Special Program in Urban and Regional Studies

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Thank you. I want to first thank most of the class, and for inviting me. I'm sorry I missed first two days of the conference, because I've been traveling. I looked at the program, and I'm looking forward to reading some of the talks, and watching them, because there's a lot to learn from this.

I want to tell you why I agreed to participate in this conference on education. Because the work that Vijay mentioned on site, it's not directly on education, but you will see the implications for that project on education, which is a central activity of our development, and international development, which I work on. So before I describe the project site, I just want to tell you a little bit about how this project came about, and the history of ideas about projects, because the field of international development is not new. It started after the second World War, and it's almost 60 years of work that has gone into it.

And just very quickly, without going into too much detail, just let me sketch out some few points that might be of interest to you. When nations started developing – basically nations that have been colonized before – the goal was to turn these countries into industrialized countries. They were basically subsistence agriculture economies, and our goal was to industrialize – rapid industrialization and true urbanization. Urbanization was going to be one of the major mechanisms of that goal.

And so, that was the economic goal. Politically, many of these countries have come out of colonial rule. They were often tribal societies. And so creation of political democracies – Western style political democracies – was also a major part of the goal. And we thought we could do with this through implementations of large projects – infrastructure projects – because those are necessary for creating the industrial base of the country. People are going to be employed from the agricultural sector where they were in a subsistence economy. They would come to the city, work in large industrial production – the working class, formation of the working class. And then the country is going to be able to produce things, export things, get foreign exchange invested in large infrastructure again, and move on.

And education was a big part of it at that time, but, particularly not only primary education, but tertiary education like the ideas of which you, Vijay, mentioned. And I also went to school in India. It's a benefit of that kind of an approach. What is interesting for me in the development field is the turnaround that happened in the 1970s in reaction

to this old model. And there was a lot of disillusionment with the old model. And the disillusionment came on two fronts.

Economically, many of these countries by 1970s where beginning to decline in standard GNP rate of growth, including Brazil, et cetera. And unemployment was on the rise. Underemployment was on the rise. People who were living in the cities and the periphery of cities, making a living in informal settlements and informal activities, with very low productivity – terrible way of life.

And politically, also by this time, many of these developing countries have turned into authoritative regimes. Latin America had all regimes except two that have become authoritarian. So people were beginning to question the paradigm of development that we had followed for the last 20, 30 years, and saying, what do we have to do differently? Who is to be blamed for this difference in outcome?

During this time – maybe some of you are born, others probably still not – there emerged a movement on "appropriate technology" by people like E.F. Shumacher. This appropriate technology school essentially argued that the problem of development was that it was too much top-driven. It was industrialization without thinking about people. So a lot of books started coming out, about development as if people mattered, et cetera.

And in general, large scale infrastructure projects, which were supposed to create employment, et cetera, they were discredited, and there was a huge amount of interest on taking the foreign aid and money straight to the poor, where the poor could do things on their own. They could build small things – houses, small businesses that they were doing before, but maybe do a little better. And to help them with this technology which they were using before to make it a little better, make it more productive, less expensive, maybe less dangerous.

So a huge amount of interest came to the term appropriate technology, which emerged at that time. In our story – of course, we are ahead of that in some ways now 20 or 30 years ahead of that time – around the 1980s, this appropriate technology and its emphasis on bottom-up development, low-scale development, small projects, livelihood projects – not large projects, not large technology, not big technology – this emphasis all of a sudden died. And it was very surprising, because things have not changed that much.

But all of a sudden in international development conversation, we are back to export. Export is the major reason for development. And because many of these countries by this time were in very serious debt crisis. And then when you are in debt crisis, you would need foreign exchange to pay.

So when you need foreign exchange, export becomes your central element of work. I'm talking about the early '80s, so all of a sudden, again we move to export, big firms. And a lot of people have argued this was the time of changing political climate to new

liberalism, which essentially emphasized privatization, deregulation, and again, the third was export promotion.

So what we struggled with when we applied to USAID was a very interesting paradox. I had seen this in the field. I had been in the field for a long time. We noticed that even though this intermediate technology, et cetera, had gone down for a while in the 1980s, all of a sudden again in the 1990s, you see this emergence of large number of this small technologies in the market. The market is flooded with these technologies. And a lot of people, like Prahalad who came out with a book called The Bottom of the Pyramid, were saying that poorer people are willing to pay for these technologies if it helps them in their day-to-day lives.

Many governments realized that following this export promotion model had not really created much of a development below. It had generated some foreign exchange, but the country, which have so many poor people in such terrible conditions, that their lives hadn't changed that much at all, that something had to be done at that bottom level for employment creation. And generally, the conversation shifted from GNP, GDP, to quality of life. Quality of life, and essentially, what Amartya Sen, our colleague at Harvard, got the Noble Prize for: enhancing human capabilities. And how did that become the goal. And that's why I see education as directly a part of that stream of conversation of enhancing human capability as the central goal of development.

