



INNOVATIONS FOR SUCCESSFUL SOCIETIES

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Interviewee: Carlos Muñoz

Interviewer: Blair Cameron

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CAMERON: This is Blair Cameron with Innovation for Successful Societies. I'm in Mexico City with Carlos Muñoz and the date is the 24th of March 2015. Carlos, thank you so much for joining me.

MUÑOZ: *Thank you, Blair.*

CAMERON: First of all, can I hear a bit about your background before you were at INE (National Institute of Ecology) and started working on PES (Payment for Environmental Services)?

MUÑOZ: *Yes. I studied economics at ITAM (Mexican Autonomous Institute of Technology), one of the private research universities here in Mexico City. There I was involved in some of the first environmentalist groups at the university. One of our topics was certainly deforestation. Others corresponded to the different interests of our group members: poverty, human rights, etc. These had to do a lot with what came later.*

CAMERON: OK, and when did you first hear about the Payment for Environmental Services policy?

MUÑOZ: *It was in our intermediate microeconomic classes, when we were first hearing about Ronald Coase's theorem and [Indecipherable] externalities the way of making [Indecipherable] taxes and [Indecipherable] subsidies whenever there were negative or positive externalities. Then it was just in theory. As we became activists at the university and saw what was causing deforestation in Mexico, reality was showing us problems of property rights and problems of unpaid externalities. Very poor communities were being asked to protect their forests for free while they were in extreme poverty. We environmentalists in cities, worried about conservation for biodiversity, were going to reap those benefits just because of our regulatory takings of their obligation to protect nature.*

That sparked the idea that it shouldn't be the burden of the communities owning the land and the forest, it should be the burden of the ones who have the ability to think in future generations. So that was the early link. It was basically economic theory combined with Mexican reality and talking with different people that were kind enough to give us their time and share their houses and meals and work shoulder to shoulder and protect and push on environmental conservation issues.

CAMERON: What was the time frame of this?

MUÑOZ: *This is the late '90s.*

CAMERON: Late '90s?

MUÑOZ: *This is at the time of probably Mexico's highest deforestation rates: 1% for timbered forest, 2% for tropical forest. So it is in the midst of the huge economic crisis of '94 plus the microeconomic crisis of the '80s and the environmental crises of the '80s and '90s. It was a combination of environmental and economic crises. That was the time.*

CAMERON: When did you start working at INE?

MUÑOZ: *After my Ph.D. So it has to do with my master's degree. After I graduated from college, me and some of my mates decided to take a backpacking trip once we*

finished school, before doing our honors dissertations. We decided that we were going to visit all of our fellow environmentalist group members all across Central and South America. So we embarked on a road trip that lasted for nine months, hitchhiking and taking buses and walking from Mexico to Argentina.

CAMERON: What was—during that time what was the most sort of—?

MUÑOZ: *During that time it was the exact same thing we had seen in Mexico: it was a pattern repeating itself, with different types of property rights. In Brazil, it was forests being colonized by people; in some other places it was the government owning the forest. In all of them it was the same story: the tradeoff between poverty and forest conservation. After I received the Chevening British Council scholarship to do my Masters in Britain – [interruption]*

CAMERON: When you did this road trip, were there any especially telling experiences that informed things later on?

MUÑOZ: *This is more like a personal interview, more than my usual analytical interviews. Let me recall... there were many. Two of them come to mind. One of them is in the Brazilian Mato Grosso. We were staying with a bishop who was working with the communities, Pedro Casaldàliga. He was kind enough to host us for a couple of weeks while some of my friends working in human rights and indigenous rights were networking with the organizations there. The rest of our group was just hanging around helping in whatever ways possible.*

There I was on one of the most beautiful river islands I've seen, just hiking around, and suddenly we saw boats carrying cattle into the island because there was green pasture to graze on. It was a natural environment and the ranchers were illegally putting their cattle into boats and sending it there. The economic force behind deforestation was very clear, that it was the moneymaking cattle versus the not-moneymaking forest that was pushing that deforestation. In Central America, I saw extreme poverty, communities using the forest unsustainably because of the immediate pressure.

So those were two of the clearest examples. Also, in Costa Rica we volunteered as environmental guards and we saw that tourism there was actually generating income. That was the economic propping of the national park structure. So in a sense it was using the eyes formed by economic training to identify the economic forces behind deforestation would be extremely different cases.

CAMERON: At that stage, were you aware of the PES program in Costa Rica?

MUÑOZ: *No, there was no PES program in Costa Rica at that time.*

CAMERON: This is pre-'97?

MUÑOZ: *Yes. Then came my Master's program in which I studied under David Pearce and Anil Markandya. They had written something called Blueprint for a Green Economy, a very influential book written in Europe about the possibility of using economic forces for environmental protection. I did my dissertation precisely on that, on poverty and deforestation, and when I came back to Mexico I went into government research. It was actually the first, the creation of the environmental ministry in Mexico.*

At the time of the creation of the ministry, a group of senior economists suggested creating an area of environmental economics and I was recruited. I was in my mid 20s and I was the first Director for Economics of the Environment. Of course I was very proud and with very little experience, because the entire area was new: people knew about the biological and natural science aspects but not the economic ones. So it was a great responsibility.

CAMERON: What year was this?

MUÑOZ: *This was the mid '90s. So at that time I started seeing the possibility of government intervention not just through theoretical analysis or empirical analysis, but actually being very close to decision-making. That was very exciting. It opened my eyes to things to come because government in Mexico, like many other governments in middle-income countries, had corruption scandals, had a very ineffective and overreaching government. It was actually a time of cutting back the role of the state, allowing the private sector to do more. Mexico was going out of the crisis using what could be labeled the Washington consensus.*

In a very interesting twist, community empowerment was growing. Our team was very involved in this. The idea was the private sector in forestry is the communities, because the communities are the ones that own the land and should be given more rights over the land. The state should be supportive and not preempting of their actions.

That was a very important coincidence. Communities were actually empowered as economic units to manage the forest, to manage it as a community forestry enterprise. It was difficult because many of them had very little formal education, two or three years, and they were being asked to be in charge of a firm that could be making tens of thousands of dollars per year in profits with technologies that they knew how to grow corn but they didn't know how to sell the culture, high-tech culture.

So it was at time that I was working on issues of economics of pollution, economics of water, and making comments on the economics of biodiversity.

A couple of years after this great experience learning the possibilities and limitations of the federal government in Mexico, I had this idea of applying to a Ph.D. program and I was fortunate enough to be accepted to the University of California at Berkeley where there were two teachers working on issues that were very attractive to me, which eventually became my dissertation. They were Alain de Janvry and Elisabeth Sadoulet, working on the empowering of rights to ejidos and on economics of development.

I was also taking classes with David Silverman, Michael Hanemann and many others working on externalities and ways of internalizing externalities through economic instruments. So they were economic instrument design classes to be applied to environment and management of natural resources.

