You know, even MIT, till 1956, had a Department of Sanitation Engineering. And in 1956 they thought that, well, Massachusetts has had good sewers for long, we don’t need any more research in it. So, I think, the material problems of that particular society have to be posed, “Why does my well get dry?” or “Why does my bus come late?” I think more than the subject matter of science, which may be universal, the methods of science are very cultural.

In Mumbai University, we have been working on a case study. We go to villages and we study—for a village of say, 1000 hectares, how much rice is grown? How much comes from PDS (Public Distribution System)? How much is sold? So, the mass balance of rice is calculated. This has found many interested students because they suddenly understand what is the relationship between yield and poverty or export and health.

Or we go and ask, “Which is the best chulha in the village?” And that's astounded a lot of students; :Is chulha a scientific object?”, they ask. And I say, “How do you call a chulha good or bad?” Often, girls respond fast. They say, “Well, it should be faster,” or "It should have less smoke,” or “It should consume less wood…”

So, I think this sort of probing, documenting, doing fieldwork, establishing causation—these are really important parts of science. The subject matter maybe atomic energy, or “Why is the bus late?” or measuring fever, and so on.

Do our scientific institutes also need to reflect on their place within society?

Most definitely. For example, if IITs get analysed, how many higher caste students and how many SC/STs students are there really? And to add to that, what are IITs doing about caste realities?

You are also talking about making social sciences and physical science talk to each other?

Absolutely. You know, this dichotomy of social science and physical science is a mutual, I think fear, or I don’t know what. So engineers will say you need so many kilos of food per year, or if I weigh your child in front of you, and the child is only six kilos, or ten kilos, and the child is 10 years of age, there is a problem. But that cannot be the only way we understand child malnourishment, right?

In most other nations such division is not there. And I really think that social scientists should start looking at us engineers, and we also should start looking at social scientists with much more interest, much more critically.

The Prohibition of Employment as Manual Scavengers Act came long ago, and along with it came a list of 42 [pieces of] equipment, which every municipality should have; a mask, a jetting machine, pumps and so on. Now, even IIT campuses don’t have that equipment.

Is there any lab that has a ‘test mask’ even? Our men are going into tanks and dying because of [lethal] fumes. A ‘test mask’ is an investment. You need a face-like structure and an artificial lung exposed to various environments to test its efficacy. And this mask needs to be standard equipment in every state.

But these are things we never asked IITs to do, right? We never asked, “What problems bother society? What do people need?”

So, I think social scientists need to look at physical scientists very carefully. And on the other hand, physical scientists also need to look at social scientists very carefully.