So when USAID just started, completely revamping their aid structure. By 2008 or 2009, they had this new fellow who is now the head of USAID who is a doctor. And they said, well, we need to rethink it completely, because all the aid we have given in the past hasn't really added up to much, and we need to rethink it. And this medical doctor, who wants to create, who wants to bring technology back in development, and again, particularly these kind of technologies for the poor.

So they asked for proposals. There were 500 proposals from 49 countries, and many, many of the American states, universities. And they gave seven grants, which is the Higher Education Solution Network of $140 million grant, of which MIT go two. And SITE the one Vijay mentioned is one. And the other one that my colleague Amy Smith is heading is called IDIN, International Development Initiative Network.

And I won't go into the details of the IDIN, but let me tell you what we are doing inside. Basically, when I wrote the proposal, I was taken by this paradox that the market had no shortage of technologies. It was flooded with technologies. And the question was development agencies did not know which technology to pick when they were going to fund projects, or when they were going to come help government.

When you asked them, how do these technologies work? They said, we don't know. There's a huge pressure for turnover. We need some kind of a framework to evaluate technologies. So we wrote a proposal saying, why don't you give us funding to MIT,

because we have been in this for a long time, and we can come back to you with a methodology? And our methodology, which we are just starting, we have divided into three layers.

The first layer of the technology, we're calling it suitability of the technology. So let's say you have a water filter that you designed. And this is supposed to clear the water 40% or 70%. Does it do that? Or does it not do that? We are going to have lab tests, directly in the lab. Bring that thing back, tear it apart, take it apart, and look at it, how it is built, and the claims that it's making – is it true? And we're going to publish that evaluation like a consumer report, but for the poor. It will be used by development agencies around the world. So this will be comparative evaluation. We might take eight water filters, and rank them in different categories, or eight cooking stoves. I mean, you name it, the market is flooded, as I said.

The second level we are looking at is an issue that came up earlier on scalability. Many of these products actually do well – reasonably well – but then they don't get expanded. And nobody exactly knows why. If it's so useful for the poor, if it is reasonably priced, why aren't the poor buying it more? And so there are issues of markets, of supply chains that get disrupted in these countries. So we want to look at want it will take to scale these products.

And the third will be sustainability, which I know is kind of a buzz word. Now everybody has to use sustainability as a term to get any funding. But I think in our case, we used it by saying, we want to look at the impact of this technology, particularly in terms of its impact on the environment: where are the resources coming from, how it is being used, and what does it impact?

So we are doing this three-way evaluation. And we are working on this evaluation, which we are starting, we are working this evaluation process with our partner organizations in the field. For example, we have Partners in Health. As you know, Partners in Health is very known. One of their members became the head of the World Bank. Oxfam, UNICEF, Mercy Crops, and a few others – two or three other organizations, which we identified – because they have done this technology for at least last 15 years. They have tried this on the ground. And we want to work with them for them to give us, identify a set of technologies that has the most potential to make an impact, because they have worked on it. So we want to bring them here to MIT, work with them, bring the product here, offer courses, seminars, the consumer report, et cetera.

What I want to end with is to tell you that these organizations that we are working with is not a fixed list. We are looking for really interesting partners, people who are doing things on the ground. And I know many of the participants in the LINC Conference, you've done work there.

Now I realize your work is more focused on education, which I still think is a centerpiece of anything we do about how people use technologies. There's no way they can use technologies without really understanding what its use is for, and that requires some education. So if you have worked on the field, and you have worked with an organization that is grappling with this problem, please do contact us. I'll give you my card. I didn't bring my presentation, because actually I came back very late yesterday, and I was totally disorganized. But if you need to reach me, you have my email here at MIT. But I do again want to say that we are beginning the project, and we are looking forward to working with people who are struggling with these ideas on the ground.

And one last comment. A part of the project goal is to create two hubs around the world, other than MIT, which is the center of this particular work. We want to create hubs where this kind of work on evaluations of technologies will go on in the field, not in labs at MIT. We want to create these hubs either Africa – particularly in Africa, there's a huge amount of need – maybe Asia, where there's a bigger infrastructure. So again, if you know of institutions that might be interested in serving as a hub for us, which has some infrastructure, want to work with us, do let us know.

Last thing on IDIN, because Amy's not here. She's actually in the field. But IDIN, the International Development Network, actually has a very high overlap with Dick's work on the project of integration and in BLOSSOMS. How so?

Amy's argument is that around the world, if you look at the field, many, many poor people and organizations have created new technologies. They did not have the legitimacy like you have, with the technology comes out of the lab at MIT, with the stamp of MIT. But they have improvised things. They are doing things to make their lives better, either in food, basically in the housing, in health – many, many small things.

And her project valorizes that, works with those groups of people there. She has a big conference in August for a month in Africa where people come share their ideas. And essentially, she's trying to create a network – global network through which these ideas can be a more formalized, can be packaged better, maybe the costs can be lowered. And I think that, as these ideas emerge, we should be able to evaluate how they work. So that's the part of the project. Thank you.