The third piece was, I did my minor at the public policy program at the government school in Berkeley for public policy. There I was studying with Eugene Bardach and Lee Friedman who were working on the public policy, economic, political economy and the public policy of generating instruments that worked and were effective and were monitoring and valuable and accountable. So it was a very good combination of economics of development, property rights, economics of the environment, and public policy.

So over that time I was invited to Mexico for talks or seminars, etc. with several of my colleagues from previous work. My professors at the time usually were kind enough to match my vacations with some seminars and I was involved, keeping in touch. My friend from the agency was involved too. One of the directors, an economist, one of the consultants that eventually became the commissioner for the North—once the Free Trade Agreement was signed, he was one of the first commissioners of the environmental corporation between Mexico, the US and Canada: Victor Lichtinger. So I met with Victor. Victor was a Stanford graduate so we had our differences. [chuckling]

I met with him once or twice that year to just chat, catch up and see what we were up to. At that time I was telling him, Victor, you know we should really launch a Mexico program to pay for the positive externalities of forest. We already moved towards empowerment of property rights. That is going well. More training, more human capital is needed. But if those firms do not receive a payment for their excellent rating, it will be only up to timber to provide conservation of forest. There are many forests that are not profitable for commercial purposes and there are many communities that are too small or need more time or more money to do it. If their business crashes, if the forest crashes, we cannot allow that.

I was there telling him this story as my dissertation progressed over time and suddenly he gives me a phone and says Carlos, you know it might be possible to make your program—a new government, a new administration was coming in, elections had already happened in Mexico, I was finishing my dissertation. He said, “Carlos, your dissertation might become a true program in Mexico.” I said, “Yes, how come? What is the miracle happening? How are we going to do that?” I was thinking more in activism and selling the idea.

He said, “No, no, I have been chosen as the new Minister of the Environment.” I went in, I reformatted INE [Mexican National Institute of Ecology] as a government think tank and my first task was to develop the program that had been the idea from before.

CAMERON: Just take a step back though. INE was reformatted to become a think tank?

MUÑOZ: Yes.

CAMERON: How did that process happen?

MUÑOZ: *It was political serendipity. INE was in charge of regulation but it had evolved as many governments, local and national, in Latin America did not develop full-fledged Ministry of the Environment from the [Indecipherable] and probably the same thing happened in Europe, in certain European states. First developed as an institute, sort of a smaller, less powerful, more technical version of an agency, an institute of ecology that is the—everybody was thinking ecology is the science so let’s make an institute of that. So INE was created as that but it was a regulatory agency. When the time came for a Ministry of the Environment, INE remained an institution just because of political maneuvering, political battles, jostling, positioning, the two things remained. So for Lichtinger his task was to close down INE and make all the regulatory tasks belong to the ministry. It was something he was going to do.*

He knew he was a man that understood the role of science in decision making, so it was a good combination. What was the best way to close down regulatory abilities but still maintain the institute and then transform it into a research institute? So it was a smooth transition—for some people not so smooth—but in terms of political crisis, it was very small, a very gradual transition. He chose scientists with a very high reputation for their work as leaders in the different fields. So he had the backing of the most renowned members of the Mexican academia and good information, good backing, for his ministry to move forward. That INE was the one that received me as Director for Economic Research.

It was an uphill battle to integrate economics into environmental decision-making but it was fun, it was making an interdisciplinary, a transdisciplinary dialog with different areas. There were funny anecdotes all around, things that we didn't understand, they didn't understand, but everybody had a very good attitude. The first and second directors of INE were conscious of that and very smart political men and it just flowed on. That INE is the one that allowed me to generate the proposal for the PES and sell it to a policy entrepreneur.

CAMERON: So you started it as the Director of Economics at INE?

MUÑOZ: Yes.

CAMERON: In what year?

MUÑOZ: 2001.

CAMERON: This is one year after (Vicente) Fox takes office?

MUÑOZ: *Actually it was the year he did.*

CAMERON: So Victor Lichtinger already knew at this stage—it was already in his head about implementing a PES program?

MUÑOZ: *He had heard for at least three straight years that it was a very important thing to do. So he was very supportive. He is an economist. So he said, "Okay, I understand your point, so let's just find a public policy—write public policy." At the beginning he said, "Please design the program, we'll make a pilot." It was designed to be funded with funds from the ministry but in the first budget cut all the effort was lost. So 2002 it never happened because of budget cuts. He said, "No, no, this lacks resilience." He literally took my notes from the government school about policy implementation, read them and said, this lacks resilience. Anything out there in the budget will be an easy target for cuts because it is so big and it is just a pigouvian subsidy, any interest groups will be able to take their money for their own productive activities and environmentalists will favor regulation. So the best way to do it was to create an earmarked tax.*

I said, "Victor, this is not going to fly. Let's make an earmark tax on water." Sorry – technically it's an earmarked environmental fee within the national fees law.

CAMERON: When did you start calling your policy idea Payment for Environmental Services?

MUÑOZ: *From day one.*

CAMERON: From day one?

- MUÑOZ: *Actually from day minus twenty.*
- CAMERON: Where did you learn that term? Was it from the Costa Rican experience or was it something you already had talked about before?
- MUÑOZ: *This is my discussion with Stefano Pagiola. He believes that the Costa Rican program influenced us but my argument is that I really read about the Costa Rican experience a year after I was already on the move with the analysis. It was different in the sense that it was based on carbon and not on water. So the environmental service link was carbon capture and it was a weak link. So I would say that we were moving in parallel with the Costa Rican one. Certainly it was useful for me with the political lobby for the Mexican PES to have the Costa Ricans having made the first move.*
- CAMERON: Right.
- MUÑOZ: *Because I was telling them this has already been tried and Costa Rica is doing it. So it helped me win some arguments with some people. In reality it was more an idea coming from the environmental economics literature in Britain and in the US.*
- CAMERON: OK.
- MUÑOZ: *It was literally from the textbook to the empirical analysis*
- CAMERON: So when you said you only read about Costa Rica after you had done your first analysis, what do you mean?
- MUÑOZ: *When did the Costa Rican program start?*
- CAMERON: 1997, they passed the law in 1996.
- MUÑOZ: *So by that time it was 1992, when I was working in my Master's program with Anil Markandya and David Pearce, so it was pre-Costa Rica. Doing the Ph.D. I was very much involved with the econometrics of the analysis so not paying very much attention to what Costa Rica was doing. The people in Costa Rica set the ecotourism example, not the other economic instruments, so in a sense what we were doing in the late '90s and already in the year 2000 was oblivious to the Costa Rican PES.*
- CAMERON: Let's talk about water.
- MUÑOZ: Okay.
- CAMERON: Why did you decide that the earmark tax on water was the best option?
- MUÑOZ: *Because first I had been working on water '92, '93, actually in the '93, '94 period in the precursor to the environmental ministry. So I knew the economics of water in Mexico pretty well. I knew that we were underpricing water. I knew that putting a tax on water would create two things. The first one was that it was a valuable thing to do to set a pricing of water users for water saving. Water would not be as cheap and people would waste it less. People and firms—because this is the federal way, water in municipalities—they would think twice about wasting something that had a higher price than a lower price. It was just basic economics.*

So I knew that the possibility and the need for increasing the price of water in Mexico was there. The second one, and it is something that I talk about in the paper, is that Mexicans from all kinds of life have link projects, previous experience, between forests and water. While teaching people about climate change in the late '90s and early 2000's was complicated—the whole idea of greenhouse gases was out there, in the US many people being skeptics—it was a far-away thing, more of a New Age global deal. For Mexicans, first, water had a very long link, very deeply ingrained in the culture, in different cultures about the need to protect the forests for the water.

