India, there is going to be high demand for people trained in green skills.

Green jobs are not necessarily all technical jobs, but are available in a variety of roles and sectors.

Some of these roles are: Sustainability manager, wind turbine technician, solar consultant, ecologist and environmental health and safety specialist. There are less specialised roles that range from compliance manager to facilities manager and technical sales representative.

Read more: The greening of young minds

Students studying for undergraduate degrees are still in the process of deciding on a career path for them. Suppose teachers could give them an idea of opportunities in the green jobs sector. In that case, they could take an informed decision about their career

paths and make meaningful contributions.

Green and climate entrepreneurship

With green jobs, 'green and climate entrepreneurship' is another subject that has not been given due importance. Green entrepreneurship includes "green innovators and entrepreneurs to bring their best new thinking to market; new ideas, new business models and new technologies."

It is rightly suggested that "if entrepreneurs can transform industries for the worse of the environment, they can and should be the ones to fight climate change.

Young climate entrepreneurs are playing an essential role in India. Public policy think tank NITI Aayog also established the Climate Entrepreneurship Hub (CEH) to create an enabling environment for climate entrepreneurship and promote green innovation.

There needs to be a focus on climate entrepreneurship while teaching environmental studies at the undergraduate level so that students know the opportunities available to them and get inspiration from existing young entrepreneurs.

Inviting young environment and climate leaders to interact with students

All over the world and in India, it has been observed that young people have taken leadership to fight climate change and protect the environment. These young people are all less than 30 years old and have dedicated substantial time in the prime of their life to climate change and environmental issues.

It will be useful for undergraduate students of different streams to learn about their motivations, experiences and learnings to relate to their experiences and be motivated to take similar actions to protect the environment and mitigate climate change.

Use of case study method and field visits

Although an environmental studies course has been taught at the school level, generally, it has been taught as one of the seven or eight subjects to pass the examination. The objective of courses like environmental studies should be to make students aware of real-world situations and help them participate in finding a solution.

But most of the time, students are fed definitions, descriptions, facts, and statistics which they can memorise and reproduce in the time-bound examination.

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When students get this course in their undergraduate degree, they have the same agenda of somehow passing the examination by writing memorised answers and getting done with it. If we want to change this situation, the teaching and evaluation methods need to be changed.

Rather than only lecturing them based on the textbook chapters, it will be useful to discuss case studies on specific issues, preferably case studies from India, so they could easily relate to them. Also, it will be useful to take students for field visits to places such as waste segregation centres, biodiversity parks etc.

While teaching courses such as Environmental Studies at the undergraduate level, one must remember the objective of introducing such a compulsory course. The vision statement in the textbook accepts that study of the environment has not received adequate attention in the academic programmes in India and this needs to be corrected.

The textbook categorically states a study of the environment and does not mention 'Environmental Science' as both are different. Teaching Environmental Studies does not necessarily require a degree in 'Environmental Science', but it definitely needs adequate knowledge of environmental issues, the ability to think and reflect and initiative and drive to fulfil the objective of this course.

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Environment

This Pune stone-crusher unit shows how to do it properly

Mangrul village unit runs on best practices despite being surrounded by polluting ones