That was the key to our success actually, because when we went to talk about the testimonies, the positions, showing our research to people in Congress, they would say, "Oh yes, water, [Indecipherable], obviously you were trying to link them, I agree, I support your initiative." If we had come saying oh it is the global environment, immediately, "Well, it is rich countries that have to contribute. They have been polluting." Or "Is there really a link? I have heard that it is not a direct link between emissions and climate change or human activities and emissions," or even "Trees capture CO2."

So instead of relying on the new thing, the new consciousness about the climate-forest link, we were working on something that already was a given. People knew that there was something. Naturally scientists were skeptical. They were saying yes there is a link but there is this paper and in these circumstances yes and in these other not. So the big skeptics were the scientists. It was fun because usually our strong arm was the science and the difficult-to-convince were the politicians and the people in general, opinion makers and public opinion. In this case it was the opposite.

Working with them, the scientists had to be convinced about how best to make the link between forests and water. We had seminars. We invited geohydrologists and hydrogeologists and the best of the best came into Mexico and talked with different people there was part for role, we had to bring the science to bear on public decision making. It also had to do with our strategy: by hearing them, people were even more convinced that something needed to be done.

I knew that reforming the National Fees Law was something that was politically feasible, which was what was taught in public policy school at Berkeley. You have to look for a set of things that are politically feasible and use them to move a heavier policy. So it was politically feasible to tax water—not easy, it was going to be difficult—but feasible, and making the link was also feasible. Taxes you cannot earmark but fees you can.

My argument was there, that if water fees were already earmarked for infrastructure, we should devote a share of them to the natural infrastructure that made the water. It is not the pipe that brings water, it is the entire ecosystem. It is a healthy watershed that brings water. I have been using this argument and it has worked in several places: when I was invited to Nairobi or to Kazakhstan or to Tanzania to talk about the Mexican PES, even to China. The argument resounded over there. It was a sounding board for several people. Several groups had more or less the same idea as Mexico: that healthy watersheds need forests to produce the water that people need.

So using that link and negotiations in Mexico, probably with very good political energy coming from the Mexican side, from the Fox administration, and with luck,

we—my favorite anecdote is that we had the idea, then we went to the party of the President and they said “Of course, it is the President’s initiative, we all support it.” Then we went to the left and they said, “We like your arguments, all the rich people in the cities paying through their water for the poor owners of the forest in the watershed, so we’ll support your policy.” We went to the Green Party and they said, “Oh, anything environmental sounds well to us so we’ll support you.” When we went to the party in the center they said, “We don’t carry favor for or against. If you’re going to raise taxes then it’s going to be the party of the President that gets hit, so we’ll support it.”

So we got support from all the different parties in passing the law. It was an exciting time.

CAMERON: Were there any people against it?

MUÑOZ: *Yes, people in the forestry area. Actually the head of the National Forest Commission was a very solid politician from the party of the President. He had chosen to be there in the agency because he didn’t want to have one of the large ministries. He wanted to sort of allow the President to choose technical people to head the ministries and he as a strong politician said, “I’ll take charge of this commission, I come from a family of foresters, I think I can do the job to support the President.” So he went in. That was also a key to success.*

Alberto Cardenas, then commissioner—years later he became the Minister of Environment and then a senator—he was a policy entrepreneur. He was looking for good innovative ideas to make a mark. That was also key to our success because the more technical foresters were actually very reluctant even to allow the state to be reduced and allow the communities to take over, because they were saying, “They don’t have the technical skills that we have. They will waste their forests’ wealth in beer.” So they were very resistant even with the revolution of rights that had happened in the mid ‘90s.

CAMERON: So how did you bring them on board?

MUÑOZ: *I didn’t. The main opposition came from them and from some people in the finance ministry that wanted to earmark for infrastructure and not for forests. The foresters were very reluctant but the head of the agency, the new politician, was able to break with tradition and push forward. They grew convinced. Once the program was working, once the people were happy with it and making good stuff with it, then they said okay. One of the reasons, it is a political kind of reason, is that they get political brownie points if the timber activity grows because they are the main economic group dealing with it. Their success was measured by cubic feet of timber being sold, processed, harvested in a sustainable way. But they didn’t get anything for noncommercial forests. So we had to force them through the instrument to take into account those environmentally valuable but economically not profitable forests.*

CAMERON: What about in Congress? Was there anyone in Congress speaking up against it?

MUÑOZ: *We were doing fine. Actually it was a new Congress, with many people elected from the first transition at the presidential level. So we had many new Congress people coming in and many of them were open. It was not going to be a battle of previous money, it was actually new money. They were increasing the water fee so there was no one to take the money away from them. It was basically the agencies who were against us. A guy in the finance ministry was opposed to us,*

very heavily. He was an economist. We asked him, haven't you read about pigouvian taxes and subsidies? He said, "Yes I have, but my job is to give money to the municipalities." So we said, it is not that you're disagreeing in intellectual terms, it's just a political position. So we decided it's fair to crush you. We went in and—.

CAMERON: [laughing]

MUÑOZ: *He could have won but we had all the support of these young politicians coming in and it was a great time.*

CAMERON: What were you informed by other than your academic experience?

MUÑOZ: *I would say by the communities themselves. Thanks to being in contact with the communities we learned that that was their problem: they were being asked to do the impossible, to sacrifice their income just to protect forests for the cities. So I would say that it was half-and-half. Half, it was economic theory, just saying prices are not right, there is a missing market here. Also, we have to reinforce the rights of the communities, so that the ones who benefit are the ones who pay.*

You hear this phrase, actually it is a David Pearce phrase, OECD (Organisation for Economic Co-operation and Development) actually picked it up: the polluter pays principle. So this idea was the counterpart, which is that conservation gets paid for. So we decided it was half theory, half just being open to what communities and their organizations were actually saying out loud and sometimes with protests, sometimes with implicit ones, deforesting when no one was seeing, rebellious acts and also just by their claims. They were saying, "We cannot do what you're asking. We need to find food."

Environmentalists warned that natural science people were always using this utopia – "no, no, no, we'll generate economic activity that is compatible with conservation and you will earn money and you will have this" – but it was just castles in the air because it was not real money. You cannot have ecotourism in every single hector of forest. They were deluded by the Costa Rican experience which is small and controlled by the state in this case. They were not trained in economics, it is not their fault. They were technical and very well-intentioned people trying to find solutions and sell them but it was not a public policy solution that was our argument.