By Divyansh Upadhyay

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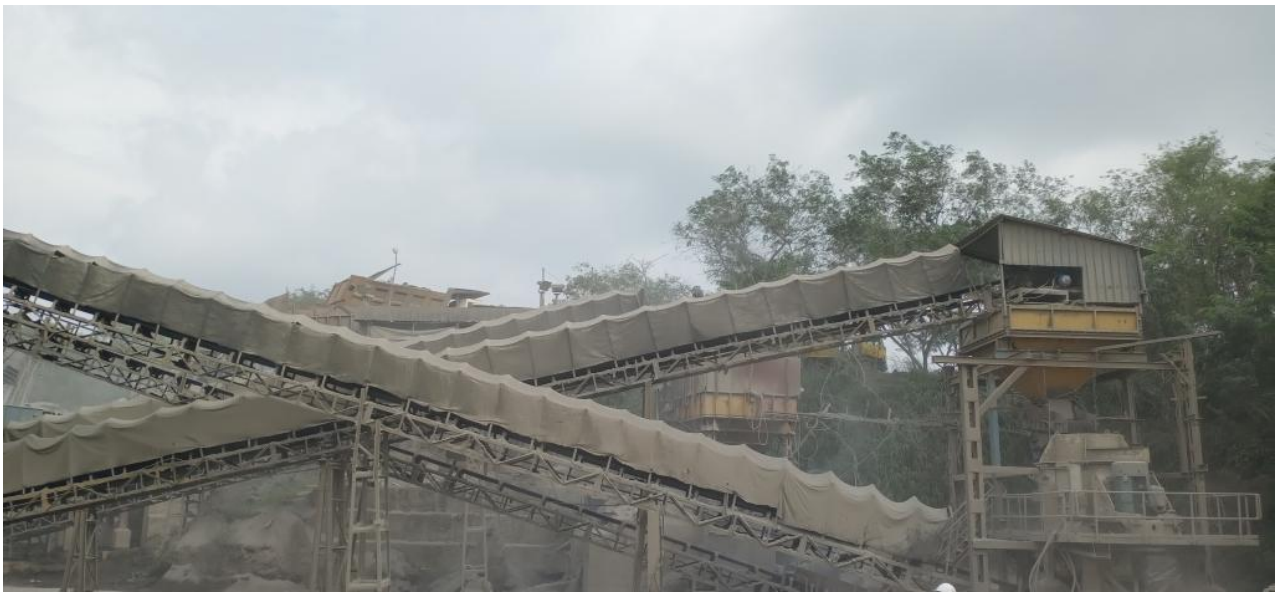

Covered conveyor belts at the stone-crusher unit. Photo: Divyansh Upadhyay

The stone-crushing industry receives a lot of negative attention for generating a huge amount of fugitive emissions that degrade air quality and the environment. However, one unit in Pune hopes to change this by providing an exemplary example of following good practices.

Illegal stone mining in protected areas has often been in the spotlight, with several cases filed with the National Green Tribunal and the Supreme Court.

Most stone crushers do not follow the state board guidelines for operation. They also do not take adequate measures of installing air pollution control devices and water sprinkling and dust extraction systems, which contribute substantially to air pollution.

Read more: Mahoba mess continues: NGT seeks report on stone mining

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Flouting of environmental norms by the stone-crusher units is regularly reported in the news too, with several cases are filed in the NGT. Pune has several classic examples of units flouting norms, especially in the Wagholi area, Lonikand, Bavadi village in Haveli taluka and Gevari taluka.

In 2016, the NGT had given directions to Maharashtra Pollution Control Board (MPCB) and Central Pollution Control Board in Uttamrao Vithalrao Bhondwe Vs state of Maharashtra and others case.

“Carry out a joint monitoring of 56 stone-crusher units in taluka Havali, district Pune and submit their report of joint inspection monitoring and cumulative impact assessment,” the NGT bench had directed.

The joint committee was also asked to “carry out ambient air quality monitoring in the nearby areas where the stone crusher units are situated and also to identify possible sources of air pollution in those localities.”

Many stone-crusher units did not adhere to the state guidelines, the study report found. MPCB had to issue a blanket ban on working stone crushers and cut down the power supply.

However, one stone-crusher unit in village Mangrul in Malwal taluka of Pune district was a guiding light for all stone crushers. The unit strictly adhered to MPCB guidelines for operating crushers and works on the best operating practices.

The cherry on the cake is that the unit ran on solar energy as well as on electricity. During closure and breakdown time, the unit returned the electricity to the Maharashtra State Electricity Board.

The unit has two crushers with a capacity of 200 tonnes per hour (tph) each and another with a capacity of 300 tph. It has a ready-mix concrete (RMC) plant of 120 tph in addition to this.

Currently, the RMC is for in-house purposes because they are making a storage plant to store final products in a closed space.

Adherence to MPCB norms

Despite such a huge capacity, the unit adheres to the MPCB guidelines and also takes some other good steps to save energy and reduce air pollution and fugitive emissions.

Read more: Villagers protest relocation of stone-crushers

The sitting criteria of the unit were strictly adhered to as per the guidelines. The unit was 1 kilometre away from the national highway and 500 metres away from the state highway, schools, hospitals and human habitation.