The economic [Indecipherable] had some of the necessary pieces, and some of them were compatible with them. Actually you are going to meet in the Lacandon jungle someone, a group, which was led by the previous environmental ministry from [Indecipherable]. At the beginning, not her, she is a very open scientist and good politician, but her entourage was very critical of us. They were saying, you neo-liberal conservative economists are trying to use the market for everything and we are against the market.

We were saying, no, no, the market must be helping us. So they were against the program.

CAMERON: Who was that? Sorry.

MUÑOZ: *The entourage of the previous minister, let's say the Green left.*

CAMERON: So this is the environmentalists within PRI (Partido Revolucionario Institucional/Institutional Revolutionary Party)?

MUÑOZ: *Yes, not within PRI but brought into coalition with PRI. Political scientists would say that PRI's strategy was to expand and incorporate all different degrees. So in a sense the environmentalists were another group that were incorporated into it.*

CAMERON: OK.

MUÑOZ: *But in principle they were against the market. So it was fun to see. They were very much into businesses but many of them were failed experiments. We had the evidence and they didn't see it. We even showed them, tell me what percentage of ecotourism projects actually survive the first year. They were saying, "But we need to do it better." I said, "No, no, it's not working. The economics are wrong."*

The good thing about this is that now, whenever me and my colleagues work or go to a conference in which some of those people are still out there and active, and they praise the Payment for Environmental Services, then we only look at them and say, "Yes!" In a sense, they praise it because they give the money. Our argument is actually not what they thought which is conservative, it is actually liberal in the European sense that you empower people. You let the market make the right signals and allow the people to make the decisions.

The people might be a consumer, might be a private firm, might be a community firm, but in a sense it is empowering the decision making. The problem you'll see in the Lacandon jungle is actually built with the PES money taking the free decision—that is our argument, freedom of speech, freedom of rights and freedom of the market—in a sense using that to generate sustainable business. It is a risk they'll make it grow, fail, whatever, but they'll have the possibilities, the resources to do so. So it is a good confluence actually. I went there in my last vacation with the kids and I was very happy to see a confluence of ideas. Even if they were against the market, they did talk with the communities so they were sensible about what they needed in the sense that the left and the liberals coincided in power and people.

CAMERON: Who is vocal about this? Who are the people that were—?

MUÑOZ: *I remember Sergio Madrid, one of the, let's say the less technical political people, but many others. Actually I found their criticism very good because it always keeps you on your toes. You learn how to build walls not from your friends but from your enemies. In that sense it was their criticism that kept our analysis sharp and arguments strong because we already had to find evidence and be open if they had a point. Yes, I would say it that way.*

Actually what began to happen, even from the first years we were seeing micromanaging, the idea of the state controlling so many things. You want communities to do whatever you think is good. Just because you studied in a university four years, it doesn't mean that communities should do your technical project. They have their own entrepreneurs, they know their limitations, their capacities, their markets. Allow them to choose. Even for the second and third years, people receiving PES were not drinking up their money. They were actually investing in education. Some of them were investing in migration, some of them were investing in their community forestry firms – which is some of the literature you have seen over time.

My argument is that it worked because it is a transfer that can be used in different ways. If there is more democratic governance of the ejido then it is better used; if there is less than it is not so well used. But that is the task of democratic empowerment of the collective owners of forests.

CAMERON: Was that ever a concern of yours when setting up the program—what if the other institutions aren't in place, like democratic governments?

MUÑOZ: *No, because I knew—after being involved in several of the networks of the community, working in rural development—that they were strong, they were smart, they were going to use things very well. In the same way they used our skills as volunteers, they would be using the money from the PES to the best for their families and communities. I'm sure that if in those cases there was fraud, there was going to be fraud with timber or with PES or whatever. That is a challenge that doesn't go away. The best way to do it is to keep on reinforcing transparency, democracy, governance in those areas.*

CAMERON: So your team at INE that was working on this policy—

MUÑOZ: *With our academic partners, the Universidad Iberoamericana and with the CIDE (Centro de Investigacion y Docencia Economicas/Center for Research and Teaching in Economics)—*

CAMERON: Can you give me a bit of understanding how this policy developed? How were you meeting? How were you discussing these ideas? How did it get on paper and get to the Congress?

MUÑOZ: *It was brainstorming. We'd get either my team or my team and the professors who were helping us and we'd go into this room that had a huge whiteboard and pens of different colors and we'd go "OK, let's write down the equations and graphs of the program. Let's bring in the data." We were printing Excel sheets and running regressions in Stata and putting things out there on the board and just thinking about it, generating options. Everybody has the right to say, criticize this, let's make something solid. I was in charge of putting those things together in a sellable presentation for different audiences.*

We crafted this bunch of research, it was in four or five working papers, and I was in charge of making the presentations and just getting the data that would convince, spark imagination, attract, attack different criticisms, resolve disputes, or resolve doubt. So we had this and went all over the place.

First it was actually circles from the inside out. From the INE towards the ministry, once we had the ministry then CONAFOR (Comision Nacional Forestal/National Forest Commission), and once CONAFOR was on the boat and actually took it as a banner—that was the thing. It was the head of CONAFOR that had the contact with Congress people and the senators. He was a member of the party, not a technical one like Victor Lichtinger. So once we had the support of them too it was just arranging a series of meetings with key members of Congress. It was one-to-one, groups of three, five, eventually we had larger committees of a dozen or two dozen. We were sitting, explaining, bringing outside expertise, talking, having a series of phone calls, some of them very late at night, staying at night in the ministry—"Please, can you hear our version of the events, can you please hear our analysis. This is mostly true, it's compatible with the idea of social goals. We're not going to—I don't know, some

people were afraid people would be losing their land—no, no, this is just a voluntary contract and the property rights are still—this is the law, we'll send you this by e-mail."

So the good thing about the INE as a think tank was that we had the time to do the research, the resources to do the research, but also the time and resources to communicate the public policy option. Once the champions had the flags then we would be supporting the political champions.

CAMERON: Did you have a lot of demand from the communities?

MUÑOZ: Yes.

CAMERON: But you mentioned that there were protests, or people deforesting, were there indicators?

MUÑOZ: Yes.

CAMERON: What other indicators were there of people really wanting something like this?

MUÑOZ: *There were protests around the establishment of national parks.*

CAMERON: OK.

MUÑOZ: *Protests against enforcing of the no land use change policies.*

CAMERON: When did that happen?

MUÑOZ: *That happened all the time. It was ever since I was in college. Talking with other people they were against—.*

CAMERON: As far as enforcement of that, when was that?

MUÑOZ: *Actually that was the problem because the government could not do a crackdown. How could you send— [interruption].*

CAMERON: So the government could not do a crackdown.

MUÑOZ: *No, nothing. Imagine sending to jail a head of household that was in extreme poverty because he had cleared a hectare of tropical forest to grow corn to feed his family. It was impossible. That was my argument. We could not do that. It was a delusion to think we could have the laws prohibit land use change and enforce them. Even a rich cattle rancher would do the same stuff and hide behind the argument that he was generating income and he would give a call to senators saying that the state would not develop if the herds did not increase.*

CAMERON: When you were developing the policy, were you informed by the likes of Coatepec and Costa Rica and—?

MUÑOZ: *Yes, actually that was a very fortunate thing. Costa Rica, to tell the truth, had very little influence on us until the time of communicating and lobbying. Actually Costa Rica was of very little help with many of the actors that we were trying to convince. They were saying, "The Costa Rican government owns the land, owns the forest, it is not like Mexico. They are not poor like Mexico. They are actually a*

middle income Central American country.” So they were not paying much attention.

Coatepec was very important because of two things. Coatepec had the luck that the guy who had started the local PES program who we met—once we were already rolling with the idea, some of the people who we were talking to said, “Oh you guys, have you heard about Coatepec?” So we found out about Coatepec through our first interviews and interactions. I said, “Yes, what about them?” The good thing was that people from the party of the President at the time knew about this because the Coatepec mayor was a man from the President’s party.

So when we went there, my explanation is esoteric on what had happened there because—What is the likelihood of a local PES program emerging in Mexico? What made this happen? For me there are three things. First, the guy was from a rich coffee-growing family. He was a solid conservative and that was why he was the man of the party and elected to the municipality. But he had worked. His parents had sent him to study and he had studied biology. When he studied biology he went and worked for a few years in a think tank in the Mexican Gulf Coast that was doing conservation work.

So as a young biology student he was exposed to the ideas of conservation. When he eventually returns to the family business, he begins to improve things, making organic cultivation of coffee, etc. He says we are losing water. Each year we have less water for our crops. As users of water we need to protect them. And everybody from Coatepec could look at the mountain because it is these small compact watersheds of the Pacific, of the Gulf Coast.

Have you heard of the phrase “Eyes that don’t see, heart that doesn’t feel”? In a sense for us it was very important because the economic link, the externalities link needs to be, as Professor Bardach would say, it needs to be felt by the incumbents. It needs to be felt by the ones that stayed. So people in Coatepec saw every day the sight of the mountains being deforested and every year they saw that water was diminishing.

So for them this Mexican link between forests and water was more than evident. The mayor said, we need to protect those forests. He had the wealth of the coffee-growing region, the need of the water and the political support to do so. So in a sense you needed to have a mayor who had studied biology, that had worked in conservation and then became head of the most important economic interest group that agriculturally needed water, combined with people seeing deforestation happening. Voilà. Whenever we went we actually asked him to tour with us to convince people. This is a very nice guy, very good politician, sensible. I would say a humble politician.

They just picked him up. The high echelons of the party knew that he was one of those grassroots politicians for their party and supported him. So in a sense we built on Coatepec’s success, saying we want to make this national and he was our poster mayor.

CAMERON: When you mentioned that you invited him to tour with you, what was the tour?

MUÑOZ: *The tour—actually it was some of the people at the National Forestry Commission, very fun guys. I would say a brilliant lawyer and a very good public relationship manager. Sort of the staff of the commissioner that was in charge of selling the idea. Two great guys. So their joke was whenever we took the plane*

to talk with people in different regions of the country to convince them to give support to the program, they called it the [Indecipherable] tour because we were jumping on the plane, going to seminars, encounters, saying "Yes, you should embrace this idea." They were in charge of them and we were there to give scientific and economic analysis support. So it was a great time.

They would ask, "Mayor, would you have some time to come with us to speak with your peers at the—I don't know—central basins, central watershed areas, to the State of Mexico, to the northern regions of Mexico? The man said yes, I will ask for leave for this period." He would jump in, come with us, press conferences, academic conferences. He was game. He was very important.

CAMERON: Were there any other funding mechanism you used other than water?

MUÑOZ: *Yes, and I discarded them—actually it was part of the analysis. The first one was the central budget—now I would see it as more resilient but at that time there was just ducks and water. So no, that not. Carbon, gasoline prices. My analysis and then hunch and then later decision was not to go there because Mexico was not mature enough to make the link between forest, carbon, and climate change in the early 2000s. I proposed to tax tourism for the PES, not related to water but to biodiversity PES. PES had the branches of carbon, biodiversity and water. The water one was the one that was largest because it was funded with the earmarked fee. The carbon one was a pilot that eventually didn't work. The biodiversity one was also funded from the central budget so it just suffered at the beginning but once the water one was well established then Congress would support the allocations for the biodiversity one and that is how it has survived.*

Actually the money you're seeing in Lacandon is from biodiversity, not the water one.

CAMERON: Why did the tourism tax get discarded?

MUÑOZ: *Because we had no precedent of federal fees on tourism; we only had the state ones. The tax and room charge was a local thing and we couldn't get all the states to agree. Because we were a federal agency with more power at the federal level, I chose not to go that way. I think I would not have succeeded more. We did do an analysis, we made the proposals, we pitched it whenever we could, but I didn't waste precious political energy into pursuing that.*

The water fees were there for decades. The other one would have had to be a new one, would have had to extend, and I had already expended my political capital passing the National Parks fee, which was a fee paid by visitors to the natural protected areas that was earmarked for conservation of those protected areas. That had—I could tell you another story like the PES one. There we were again attacked by the tourist operators that didn't want their tourists to pay a fee and by some parks earning more money than others, they didn't want to. The Ministry of Tourism wanted the money for their own purposes instead of the Ministry of Environment dealing with them. There was the issue of whales. We wanted to charge for a whale watching fund, conservation and study of whales, because we were a scientific agency. So we deemed that as more important. So it was very complicated but successful story.

We had succeeded in making the tourists pay for conservation of the natural protected areas; that was already a check. But I knew that if I was going again into that, resistance to our economic instruments was—they were already

warned about our pressure and they would probably have attacked stronger. So we chose to go with the water ones to surprise them, get the instrument, and then we'd have those.

CAMERON: When the pilot got scrapped, was that a setback?

MUÑOZ: *Yes, it was a very disappointing one. But actually because we were in economic and policy analysis unit, we took that in stride. We said, "OK, that is evidence that those programs failed." So it was for us, in a sense, part of our research. We found out that certain proposals don't work, but that is something that enriches policy analysis.*

CAMERON: When you built the political support to pass the water tax to fund this—

MUÑOZ: *Yes, it was great.*

CAMERON: Can you talk to me about that?