Steps taken by the unit for adhering to MPCB guidelines

Parameters	Steps taken
Conveyor belts	Covered with GI/MS sheets
Water sprinklers	Available at unloading, handling, and loading section
Screen classifiers	Fully covered with GI/MS sheets
Wetting of the road	On regular basis with sprinklers
Approach road	Metalled roads
Display Board	Available at the entrance of the unit
Boundary wall	All sides covered with 10 feet wall
Plantation	The thick foliage of the plants along the periphery

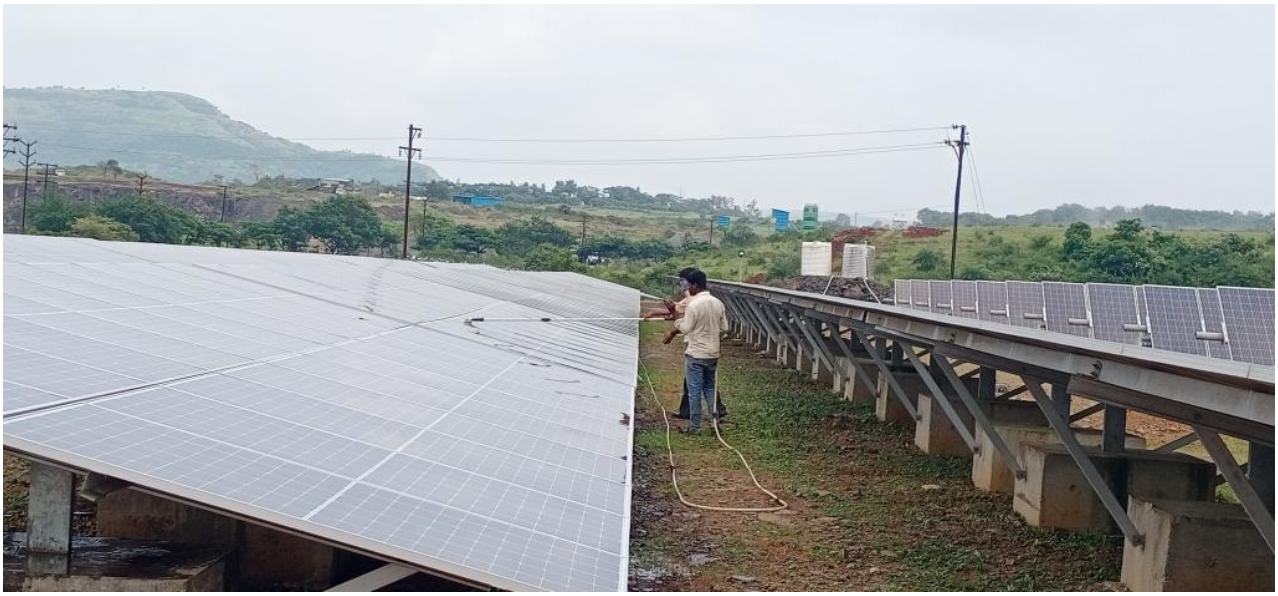
Housekeeping	Regularly on a daily basis
Operating time	7 am to 6 pm

Energy saving

Installation of two solar plants, each of 1 megawatt capacity, helps the unit conserve energy. One plant was installed in 2018 and the other in 2021. The solar plants are constructed over the stone quarry, which has been previously used by the unit.

The cost of installing the solar plant was around Rs 6 crore and the plant generates around 1.5 million units every year.

Maintenance of solar panels in the area surrounded by the crusher units and quarries is a challenging task, as huge amounts of dust got accumulated on the solar panels and hampered energy generation. However, unit combats this with regular washing and wiping.



Washing of solar panels. Photo: Divyansh Upadhyay

Some of the steps taken by the unit to follow best practices are:

- Cleaning of solar panels
- Covered conveyor belts
- Regular wetting of roads
- Display board outside the industry
- Thick foliage of plants along unit's periphery
- Sprinklers along the roadside

The above-mentioned case study should be highlighted and propagated to wider audiences. Global good operating practices should be documented as well.

Read more: Quarrying suspended in Navi Mumbai's Parsik Hill as authorities review mining lease

Such holistic documents will help the sector, maximize explicit knowledge and will enable other industries to benefit from exchanging experiences with one another. The documentation should help develop and implement solutions adaptable to similar problems in different situations and contexts.

Exposure visits should be conducted for regulators and industry professionals, accompanied by training programmes, to showcase the ongoing good practices prevailing in different industries.

By adapting to good practices, the stone-crusher industry can enhance their feasibility and profitability and can set an exemplary example in front of other industries.