MUÑOZ: *Yes, in a sense we were a think tank. So remember think tanks, they sell ideas, that is their strength. I would say that the minister himself was very interested in water. He mentioned three topics. Actually his political link to President Fox was that when President Fox was Governor of Guanajuato, he was an adviser to the Governor, and the main crisis was water. So the minister was very keen on water. The President himself was coming from the regions in Mexico that suffer from water scarcity. So I would say that the high-level politicians were keen and sensible to the promise of water; they had received that from their constituencies over and over again in their campaigns.*

Even now, the latest thing in Mexico is the water law that was stopped in Congress from taking over and giving to corporate interests the water for the people, etc. So Mexico has all these tensions about water. Actually there is a paper, a working paper within that on social tensions and water. It is published by [Indecipherable], which we did a link of. We gathered all the news, there was a water crisis and we linked that to water scarcity and we found the correlation between the two. So it was very exciting.

I would say that in Congress every politician, I would say 99% of them, if you ask them what are your three top environmental priorities, they will mention water. It is in all platforms, it is in all political agendas. Mexico has many water problems.

CAMERON: You just described this link between water and forests as a very Mexican thing, why is that?

MUÑOZ: *I don't know why. Really I am not a sociologist, I'm not a cultural expert. It is a puzzle for me. I've always asked around to see if anyone does, I am waiting to see a paper explaining where that came from. The closest thing I've come to an explanation for that—for me it is just in political terms, you take the political interests as given, this is what people care about. You can work over that to make an agenda, it is actually policy—you may have heard of agenda-setting papers. You can do something to put up a certain topic or make it go away. I took that as a given. Mexicans care about water and they recognize a link—sometimes fussy, sometimes stronger—between forests and water. So for them it is there. We worked with that and it worked.*

There is a guy named Iduriaga that has published a couple of books on views on the environment by visitors to Mexico, sort of strangers' eyes over Mexico. He speaks to that. He has found papers from—I don't know, from the 19th century, early 20th century—where water issues and forests are mentioned. Maybe it's that, maybe it is a Coatepec story, maybe it is deeply ingrained culture. Maybe it is just a link: people seeing how clean water flows from areas that have forests and once those forests are gone, then they see dirty water. Maybe it is just careful, natural observations by many people.

CAMERON: Right. So you won support for this 2.5% of the water fee to fund the program. Was that enough? How did you feel about that number?

MUÑOZ: *I was very happy. We made a link using something called the price elasticity of water. If you know how much water reacts to the price increases, 2.5 was going to give us around a 2 point water savings, between 2 and 2.5 reaction in savings. That was part of the goal; they were saying Mexico needs to save water. 2.5% needs to be saved to avoid over exploitation of these areas and then from there more. But in reality it was what I thought was the politically feasible number. It was the highest I could politically sell. If I went for 5, 10, then it would be too big. If I went for 1 it would be too small. Let's say 5 was the top political gain I thought I could make, then 2.5 was like bargaining in the market, not you, not me, 5, zero, 2.5, OK, we'll settle someplace in the middle. So that was the way we worked with the water agency and then with the finance ministry. It was the highest politically acceptable level.*

CAMERON: And once the law was passed?

MUÑOZ: *After the first year, once the success of the program was beginning to be felt—once people were receiving the checks, saw that the forests were theirs and not the government's, that there was not a threat to their rights and that they were free to use that money investing in the forest as they wanted and to do something else for the improvement of the poor neighborhoods or the poor villages within the forest—once the people felt that, then the support of the program came in. Once the people's support of the program came in, politicians said, "This is a successful thing, let's increase it," and the budget grew.*

By the end of that administration and start of the new administration, I would say that half of the money of PES was coming from the earmarked fee, and half from the central budget. Sort of a matching fund. The Congress and the people support this 2.5, we'll put in another 2.5. That's how it has stayed.

CAMERON: When you passed the law, what were your goals? What did you foresee? In five years, what was your goal? In ten years, what was your goal?

MUÑOZ: *The goal was to get a foot inside the door. Once we were there, then the program would protect itself because the benefits would come in, people would see conservation, and then the economic support would come in. But as we were well trained at Berkeley and the University of London, we needed to check on that. So we began to do studies. Afterwards I said OK, my job in this is done, problem solved, it's already been implemented. We'll study the targeting. So I immediately began to look for ways to improve it. Actually it was a whole other story. We found out that because of certain dynamics in the implementation of the program, money was not going to the forests that were in the greatest need—which is the second paper.*

The greatest need was in areas that were under more economic pressure on the forest, and nobody knew where they were. So we spent a couple of years building such a model to identify the areas and then we spent the next year and a half—it was probably the most costly one—to do better targeting of the program toward the areas which had the poorest people and the greatest risk of being deforested.

We created something called the economic index of risk of deforestation. We found out that that didn't sell as well so we changed the name to "Economic Pressure on Deforestation" and that is what we have now. I spent lots of time trying to deal with the committees which were very fast filling in with vested interests sending their money—the money from PES to their forests. If those were not the best forests, where the technocrats tie in is to reallocate according to some fancy policy goal. And we said, "That was not what it was created for. It is not to give money to your cronies, it is made to make a difference and the way to make a difference is this." But again, the people from some of the groups that I was mentioning wanted to fund their microdreams. They wanted to get funding, as anyone would, for their own projects.

So they were working with Oaxaca and people in Oaxaca were very supportive of them. They would say, "Give money to the people in Oaxaca." We said, "But that is not the greatest risk." They said, "No, that is where we're working." I said, "No, you should not be using the money, that money should go to where there is the greatest need and the greatest change can be achieved." That is why the label of technocrats came in. I would say that my goal was to make it an efficient, well-targeted program that created the greatest difference.

I would say that it cost us the enmity of several of the new generation of CONAFOR people in the previous administration because we were very critical of their targeting. Eventually, by our criticisms and reforms pushed past them, we doubled or tripled the efficiency of the program.

CAMERON: I want to go back briefly to the goals you had at the start of the program, as far as on-the-ground goals, what you wanted to achieve—.

MUÑOZ: *Avoid deforestation.*

CAMERON: Did you have a goal as to how much you wanted to decrease deforestation by?

MUÑOZ: *That's interesting because we knew that it was a reaction but there was no evidence of how much it would be. We had some estimates about how fast deforestation would be reduced. It all depended on the size of the program. So we were actually trusting the market to tell us what was feasible given the money. If more was needed, then more money should be coming. Our aim was to get prices right, get prices better, and then see what that would bring to Mexico.*

I was very happy to find out that one of the professors that helped us in the early stages later in the (Felipe) Calderón administration was chosen as the head of the National Forestry Commission. We were very happy about that. We went to him, said OK, you know about what the challenges are, so you should be helping us to improve the situation. And he did.

By the end of the Calderón administration—remember I told you it was a 1%, between 1 and 2% per year deforestation rate, one of the highest in Latin

America, in the world I would say. Now it is less than one quarter of a percent. So for me that is caused by three effects, although more studies need to be done to allocate the responsibility.

I would say empowering communities to have their own community forestry firms is behind that, reducing deforestation. It was just community forestry firms maturing and protecting their forests. I would say that conservation policies, just direct appropriations, no more deforestation in this natural protected area, played a role thanks to good funding. I would say some of that was created by the economic instrument but most of it came from conscious citizens claiming from our budget for the national parks and innovative programs such as PES. Plus the fall in agricultural prices, lower reasons for deforestation and sadly because some of the most easily accessible forests were gone.