Environment

The Supreme Court is sending wrong signals on post facto environmental clearances

Recently, the apex court has overlooked its own judgments and the underlying logic behind why there is a mechanism for environmental impact assessments and clearances

By Mahesh Menon

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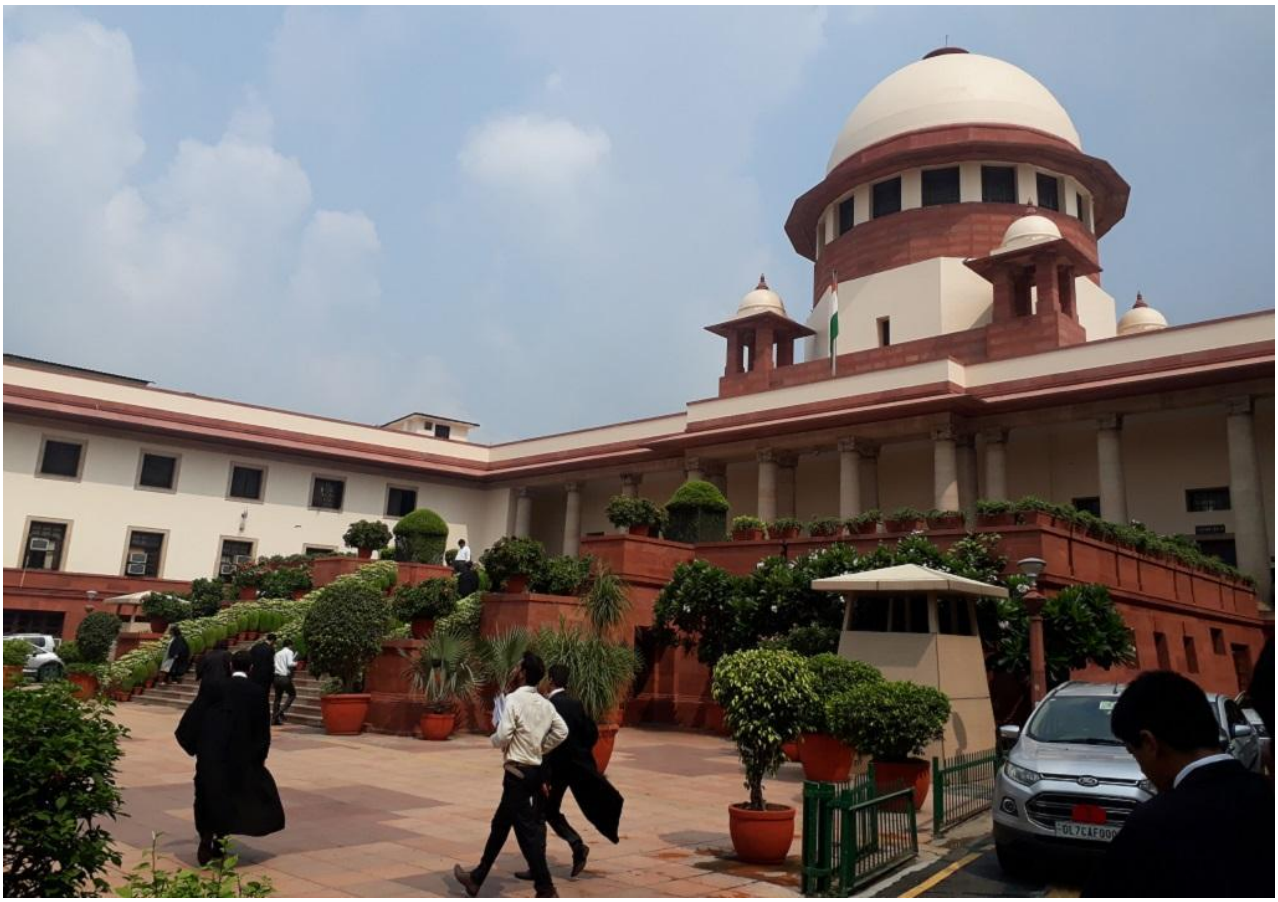

The Supreme Court again went on to signal last week that complying with the requirements of environmental law was optional. In *D Swamy vs Karnataka State Pollution Control Board ("D Swamy")*, decided last week, the court concluded that *ex post facto* environmental clearances (EC) were acceptable.

The court reached this conclusion in response to a claim that a bio-medical treatment facility was set up and run without an EC.