CAMERON: What have been the biggest failures of the program?

MUÑOZ: *I would say that if there was a design flaw, which we tried to correct, it was the way economic interests came into play through a committee that would allocate the rules. Naively, we created rules that were flexible to recognize any errors or new evidence. It was a design recommendation, but in the end it played against us because the flexibility meant that committees could change the rules under certain parameters.*

So whenever a new group came in they would say, "I would like selection criteria to be if the [Indecipherable] is to get communities participating in this fancy ecological zoning thing I invented in the agency." So many people came with their pet projects and wanted to get funding for them and set the criteria for allocation. We started that in 2006 and 2007 and came out with the finding that these secondary criteria were actually eating the space of the primary criteria which were poverty, hydrological relevance, economic pressure and deforestation. By having these dozens of small pet projects coming in or fancy policies or the current governor wanted to have something to do with mountains or wanted to do something to support, etcetera, X, Y group, they begin to eat at the funding. We had divided the point system for allocation of the program into primary and secondary, then we could have received all the political pressure into the secondary box, leaving the main policy objectives in the first box, say 80% weight on the decision.

We tried to correct by increasing the weight of the first ones but we got attacked by the secondary ones and it was very difficult to do. Eventually, interestingly enough, once our analysis was strong and vocal, then they began to shut the participation of agencies and even have gone in then we would be shut out by the middle managers who didn't want that to be changed.

I would also say that the targeting could have been better from the beginning. It got corrected at high political cost for the INE, the research agency. Now we have sort of a compromise. It is better than it was before but it could have been even better. That was a lesson I always stress to the people designing their instruments from the beginning. There is an additional design improvement which was already recommended by our advisors from UC Berkeley at the beginning, which is to create not two prices but a series of prices. That is a strong recommendation coming from economic theory but I saw that difficult to sell. At the beginning, I could only sell two tiers and two different levels of payment. Eventually one of the things that this professor, Torres-Rojo, helped us push through was to create not two but four, five, six different steps or levels in the

design of the program and that was very useful. I think that improved the efficiency for the program quite a bit.

CAMERON: Why was it hard to sell? Why would it be hard to sell varying prices?

MUÑOZ: *Because people would know the link between forest and water but could ask, "Why is my neighbor's forest more important than my forest? I see the same trees." So it was very difficult to objectively say that one forest was more valuable than another. People would be fighting like siblings for equal treatment whereas we knew that there was a difference.*

It was a sale that an antipoverty program did. It was not without cost but it was successful. We will only give subsidies to extremely poor people and this is the way we check. I remember being in the field doing research for my dissertation with some people claiming that they didn't receive the antipoverty program and they were very angry at the politicians for taking them out of the list. When I visited their houses, I saw that they had a cement floor and they had a small truck; they were not in extreme poverty. So this differentiating between the ones with extreme poverty and those without was done through a survey, objective data and it stuck by creating a list.

That which is evident, you go to a household and you could immediately see if there were in extreme poverty or not. You could do some analysis for the people in between but for the main groups it was easy to separate. With forests, it's not so. I found that the knowledge of ecological relationships, of ecosystem interactions was not so widespread as to allow me to create that difference.

Beyond that, economic opportunity costs—which was a very important thing to say—was even more difficult because we would say the ones closer to the highway are the ones that have more deforestation because they are closer to the market for meat and the market for other cultural products, so those should be receiving the high payment. But the people in the high mountains have more beautiful forests. They are very well preserved because they have less pressure. "See, mine are more valuable than those scrawny trees down there." In a sense the opportunity cost was inverse, linked to the visibility of the valuable environmental service.

After bringing in Sampurno Bruijnzeel and all the gurus in the forest-water relationship, they were able to sell the idea that cloud forests were more valuable than the rest because they had this link to fog and capturing water. Just because I had lots of scientific evidence, I was able to split in two the payment. That was only because of the value of the service, not the opportunity costs.

The new system says, we'll pay more: the high opportunity cost forests and the low opportunity cost forests. But remember that it's five years after the program was launched and with an academic directing the National Forestry Commission. We were very happy that he was able to split at least into two, although it was not correctly done because some of his middle managers were trying to squeeze in different projects in priority regions—priorities for the President or for the governor—and they didn't follow the kosher approach to the opportunity costs. But in a sense there was a positive correlation and it was acceptable. It was not worth fighting too much over it. The main goal was achieved.

CAMERON: Can you talk a bit about the role of any outside groups, such as the World Bank or—?

MUÑOZ: *Oh yes. The World Bank was very supportive. Once we said this idea was out, the World Bank needed to put some funds for conservation and development. It was just a good match: they had money to support the forestry commission and they liked the idea of the economic instrument. So I would say Stefano Pagiola from the World Bank and [Indecipherable] from [Indecipherable] were very helpful. They helped us organize the seminars, bring in the international support. The World Bank actually funded the system that made very transparent payments to people joining in the program. That was very important.*

CAMERON: What was that exactly?

MUÑOZ: *It was satellite images processing the lists, a geographical information system that registers who joins the program and the financial system that keeps the money being administered, delivered every year after the verification of forest conservation has happened. That didn't exist. It would have been difficult for CONAFOR to do it without the support of the World Bank. They were very helpful in funding the implementation, I mean to provide the credit to do so—because the Mexican government did eventually pay that. They were also helpful for the grants to support our research. I would say that a third of the research was done thanks to the support of outside agencies.*

CAMERON: Were there any other outside groups that had influences on the program?

MUÑOZ: *I would say that environmentalist groups at the beginning were opposing because some of the ones with more vested interests—the ones that had grown economically, environmental consultancy groups around the previous secretary, etc.—they had an interest in bringing funds to their own areas so they were not very helpful.*

Some of the more policy-oriented ones, the WWF (World-Wide Fund for Nature), Conservation International were, let's say, one degree of separation from the other guys. They were supportive. They always gave us good press.

The agricultural ministry in a sense didn't put pressure because they were working on the areas already transformed and they were giving subsidies competing with the environmental ones. So that was a fight that had to be left for some other day in which the agricultural subsidies would need to be decoupled not to alter because if PES gives 300 pesos for a hector of 500 and the Cattle Ranching Program gives 600, then you're fighting against a much larger budget.

CAMERON: Is that an ongoing battle?

MUÑOZ: *It is, yes. Actually the recent news is that one of them was won. My new think tank in Center Molina (Molina Center for Energy and the Environment), we helped, using this idea, to create an environmental tax on pesticides. So in a sense that's an ongoing battle which we won one round. In essence, decoupling environmentally perverse subsidies is a key challenge and certain things will happen. We did research on the way the subsidies actually increase deforestation but that has been much more difficult to sell and the Ministry of the Environment has less power than the agricultural ministry. So it is very difficult to convince any secretary or undersecretary to take on the agricultural and cattle ranching interests.*

CAMERON: That research that you just mentioned there, was that done through Center Molina?

MUÑOZ: *Yes, through a National Science Foundation grant.*

CAMERON: What do you think are the main threats to the program both as far as its continued effectiveness and if there are any threats at all to the sustainability of the program as a whole?

MUÑOZ: *One of the dangers is that it stays as it is. I think it needs more improvement on the targeting side. I moved on to the grey issues, the ground issues in the Center Molina: climate change, environmental tax on fuels, etc. I actually had to devote myself to brown issues, not to green ones. That is something that should be pursued again. That is something I would like to do again.*

CAMERON: What do you mean by brown issues as opposed to green ones?

MUÑOZ: *Brown issues are pollution, climate change; green issues are conservation, forests, biodiversity.*

So the government needs to improve on targeting and it can be done. We need to just gather the political support, coalition and innovation to get this through.

CAMERON: What does that require? Is that something that can happen?

MUÑOZ: *Changing the rules. Actually the new administration has new people at the National Forestry Commission. They could be corporatists, in the political science meaning of giving money not following efficiency rules but more political favors. So that is a threat. That needs to be stemmed by increasing transparency and proper allocation rules. Discretionarities could be a greater threat.*

Actually, we saw some of that at the end of the last administration because the program itself grew and stayed at a certain size, between 600 and 1000 million pesos per year, but there were local programs emerging in which a good idea was to create links between the local benefits of the PES, the local beneficiaries, and the federal program that used the money from the water users. In a sense, they wanted to bring in organized interest groups—mining companies, agricultural districts—to pay for the water which is a good idea because you use the money in general from water and also the money in particular to protect a certain watershed. It might not be priority one at the national level but it might be a local priority, a local priority which local funds sum up with the national funds and get that. So embedding the nesting of local and national problems is valuable. One of the threats was to go local and forget the national ones which would be a mess because some regions have valuable forests but don't have an economic interest group using the water. So creating a good link between the local and the national program is very important, not one to beat the other.

I would say the main threat comes from discretionary use of PES. Second threat could be that the local PES eats up the federal one instead of complementing it. I would say that improper evaluation, just forgetting about the evaluation, would be the biggest threat because then the first thing or the second could happen and you would not see it.

A strength is that the money has been flowing for several years and certainly the kind of things you will visit next are good examples of steady supply of money for

the post externalities, creates an economic force that protects the forest. You'll see several good cases of that.

CAMERON: One of the criticisms that I've heard is that PES doesn't work as well as a standalone policy and where it has been most successful has been where there's been a local NGO (nongovernmental organization) or local organization of complementing policies.

MUÑOZ: *I would say, show me the numbers. I think that local NGOs would want to say that because they would like their role to be increased and fulfilled and to have money flowing to them. I would say that it is difficult to believe somewhat that would benefit from money going to their own. Now we did some tests on that by putting of course where NGOs were working. Of course I fully support the idea. I think that the more the merrier, the more people converging in an area would improve this, but I would say that micromanagement or too much intervention could be also damaging. Yes. Are there nannies? Will they be checking in how the funds are? Maybe they want to have a super deep green approach instead? I tend to privilege the liberal approach in which by empowering them, they'll find their partners. Actually one could test that. The communities that have PES have attracted NGOs instead of the other way, instead of NGOs attracting them.*

A positive partnership is when an NGO partners up and helps them to get the funds from PES. So in a sense it is also a very market-oriented approach. Get the NGOs interested in an entrepreneurial proposition of conservation within the region. So yes, let them say that so they'll find out but do not change the rules of the program.

CAMERON: What factors do you think are most important in making PES successful at a local level? What other—

MUÑOZ: *I would say that going back to Coatepec; if Coatepec had a local PES without the federal one, which means it was a value proposition for them at the local watershed level—that should be replicated. That is what should be done.*

CAMERON: What about—is there anything that you think makes PES less successful?

MUÑOZ: *Discretionality and—*

CAMERON: Things at the top? Things that could affect it from a more local level?

MUÑOZ: *I think that democracy governance.*

CAMERON: Governance?

MUÑOZ: *I remember being in an ejido where the people in the street, members of the community said, "We don't know about any PES happening here." It was one of them that had received for two years or three years in which the elite of the community governance system was hiding the external funds, or was, let's say, not forthcoming sharing data. They said, "Oh, we received money from different government agencies. You don't care where the money comes from, we will just show the resource." So in a sense, it's not details. But on the other hand, that money could come in and be allocated in some other non-democratic, not fair way and no one would know. But that is a challenge everywhere.*

Strengthening local governance for these common property resources which have a well-defined set of owners is a priority for anything, for any program because if it is a common resource, then governance is key to make it work for everyone.

CAMERON: Monitoring enforcement. Do you think it has been sufficient?

MUÑOZ: *Yes. I would like to see more data on the failed programs. I remember asking for them for a while, several years. It was literally trickling down, four, five, ten ejidos which would get their PES contracts canceled because of the conditionalities not being fulfilled. My argument was that the power of PES is in the conditionality. If you don't deliver, you won't get the funds next year. That has made the entire difference in people having the right incentives to act. If you lose conditionality, you lose all the program.*

The good thing is that the system was set up from the beginning with the help of the World Bank etc. so it has the eyes of—I know that Stephano Pagiola is coming again for review of the program to see how it has worked. So getting outsiders to keep an eye on this keeps transparency going. If you've built a program on objectivity and transparency, it has been very resilient over the years. I am surprised and very happy for it.

CAMERON: Excellent. Well I know that you have to go.

MUÑOZ: *Yes, I have to go Cameron, but it was a good interview.*

CAMERON: It was really fantastic speaking with you. If there is anything else you wish to say?

MUÑOZ: *No, I think it is good. We can talk more later if you want to check on some of the stories. I would say that my recommendation would be to go to the areas that have received funds, not only the most attractive cases because if you only look at the people that get scholarships, you will only get the extraordinary ones. You should be looking at the statistics and choosing random recipients to hear their stories. A very successful one might be inspiring, but it might be deceiving because you want to see how most of the people going to school do, not just the scholarship ones.*

You want to see how most of the forests do with the PES, not just the extremely successful ones or more visible ones. There, ask: "This flow of money over the years, how much it is? What have you guys done with it?" And you will see all the ingenuity, creativity, very good ideas that happen. You will see that people want to improve the lives of their families and communities and that they have made the best use of this money. That should not be played down. Even if some people would like to direct specific programs, ideas to be launched, you should be looking at what people want and what communities want and have done. That should be the right story.

CAMERON: Thank you very much. I will be in touch in the coming months.

MUÑOZ: *If you have some ideas of other successful societies, would you be willing to hear?*

CAMERON: Absolutely.

MUÑOZ: *We'll keep you posted.*

CAMERON: Great. Thank you so much Carlos.