In 2017, a bench consisting of Justices Madan Lokur and Deepak Gutpa, after reviewing the underlying purpose of an EC, observed in *Common Cause vs Union of India:*

> "The concept of an *ex post facto* or a retrospective EC is completely alien to environmental jurisprudence" because it can "be detrimental to the environment and could lead to irreparable degradation of the environment" (paragraph 125).

However, time and again, the court has decided to ignore this underlying logic to condone the lack of prior consent. Let me present brief critical review of the judgments on this issue.

We have more than one instance where the court was willing to overlook lack of compliance with the law and grant remedies to polluting industries, one way or the other.

Electrotherm (India) Limited v Patel Vipulkumar Ramjibhai, decided in 2016, was the case of a steel plant undertaking expansion without conducting a public hearing and a clearance being given to it despite this.

The National Green Tribunal (NGT) decided that this resulted in the clearance becoming invalid and the expansion being reversed. But the Supreme Court, on appeal, decided that since the unit in question was in operation for some time now:

> Hence, considering the peculiar facts of the case, "the interest of justice would be sub-served if that part of the decision exempting public consultation / public hearing is set aside and the matter is relegated back to the concerned Authorities to effectuate public consultation / public hearing".

A few years later, in *Alembic Pharmaceuticals Ltd v Rohit Prajapati* (2020), the Court dealt with a situation where a number of industrial units that were set up functional without clearances were ordered to be closed down by the NGT, even though they obtained these clearances later.

The court went on to cite the judgment in Common Cause to reiterate that: "The concept of an *ex post facto* EC is in derogation of the fundamental principles of environmental jurisprudence…".

It was observed that the purpose of an EC was to identify the likely impact of an activity on the environment with a view to implement adequate protective measures and in the absence of EC, these measures would not exist (paragraph 23).

However, after noting that these entities had subsequently been granted a clearance, the court concluded that since they were functioning for a long period of time and they employed a large number of workers:

> "This Court must take a balanced approach which holds the industries to account for having operated without environmental clearances in the past without ordering a closure of operations" and that they must be permitted to function by paying a penalty in terms of the principle that "polluter pays".

The court characterised this as an exceptional measure, peculiar to the facts of that case.

In both these cases, the court took the basic stance that an *ex post facto* clearance would not comply with the requirements of environmental law but made an exception of the situation at hand to "meet the ends of justice". However, this was to change soon.

Electrosteel Steels Limited v Union Of India, decided in 2021, involved a mine that functioned without adequate clearances and the NGT had ordered its closure.

According to the court:

> "The question (was) whether an establishment contributing to the economy of the country and providing livelihood to hundreds of people should be closed down for the technical irregularity of shifting its site without prior environmental clearance" without affording it an opportunity to rectify this issue.

The court went on to answer this question in the negative, also holding that it was within the powers of the government to allow a *post-facto* environmental clearance, as the law did not expressly prohibit it.

Across these cases, what one witnesses is a form of reluctance to order closure of industries even though they had started to function without adequate clearances. The reluctance appears to be driven by how it affects the livelihood of workers, or how time has passed or how they contribute to the economy.

While these are indeed relevant concerns, can we regard that these are adequate reasons to overlook non-compliance with the law? Time and again the Supreme Court has reiterated that sustainable development is a part of the right to life and it forms one of the components of the right to a clean and healthy environment.

The least that sustainable development requires is to evaluate the potential environmental impacts of a proposed activity and take measures to prevent or minimise them.

A *post-facto* approval can never achieve this, as there are no harms visualised and no remedies taken in advance. To resort to "polluter pays" to rectify this only makes it pollute and pay.

The judgments in *Electrosteel* and *D Swamy* seems to lay down a troubling general proposition that *post-facto* environmental clearances are permissible. This is contrary to the earlier judgment of the court in both *Common Cause* and *Alembic*, which in some detail explained why this would be contrary to logic and the foundations of environmental law.

Unfortunately, the court overlooked these judgments and the underlying logic behind why there is a mechanism for environmental impact assessments and clearances and what they seek to achieve.

Perhaps more damaging is the *signal* that the court sends to the public at large.

The message that it is alright to ignore the requirement for environmental clearances, if it can be rationalised later with the number of persons who may stand to lose their jobs or the significance of the activity to the economy. In such cases, it appears that the principle can be pollute and pay.

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